4.0 MCM2: ILLICIT DISCHARGE DETECTION AND ELIMINATION

4.1 OVERVIEW

The illicit discharge detection and elimination (IDDE) MCM is intended to detect and eliminate discharges to the MS4 system that are not entirely composed of stormwater. As identified in the Phase II TPDES permit, MS4 permittees are required to develop a strategy to detect and eliminate illicit discharges to the storm drain system. The EPA has defined an illicit discharge as "any discharge into a separate storm sewer system that is not composed entirely of stormwater."

4.2 FEDERAL REGULATORY REQUIREMENTS

40 CFR 122.34 (b)(3) states that the MS4 operator must develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined at 40 CFR Sec. 122.26 (b)(2)) into your small MS4. The MS4 operator must:

- Develop a storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
- To the extent allowable under State, Tribal, or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges into your storm sewer system and implement appropriate enforcement procedures and actions;
- Develop and implement a plan to detect and address non-stormwater discharges including illegal dumping, to your system; and
- Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

The City will address the following categories of non-stormwater discharges or flows (i.e., illicit discharges) only if they are identified as significant contributors of pollutants to the MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (discharges or flows from firefighting activities are excluded from the effective prohibition against non-stormwater and need only be addressed where they are identified as significant sources of pollutants to waters of the United States).

4.3 TPDES PHASE II PERMIT REQUIREMENTS

4.3.1 Illicit Discharge Detection and Elimination

(a) Permit Requirements

(1) MS4 Mapping: An updated map of the storm sewer system must be developed and must include the following:

i. The location of all outfalls operated by the permittee and the discharge in waters of the U.S.;
ii. The names and locations of all surface waters receiving discharges from MS4's outfalls; and
iii. Priority areas identified under Part III.B.2(e)(1).

(2) Education and Training: All permittees shall implement a method for informing or training all the permittee's field staff that may come into contact with or otherwise observe an illicit discharge or illicit connection to the small MS4 as part of their normal job responsibilities. Training program materials and attendance lists must be maintained on site and made available for review by the TCEQ.

(3) Public Reporting of Illicit Discharges and Spills: All permittees shall publicize and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from the MS4. The permittee shall provide a central contact point to receive reports.

(4) All permittees shall develop and maintain on site procedures for responding to illicit discharges and spills.

(5) Source Investigation and Elimination
i. Minimum investigation requirements – upon becoming aware of an illicit discharge, all permittees shall conduct an investigation to identify and locate the source of such illicit discharges as soon as practicable.
ii. Identification and investigation of the source of the illicit discharge – all permittees shall investigate and document the source of illicit discharges where the permittees have jurisdiction to complete such an investigation. If the source of the illicit discharge extends outside the permittee's boundary, all permittees shall notify the adjacent permitted MS4 operator or TCEQ's Field Operation Support Division according to Part III.A.3.b.
iii. Corrective action to eliminate illicit discharges – If and when the source of an illicit discharge has been determined, all permittees shall immediately notify the responsible party of the problem, and shall require the responsible party to perform all necessary corrective actions to eliminate the illicit discharge.
1. Permittees that operate a Level 4 small MS4 shall upon being notified that the discharge has been eliminated, conduct a follow-up investigation or field screening, consistent with Part III.B.2(e)(2), to verify the discharge has been eliminated. The permittee shall document its follow-up investigation.

(6) Inspections

The permittee shall conduct inspections in response to complaints, and shall conduct follow-up inspections to ensure that corrective measures have been implemented by the responsible party.

