

City of Bryan  
Storm Water Management Program  
Annual Report – Year 5



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

Prepared in accordance with TPDES General Permit TXR040000

2018

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**MS4 Annual Report**

## Phase II (Small) MS4 Annual Report Form

TPDES General Permit Number TXR040000

### A. General Information

Authorization Number: TXR040336

Annual Reporting Year: (calendar year, permit year, or fiscal year): Fiscal Year (10/1/2017 – 9/30/2018)

Last day of fiscal year, if applicable: September 30, 2018

MS4 Operator Level: 5

Name of MS4/Permittee: City of Bryan

Contact Name: Mark Jurica Telephone Number: (979) 209-5932

Mailing Address: P.O. Box 1000 Bryan, TX 77803

E-mail Address: [mjurica@bryantx.gov](mailto:mjurica@bryantx.gov)

### B. Narrative Provisions (Part IV Section B.2.(a))

1. Provide information on the status of complying with permit conditions: (Part V - Standard Permit Conditions):

	Yes	No	Explain
Permittee is currently in compliance with the SWMP as submitted to and approved by the TCEQ.		✓	See Attachment 1
Permittee is currently in compliance with recordkeeping and reporting requirements.		✓	With the previous hiring of a full-time drainage inspector, compliance with MCM 3 is in progress with increased record keeping for small lot residential permits.  With the upcoming city wide development online permitting system, we hope to improve record keeping.
Permittee meets the eligibility requirements of the permit (e.g., TMDL requirements, Edwards Aquifer limitations, compliance	✓		TMDL I-Plan Approved by TCEQ August 22, 2012

history, etc.)

2. Provide a general assessment of the appropriateness of the selected BMPs. Use table below or attach a summary, as appropriate (See Example 1 in instructions):

MCM(s)	BMP	BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.
1A: Public Outreach	Community Education	Yes. 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.
1B: Public Education	School Education	Yes. 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.
1C: Public Education	Construction Site Operator Education	Yes. 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.
1D: Public Education	City Staff Education	Yes. 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.
1E: Public Education	Public Participation/Volunteer Activities	This measure includes opportunities for a wide variety of people who live, work, and play in Bryan to participate in SWMP development and implementation. Additionally, this measure promotes community awareness and protection of stormwater quality through participation in the storm drain marking, litter cleanup, and stream monitoring.
2A: Illicit Discharge	Illicit Discharge Detection and Elimination	Yes. The City's Illicit Discharge Detection and Elimination practices are used to locate and remove prohibited discharges from entering the storm drainage
2B: Illicit Discharge	Storm Sewer Screening and Illicit Discharge Inspections	Yes. 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.
2C: Illicit Discharge	Storm Sewer Map Verification and Update	Yes. Maintaining an updated and accurate map of the storms sewer system is critical to providing timely emergency response for spills and detecting illicit discharges

<b>MCM(s)</b>	<b>BMP</b>	<b>BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.</b>
2D: Illicit Discharge	Household Hazardous Waste and Oil Recycling	Yes. 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.
2E: Illicit Discharge	Septic Tanks	Yes. 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 closure requirements for failing septic tanks located within the city limits.
3A: Construction Run Off	Construction Plan Review	Yes. Expansion of the plan and permit issuance process is needed to ensure construction activity and land disturbance conforms to TXR0150000 and the City' SWMP.  Amending legal authority to establish a stormwater permit process yields opportunity for improving this BMP. Review of internal policy and process relating to permit issuance for general construction and land disturbance (without amending the existing legal authority) serves as an alternative for BMP enhancement.
3B: Construction Run Off	Inspection of Construction Sites and Enforcement of Control Measure Requirements	Yes. The inspection verifies that the structural and non-structural control measures as outlined on the Erosion Control Plan and in the Stormwater Pollution Prevention Plan (SWPPP) are accurately reflected on the site, and are functioning as intended (maintained) to prevent pollution from leaving the site. The City maintains legal authority to inspect construction sites and require site compliance.  The City has funding for the new online permitting software that will centralize and track these items. The City was in the process of testing the new online permitting system readying for "go live" in 2018; however technical issues and company restructuring has put an undetermined delay on this. Currently the inspection record keeping is being maintained electronically through pdf and photographic records but not in a centralized fashion until online software is in place.
3C: Construction Run Off	Maintain Legal Authority and Guidelines	Yes. The City will maintain its legal authority and update as necessary to comply with the TXR150000, TXR040000, and TXR050000 General Permits. 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
4A: Post Construction	Bryan City Code Review and Updates	Yes. 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.

<b>MCM(s)</b>	<b>BMP</b>	<b>BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.</b>
4B: Post Construction	Establish Post-Construction Stormwater Management Program	Some components of this program exist but development of a more formal program is still needed. For large residential sites and commercial sites, a one year warranty inspection is performed at which time any deficiencies are remedied by the owner. If no deficiencies are noted it is at that time that we insure all BMPs that were employed that are not long term BMPs (such as silt fence) are removed from the site. A program was established for inspections of existing stormwater detention ponds (private and public facilities)
4C: Post Construction	Evaluation of Flood Control Projects	Yes. 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 Site Development Review 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.
4D: Post Construction	Implementation and Performance of Structural/Non-structural	Detention pond inspection program was launched and a total of 16 stormwater pond inspections were performed this permit term.
5A: Pollution Prevention & Housekeeping	Municipal Facilities Identification	Yes. The City maintains SOPs for general good housekeeping, equipment washing, and fueling operations and vehicle maintenance, and chemical application. Furthermore, city-owned facility assessments are performed one time per period term.
5B: Pollution Prevention & Housekeeping	Training for Municipal Employees	Yes. 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.
5C: Pollution Prevention & Housekeeping	Contractor Training Oversight	Yes. 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.
5D: Pollution Prevention & Housekeeping	Waste Management	Yes. 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.
5E: Pollution Prevention & Housekeeping	Pesticides, Herbicides and Fertilizer Application	Yes. 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.
5F: Pollution Prevention & Housekeeping	Street Sweeping	Yes. 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.

MCM(s)	BMP	BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.
5G: Pollution Prevention & Housekeeping	Grass Clippings, Leaf Litter, and Animal Waste	Yes. 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 I-Plan establishes 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.
5H: Pollution Prevention & Housekeeping	Road and Parking Lot Maintenance	Yes. 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.
5I: Pollution Prevention & Housekeeping	Cold Weather Conditions	Yes. Application of salt or sand to roadways and sidewalks is performed on a limited basis.
5J: Pollution Prevention & Housekeeping	Spill Response	Yes. The City responds to spills and employs spill prevention procedures/practices for proper handling, storage, and disposal of hazardous and non-hazardous materials. HazMat services are used for circumstances requiring specialized handling and disposal of waste.
5K: Pollution Prevention & Housekeeping	WWTP Performance	Yes. A waste load allocation of 36.25 CFU/100 mL is established in the Carters Creek TMDL I-Plan for <i>E. coli</i> loading associated effluent discharges from the Burton Creek WWTP. Proper operation and maintenance of each WWTP plays a key role in reducing <i>E. coli</i> loading to each plant's receiving stream.  See Attachments 2, 3 and 4
6A: MS4 Maintenance Activities	System Repair and Maintenance	Yes. 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 reduce the discharge of pollutants from the MS4.
6B: MS4 Maintenance Activities	Water Quality and Flood Control Structures	Yes. 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 reduce the discharge of pollutants from the MS4.
6C: MS4 Maintenance Activities	Floatables	Yes. 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.
6D: MS4 Maintenance Activities	Litter Abatement	Yes. 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.

