



**CITY OF BRYAN**  
*The Good Life, Texas Style.™*

# **STORMWATER MANAGEMENT PROGRAM**

**TPDES Permit No. TXR040336**

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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 <sub>5</sub>	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 <sub>SEG</sub>	Allowable Load from Non-Permitted Sources within the Segment
LA <sub>TL</sub>	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 to be considered for the new SWMP and 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 better define program intent, measurable goals, program outlay, and program function. A summary of revisions and rationale are as follows:

**1. Nomenclature:** The term "Best Management Practice" (BMP) has been replaced with "Stormwater Control Measure" (SCM). The use of the term SCM is specific to the field of stormwater.

**2. SWMP Format:** Element definitions within the SWMP have been restructured to 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 streamlines the format of the previous SWMP and 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.

**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 1<sup>st</sup> and ending September 30<sup>th</sup> 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.

<b>SWMP Element Participation</b>	<b>Public Education, Outreach, and Involvement</b>	<b>Illicit Discharge Detection and Elimination</b>	<b>Construction Site Stormwater Runoff Control</b>	<b>Post-Construction Stormwater Management</b>	<b>Pollution Prevention &amp; Good Housekeeping</b>	<b>MS4 Maintenance Activities</b>
Bryan Texas Utilities	✓				✓	✓
Building Services	✓	✓	✓		✓	✓
Code Enforcement	✓	✓	✓	✓	✓	✓
Coulter Airfield					✓	✓
Engineering	✓	✓	✓	✓	✓	✓
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. Some of the streets are served by storm sewer; 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 IMPAIRED 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 TMDL for the Carters Creek Watershed was approved by EPA on September 27, 2012. The corresponding I-Plan was approved by TCEQ on August 22, 2012.

Waste loading 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 <sub>WWTP</sub>	WLA <sub>SW</sub>	LA <sub>SEG</sub>	LA <sub>TL</sub>	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

\*WLA<sub>WWTP</sub> = 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 among 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 following stream segments are listed in the Texas Water Inventory 303(d) List as “impaired”.

**City of Bryan Impaired Stream Segments – without TMDL**

Segment No.	Segment Name	Impairment
1209A	Country Club Lake	Toxicity in Sediment
1209B	Fin Feather Lake	Toxicity in Sediment
1242B	Cottonwood Branch	Bacteria ( <i>E. coli</i> )
1242C	Still Creek	Bacteria ( <i>E. coli</i> )
1242D	Thompsons Creek	Bacteria ( <i>E. coli</i> )

- 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 A Closure response for soil remediation efforts completed by Legacy Site Services from the dam of Fin Feather 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. Fin Feather Lake is

owned by Union Pacific Railroad and Country Club Lake by the City of Bryan. 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 will be to advise, counsel, or represent the City on such matters relating to property development and sediment disturbance in areas surrounding and including Fin Feather Lake or Country Club Lake.

Indicators of success regarding measures relating to toxicity in sediment will include: (1) number of site plans reviewed, (2) number of construction projects performed, and (3) number of educational opportunities conducted.

- Segment No. 1242B, 1242C, and 1242D: A TMDL is not established for these segments. The same measurable 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 general 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 2010 (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 2010 Implementation Procedures or draft 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 is provided to homeowners associations, parent-teachers associations, church, school organizations, and non-governmental organizations to distribute stormwater pollution prevention messages aimed at a wide range of topics depending upon the age group, demographics, and community interest. Additionally, participation in Brazos Clean Water is another vehicle used for satisfying public education. Brazos Clean Water is a program created by the Brazos Basin Stormwater Education Committee (BBSEC) made up of representatives from Brazos County, the Cities of Bryan and College Station, Texas A&M University, and the Texas Department of Transportation. The purpose of this committee is to facilitate collaboration among local MS4s and maximize effectiveness of local stormwater education efforts in the Brazos region.

### **1.B School Education**

Students have the potential to impact stormwater and water quality in the MS4 and can also 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. BEE Bins (Bryan Environmental Education Bins) are created by the City and provided to educators for classroom instruction at no cost to the educator.

### **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 disseminated to 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. Public presentation concerning SWMP development was presented to Bryan City Council on April 8, 2014. The City openly welcomes input and suggestions from the public regarding the SWMP.

Table 6-1A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 6-1B 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	Indicators to Measure Progress
<ul style="list-style-type: none"> <li>▪ 1.A Community Education</li> </ul>	<b>Years 1 &amp; 2:</b> <ul style="list-style-type: none"> <li>▪ Review existing outreach</li> <li>▪ Continuation of outreach</li> <li>▪ Brainstorm topics and ideas</li> <li>▪ Brainstorm new media avenues</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of PSAs created</li> <li>▪ Traffic count (website, application, media, etc.)</li> <li>▪ Number of media avenues utilized</li> <li>▪ Number of promotional items purchased</li> </ul>
	<b>Year 3:</b> <ul style="list-style-type: none"> <li>▪ Explore options for dual language outreach</li> </ul>	<ul style="list-style-type: none"> <li>▪ Topics to translate identified and translation underway</li> </ul>
	<b>Years 4 &amp; 5:</b> <ul style="list-style-type: none"> <li>▪ Execute dual language media launch</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of dual language materials created</li> <li>▪ Percentage of outreach avenues offered in dual language</li> </ul>
<ul style="list-style-type: none"> <li>▪ 1.B School Education</li> </ul>	<b>Years 1 &amp; 2:</b> <ul style="list-style-type: none"> <li>▪ Continue existing outreach program with schools</li> <li>▪ Evaluate existing programs for program expansion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of presentations</li> <li>▪ Number of school events attended</li> <li>▪ Number of BEE Bins checked out</li> </ul>
	<b>Year 3:</b> <ul style="list-style-type: none"> <li>▪ Explore dual language outreach</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of BEE Bins translated</li> </ul>
	<b>Years 4 &amp; 5:</b> <ul style="list-style-type: none"> <li>▪ Continue existing outreach program with schools</li> <li>▪ Evaluate existing programs for program expansion</li> <li>▪ Explore dual language outreach</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of presentations</li> <li>▪ Number of school events attended</li> <li>▪ Number of BEE Bins checked out</li> <li>▪ Percentage of outreach materials offered in dual language</li> </ul>
<ul style="list-style-type: none"> <li>▪ 1.C Construction Site Operator Education</li> </ul>	<b>Years 1, 2, 3, 4, &amp; 5:</b> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and services</li> <li>▪ Evaluate outreach materials and modify as needed</li> <li>▪ Complete annual multi-sector training for affected staff</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of pre-construction meetings performed</li> <li>▪ Number of outreach materials distributed</li> </ul>
<ul style="list-style-type: none"> <li>▪ 1.D City Staff Education</li> </ul>	<b>Years 1, 3 &amp; 5:</b> <ul style="list-style-type: none"> <li>▪ Perform biannual training of staff implementing</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of employees trained in SWMP</li> </ul>

**Table 6-1A**  
**Element 1: Public Education, Outreach, Involvement and Participation**

Activities	Implementation Schedule	Indicators to Measure Progress
	the City's SWMP ▪ Complete annual multi-sector training for affected staff	▪ Number training sessions completed ▪ Number of employees trained in multi-sector permit
	<b>Years 2 &amp; 4:</b> ▪ Evaluate training materials and modify as needed ▪ Complete annual multi-sector training for affected staff	▪ Number of employees trained in multi-sector permit
▪ I.E Public Participation/Volunteer Activities	<b>Years 1, 2, 3, 4 &amp; 5:</b> ▪ Continuation of existing programs and services ▪ Brainstorm avenues for increasing public participation ▪ Update website with Annual Report	▪ Number of cleanups performed by volunteers ▪ Number of volunteer sampling events (TMDL) ▪ Website updated

**Table 6-1B  
Element 1: Interim Milestones**

Year 1	<ul style="list-style-type: none"> <li>▪ Internal discussion and planning efforts underway</li> <li>▪ Media and marketing avenues explored</li> <li>▪ Employee and contractor training materials reviewed and revised as needed</li> <li>▪ TCEQ SSO objectives met</li> <li>▪ I-Plan objectives met</li> </ul>
Year 2	<ul style="list-style-type: none"> <li>▪ Continuation of internal discussion and planning efforts</li> <li>▪ Media and marketing avenues secured</li> <li>▪ Employee and contractor training materials reviewed and revised as needed</li> </ul>
Year 3	<ul style="list-style-type: none"> <li>▪ Translation of outreach materials and BEE Bins</li> </ul>
Years 4 & 5	<ul style="list-style-type: none"> <li>▪ BEE Bin topics expanded with dual language subjects available</li> </ul>

## **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, facility inspections, and storm drain system information from GIS 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. This method of enforcement involves issuance of a warning as a first step, followed (if compliance is not met) by administrative or legal action. 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.
- A 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.
- A 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 effected 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 upgradient 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, DO, ammonia, turbidity, solids, etc.) when further investigation is needed.
- 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: Staff 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 also include inspection of the facility’s SWPPP (if applicable). Inspection findings will be documented to an inspection report specific to the inspection type (i.e. industrial or construction). Corrective

