STORMWATER MANAGEMENT PROGRAM

TPDES Permit No. TXR040336

Amended February 24, 2020

Prepared by:
City of Bryan
Development Services
P.O. Box 1000
Bryan, TX 77805

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List of Acronyms and Abbreviations

AST	Aboveground Storage Tank
BEE	Bryan Environmental Education
BCHD	Brazos County Health Department
BMPs	Best Management Practices
BBSEC	Brazos Basin Stormwater Education Committee
BVCOG	Brazos Valley Council of Governments
$CBOD_5$	Carboneous Biological Oxygen Demand
CCTV	Closed Circuit Television
City	City of Bryan
CFU	Colony Forming Units
CFR	Code of Federal Regulation
CSN	Construction Site Notice
DIY	Do It Yourself
GIS	Geographic Information System
GPS	Global Positioning System
HHW	Household Hazardous Waste
IDD&E	Illicit Discharge Detection & Elimination
I&I	Inflow and Infiltration
I-Plan	Implementation Plan
KBB	Keep Brazos Beautiful
LA_{SEG}	Allowable Load from Non-Permitted Sources within the Segment
LA_{TL}	Tributary Load Allocations Entering Segment
LID	Low Impact Development
MCM	Minimum Control measure
MEP	Maximum Extent Possible
MOS	Margin of Safety
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
NOI	Notice of Intent
SCM	Stormwater Control Measure
SDRC	Site Development Review Committee
SOP	Standard Operating Procedure
SSO	Sanitary Sewer Overflow
SWAW	Solid Waste Assessment Worker
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Program
TCEQ	Texas Commission on Environmental Quality
TMDL	Total Maximum Daily Load
TPDES	Texas Pollution Prevention System
UST	Underground Storage Tank
WLA	Waste Load Allocation
WWTP	Wastewater Treatment Plant

1.0 INTRODUCTION

The City of Bryan (City) is required under the Texas Pollutant Discharge Elimination System (TPDES) Permit Number TXR040336 to develop and implement a Stormwater Management Program (SWMP). The SWMP includes an overview of the ordinances and other regulatory mechanisms that provide legal authority to implement and enforce the requirements of the permit, and outlines the stormwater control measures (SCMs) used to meet permit requirements. The SWMP provides the City with a comprehensive plan that will serve as a guide for expansion, development, and management of the City's storm drain system, and is intended to comply with TPDES General Permit TXR040000 requirements.

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

The SWMP is comprised of the following sections:

Section 1 **Introduction:** Provides the purpose and general format of the SWMP.

Section 2 **SWMP Revisions and Rationale for Revisions**: Provides a detailed description of the proposed revisions to the existing SWMP, and be considered for the new SWMP and new permit term.

Section 3 **SWMP Program Organization:** Provides an overview of the program including roles and responsibilities for implementation of the SWMP.

Section 4 **Description of the Permit Area**: Provides a description of the geographic boundary of the MS4 and watersheds within the corporate boundaries of the City.

Section 5 **Impaired Water Bodies:** Provides a description of monitoring activities and requirements associated with Total Maximum Daily Load (TMDL).

Section 6 **SWMP Elements:** Provides a summary of each SWMP element, related SWMP activities, implementation schedules, indicators to measure success, and interim milestones.

2.0 SWMP REVISIONS AND RATIONALE FOR REVISIONS

This SWMP proposes several revisions to strengthen and streamline program administration. Revisions will better define the programs intent, measurable goals, program layout, and program functions. A summary of revisions and rationale are as follows:

1. Nomenclature: We are replacing the term "Best Management Practice" (BMP) with "Stormwater Control Measure" (SCM). The use of the term SCM is specific to the field of stormwater.

2. SWMP Format: Restructured element definitions within the SWMP, will include a brief description of the element's purpose and overview, an outline of related activities, a table containing the applicable SCMs, measurable goals, and implementation schedule. This section will streamlines the format of the previously submitted SWMP. It is intended to enhance management and execution of the SWMP.

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

a) Measureable goals within each SCM have been amended and/or expanded to improve tracking and data analysis.

b) Elements within each SCM have been expanded and amended to provide program flexibility and improved management/performance over the permit term.

c) Additions to the inspection form to ensure compliance with site reporting requirements.

4. Schedule of Deliverables: Each element has a corresponding Table A and Table B. These tables are used to outline the activities, implementation schedule, indicators to measure progress, and interim milestones for each element. The City operates on a fiscal year beginning on October 1st and ending September 30th of the following year. Deliverables are cataloged by "year" in each table and is reflective of the City's fiscal year. October of each fiscal year serves as the starting point for activities performed under each SCM.

It is understood that established deliverables are carried forward throughout the permit term from their listed "implementation year" unless the deliverable is redefined; thence, the redefined deliverable will carry forward throughout the permit term.

3.0 STORMWATER MANAGEMENT PROGRAM ORGANIZATION

3.1 SWMP Participation

The Mayor is the ultimate authority for the City of Bryan's MS4. The City Manager is responsible for developing and implementing policies established by the City Council, recommending the budget for accomplishing work of the city, enforcing laws and ordinances, and recommending improvements to the city's operations. Day-to-day SWMP activities are performed by 13 different city departments.

SWMP Element Participation	Public Education, Outreach, and Involvement	Illicit Discharge Detection and Elimination	Construction Site Stormwater Runoff Control	Post-Construction Stormwater Management	Pollution Prevention & Good Housekeeping	MS4 Maintenance Activities
Bryan Texas Utilities	✓				✓	✓
Development Services	✓	✓	✓	✓	✓	✓
Code Enforcement	✓	✓	✓	✓	✓	✓
Coulter Airfield					✓	✓
Engineering Services	✓	✓	✓	✓	✓	✓
Environmental Services	✓				✓	✓
Fire Department	✓	✓			✓	✓
Parks & Recreation	✓				✓	✓
Police Department	✓	✓			✓	✓
Public Information	✓					
Streets & Drainage	✓	✓	✓	✓	✓	✓
Warehouse					✓	
Water Services	✓	✓		✓	✓	✓

3.2 Legal Authority

The City has established legal authority to carry out all aspects of the SWMP. Ordinances and other regulatory mechanisms that provide the legal authority necessary to implement and enforce the requirements of the permit, include, but are not limited to, the following sections of Bryan Code:

Chapter 14 – Buildings and Building Regulations

Chapter 46 – Stormwater Management

Chapter 50 – Health and Safety

Chapter 62 – Land and Site Development

Chapter 78 – Natural Resources

Chapter 102 – Solid Waste

Chapter 110 – Subdivision

Chapter 122 – Utilities

Chapter 130 – Zoning

4.0 DESCRIPTION OF THE PERMIT AREA

The permit area includes the incorporated areas of the City. The permit boundary will be expanded, as necessary, to include any newly incorporated areas. The City has approximately 300 centerline miles of street. Storm sewer serves some streets; however, a vast majority of the street system is served by open ditch drainage.