3. Describe progress towards reducing the discharge of pollutants to the maximum extent practicable. Summarize any information used (such as monitoring data) to evaluate reductions in the discharge of pollutants. Use a table or attach a narrative description as appropriate:

MCM	BMP	Parameter	Quantity	Units	Does BMP Demonstrate a Direct Reduction in Pollutants? (Yes
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					<b>/ No / Explain)</b>
1	Community Education	Outreach Materials	<ul style="list-style-type: none"> <li>▪ \$1,952 expensed for utility bill insert – Common Code Violations</li> <li>▪ 4,215 promotional items ordered. \$3,860.34 expensed.               <ul style="list-style-type: none"> <li>✓ City of Bryan News Channel 16</li> <li>✓ Community Hero</li> <li>✓ Bryan Police Academy</li> <li>✓ National Night Out</li> <li>✓ Bryan Police Academy (Sp)</li> <li>✓ Habitat New Home Owners</li> <li>✓ Neighborhood Night Out</li> <li>✓ Radio Algeria</li> <li>✓ Various HOA Meetings</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Dollars</li> <li>▪ Events</li> </ul>	Yes. Heavy emphasis on public education is focused to illegal dumping and general usage of the sewer system. Work order history combined with system overflows show a reduction in illicit discharges and system overflows.
2	Illicit Discharge & Elimination	Overflows/Releases	<ul style="list-style-type: none"> <li>▪ 37</li> <li>▪ 242</li> <li>▪ 31.1</li> </ul>	<ul style="list-style-type: none"> <li>▪ SSOs</li> <li>▪ Defects Found</li> <li>▪ Mile of Pipe Tested</li> </ul>	<p>Yes. Burton Creek and Country Club Branch are impaired stream segments located within the City of Bryan. A TMDL has been established for these stream segments. Requirements of the MS4 combined with the TDML I-Plan center on identification and elimination of point and non-point sources of <i>E. coli</i>.</p> <p>See Attachments 2,3 and 4</p>
3	Construction Site Management	Plans Reviewed	<ul style="list-style-type: none"> <li>▪ 41</li> </ul>	Permits Issued changed	Yes. Sites were inspected on a regular basis with goal of inspecting at least monthly or more frequently if wet weather. Large sites were inspected more frequently than smaller sites. See Attachment 9.
4	Construction Site Management	Post Construction Controls	<ul style="list-style-type: none"> <li>▪ 84</li> </ul>	Inspections	Yes. Commercial and Residential subdivisions having public infrastructure associated with them (84) were inspected at the 1-year warranty period; and commercial sites w/o public infrastructure that we received complaints on (2); to note any deficiencies and to remove any remaining temporary BMPs such as silt fence. 16 detention pond inspections were performed.
5	Training for Municipal Employees	Employees Trained	<ul style="list-style-type: none"> <li>▪ 48</li> </ul>	Employees Trained	Yes. Training on topics relating to MS4 increase employee education and awareness to permit conditions and

					responsibilities.
6	System Screening	Inlet Inspections	▪ 366	Inspections	Yes. Inlet inspections are databased through work order history. Work orders deter illicit discharges in the future by allowing utility managers the ability to track current and previous conditions/occurrences of an individual inlet.

4. Provide the measurable goals for each of the MCMs, and an evaluation of the success of the implementation of the measurable goals (See Example 2 in instructions):

MCM(s)	Measurable Goal(s)	Success																																
1A: Public Education	<p>a. Number of PSAs created</p> <p>b. Traffic count (website, application, media, etc.)</p> <p>c. Number of media avenues utilized</p> <p>d. Number of promotional items purchased</p> <p>e. Number of dual language materials created</p> <p>f. Percentage of outreach materials offered in dual language</p>	<p>a. 2</p> <p>b. Web traffic tracked by Google Analytics. Traffic count:</p> <table><thead><tr><th>Web Page</th><th>FY17 Page Views</th><th>FY18 Page Views</th><th>% Change</th></tr></thead><tbody><tr><td><i>Code Enforcement</i></td><td>6,318</td><td>5,682</td><td>-10%</td></tr><tr><td><i>Permits</i></td><td>10,547</td><td>9,672</td><td>-8%</td></tr><tr><td><i>Building Services</i></td><td>4,521</td><td>4,045</td><td>-10.53%</td></tr><tr><td><i>Building Design</i></td><td>861</td><td>679</td><td>-21.14%</td></tr><tr><td><i>Building FAQ</i></td><td>1,708</td><td>1,466</td><td>-14.17%</td></tr><tr><td><i>Environmental Svc</i></td><td>15,706</td><td>17,596</td><td>12%</td></tr><tr><td><i>Stormwater Mgt</i></td><td>965</td><td>531</td><td>-44.97%</td></tr></tbody></table> <p>c. City of Bryan Channel 16, City of Bryan Website, and City of Bryan social media pages are used as outreach to the public.</p> <p>d. 4,215 items ordered and distributed. \$3,860.34. One utility bill insert was mailed. \$1,952. (See Attachment 6)</p> <p>e. 4</p> <p>f. 100%</p>	Web Page	FY17 Page Views	FY18 Page Views	% Change	<i>Code Enforcement</i>	6,318	5,682	-10%	<i>Permits</i>	10,547	9,672	-8%	<i>Building Services</i>	4,521	4,045	-10.53%	<i>Building Design</i>	861	679	-21.14%	<i>Building FAQ</i>	1,708	1,466	-14.17%	<i>Environmental Svc</i>	15,706	17,596	12%	<i>Stormwater Mgt</i>	965	531	-44.97%
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1B: Public Education	<p>a. Number of presentations</p> <p>b. Number of school events attended</p> <p>c. Percentage of outreach materials offered in dual language</p>	<p>a. 6 (Carver Kemp, Autumn Lakes, NNO, Radio Algeria, Council Workshop, Habitat New Home Owners)</p> <p>b. 0</p> <p>c. 100% for the four brochures referenced above. City of Bryan website is ADA compliant and provides site visitors with translation opportunity.</p>																																
1C: Public Education	<p>a. Number of pre-construction meetings performed</p> <p>b. Number of outreach materials distributed</p>	<p>a. 28</p> <p>b. 28</p>																																
1D: Public Education	<p>a. Number of employees trained in SWMP</p> <p>b. Number training sessions completed</p> <p>c. Number of employees trained in multi-sector permit</p>	<p>a. 48</p> <p>b. 2</p> <p>c. 16</p>																																

<b>MCM(s)</b>	<b>Measurable Goal(s)</b>	<b>Success</b>
1E: Public Education	<ul style="list-style-type: none"> <li>a. Number of cleanups performed by volunteers</li> <li>b. Number of volunteer sampling events (TMDL)</li> <li>c. Website updated</li> </ul>	<ul style="list-style-type: none"> <li>a. 6. Groesbeck, Newton, Kemp Elementary School, Austin's Colony, Sam Rayburn Middle School, and Clear Leaf</li> <li>b. TDML project has completed. No sampling events have been performed. Control measure will be retained for reconnaissance performed by the City or other.</li> <li>c. City of Bryan website is updated annually with the submitted annual report. Brazos Clean Water Website is maintained by Texas Water Resource Institute. Website is updated with information provided by the contributing entities (Bryan, College Station, TAMU, Brazos Co., etc.).</li> </ul>
2A: Illicit Discharge and Elimination	<ul style="list-style-type: none"> <li>a. Number of illicit discharge sources identified and corrected</li> <li>b. Number and types of illicit discharge related work order requests issued</li> <li>c. TCEQ SSO Initiative objectives met</li> </ul>	<ul style="list-style-type: none"> <li>a. 476 (234 sewer/water cases, 206 private defects, 8 missing/broken cleanouts, 27 sewer main defects, 1 broken/damaged manhole)</li> <li>b. 476 (234 sewer/water cases, 206 private defects, 8 missing/broken cleanouts, 27 sewer main defects, 1 broken/damaged manhole)</li> <li>c. SSOI objectives met. SSOI report submitted to TCEQ</li> </ul>
2B: Illicit Discharge and Elimination	<ul style="list-style-type: none"> <li>a. Number of sanitary sewer SSOs</li> <li>b. Miles of sanitary sewer pipe cleaned</li> <li>c. Mile of pipe inspected for root invasion</li> <li>d. Number of sewer sub-basins inspected using smoke testing</li> <li>e. Number of private-side sewer defects identified and repaired</li> <li>f. Number of public-side sewer defects identified and repaired</li> <li>g. Number of grease traps inspected</li> <li>h. Number of educational events attended</li> <li>i. Number of educational materials distributed</li> <li>j. TCEQ SSO Initiative objectives met</li> </ul>	<ul style="list-style-type: none"> <li>a. 37</li> <li>b. 89</li> <li>c. 89</li> <li>d. 3</li> <li>e. 206</li> <li>f. 28</li> <li>g. 44</li> <li>h. &gt;20 (Neighborhood Night Out, Copperfield HOA, Citizens Police Academy, Radio Algeria)</li> <li>i. \$1,952 expensed for a utility bill insert. \$3,860.64 expensed for promotional items (4,215 items). (See Attachment 6)</li> <li>j. SSOI objectives met. Report submitted to TCEQ on October 30, 2018</li> </ul>
2D: Illicit Discharge and Elimination	<ul style="list-style-type: none"> <li>a. Number and types of updates to asset inventory and map</li> <li>b. Number of manholes and inlets inspected</li> <li>c. GIS layer updated and current</li> </ul>	<ul style="list-style-type: none"> <li>a. Assets are updated to GIS in real-time. Changes made to GIS are driven by (1) field observations and (2) new construction</li> <li>b. 366 manholes and 366 inlets were inspected this reporting period.</li> <li>c. GIS is updated daily to reflect changes and/or additions made to the water and sewer system base maps</li> </ul>
2E: Illicit Discharge and Elimination	<ul style="list-style-type: none"> <li>a. Participation rates per HHW reporting year</li> <li>b. Number of HHW events hosted per year</li> </ul>	<ul style="list-style-type: none"> <li>a. Traffic Count: October 2017 (2,043 vehicles) and April 2018 (1,756 vehicles)</li> <li>b. 2</li> <li>c. 4,367 gallons of used motor oil, 20 drums of used oil filters, 1 collection for antifreeze. The city's cooking grease recycler was purchased by a new company.</li> </ul>

