2019

Storm Water Solutions, LLC

Stormwater Management Program

For

The Sienna Plantation Coalition

Consisting of

Sienna Plantation Management District

Sienna Plantation Levee Improvement District

Sienna Plantation Municipal Utility District No. 1

Sienna Plantation Municipal Utility District No. 2

Sienna Plantation Municipal Utility District No. 3

Sienna Plantation Municipal Utility District No. 4

Sienna Plantation Municipal Utility District No. 10

Sienna Plantation Municipal Utility District No. 12

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Acronyms and Abbreviations

AU - Assessment Unit

AWBD - Association of Water Board Directors

BIG - Bacteria Implementation Group

BMP - Best Management Practice

BRA - Brazos River Authority

CRP - Texas Clean Rivers Program

DMR - Discharge Monitoring Report

DO - dissolved oxygen

EPA - U.S. Environmental Protection Agency

E. coli - *Escherichia coli*

ETJ - Extra-Territorial Jurisdiction

FOG - Fats, Oils, and Grease

GCWA - Gulf Coast Water Authority

H-GAC - Houston-Galveston Area Council

I-Plan - Implementation Plan

IA - Implementation Activity

IS - Implementation Strategy

LA - Load Allocation

LlD - Low Impact Development

LlDs - Levee Improvement Districts

MEP – Maximum Extent Practicable

MGD - Million Gallons per Day

mL - Milliliter

MPN - Most Probable Number

MS4 – Small Municipal Separate Storm Sewer System

MUD - Municipal Utility District

OSSF - On-Site Sewage Facility

SSO - Sanitary Sewer Overflow

SOPs – Standard Operating Procedures

SWCD - Soil and Water Conservation District

SWMP – Stormwater Management Program

TAC - Texas Administrative Code

TCEQ - Texas Commission on Environmental Quality

TMDL - Total Maximum Daily Load

TPDES - Texas Pollutant Discharge Elimination System

UA - U.S. Census Bureau-designated Urbanized Area

UAMP- Utility Asset Management Program

WLA - Waste Load Allocation

WPP - Watershed Protection Plan

WQMP - Water Quality Management Plan

WWTF - Wastewater Treatment Facility

Part I - General Permit Requirements

Permit Overview

The Texas Commission on Environmental Quality (TCEQ) issued the Texas Pollutant Discharge Elimination System (TPDES) General Permit Number TXR040000 (the permit) on January 24, 2019 with an effective date of January 24, 2019. This permit supersedes and replaces the TPDES General Permit No. TXR040000, issued December 13, 2013. 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 MS4s 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 regulated MS4s 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, regardless of whether the discharge is conveyed through a separately operated storm sewer system. An MS4 Operator that implements its SWMP and the selected Best Management Practices (BMPs) in accordance with the permit, will be considered meeting the standard of reducing pollutants to the MEP, and will be deemed in compliance with the permit.

Regulated MS4 Operator(s)

Applicants:

For

Sienna Plantation Levee Improvement District

Sienna Plantation MUD 1

c/o The Muller Law Group PLLC

202 Century Square Blvd.

Sugar Land, Texas 77478

For
Sienna Plantation Management District
Sienna Plantation MUDs 2, 3, 4, 10, 12
c/o Allen Boone Humphries Robinson LLP
3200 Southwest Freeway, Ste. 2600
Houston, Texas 77027

This Stormwater Management Program will be implemented by a coalition of MS4 Operators. The participants in the plan are as follows;

Sienna Plantation Management District,

Sienna Plantation Levee Improvement District

Sienna Plantation MUDs No. 1,2,3,4,10 and 12

Sienna Plantation MUD 4 is a new MS4 Operator under the Permit and will partner with the above-mentioned MS4 Operators during this five-year permit term. Sienna Plantation MUD 4 will implement the BMPs that were developed by the aforementioned MS4 Operators to address MCMs during the prior permit-term. New program elements specific to Sienna Plantation MUD 4 will be developed as needed to comply with permit conditions. Progress will be reported in annual report.

For purposes of this plan, this coalition will be referred to as the MS4 Operator.

Legal Authority

The Sienna Plantation Levee Improvement District is a conservation and reclamation District created pursuant to provisions of Chapter 57, Texas Water Code and Article XVI, Section 59 of the Texas Constitution and operates and is governed by provisions of Chapter 49 and 54 of the Texas Water Code, as amended. The Management District and each Municipal Utility 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 and 54 of the Texas Water Code, as amended. Each MS4 Operator owns and operates a municipal separate storm sewer system and is considered a "Non-traditional Small MS4 Operator" as defined in the permit. TXR040000 defines the MS4 Operator as a Level 2 MS4 and the MS4 Operator 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 and penalties into the MS4 Operator's Rate Order or the MS4 Operator's adoption of rules and regulations via resolution of the MS4 Operator's Board of Directors (which would serve the same function as an ordinance). Over the course of the permit term, the MS4 Operator will develop a program to inspect third party actions from contractors, builders, and other potential polluters within its jurisdiction and to ensure compliance with this SWMP.

Location of the MS4 Operator

The Sienna Plantation Management District's jurisdiction lies wholly within the 2010 Census City of Houston Urbanized Area. The approximate center is Latitude/Longitude: **29.5314, -95.5343.** See Location Map 1 **(Appendix B)** for the MS4 Operator's jurisdiction.

The Sienna Plantation Levee Improvement District's jurisdiction lies partially within the 2010 Census City of Houston Urbanized Area. The approximate center is Latitude/Longitude: **29.4998, -95.5196.** See Location Map 2 **(Appendix C)** for the MS4 Operator's jurisdiction.

The Sienna Plantation MUD 1 District's jurisdiction lies wholly within the 2010 Census City of Houston Urbanized Area. The approximate center is Latitude/Longitude: **29.4748, -95.4991.** See Location Map 3 **(Appendix D)** for the MS4 Operator's jurisdiction.

The Sienna Plantation MUD 2 District's jurisdiction lies wholly within the 2010 Census City of Houston Urbanized Area. The approximate center is Latitude/Longitude: **29.4971, -95.5184.** See Location Map 4 **(Appendix E)** for the MS4 Operator's jurisdiction.

The Sienna Plantation MUD 3 District's jurisdiction lies wholly within the 2010 Census City of Houston Urbanized Area. The approximate center is Latitude/Longitude: **29.4905, -95.5316.** See Location Map 5 **(Appendix F)** for the MS4 Operator's jurisdiction.

The Sienna Plantation MUD 4 District's jurisdiction lies partially within the 2010 Census City of Houston Urbanized Area. The approximate center is Latitude/Longitude: **29.4816, -95.5226.** See Location Map 7 **(Appendix G)** for the MS4 Operator's jurisdiction.

The Sienna Plantation MUD 10 District's jurisdiction lies partially within the 2010 Census City of Houston Urbanized Area. The approximate center is Latitude/Longitude: **29.5291, -95.5567.** See Location Map 6 **(Appendix H)** for the MS4 Operator's jurisdiction.

The Sienna Plantation MUD 12 District's jurisdiction lies partially within the 2010 Census City of Houston Urbanized Area. The approximate center is Latitude/Longitude: **29.5136, -95.5422.** See Location Map 7 **(Appendix I)** for the MS4 Operator's jurisdiction.

Resources

Although financial resources are limited and the demand for funding is ever-increasing, the MS4 Operator will ensure its annual budget includes adequate financial resources for proper implementation of the SWMP. There will be a team of consultants reporting to the MS4 Operator on a regular basis to ensure that SWMP implementation stays on schedule and within the budget.

Reporting Year

The MS4 Operator has elected to align its reporting year with the calendar year. The end of reporting year 1 is December 31, 2019. The MS4 Operator will submit the annual report outlining the accomplishments under the SWMP within 90 days of December 31st of each year during this permit term.

Record Keeping

The MS4 Operator will retain all records, a copy of the permit, and records of all data used to complete the NOI for the permit and satisfy the public participation requirements, for a period of at least three (3) years, or the remainder of the term of this general permit, whichever is longer. The MS4 Operator will submit the records to the executive director when specifically asked to do so. The SWMP will be retained at a location accessible to the TCEQ. The MS4 Operator will make the NOI and the SWMP available to the public at reasonable times during regular business hours, if requested to do so in writing. Copies of the SWMP will be made available within ten (10) business days of receipt of a written request. Other records shall be provided in accordance with the Texas Public Information Act.

The SWMP and its contents can be viewed at the following addresses:

The Muller Law Group PLLC
202 Century Square Blvd.
Sugar Land, TX 77478

Storm Water Solutions LLC
16110 Hollister Street
Houston, TX 77066

Allen Boone Humphries Robinson LLP
3200 Southwest Freeway, Suite 2600
Houston, TX 77027

Effluent Limitations

Effluent limitations for stormwater runoff are narrative and not numerical, requiring implementation of best management practices to protect water quality to the maximum extent practicable. The targeted controls and BMPs chosen in this SWMP take into consideration applicable effluent limitations and are in compliance with State of Texas rules and regulations.

Enforcement measures and Standard Operating Procedures

The MS4 Operator will adopt standard operating procedures (SOPs) over the course of the permit term that outline how to respond to permit violations. These SOPs will be included in a Stormwater Guidance Manual that will be created as part of the SWMP over the course of the permit term. Chapters regarding each Minimum Control Measure (MCM) will be developed and comprise the Stormwater Guidance Manual.

Implementation

The MS4 Operator does not have a paid staff of employees to implement the stormwater program. Therefore, the MS4 Operator has engaged a Stormwater Consultant to direct program implementation during the permit term. The Stormwater Consultant is responsible for coordinating SWMP related activities including development of BMPs, correspondence with the TCEQ, preparing the Annual Reports, and other activities, to comply with the permit conditions. The Stormwater consultant is responsible for coordinating efforts, including those of other consultants, related to compliance with TPDES Permit No TXR040000. The Stormwater Consultant will set milestones and report directly to the MS4 Operator on a regular basis to keep them apprised of the SWMP implementation progress. The following MS4 consultants will assist in the implementation of the SWMP:

Attorney
The Muller Law Group, PLLC
202 Century Blvd
Sugar Land, TX 77478

Attorney
Allen Boone Humphries Robinson LLP
3200 Southwest Freeway, Suite 2600
Houston, TX 77027

Engineer
LJA Engineering Inc.
2929 Briarpark Dr, Suite 600
Houston, TX 77042

Operator
SI Environmental, LLC
6420 Reading Road
Rosenberg, TX 77471

Engineer (Sienna MUD 1)
Costello, Inc
2107 CityWest Blvd
3rd Floor
Houston, TX 77042

Storm Water Consultant
Storm Water Solutions LLC
16110 Hollister Street
Houston, Texas 77066

Levee Operator
Levee Management Services, LLC
1650 Highway 6, Suite 430
Sugar Land, TX 77478

Public Notice Requirements

From time to time, the MS4 Operator will be required to follow public notice guidelines during the permit term. The MS4 Operator will comply with public notice requirements when publishing the SWMP and applicable paperwork. After the MS4 Operator receives written instructions from the TCEQ's office of the chief clerk, a notice will be published of the executive director's preliminary determination on the NOI and SWMP. A copy of the press release and a copy of the notarized affidavit of the publication of notice will be sent to the TCEQ as outlined in the TXR040000. The MS4 Operator will follow all State and local requirements regarding public notices.

Noncompliance Notification

As required, the MS4 Operator will report any noncompliance which may endanger human health or safety or the environment immediately to the TCEQ regional office. The MS4 Operator will also provide a written report to the appropriate TCEQ regional office and to the TCEQ Enforcement Division (MS-224) within five working days of becoming aware of the noncompliance. The written report will contain:

- A description of the noncompliance and its cause;
- The potential danger to human health or safety, or the environment;
- The period of noncompliance, including exact dates and times;
- If the noncompliance has not been corrected, the anticipated time it is expected to continue; and
- Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effect.

Part II – Stormwater Management Program

Overview of SWMP and Minimum Control Measures

The underlying purpose of the permit is to require regulated small MS4s to reduce the discharge of pollutants from the MS4 to the 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 MS4 is required to develop and manage a Stormwater Management Program for all stormwater discharges that reach waters of the United States, regardless of whether the discharge is conveyed through a separately operated storm sewer system.

The MS4 Operator has included the following Minimum Control Measures (MCMs) and the selected Best Management Practices (BMPs) in accordance with the permit in order to meet the standard of reducing pollutants to the MEP. Each MCM and/or Program Element for Bacteria applies to each MS4 Operator, unless otherwise noted.

MCM 1.0 Public Education, Outreach and Involvement

Summary/Rationale

Public education is an important aspect of the overall nation-wide stormwater program. A public education, outreach, and involvement program has been developed in the MS4 Operator's Stormwater Guidance Manual to inform the public about the impacts that pollution in stormwater runoff can have on water quality, hazards associated with illegal discharges and improper disposal of waste, and ways to minimize the impact on stormwater quality. Educational materials will continue to be developed for visitors, construction site personnel, MS4 Operator consultants and customers, which include businesses, commercial and industrial facilities, and customers. One new educational avenue to be used is the Levee District's website; www.siennalid.org. The MS4 Operator's public education, outreach, and involvement program will continue using existing, as well as new educational materials to inform these users of the stormwater conveyance system about the SWMP. A public involvement/participation program has also been developed and will be updated as necessary to include opportunities for all customers within the MS4 Operator's jurisdiction to participate in the SWMP development and implementation. The MS4 Operator will continue to document the activities conducted as part of this MCM. These records, along with any changes made to the BMPs or the corresponding implementation schedule, will be communicated in the annual report.