Figure 2-1 (Watershed Map) provides a summary of the watersheds located within the City of Bryan's MS4. Maps that illustrate land use, MS4 layout and outfalls, and other key system features are included in Figure 2-2 (MS4 Overview Map) and Figure 2-3 (Land Use Map). The City's map system is GIS-based. The GIS map is used for operation, maintenance, and management of the MS4. Regular updates, corrections and additions, to the map are made as information becomes available.

5.0 IMPARED WATER BODIES

Total Maximum Daily Load

Total Maximum Daily Load (TMDL) and an Implementation Plan (I-Plan) address water quality impairment for *Escherichia coli* (*E. coli*) within the Carters Creek Watershed: Carters Creek (Segment 1209C_01), Burton Creek (Segment 1209L_01) and Country Club Branch (Segment 1209D_01).

A TMDL is an estimate of the allowable pollutant load that a water body can accept, and still be in compliance, with the water quality standards for the designated use. Figure 2-4 (Impaired Stream Map) identifies the location of the impaired water bodies within the City's MS4. The EPA approved the TMDL for the Carters Creek Watershed on September 27, 2012. The corresponding I-Plan was approved by the TCEQ on August 22, 2012.

Waste load allocations outlined within the I-Plan, have been used to satisfy benchmarking requirements of the General Permit. A summary of allocations adopted by the I-Plan are referenced below:

TMDL Allocation Summary for Impaired Creeks located in Bryan, TX

Segment	Stream Name	TMDL	MOS	WLA_{WWTP}	WLA_{SW}	LA_{SEG}	LA_{TL}	Future Growth
1209L	Burton Creek	199.9	8.428	36.25*	116.7	1.409	31.31	5.785
1209D	Country Club Branch	14.38	0.2746	0	5.219	0	8.890	0
1209C	Carters Creek	814.6	30.74	47.36	269.8	259.2	199.9	7.625

*WLA_{WWTP} = 126 MPN/100 mL * 8 MGD * 3.7854E+07 100 mL/MGD * (1-5%) [Billion NPM/Day]

Elements addressing water quality monitoring, infrastructure maintenance and operation, surface water runoff, and development safeguards outlined within the I-Plan are written into the SWMP to ensure continuity for reducing *E. coli* loading between both documents (I-Plan and SWMP).

The TMDL Allocation Summary table will serve as the ultimate measure of program success. Measureable milestones and implementation schedules from the I-Plan will be used to steer monitoring efforts and measure program success. SCMs addressing *E. coli* that coincide with control of *E. coli* are highlighted green in each Element.

Indicators of success regarding measures relating to *E. coli* will include: (1) number of sources identified or eliminated, (2) decrease in number of illegal dumping cases, (3) increase in reporting of illegal dumping, (4) number of educational opportunities conducted, (5) reduction in sanitary sewer overflows, and (6) increase in illegal discharge detection through dry screening.

Impaired Water Bodies

The Texas Integrated Report Index of Water Quality Impairments identifies all water bodies with one or more impairments. The index is divided into two main categories:

Category 4: Impairments that are not suitable for a TMDL or for which a TMDL has already been approved

Category 5: Impairments which may be suitable for development of a TMDL (303d List)

City of Bryan Impaired Stream Segments – Category 5

Segment No.	Classification	Segment Name	Impairment
1209A	5c	Country Club Lake	Toxicity in Sediment
1209B	5c	Fin Feather Lake	Toxicity in Sediment
1242B	5b	Cottonwood Branch	Bacteria (*E. coli*)
1242C	5b	Still Creek	Bacteria (*E. coli*)
1242D	5b	Thompsons Creek	Bacteria (*E. coli*)

5b: a review of standards for one or more parameters will be conducted before a management strategy is selected, including a possible revision to the TSWQSs

5c: additional data or information will be collected and/or evaluated for one or more parameters before a management strategy is selected

- Segment No. 1209A and 1209B: A TMDL is not established for these segments. Segment No. 1209A and 1209B are impaired for toxicity in sediment (e.g. arsenic) associated with operation and closure of Elf Atochem. This facility is no longer in operation; however, remediation efforts addressing both arsenic contaminated sources of soil and groundwater have been performed and completed by Arkema Inc. and its agent. Remedial action has been performed within Segment No. 1209A and 1209B to return sediment concentrations for arsenic to a level equivalent or below background. Avoiding disturbance of the soil within these stream segments presents the best course of action in offsetting downstream impact(s).

  A copy of TCEQ's Standard for Closure response for soil remediation efforts completed by Legacy Site Services from the dam of Finfeather Lake to Country Club Lake is attached as Figure 1-1. A graph illustrating arsenic concentrations measured in Fin Feather Lake and Country Club Lake by Arkema over a period of 20 years is provided as Figure 1-2. Union Pacific Railroad and Country Club Lake by the City of Bryan own Finfeather Lake. Development of these properties is not anticipated.

  The City may from time to time employ a technical advisor or advisors who are experienced and educated in the site remediation matters. The function of the advisor isto advise, counsel, or represent the City on such matters relating to property development and sediment disturbance in areas surrounding and including Finfeather Lake or Country Club Lake.

  Indicators of success regarding measures relating to toxicity in sediment will include: (1) number of site plans reviewed that directly impact sediment within the water bodies, (2) number of construction projects performed that directly impact sediment within the water bodies, and (3) number of educational opportunities conducted addressing water quality issues relating to the SMWP.

- Segment No. 1242B, 1242C, and 1242D: A TMDL is not established for these segments. The same measureable milestones and implementation schedules as used for monitoring and control of *E. coli* for the City's TMDL-approved stream segments 1209L (Burton Creek) and 1209D (Country Club Branch) will be adopted for these stream segments since all segments share a common impairment – Bacteria (*E. coli*). Taking this action is expected to yield greater efficiency through uniformity in monitoring and control of *E. coli* while minimizing confusion for staff and the public.

  Indicators of success regarding measures relating to *E. coli* will include: (1) number of sources identified or eliminated, (2) decrease in number of illegal dumping cases, (3) increase in reporting of illegal dumping, (4) number of educational opportunities conducted, (5) reduction in sanitary sewer overflows, and (6) increase in illegal discharge detection through dry screening

Endangered Species

Review of TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards, June 2012 (TCEQ RG-194)* identifies the Houston Toad as an endangered or threatened species for stream segment numbers 1209 (Leon County) and 1242 (Burleson County). Brazos County is not identified as a county of concern for these stream segments in TCEQ's current 2012 Implementation Procedures. The City of Bryan's MS4 discharges to stream segments number 1209 and 1242 downstream of Burleson County and Leon County and will not cause impact to water quality or habitat associated with the Houston Toad upstream of the City of Bryan.