MCM(s)	Measurable Goal(s)	Success
	c. Volume of used motor oil and cooking oil recycled	Collection quantity for the reporting period was not available from the new provider. (see Attachment 7)
2F: Illicit Discharge and Elimination	a. Number of septic tanks removed from service in city limits b. Number of enforcement actions against septic tanks located in the city limits	a. 0 b. 0
3A: Construction Site Runoff	a. Number of outreach materials distributed b. Number of dual language materials created c. Number of Site Development Review cases d. Number of Building Permits issued e. Number of designed Capital Improvement Projects – percentage of Capital Improvement Projects with SWPPP f. Number of engineered construction plans related to public infrastructure g. Number of small residential construction sites plans reviewed	a. 28 b. 0 c. 242 new cases d. 10,808 total e. 6 – 100% f. 48 (#of projects total from inspectors list including upcoming) g. 614 (Includes 498 single family homes, 32 swimming pools, 119 manufactured homes)
3B: Construction Site Runoff	a. Number of complaint-driven inspections b. Number of engineered construction plans related to public infrastructure reviewed c. Number, type, and location of inspections completed d. Number of inspections needing improvement vs. total number of inspections e. Number of enforcement actions enacted f. Small residential	a. 61 b. 52 c. A total of 995 inspections were performed (458 engineering commercial / subdivision construction site inspections; and 537 residential inspections were performed) d. 464 total inspections where deficiencies were found out of 995 total inspections e. 4 (1 engineering and 3 stormwater inspector) f. 364

MCM(s)	Measurable Goal(s)	Success
	construction sites inspected	
3C: Construction Site Runoff	a. Number of ordinances reviewed b. Number of ordinance amendments made or new ordinances adopted	a. 1 b. 0
4A: Post Construction Stormwater	a. Number of ordinances reviewed b. Number of ordinances modified c. Number of new ordinances adopted	a. 1 – Drainage Design Guidelines. Formal adoption pending. (referenced in ordinance) b. 1 – Drainage Design Guidelines Formal adoption pending. (referenced in ordinance) c. 0
4B: Post Construction Stormwater	a. Database established b. Number of site inspections performed c. Number of enforcement actions enacted d. Evaluate continued operation and maintenance practices e. Develop written procedures for enforcement and management mechanisms for post-construction stormwater management	a. Database established, in 2019-2020 an online permitting/inspection process will be launched to further enhance our inspection process. b. 84 commercial/subdivision inspections performed c. 0 – voluntary compliance on issues noted d. With the online permitting/inspection process development, our processes were evaluated and will continue to be modified to better our reporting/inspection capabilities. e. Draft SOP prepared, procedures will be combined with other departments to produce a complete document.
4C: Post Construction Stormwater	a. Number of flood control and drainage construction projects with water quality measures initiated b. Number of flood control and drainage construction projects with water quality measures completed c. Types and locations of measures implemented d. Evaluate continued operation and maintenance practices	a. 34 b. 9 c. Compared to previous years where we listed zero, this year we added projects with 2yr (or stream bank erosion) detention as water quality measures. d. See Section E Stormwater Activities for planned stormwater activities in the next reporting period. Detention pond inspections were performed in this term and will continue in future terms. A total of 16 pond inspections were performed for existing stormwater facilities, with the goal to perform inspections on a 2 year rotation.
4D: Post Construction Stormwater	a. Number of new and redevelopment projects over 1 acre b. Number, type(s) and locations of LID	a. 33 b. 0 c. Ongoing

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.

MCMs addressing impaired waterbodies are highlighted in green within this report.

See Attachments 2 - 6

2. Describe the implementation of targeted controls if the small MS4 discharges to an impaired water body with an approved TMDL (*Part II Section D.4.(a)*):

See D.1 above.

3. Report the benchmark identified by the MS4 and assessment activities (*Part II Section D.4.(a)(6)*):

<b>Benchmark Parameter</b>	<b>Benchmark Value (MPN/day)</b>	<b>Description of additional sampling or other assessment activities</b>	<b>Year(s) conducted</b>
Bacteria ( <i>E. coli</i> )	See Attachments 2-5	Sampling efforts are performed by (1) TWRI, TCEQ, and BRA for stream sampling and (2) City of Bryan for WWTP performance.	2015/16

4. Provide an analysis of how the selected BMPs will be effective in contributing to achieving the benchmark (*Part II Section D.4.(a)(4)*):

<b>Benchmark Parameter</b>	<b>Selected BMP</b>	<b>Contribution to achieving Benchmark</b>
Bacteria ( <i>E. coli</i> )	Community Education	Improve water quality within the watershed through public education and outreach.
Bacteria ( <i>E. coli</i> )	Illicit Discharge Detection and Elimination	Continue implementation of SSO initiatives in the watershed, minimizing impacts of raw sewage being spilled in the watershed due to failures in the wastewater collection and treatment system.  See Attachment 3 and 4
Bacteria ( <i>E. coli</i> )	Storm Sewer Screening and Illicit Discharge Inspections	Improve water quality within the watershed through storm sewer maintenance and inspection to identify and correct illicit discharges or connections.
Bacteria ( <i>E. coli</i> )	Sanitary Sewer Overflows and Infiltration	Continue implementation of SSO initiatives in the watershed, minimizing impacts of raw sewage being spilled in the watershed due to failures in the wastewater collection and treatment system.  See Attachment 3

Benchmark Parameter	Selected BMP	Contribution to achieving Benchmark
Bacteria ( <i>E. coli</i> )	Septic Tanks	Improve identification, inspection, pre-installation planning, education, operation, maintenance, and tracking of all OSSFs in the watershed to minimize the potential negative water quality impacts from malfunctioning systems. Septic tanks are regulated by the Brazos County Health Department. The City is working with Brazos County to develop a GIS layer for tracking locations of septic tank installation in the City of Bryan to assist both agencies with system management.
Bacteria ( <i>E. coli</i> )	WWTP Performance	Ensures WWTPs are performing in accordance with their TPDES discharge permit.  See Attachment 4

5. If applicable, report on focused BMPs to address impairment (*Part II Section D.4.(a)(5)*):

Pollutant to Address	Description of Focused BMP	Comments/Discussion
Bacteria ( <i>E. coli</i> )	Private Line Repairs/Smoke Testing	City crews proactively smoke test the sanitary sewer system for defects (public and private). 31.1 miles of sewer pipe were smoke tested for this reporting period. 258 private defects were identified and repaired. 193.3 miles of pipe have been smoke tested since FY2012.
Bacteria ( <i>E. coli</i> )	Sewer Line Cleaning and Inspection	Approximately 89 miles was cleaned and inspected in FY2018.
Bacteria ( <i>E. coli</i> )	Septic Tanks	OSSFs are prohibited for installation if a property is located within 150' of a sewer service. Bryan Code has established protocols for OSSF abandonment and closure when sewer service becomes available. Septic tanks are regulated by the Brazos County Health Department.
Bacteria ( <i>E. coli</i> )	WWTP Performance	WWTPs are operating beneath discharge permit limitations for <i>E. coli</i> . See Attachment 2.