1.1 Education and Involvement - MS4 Operator consultants

Description

The training program is directed at applicable MS4 Operator consultants responsible for municipal operations subject to the IDDE program, pollution prevention/good housekeeping, construction stormwater runoff control program, and post-construction stormwater management and members of the general public who may be in attendance at regular District Board meetings. Training sessions will continue to be used to educate these parties on the requirements of TXR040000, concentrating on issues that were important to the MS4 Operator during the previous permit term. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: MS4 Operator consultants who regularly attend District Board meetings and members of the public, who may be in attendance at District Board meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year.

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	July 23, 2019

- Year 2: MS4 Operator consultants who regularly attend monthly District meetings and members of the public, who may be in attendance at District Board meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year.

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	Dec 31, 2020

- Year 3: MS4 Operator consultants who regularly attend monthly District meetings and members of the public, who may be in attendance at District Board meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	Dec 31, 2021

- Year 4: MS4 Operator consultants who regularly attend monthly District meetings and members of the public, who may be in attendance at District Board meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	Dec 31, 2022

- Year 5: MS4 Operator consultants who regularly attend monthly District meetings and members of the public, who may be in attendance at District Board meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year.

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	Dec 31, 2023

End of Permit Term Goal: All MS4 Operator consultants and members of the public who were in attendance at regular board meetings will be educated on the Public Education, Outreach and Involvement goals of the SWMP and the requirements of TXR040000.

Measurable Evaluation Criteria

- Meeting agenda
- Number of training sessions held
- Training material distributed at meetings
- Minutes of the meeting

1.2 Stormwater Website

Description

The MS4 Operator will continue to use the stormwater website, CleanBayous.org, and its own respective website, as listed in program element 1.0, as central locations of its SWMP information. Public documents, including the SWMP and the Stormwater Guidance Manual (GM) will be available for download. The website(s) will showcase educational materials, as well as announce relevant public participation opportunities. The website(s) will continue to specifically target required groups including customers, visitors, MS4 Operator consultants, businesses, commercial and industrial facilities, and construction site personnel. Visitors will be able to report illicit discharge and illegal dumping through cleanbayous.org, as well as reference informative material relative to the SWMP and Stormwater Guidance Manual. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Ensure the MS4 Operator's most recent, approved annual report is available on at least one website (the new NOI, SWMP, and GM will also be uploaded if approved in year 1).

BMP/Activity	Quantifiable Target/Objective	Deadline
Upload annual report, new SWMP & GM	Website(s) updated	Dec. 31, 2019

Year 2: Make public education material available on at least one website. Ensure the most recently approved annual report, NOI, SWMP, and GM are available on at least one website. Monitor and respond to all complaints submitted through cleanbayous.org's illicit discharge complaint module.

BMP/Activity	Quantifiable Target/Objective	Deadline
Respond to public complaints on website	Respond to 100% of complaints	3 business days
Upload annual report, new SWMP & GM	Website(s) updated	Dec. 31, 2020
Upload educational material	Website(s) updated	Dec. 31, 2020

- Year 3: Make public education material available on at least one website. Ensure the most recently approved annual report, NOI, SWMP, and GM are available on at least one website. Monitor and respond to all complaints submitted through cleanbayous.org's illicit discharge complaint module.

BMP/Activity	Quantifiable Target/Objective	Deadline
Respond to public complaints on website	Respond to 100% of complaints	3 business days
Upload annual report, new SWMP & GM	Website(s) updated	Dec. 31, 2021
Upload educational material	Website(s) updated	Dec. 31, 2021

- Year 4: Make public education material available on at least one website. Ensure the most recently approved annual report, NOI, SWMP, and GM are available on at least one website. Monitor and respond to all complaints submitted through cleanbayous.org's illicit discharge complaint module.

BMP/Activity	Quantifiable Target/Objective	Deadline
Respond to public complaints on website	Respond to 100% of complaints	3 business days
Upload annual report, new SWMP & GM	Website(s) updated	Dec. 31, 2022
Upload educational material	Website(s) updated	Dec. 31, 2022

- Year 5: Make public education material available on at least one website. Ensure the most recently approved annual report, NOI, SWMP, and GM are available on at least one website. Monitor and respond to all complaints submitted through cleanbayous.org's illicit discharge complaint module.

BMP/Activity	Quantifiable Target/Objective	Deadline
Respond to public complaints on website	Respond to 100% of complaints	3 business days
Upload annual report, new SWMP & GM	Website(s) updated	Dec. 31, 2023
Upload educational material	Website(s) updated	Dec. 31, 2023

- End of Permit Term Goal: Websites will showcase educational material, receive and track complaints, announce public participation events, as well as the NOI/SWMP/Stormwater Guidance Manual, and the most recent annual report.

Measurable Evaluation Criteria

- Number of reports/complaints
- Amount of educational items and regulatory items uploaded to websites

1.3 General Public Education & Involvement

Description

The public education and involvement program will continue to be used to inform the public about the impacts that pollution in stormwater run-off can have on water quality, hazards associated with illegal/illicit discharges and improper disposal of waste, and ways to minimize the impact on stormwater quality. This educational effort will continue to recommend methods to the MS4 Operator customers as to how they can identify and reduce pollution/illicit discharges. When available, this program will convey participation opportunities for MS4 Operator's customers. Educational material will continue to address lawn maintenance, household hazardous waste, commercial stormwater impacts, and other sources of pollution. This education effort will continue to recommend methods to the MS4 Operator customers as to how they can identify and reduce pollution/illicit discharges. Material will be posted on at least one of these websites for public viewing. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Ensure the MS4 Operator's most recently approved annual report is available on at least one website. The new SWMP and Stormwater Guidance Manual (GM) will also be uploaded if approved in year 1.

BMP/Activity	Quantifiable Target/Objective	Deadline
Upload annual report, new SWMP & GM	Website(s) updated annually	Dec. 31, 2019

- Year 2: Approve design for the year 2 education material, in the form of a utility bill insert (UBI), to be distributed in an annual mailing to all District customers. Perform 1 mailing to MS4 Operator customers. Post on at least one website.

BMP/Activity	Quantifiable Target/Objective	Deadline
Presentation of educational material options at District board meeting	Approve design for educational material	April 30, 2020
Mail approved UBI to all District customers	Mail all District customers annually in one mail out	Dec. 31, 2020
Post educational material on website	Website(s) updated annually	Dec. 31, 2020

- Year 3: Approve design for the year 3 education material, in the form of a utility bill insert (UBI), to be distributed in an annual mailing to all District customers. Perform 1 mailing to MS4 Operator customers. Post on at least one website.

BMP/Activity	Quantifiable Target/Objective	Deadline
Presentation of educational material options at District board meeting	Approve design for educational material	April 30, 2021
Mail approved UBI to all District customers	Mail all District customers annually in one mail out	Dec. 31, 2021
Post educational material on website	Website(s) updated annually	Dec. 31, 2021

- Year 4: Approve design for the year 4 education material, in the form of a utility bill insert (UBI), to be distributed in an annual mailing to all District customers. Perform 1 mailing to MS4 Operator customers. Post on at least one website.

BMP/Activity	Quantifiable Target/Objective	Deadline
Presentation of educational material options at District board meeting	Approve design for educational material	April 30, 2022
Mail approved UBI to all District customers	Mail all District customers annually in one mail out	Dec. 31, 2022
Post educational material on website	Website(s) updated annually	Dec. 31, 2022

- Year 5: Approve design for the year 5 education material, in the form of a utility bill insert (UBI), to be distributed in an annual mailing to all District customers. Perform 1 mailing to MS4 Operator customers. Post on at least one website.

BMP/Activity	Quantifiable Target/Objective	Deadline
Presentation of educational material options at District board meeting	Approve design for educational material	April 30, 2023
Mail approved UBI to all District customers	Mail all District customers annually in one mail out	Dec. 31, 2023
Post educational material on website	Website(s) updated annually	Dec. 31, 2023

- End of Permit Term Goal: All customers within the MS4 Operator's jurisdiction will receive educational material annually. Updated educational information and the SMWP and GM will be available on at least one website.

Measurable Evaluation Criteria

- Educational material approved annually
- Educational material distributed annually
- Educational material posted on website(s) annually

1.4 Community Involvement

Description

The Community Involvement program will be continued to provide opportunities for District customers to participate in the SWMP development and implementation. Since the District does not have paid staff, the Community Involvement Program will also be presented to District consultants at two regularly scheduled Board meetings to allow an opportunity for feedback concerning this program. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Include agenda item at MS4 Operator's regular monthly meetings for public discussion of stormwater related issues.

BMP/Activity	Quantifiable Target/Objective	Deadline
Hold monthly Board of Directors meeting	Hear feedback from customers and District consultants on public involvement opportunities.	Dec. 31, 2019

- Year 2: Include agenda item at MS4 Operator's regular meeting for public discussion of stormwater related issues.

BMP/Activity	Quantifiable Target/Objective	Deadline
Hold monthly Board of Directors meeting	Hear feedback from customers and District consultants on public involvement opportunities.	Dec. 31, 2020

- Year 3: Include agenda item at MS4 Operator's regular meeting for public discussion of stormwater related issues.

BMP/Activity	Quantifiable Target/Objective	Deadline
Hold monthly Board of Directors meeting	Hear feedback from customers and District consultants on public involvement opportunities.	Dec. 31, 2021

- Year 4: Include agenda item at MS4 Operator's regular meeting for public discussion of stormwater related issues.

BMP/Activity	Quantifiable Target/Objective	Deadline
Hold monthly Board of Directors meeting	Hear feedback from customers and District consultants on public involvement opportunities.	Dec. 31, 2022

- Year 5 Include agenda item at MS4 Operator's regular meeting for public discussion of stormwater related issues.

BMP/Activity	Quantifiable Target/Objective	Deadline
Hold monthly Board of Directors meeting	Hear feedback from customers and District consultants on public involvement opportunities.	Dec. 31, 2023

- End of Permit Term Goal: The public will be afforded opportunities to provide feedback relative to stormwater quality issues.

Measurable Evaluation Criteria

- Monthly meeting agendas
- Customers in attendance to discuss stormwater quality-related issues
- Number of public involvement opportunities presented and discussed

Interim Milestone for MCM 1.0

By the end of year 2, at least one website will be updated with the MS4 Operator's SWMP, GM, and most recently approved annual report for public viewing. By the end of year 3, MS4 Operator consultants will have received six training sessions relative to the SWMP.

MCM 2.0 Illicit Discharge Detection and Elimination (IDDE)

Summary/Rationale

Illicit discharges are a major source of pollution in the nation's waterways. The MS4 Operator currently has a Stormwater Guidance Manual in effect. This Manual outlines detection and elimination techniques and procedures. To the extent allowable under State and local law, a regulatory mechanism has been established to prohibit and eliminate illicit discharges. In conjunction with the regulatory mechanisms, appropriate actions and enforcement procedures for removing the source of an illicit discharge will continue to be reviewed, updated and implemented. A comprehensive map of the conveyance system, including the locations of outfalls and the names and locations of Waters of the U.S. receiving discharges, will be updated periodically to aid in the detection and elimination of sources of illicit discharges. The following non-stormwater sources may be discharged from the MS4 Operator as allowed under the general permit: water line flushing; runoff or return flow from landscape irrigation, lawn irrigations, and other irrigation utilizing potable water, groundwater, or surface water sources; discharges from potable water sources; diverted stream flows; rising ground water and springs; uncontaminated ground water infiltration; uncontaminated pumped ground water; foundation and footing drains; air conditioning condensation; water from crawl space pumps; individual residential vehicle washing; flows from wetlands and riparian habitats; dechlorinated swimming pool discharges; street wash water; discharges or flows from emergency firefighting activities (firefighting activities do not include washing of trucks, runoff water from training activities, test water from fire suppression systems, and similar activities); and other similar occasional incidental non-stormwater discharges, unless the TCEQ develops permits or regulations addressing these discharges. Onsite sewage disposal systems are not allowed in this District. The MS4 Operator will document the activities conducted as part of this MCM. These records, along with any changes made to the BMPs or the corresponding implementation schedule, will be communicated in the annual report.