ELEMENT 1: PUBLIC EDUCATION, OUTREACH, AND INVOLVEMENT

The City employs a public education, outreach, involvement and participation program to encourage stewardship of surface water resources by raising awareness of issues, providing information on SCMs used to improve water quality, and providing the public with opportunity for input into the program.

Focus points include: (1) reduce *E. coli* loading to the MS4 by increasing public awareness to pet waste, general sewer usage, and FOG (Fats, Oil and Grease) control, (2) reduce organic loading to the MS4 from routine residential activities such as lawn and vehicle maintenance, (3) continuation of education and outreach avenues carried forward from the previous permit term.

The success of this element is dependent on its ability to distribute timely and relevant information in a manner that is readily understood by the targeted audience(s).

APPLICABLE STORMWATER CONTROL MEASURES

The SCMs of this element are aligned in two areas of focus:

- Public education including technical training in direct support of the permit elements (including City staff).
- Public involvement and participation to solicit input into the SWMP.

1.A Community Education

Simple activities such as fertilizing, vehicle maintenance, and home improvements adversely impact our environment when performed incorrectly. Targeting educational materials to inform residents of safe alternatives and good housekeeping practices concerning home and yard maintenance will aid in lowering stormwater impact by this element.

Tailoring educational programs and literature to various audiences will promote maximum outreach/impact of this control measure. Educational efforts target the following activities:

- Automotive maintenance and washing
- Litter prevention
- Pet and animal wastes
- Disposal of household hazardous wastes (paint, solvents, cleaning products, etc.)
- Home and garden care activities (pesticides, herbicides, and fertilizers)

Neighborhood-based outreach programs are provided to the homeowners associations, parent-teachers associations, church, school organizations, and non-governmental organizations. To help distribute stormwater pollution prevention messages aimed at a wide range of topics depending upon the age group, demographics, and community interest.

1.B School Education

Students have the potential to impact stormwater and water quality in the MS4, and can positively affect their families' outlook. The City promotes stormwater education within the schools through service learning opportunities, participating in guest speaking opportunities, and by supporting Keep Brazos Beautiful (KBB) in its school education efforts.

1.C Construction Site Operator Education

Runoff from construction sites has an identified potential to degrade water quality in the MS4. Waste management, erosion control, and sediment management are points of concern relating to construction sites. The combination of guidance materials and general meetings with City staff are vehicles used in educating construction site operators in protecting water quality within the MS4.

1.D City Staff Education

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

1.E Public Participation/Volunteer Opportunities

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

The City promotes community awareness and protection of stormwater quality through participation in the storm drain marking, litter cleanup, and stream monitoring. Partnerships with the BBSEC, Keep Brazos Beautiful (KBB), and local civic and religious groups play a key role in continuation and success of this element.

A copy of the SWMP and annual reports are available for public review and comment online at (https://www.bryantx.gov/capital-improvement-projects/stormwater-management-program/?hilite=%27stormwater%27%2C%27management%27%2C%27plan%27) and in the City Secretary's office.

A public presentation concerning the SWMP development was presented to Bryan City Council on April 9, 2019. The City openly welcomes input and suggestions from the public regarding the SWMP.

Table 5-1A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 5-1B provides a list of interim milestones for the SCMs described in this element.

Table 6-1A Element 1: Public Education, Outreach, Involvement and Participation		
Activities	**Implementation Schedule**	**Measureable Goals Permit Term: 2019-2024**
▪ 1.A Community Education ▪ 1.B School Education	▪ Review existing outreach. ▪ Continuation of outreach. ▪ Brainstorm topics and ideas. ▪ Brainstorm new media avenues. ▪ Continue existing outreach program with schools Evaluate existing programs for program expansion.	▪ Sponsor at least two community wide events focusing on stormwater quality and related issues annually. ▪ At least three City webpages (e.g. Code Enforcement, Stormwater, and Permitting) will track web traffic. The results will be reviewed annually. Updates will be made as needed. ▪ Track messages chosen and amount published, amount distributed, and associated expense annually. Adjust outreach efforts and media as needed.
▪ 1.C Construction Site Operator Education	▪ Continuation of existing programs and services. ▪ Evaluate outreach materials and modify as needed. ▪ Evaluate outreach materials and modify as needed. ▪ Increase contractor awareness to stormwater quality.	▪ Tracking the number of pre-construction meetings, estimated at 20 per year, on an annual basis. ▪ Tracking of distributed outreach materials will be counted annually. The number will be based on pre-construction and SDRC meetings held each year. An estimating about 20 pre-construction and SDRC meetings will be held, distributing about 40 each year. ▪ An annual review will be performed to ensure that all Capital Improvement Project contracts and street improvement contracts (estimated 10 per year, will contain stormwater quality provisions.

Table 6-1A Element 1: Public Education, Outreach, Involvement and Participation		
Activities	**Implementation Schedule**	**Measureable Goals Permit Term: 2019-2024**
▪ 1.D City Staff Education	▪ Perform biannual training of staff implementing the City's SWMP. ▪ Complete annual multi-sector training for affected staff.	▪ A minimum of 200 employees trained in SWMP (Engineering, Development/Permitting, Public Works, Parks, and Facilities). ▪ A minimum of 10 employees trained in multi-sector permit (wastewater plants and Coulter Airfield) annually.
▪ I.E Public Participation/Volunteer Activities	▪ Allow annual public review and comment on SWMP ▪ Update website with Annual Report and SWMP	▪ SWMP and annual report will be updated to the website once a year. ▪ A minimum of three stream and creek cleanup events performed annually

Table 6-1B Element 1: Interim Milestones	
Years 1, 2,3,4 & 5	▪ Internal discussion and planning efforts underway ▪ Employee and contractor training materials reviewed and revised as needed ▪ TCEQ SSO objectives met ▪ Continuation of internal discussion and planning efforts ▪ Employee and contractor training materials reviewed and revised as needed ▪ Continuation of established practices

ELEMENT 2: ILLICIT DISCHARGE DETECTION AND ELIMINATION

The City's Illicit Discharge Detection and Elimination (IDDE) Program outlines measures to detect and eliminate illicit discharges to the storm sewer system, detect and eliminate sanitary sewer overflows, promote household hazardous waste collection, and provide response to illegal dumping and citizen requests.

APPLICABLE STORMWATER CONTROL MEASURES

2.A Illicit Discharge Detection and Elimination

IDDE is used to locate and remove prohibited discharges from entering the storm drainage system. The City's IDDE program uses a combination of dry weather outfall inspections, closed circuit television (CCTV) inspection, in conjunction with facility inspections. GIS (storm drain) information is used to trace the origin of a suspected illicit discharge(s).