6. Describe progress in achieving the benchmark (*Part II.D.4.(a)(6)*):

Benchmark Indicator	Description/Comments
Sanitary sewer overflows (SSOs)	SSOs are point sources for <i>E. coli</i> and pollutant loading within the watershed. SSO frequency for public overflows decreased for the current monitoring period compared

	with FY2017 (39) compared with the previous FY2016 (41).
Dry weather screening of storm sewer system	Dry weather screening is performed during routine maintenance by staff to pinpoint cross connections and line breakage. 366 inlet and manhole inspections were completed.
Illegal dumping and prohibited discharge cases worked	Code Enforcement responds to citizen complaints concerning illegal dumping and prohibited discharges. See Attachment 5
Sanitary sewer system maintenance and inspection	Sanitary sewer pipe cleaning/inspection combined with smoke testing are tools used for upkeep and maintenance of the sanitary sewer system. <ul style="list-style-type: none"> <li>▪ Private Defects Found (current:206, FY2017: 114)</li> <li>▪ Public Defects Found (current: 52, FY2017: 26)</li> <li>▪ Miles of Pipe Cleaned/Inspected (current: 89, FY2017: 96)</li> </ul>

### E. Stormwater Activities (Part IV Section B.2.(d))

Describe any stormwater activities the MS4 operator has planned for the next reporting year. Use the table or attach a summary, as appropriate:

MCM(s)	BMP	Stormwater Activity	Description/Comments
1A: Public Outreach	Community Education	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
1B: Public Education	School Education	<ul style="list-style-type: none"> <li>▪ Continue existing outreach program with schools</li> <li>▪ Evaluate existing programs for program expansion</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term. BEE Bins are no longer utilized for education. This program and measure will be evaluated and amended as needed.
1C: Public Education	Construction Site Operator Education	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
1D: Public Education	City Staff Education	<ul style="list-style-type: none"> <li>▪ Evaluate training materials and modify as needed</li> <li>▪ Complete annual multi-sector training for affected staff</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
1E: Public Education	Public Participation/Volunteer Activities	<ul style="list-style-type: none"> <li>▪ Continuation of existing programs and services</li> <li>▪ Brainstorm avenues for increasing public participation</li> <li>▪ Update website with Annual Report</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term

<b>MCM(s)</b>	<b>BMP</b>	<b>Stormwater Activity</b>	<b>Description/Comments</b>
2A: Illicit Discharge	Illicit Discharge Detection and Elimination	<ul style="list-style-type: none"> <li>Implement training program for illicit discharge investigation and elimination</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
2B: Illicit Discharge	Storm Sewer Screening and Illicit Discharge Inspections	<ul style="list-style-type: none"> <li>Implement training program for illicit discharge investigation and elimination</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
2C: Illicit Discharge	Storm Sewer Screening and Illicit Discharge Inspections	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
2D: Illicit Discharge	Sanitary Sewer Overflows and Infiltration	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
2E: Illicit Discharge	Storm Sewer Map Verification and Update	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
2F: Illicit Discharge	Household Hazardous Waste and Oil Recycling	<ul style="list-style-type: none"> <li>Continuation of used oil recycling services</li> <li>Increase marketing and outreach of recycling services</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
2G: Illicit Discharge	Septic Tanks	<ul style="list-style-type: none"> <li>Continuation of application review with BCHD</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term

<b>MCM(s)</b>	<b>BMP</b>	<b>Stormwater Activity</b>	<b>Description/Comments</b>
3A: Construction Run Off	Construction Plan Review	<ul style="list-style-type: none"> <li>Continuation of Site Development Review and plans review process for Capital Improvement Projects</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
3B: Construction Run Off	Inspection of Construction Sites and Enforcement of Control Measure Req.	<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>	2017 a full time dedicated drainage inspector was hired for inspection of small & large construction sites. The inspector has bolstered the City's efforts to achieve compliance with construction-site inspection requirements and has resulted in increased enforcement actions. Large sites, sites within a Common Area of Development, and sites with recurring deficiencies received inspections more frequently.
3C: Construction Run Off	Maintain Legal Authority and Guidelines	<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>	Spreadsheet used for data management relating to construction stormwater permits (NOI, NOT, CSN). City of Bryan future online permitting system will track this information when it is implemented.
4A: Post Construction	Bryan City Code Review and Updates	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
4B: Post Construction	Establish Post-Construction Stormwater Management Program	<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>	Written procedures are in development and hope to be complete with our new permit. Full time drainage inspector will be involved in coordinating participating departments in the creation of the SOPs for post construction.

<b>MCM(s)</b>	<b>BMP</b>	<b>Stormwater Activity</b>	<b>Description/Comments</b>
4C: Post Construction	Evaluation of Flood Control Projects	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term. In this permit term, detention pond inspection program was implemented and will continue through future terms.
5A: Pollution Prevention & Housekeeping	Municipal Facilities Identification	<ul style="list-style-type: none"> <li>Continue to draft facility SOPs</li> <li>Create inspection/assessment form</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
5B: Pollution Prevention & Housekeeping	Training for Municipal Employees	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
5C: Pollution Prevention & Housekeeping	Contractor Training Oversight	<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 performance</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
5D: Pollution Prevention & Housekeeping	Waste Management	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
5E: Pollution Prevention & Housekeeping	Pesticides, Herbicides and Fertilizer Application	<ul style="list-style-type: none"> <li>Continuation of service</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term

<b>MCM(s)</b>	<b>BMP</b>	<b>Stormwater Activity</b>	<b>Description/Comments</b>
5F: Pollution Prevention & Housekeeping	Street Sweeping	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
5G: Pollution Prevention & Housekeeping	Grass Clippings, Leaf Litter, and Animal Waste	<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>	<p>Revision of the Solid Waste Ordinance, adoption of a Municipal Setting Designation, and adoption of Local Limits for Thompsons Creek is forecasted for the next reporting period</p> <p>This MCM is a continuous effort that will be performed for the remainder of the permit term</p>
5H: Pollution Prevention & Housekeeping	Road and Parking Lot Maintenance	<ul style="list-style-type: none"> <li>Continuation of service</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
5I: Pollution Prevention & Housekeeping	Cold Weather Conditions	<ul style="list-style-type: none"> <li>Continuation of service</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
5J: Pollution Prevention & Housekeeping	Spill Response	<ul style="list-style-type: none"> <li>Continuation of existing programs and focus</li> <li>Review existing protocols</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
5K: Pollution Prevention & Housekeeping	WWTP Performance	<ul style="list-style-type: none"> <li>Continuation of existing programs and focus</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
6A: MS4 Maintenance Activities	System Repair and Maintenance	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term
6B: MS4 Maintenance Activities	Water Quality and Flood Control Structures	<ul style="list-style-type: none"> <li>Continuation of existing programs and focus</li> <li>Record damaged storm drain piping and schedule</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term

MCM(s)	BMP	Stormwater Activity	Description/Comments
		maintenance <ul style="list-style-type: none"> <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>	
6C: MS4 Maintenance Activities	Floatables	<ul style="list-style-type: none"> <li>Continuation of existing programs and focus</li> </ul>	This MCM is a continuous effort that will be performed for the remainder of the permit term
6D: MS4 Maintenance Activities	Litter Abatement	<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>	This MCM is a continuous effort that will be performed for the remainder of the permit term

## F. SWMP Modifications (Part IV Section B.2.(e))

1. Changes have been made or are proposed to the SWMP since the NOI or the last annual report, including changes in response to TCEQ's review.

Yes      No      ✓

If 'Yes', report on changes made to measurable goals and BMPs:

MCM(s)	Measurable Goal(s) or BMP(s)	Implemented or Proposed Changes (Submit NOC as needed)

<b>MCM(s)</b>	<b>Measurable Goal(s) or BMP(s)</b>	<b>Implemented or Proposed Changes (Submit NOC as needed)</b>

**Note:** If changes include additions or substitutions of BMPs, include a written analysis explaining why the original BMP is ineffective or not feasible and why the replacement BMP is expected to achieve the goals of the original BMP.