action to cease discharge will be enacted and may result in 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 and Categorical 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 storm sewer system is critical to providing timely emergency response for spills and detecting illicit discharges. The City's storm sewer system presently consists of 411 different storm sewer outfalls, 56.77 miles of storm sewer pipe, 71 miles of creek channels, and 2,158 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 6-2A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 6-2B 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	Indicators to Measure Progress
<ul style="list-style-type: none"> <li>▪ 2A: Illicit Discharge Detection and Elimination</li> <li>▪ 2B: Storm Sewer Screening and Illicit Discharge Inspections</li> </ul>	<p><b>Year 1:</b></p> <ul style="list-style-type: none"> <li>▪ Identify and correct illicit discharge/connections</li> <li>▪ Establish training program for illicit discharge investigation and elimination</li> <li>▪ Facilitate mechanism for reporting and response to residential concerns regarding illegal dumping and discharge of non-stormwater materials</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of illicit discharge sources identified and corrected</li> <li>▪ Number and types of illicit discharge related work order requests issued</li> <li>▪ TCEQ SSO Initiative objectives met</li> </ul>
	<p><b>Year 2:</b></p> <ul style="list-style-type: none"> <li>▪ Implement training program for illicit discharge investigation and elimination</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inspection and enforcement procedures reviewed</li> <li>▪ Number of employees trained</li> <li>▪ TCEQ SSO Initiative objectives met</li> </ul>
	<p><b>Years 3, 4 &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of training program for illicit discharge investigation and elimination</li> <li>▪ Detect, inspect, and investigate discharges and/or improper disposal of waste</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of employees trained</li> <li>▪ Number and types of illicit discharge related cases worked</li> <li>▪ Number of illicit discharges resolved</li> <li>▪ TCEQ SSO Initiative objectives met</li> </ul>
<ul style="list-style-type: none"> <li>▪ 2B: Storm Sewer Screening and Illicit Discharge Inspections</li> <li>▪ 2C: Sanitary Sewer Overflows and Infiltration</li> </ul>	<p><b>Years 1, 2, 3, 4 &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and services</li> <li>▪ Identify and correct illicit discharge/connections</li> <li>▪ Establish training program for illicit discharge investigation and elimination</li> <li>▪ Facilitate mechanism for reporting and response to residential concerns regarding illegal dumping and discharge of non-stormwater materials</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of sanitary sewer SSOs</li> <li>▪ Number of sanitary sewer SSOs</li> <li>▪ Miles of sanitary sewer inspected using CCTV</li> <li>▪ Miles of sanitary sewer pipe cleaned</li> <li>▪ Miles of root control application completed</li> <li>▪ Number of sewer sub-basins inspected using smoke testing</li> <li>▪ Number of private-side sewer defects identified and repaired</li> <li>▪ Number of public-side sewer defects identified and repaired</li> <li>▪ Number of grease traps inspected</li> <li>▪ Percent compliance for grease traps complying with pumping schedule</li> </ul>

**Table 6-2A**  
**Element 2: Illicit Discharge and Elimination**

Activities	Implementation Schedule	Indicators to Measure Progress
		<ul style="list-style-type: none"> <li>▪ Number of educational events attended</li> <li>▪ Number of educational materials distributed</li> <li>▪ TCEQ SSO Initiative objectives met</li> </ul>
<ul style="list-style-type: none"> <li>▪ 2D: Storm Sewer Map Verification and Update</li> </ul>	<p><b>Year 1, 2, 3 4, &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Inspect and verify condition of outfall and water quality</li> <li>▪ Inspect and verify condition of manholes and inlets (20% of system)</li> <li>▪ Expansion and maintenance of GIS layers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number and types of updates to asset inventory and map</li> <li>▪ Number of manholes and inlets inspected</li> <li>▪ GIS layer updated and current</li> </ul>
<ul style="list-style-type: none"> <li>▪ 2E: Household Hazardous Waste and Oil Recycling</li> </ul>	<p><b>Year 1, 2, 3 4, &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of used oil recycling services</li> <li>▪ Increase marketing and outreach of recycling services</li> </ul>	<ul style="list-style-type: none"> <li>▪ Participation rates per HHW reporting year</li> <li>▪ Number of HHW events hosted per year</li> <li>▪ Volume of used motor oil and cooking oil recycled</li> </ul>
<ul style="list-style-type: none"> <li>▪ 2F: Septic Tanks</li> </ul>	<p><b>Year 1, 2, 3 4, &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of application review with BCHD</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of septic tanks installed in city limits</li> <li>▪ Number of enforcement actions against septic tanks located in the city limits</li> <li>▪ Number of septic tanks removed from service in the city limits</li> </ul>

**Table 6-2B**  
**Element 2: Interim Milestones**

Year 1	<ul style="list-style-type: none"> <li>▪ Internal discussion and planning efforts underway</li> <li>▪ TCEQ SSO objectives met</li> <li>▪ I-Plan objectives met</li> <li>▪ Employee training materials drafted</li> <li>▪ GIS layers and map updated</li> <li>▪ Outfalls inspected</li> <li>▪ 20% of storm sewer inlets and manholes inspected</li> </ul>
Years 2, 3, 4, & 5	<ul style="list-style-type: none"> <li>▪ Continuation of internal discussion and planning efforts</li> <li>▪ Employee training materials complete</li> <li>▪ Continuation of storm sewer inlet and manhole inspections</li> </ul>

### **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 is addressed by implementing effective controls per site-specific Stormwater Pollution Prevention Plans (SWPPPs), construction site inspections, and notifying building applicants of the applicable requirements that affect projects under the TPDES permit regulations. 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. Construction sites are inspected on the following frequencies:

- **Large or Small Construction Sites\***: no less than every 30 calendar days or after major rain events.
- **Very Small Sites** (less than or equal to 1 acre)\*: no less than 3 calendar days from receipt of complaint

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

#### **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.
- Making building permit applicants aware 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 above mentioned development review processes or capital improvement design processes ensures that an erosion control plan and copies of the NOI or CSN are submitted to the City and that a SWPPP is maintained on-site by the contractor. The City's plan review process incorporates consideration of potential water quality impacts, receipt and consideration of information submitted by the public, and 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 reduce sediment and other pollutants from being discharged from the construction site. In addition, appropriate pollution prevention 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 Site Development Review Committee (SDRC) and building permit process, and during the inspections. Various outreach pamphlets have been developed for contractors and home owners to identify their responsibilities with regard to stormwater quality management. Contractors working on capital improvement projects for the City are notified as part of the pre-construction meetings of their requirements for maintaining SWPPP and compliance with the General Permit.

### **3.B Inspection of Construction Sites and Enforcement of Control Measure Requirements**

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

- **Large or Small Construction Sites\***: no less than every 30 calendar days or after major rain events.
- **Very Small Sites** (less than or equal to 1 acre)\*: no less than 3 calendar days from receipt of complaint

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

The 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) are accurately reflected on the site, and are functioning as intended (maintained) to prevent pollution from 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 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 a misdemeanor offense.

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

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

An inventory of all City-permitted active public and private construction sites is accessible through records kept in various spreadsheets and permitting software managed between Engineering and Building Services.

### **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 and make them accessible through the internet. Maintain and revise as necessary the stormwater quality requirements in the standard construction contracts for capital improvement projects.

Table 6-3A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 6-3B provides a list of interim milestones for the SCMs described in this element.

**Table 6-3A  
Element 3: Construction Site Runoff**

Activities	Implementation Schedule	Indicators to Measure Progress
<ul style="list-style-type: none"> <li>▪ 3A: Construction Plan Review</li> </ul>	<p><b>Years 1, 2, 3, 4 &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of Site Development Review and plans review process for Capital Improvement Projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of outreach materials distributed</li> <li>▪ Number of dual language materials created</li> <li>▪ Number of Site Development Review cases</li> <li>▪ Number of Building Permits issued</li> <li>▪ Number of designed Capital Improvement Projects – percentage of Capital Improvement Projects with SWPPP</li> <li>▪ Number of engineered construction plans related to public infrastructure reviewed</li> </ul>
<ul style="list-style-type: none"> <li>▪ 3B: Inspection of Construction Sites and Enforcement of Control Measure Requirements</li> </ul>	<p><b>Years 1, 2, 3, 4 &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of inspection protocol – (1) at least 1 inspection every 30 days for each active project and (2) after major rain events</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of complaint-driven inspections</li> <li>▪ Number of engineered construction plans related to public infrastructure reviewed</li> <li>▪ Number, type, and location of inspections completed</li> <li>▪ Number of inspections needing improvement vs. total number of inspections</li> <li>▪ Number of enforcement actions</li> </ul>
<ul style="list-style-type: none"> <li>▪ 3C: Maintain Legal Authority and Guidelines</li> </ul>	<p><b>Years 1 &amp; 2</b></p> <ul style="list-style-type: none"> <li>▪ Review existing ordinances and control mechanisms for conformance relating to General Permit requirements</li> <li>▪ Internal planning and discussion</li> <li>▪ Amend or propose new ordinance language where needed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of ordinances reviewed</li> <li>▪ Number of ordinance amendments made or new ordinances adopted</li> </ul>
	<p><b>Year 3, 4 &amp; 5</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of internal planning, discussion, and ordinance review</li> <li>▪ Amend or propose new ordinance language where needed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of ordinances reviewed</li> <li>▪ Number of ordinance amendments made or new ordinances adopted</li> </ul>



**Table 6-3B  
Element 3: Construction Site Runoff**

Years 1, 2 & 3	<ul style="list-style-type: none"> <li>▪ Internal discussion and planning efforts underway</li> <li>▪ Employee training materials drafted</li> <li>▪ Inspection frequency met</li> <li>▪ Continuation of internal discussion and planning efforts</li> <li>▪ Ordinances reviewed, amended, or adopted</li> </ul>
Years 4 & 5	<ul style="list-style-type: none"> <li>▪ Continuation of current practices</li> </ul>

## **ELEMENT 4: POST-CONSTRUCTION STORMWATER MANAGEMENT**

Stormwater discharges from new development and redevelopment sites have the potential to degrade water quality, from soil disturbance associated with construction, or from an increase in impervious surface cover. Stormwater control measures 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 development projects and capital improvement 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 any outstanding stabilization measures are noted for the contractor. The sites are also re-inspected one year after acceptance as part of a warranty inspection at which time any remaining control measures such as silt fencing that has not been removed is done so 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, Bryan Code will be updated to include water quality provisions to support enforcement including spill response, reflect changes in state and federal regulations, and improve 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 new and 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 City or owner/operators of new or redeveloped sites.

#### **4.C Evaluation of Flood Control Projects**

Various studies and the technical documents used to develop the Carters Creek Watershed TMDL indicate the potential for significant pollutant loading to occur during the peak flow periods associated with flood events. Incorporating water quality features into capital improvement projects for flood control may provide an effective way of addressing pollutant transport while providing local flood relief. Another approach to reducing flood-borne contaminant transport is to reduce the volume of runoff from developing sites. This secondarily addresses water quality by affecting the hydrologic response of the receiving waterbody; (that is, it reduces the volume of water available to convey pollutants downstream). The City evaluates capital improvement projects each year that offer the potential to integrate water quality design features into flood management-focused design. Additionally, all 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 low in the watershed adjacent to primary systems where detention would cause stacking of peak flows in the watershed. Further evaluation needs to be done to identify the best way to achieve and encourage stormwater quality designs in these detention facilities without increasing the cost to the development.