The City maintains a web-based work order request dubbed "Help Bryan!" to allow citizens the ability to report stormwater related issues and concerns. Customer calls are processed through the Public Works Call Center and Bryan Texas Utilities Call Center. The City's stormwater-related education materials encourage the public to report illicit discharges. City staff respond to citizen complaints and correlate action back to a work order system. The work order system allows system users to assess the numbers and types of requests along with the location(s) of the concern. Depending on the case type, inspector notes and findings are logged into GIS to provide visual reference of the case's geographic location.

The City's Environmental Compliance Officers, Neighborhood Enforcement Team, Bryan Fire Department, Building Inspections, Engineering Inspections, and Code Enforcement Officers address illegal dumping and illicit discharges. The City has an established phased approach for enforcing penalties and violations. The first step is to issue a warning by either phone call or electronic method, and will be followed by an administrative or legal action, if non-compliance is still not achieved. This enforcement protocol is based on the assumption that the level of enforcement escalates until compliance is achieved. This approach does not prevent the City from skipping certain steps for more serious problems.

Phased Approach Enforcement Plan

Warning

- Verbal notice or a written letter to the owner/operator.
- The time frame to correct the identified problem should be based on the severity or complexity of the problem.

Administrative Action

- Formal notice in the forms of a Notice of Violation, Cease and Desist Order, Order to Abate, Notice to Clean, or any other similar notification outlined in the City's code of ordinances that identifies a problem, requires correction or abatement but does not assess a fine.
- The time frame to correct the identified problem should be specified based on the severity or complexity of the problem.

Administrative Action with Fine and/or Cost Recovery

- Same as above with the addition that fine(s) are assessed administratively and/or abatement costs are recovered.

Legal Action

- Includes any actions taken by the City that brings the facility into the court system (citation, court action, etc.).

2.B Storm Sewer Screening and Illicit Discharge Inspections

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

Signs of an illicit connection or discharge include:

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

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

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

Techniques used for detecting illicit discharges include:

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

inspection report based on the type of inspection (i.e. industrial or construction). A corrective action will be enacted to cease discharge and may result in an enforcement action against the facility.

2.C Sanitary Sewer Overflows and Infiltration

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

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

2.D Storm Sewer Map Verification and Update

Maintaining an updated and accurate map of the storms sewer system is critical to providing timely emergency response for spills and detecting illicit discharges. The City's storm sewer system presently consists of 803 different storm sewer outfalls, 107.1 miles of storm sewer pipe, 95.3 miles of creek channels, and 3,679 inlets. The map is GIS-based. Regular updates, corrections and additions to the map provide data necessary for managing activities within the MS4. Asset verification is necessary to ensure integrity and accuracy within the map. Dry weather inspections are included as part of this effort. A summary of actions performed include:

- Verification of outfall condition and location using a GPS unit. Any repair or replacement needs are logged into the work order system for action.
- Verification of inlet and manhole condition and location using a GPS unit. Any repair or replacement needs are logged into the work order system for action.

2.E Household Hazardous Waste and Oil Recycling

Most households routinely use small amounts of pesticides, herbicides, fertilizers, automotive fluids, batteries, paints, and solvents in the day-to-day upkeep of their homes, apartments and condominiums. Improper disposal of these materials through trash collection or poured down the storm drain can result in unwanted impact to the environment.

- Household Hazardous Waste (HHW) is a bi-annual event held to provide free disposal of household wastes for residents living within the Brazos Valley Council of Governments (BVCOG) service area: Grimes, Brazos, Lee, Robertson, Burleson, Madison, and Leon County. Funding and support for this event is provided by the cities of Bryan and College Station, along with the Brazos Valley Solid Waste Management Agency.

- The City of Bryan Do-It-Yourself (DIY) Used Oil Center is open Monday – Saturday and provides disposal for used motor oil, oil filters, and used cooking oil free of charge to Bryan residents.

2.F Septic Tanks

Brazos County Health Department (BCHD) serves as the City's designated health official. The City maintains legal authority prohibiting use of a septic tank when public sewer service is unavailable. The City and BCHD maintain a working relationship allowing co-review of septic tank applications to determine applicability before installation is granted. The City also maintains legal authority addressing performance standards and closure requirements for failing septic tanks located within the city limits.

Table 5-2A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 5-2B provides a list of interim milestones for the SCMs described in this element.

Table 6-2A Element 2: Illicit Discharge and Elimination		
Activities	**Implementation Schedule**	**Measurable Goals Permit Term: 2019-2024**
▪ 2A: Illicit Discharge Detection and Elimination ▪ 2B: Storm Sewer Screening and Illicit Discharge Inspections ▪ 2C: Sanitary Sewer Overflows and Infiltration ▪ 2D: Storm Sewer Map Verification and Update	▪ Identify and correct illicit discharge/connections ▪ Establish training program for illicit discharge investigation and elimination. ▪ Facilitate mechanism for reporting and response to residential concerns regarding illegal dumping and discharge of non-stormwater materials. ▪ Continuation of training program for illicit discharge investigation and elimination. ▪ Detect, inspect, and investigate discharges and/or improper disposal of waste. ▪ Facilitate mechanism for reporting and response to residential concerns regarding illegal dumping and discharge of non-stormwater materials.	▪ 100% of reported sanitary sewer overflows investigated annually. ▪ 40 miles of public sanitary sewer system is (public) inspected (smoke testing, CCTV, and PM service) with a goal of a 5% increase annually. ▪ A minimum 100 employees trained in illicit discharge detection and elimination; training completed during the terms 2019, 2021, and 2023. A minimum of 15 employees trained annually. ▪ 100% of MS4-realted case types and points of generation (e.g. proactive, citizen complaint, etc.) completed annually. ▪ A minimum 425 storm sewer manholes and inlets inspected with a goal of 5% increase annually. ▪ An annual review of the City's storm sewer map will be performed.
▪ 2E: Household Hazardous Waste and Oil Recycling	▪ Continuation of used oil recycling services (internal and external of city administration). ▪ Collaborating with BVSWMA Landfill for community disposal opportunities household hazardous waste.	▪ Annually, a minimum of one HHW event completed. ▪ A minimum of 3000 gallons of used motor oil, 8 drums of filters.
▪ 2F: Septic Tanks	▪ Permitting and inspection for septic tanks (partnership with Brazos County Health	▪ Annually, a minimum of one meeting with Brazos County Health Department to identify

Table 6-2A Element 2: Illicit Discharge and Elimination		
Activities	**Implementation Schedule**	**Measurable Goals Permit Term: 2019-2024**
	Department).	septic tank violation within the city.