2. Explain additional changes or proposed changes not previously mentioned (i.e. dates, contacts, procedures, annexation of land etc.): None

### **G. Additional BMPs (Part IV Section B.2.(f))**

Provide a description and schedule for implementation of additional BMPs that may be necessary, based on monitoring results, to ensure compliance with applicable TMDLs and implementation plans.

<b>BMP</b>	<b>Description</b>	<b>Implementation Schedule (Start Date etc.)</b>	<b>Status / Completion Date (completed, in progress, not started)</b>

### **H. Additional Information (Part IV Section B.2.(g))**

1. Is the permittee relying on another entity/ies to satisfy some of its permit obligations?

Yes      No    ✓

If 'Yes,' provide the name(s) of other entity/ies and an explanation of their responsibilities (add more spaces or pages if needed):

2.a. Is the named permittee sharing a SWMP with other entities?

Yes      No    ✓

2.b. If 'yes,' is this a system-wide annual report including information for all permittees?

Yes      No

If 'Yes,' list all associated permit numbers and permittee names (add additional spaces or pages if needed):

Authorization Number:	_____	Permittee:	_____
Authorization Number:	_____	Permittee:	_____
Authorization Number:	_____	Permittee:	_____
Authorization Number:	_____	Permittee:	_____

## **I. Construction Activities (Part IV Section B.2.(h-i))**

1. The number of construction projects in the jurisdiction of the MS4 where the permittee was not the construction site operator (as provided in submittals to the MS4 operator via notices of intent or site notices    23

2. a. Does the permittee utilize the optional seventh MCM related to construction?

Yes      No    ✓

2. b. If 'yes,' then provide the following information for this permit year:

The number of municipal construction activities authorized under this general permit	
The total number of acres disturbed for municipal construction projects	

**Note:** Though the seventh MCM is optional, implementation must be requested on the NOI or on a NOC and approved by the TCEQ.

## SWMP Compliance Status

This attachment is delivered to provide TCEQ with status update for the City's performance in meeting the conditions adopted into its SWMP and outline areas where the City fell short in its program.

### **Item No. 1: Staff Training. MCM 1 & 5.**

The SWMP identifies that training for city staff will occur biannually. The SWMP-defined training periods are Years 1, 3, and 5. The City's NOI establishes the reporting period as fiscal years (October 1 – September 30). Improved management and consistency is needed for this MCM. Likewise, it is further suggested that this MCM be enhanced by introduction of Parks, BTU, and civil services for staff training.

- Public Works – March 2015 (FY2015 – Reporting Year 2)
- Engineering/Development Services – February 2016 (FY2016 – Reporting Year 3)
- Public Works/Engineering/Development Services – April 2017 (FY2017 – Reporting Year 4)
- Engineering / Development Services – September 28, 2017
- Engineering/Development Services – March 28, 2018 (FY2018 – Reporting Year 5)

### **Item No. 2: Construction Site Management. MCM 3**

The SWMP identifies reporting and recordkeeping requirements for Construction Sites that have the potential to discharge pollutants into the MS4. The SWMP provides a schedule for inspection that consists of 1 inspection every 30 days or 2 inspections every 30 days following a rain event on sites that are equal to or greater than 1 acre, or that are part of a Common Plan of Development. With the addition of a full-time inspector in 2017, small & large construction sites have been inspected to ensure that SWP3s have been implemented on sites with NOI coverage as well as sites below 1 acre in disturbance. With the addition of the expected construction site permitting database, recordkeeping and inspection frequency will be better maintained.

- City has made progress in achieving SWMP inspection schedule, however at this time additional resources in the form of personnel are still required to achieve compliance with inspection requirements for residential sites.
- Large sites and sites with recurring deficiencies were inspected more frequently than small-lot residential sites under 1 acre and not within a Common Area of Development.
- Increased # of enforcement actions in response to construction site inspections and deficiencies found on site.
- Stormwater Inspection forms have been updated to include additional site information and streamline inspection process
- Addition of the construction-site permit database software will allow for greater control of recordkeeping, currently inspection documents and NOI, etc. are not being stored in centralized system.

### **Item No. 3: Post Construction Stormwater Management. MCM 4.**

The SWMP identifies the need for long term maintenance of stormwater features to ensure long term performance of controlling discharges into the MS4. Continued improvements of our processes and procedures are needed to accomplish this measure fully.

- Ordinance needs to be revised pending upcoming new state permit.
- Develop written procedures for enforcement, and management mechanism for post-construction stormwater management; although we have drafted post construction SOP we need to combine procedures from other departments to make a complete document.
- Lack of staff is limiting our ability to inspect stormwater controls on a more frequent basis.

## J. Certification

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Name (printed): Kean Register

Signature: 

Title: City Manager

Date: 11/29/18

Name (printed): Jayson Barfknecht, PhD, P.E.

Signature: 

Title: Public Works Director

Date: 11/28/2018

Name (printed): Paul Kaspar

Signature: 

Title: City Engineer

Date: 11/28/18


Name (printed): Cody Crayatt

Signature: 

Title : Development Manager

Date: 11/27/18

Name (printed): Robert Willis

Signature: 

Title : Streets & Drainage Supervisor

Date: 11-27-2018

Name (printed): Mark Jurica

Signature: 

Title : Treatment & Compliance Manager

Date: 11-20-2018

**Note:** If this is this a system-wide annual report including information for all permittees, each permittee shall sign and certify the annual report in accordance with 30 TAC §305.128 (relating to Signatories to Reports).

**Attachment 2 - Carters Creek Watershed Assessment**

# CARTERS CREEK TOTAL MAXIMUM DAILY LOAD IMPLEMENTATION PROJECT FINAL REPORT

Texas Water Resources Institute TR-488  
February 2016



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## Executive Summary

The “Carters Creek Total Maximum Daily Load Implementation” project was developed to provide additional information to watershed stakeholders regarding the spatial and temporal distribution of *E. coli* concentrations in water across the watershed to aid in planning future implementation efforts across the watershed. This goal was accomplished through a variety of focused tasks that collected water quality data and *E. coli* source information from across the watershed. Water quality monitoring was greatly expanded by utilizing four different monitoring approaches. Routine monthly monitoring conducted at four stations over a two-year period provided additional data for future water body assessments. Reconnaissance monitoring was conducted by volunteers on a monthly basis at 10 locations and provided water quality information in many areas of the watershed that had not been previously monitored. Stormwater sampling was conducted at two locations and demonstrated the influences of runoff events on water quality. Lastly, an intensive water quality monitoring approach was utilized to collect a large number of samples within selected creek segments on the same day to illustrate changes in water quality from upstream to downstream. This approach enabled specific areas of the watershed to be identified where *E. coli* loading is likely to occur.

Sources of *E. coli* across the watershed were also explored through this project. Physical observations were made in multiple locations across the watershed and recorded a diverse suite of *E. coli* contributors across the watershed. Pets and urban wildlife were noted in many developed locations while livestock and wildlife were noted in many of the undeveloped areas. No major influxes of *E. coli* were suspected to come from animals in any one area, but they certainly contribute to the overall *E. coli* load in the watershed. Urban infrastructure was also evaluated to identify areas where it can potentially influence water quality. A geographic information system was used to map infrastructure across the watershed and identify areas where infrastructure density or proximity to the stream suggest an increase in potential for water quality influences.

Combining water quality information with source survey results illustrated areas across the watershed where water quality observations may be at least partly explained by source survey results. These areas warrant further investigation in many cases, especially where infrastructure could be contributing to observed *E. coli* concentrations. Through this project, no simple approach to addressing *E. coli* loading in the watershed was identified. Instead, it will take a concerted effort to address many diffuse sources of *E. coli* across the watershed. Many such measures are already underway in the watershed and the entities responsible for them are addressing this challenging issue.