2.1 Illicit Discharge Detection and Elimination Program

Description

The MS4 Operator will continue to implement, and enforce the existing IDDE program, outlined in the District's Stormwater Guidance Manual (chapter 2) to detect, investigate, and eliminate illicit discharge into the MS4. The program includes an annual update to the MS4's stormwater conveyance map, methods for training, procedures for tracing, and procedures for removing the source. Chapter 2 of the Stormwater Guidance Manual,

which is the MS4's IDDE Program will continue to be implemented as a part of its SWMP. This chapter shall also include information regarding responses to, and investigations of, illicit discharges and spills. If the illicit connection or illicit discharge is observed related to another operator's MS4, the MS4 Operator shall notify the other MS4 Operator within 48 hours of discovery. If impracticable, the MS4 Operator shall notify the appropriate TCEQ regional office of the possible illicit connection. If another MS4 notifies the MS4 Operator of an illegal connection or an illicit discharge, then the MS4 Operator shall follow the IDDE plan. The MS4 Operator will review and update the SWMP and IDDE plan throughout the permit term as necessary. The MS4 Operator will also maintain on-site procedures for responding to illicit discharges and spills and will include source investigation and elimination, and conduct inspections deemed appropriate in response to complaints. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: The stormwater consultant will explain the need to comply with the new conditions of the 2019 TXR040000 to the MS4 Operator consultants and customers in attendance at a regularly scheduled meeting of the Board of Directors. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within three business days.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019
Monitor website for complaints	Respond to 100% of complaints	3 business days

- Year 2: The Stormwater consultant will review and update the District's IDDE Program. This is necessary to comply with new permit conditions in the 2019 TXR040000. The criteria used are the conditions in the TXR040000. Action items as a result of the review, will include updated material in the District's GM. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within 3 business days. The MS4 Operator will hold two training sessions relative to IDDE and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 2 of GM	Chapter 2 will comply with new IDDE provisions of TXR040000	Dec. 31, 2020

Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2020
Monitor website for complaints	Respond to 100% of complaints	3 business days
Training & Education on IDDE Program	Hold 2 training sessions per year	Dec 31, 2020

- Year 3: The Stormwater consultant will review and update the District's IDDE Program. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within 3 business days. The MS4 Operator will hold two training sessions relative to IDDE and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 2 of GM	Chapter 2 will comply with new IDDE provisions of TXR040000	Dec. 31, 2021
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2021
Monitor website for complaints	Respond to 100% of complaints	3 business days
Training & Education on IDDE Program	Hold 2 training sessions per year	Dec 31, 2021

- Year 4: The Stormwater consultant will review and update the District's IDDE Program. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within 3 business days. The MS4 Operator will hold tow training sessions relative to IDDE and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 2 of GM	Chapter 2 will comply with new IDDE provisions of TXR040000	Dec. 31, 2022
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2022
Monitor website for complaints	Respond to 100% of complaints	3 business days
Training & Education on IDDE Program	Hold 2 training session2 per year	Dec 31, 2022

- Year 5: The Stormwater consultant will review and update the District's IDDE Program. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within 3 business days. The MS4 Operator will hold two training sessions relative to IDDE and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 2 of GM	Chapter 2 will comply with new IDDE provisions of TXR040000	Dec. 31, 2023
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2023
Monitor website for complaints	Respond to 100% of complaints	3 business days
Training & Education on IDDE Program	Hold 2 training sessions per year	Dec 31, 2023

- End of Permit Term Goal: The IDDE Program will be updated and implemented. A comprehensive map of the MS4's stormwater conveyance system will be up to date.

Measurable Evaluation Criteria

- Monthly meeting agenda item for public involvement, necessary training, and education
- Monthly meeting minutes
- Updated chapter 2 of the GM
- Updated stormwater conveyance map

Interim Milestone for MCM 2.0

By the end of year 3, four training sessions on chapter 2 of the GM will be held for District consultants and customers in attendance of the Board meeting where training was held. The stormwater conveyance map will be updated annually.

MCM 3.0 Construction Site Stormwater Runoff Control

Summary/Rationale

Construction site runoff has continually been a major source of pollution of the nation's waterways. This source of pollution is so impactful that a separate stormwater permit (TXR150000) has been issued to regulate these pollutants, including trash, chemicals, and other harmful contaminants. The MS4 Operator, to the extent allowable under State and local law, will continue to, implement, and enforce a program to reduce pollutants in any stormwater runoff from construction activities that result in a land disturbance of greater than or equal to one acre

including projects less than one acre that are part of a larger common plan of development or sale that will result in disturbance of one or more acres. The program, as outlined in the MS4 Operator's Stormwater Guidance Manual, will continue to require construction site operators to implement erosion and sediment control practices as well as manage construction site stormwater runoff, as required by the Construction General Permit (CGP) TXR150000. The program includes the implementation of a regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State and local law. Procedures will be updated as necessary for site inspections, enforcement of resolution, consideration of public input, and site plan review to consider water quality impacts. The MS4 Operator will review and update the existing chapter in the Stormwater Guidance Manual. Updates will ensure that the Construction Site Runoff Control Program, which consist of a Construction Operation Program, a Construction Plan Review Process, and a Construction Site Inspection and Enforcement Program all meet the standards of the current TXR150000. The MS4 Operator will document the activities conducted as part of this MCM. These records, along with any changes made to the BMPs or the corresponding implementation schedule, will be communicated in the annual report.

3.1 Construction Site Runoff Control Program

Description

The MS4 Operator will continue to implement and enforce this program requiring operators of small and large construction activities to select, install, implement, and maintain stormwater control measures that prevent illicit discharges to the maximum extent practicable. This program also includes the implementation of a regulatory mechanism, as well as sanctions to ensure compliance to the extent allowable under law, to require erosion and sediment control. As part of the Construction Site Runoff Program outlined in the Stormwater Guidance Manual, the Construction Operations Program details the methods of ensuring the Stormwater Pollution Prevention Plan (SWPPP) is in accordance with the TXR150000. This program details how the MS4 Operator will maintain and implement site plan review procedures. The MS4 Operator will update its existing inspection procedures where necessary for large and small construction projects. This program also outlines methods relative to the construction site inspection and enforcement requirements, which are included in the program. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: The stormwater consultant will explain the need to comply with the new conditions of the 2019 TXR040000 to the MS4 Operator consultants and customers in attendance at a regularly scheduled meeting of the Board of Directors.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019

- Year 2: The stormwater consultant will review and update existing Construction Site Stormwater Runoff Program (Chapter 3 of Stormwater Guidance Manual). Implement the Construction Site Runoff Control Program as outlined in the Stormwater Guidance Manual. The MS4 Operator will hold two training sessions relative to Construction Site Stormwater Runoff Control and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 3 of GM	Chapter 3 will comply with the new construction provisions of TXR040000	Dec. 31, 2020
Implement chapter 3 of GM	District engineer will review all new construction plans for compliance with TXR150000	30 days from receipt of plans
Review NOIs for new construction sites	Review of 100% of NOIs received for new construction projects by District's engineer/stormwater consultant	30 days from NOI filing date
Training & Education on Construction Site Stormwater Runoff Control	Hold 2 training sessions per year	Dec 31, 2020

- Year 3: The stormwater consultant will review and update existing Construction Site Stormwater Runoff Program. Implement the Construction Site Runoff Control Program as outlined in the Stormwater Guidance Manual. The MS4 Operator will hold two training sessions relative to Construction Site Stormwater Runoff Control and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 3 of GM	Chapter 3 will comply with the new construction provisions of TXR040000	Dec. 31, 2021
Implement chapter 3 of GM	District engineer will review all new construction plans for compliance with TXR150000	30 days from receipt of plans

Review NOIs for new construction sites	Review of 100% of NOIs received for new construction projects by District's engineer/stormwater consultant	30 days from NOI filing date
Training & Education on Construction Site Stormwater Runoff Control	Hold 2 training sessions per year	Dec 31, 2021

- Year 4: The stormwater consultant will review and update existing Construction Site Stormwater Runoff Program. Implement the Construction Site Runoff Control Program as outlined in the Stormwater Guidance Manual. The MS4 Operator will hold two training sessions relative to Construction Site Stormwater Runoff Control and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 3 of GM	Chapter 3 will comply with the new construction provisions of TXR040000	Dec. 31, 2022
Implement chapter 3 of GM	District engineer will review all new construction plans for compliance with TXR150000	30 days from receipt of plans
Review NOIs for new construction sites	Review of 100% of NOIs received for new construction projects by District's engineer/stormwater consultant	30 days from NOI filing date
Training & Education on Construction Site Stormwater Runoff Control	Hold 2 training sessions per year	Dec 31, 2022

- Year 5: The stormwater consultant will review and update existing Construction Site Stormwater Runoff Program. Implement the Construction Site Runoff Control Program as outlined in the Stormwater Guidance Manual. The MS4 Operator will hold two training sessions relative to Construction Site Stormwater Runoff Control and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 3 of GM	Chapter 3 will comply with the new construction provisions of TXR040000	Dec. 31, 2023
Implement chapter 3 of GM	District engineer will review all new construction plans for compliance with TXR150000	30 days from receipt of plans
Review NOIs for new construction sites	Review of 100% of NOIs received for new construction projects by District's engineer/stormwater consultant	30 days from NOI filing date

Training & Education on Construction Site Stormwater Runoff Control	Hold 2 training sessions per year	Dec 31, 2023

- End of Permit Term Goal: The Construction Site Stormwater Runoff Control Program (TXR040000 and TXR150000) will be implemented throughout the MS4 Operator's jurisdiction on all new construction sites in accordance with the GM and SWMP.

Measurable Evaluation Criteria

- Monthly meeting agenda item for public involvement, necessary training, and education
- Monthly meeting minutes
- Updated chapter 3 of the GM
- Number of NOIs received by the District's engineer
- Number of new construction plans reviewed by District's engineer

Interim Milestone for MCM 3.0

By the end of year 2, chapter 3 of the GM will be updated.

MCM 4.0 Post-Construction Stormwater Management in New Development and Redevelopment

Summary/Rationale

Stormwater runoff from existing development, as well as redevelopment in previous developed areas can be a major source of pollution, including bacteria, fertilizers, pesticides, trash, and other harmful contaminants. To the extent allowable under State and local law, the MS4 Operator will continue to implement and enforce the SOPs detailed in the Stormwater Guidance Manual to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre of land, including projects less than one acre that are part of a larger common plan of development or sale that will result in disturbance of one or more acres. The Stormwater Guidance Manual works in tandem with the MS4 Operator's adopted regulatory mechanism to address structural/nonstructural controls on new development and redevelopment, as well as sanctions to ensure compliance, to the extent allowable under State and local law. The MS4 Operator will continue to document the activities conducted and the amount of resources/materials used. These records, along with any changes made to the BMPs or the corresponding implementation schedule, will be communicated in the annual report. Records of enforcement actions will be documented in the meeting minutes and kept in the District file.

4.1 Post-Construction Stormwater Maintenance Program

Description

The existing chapter in the MS4 Operator's Stormwater Guidance Manual will be updated at the recommendation of the stormwater manager and with the approval of the Board of Directors. This chapter addresses the MS4 Operator's approach to Post-Construction Stormwater Maintenance in New Development and Redevelopment. This chapter also addresses the use and recommended implementation of structural/nonstructural controls, as well as outlines methods used for the long term operation and maintenance of these structural controls. Any maintenance of structural/non-structural controls, according to the Stormwater Guidance Manual, will be performed at a frequency determined by the MS4 Operator to ensure adequate long-term operation and to maintain the continued effectiveness of appropriate BMPs for the community. Regular maintenance for all drainage ways and appurtenances within the MS4 Operator's jurisdiction will be required and outlined in the MS4 Operator's Stormwater Guidance Manual. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: The stormwater consultant will explain the need to comply with the new conditions of the 2019 TXR040000 to the MS4 Operator consultants and customers in attendance at a regularly scheduled meeting of the Board of Directors. Review the Post-Construction Program within the MS4's jurisdiction.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019
Review & update chapter 4 of GM	Chapter 4 will comply with the new post-construction provisions of TXR040000	Dec. 31, 2019

- Year 2: The stormwater consultant will review and update the existing Stormwater Guidance Manual chapter relative to post-construction. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Implement the Post-Construction Program within the MS4's jurisdiction. Annually review the county's Drainage Criteria Manual for any new regulations that may affect post-construction/new construction.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 4 of GM	Chapter 4 will comply with the new post-construction provisions of TXR040000	Dec. 31, 2020

Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2020
Implement chapter 4 of GM	District engineer will review all new post-construction plans and applications for new construction	30 days from receipt of plans
Review county's Drainage Criteria Manual	Modify chapter 4 of the GM based on new provisions found in the county's Drainage Criteria Manual	Dec. 31, 2020

- Year 3: The stormwater consultant will review and update the existing Stormwater Guidance Manual chapter relative to post-construction. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Implement the Post-Construction Program within the MS4's jurisdiction. Annually review the county's Drainage Criteria Manual for any new regulations that may affect post-construction/new construction and/or to the implementation schedule will be made as appropriate.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 4 of GM	Chapter 4 will comply with the new post-construction provisions of TXR040000	Dec. 31, 2021
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2021
Implement chapter 4 of GM	District engineer will review all new post-construction plans and applications for new construction	30 days from receipt of plans
Review county's Drainage Criteria Manual	Modify chapter 4 of the GM based on new provisions found in the county's Drainage Criteria Manual	Dec. 31, 2021

- Year 4: The stormwater consultant will review and update the existing Stormwater Guidance Manual chapter relative to post-construction. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Implement the Post-Construction Program within the MS4's jurisdiction. Annually review the county's Drainage Criteria Manual for any new regulations that may affect post-construction/new construction.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 4 of GM	Chapter 4 will comply with the new post-construction provisions of TXR040000	Dec. 31, 2022
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2022

Implement chapter 4 of GM	District engineer will review all new post-construction plans and applications for new construction	30 days from receipt of plans
Review county's Drainage Criteria Manual	Modify chapter 4 of the GM based on new provisions found in the county's Drainage Criteria Manual	Dec. 31, 2022

- Year 5: The stormwater consultant will review and update the existing Stormwater Guidance Manual chapter relative to post-construction. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Implement the Post-Construction Program within the MS4's jurisdiction. Annually review the county's Drainage Criteria Manual for any new regulations that may affect post-construction/new construction.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 4 of GM	Chapter 4 will comply with the new post-construction provisions of TXR040000	Dec. 31, 2023
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2023
Implement chapter 4 of GM	District engineer will review all new post-construction plans and applications for new construction	30 days from receipt of plans
Review county's Drainage Criteria Manual	Modify chapter 4 of the GM based on new provisions found in the county's Drainage Criteria Manual	Dec. 31, 2023

- End of Permit Term Goal: Implementation of chapter 4 of the Stormwater Guidance Manual and produce an updated stormwater conveyance map annually.