Table 6-2B Element 2: Interim Milestones	
Years 1, 2, 3, 4, & 5	▪ Continuation of internal discussion and planning efforts ▪ Continuation of storm sewer inlet and manhole inspections ▪ TCEQ SSO objectives met ▪ I-Plan objectives met ▪ GIS layers and map updated ▪ Outfalls inspected ▪ 20% of storm sewer inlets and manholes inspected ▪ Continuation of established practices

ELEMENT 3: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

The City is required to enforce compliance with the TPDES Construction General Permit Number TXR150000 for construction sites that disturb more than one acre of land. Stormwater runoff from construction sites will be addressed by, implementing effective controls per site, Stormwater Pollution Prevention Plans (SWPPPs), construction site inspections, and notifying building contractors. These regulations require existing construction programs to regulate sites that discharge into the MS4 and disturb more than one acre, to address construction wastes, include plan review that addresses water quality impacts and incorporates ways of addressing public concerns related to construction activities.

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

APPLICABLE STORMWATER CONTROL MEASURES

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

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

3.A Construction Plan Review and Notification of Contractors

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

The City, through the development review processes or capital improvement design processes, ensures that an erosion control plan is implemented and copies of the NOI or CSN are submitted to the City, and that the contractor maintains a SWPPP on-site. The exception for small residential projects that are not part of a common plan of development, and are less than 1 acre of disturbed area. The City's plan review process incorporates the consideration of potential water quality impacts, receipt of and consideration of information submitted by the public, site inspection and enforcement of control measures to the extent allowable under state and local law.

All sites that disturb more than one acre are required to implement appropriate controls to prohibit sediment and other pollutants from discharging from the construction site. In addition, best management

practices and housekeeping measures to address litter, waste materials, concrete truck washouts, chemicals and sanitary waste are also required for every site, regardless of size.

The City notifies contractors and construction building permit applicants of their responsibilities under the TPDES General Construction Permit, as a part of the City's Site Development Review Committee (SDRC) and building permit processes, and during site inspections. Various outreach pamphlets are developed for contractors, and homeowners, that identify their responsibilities concerning stormwater quality management. Contractors working for the City, on capital improvement projects will be notified of their responsibilities during pre-construction meeting for maintaining SWPPP and compliance with the Construction General Permit.

3.B Inspection of Construction Sites and Enforcement of Best Management Practice Requirements

Construction inspections focus on achieving site compliance through effective site water management, erosion and sediment control. These inspections take place on development projects as well as capital improvement projects for the City. The suggested site inspection frequencies are provided below:

- **Large or Small Construction Sites***: at a minimum of 1 time every 30-calendar days.
- **Very Small Sites** (less than or equal to 1 acre) *: no less than 3-calendar days from receipt of a complaint.

  ***Note: complaints will receive a full inspection in no more 3-calendar days from receipt of the complaint**

The construction inspection verifies that the structural and non-structural control measures as outlined on the erosion control plan, and in the Storm Water Pollution Prevention Plan (SWPPP) accurately reflect what is on the site, and are functioning as intended (maintained) to prevent pollution from leaving the site. It is the contractor's responsibility to ensure the measures are effectively preventing pollution from the site and make appropriate changes as needed to achieve the goal. The City's stabilization policy is that all sites must meet at a minimum, the requirements of the TPDES Construction General Permit. The City maintains legal authority to inspect construction sites, require site compliance, and provide tiered enforcement of non-compliance as follows:

- Verbal Notice of Noncompliance to achieve voluntary compliance, may include stop work order if egregious offense.
- Stop Work Order, and/or hold placed on all project approvals (i.e. building permit, plat recordation, infrastructure inspection or acceptance, and certificate of occupancy).
- Notice of Violation (NOV) with timeframe to come into full compliance.
- Failure to remedy a NOV may result in penalties including fines in accordance with penalty provisions of the City's Code of Ordinance.

MS4 staff and construction site operators are provided training as part of the activities outlined under Element 1. The public can submit information pertaining to any active construction site in many ways to the City, including email, the Help Bryan! web form submittal, or by phone call to the Public Works Call Center or the BTU Call Center. Information submitted is acted upon within 3-calendar days.

Inspections are documented using standardized inspection forms either on paper or electronically, and an example inspection report is provided as Attachment C (Stormwater Inspection Report). Inspectors aim to take pictures of the violation or failing BMP, and include them with the inspection form.

An inventory of all City-permitted, active public, and private construction sites are accessible through records kept in various spreadsheets and permitting software, managed between the Engineering and the Development Services departments.

3.C Maintain Legal Authority and Guidelines

The City will maintain its legal authority and update as necessary, to comply with the TPDES General Construction Permit. The City will maintain guidance documents for construction, and design professionals, which are available on the City's website. The City also maintain and revise, as necessary, the stormwater quality requirements in the standard construction contracts for capital improvement projects.

Table 5-3A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 5-3B provides a list of interim milestones for the SCMs described in this element.

Table 6-3A Element 3: Construction Site Runoff		
Activities	**Measurable Goals (Permit Term 2019-2024)**	**Indicators to Measure Progress**
▪ 3A: Construction Plan Review	▪ Continuation of Site Development Review (SDRC) and plans review process for Capital Improvement Projects ▪ Distribute 200 outreach materials annually and have dual language materials available, as needed. ▪ Achieve 100 % of construction plans reviewed, through the city's processes listed in the Indicators to Measure Progress. ▪ Train Engineers, Planners, Plan Reviewers, Engineering and Building Inspectors and external departments, where applicable, (e.g. Water Services, Parks and Recreation etc.) on compliance with SWMP and Construction General Permit. Train 20% per year until 100% of Staff are trained. ▪ Develop checklist identifying minimum elements required in SWPPP, to be distributed to external stakeholders, by end of fiscal year 2021. ▪	▪ The number of outreach materials distributed, through the year are tracked annually (such as pre-construction meetings, SDRC meetings, public meetings, etc.) ▪ The number of Site Development Review (SDRC) cases, will be tracked annually. ▪ The number of Building Permits issued will be counted annually. ▪ The number of designed Capital Improvement Projects and percentage of Capital Improvement Projects with SWPPP will be counted based on the level of area disturbed and counted annually. ▪ The number of engineered construction plans related to public infrastructure reviewed and counted annually. ▪ Checklist established and distributed.
▪ 3B: Inspection of Construction Sites and Enforcement of Control Measure Requirements	▪ Continuation of inspection protocol – at least 1 inspection every 30 days for each active project. ▪ Maintain 25% compliance on project sites (based on inspections). ▪ Create inventory of active public and private projects among all departments by end of fiscal year 2021. ▪ Train Engineering and Building Inspectors and	▪ Perform inspections for BMPS, TCEQ construction general permit compliance and the City of Bryan Ordinances. These will be counted through an excel database, and the number reported annually. ▪ The number of complaint-driven inspections will be reported annually. ▪ Number of compliant site inspections compared