*E. coli* analysis for the reconnaissance samples were processed differently than routine samples. The City of Bryan Thompsons Creek Wastewater Treatment Facility (WWTF) processed samples from Bryan sub-watersheds and samples from College Station sub-watersheds were processed at the City of College Station's Carters Creek WWTF lab. *E. coli* enumeration was conducted using the IDEXX Colilert-18 method. This method produces results in a most probably number (MPN) or *E. coli* per 100 mL and is widely used for assessment purposes. These methods are considered equals by the state for assessment purposes thus justifying their use. Validation of this assumption of similar results was completed by processing water samples collected from a single site using both methods.

### **Storm Sampling**

Automated sampling devices (ISCO Model 6712 Portable Samplers, Teledyne-ISCO, Lincoln, NE) were deployed on Burton Creek and Carters Creek at Stations 11783 and 21259 (Table 1, Figure 2), respectively to collect stormwater runoff influenced samples. These samplers were programmed to only sample after the creek sites rose to a predetermined level. Once samplers were enabled, they took flow-weighted composite samples of the runoff event and recorded water levels which were translated to stream flow volumes. This data allowed for *E. coli* loads in storm events to be calculated. Samples were processed for *E. coli* concentrations by SAML using the USEPA 1603 method. Only *E. coli* concentrations and water depth/stream flow were recorded for these sampling events.



*Automated Storm Sampler at Station 21259 during a runoff event*

### **Load Duration Curves**

Load Duration Curve Analyses (LDC) was performed in order to assess the bacterial loading for Carters and Burton Creeks. LDCs pair streamflow and *E. coli* concentrations collected on the same date to estimate the pollutant loading reductions needed to meet

the site. These detailed data improved the understanding of each location surveyed throughout the watershed and the distribution of potential water quality stressors.

Geographic information systems (GIS) data was also aggregated to further the understanding of the watershed as it relates to potential *E. coli* loading. The goal of the GIS was to aggregate information across the watershed so that it can be utilized to compare watershed characteristics with water quality and explore potential relationships with observed water quality. Available layers from local entities including Brazos County, COB, COCS, TAMU, and TxDOT were acquired and integrated with statewide and national datasets were also acquired from entities including TCEQ, TxDOT, the US Geologic Survey, the US Department of Agriculture (USDA) Natural Resource Conservation Service, USDA Farm Service Agency, and the Multi-Resolution Land Characteristics Consortium. New information was also created and integrated into the GIS. Watershed survey data were digitized and data layers were created that describe survey observations and depict their location across the watersheds. Water quality layers were also generated that illustrate measured water quality across the watershed.

To estimate the total number of on-site sewage facilities (OSSFs) in the watershed, data available from the Brazos County Health Department was aggregated with information regarding septage disposals made by septic pumping service companies who report the location where it originated. A method developed by Gregory et al. 2013 was also applied to identify other potential OSSFs in the watershed that may not have been noted in other data sets. Briefly, this approach combines Census data, aerial imagery and 911 address point locations to identify the number of residences in areas not serviced by centralized sewer systems. The points estimated were compared to those available from acquired data and locations where OSSFs were likely to be located but not known, were added to create an expected OSSF location layer.

### **Intensive Water Quality Monitoring**

Tributaries of Carters and Burton Creeks routinely found with higher *E. coli* concentrations relative to other areas of the watershed with were sampled using a two-phase intensive sampling approach. The goal of this sampling type was to identify small sections of the monitored stream where *E. coli* concentrations rapidly increased. The approach utilized an initial screening sampling regime where numerous samples were taken along the stream on the same date to roughly identify areas within the stream where substantial *E. coli* concentration increases were observed. Stream reaches found to have rapid increases in *E. coli* as compared to other sampled reaches were resampled with a second intensive sampling event to further refine understanding of water quality

Table 3. P-values for median comparisons between each monitoring site

	80915	11782	80910	80912	80908	11783	80917	80914	80916	80913	80911	11785	21259
80909	0.01	0.09	0.13	0.03	0.01	.02	0.33	0.09	<0.01	<0.01	0.91	<0.01	0.03
80915		0.06	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	0.01	0.04	<0.01
11782			0.01	<0.01	<0.01	<0.01	0.77	<0.01	<0.01	<0.01	0.19	<0.01	<0.01
80910				0.35	0.87	0.83	0.11	0.93	0.25	0.04	0.42	0.15	0.84
80912					0.48	0.43	0.01	0.46	0.80	0.27	0.09	0.81	0.48
80908						0.99	<0.01	0.84	0.13	<0.01	0.13	0.01	0.70
11783							<0.01	0.83	0.13	<0.01	0.14	0.02	0.82
80917								0.03	<0.01	<0.01	0.33	<0.01	0.01
80914									0.23	<0.01	0.30	0.04	0.83
80916										<0.01	0.04	0.11	0.32
80913											<0.01	0.03	<0.01
80911												0.02	0.16
11785													0.03

Table 4. *E. coli* load reductions needed to meet water quality standards in Carters Creek near SH6 (Station 11782)

Flow Condition	% Flow Exceedance	Percent Load Reduction*	Average Annual Loading (cfu/year)
High Flow	0-10%	73.57	2.65E+02
Moist Conditions	10-40%	47.77	1.74E+02
Mid-Range	40-60%	19.38	7.08E+01
Dry Conditions	60-90%	NA	NA
Low Flow	90-100%	NA	NA

\* NA signifies that loads are within allowable limits within the flow category

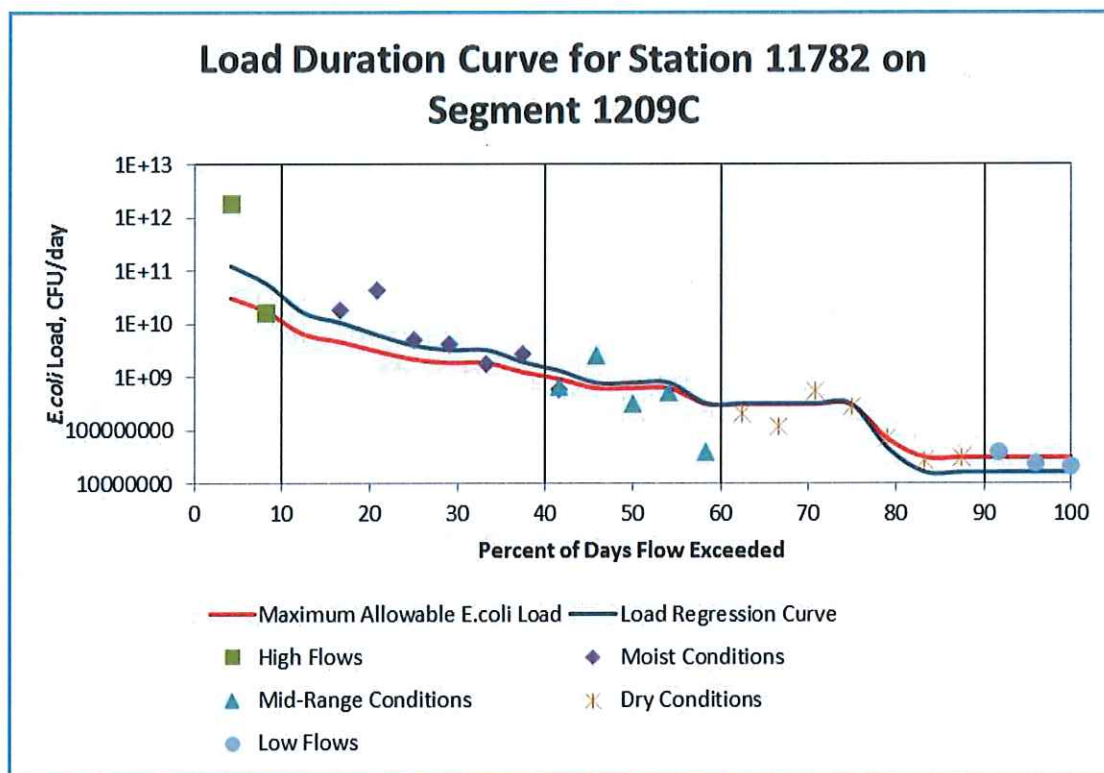


Figure 4. LDC for station 11782: Carters Creek at SH6

Table 6. *E. coli* load reductions needed to meet water quality standards in Carters Creek at Bird Pond Rd. (Station 11785)