Measurable Evaluation Criteria

- Monthly meeting agenda item for public involvement, necessary training, and education
- Monthly meeting minutes
- Updated chapter 4 of the GM
- Number of applications for new construction/reconstruction received by the District's engineer
- Updated stormwater conveyance map

Interim Milestone for MCM 4.0

By the end of year 2, any updates to the Post-Construction Stormwater Management chapter of Stormwater Guidance Manual will be completed.

MCM 5.0 Pollution Prevention and Good Housekeeping for Municipal Operations

Summary/Rationale

In addition to the stormwater conveyance system, the MS4 Operator may own facilities including water plants, lift stations, wastewater treatment plants, parks, and parking lots that could be a source of pollution to the state's waterways. The MS4 Operator's Stormwater Guidance Manual addresses the approach to Pollution Prevention and Good Housekeeping for Municipal Operations. The Stormwater Guidance Manual also contains methods used to develop and maintain inventory of facilities and stormwater controls, procedures for contractor requirements and oversight, and evaluation of municipal operation and maintenance activities. The MS4 Operator's Operation and Maintenance Program will continue to be implemented to prevent or reduce pollutant runoff from municipal operations and municipally-owned areas. A training program will continue to be implemented for all parties responsible for municipal operations subject to the pollution prevention/good housekeeping program. Procedures for the proper disposal of waste removed within the MS4 Operator's jurisdiction and waste that is collected as a result of maintenance of stormwater structural controls will continue to be implemented as well. A list of maintenance activities, maintenance schedule, and long-term inspection procedures for controls used to reduce floatables and other pollutants is also included in this program element. Housekeeping measures and BMPs that reduce pollutants will continue to be implemented throughout this permit term. Stormwater discharges authorized by other TPDES permits are authorized and meet the applicability and eligibility requirements under TXR040000. The MS4 Operator will document the activities conducted as part of this MCM. These records, along with any changes made to the BMPs or the corresponding implementation schedule, will be communicated in the annual report.

5.1 Operations and Maintenance Program

Description

As part of its Stormwater Guidance Manual, the MS4 Operator has developed an Operation and Maintenance Program with the ultimate goal of preventing or reducing pollutant runoff from municipal activities and municipally-owned areas. The program also includes education concerning the proper disposal of waste material. Contractor oversight is included in this program as well; any contractor hired by the MS4 Operator to perform work within the MS4 Operator's jurisdiction is contractually required to comply with all of the stormwater control measures, good housekeeping practices, and facility-specific stormwater management operating procedures described in the permit.

The MS4 Operator will continue to evaluate Operation and Maintenance (O&M) activities for the potential to discharge pollutants. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: The stormwater consultant will explain the need to comply with the new conditions of the 2019 TXR040000 to the MS4 Operator consultants and customers in attendance at a regularly scheduled meeting of the Board of Directors.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019

- Year 2: The stormwater consultant will annually review and update existing Municipal Operations Program. Implement Operations and Maintenance Program as outlined in chapter 5 of the GM. Annually update inventory of all facilities and stormwater controls owned by the District based on any new construction of District facilities. The MS4 Operator will hold two training sessions relative to Pollution Prevention and Good Housekeeping for Municipal Operations and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline/Frequency
Review & update chapter 5 of GM	Chapter 5 will comply with the new Municipal Operations provisions of TXR040000	Dec. 31, 2020
Implement chapter 5 of GM	Board of Directors will review monthly operations reports for compliance with the stormwater program	Monthly
Update inventory of District facilities	District operator will maintain & update an inventory of District facilities for use in implementing good housekeeping measures	Dec. 31, 2020
Training & Education on Municipal Operations & Good Housekeeping	Hold 2 training sessions per year	Dec 31, 2020

- Year 3: The stormwater consultant will annually review and update existing Municipal Operations Program. Implement Operations and Maintenance Program as outlined in chapter 5 of the GM. Annually update inventory of all facilities and stormwater controls owned by the District based on any new construction of District facilities. The MS4 Operator will hold two training sessions relative to Pollution Prevention and Good Housekeeping for Municipal Operations and other SWMP goals. The training sessions will be performed during regularly

scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline/Frequency
Review & update chapter 5 of GM	Chapter 5 will comply with the new Municipal Operations provisions of TXR040000	Dec. 31, 2021
Implement chapter 5 of GM	Board of Directors will review monthly operations reports for compliance with the stormwater program	Monthly
Update inventory of District facilities	District operator will maintain & update an inventory of District facilities for use in implementing good housekeeping measures	Dec. 31, 2021
Training & Education on Municipal Operations & Good Housekeeping	Hold 2 training sessions per year	Dec 31, 2021

- Year 4: The stormwater consultant will annually review and update existing Municipal Operations Program. Implement Operations and Maintenance Program as outlined in chapter 5 of the GM. Annually update inventory of all facilities and stormwater controls owned by the District based on any new construction of District facilities. The MS4 Operator will hold two training sessions relative to Pollution Prevention and Good Housekeeping for Municipal Operations and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline/Frequency
Review & update chapter 5 of GM	Chapter 5 will comply with the new Municipal Operations provisions of TXR040000	Dec. 31, 2022
Implement chapter 5 of GM	Board of Directors will review monthly operations reports for compliance with the stormwater program	Monthly
Update inventory of District facilities	District operator will maintain & update an inventory of District facilities for use in implementing good housekeeping measures	Dec. 31, 2022
Training & Education on Municipal Operations & Good Housekeeping	Hold 2 training sessions per year	Dec 31, 2022

- Year 5: The stormwater consultant will annually review and update existing Municipal Operations Program. Implement Operations and Maintenance Program as outlined in chapter 5 of the GM. Annually update inventory of all facilities and

stormwater controls owned by the District based on any new construction of District facilities. The MS4 Operator will hold two training sessions relative to Pollution Prevention and Good Housekeeping for Municipal Operations and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline/Frequency
Review & update chapter 5 of GM	Chapter 5 will comply with the new Municipal Operations provisions of TXR040000	Dec. 31, 2023
Implement chapter 5 of GM	Board of Directors will review monthly operations reports for compliance with the stormwater program	Monthly
Update inventory of District facilities	District operator will maintain & update an inventory of District facilities for use in implementing good housekeeping measures	Dec. 31, 2023
Training & Education on Municipal Operations & Good Housekeeping	Hold 2 training sessions per year	Dec 31, 2023

- End of Permit Term Goal: Continued implementation of Operation and Maintenance Program for municipally owned facilities, as outlined in chapter 5 of the Stormwater Guidance Manual.

Measurable Evaluation Criteria

- Monthly meeting agenda item for public involvement, necessary training, and education
- Monthly meeting minutes
- Updated chapter 5 of the GM
- Number of facilities inventoried

Interim Milestone for MCM 5.0

By the end of year 3, inventory of facilities and stormwater controls will be updated and recorded.

MCM 6.0 Industrial Stormwater Sources

Summary/Rationale

As a level 2 small MS4 Operator, there are no industrial stormwater requirements under the current permit.

MCM 7.0 Authorization for Construction Activities where the MS4 Operator is the Site Operator

Summary/Rationale

The MS4 Operator has chosen not to develop this optional measure at this time.

Part III - Pollutant of Concern Program

Background

Section 303(d) of the federal Clean Water Act requires all States to identify and list waters that do not meet, or are not expected to meet, applicable water quality standards. The standards describe the ways the water bodies are used and those descriptions are embodied in the updated *Texas Surface Water Quality Standards (TSWQS-TCEQ 2014).* Most water bodies in and around the Houston- Galveston region must meet the standard for ***contact recreation.*** In order to meet this standard, the water body must be safe for swimming, wading by adults and children, canoeing, or other activities that involve direct contact with the water. While there are several sources of pollutants in the streams in and around Houston, the most predominant source is bacteria. The *Texas Surface Water Quality Standards* establish the following criteria for the designated uses*:*

Bacteria – Contact Recreation

- The geometric mean of *E-coli in freshwater* should not exceed 126 colony forming units (cfu) per 100 milliliter (ml).

For every listed water body that does not meet the standard, the State must develop a Total Maximum Daily Load (TMDL) for each pollutant that contributes to the impairment of the stream. A TMDL is a technical analysis that determines the amount of a particular pollutant that a water body can receive and still meet the applicable water quality standard. The TMDL document estimates how much the pollutant load must be reduced in order to comply with the standard.

A regulated MS4 Operator that discharges stormwater into an impaired water body with a TMDL, is required to develop a program and choose Best Management Practices (BMPs) that target the pollutants of concern as identified in the TMDL. The stormwater discharge does not have to discharge directly into the impaired water body, but if this discharge is located in the watershed where the TMDL was developed, permit conditions will apply. The BMPs chosen will focus on areas the MS4 Operator identifies as having the potential to be a cause of the pollutant of concern. Each BMP selected will have measurable goals, an implementation schedule and interim milestones will be set to assess program progress. A benchmark for the pollutant of concern will be identified by the MS4 Operator to assist in determining if the program is effective in addressing the pollutant of concern. Monitoring of progress toward achieving the benchmark is also required and will be included in the annual report using appropriate program indicators.

Interior Stormwater Conveyance System Description

The MS4 Operator's interior stormwater conveyance system is complicated. There are three watersheds involved, the Upper Oyster Creek watershed, the Oyster Creek above Tidal watershed and the Brazos River watershed (see map – Figure 1). A major thoroughfare, Sienna Parkway, acts for the most part, as the drainage divide between the two watersheds. A breakdown of the stormwater conveyance by watershed for each MS4 is as follows:

Brazos River

- A portion of Sienna Plantation MUD 1 (west of Sienna Parkway)
- A portion of Sienna Plantation MUD 2 (west of Sienna Parkway)
- A portion of Sienna Plantation MUD 3 (west of Sienna Parkway)
- A portion of Sienna Plantation MUD 4 (west of Sienna Parkway)
- A Portion of Sienna Plantation Levee Improvement District

Oyster Creek above Tidal (Direct Discharge)

- A portion of Sienna Plantation MUD 1
- A portion of Sienna Plantation Management District directly into Oyster Creek above Tidal
- A portion of Sienna Plantation MUD 2
- A portion of Sienna Plantation MUD 3
- A portion of Sienna Plantation MUD 4
- A portion of Sienna Plantation MUD 10
- A portion of Sienna Plantation Levee Improvement District

Upper Oyster Creek (through Steep Bank Creek and Flat Bank Creek)

- A portion of Sienna Plantation Management District
- A portion of Sienna Plantation MUD 10
- A portion of Sienna Plantation MUD 12
- A portion of Sienna Plantation Levee Improvement District

The Brazos River is not on the CWA 303d list of impaired water bodies, neither has a TMDL been approved/adopted. Oyster Creek above Tidal is on the 303d list and is identified as segment 1110, however no TMDL has been approved/adopted. Upper Oyster Creek, segment 1245 has an established TMDL.

The portion of the Sienna Plantation Management District, Sienna Plantation MUD 10, Sienna Plantation MUD 12 and Sienna Plantation Levee Improvement District that are located within the Upper Oyster Creek Watershed will be required to comply with permit provisions concerning impaired water bodies and TMDLs, and establish a benchmark for the pollutant of concern.
The portion of the Sienna Plantation Management District, Sienna Plantation MUD 1, Sienna Plantation MUD 2, Sienna Plantation MUD 3, Sienna Plantation MUD 4, and Sienna Plantation Levee Improvement District that are located within the Oyster Creek above Tidal watershed are not presently required to comply with these TMDL provisions, however, since they discharge directly into Upper Oyster Creek above Tidal, a determination must be made as to whether they may be a source of the pollutant of concern.

The portions of Sienna Plantation MUD 1, Sienna Plantation MUD 2, Sienna Plantation MUD 3, Sienna Plantation MUD 4, and Sienna Plantation Levee Improvement District that drain directly or indirectly into the Brazos River are not required to comply with permit provisions concerning impairments of concern and TMDLs, as this is not an impaired stream.

Since all of the MS4 Operators discharge, as least in part, to an impaired water body, the coalition will comply with the conditions concerning Impaired Water Bodies and TMDLs.