Table 6-3A Element 3: Construction Site Runoff		
Activities	**Measurable Goals (Permit Term 2019-2024)**	**Indicators to Measure Progress**
	external departments, where applicable, (e.g. Water Services, Parks and Recreation etc.) on compliance with SWMP and Construction General Permit. Train 20% per year until 100% of staff is trained.	to total number of inspections. ▪ The number of enforcement actions, will be tracked and reported annually. ▪ Inventory is created. ▪ The training will be conducted once a year on SWMP and changes if any, with the Construction General Permit.
▪ 3C: Maintain Legal Authority and Guidelines	▪ A Conduct a staff review of existing stormwater management ordinance and control mechanisms for conformance, relating to General Permit requirements, by end of fiscal year 2021. (September 30, 2021). ▪ Amend new ordinance language where needed by end of fiscal year 2022. (September 30, 2022).	▪ Review existing stormwater management ordinances and track changes. ▪ Ordinance changes approved by council. ▪ Ordinance changes rejected by council.

ELEMENT 4: POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

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

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

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

APPLICABLE STORMWATER CONTROL MEASURES

4.A Bryan Code Review and Updates

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

4.B Establish Post-Construction Stormwater Management Program

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

4.C Evaluation of Flood Control Projects

Incorporating water quality features into private and public development/redevelopment projects for flood control may provide an effective way of addressing pollutant transport while providing local flood relief. Additionally, reducing volume of runoff from construction sites results in a reduction in transportation of water-borne contaminants, which secondarily addresses water quality by limiting the volume of water available to convey pollutants downstream.

The City evaluates private and public development/redevelopment projects each year that offer the potential to integrate water quality design features into flood management-focused design. Additionally, all private development projects that come through the SDRC process, are required to provide stormwater detention if greater than one (1) acre for commercial and two (2) acres for single residential lots or prove

to the City why the detention would be more detrimental. Exemptions to providing detention are only possible that are low in the watershed adjacent to primary systems where detention would cause stacking of peak flows in the watershed.

Further evaluation will need to be completed, to identify the best means to achieve and encourage stormwater quality designs, without increasing the cost to the private or public development/redevelopment.

4.D Implementation and Performance of Structural/Non-structural Controls

Structural and non-structural controls are designed, to provide both direct and indirect benefits to the water quality of the receiving water body. However, because many of these measures are relatively new to the City and their performance has not been fully assessed with respect to effectiveness in improving local water quality. The low impact development (LID) design elements and green infrastructure controls at City facilities will be tracked by type and location. Additionally, the number, location, size, and land use types of new development and redevelopment projects using these measures will be studied, to see if any progress was made.

Table 5-4A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 5-4B provides a list of interim milestones for the SCMs described in this element.

Table 5-4A Element 4: Post Construction Stormwater Management		
Activities	**Measureable Goals (Permit Term 2019-2024)**	**Indicators to Measure Progress**
▪ 4.A Bryan City Code Review and Updates	▪ Continuation of inspection protocol – at least 1 inspection every 30 days for each active project. ▪ Maintain 25% compliance on project sites (based on inspections). ▪ Create inventory of active public and private projects among all departments by end of fiscal year 2021. ▪ Train Engineering and Building Inspectors and external departments, where applicable, (e.g. Water Services, Parks and Recreation etc.) on compliance with SWMP and Construction General Permit. Train 20% per year until 100% of staff are trained.	▪ Perform inspections for BMPS, TCEQ construction general permit compliance and the City of Bryan Ordinances. These will be counted through an excel database, and the number reported annually. ▪ The number of complaint-driven inspections will be reported annually. ▪ Number of compliant site inspections compared to total number of inspections. ▪ The number of enforcement actions, will be tracked and reported annually. ▪ Inventory is created. ▪ The training will be conducted once a year on SWMP and changes if any, with the Construction General Permit.
▪ 4.B Establish Post-Construction Stormwater Management Program	▪ Perform review of data acquisition procedures and revise, as necessary, by end of fiscal year 2022. (September 30, 2022). ▪ Maintain 25% compliance on project sites (based on post-construction inspections). ▪ Evaluate effectiveness/implementation of long-term operation and maintenance of stormwater controls by end of fiscal year 2021. (September 30, 2021). ▪ Develop record of documented enforcement actions by end of fiscal year 2022. (September 30, 2022). ▪ Develop a template of a maintenance agreement, and repository for private detention ponds, maintenance agreements by end of fiscal year 2022. (September 30, 2022). ▪ Develop written procedures for enforcement, and management mechanism for post-construction	▪ Review of data acquisition procedures performed. ▪ Number of compliant post-construction site inspections compared to total number of post-construction site inspections. ▪ Evaluation with relevant stakeholders (e.g. Water Services, Streets and Drainage etc.) preformed. ▪ Database of enforcement actions established. ▪ Repository established. ▪ SOP drafted and implemented.

Table 5-4A Element 4: Post Construction Stormwater Management		
Activities	**Measureable Goals (Permit Term 2019-2024)**	**Indicators to Measure Progress**
	stormwater management.	
• 4.C Evaluation of Flood Control Projects	▪ Evaluate private and public. ▪ Development/redevelopment projects for flood control on a case-by-case basis to assess feasibility of incorporating stormwater controls to address water quality.	▪ Number of flood control and drainage construction projects with water quality measures initiated, documenting 100%. ▪ Number of flood control and drainage construction projects with water quality measures completed, documenting 100%. ▪ Types and locations of measures implemented, documenting 100%. ▪ Evaluate continued operation and maintenance practices, documenting all.
• 4.D Implementation and Performance of Structural/Non-structural Controls	▪ Develop inspection form for detention facilities. ▪ Add inspection form to City website. ▪ Responsible party submit inspection forms annually to the City of Bryan.	▪ Inspection form completed and made publically available by the end of 2021. ▪ Number of annual responsible party inspections submitted. Notification to public and complete implementation by end of 2021.
	▪ Promote the use of Low Impact Development (LID) and green infrastructure controls, and including, but not limited to: a) Green Roofs b) Rain Harvesting Systems c) Retention ponds d) Riparian buffer systems e) Permeable pavement f) Bio-swales	▪ Number, size, type(s), land use and locations of new and redevelopment projects over 1 acre, will be documented and completed by the end of 2021. ▪ Number, type(s) and locations of LID features implemented at City facilities, documenting all by end of the year. • Continue operation and maintenance practices evaluations, documentation by end of year.