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

Structural and non-structural controls are intended 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, 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 also be tracked.

Table 6-4A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 6-4B provides a list of interim milestones for the SCMs described in this element.

**Table 6-4A**  
**Element 4: Post Construction Stormwater Management**

Activities	Implementation Schedule	Indicators to Measure Progress
<ul style="list-style-type: none"> <li>▪ 4.A Bryan City Code Review and Updates</li> </ul>	<p><b>Years 1, 2, 3, 4, &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Identify needed change to Bryan City Code with regard to federal state, and local environmental regulations and design practices</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of ordinances reviewed</li> <li>▪ Number of ordinances modified</li> <li>▪ Number of new ordinances adopted</li> </ul>
<ul style="list-style-type: none"> <li>▪ 4.B Establish Post-Construction Stormwater Management Program</li> </ul>	<p><b>Year 1 &amp; 2:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Development written procedures for enforcement, and management mechanism for post-construction stormwater management</li> <li>▪ Review data acquisition procedures and revise as necessary</li> <li>▪ Track number of new development and redevelopment projects meeting MS4 monitoring requirements</li> <li>▪ Evaluate long-term operation and maintenance of stormwater controls</li> <li>▪ Document enforcement actions enacted</li> </ul> <p><b>Years 3, 4 &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> </ul>	<ul style="list-style-type: none"> <li>▪ SOP drafted and practiced</li> <li>▪ Database established</li> <li>▪ Number of plans reviewed</li> <li>▪ Number of site inspections performed</li> <li>▪ Number of enforcement actions enacted</li> <li>▪ Number and types of enforcement actions enacted</li> <li>▪ Evaluate continued operation and maintenance practices</li> </ul>
<ul style="list-style-type: none"> <li>▪ 4.C Evaluation of Flood Control Projects</li> </ul>	<p><b>Years 1, 2, 3, 4, &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Evaluate City capital improvement projects for flood control on a case-by-case basis to assess feasibility of incorporating stormwater controls to address water quality</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of flood control and drainage capital improvement project design evaluated for water quality measures</li> <li>▪ Number of flood control and drainage construction projects with water quality measures initiated</li> <li>▪ Number of flood control and drainage construction projects with water quality measures completed</li> <li>▪ Types and locations of measures implemented</li> <li>▪ Evaluate continued operation and maintenance practices</li> </ul>

**Table 6-4A**  
**Element 4: Post Construction Stormwater Management**

Activities	Implementation Schedule	Indicators to Measure Progress
<ul style="list-style-type: none"> <li>▪ 4.D Implementation and Performance of Structural/Non-structural Controls</li> </ul>	<p><b>Years 1, 2, 3, 4, &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Promote the use of Low Impact Development (LID) and green infrastructure controls including, but not limited to:               <ul style="list-style-type: none"> <li>a) Green Roofs</li> <li>b) Rain Harvesting Systems</li> <li>c) Retention ponds</li> <li>d) Riparian buffer systems</li> <li>e) Permeable pavement</li> <li>f) Bio-swales</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Number, size, type(s), land use and locations of new and redevelopment projects over 1 acre</li> <li>▪ Number, type(s) and locations of LID features implemented at City facilities</li> <li>▪ Evaluate continued operation and maintenance practices</li> </ul>

**Table 6-4B**

**Element 3: Post-Construction Stormwater Management**

Years 1 & 2	<ul style="list-style-type: none"><li>▪ Internal discussion and planning efforts underway</li><li>▪ Employee training materials drafted</li><li>▪ Inspection frequency met</li><li>▪ Continuation of internal discussion and planning efforts</li><li>▪ Ordinances reviewed, amended, or adopted</li></ul>
Year 3	<ul style="list-style-type: none"><li>▪ Employee training materials complete</li></ul>
Years 4 & 5	<ul style="list-style-type: none"><li>▪ Continuation of current practices</li></ul>

**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 STORMWATER 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**

<b>Facility</b>	<b>Regulated Program</b>	<b>Activity</b>
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
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 absolutely 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 water courses, 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 Spill Response**

Multiple departments within the City support this measure. The City responds to spills and employs spill prevention procedures/practices for proper handling, storage, and disposal of hazardous and non-hazardous materials. Notice of hazardous and non-hazardous spills are processed through multiple avenues: Help Bryan, Public Works Call Center, City Manager's Office, Police and Fire Dispatch, and Bryan Texas Utilities. HazMat services are used for circumstances requiring specialized handling and disposal of waste.

#### **5.K 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 6-5A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 6-5B 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	Indicators to Measure Progress
<ul style="list-style-type: none"> <li>▪ 5.A Municipal Facilities Identification</li> </ul>	<b>Year 1:</b> <ul style="list-style-type: none"> <li>▪ Identify City-owned facilities with potential to impact stormwater quality</li> <li>▪ Identify high priority facilities</li> <li>▪ Establish database</li> <li>▪ Update findings to GIS</li> <li>▪ Draft facility-specific SOPs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Applicable facilities identified</li> <li>▪ Database created</li> <li>▪ GIS layer created</li> </ul>
	<b>Year 2:</b> <ul style="list-style-type: none"> <li>▪ Continue to draft facility SOPs</li> <li>▪ Create inspection/assessment form</li> </ul>	<ul style="list-style-type: none"> <li>▪ SOPs completed</li> <li>▪ Database updated</li> <li>▪ GIS updated</li> <li>▪ Facility assessments completed</li> </ul>
	<b>Years 3, 4 &amp; 5:</b> <ul style="list-style-type: none"> <li>▪ Continuation of facility assessments and revision (as needed) to database and GIS</li> </ul>	
<ul style="list-style-type: none"> <li>▪ 5.B Training for Municipal Employees</li> </ul>	<b>Years 1, 2, 3, 4 &amp; 5:</b> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Perform department-specific annual training of staff execution of the City’s SWMP</li> <li>▪ Complete annual multi-sector training for affected staff</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of employees trained in SWMP</li> <li>▪ Number training sessions completed</li> <li>▪ Number of employees trained in multi-sector permit</li> </ul>
<ul style="list-style-type: none"> <li>▪ 5.C Contractor Training and Oversight</li> </ul>	<b>Year 1:</b> <ul style="list-style-type: none"> <li>▪ Evaluate bid and contract documents to reflect contractor performance requirements</li> <li>▪ Evaluate and draft outreach materials</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of contractors educated on City’s SWMP</li> <li>▪ Number of outreach materials completed</li> </ul>
	<b>Years 2,3, 4, &amp; 5</b> <ul style="list-style-type: none"> <li>▪ Revise bid and contract documents to include contractor performance requirements relating to SWMP</li> <li>▪ Utilize mandatory pre-bid meetings as outreach (as necessary)</li> <li>▪ Establish protocol for documenting contractor training</li> <li>▪ Establish protocol for documenting poor contractor</li> </ul>	<ul style="list-style-type: none"> <li>▪ Percentage of contracts amended to include SWMP language</li> <li>▪ Number of contractor performance forms completed for not meeting contractual obligations relating to SWMP</li> </ul>

**Table 6-5A  
Element 5: Pollution Prevention & Good Housekeeping**

Activities	Implementation Schedule	Indicators to Measure Progress
	performance	
<ul style="list-style-type: none"> <li>▪ 5.D MS4 Waste Management</li> </ul>	<b>Years 1, 2, 3, 4, &amp; 5</b> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Perform task/department-specific annual training of staff execution of the City’s SWMP</li> <li>▪ Draft task/facility-specific SOPs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Percentage or volume of waste recycled</li> <li>▪ Number of waste types recycled</li> <li>▪ Percentage or number of toxic chemicals replaced with non-toxic</li> </ul>
<ul style="list-style-type: none"> <li>▪ 5.E Pesticides, Herbicides and Fertilizer Application</li> </ul>	<b>Year 1</b> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Evaluate chemical inventory</li> <li>▪ Draft SOPs</li> <li>▪ Develop schedule for chemical application</li> </ul> <b>Years 2, 3, 4, &amp; 5</b> Continuation of service	<ul style="list-style-type: none"> <li>▪ SOP completed</li> <li>▪ Schedule completed</li> <li>▪ Number of licensed applicators employed by the City</li> </ul>
<ul style="list-style-type: none"> <li>▪ 5.F Street Sweeping</li> </ul>	<b>Years 1, 2, 3, 4 &amp; 5</b> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Sweep all streets at least 2 times per year; thoroughfares at least 4 times per year; city-owned parking lots 4 times per year</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of street miles swept</li> <li>▪ Volume of debris collected through sweeping</li> </ul>
<ul style="list-style-type: none"> <li>▪ 5.G Grass Clippings, Leaf Litter and Animal Waste</li> </ul>	<b>Years 1, 2, 3, 4, &amp; 5:</b> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Review existing outreach</li> <li>▪ Continuation of outreach</li> <li>▪ Review legal authority and amend as necessary</li> <li>▪ Enforcement of city ordinances</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of outreach materials created</li> <li>▪ Number of PSAs created</li> <li>▪ Percentage of city parks providing animal waste stations</li> <li>▪ Number of completed cases</li> </ul>
<ul style="list-style-type: none"> <li>▪ 5.H Road and Parking Lot Maintenance</li> <li>▪ 5. I Cold Weather Conditions</li> </ul>	<b>Year 1</b> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Draft SOPs</li> </ul> <b>Years 2, 3, 4, &amp; 5:</b> <ul style="list-style-type: none"> <li>▪ Continuation of service</li> </ul>	<ul style="list-style-type: none"> <li>▪ SOPs completed</li> <li>▪ Number of deicing events (location and volume)</li> <li>▪ Number of road projects completed (new)</li> <li>▪ Number of road projects completed (maintenance)</li> </ul>
<ul style="list-style-type: none"> <li>▪ 5.J Spill Response</li> </ul>	<b>Years 1, 2, 3, 4, &amp; 5:</b>	