Watershed Description - Upper Oyster Creek

Upper Oyster Creek extends for approximately 54 miles in an area of Fort Bend County that is rapidly growing. It is located in the Brazos river basin southwest of Houston. It originates at the Gulf Coast Water Authority's (GCWA) Shannon Pumping Station on the Brazos River, continues through Jones Creek to its confluence with Oyster Creek, through the City of Sugar Land to its confluence with Flat Bank Creek, through Flat Bank Creek to its confluence with a diversion canal, through the diversion canal to its confluence with Steep Bank Creek, and finally through Steep Bank Creek to its confluence with the Brazos River (Figure 1). There are three dams shown on Figure 1 that are located on the watercourse around the City of Sugar Land. GCWA uses the reach above dam 3 for its canal system, which supplies water for irrigation, industrial, and public drinking water to areas southeast of the watershed, including areas in the vicinity of Sugar Land.

Impaired Water Body - Total Maximum Daily Load (TMDL) - Upper Oyster Creek (2007)
Upper Oyster Creek is designated as segment 1245 as defined in the *Texas Surface Water Quality Standards (TCEQ 2014).* Segment 1245 was first placed on the list of impaired water bodies (303d list) in 1996. The TCEQ adopted one TMDL for Bacteria in Upper Oyster Creek (Segment 1245) on August 8, 2007. This TMDL was approved by the U.S. Environmental Protection Agency (EPA) on September 28, 2007. On July 28, 2010, the TCEQ adopted two TMDLs for dissolved oxygen in Upper Oyster Creek (Segment 1245). This TMDL was approved by the EPA on September 21, 2010.

Upper Oyster Creek is divided into two reaches in the TMDL analysis, upstream and downstream of Dam 3 located within the City of Sugar Land. Both reaches are impaired for bacteria, and neither meet the contact recreation standard as set by the 2014 TSWQS. The TMDL for Upper Oyster Creek States that a 73% reduction in bacteria loading is required to meet the contact recreation use in each reach.

Note: In 2008 the TCEQ consolidated a previous subdivision of the creek from six (6) assessment units to three (3) assessment units (AUs). The lower reach is designated as AU 1245_01, while the upper reaches are designated as 1245_02 and 1245_03. The document "Two Total Maximum Daily Loads for dissolved oxygen in Upper Oyster Creek" (TCEQ 2007) only included Assessment Units 1245_02 and 1245_03, upstream of Dam # 3. A separate use attainability analysis (UAA) was performed on AU 1245_01 and determined that this AU was not impaired for dissolved oxygen.

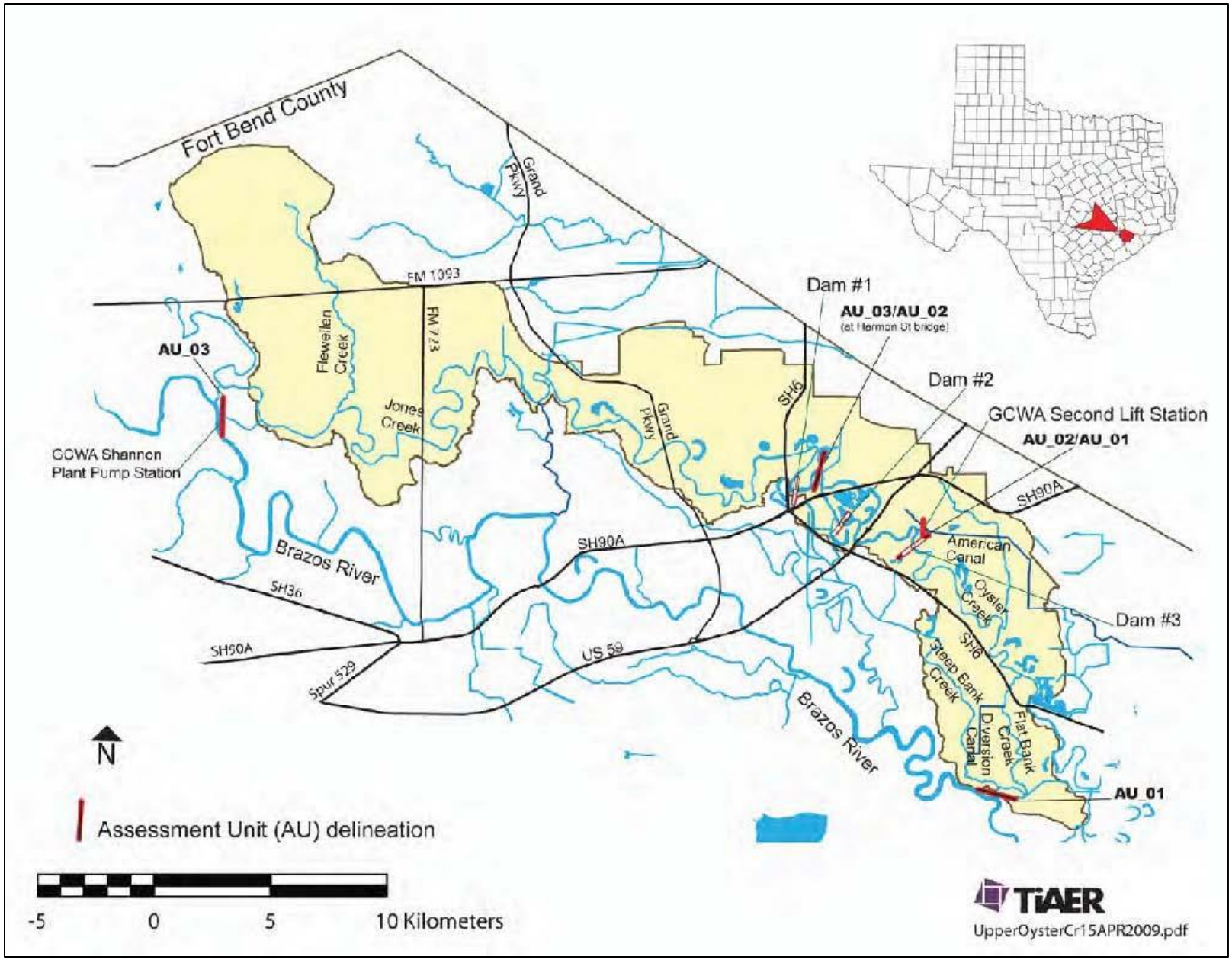

Figure 1 Upper Oyster Creek Watershed

Benchmarks for Pollutants of Concern

TXR040000 requires small MS4s that discharge into an impaired water body with an approved TMDL, where stormwater runoff has the potential to cause or contribute to the impairment, to identify a benchmark for the pollutant of concern. While the benchmark has a numeric value, it is not a numeric effluent limitation, but rather a guideline for evaluating progress toward the goal of achieving the water quality standard for the stream. The establishment of the benchmark for the SWMP considered the following options, as outlined in the permit:

- If the MS4 is subject to a TMDL that identifies a Waste Load Allocation(s) (WLA) for permitted MS4 stormwater sources, then the SWMP may identify it as the benchmark. Where an aggregate allocation is used as a benchmark, all affected MS4 Operators are jointly responsible for progress in meeting the benchmark and shall (jointly or individually) develop a monitoring/assessment plan as required in Part II.D.4(a)(6) of the permit.

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

The MS4 Operator has elected to use the aggregate Waste Load Allocation (WLA) for all affected MS4's and will jointly be responsible for progress in meeting the benchmark with other MS4's located in the watershed and will develop a monitoring program as described in Part II.D.4(a)(6) of the TXR04000.

Upper Oyster Creek is unique in that it is divided into two distinct reaches. The source of the division is Dam # 3 located in the City of Sugar Land. In the TMDL document for Upper Oyster Creek, the WLA for bacteria is broken down into two hydrologic reaches. The reaches described in the TMDL document as follows;

- Allocation Reach 1: Segment 1245 from its downstream confluence with the Brazos River and extending upstream to Dam # 3, including Flat Bank Creek, Steep Bank Creek and a Diversion Canal. This corresponds with AU 1245_01(Figure 1)
- Allocation Reach 2: Segment 1245 from Dam # 3 upstream to the GCWA Shannon Pump Station. This includes AUs 1245-02 and 1245_03 (Figure 1)

Sampling that has taken place to determine the TMDL for Upper Oyster Creek used *E-coli* as the indicator bacteria for assessing contact recreation. The WLA for *E-coli* for each reach is summarized in Table 12 of the TMDL.

Allocation Reach 1	
Existing Loading	4,570 billion
Allowable Loading	1,453 billion
Waste Load Allocation (Continuous)	367 billion
Waste Load Allocation (Non-continuous)	699 billion
Waste Load Allocation (Total)	1,066 billion
Load Allocation	387 billion
Margin of Safety	Implicit
Required Percent Reduction	73 %
Allocation Reach 2	
Existing Loading	7,492 billion
Allowable Loading	1,682 billion
Waste Load Allocation (Continuous)	94 billion
Waste Load Allocation (Non-continuous)	407 billion
Waste Load Allocation (Total)	501 billion
Load Allocation	I,181 billion
Margin of Safety	Implicit
Required Percent Reduction	73 %

Note: The TMDL for Upper Oyster Creek was adopted in 2007. This TMDL identifies two separate Waste Load Allocations for point source contributions (continuous and non-continuous). The continuous WLA is associated with Waste Water Treatment Facilities (WWTFs). The non-continuous WLA is for other point sources, including urban stormwater sources. The Waste Load Total shown in the Table 12 is the total load allocation for both sources. The Load Allocation shown in the table is from non-point sources in the watershed.

The MS4 Operator discharges stormwater into Reach 1. The Benchmark for bacteria is the WLA (non-continuous) and is 699 billion cfu/day.

Implementation Plans (I-Plans)

In order to address the high levels of bacteria in the Houston and surrounding areas, the TCEQ asked stakeholder groups to convene and address these problems. Two separate groups were assembled. One group represented the watersheds in the Houston-Galveston Region and became known as the Bacteria Implementation Group (BIG), the other group represented Upper Oyster Creek and was simply known as the Upper Oyster Creek Implementation Group. While these were two distinct groups, they both consisted of representatives from city and county governments, resource agencies, business and agriculture, professional organizations, watershed groups and the public. The BIG group started meeting in 2010 and met over the course of over 2 years to produce a document entitled "Implementation Plan for Seventy-Two Total Maximum Daily Loads for Bacteria in the Houston-Galveston Region." This Implementation Plan, or as commonly called, 'I-Plan' was adopted by TCEQ on January 30, 2013. The BIG's I-Plan outlines the potential sources of bacteria and dissolved oxygen, as well as implementation strategies that will be used to reduce these pollutants of concern over the next several years.

The Upper Oyster Creek Group began meeting in 2012 and produced a document entitled "Implementation Plan for Two Total Maximum Daily Loads for dissolved oxygen and One Total Maximum Daily Load for Bacteria in Upper Oyster Creek." This Implementation Plan, or as commonly called, 'I-Plan' was approved by the TCEQ on January 15, 2014. While the Upper Oyster Creek I-Plan used many of the ideas and strategies from the BIG's I-Plan, The Upper Oyster Creek I-Plan also addressed the dissolved oxygen impairment in the upper portion of the stream. This I-Plan outlines the potential sources of bacteria and dissolved oxygen, as well as implementation strategies that will be used to reduce these pollutants of concern over the next several years. The ideas and strategies are intended for the entire Upper Oyster Creek watershed. The MS4 Operator will refer to information found in both I-Plans, and implement BMPs and programs as applicable for the sources from the MS4.

Sources of the Bacteria Impairment

The TMDL documents state the sources for indicator bacteria vary, and there is no single predominant source. Bacteria specific to humans, avian, and non-avian wildlife and domestic animals all accounted for appreciable portions of the loadings. Both I-Plans summarize information found in the TMDL documents for potential pollution sources. The MS4 Operator has reviewed the potential sources of bacteria as identified in the TMDL and I-Plans as well as the strategies proposed to address these potential sources. I-Plan strategies are intended to be implemented on a watershed basis; however, some of the strategies may not apply within the

jurisdiction of the MS4 Operator. The MS4 Operator has developed a Bacteria Program based on selected sources for bacteria that may occur within its jurisdiction.

Bacteria Specific Program Elements

- 1.0 Waste Water Treatment Facilities (WWTFs) (facility monitoring/reporting/assessment)
- 2.0 Sanitary Sewer System (if applicable)
- 3.0 Illicit Discharges and Dumping
- 4.0 Residential Education
- 5.0 Animal Sources

The MS4 Operator has chosen the following Best Management Practices that focus on the impairment of concern for the selected program elements.

1.0 - WWTF discharge monitoring and reporting and facilities

(Note: This program element only applies to Sienna Plantation MUD 1 as the operator of the WWTF on behalf of all of the Districts in this coalition)

Description

Non-compliant WWTFs can be sources of bacteria in the receiving stream. With the exception of those facilities using an ultraviolet (UV) disinfection system, WWTFs were, historically, not required to monitor for bacteria. As mentioned in the BIG's I-Plan, "results from limited monitoring of bacteria in the BIG region suggests that while levels of indicator bacteria in effluent from individual WWTFs is typically low, at any given time approximately 5 percent to 10 percent of the facilities can be found to be exceeding the single-sample criterion for *E-coli*." The Upper Oyster Creek I-Plan also describes an implementation strategy for this element. The goal of this program element is to keep the MS4 Operator aware of *E-coli* limits at the WWTF throughout the permit term. Training of the MS4 Operator's consultants and applicable parties in an integral part of this program element.