(b) Additional Requirements for Level 4 Small MS4

(1) Identification of Priority Areas. Permittees who operate Level 4 small MS4s shall identify priority areas likely to have illicit discharges and shall document the basis for the selection of each priority area and shall create a list of all priority areas identified. The priority area list will be available for review by the TCEQ.
(2) Dry Weather Screening. By the end of the permit term, permittees who operate Level 4 small MS4s shall develop and implement a written dry weather field screening program to assist in detecting and eliminating illicit discharges to the small MS4. Dry weather field screening must consist of (1) field observation and (2) field screening according to the MS4 permit.
(3) Reduction of Floatables. The permittee shall implement a program to reduce the discharge of floatables (for example, litter and other human-generated solid refuse) in the MS4. The MS4 shall include source controls at a minimum and structural controls and other appropriate controls where necessary. The permittee shall maintain two locations where floatable material can be removed before the stormwater is discharged to or from the MS4. Floatable material shall be collected at the frequency necessary for maintenance of the removal devices, but not less than twice per year. The amount of material collected shall be estimated by weight, volume, or by other practical means. Results will be included in the City's annual report.

4.4 ALLOWABLE NON-STORMWATER DISCHARGES

The following non-stormwater sources may be discharged from the small MS4 and are not required to be addressed in the small MS4's Illicit Discharge and Detection or other minimum control measures, unless they are determined by the permittee or the TCEQ to be significant contributors of pollutants to the small MS4:

- water line flushing;
- runoff or return flow from landscape irrigation, lawn irrigation, and other irrigation utilizing potable water, groundwater, or surface water sources;
- discharges from potable water sources that do not violate Texas Surface Water Quality Standards;
- diverted stream flows;
- rising ground waters 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 that do not violate Texas Surface Water Quality Standards;
- street wash water;

- discharges or flows from fire-fighting activities (fire-fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, and similar activities);
- other allowable non-stormwater discharges listed in 40 CFR 122.26(d)(2)(iv)(B)(1);
- non-stormwater discharges that are specifically listed in the TPDES Multi Sector General Permit (MSGP) TXR050000 or the TPDES Construction General Permit (CGP) TXR150000;
- discharges that are authorized by a TPDES or NPDES permit or that are not required to be permitted; and
- other similar occasional incidental non-stormwater discharges, unless the TCEQ develops permits or regulations addressing these discharges.

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

4.5 DISCUSSION OF STORMWATER PROGRAMS

The City of Sugar Land currently implements a variety of illicit discharge detection programs to identify sources of stormwater pollution throughout the community.

4.5.1 Storm Sewer Mapping

During the first permitting term, the City of Sugar Land developed a GIS work plan, which mapped the City's outfalls. The City is currently in the process of updating the MS4 map of the storm drainage system to show the known Waters of the U.S. and the location of storm sewer pipes, ditches, and other conveyances owned by the City. The map will also detail the locations of major and minor outfalls to the known Waters of the U.S. These map features include:

- All stormwater discharge points 24 inches or larger in diameter from City-owned or maintained drainage systems

The GIS work plan that was developed details a phased building of the public infrastructure system (water and wastewater systems, pumping facilities, storm sewer systems, roadway and sidewalk systems, street lighting, drainage ditches, basins, etc.). This system provides graphic representations of all infrastructure within the city limits. In order to obtain source information for the development of the storm sewer map, the City utilizes construction as-built drawings, which directly reflect the infrastructure installed throughout the City. Storm sewer information from new developments are acquired directly from the construction developers.

An up-to-date storm sewer map is crucial in detecting and removing illicit sewer connections and thereby eliminating illicit discharges. The City currently requires developers to provide GIS-

compatible electronic files of commercial, educational, industrial and municipal development drawings. Once acquired, these files are integrated into a City drainage system map.

Measurable Goals:

- Update the storm sewer map to reflect all newly constructed infrastructure within the city limits by December of each year (2019-2024).

Evaluation:

- Update the storm sewer map to reflect newly constructed infrastructure.