**Table 6-5A  
Element 5: Pollution Prevention & Good Housekeeping**

Activities	Implementation Schedule	Indicators to Measure Progress
	<ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Review existing protocols</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of city employees trained in spill response</li> <li>▪ Number and location of spill events requiring response</li> </ul>
<ul style="list-style-type: none"> <li>▪ 5.K WWTP Performance</li> </ul>	<p><b>Years 1, 2, 3, 4, &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> </ul>	<ul style="list-style-type: none"> <li>▪ TPDES Discharge Permit met</li> <li>▪ Discharge monitoring reports submitted</li> </ul>

**Table 6-5B  
Element 2: Interim Milestones**

Year 1	<ul style="list-style-type: none"> <li>▪ Internal discussion and planning efforts underway</li> <li>▪ TCEQ SSO objectives met</li> <li>▪ I-Plan objectives met</li> <li>▪ Employee training materials drafted</li> <li>▪ GIS layers and map updated</li> <li>▪ Municipal facilities identified and updated to database and GIS</li> <li>▪ Begin construction of municipal facility inspection form</li> <li>▪ Review bid and contract forms</li> <li>▪ Annual training for municipal employees completed</li> <li>▪ Review legal authority</li> <li>▪ Begin construction of SOPs</li> </ul>
Year 2	<ul style="list-style-type: none"> <li>▪ Continuation of internal discussion and planning efforts</li> <li>▪ Municipal facility inspection form drafted</li> <li>▪ Continuation of storm sewer inlet and manhole inspections</li> <li>▪ SOPs complete</li> <li>▪ Bid and contractor forms revised</li> <li>▪ Evaluate chemical inventory</li> </ul>
Years 3, 4 & 5	<ul style="list-style-type: none"> <li>▪ Annual training for municipal employees completed</li> </ul>

## **ELEMENT 6: 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**

#### **6.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 City's MS4 infrastructure includes at least:

- 2,158 Inlets
- 56.77 miles stormsewer pipe
- 267 Retention/Detention Ponds & Lakes
- 411 outfalls
- 71 miles creek channels

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.

##### **6.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.

##### **6.A.2 Water Quality and Flood Control Structures**

Inlets and detention ponds are part of the City's structural controls. Currently, there are 21 detention ponds, 71 miles of creek channels, 56.77 stormsewer pipes, and 2,158 inlets that are City-maintained. Maintenance of these facilities includes regular inspections, minor erosion repairs, and desilting as necessary to maintain flood control capacity.

#### **6.B Floatables**

Floatables are the most visible indication of man-made 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.

#### **6.C Litter Abatement**

The City partners 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 6-6A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Table 6-6B provides a list of interim milestones for the SCMs described in this element.

**Table 6-6  
Element 6: MS4 Maintenance Activities**

Activities	Implementation Schedule	Indicators of Progress
<ul style="list-style-type: none"> <li>▪ 6.A.1 System Repair and Maintenance</li> <li>▪ 6.A.2 Water Quality and Flood Control Structures</li> </ul>	<p><b>Years 1, 2, 3, 4 &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Record damaged storm drain piping and schedule maintenance</li> <li>▪ Investigate roadside ditches and culverts through service requests</li> <li>▪ Asset management through GIS and database</li> <li>▪ 20% system inlets inspected per year</li> <li>▪ Clean and repair system inlets as needed</li> <li>▪ Inspect all city-maintained retention and detention ponds annually</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of pipe areas scheduled for maintenance</li> <li>▪ Number of repairs completed</li> <li>▪ GIS layer created</li> <li>▪ Database created</li> <li>▪ Number of roadside ditches and culverts repaired</li> <li>▪ Number of roadside culverts replaced</li> <li>▪ Volume of debris removed</li> <li>▪ Number of city-maintained ponds inspected</li> </ul>
<ul style="list-style-type: none"> <li>▪ 6.B Floatables</li> </ul>	<p><b>Years 1, 2, 3, 4 &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of inlets protected</li> <li>▪ Number of events where litter intervention is provided</li> <li>▪ Volume of debris collected from street cleaning/right-of-way management</li> </ul>
<ul style="list-style-type: none"> <li>▪ 6.C Litter Abatement</li> </ul>	<p><b>Years 1, 2, 3, 4 &amp; 5:</b></p> <ul style="list-style-type: none"> <li>▪ Continuation of existing programs and focus</li> <li>▪ Support and participate in regional litter abatement programs (Keep Brazos Beautiful, Texas Trash Off, Big Event, etc.).</li> <li>▪ Support and participate in service projects and volunteer efforts regarding illegal dumping</li> <li>▪ Right-of-way litter collection by Solid Waste Assessment Workers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of cleanup events participated in by City staff</li> <li>▪ Number of KBB-led events performed</li> <li>▪ Volume of debris collected from street cleaning/right-of-way management</li> </ul>



**Table 6-6B\***  
**Element 2: Interim Milestones**

Years 1, 2, 3, 4 & 5	<ul style="list-style-type: none"><li>▪ Internal discussion and planning efforts underway</li><li>▪ TCEQ SSO objectives met</li><li>▪ I-Plan objectives met</li></ul>
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\*Element 6-6 focuses on core functions within Public Works. Interim milestones for these activities center on continuation of existing and expansion as needed.

**Bryan City Council Resolution**

**RESOLUTION NO. 3545**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BRYAN, TEXAS, AUTHORITYING IMPLEMENTATION AND CONTINUANCE OF A STORMWATER MANAGEMENT PROGRAM FOR MANAGEMENT OF STORMWATER AND NON-STORMWATER DISCHARGES FROM THE CITY OF BRYAN'S MUNICIPAL SEPARATE STORM SEWER SYSTEM TO SURFACE WATER IN THE STATE.**

**WHEREAS**, Municipal Separate Storm Sewer System (MS4) refers to a conveyance or system of conveyances (including road with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned by the City of Bryan and designed or used for collecting or conveying stormwater which is not part of a publicly owned treatment works (i.e. sewage treatment plant); and

**WHEREAS**, the Texas Commission on Environmental Quality (TCEQ) has implemented the Texas Pollution Discharge Elimination System (TPDES) to regulate stormwater and non-stormwater discharges from a MS4 to surface water in the state; and

**WHEREAS**, on December 13, 2013, the TCEQ reissued the TPDES General Permit No. TXR040000 governing MS4s for an additional 5 year permit term; and

**WHEREAS**, the City of Bryan has established a Stormwater Management Program (SWMP) for operation and maintenance of its MS4 in accordance with TCEQ General Permit No. TXR040000; and

**WHEREAS**, submittal of a Notice of Intent and SWMP to TCEQ is required to obtain permit coverage; and

**WHEREAS**, the City of Bryan's MS4 General Permit authorization is TXR040336; and

**WHEREAS**, the City of Bryan is dedicated to protecting the health, safety, and welfare of its citizens by minimizing impact to surface water quality through management of its MS4.

**NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BRYAN, TEXAS AS FOLLOWS:**

1.

The City will prepare and submit a Notice of Intent to the Texas Commission on Environmental Quality on or before June 11, 2014, stating the City's intent to comply with the General Permit No. TXR040000.

2.

The program will include control measures, ordinances, and standards for public education and participation, construction and development activities, municipal operations, systems maintenance and operation, and illicit discharge identification and elimination.

3.

The Mayor and to the extent permitted under applicable laws and ordinances, the City Manager, shall be authorized to execute the Notice of Intent, Stormwater Management Program, and related instruments as may be required for permit authorization.

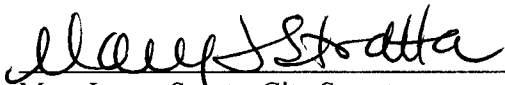
4.

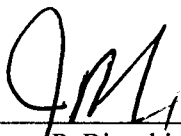
This resolution shall be effective immediately upon its adoption.

**PASSED, APPROVED AND ADOPTED** this 22<sup>nd</sup> day of April, 2014, by affirmative vote of the Bryan City Council meeting in regular session.

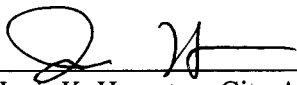
ATTEST:

CITY OF BRYAN

  
\_\_\_\_\_  
Mary Lynne Stratta, City Secretary

  
\_\_\_\_\_  
Jason P. Bienski, Mayor

APPROVED AS TO FORM:

  
\_\_\_\_\_  
Janis K. Hampton, City Attorney

**Attachment A**  
**Illicit Discharge Field Inspection Data Sheet**

**City of Bryan  
Illicit Discharge/Elimination Field Data Sheet**

**General Information**

Location ID#: \_\_\_\_\_ Date: \_\_\_\_\_

Location Name: \_\_\_\_\_ Time: \_\_\_\_\_

Weeks since last rain (>0.1"):      <1 week    2 weeks    >3 weeks

**Field Site Description**

**Discharge**                      Open Channel      Manhole      Outfall      Other \_\_\_\_\_

**Dominant Land Use**      Industrial      Commercial      Residential      Unknown      Other \_\_\_\_\_

**Flow Estimation**

Flow Observed:      Yes      No                      Approximate Pipe Diameter: \_\_\_\_\_

Width of Water Surface (ft.) (1) \_\_\_\_\_

Approx Depth of Water (in.) \_\_\_\_\_                      Divide by 12 to get feet (2) \_\_\_\_\_ ft.