ELEMENT 5: POLLUTION PREVENTION & GOOD HOUSEKEEPING

The City's Pollution Prevention and Good Housekeeping Program focuses on continuous improvement processes to reduce pollutant runoff from municipal operations. This program provides for waste management, use of pesticides, herbicides, and fertilizers, spill prevent and control, and day-to-day activities performed by City staff which have the ability to impact stormwater quality.

APPLICABLE STORMWTER CONTROL MEASURES

5.A Municipal Facilities Identification

This program includes developing an inventory of municipal facilities with the potential to impact stormwater quality. A list of municipal facilities subject to requirements of this element are included in Attachment D, along with a list of all municipally owned and operated industrial activities subject to the TXR050000 Multi-Sector General Permit. Location of these facilities will be added as a layer in the GIS map. An assessment of low priority facilities will be performed one time per permit term to grade the facility's operation and risk to stormwater quality; high priority facilities will be inspected annually. Findings of each assessment will be documented.

A standard operating procedure (SOP) for general good housekeeping, equipment washing, and fueling operations and vehicle maintenance, and chemical application will be drafted and used to establish guidelines and standards for municipal facilities and operations.

Facility-specific SOPs will be drafted for facilities listed as "*high priority*" and not permitted under the Multi Sector General Permit. Existing SWPPPs for these facilities will not be drafted but will be referenced to an existing SOP to satisfy requirements of the General Permit. A listing to applicable facilities meeting this determination is provided below:

City-Owned High Priority Facilities

Facility	Regulated Program	Activity
Burton Creek WWTP	TXR050000 Multi Sector General Permit	Wastewater Treatment
Still Creek WWTP	TXR050000 Multi Sector General Permit	Wastewater Treatment
Thompsons Creek WWTP	TXR050000 Multi Sector General Permit	Wastewater Treatment
Fountain Street Fuel Island	SPCC Rule	Fuel Island - AST
Coulter Airfield	TXR050000 Multi Sector General Permit	General Aviation
Sue Haswell Pool	N/A	Bulk Chemical Storage
Bryan Aquatic Center	N/A	Bulk Chemical Storage
Henderson Harbor	N/A	Bulk Chemical Storage
Sadie Thomas Pool	N/A	Bulk Chemical Storage
City Golf Course	SPCC Rule	Fuel Island - AST
Travis B. Bryan Park	SPCC Rule	Fuel Island - AST
Municipal Service Center	N/A	Vehicle Washing
	N/A	Fuel Island - UST

5.B Training for Municipal Employees

This measure includes, but is not limited to, providing information on preventing and reducing storm water pollution from all municipal operations. City employees are trained on the proper procedures for reporting, containing spills and preventing pollutants from entering the storm drains. The combination of monthly group meetings and area-specific focused meetings are used to satisfy the requirement of this element. A training log will be maintained to document employee attendance.

5.C Contractor Training and Oversight

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

5.D MS4 Waste Management

Preventing environmental upset through waste management is as important for protecting the health and sanitation of the community. Disposal of regulated wastes such as motor oils, oil filters, automotive fluids, etc. used by the City, are managed through contract or agreement with a service provider.

5.E Pesticides, Herbicides and Fertilizer Application

Minimizing discharge of pollutants related to storage and application of pesticides, herbicides and fertilizers applied by City staff or contractors to public rights-of-way, parks, and other public property is a key component to protecting water quality. A SOP for these processes will be drafted, and used to establish guidelines and standards for application and use by City staff and contractors.

5.F Street Sweeping

Street sweeping is performed to limit litter and dust/dirt along public streets, public parking lots, and right-of-ways from being washed into the storm drain. Road debris from traffic flow can add to sediment loading of the storm drain if not properly managed. The following street sweeping SCMs are recommended to reduce runoff pollution while increasing sweeping efficiency:

Timing and Frequency

- Avoid wet cleaning or flushing of streets, utilize dry methods where possible.
- If wet cleaning or flushing is necessary, sweep and remove debris before flushing; plug storm drain inlet and direct wash water to the sanitary sewer. Alternately, allow wash water to drain to the storm drain and collect it downstream at a manhole.
- Adjust sweeping frequencies based on factors such as traffic volume, land use, field observations or sediment and trash accumulation, proximity to watercourses, etc.

Residuals Disposal

- Dispose of street sweeping debris and dirt at a landfill.
- Do not leave street sweeping debris and dirt piles along the side of the road or by a riparian area.
- Wash equipment at a wash rack that drains to the sanitary sewer.

5.G Grass Clippings, Leaf Litter and Animal Wastes

Grass clippings, leaf litter and animal wastes are addressed through several different initiatives to limit biological wastes, and nutrients discharges into the MS4. The TMDL and I-Plan establish control measures to address bacteria within the permit area. Existing ordinances will be continually reviewed, and revised as needed to ensure success of this measure.

5.H Road and Parking Lot Maintenance

Control of sediment and debris from municipally owned road and parking lot maintenance is addressed through several different initiatives. Operating standards for road repair and maintenance (City and

contractor) are established to protect water quality. A SOP for road and parking lot maintenance will be drafted, and used to establish guidelines and standards for use by City staff and contractors.

5.I Cold Weather Conditions

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

5.J WWTP Performance

The City has three wastewater treatment plants (WWTPs): (1) Burton Creek, (2) Still Creek, and (3) Thompsons Creek. Burton Creek discharges to the Carters Creek Watershed and is located within the TMDL service area. A waste load allocation of 36.25 CFU/100 mL is established in the TDML for *E. coli* loading associated with Burton Creek's discharge. Monitoring for *E. coli* is built into each plant's discharge permit. Proper operation and maintenance of each WWTP plays a key role in reducing *E. coli* loading to each plant's receiving stream.

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

Table 5-5B provides a list of interim milestones for the SCMs described in this element.

Table 6-5A Element 5: Pollution Prevention & Good Housekeeping		
Activities	**Implementation Schedule**	**Measurable Goals Permit Term: 2019-2024**
▪ 5.A Municipal Facilities Identification	▪ Identify City-owned facilities with potential to impact stormwater quality. ▪ Identify high priority facilities. ▪ Facility-specific SOPs established and added (as needed) for new facilities. ▪ Facility assessments complete.	▪ An annual review of City-owned facilities are identified and mapped within GIS. ▪ An annual review of City-owned facilities are assessed against SWMP. ▪ An annual review of SOPs is performed.
▪ 5.B Training for Municipal Employees	▪ Perform department-specific annual training of staff execution of the City's SWMP. ▪ Complete annual multi-sector training for affected staff.	▪ A minimum of 100 employees trained in SWMP; training completed (2019, 2021, 2023). A minimum of 15 employees trained annually. ▪ Annually, a minimum of 10 employees trained in multi-sector permit.
▪ 5.C Contractor Training and Oversight	▪ Establish database of City-contractor service providers having potential to impact stormwater quality. ▪ Amend RFBs or obtain MS4 acknowledgement forms from identified contractors addressing performance measures related to the MS4.	▪ An annual review will be performed to ensure that all Capital Improvement Project contracts and street improvement contracts contain stormwater quality provisions. ▪ An annual review of all service agreements for mowing, chemical application, and bulk chemical delivery have contract acknowledgements pertaining to stormwater quality.
▪ 5.D MS4 Waste Management	▪ Provide avenues for source reduction and recycling. ▪ Litter control and abatement.	▪ Annually, a minimum of 300 cu. yds. of paper good is recycled (in-house). ▪ A minimum of 3000 gallons of used motor oil, 9 barrels of filters.