Flow Condition	% Flow Exceedance	Percent Load Reduction	Average Annual Loading (cfu/year)
High Flow	0-10%	87.55	3.20E+04
Moist Conditions	10-40%	79.54	2.90E+04
Mid-Range	40-60%	78.58	2.87E+04
Dry Conditions	60-90%	76.32	2.79E+04
Low Flow	90-100%	64.94	2.37E+04

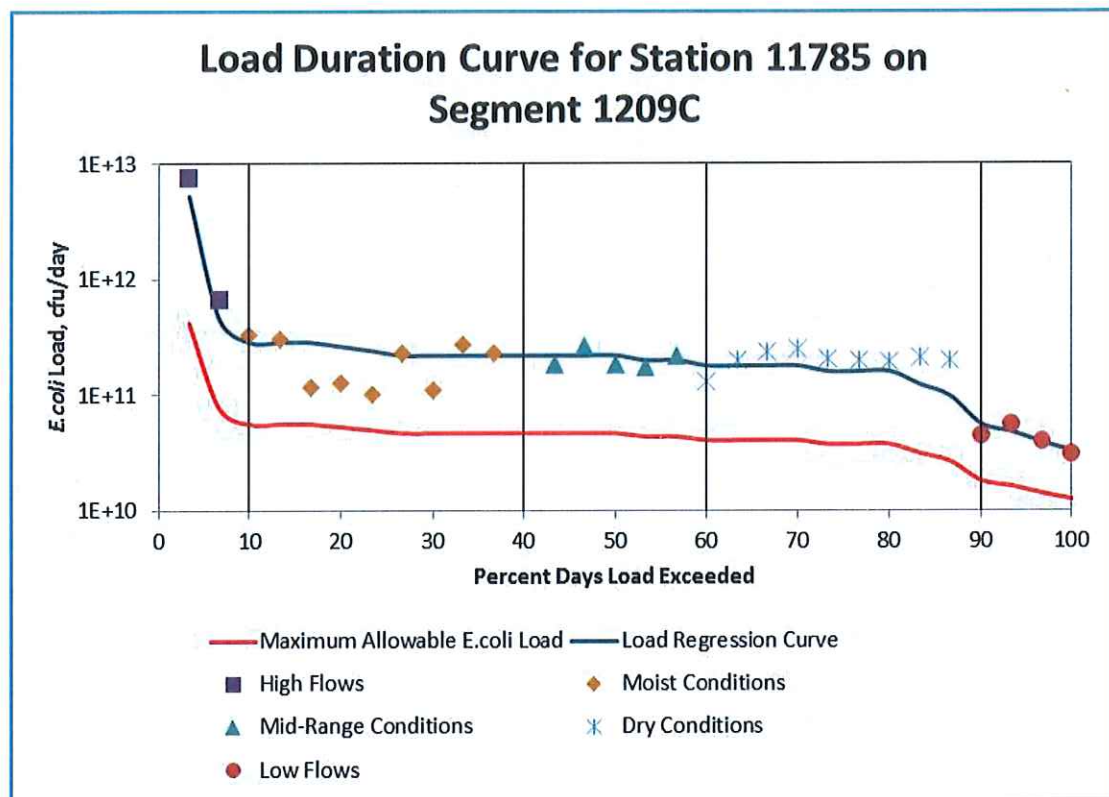
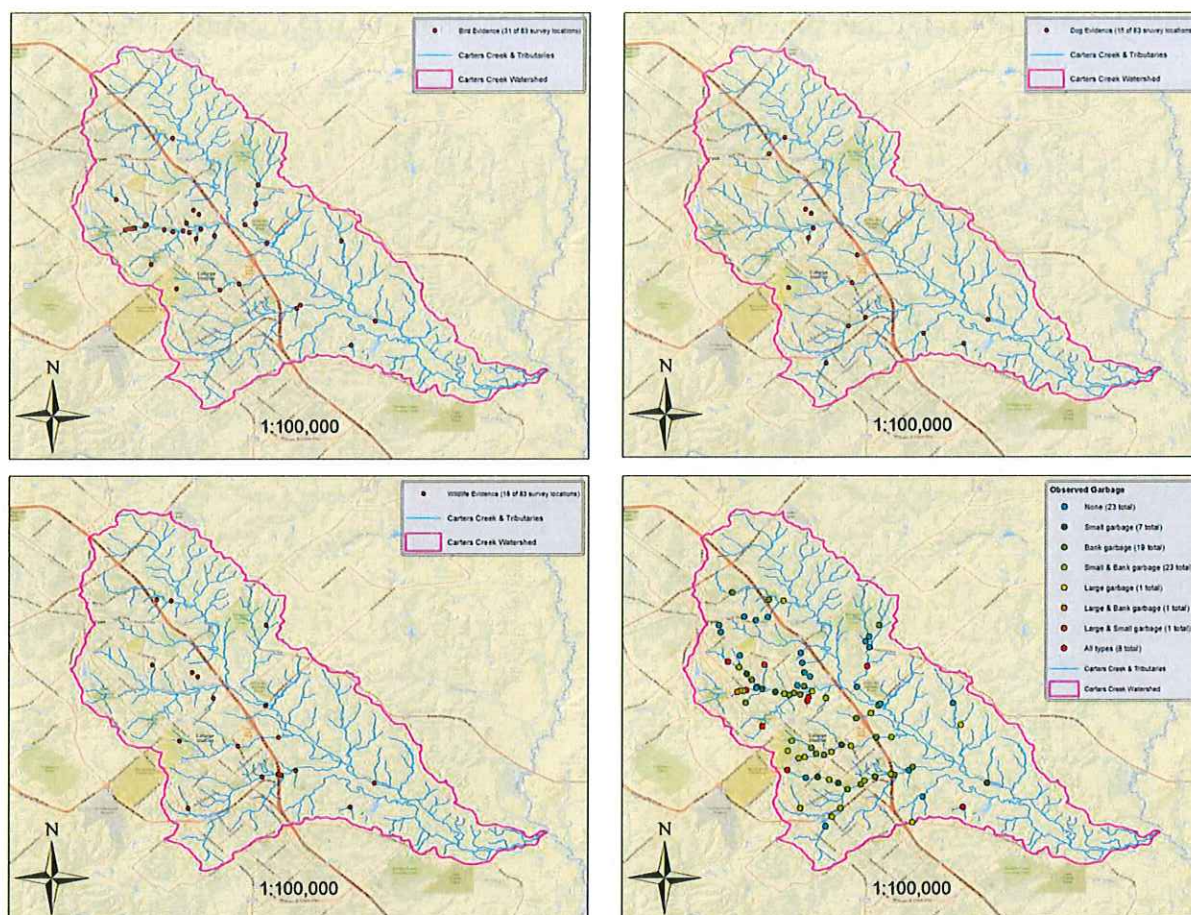


Figure 6. LDC for station 11785; Carters Creek at Bird Pond Road

water quality may be adversely impacted by allowing for rapid visualization of potential water quality stressors and their proximity to local waterbodies.

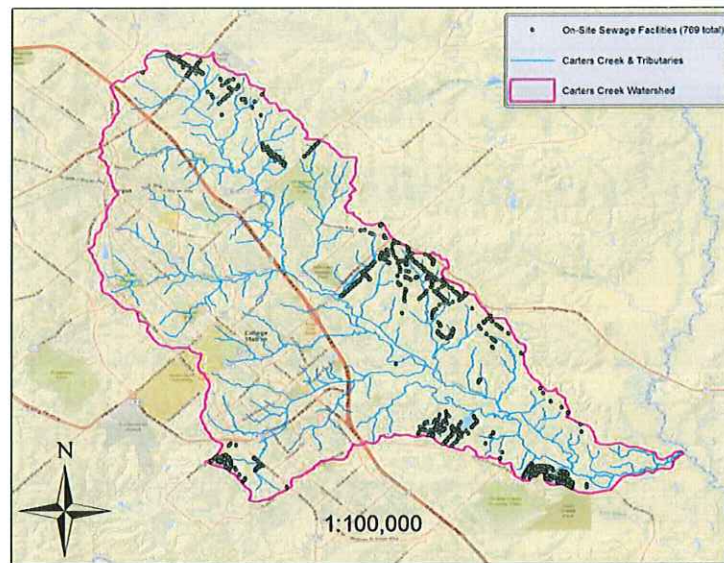
Animal sources of *E. coli* were widely documented across the watershed as expected. Birds, dogs, and feral hogs or their evidence was most commonly observed and many other species were noted as well but at less frequent intervals. Garbage was also routinely observed across the watershed in a number of locations. Locations where observations were made are included in Figure 8. These maps do not depict the full extent of fecal loading from animals across the watershed.