Approx Flow Velocity (ft/s) (3) \_\_\_\_\_

Flow Rate (cubic ft./sec) = (1) x (2) x (3) = \_\_\_\_\_ cfs

**Visual Observations** (circle all that apply)

Odor	None	Sewage	Musty	Other: _____
Color	Clear	Black	Brown	Other: _____
Clarity	Clear	Cloudy	Opaque	Other: _____
Floatables	None	Oily	Garbage	Other: _____
Vegetation	None	Normal	Excessive	Other: _____
Biological	Fish	Larva	Algae	Other: _____
Photos Taken:	Yes	No		

**Field Analyses**

DO	_____ mg/L	Ammonia	_____ mg/L	Copper	_____ mg/L
Water Temp	_____ degrees C	Chlorine	_____ mg/L	pH	_____ SU

Laboratory Sample:      Yes      No      If Yes, attach a copy of chain-of-custody

**Comments:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
**Inspector Name**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

**Attachment B**  
**Dry Weather Field Inspection Report**

## City of Bryan Dry Weather Inspection Report

Date: \_\_\_\_\_ Inspector: \_\_\_\_\_

Time: \_\_\_\_\_

Feature ID: \_\_\_\_\_

Feature Location: \_\_\_\_\_

Receiving Water Body: \_\_\_\_\_

Photos Taken: YES NO Photo ID: \_\_\_\_\_

Weather: Clear Cloudy Temperature: \_\_\_\_\_ Wind Present: YES NO

Precipitation in the past 3 days: YES \_\_\_\_\_ Inches NO

Pipe Flow: None Trickle Steady ¼ pipe flow or more

Seepage Flow: None Trickle Steady ¼ pipe flow or more

Color (if flow is present):

**Debris/Pollution**

None	0	None/Natural	0	Clear	0
Foam	3	Musty	5	Cloudy	5
Floating Scum	8	Sewage/Septic	10	Opaque	10
Oil/Film	9	Vegetative Mat	9	Sewage	10
<b>TOTAL</b>		<b>TOTAL</b>		<b>TOTAL</b>	

**Grand Total Score:** \_\_\_\_\_

Sedimentation:	Open	¼ Full	½ Full	¾ Full	Plugged
Structure Condition:	Open	¼ Full	½ Full	¾ Full	Plugged
Trash/Litter: YES NO	Yard waste observed: YES NO				

General Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Potential Sources/Actions Taken: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Follow Up Required: Yes NO



**Attachment C**  
**Stormwater Inspection Report**



# Stormwater Inspection Report



## General Information

Project Name: \_\_\_\_\_

TPDES Permit #: \_\_\_\_\_

Operator Name: \_\_\_\_\_

Operator Phone: \_\_\_\_\_

## Site Information

NOI posted:  Yes  No  N/A

SWP3 Onsite:  Yes  No  N/A

Sm./Lg. Site Notice posted:  Yes  No  N/A

Erosion Control:  Yes  No  N/A

## Best Management Practices (BMPs)

Current Phase (Circle One):      1      2      3      4      5

### Phase 1 – Pre-Construction (limited ground disturbance, no tracked equipment)

1.	Are silt retention device installed (i.e. silt fencing, check dams) and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
2.	Are portable toilets properly located (i.e. out of flow lines, away from inlets and within a containment area)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
3.	Are storm drain inlets (new/existing) properly protected (i.e. screens, socks)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
4.	Are washout (e.g., paint, stucco, concrete) facilities available, clearly marked, and maintained?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
5.	Are natural resource areas (e.g., floodplain, streams, wetlands, mature trees, etc.) and limits of construction protected with barriers or fences?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A

### Phase 2 – Detention Facilities Installation

Preceding Phase(s) Completed/Adequate?  Yes  No

6.	Are temporary construction exit(s)/entrance(s) installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
7.	Are waste receptacles located on site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
8.	Is sediment basin installed (if $\geq 10$ ac)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
9.	Are material storage procedures/areas adequately implemented and identified?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
10.	Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
11.	Is rough grade detention pond functioning and outlet installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
12.	Slope protection measures installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
13.	Visual inspection of down-stream discharge shows no litter/trash, construction debris or materials?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A

### Phase 3 – Full Clearing/Grading

Preceding Phase(s) Completed/Adequate?  Yes  No

14.	Are dust control measures used (i.e. watering)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
15.	Is street sweeping occurring as required?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
16.	Does rough grade properly drain to pond?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A
17.	Are temporary stabilization measures used (i.e. hay bales, sod, watering)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NR <input type="checkbox"/> N/A

**NR – Needs Repair**



**Attachment D**  
**Municipal Facilities Assessment Checklist**

**City of Bryan  
Facility Assessment Checklist**

**Chemicals**

Does the facility store chemicals that may enter the MS4 (oil – motor or cooking, hydraulic fluid, paint, etc.)?  Yes  No

Where are the chemicals located (storage cabinet, flammable container, etc.)?

What type of chemicals are stored?

Are Material Safety Data Sheets (MSDS) for stored chemicals current and onsite?  Yes  No

How are the chemicals disposed?

**Solid Waste**

Does the facility have solid waste containers?  Yes  No

- Number of containers: \_\_\_\_\_
- Are containers covered?  Yes  No
- Condition of container(s) and disposal area:  Good  Fair  Poor

**Best Management Practices (BMPs)**

Does the facility employ general BMPs?  Yes  No (Check all that apply)

- Spill Kits
  - Secondary Containment
  - Waste Recycling
  - Employee Training
  - Handling for Special Waste
  - Vegetative Swale
  - Grit Trap
  - Other:
- 

Are maintenance records for permanent BMPs maintained onsite?

Does facility maintain or wash vehicles?  Yes  No Washwater goes to: \_\_\_\_\_

**General Housekeeping Practices (litter control, spill cleanup, containment, etc.)**

Facility Conditions:  Good  Fair  Poor

Outfall Conditions:  Good  Fair  Poor

**Facility Classification**

Does the facility meet *high priority* criteria? High priority facilities must include, at a minimum, maintenance yards, hazardous waste facilities, fuel storage locations, and any other facility at which chemicals or other materials have a high potential to be discharge into stormwater.  Yes  No

If "Yes" why: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Facility Name: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Inspector Name: \_\_\_\_\_

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Figure 1-1**  
**TCEQ's Standard A Closure Response**

received  
5/3/10 BSS

Bryan W. Shaw, Ph.D., *Chairman*  
Buddy Garcia, *Commissioner*  
Carlos Rubinstein, *Commissioner*  
Mark R. Vickery, P.G., *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

April 30, 2010

Mr. Gary Shelby, P.E.  
Principal Project Manager  
[Gary.shelby@total.com](mailto:Gary.shelby@total.com)  
Legacy Site Services (LSS)  
468 Thomas Jones Way, Suite 150  
Exton, PA 19341-2528

Re: Response Action Completion Report (RACR), dated February 26, 2009  
Connecting Channel Remediation  
201 Dodge Street, Bryan, Brazos County, Texas  
TCEQ SWR No. 31695  
TCEQ Agreed Order dated December 2, 1992, and Amended April 9, 1999.  
EPA ID No. TXD008085185  
CN No. 600124044 / RN No. 101664084

Dear Mr. Shelby:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above referenced submittal, dated February 26, 2009, and all information available to the staff. The TCEQ hereby reiterates its approval of the corrective action for the connecting channel, which was excavated to background. All properties addressed by the Response Action Completion Report dated February 26, 2009 have no restriction for soils, including property south of (but not including) Finfeather Dam and north of Williamson Drive. Properties remediated within the Kazmeier Pond area will only have a groundwater use restriction. Based on the TCEQ review of the report, Texas Risk Reduction Program (TRRP) Remedy Standard A Residential Protective Concentration Levels (PCLs) have been achieved such that no institutional control or post-response action care is required. No further action is required under 30 Texas Administrative Code (TAC) §350 for the above-referenced areas.

In order to attain Remedy Standard A under TRRP, all industrial solid waste and municipal hazardous waste and waste residues must be removed or decontaminated from affected media (i.e., soil, surface water, groundwater, air, etc.) to applicable human health and ecological based standards and criteria. In order to be released from the requirement to file an institutional control in accordance with 30 TAC §350 Subchapter F, contaminants that remain in place must not exceed Residential PCLs.

Please be aware that it is the continuing obligation of persons associated with a site to ensure that municipal hazardous waste and industrial solid waste are managed in a manner which does not cause the discharge or imminent threat of discharge of waste into or adjacent to waters in the state, a nuisance, or the endangerment of the public health and welfare as required by 30 TAC §335.4. If the activities described in the report fail to comply with these requirements, please take any necessary and authorized action to correct such conditions. A TCEQ field inspector may conduct an inspection of the site to determine compliance with the report.



Mr. Gary Shelby  
Page 2  
April 30, 2010  
TCEQ SWR No. 31695

Questions concerning this letter should be directed to me at (512) 239-2261 or via email at [aartega@tceq.state.tx.us](mailto:aartega@tceq.state.tx.us). When responding by mail, please submit an original and one copy of all correspondence and reports to the TCEQ Remediation Division at Mail Code MC-127 with an additional copy submitted to the local TCEQ Region Office. The information in the reference block should be included in all submittals.

Sincerely,



Antonieta Arteaga, Project Manager  
Corrective Action Team 1, VCP-CA Section  
Remediation Division  
Texas Commission on Environmental Quality

AA/jdm

cc: Mr. Daniel C. Warth, P.E., URS Group, Inc. [Dan\\_Warth@urscorp.com](mailto:Dan_Warth@urscorp.com)  
Mr. Frank Burleson, Waste Program Manager, TCEQ Region 9 Office, Waco