4.5.2 Household Recycling Program

The City currently offers curbside services for household hazardous waste and electronics disposal as part of the solid waste program. The following materials are accepted:

- Paint: latex and oil-based
- Paint thinners, gasoline, solvents
- Oil, petroleum-based lubricants
- Ethylene glycol, antifreeze
- Pesticides, herbicides
- Aerosols
- Mercury and mercury debris
- Light bulbs: fluorescents, compact fluorescent (CFL), high intensity
- HID lamps
- Batteries: lead acid, alkaline, NiCad
- Pool chemicals
- Cleaners: acidic and basic
- Resins and epoxy
- Electronic waste: TVs, computers, monitors and similar electronic waste

The City also publicizes and promotes the Fort Bend Recycling and HHW Center through a variety of avenues including informational brochures, magnets, and residential telephone inquiries and encourages residents to dispose of their HHW and recyclables at the facility. Items accepted at this facility (year-round) include batteries, motor oil, oil filters, latex paint, antifreeze, transmission oil, power steering fluid, flammables, caustics, toxics, cooking oil, consumer electronics, and other recyclables.

Measurable Goals:

- Collect 10,000 pounds of household hazardous and electronic waste through the City's collection programs by December of each year (2019-2024).

Evaluation:

- Record and report the amount of waste collected through the household hazardous and electronic waste programs.

4.5.3 Stormwater Ordinance

The City of Sugar Land will review the stormwater and other related ordinances to prohibit and eliminate illicit discharges to the MS4. The Environmental & Neighborhood Services and Code Enforcement Departments will work together to ensure ordinance compliance throughout the community. The ordinance will prohibit illicit discharges and connections, all non-stormwater discharges that significantly contribute pollutants to the MS4, and illegal dumping. It will include appropriate enforcement procedures and actions. In addition, the ordinance will establish the legal authority to carry out inspection and monitoring procedures that may be necessary to ensure compliance.

Measurable Goals:

- Evaluate the existing City stormwater ordinance for potential updates and adopt any necessary modifications by December 2020.
- Implement modified ordinance from January 2021 through January 2024.

Evaluation:

- Adoption of modified stormwater ordinance.
- Report the number of ordinance violations occurring each year, and annually compare this data to assess ordinance effectiveness.

4.5.4 Illicit Discharge Detection and Elimination Program & Dry Weather Screening

The City maintains an Illicit Discharge Detection and Elimination (IDDE) program that utilizes a combination of techniques to respond to citizen complaints while proactively detecting illicit discharges. The program also contains procedures for tracking down the actual source of illicit discharges, eliminating them and procedures on how to follow-up. The City will report to the TCEQ immediately upon becoming aware of the occurrence of any illicit flows believed to be an immediate threat to human health or the environment. In order to proactively detect illicit discharges, the City performs dry weather screening activities in areas identified to have the highest potential for illicit discharge and/or illegal dumping.

Measurable Goals:

- Review and update the dry weather outfall screening, inspection, and detection program procedures by December 2021.
- Identify and document all high priority areas within the MS4 likely to have illegal dumping and illicit discharges by December 2021.

- Investigate and eliminate all found illicit discharges and perform follow up inspections from January 1 to December 31 of each year (2019-2024).
- Perform dry weather screening on 50% of the known City-owned outfalls in areas identified as having a high potential for illicit discharges by December of each year (2019-2024).

Evaluation:

- Record modifications to program procedures and document date of procedure review and update.
- Document and map areas identified as high priority for dry weather screening.
- Report all illicit discharges found, eliminated, and the result of the follow up inspections.
- Report the number of outfalls screened vs the total number of City-owned outfalls in high priority areas.

4.5.5 Septic Systems

Septic systems can be a significant source of bacteria impacting stormwater runoff. During the last permitting term, the City of Sugar Land believed it only had a small number of remaining septic systems within the City limits, however the City annexed two areas that may contain on-site septic systems. The City maintains an ordinance that prohibits the installation of new septic systems within the corporate city limits. A septic system inspection program will facilitate the improvement of failing septic systems and reduce potential contamination of surface and groundwater, including water supply wells. Through program development, the City will assess the need to screen areas for indications of failing systems and the need for system modifications in order to ensure proper treatment.

Measurable Goals:

- Determine the number of septic systems within jurisdiction by December 2021.
- If septic systems are identified within jurisdiction, develop an inspection program to reduce the potential for system failure by December 2022.
- Respond to 100% of complaints received regarding septic systems from January 1 to December 31 of each year (2019-2024).