BMP 1.1 - Monitor permit limits for the WWTF

The MS4 Operator has enlisted a group of professionals to manage its day-to-day business activities. Of these professionals, the District Operator is in charge of the daily operations and maintenance of the WWTF. Reporting compliance with permit conditions takes place on a monthly basis. *E-coli* limits are now required in WWTF permits. The TCEQ has placed these limits in all new WWTF permits where *E-coli* is the impairment of concern. The MS4 Operator will require written regular reporting of *E-coli* limits on

any operations report delivered to the MS4 Operator. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Introduce the need to comply with TXR040000 to the MS4's consultant team.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019

- Years 2-5: Review existing operations reports to ensure Discharge Monitoring Reports (DMRs) information is included in the report.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review monthly operations reports	Ensure *E-coli* values are within permits	Monthly

- End of permit term Goal – MS4 Operator will be aware of *E-coli* limits in its WWTF permit and will receive regular reports with DMR values included in the District Operator's report.

Measurable Criteria

- Meeting agenda to include operations report
- District Operator's reports includes *E-coli* limits for WWTF

BMP 1.2 Facilities Assessment

The MS4 Operator enlists a group of professionals to manage its day-to-day business activities. Of these professionals, the engineer is in charge of the design and construction of the MS4 Operator's WWTF. Regular reporting concerning the compliance with permit conditions, as well as on-going conversations with other members of the consultant team, help assess the operating condition of the WWTF. As mentioned in the BIG's I-Plan, "bacteria monitoring may reveal WWTFs that are not meeting effluent limits. Upgrades or repairs, as appropriate, will be the responsibility of each individual facility owner in order to comply with individual permits." The MS4 Operator will continue to review conditions of the WWTF with its consultant team on a periodic basis to determine if problems exist that may lead to non-compliance with effluent conditions, especially the *E-coli* limit. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Introduce the need to comply with TXR040000 to the MS4's consultant team.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019

- Years 2-5: Report to the MS4 Operator on a regular basis any deficiencies of the WWTF that may lead to non-compliance, especially with *E-coli*.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review monthly engineering reports	Ensure deficiencies of the WWTF are identified	Monthly

- End of permit term Goal – MS4 Operator will be aware of the condition of its WWTF and its ability to comply with permit effluent limitations.

Measurable Criteria

- Meeting Agenda to include engineering reports
- Engineer/ District Operator reports from regular meetings

Interim Milestones

By the end of year 2, ensure the District Operator's report includes monthly *E-coli* values.

2.0 – Sanitary Sewer System

(Note: this program element applies to all MS4 participants except Sienna Plantation LID)

Description

Sanitary sewer system overflows (SSOs) may be a source of bacteria in stormwater runoff within the MS4 Operator's jurisdiction. Both the BIG's I-Plan and the Upper Oyster Creek I-Plan mention strategies for SSOs. The EPA has concluded that SSOs contribute to bacteria loading in nearly all impaired streams, but may or may not be a primary source of loading. These overflows can originate from individual homes, businesses, as well as MS4 Operator-owned facilities. Overflows may be caused by blockages in the sanitary sewer line, line breaks, defects that allow stormwater and groundwater to infiltrate into the system, lapses in operation, inadequate design and construction, power failures, and even vandalism. The goal of this program element is to review and update existing maps of the sanitary sewer system, as well as monthly operations reports and incorporate changes necessary for proper operation and maintenance of the system. This element includes a review of monthly reports from the District Operator on the physical

system, including lift stations. Components of the program will be reviewed over the permit term and updated as necessary.

BMP 2.1 Mapping of Sanitary Sewer System

Description

An accurate map of the MS4 Operator's sanitary sewer system is critical to proper operations and reporting of overflows. The MS4 Operator will review existing maps of the sewer system and determine the need for updates of existing maps. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Introduce the need to comply with TXR040000 to the MS4's consultant team.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019

- Years 2-5: Update existing maps of the MS4 Operator's sanitary facilities, including lift stations.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review and update sanitary sewer map	Produce an annual updated sanitary sewer map	Dec. 31 every permit year

- End of permit term goal – MS4 Operator will have an accurate overall map of the sanitary sewer system to aid in the proper management of the MS4 Operators wastewater flows.

Measurable Criteria

- Meeting Agenda/minutes
- Updated overall sanitary sewer system map

BMP 2.2 Reporting of Sanitary Sewer Overflows (SSOs)

Description

Reporting of events that could discharge the pollutant of concern is critical to the proper management of the sanitary sewer system. Current EPA regulations specify reporting requirements for noncompliance, including SSOs, in 40 C.F.R. § 122.41 (1) (6) and (7) (2011). Reporting at regular meetings of any applicable overflows and/or stoppages in the system, sanitary lift station operations, as well as critical information about operations at

the WWTF, will aid in the reduction of bacteria discharges into the receiving stream. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Introduce the need to comply with TXR040000 to the MS4's consultant team.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019

- Years 2-5: Review operations reports for specific information that pertains to the discharge of the pollutant of concern from SSOs.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review all monthly operations reports	Ensure reporting of SSOs is included on monthly reports	Monthly

- End of permit term goal – MS4 Operator will prepare a monthly operations report that includes information on SSOs.

Measurable Criteria

- Meeting Agenda/minutes
- Completed/updated District Operator's report with SSO information included

BMP 2.3 Facilities Assessment

Description

The BIG's I-Plan suggested to the TCEQ that all sanitary systems should be required to develop and implement a Utility Asset and Management Program (UAMP) (Implementation Activity 2.1). The Oyster Creek I-Plan mentions the issue of aging infrastructure in its Implementation Strategy 11.0. As previously stated, the MS4 Operator enlists a group of professionals to manage its day to day business activities. The engineer is the professional in charge of the design and construction of the MS4 Operator's sanitary sewer system. Regular reporting of the compliance with permit conditions, as well as on-going conversations between the engineer, the District's operator and the attorney will help assess the operating condition of the sanitary sewer system. The MS4 Operator will continue to review conditions of the sanitary sewer system with these 3 consultants on a monthly basis to determine if problems exist that may lead to non-compliance with effluent conditions. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1 – Introduce the need to comply with TXR040000 to the MS4's consultant team.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019

- Years 2-5: Review reporting program that aids management and operations personnel in determining the overall conditions of the sanitary sewer system.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review all monthly operations reports	Ensure reporting of damages to sanitary sewer system, lift stations, and the WWTF is included on monthly reports	Monthly

- End of permit term Goal – MS4 Operator will be aware of the condition of its sanitary sewer system to ensure continued compliance with all permit conditions, including SSOs.

Measurable Criteria

- Meeting Agenda/minutes
- Monthly District Operator's Report
- Monthly engineer's report
- Annual capital improvement budget

BMP 2.4 Reporting and maintenance of Lift Station Functions

Description

The proper design and maintenance of lift stations located within the MS4 Operator's jurisdiction is critical for compliance with the bacteria program. Lift stations can fail, as demonstrated by the many power outages during 2017 when Hurricane Harvey hit the Houston Metropolitan Area. There were many power outages that led to discharge of untreated wastewater into the receiving streams. Lift stations may also fail due to mechanical failure, vandalism and old age. This program element includes a review of existing lift stations with the goal of developing on overall operations and inspection plan to be implemented on an annual basis. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Introduce the need to comply with TXR040000 to the MS4's consultant team.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019

- Year 2: Prepare an updated inventory of existing lift stations that are managed by the District Operator, including the ability to operate under loss of power conditions.

BMP/Activity	Quantifiable Target/Objective	Deadline
Audit 100% of MS4 Operator-owned lift stations	Prepare an overall map/list showing locations of 100% of MS4 Operator-owned lift stations	Dec 31, 2020
Analyze 100% of MS4 Operator-owned lift stations	Determine lift station capability to operate under loss of power conditions	Dec 31, 2020

- Years 3-5: Review lift station operations on a monthly basis to ensure proper operations and maintenance, including the capability to operate under loss of power conditions.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review monthly District Operator's report	Ensure proper operation and maintenance of 100% of MS4 Operator-owned lift stations	Monthly

- End of permit term goal – MS4 Operator will have a complete inventory of MS4 Operator-owned lift stations, including the status of ability of each lift station to operate under loss of power conditions.

Measurable Criteria

- Meeting agenda/minutes
- Map/list of sanitary lift stations located within the MS4 Operator's jurisdiction
- Monthly District Operator's report, including sanitary lift station operations

BMP 2.5 Sanitary Sewer Use Requirements

Description

Whether the MS4 Operator discharges to another WWTF (subscriber system), or owns and operates its own WWTF, the proper use of the sanitary sewer system by all residents within the MS4 Operator's jurisdiction is critical for compliance with stream standards. This program element includes a review of existing rules and regulations of the MS4 Operator, including applicable subscriber system contracts, in order to ensure proper use of the system. Emphasis will be placed on rules that govern the ownership and operations of grease traps, grit traps and the discharge of fats, oils and grease into the sanitary system. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Introduce the need to comply with TXR040000 to the MS4's consultant team.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019

- Year 2: Identify/update applicable subscriber system(s) to the WWTF. Ensure contracts are in place for outside subscribers to the WWTF.

BMP/Activity	Quantifiable Target/Objective	Deadline
Identify subscribers that use the WWTF	Ensure 100% of subscribers to the WWTF are identified	Dec 31, 2020
Review existing subscriber contracts	Ensure subscriber contracts address the proper operation of grease traps, grit traps, and the discharge of fats, oils, and greases (FOG)	Dec 31, 2020

- Years 3-5: Review the MS4 Operator's Rate Order/rules that pertain to the proper use of the sanitary sewer system. The review will ensure there are rules that govern the ownership of grease traps, grit traps and the discharge of fats, oils and grease into the sanitary system.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review Rate Order/rules	Ensure rules are in place regarding ownership of grease traps, grit traps, and FOG	Dec 31 every permit year

- End of permit term goal – MS4 Operator will have adequate rules and contracts in place to ensure proper use of the sanitary system by all parties, including subscriber systems.

Measurable Criteria

- Meeting agenda/minutes
- Rate Order language that addresses proper use of the MS4 Operator's sanitary sewer system
- Copy of subscriber system contracts

Interim Milestones

By the end of year 2, each lift station will be inventoried. The operations report will include information on SSOs that have occurred in the system. By the end of year 3 the MS4 Operator's Rate Order will be reviewed to ensure proper use of the MS4 Operator's sanitary sewer system.

3.0 – Illicit Discharge Detection & Elimination (IDDE)

(Note: this program element applies to all MS4 participants)

Description

As reported in the BIG's I-Plan, "Many of the TMDLs in the BIG region indicate that illicit discharges and dumping account for a significant dry-weather bacteria loadings." The Upper Oyster Creek I-Plan addresses this issue in its Implementation Strategy 11.0, which deals with sanitary sewer systems. As described and developed in MCM 2 of this SWMP, the MS4 Operator has developed a program in its Stormwater Guidance Manual to detect, investigate, and eliminate illicit discharge into the MS4. Emphasis on bacteria laden discharges and spills, such as from grease traps, grit traps and waste haulers will be the focus during this permit term. The goal of the program is to eliminate illicit discharges to the extent allowable under State and local law. Training of the MS4 Operator's consultants is an integral part of this program element.

BMP 3.1 Illicit Discharge & Dumping

Description

Illicit discharge and dumping can introduce pollutants both directly and indirectly into the waterways. Sources can include illegal connections to the storm sewer, as well as discharges directly into the water body. As described in MCM 2, the SWMP will include a current map of the MS4 Operator's storm sewer system, as well as a reporting mechanism on cleanbayous.org. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: The stormwater consultant will explain the need to comply with the new conditions of the 2019 TXR040000 to the MS4 Operator consultants and customers in attendance at a regularly scheduled meeting of the Board of Directors. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within three business days.

BMP/Activity	Quantifiable Target/Objective	Deadline
Attend Board of Directors meeting	Outline TXR040000 new permit terms	July 23, 2019
Monitor website for complaints	Respond to 100% of complaints	3 business days

- Year 2: The Stormwater consultant will review and update the District's IDDE Program. This is necessary to comply with new permit conditions in the 2019 TXR040000. The criteria used are the conditions in the TXR040000. Action items as a result of the review, will include updated material in the District's GM.

Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within 3 business days. The MS4 Operator will hold two training sessions relative to IDDE and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 2 of GM	Chapter 2 will comply with new IDDE provisions of TXR040000	Dec. 31, 2020
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2020
Monitor website for complaints	Respond to 100% of complaints	3 business days
Training & Education on IDDE Program	Hold 2 training sessions per year	Dec 31, 2020

- Year 3: The Stormwater consultant will review and update the District's IDDE Program. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within 3 business days. The MS4 Operator will hold two training sessions relative to IDDE and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 2 of GM	Chapter 2 will comply with new IDDE provisions of TXR040000	Dec. 31, 2021
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2021
Monitor website for complaints	Respond to 100% of complaints	3 business days
Training & Education on IDDE Program	Hold 2 training sessions per year	Dec 31, 2021

- Year 4: The Stormwater consultant will review and update the District's IDDE Program. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within 3 business days. The MS4 Operator will hold tow training sessions relative to IDDE and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 2 of GM	Chapter 2 will comply with new IDDE provisions of TXR040000	Dec. 31, 2022
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2022
Monitor website for complaints	Respond to 100% of complaints	3 business days
Training & Education on IDDE Program	Hold 2 training session2 per year	Dec 31, 2022

- Year 5: The Stormwater consultant will review and update the District's IDDE Program. Annually review and update the stormwater conveyance map based on changes to the storm sewer system caused by new construction and/or reconstruction. Respond to all customer reports of illegal dumping and/or illicit discharges as generated by the cleanbayous.org complaint module within 3 business days. The MS4 Operator will hold two training sessions relative to IDDE and other SWMP goals. The training sessions will be performed during regularly scheduled monthly Board meetings for MS4 Operator consultants and District customers in attendance at the meeting.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review & update chapter 2 of GM	Chapter 2 will comply with new IDDE provisions of TXR040000	Dec. 31, 2023
Review and update stormwater conveyance map	Produce an annual updated stormwater conveyance map	Dec. 31, 2023
Monitor website for complaints	Respond to 100% of complaints	3 business days
Training & Education on IDDE Program	Hold 2 training sessions per year	Dec 31, 2023

- End of Permit Term Goal: The IDDE Program will be updated and implemented. A comprehensive map of the MS4's stormwater conveyance system will be up to date.

Measurable Evaluation Criteria

- Monthly meeting agenda item for public involvement, necessary training, and education
- Monthly meeting minutes
- Updated chapter 2 of the GM
- Updated stormwater conveyance map

Interim Milestones

By the end of year 3, four training sessions on chapter 2 of the GM will be held for District consultants and customers in attendance of the Board meeting where training was held. The stormwater conveyance map will be updated annually.

4.0 - Residential/Public & MS4 Operator Consultant Education

(Note: this program element applies to all MS4 participants)

Description

MCM 1 in this SWMP is designed to be an overall public education program that is used to inform the public about the impacts that pollution in stormwater run-off can have on water quality, hazards associated with illegal discharges and improper disposal of waste, and ways to minimize the impact on stormwater quality. This program element is aimed at changing public behavior through education efforts. Specific educational material will continue to be developed, placing emphasis on possible sources of bacteria, including bacteria from residential sites during stormwater runoff events, bacteria from fats, oils and greases that clog drains and sanitary lines, pet waste, and general lawn care practices. Public education material will continue to focus on why bacteria is an issue in our waterways and strategies that can reduce bacteria in these waterways. This program element will continue to take advantage of existing public education programs and materials. Material will continue to be distributed to residents within the MS4 Operator's jurisdiction and will be posted on at least one of the aforementioned websites for public viewing. Training of the MS4 Operator's consultants and the public is an integral part of this program element.

BMP 4.1 MS4 Operator Consultant & Public Training

Description

The training program is directed at MS4 Operator consultants and the public who attend regularly scheduled Board meetings. Training sessions will continue to be used to educate these parties on the requirements of TXR040000, concentrating on the bacteria program elements of the SWMP. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: MS4 Operator consultants who regularly attend District Board meetings and members of the public, who may be in attendance at District Board meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year.

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	July 23, 2019

- Year 2: MS4 Operator consultants who regularly attend monthly District meetings and members of the public, who may be in attendance at District Board

meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year.

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	Dec 31, 2020

- Year 3: MS4 Operator consultants who regularly attend monthly District meetings and members of the public, who may be in attendance at District Board meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	Dec 31, 2021

- Year 4: MS4 Operator consultants who regularly attend monthly District meetings and members of the public, who may be in attendance at District Board meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	Dec 31, 2022

- Year 5: MS4 Operator consultants who regularly attend monthly District meetings and members of the public, who may be in attendance at District Board meetings, will be educated on the Public Education, Outreach and Involvement goals of the SWMP during two regular meetings in the calendar year.

BMP/Activity	Quantifiable Target/Objective	Deadline
Training & Education	Hold 2 training sessions per year	Dec 31, 2023

End of Permit Term Goal: All MS4 Operator consultants and members of the public who were in attendance at regular board meetings will be educated on the Public Education, Outreach and Involvement goals of the SWMP and the requirements of TXR040000.

Measurable Evaluation Criteria

- Meeting agenda
- Number of training sessions held
- Training material distributed at meetings
- Minutes of the meeting

Interim Milestones

At least two training session on bacteria specific topics will be help by the end of year 2. At least one design for bacteria specific training material will be selected by the end of year 2.

5.0– Animal Sources

(Note: this program element applies to all MS4 participants)

Description

Animals that use open space and other green areas within the MS4 Operator's jurisdiction could be a significant source of bacteria entering the receiving stream. These sources include pets such as dogs, cats, horses and other types of domestic animals. The sources also include many species of wild animals that travel and use these open spaces. This program element is aimed at changing public behavior relating to the proper use of these open spaces and green areas. Public education will include mail outs and/or other educational material that may be developed over the term of the permit. Educational material will be regularly distributed, as deemed necessary by the MS4 Operator, to residents within the MS4 Operator's jurisdiction and will be posted on cleanbayous.org for public viewing. The clear, specific, and measurable goals for this activity are outlined in the tables below.

Implementation Schedule

- Year 1: Review the overall public education program with an emphasis on material describing the proper disposal of pet waste.

BMP/Activity	Quantifiable Target/Objective	Deadline
Review public education program	Design a utility bill insert specific to pet waste.	Dec. 31, 2019

- Year 2: Approve design for the year 2 education material, in the form of a utility bill insert (UBI), to be distributed in an annual mailing to all District customers. Perform 1 mailing to MS4 Operator customers. Post on website.

BMP/Activity	Quantifiable Target/Objective	Deadline
Presentation of educational material options at District board meeting	Approve design for utility bill insert	April 30, 2020
Mail approved UBI to all District customers	Mail all District customers annually in one mail out	Dec. 31, 2020
Post educational material on website	The website is updated annually	Dec. 31, 2020

- Year 3: Approve design for the year 3 education material, in the form of a utility bill insert (UBI), to be distributed in an annual mailing to all District customers. Perform 1 mailing to MS4 Operator customers. Post on website.

BMP/Activity	Quantifiable Target/Objective	Deadline
Presentation of educational material options at District board meeting	Approve design for utility bill insert	April 30, 2021
Mail approved UBI to all District customers	Mail all District customers annually in one mail out	Dec. 31, 2021
Post educational material on website	The website is updated annually	Dec. 31, 2021

- Year 4: Approve design for the year 4 education material, in the form of a utility bill insert (UBI), to be distributed in an annual mailing to all District customers. Perform 1 mailing to MS4 Operator customers. Post on website.

BMP/Activity	Quantifiable Target/Objective	Deadline
Presentation of educational material options at District board meeting	Approve design for utility bill insert	April 30, 2022
Mail approved UBI to all District customers	Mail all District customers annually in one mail out	Dec. 31, 2022
Post educational material on website	The website is updated annually	Dec. 31, 2022

- Year 5: Approve design for the year 5 education material, in the form of a utility bill insert (UBI), to be distributed in an annual mailing to all District customers. Perform 1 mailing to MS4 Operator customers. Post on website.

BMP/Activity	Quantifiable Target/Objective	Deadline
Presentation of educational material options at District board meeting	Approve design for utility bill insert	April 30, 2023
Mail approved UBI to all District customers	Mail all District customers annually in one mail out	Dec. 31, 2023
Post educational material on website	The website is updated annually	Dec. 31, 2023

- End of Permit Term Goal: All customers within the MS4 Operator's jurisdiction will receive educational material annually. Updated educational information and the SMWP and GM will be available on the website.

Measurable Evaluation Criteria

- Educational material approved annually
- Educational material distributed annually
- Educational material posted on website annually

6.0 – Monitoring of Progress towards the Benchmark

Description

The MS4 Operator will continue to monitor progress in achieving the listed benchmark and improving water quality and shall report this progress in each annual report. Based on an evaluation of the BMPs chosen for each program element, the MS4 Operator will assess program success and progress towards achieving the benchmark. Progress will be reported using program indicators such as number of educational opportunities conducted, number of training sessions held, etc. The MS4 Operator is part of an I-Plan that has been prepared for the watershed. The MS4 Operator will continue to monitor progress of stream quality by attending the annual meeting of the Oyster Creek Coalition. The MS4 Operator will review the effectiveness of the program to determine the need to change any program elements or BMPs and will make these decisions on an annual basis. The clear, specific, and measurable goals for this activity are outlined in the table below.

BMP/Activity	Quantifiable Target/Objective	Deadline
Prepare annual report	Monitor progress towards achieving the benchmark	Dec. 31 every permit year.
Stormwater consultant to attend TMDL/I-Plan meetings	Keep informed on overall watershed progress relative to the bacteria program	Dec. 31 every permit year.

Part IV – Appendices

Appendix A

“References”

References

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TCEQ 2010. Two Total Maximum Daily Loads for dissolved oxygen in Upper Oyster Creek, Segment 1245, Assessment Units: 1245_02 and 1245_03, <www.tceq.texas.gov/assets/public/waterquality/tmdl/25oystercreek/25-upperoysteroxygen-approved-epa.pdf>

Appendix B

"Location Map 1 – Sienna Plantation Management District Aerial"

Google earth

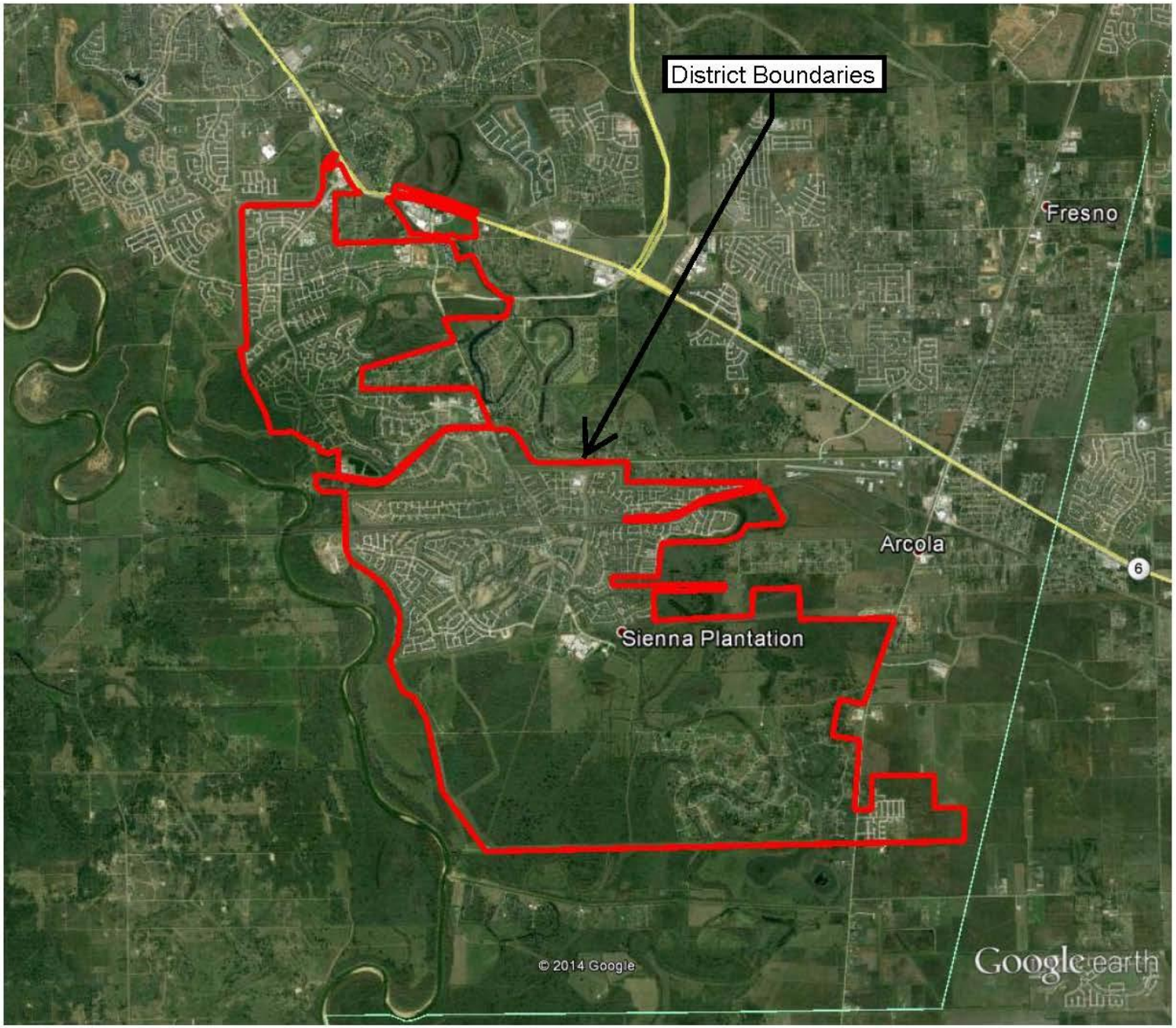
miles 1

km 3

Location Map 1 - Sienna Plantation Management District Aerial

Appendix C

“Location Map 2 – Sienna Plantation LID Aerial”