STEVE LOTTI - ARKEMA 9/13/12

**Figure 1-2**  
**Fin Feather Lake and Country Club Lake Monitoring Data**

**Table 1. Arsenic Concentrations Over Time in Municipal Lake**

LOCID	SAMPLE ID	DEPTH	DATE	METHOD	RESULT (mg/L)	Flag
ML-01	WS-ML-01-R1-010	0	8/19/2005	SW6020	0.16	JH
ML-01	WS-ML-01-R2-013	0	5/17/2006	SW6020	0.128	
ML-02	WS-ML-02-R1-010	0	8/19/2005	SW6020	0.0495	JH
ML-02	WS-ML-02-R1-030	1.5	8/19/2005	SW6020	0.0479	JH
ML-02	WS-ML-02-R2-010	0	5/17/2006	SW6020	0.0289	
ML-02	WS-ML-02-R2-020	1	5/17/2006	SW6020	0.0323	
ML-03	WS-ML-03-R1-010	0	8/19/2005	SW6020	0.0831	JH
ML-03	WS-ML-03-R1-030	1.5	8/19/2005	SW6020	0.0781	JH
ML-03	WS-ML-03-R2-010	0	5/17/2006	SW6020	0.0531	
ML-03	WS-ML-03-R2-020	1	5/17/2006	SW6020	0.0541	
ML-04	WS-ML-04-R1-010	0	8/19/2005	SW6020	0.0547	JH
ML-04	WS-ML-04-R1-030	1	8/19/2005	SW6020	0.0522	JH
ML-04	WS-ML-04-R2-010	0	5/17/2006	SW6020	0.0615	
ML-04	WS-ML-04-R2-020	1	5/17/2006	SW6020	0.0584	
ML-05	WS-ML-05-R1-010	0	8/19/2005	SW6020	0.051	JH
ML-05	WS-ML-05-R2-010	0	5/20/2006	SW6020	0.0513	
ML-06	WS-ML-06-R1-010	0	8/19/2005	SW6020	0.047	JH
ML-06	WS-ML-06-R1-020	2.5	8/19/2005	SW6020	0.0497	JH
ML-06	WS-ML-06-R1-033	4	8/19/2005	SW6020	0.0456	JH
ML-06	WS-ML-06-R2-013	0	5/17/2006	SW6020	0.0441	
ML-06	WS-ML-06-R2-020	2.75	5/17/2006	SW6020	0.0421	
ML-06	WS-ML-06-R2-030	4.5	5/17/2006	SW6020	0.0438	
ML-07	WS-ML-07-R1-010	0	8/19/2005	SW6020	0.0491	JH
ML-07	WS-ML-07-R1-020	2.5	8/19/2005	SW6020	0.0488	JH
ML-07	WS-ML-07-R2-010	1	5/17/2006	SW6020	0.0495	
ML-07	WS-ML-07-R2-020	2	5/17/2006	SW6020	0.0483	
ML-07	WS-ML-07-R2-030	3	5/17/2006	SW6020	0.0506	
ML-08	WS-ML-08-R1-010	0	8/19/2005	SW6020	0.0485	JH
ML-08	WS-ML-08-R1-020	2.5	8/19/2005	SW6020	0.0501	JH
ML-08	WS-ML-08-R2-010	0	5/17/2006	SW6020	0.0438	
ML-08	WS-ML-08-R2-020	2	5/17/2006	SW6020	0.0434	
ML-08	WS-ML-08-R2-030	3.5	5/17/2006	SW6020	0.0422	
ML-09	WS-ML-09-R1-010	1	8/19/2005	SW6020	0.0481	JH
ML-09	WS-ML-09-R1-020	2.75	8/19/2005	SW6020	0.0494	JH
ML-09	WS-ML-09-R1-030	4.5	8/19/2005	SW6020	0.0481	JH
ML-09	WS-ML-09-R2-010	1	5/17/2006	SW6020	0.0480	
ML-09	WS-ML-09-R2-020	2.5	5/17/2006	SW6020	0.0487	
ML-09	WS-ML-09-R2-030	4	5/17/2006	SW6020	0.0490	
ML	SW-ML-Composite	0	2/10/2009	SW6010BD	0.0279	
ML	SW-ML-COMPOSITE	0	2/8/2010	SW6010BD	0.0503	
ML	SW-ML-COMPOSITE	0	1/31/2011	SW6010BD	0.0267	
ML	SW-ML-COMPOSITE	0	3/5/2012	SW6010BD	0.0322	
ML	SW-ML-COMPOSITE	0	3/18/2013	SW6020AD	0.0230	

**Arsenic PCL = 0.19 mg/L**

J = Estimated

H = Biased High

**Table 2. Arsenic Concentrations Over Time in Municipal Lake Sediment**

Sample Date	Location	Sample ID	Analytical Method	Critical PCL ( <sup>Total</sup> Sed <sub>Comb</sub> ) (mg/kg)	Arsenic Concentration (mg/kg)
February 2009	ML-1	SE-ML-1	SW6010B	110	92.5
February 2009	ML-3	SE-ML-3	SW6010B	110	19.1
February 2009	ML-6	SE-ML-6	SW6010B	110	29
February 2009	ML-8	SE-ML-8	SW6010B	110	32.7
February 2009	ML-9	SE-ML-9	SW6010B	110	85.6
<b>2009 Average Concentration</b>					<b>52</b>
February 2010	ML-1	SE-ML-1	SW6010B	110	59.3
February 2010	ML-3	SE-ML-3	SW6010B	110	9.45
February 2010	ML-6	SE-ML-6	SW6010B	110	26.5
February 2010	ML-8	SE-ML-8	SW6010B	110	31.8
February 2010	ML-9	SE-ML-9	SW6010B	110	51.5
<b>2010 Average Concentration</b>					<b>36</b>
February 2011	ML-1	SE-ML-1	SW6010B	110	86
February 2011	ML-3	SE-ML-3	SW6010B	110	12.4
February 2011	ML-6	SE-ML-6	SW6010B	110	23.5
February 2011	ML-8	SE-ML-8	SW6010B	110	31.5
February 2011	ML-9	SE-ML-9	SW6010B	110	24.5
<b>2011 Average Concentration</b>					<b>36</b>
February 2012	ML-1	SE-ML-1	SW6010B	110	45.2
February 2012	ML-3	SE-ML-3	SW6010B	110	8.6
February 2012	ML-6	SE-ML-6	SW6010B	110	99.3
February 2012	ML-8	SE-ML-8	SW6010B	110	49.3
February 2012	ML-9	SE-ML-9	SW6010B	110	19
<b>2012 Average Concentration</b>					<b>44</b>
February 2013	ML-3	SE-ML-3	SW6010B	110	8.53
February 2013	ML-6	SE-ML-6	SW6010B	110	20.4
February 2013	ML-8	SE-ML-8	SW6010B	110	61
February 2013	ML-9	SE-ML-9	SW6010B	110	21.1
<b>2013 Average Concentration</b>					<b>28</b>
<b>Five Year Average Concentration</b>					<b>39</b>

Table 3. Arsenic Concentrations Over Time in Finfeather Lake

LOCID	SAMPLE ID	Depth	DATE	METHOD	RESULT (mg/L)	Flag
FL-01	WS-FL-01-R1-010	1	8/18/2005	SW6020	0.123	
FL-01	WS-FL-01-R1-020	4	8/18/2005	SW6020	0.127	
FL-01	WS-FL-01-R1-030	7	8/18/2005	SW6020	0.104	
FL-01	WS-FL-01-R2-010	1	5/18/2006	SW6020	0.104	
FL-01	WS-FL-01-R2-020	4	5/18/2006	SW6020	0.103	
FL-01	WS-FL-01-R2-030	7	5/18/2006	SW6020	0.101	
FL-02	WS-FL-02-R1-010	1	8/18/2005	SW6020	0.130	
FL-02	WS-FL-02-R1-020	4	8/18/2005	SW6020	0.130	
FL-02	WS-FL-02-R1-030	7	8/18/2005	SW6020	0.125	
FL-02	WS-FL-02-R2-010	1	5/16/2006	SW6020	0.0985	
FL-02	WS-FL-02-R2-020	4	5/16/2006	SW6020	0.0993	
FL-02	WS-FL-02-R2-030	7	5/16/2006	SW6020	0.0985	
FL-03	WS-FL-03-R1-010	1	8/18/2005	SW6020	0.135	
FL-03	WS-FL-03-R1-023	4.25	8/18/2005	SW6020	0.124	
FL-03	WS-FL-03-R1-030	7.5	8/18/2005	SW6020	0.105	
FL-03	WS-FL-03-R2-010	1	5/16/2006	SW6020	0.100	
FL-03	WS-FL-03-R2-020	4	5/16/2006	SW6020	0.0956	
FL-03	WS-FL-03-R2-030	7	5/16/2006	SW6020	0.0989	
FL-04	WS-FL-04-R1-010	1	8/18/2005	SW6020	0.126	
FL-04	WS-FL-04-R1-020	2.75	8/18/2005	SW6020	0.126	
FL-04	WS-FL-04-R2-010	1	5/18/2006	SW6020	0.0992	
FL-04	WS-FL-04-R2-020	2	5/18/2006	SW6020	0.0998	
FL-04	WS-FL-04-R2-030	3	5/18/2006	SW6020	0.101	
FL-05	WS-FL-05-R1-010	1	8/18/2005	SW6020	0.128	
FL-05	WS-FL-05-R1-020	5	8/18/2005	SW6020	0.137	
FL-05	WS-FL-05-R1-030	9	8/18/2005	SW6020	0.124	
FL-05	WS-FL-05-R2-013	1	5/16/2006	SW6020	0.100	
FL-05	WS-FL-05-R2-020	5	5/16/2006	SW6020	0.0963	
FL-05	WS-FL-05-R2-030	9	5/16/2006	SW6020	0.0978	
FL-06	WS-FL-06-R1-010	1	8/18/2005	SW6020	0.125	
FL-06	WS-FL-06-R1-020	5.5	8/18/2005	SW6020	0.124	
FL-06	WS-FL-06-R1-033	10	8/18/2005	SW6020	0.104	
FL-06	WS-FL-06-R2-010	1	5/16/2006	SW6020	0.108	
FL-06	WS-FL-06-R2-020	5	5/16/2006	SW6020	0.110	
FL-06	WS-FL-06-R2-030	9	5/16/2006	SW6020	0.111	
FL-07	WS-FL-07-R1-010	1	8/18/2005	SW6020	0.128	
FL-07	WS-FL-07-R1-020	7	8/18/2005	SW6020	0.130	
FL-07	WS-FL-07-R1-030	13	8/18/2005	SW6020	0.114	
FL-07	WS-FL-07-R2-010	1	5/16/2006	SW6020	0.109	
FL-07	WS-FL-07-R2-020	8	5/16/2006	SW6020	0.108	
FL-07	WS-FL-07-R2-030	16.5	5/16/2006	SW6020	0.0973	
FL-08	WS-FL-08-R1-010	1	8/19/2005	SW6020	0.131	JH
FL-08	WS-FL-08-R1-020	5	8/19/2005	SW6020	0.127	JH
FL-08	WS-FL-08-R1-030	9	8/19/2005	SW6020	0.117	JH
FL-08	WS-FL-08-R2-010	1	5/18/2006	SW6020	0.101	
FL-08	WS-FL-08-R2-020	6.5	5/18/2006	SW6020	0.101	
FL-08	WS-FL-08-R2-030	12	5/18/2006	SW6020	0.0808	
FL-09	WS-FL-09-R1-010	1	8/19/2005	SW6020	0.129	JH
FL-09	WS-FL-09-R1-020	3.75	8/19/2005	SW6020	0.122	JH
FL-09	WS-FL-09-R1-030	6.5	8/19/2005	SW6020	0.142	JH
FL-09	WS-FL-09-R2-010	1	5/18/2006	SW6020	0.101	
FL-09	WS-FL-09-R2-020	4.25	5/18/2006	SW6020	0.101	
FL-09	WS-FL-09-R2-030	6.5	5/18/2006	SW6020	0.100	
FL	SW-FL-Composite	0	2/11/2009	SW6010BD	0.0595	
FL	SW-FL-COMPOSITE	0	2/9/2010	SW6010BD	0.0418	
FL	SW-FL-COMPOSITE	0	2/1/2011	SW6010BD	0.0423	
FL	SW-FL-COMPOSITE	0	3/6/2012	SW6010BD	0.0576	
FL	SW-FL-COMPOSITE	0	3/19/2013	SW6020AD	0.0864	