Evaluation:

- Document the number of septic systems identified.
- Document the septic system inspection program procedures.
- Track the number of septic system investigations/complaints received and record investigation results.

4.5.6 Field Staff Training

Sugar Land will continue to implement a training program to City staff that have the potential to encounter or respond to illicit discharges, identify spills and look for signs of fish kills.

Measurable Goals:

- Provide one training class to City staff that have the potential to encounter an illicit discharge by December of each year (2019-2024).

Evaluation:

- Document the topic of the course provided, the names of staff participating, and the training materials utilized.

4.5.7 Database of Businesses

The City maintains a database of active businesses within its jurisdiction. The Environmental & Neighborhood Services Department, in coordination with GIS and Economic Development perform routine updates to the information. The database is utilized for several activities, one of which being the grease trap inspection program.

Measurable Goals:

- Update the database to reflect active businesses within the MS4 jurisdiction by December of each year (2019-2024).

Evaluation:

- Record updates to the database information.

4.5.8 Public Reporting of Illicit Discharges and Spills

Illicit discharges and spills that affect the City's MS4 may cause visible environmental impacts to the City's streams and waterways. These resulting environmental impacts may lead to fish kills, discoloration in water, oil sheen on water, large-scale algal bloom, etc. and are impacts that the public will notify the City of. In order to streamline responses to illicit discharges and spills, the City will maintain a database of reported illicit discharges and spills and promote public reporting.

Measurable Goals:

- Record and classify all incoming 311 Contact Center calls regarding stormwater quality issues from January 1 to December 31 of each year (2019-2024).
- Distribute one type of educational outreach material to enhance 311 Contact Center exposure at one community event by December of each year (2019-2024).
- Investigate all complaints identified through the 311 Contact Center from January 1 to December 31 of each year (2019-2024).

Evaluation:

- Report the number and classification of all 311 Contact Center calls received regarding stormwater quality issues.
- Record and report the quantity, type and distribution method used to enhance 311 Contact Center exposure at annual event.
- Record the responses associated with complaints received and how many were closed.

4.5.9 Reduction of Floatables

The City will develop a program to reduce the discharge of floatables in the MS4. Program components will include source controls (at a minimum), structural controls, and other appropriate controls where necessary. The City will also identify and maintain two (2) locations where floatable materials can be removed before the stormwater is discharged. Both locations will be maintained at a minimum of twice per year. As the City already has one floatable control structure installed, locations will be evaluated for the installation of an additional structure. The floatable material collected will be estimated by weight, volume, or by other practical means and reported in the annual report.

Measurable Goals:

- Develop floatable control program procedures and identify one location where floatable material can be removed before discharge by December 2021.
- Complete installation of one floatable control structure by January 2024.
- Conduct two floatable monitoring events from January 2023 to December 2023.

Evaluation:

- Document program development and floatable control location.
- Document date of control structure installation.
- Document material and volume of floatables collected.

4.5.10 Grease Trap and Collection System Inspections

The City inspects their infrastructure for health and construction-related issues of concern and responds to citizen requests regarding streets, drainage, and traffic. The City and contract crews are responsible for the operation, maintenance and repair of wastewater collection lines, manholes, and appurtenances. Crews make all necessary repairs to lines transporting wastewater from the customer to the treatment plant. These repairs include unstopping City wastewater transmission lines, preventive maintenance line cleaning and manhole repairs to ensure that wastewater is transported from the customers' sewer service to wastewater lift stations and eventually to a waste treatment facility with minimal disruption. In addition, the Public Works Department also assesses the operation and maintenance of grease traps at businesses throughout the City.

Measurable Goals:

- Continue to perform operation, maintenance, and inspections on 2% of the City's 500 miles of gravity main wastewater collection lines by December of each year (2019-2024).
- Perform one inspection at 100% of grease traps within MS4 jurisdiction by December of each year (2019-2024).

Evaluation:

- Record the miles of wastewater collection lines inspected.
- Document the number of known grease trap installed within jurisdiction and compare to the number of inspections conducted.