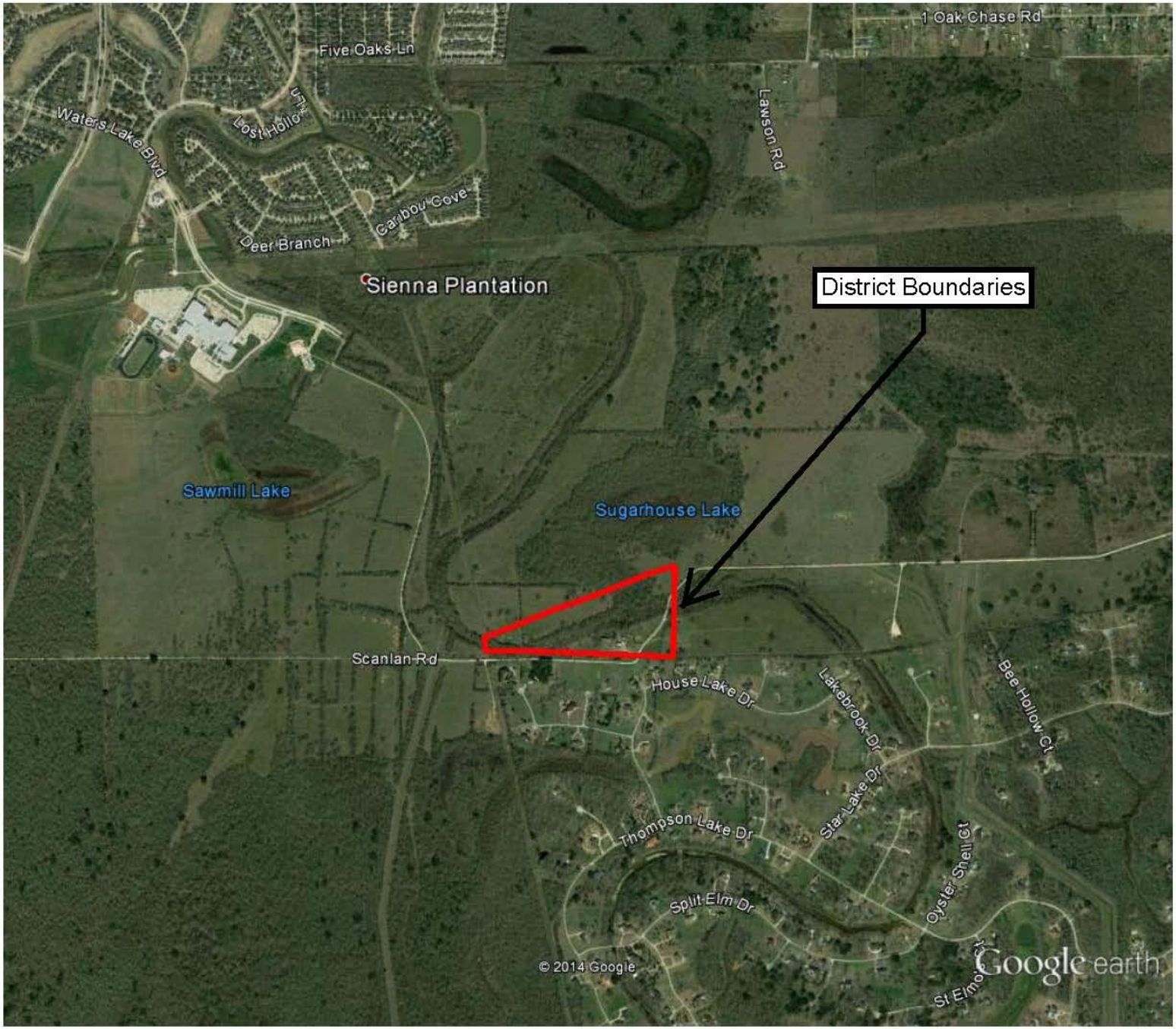
Google earth

miles 7
km 10

Location Map 2 - Sienna Plantation LID Aerial

Appendix D

"Location Map 3 – Sienna Plantation MUD 1 Aerial"



Google earth

miles 2

km 3

Location Map 3 - Sienna Plantation MUD 1 Aerial

Appendix E

"Location Map 4 – Sienna Plantation MUD 2 Aerial"

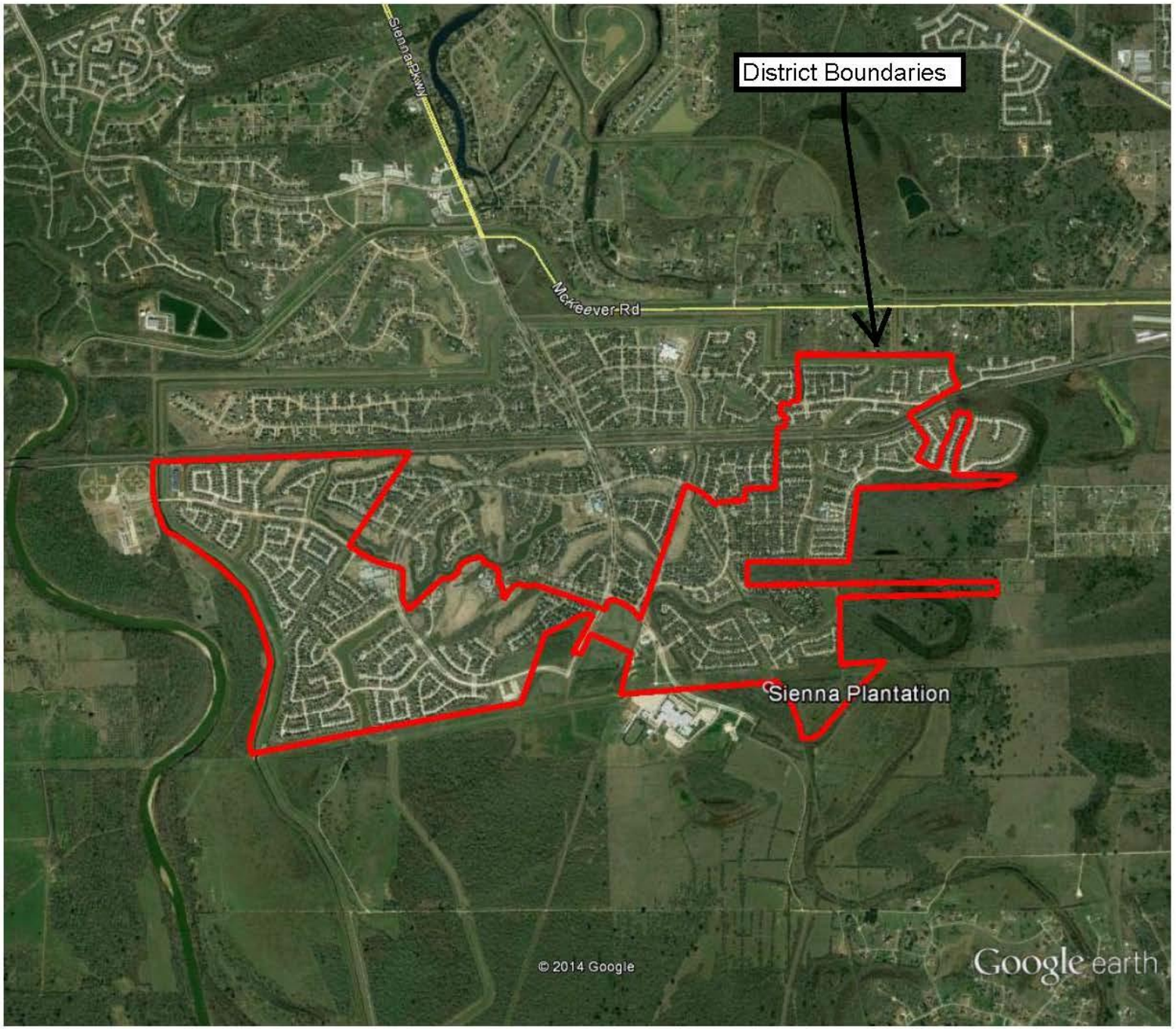
Google earth

miles 3
km 5

Location Map 4 - Sienna Plantation MUD 2 Aerial

Appendix F

"Location Map 5 – Sienna Plantation MUD 3 Aerial"



Google earth

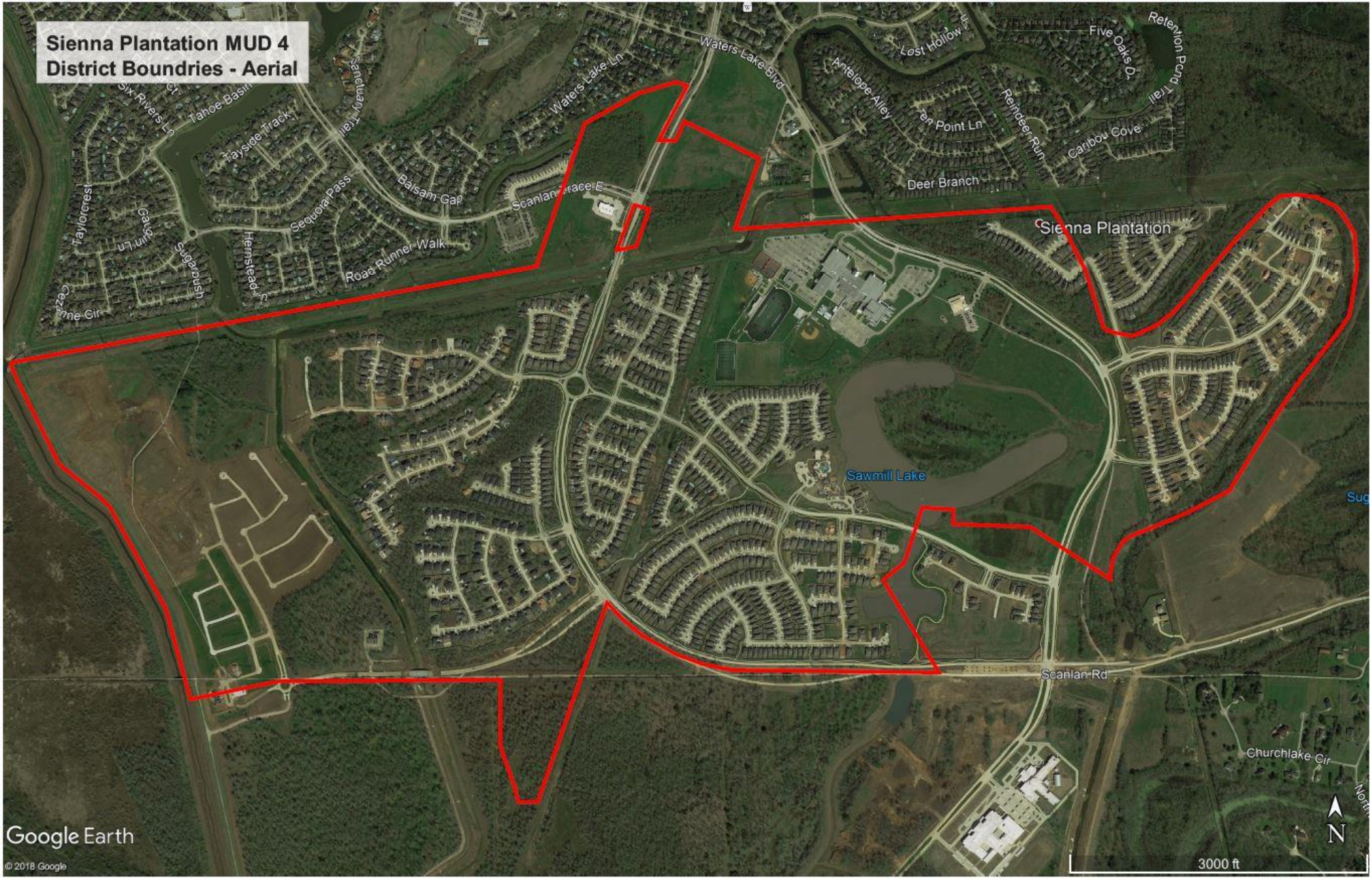
miles 3

km 5

Location Map 5 - Sienna Plantation MUD 3 Aerial

Appendix G

"Location Map 6 – Sienna Plantation MUD 4 Aerial"


Sienna Plantation MUD 4
District Boundries - Aerial
Waters Lake Blvd
Waters Lake Ln
Lost Hollow Ln
Five Oaks Dr
Retention Pond Trail
Antelope Alley
Reindeer Run
Caribou Cove
Deer Branch
Tahoe Basin
Tayside Track
Sequoia Pass
Balsam Gap
Scanlan Trace E
Taylorcrest
Sugarbush
Hemstead
Road Runner Walk
Sienna Plantation
Sawmill Lake
Scanlan Rd
Churchlake Cir
Google Earth
© 2018 Google
N
3000 ft

Appendix H

"Location Map 7 – Sienna Plantation MUD 10 Aerial"

Google earth

miles 4

km 7

Location Map 6 - Sienna Plantation MUD 10 Aerial

Appendix I

"Location Map 8 – Sienna Plantation MUD 12 Aerial"

Google earth

miles 3

km 5

Location Map 7 - Sienna Plantation MUD 12 Aerial

Appendix J

“TXR040000”

Appendix K

"Notice of Intent"