Arsenic PCL = 0.19 mg/L

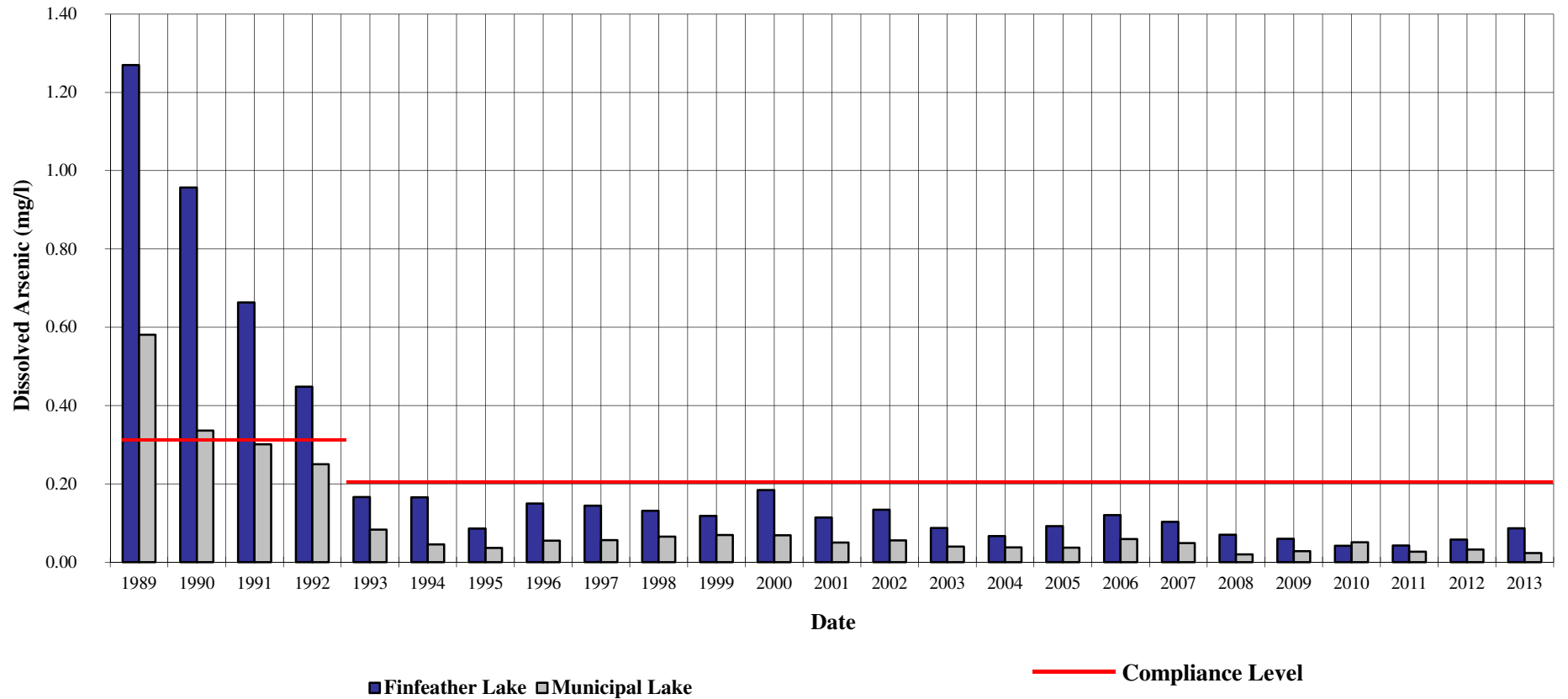
J = Estimated

H = Biased High

**Table 4. Arsenic Concentrations Over Time in Finfeather Lake Sediment**

Sample Date	Location	Sample ID	Analytical Method	Critical PCL ( <sup>Total</sup> Sed <sub>Comb</sub> ) (mg/kg)	Arsenic Concentration (mg/kg)
February 2009	FL-2	SE-FL-2	SW6010B	110	54.9
February 2009	FL-3	SE-FL-3	SW6010B	110	108 (92.3)
February 2009	FL-7	SE-FL-7	SW6010B	110	118
February 2009	FL-8	SE-FL-8	SW6010B	110	37.4
February 2009	FL-9	SE-FL-9	SW6010B	110	45.2
<b>2009 Average Concentration</b>					<b>64</b>
February 2010	FL-2	SE-FL-2	SW6010B	110	59.8
February 2010	FL-3	SE-FL-3	SW6010B	110	83.3
February 2010	FL-7	SE-FL-7	SW6010B	110	50.6
February 2010	FL-8	SE-FL-8	SW6010B	110	64.6
February 2010	FL-9	SE-FL-9	SW6010B	110	48.3
<b>2010 Average Concentration</b>					<b>61</b>
February 2011	FL-2	SE-FL-2	SW6010B	110	80.2
February 2011	FL-3	SE-FL-3	SW6010B	110	61.7
February 2011	FL-7	SE-FL-7	SW6010B	110	149
February 2011	FL-8	SE-FL-8	SW6010B	110	43.6
February 2011	FL-9	SE-FL-9	SW6010B	110	94.4
<b>2011 Average Concentration</b>					<b>86</b>
February 2012	FL-2	SE-FL-2	SW6010B	110	94
February 2012	FL-3	SE-FL-3	SW6010B	110	90.5
February 2012	FL-7	SE-FL-7	SW6010B	110	157
February 2012	FL-8	SE-FL-8	SW6010B	110	113
February 2012	FL-9	SE-FL-9	SW6010B	110	56.7
<b>2012 Average Concentration</b>					<b>102</b>
February 2013	FL-2	SE-FL-2	SW6010B	110	75.2
February 2013	FL-3	SE-FL-3	SW6010B	110	69.4
February 2013	FL-7	SE-FL-7	SW6010B	110	144
February 2013	FL-8	SE-FL-8	SW6010B	110	93.3
February 2013	FL-9	SE-FL-9	SW6010B	110	71.3
<b>2013 Average Concentration</b>					<b>91</b>
<b>Five Year Average Concentration</b>					<b>81</b>

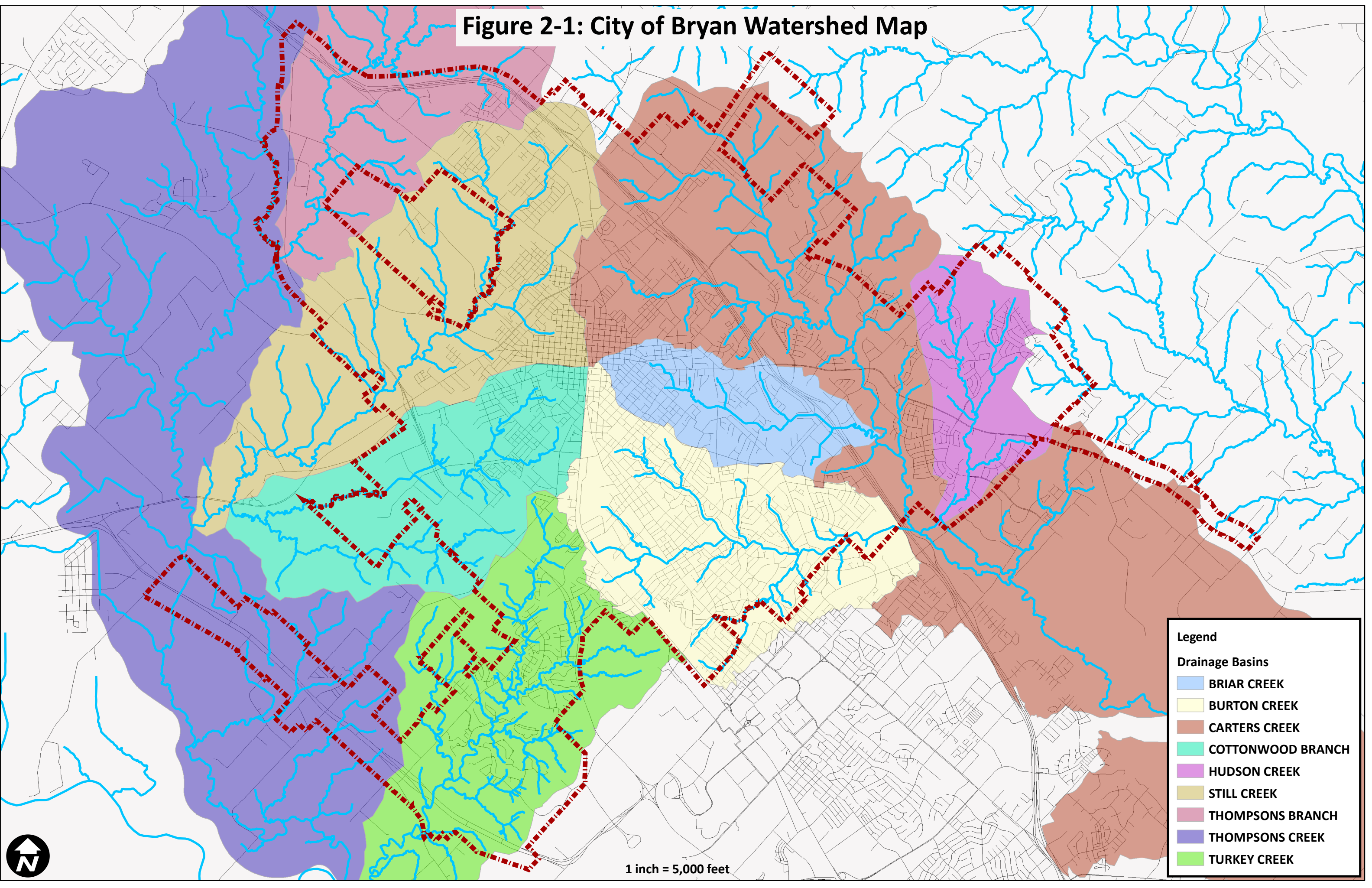
**Figure 1: Finfeather and Muncipal Lakes Annual Average Dissolved Arsenic Concentrations**