Table 6-5A Element 5: Pollution Prevention & Good Housekeeping		
Activities	**Implementation Schedule**	**Measurable Goals Permit Term: 2019-2024**
▪ 5.E Pesticides, Herbicides and Fertilizer Application	▪ Protection of water quality from application of herbicides, pesticides, and fertilizers.	▪ An annual review of SOPs is performed.
▪ 5.F Street Sweeping	▪ Sweep all streets at least 2 times per year, thoroughfares at least 4 times per year and city-owned parking lots 4 times per year.	▪ A minimum of 250 lane miles are street miles are swept with a goal of 5% increase annually.
▪ 5.G Grass Clippings, Leaf Litter and Animal Waste	▪ Review legal authority and amend as necessary. ▪ Enforcement of city ordinances. ▪ Community education.	▪ Sponsor a minimum of two community wide events focusing on stormwater quality and related issues annually. ▪ At least three City webpages (e.g. Code Enforcement, Stormwater, and Permitting) will track web traffic. The results of such will be reviewed annually. Updates will be made as needed.
▪ 5.H Road and Parking Lot Maintenance ▪ 5. I Cold Weather Conditions	▪ Maintenance of streets and roadways.	▪ An annual review of SOPs is performed.
▪ 5.J WWTP Performance	▪ Water quality monitoring. ▪ Wastewater plant operations.	▪ TPDES discharge permits for *E. coli* are met. DMRs are submitted monthly and reviewed annually for performance.

Table 5-5B Element 2: Interim Milestones	
Years 1,2,3,4 & 5	▪ TCEQ SSO objectives met ▪ Annual training for municipal employees completed ▪ GIS layers and map updated ▪ Municipal facilities identified and updated to database and GIS ▪ Contractor database created. Review bid and contract forms ▪ Review legal authority ▪ Facility assessments complete

ELEMENT 5.2: MS4 MAINTENANCE ACTIVITIES

The storm drainage system requires regular maintenance to make sure that the control structures intended to prevent pollution are functioning as intended, and to mitigate/reduce negative impacts to water quality. Implementing a program to address structural controls, floatables, and roadways improves the integrity of the storm sewer system and decreases the potential for the discharge of pollutants to the MS4.

APPLICABLE STORMWATER RELATED CONTROL MEASURES

5.2.A Structural Controls

Structural controls within the MS4 that are owned, operated and maintained by the City, include the conveyances (creeks and channels) and engineered control systems (drainage inlets and piping systems, culverts, and detention and retention ponds). Ongoing operations and maintenance of these structural controls can reduce the discharge of pollutants from the MS4.

The MS4 maintenance program for structural controls includes a regular program of inspections, repair and maintenance activities for the above listed infrastructure. The City uses a tiered maintenance approach to prioritize cleaning and repair activities and opportunities to incorporate water-quality improvement measures.

5.2.A.1 System Repair and Maintenance

Regular inspections, maintenance and repair for the pipes, culverts, and ditches can prevent blockages, reduce flooding and limit pollution to the MS4. Depending on infrastructure type, inspections are conducted through CCTV or visual observation for any necessary cleaning, maintenance, and repair.

5.2.A.2 Water Quality and Flood Control Structures

Inlets and detention ponds are part of the City's structural controls. The City currently maintains 30 detention ponds, 95.3 miles of creek channels, 107.1 miles of storm sewer pipes, and 3,679 inlets. Maintenance of these facilities includes regular inspections, minor erosion repairs, and desilting as necessary to maintain flood control capacity.

5.2.B Floatables

Floatables are the most visible indication of manufactured pollution to surface water. The City has implemented a multi-faceted floatables program to address this issue. In addition to structural controls, litter abatement programs are in place to reduce discharge of floatables into the MS4. Floatables removal improves surface water quality, channel aesthetics, and drainage system conveyance.

5.2 .C Litter Abatement

The City collaborates with Keep Brazos Beautiful (KBB) for (1) promoting educational awareness regarding environmental stewardship and (2) coordinating volunteer efforts in litter collection, and (3) benchmarking aesthetics for city streets and right-of-ways. This partnership is key in building relationships for service projects and expanding educational outreach within the community.

Table 5-5.2A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 5-5.2B provides a list of interim milestones for the SCMs described in this element.

Table 5-5.2 Element 5.2: MS4 Maintenance Activities		
Activities	**Implementation Schedule (Permit Term 2019-2024)**	**Indicators of Progress**
▪ 6.A.1 System Repair and Maintenance ▪ 6.A.2 Water Quality and Flood Control Structures ▪ 6.B Floatables	▪ Record damaged storm drain piping and schedule maintenance. ▪ Investigate roadside ditches and culverts through service requests. ▪ Asset management though GIS and database. ▪ Clean and repair system inlets as needed. ▪ Inspect all city-maintained retention and detention ponds annually.	▪ 100% of reported sanitary sewer overflows investigated annually. ▪ A minimum 425 storm sewer manholes and inlets inspected with a goal of 5% increase annually. ▪ Annually review stormwater map to ensure new infrastructure constructed has been added to the storm sewer map.
▪ 6.C Litter Abatement	▪ Support and participate in regional litter abatement programs (Keep Brazos Beautiful, Texas Trash Off, Big Event, etc.). ▪ Support and participate in service projects and volunteer efforts regarding illegal dumping.	▪ A minimum of two citywide cleanup events sponsored annually. ▪ An annual review to ensure that we maintain a good standing with Keep Texas Beautiful will be performed. ▪ A minimum of three stream and creek cleanup events performed annually.

Table 5-5.2B* Element 2: Interim Milestones	
Years 1, 2, 3, 4 & 5	▪ Internal discussion and planning efforts underway ▪ TCEQ SSO objectives met ▪ I-Plan objectives met ▪ Continuation of existing practices

*Element 5-5.2 focuses on core functions within Public Works. Interim milestones for these activities center on continuation of existing and expansion as needed.