**Figure 2-1  
Watershed Map**



Figure 2-1: City of Bryan Watershed Map



**Legend**

**Drainage Basins**

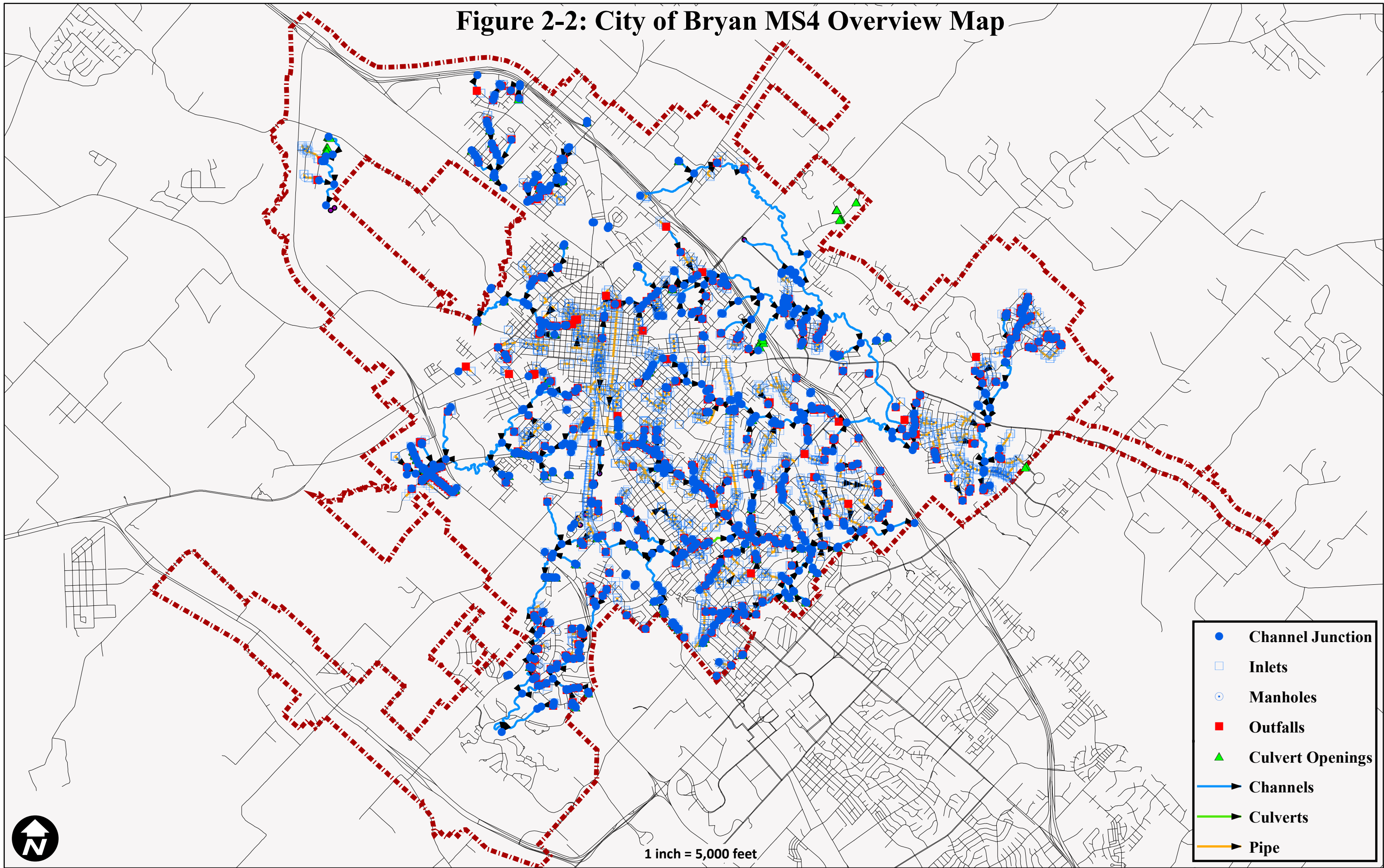
- BRIAR CREEK
- BURTON CREEK
- CARTERS CREEK
- COTTONWOOD BRANCH
- HUDSON CREEK
- STILL CREEK
- THOMPSONS BRANCH
- THOMPSONS CREEK
- TURKEY CREEK



1 inch = 5,000 feet

**Figure 2-2**  
**MS4 Overview Map**

**Figure 2-2: City of Bryan MS4 Overview Map**



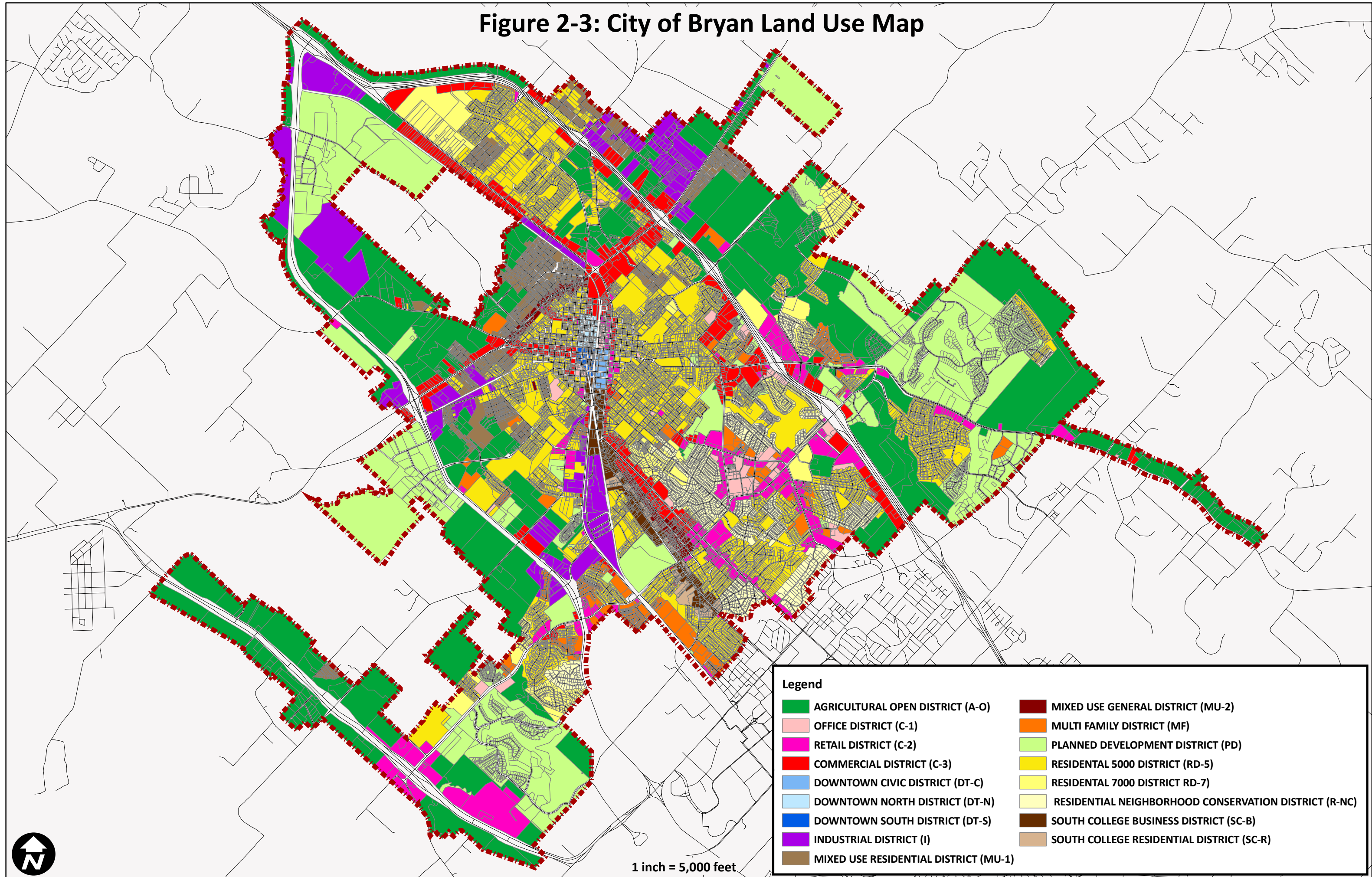
- Channel Junction
- Inlets
- Manholes
- Outfalls
- ▲ Culvert Openings
- ▶ Channels
- ▶ Culverts
- ▶ Pipe

1 inch = 5,000 feet



**Figure 2-3  
Land Use Map**

Figure 2-3: City of Bryan Land Use Map



Legend	
	AGRICULTURAL OPEN DISTRICT (A-O)
	PLANNED DEVELOPMENT DISTRICT (PD)
	RESIDENTIAL 5000 DISTRICT (RD-5)
	RESIDENTIAL 7000 DISTRICT (RD-7)
	SOUTH COLLEGE RESIDENTIAL DISTRICT (SC-R)
	SOUTH COLLEGE BUSINESS DISTRICT (SC-B)
	DOWNTOWN SOUTH DISTRICT (DT-S)
	DOWNTOWN NORTH DISTRICT (DT-N)
	DOWNTOWN CIVIC DISTRICT (DT-C)
	COMMERCIAL DISTRICT (C-3)
	RETAIL DISTRICT (C-2)
	OFFICE DISTRICT (C-1)
	INDUSTRIAL DISTRICT (I)
	MIXED USE RESIDENTIAL DISTRICT (MU-1)
	MULTI FAMILY DISTRICT (MF)
	MIXED USE GENERAL DISTRICT (MU-2)

**Figure 2-4  
Impaired Stream Map**