**Figure 8. Locations where potential *E. coli* sources were observed in the watershed. Clockwise from top left: Birds, Dogs, Garbage, Wildlife**

Infrastructure was also evaluated as a potential influence to water quality. Stormwater conveyances, wastewater conveyances, and streets can all have influences on water quality; particularly if system failures occur. Using GIS data provided by the entities within the watershed, cohesive layers of each infrastructure system was developed.

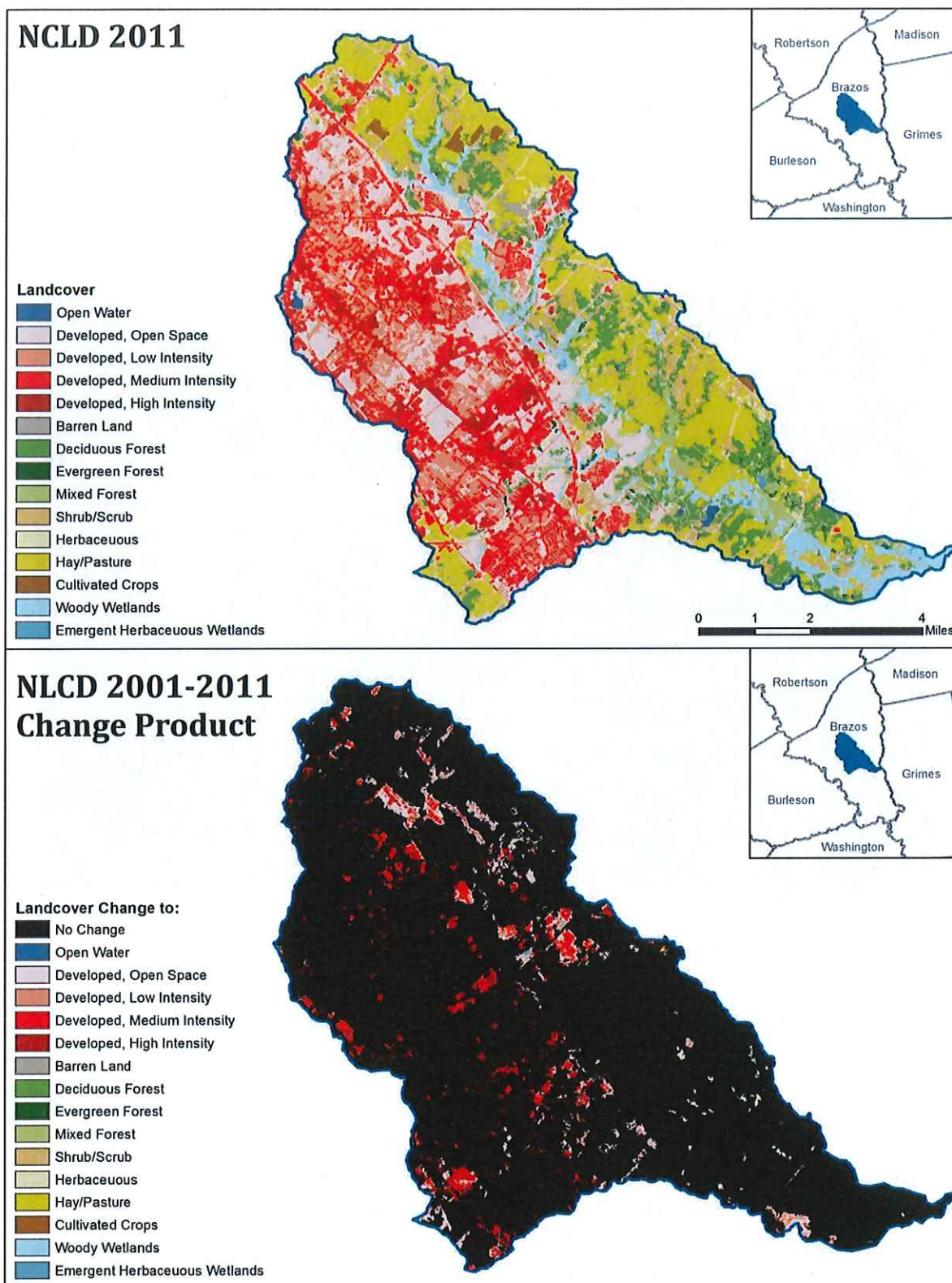
with any management system, failures can and do occur as a result of system age, improper maintenance, poor system installation or design, or system overload. Regardless of cause, failures increase the potential for wastewater to be released to the environment without proper treatment. Proximity of a failing OSSF to creeks or drainage ditches can influence the potential for improperly treated waste to make its way into downstream water bodies. In total, there are an estimated 769 OSSFs distributed across the watershed (Figure 10).



**Figure 10. Estimated OSSF locations in the watershed**

During the watershed survey, no obvious sources of *E. coli* loading other than fecal deposition by animals were noted and no infrastructure failures were identified.

Changes in land use and land cover were also evaluated as a potential water quality stressor. Land cover changes are often associated with changes in water quality. Generally, as the level of impervious surface increases, water quality degrades. This is due to multiple factors such as the concentration of potential pollutant sources, increased runoff production, and decreased water filtering and storage capacity of the watershed. Changes in land use and land cover in the watershed have increased considerably in recent years due to the rapid growth of Bryan and College Station and the surrounding areas. Land use and land cover layers from 2001 and 2011 were compared to quantify this level of change. This assessment demonstrated considerable loss of open space and a considerable increase in developed areas (Table 8 and Figure 11). In total, 8.5% of the watershed experienced a land use change in this 10 year assessment window. Land use losses occurred primarily in forests, shrub/scrub and in



**Figure 11. Land use and land cover (top) and the area where land use and land cover change occurred (bottom) in the Carters Creek watershed**

waterbodies sampled, two sections of Bee Creek and one of its tributaries; two reaches of Burton Creek and two of its tributaries; and two reaches of Wolf Pen Creek and two of its tributaries were found to have the highest rates of *E. coli* increase. Following the first round of sampling, GIS and watershed survey information were reviewed to provide information on potential *E. coli* sources which may contribute to the increases observed. These potential sources were noted and extra care was taken regarding observations during the second sampling. No obvious influences of these sources were noted; however, the entire reach of each stream segment was not surveyed.

Waterbodies exhibiting considerably larger increases in *E. coli* concentrations between sampling locations were noted during the first sampling event. Two reaches of Bee Creek and one of its tributaries; two reaches of Burton Creek and two of its tributaries; and two reaches of Wolf Pen Creek and two of its tributaries were found to have the highest rates of increase. These sites were further investigated during a second sampling event.

The second round of intensive sampling provided additional insight into the specific loading areas within the sampled reaches. As in the first round of sampling, the portion of Bee Creek immediately upstream of Texas Ave. exhibited rapid increases and decreases of *E. coli* concentrations. The most upstream portion of the creek that drains from Spence Park on the TAMU campus also exhibited a considerable increase in *E. coli* concentrations that were 2 – 3 orders of magnitude higher than the primary contact recreation standard. Several reaches within the Burton Creek watershed also showed considerable changes in *E. coli* concentration within short distances. The unnamed tributary of Burton Creek that flows from Country Club Lake across Villa Maria and Texas Ave showed a rapid increase in *E. coli* immediately upstream and downstream of Villa Maria before levels declined to near the primary contact recreation standard. In Burton Creek between Broadmoor Ave. and the downstream end of Tanglewood Park, *E. coli* also increased steadily before beginning to decline. In the Wolf Pen Creek watershed, the tributaries monitored contained the higher observed *E. coli* concentrations than the creek. These areas included the headwaters of a tributary that drain the Bonfire Memorial and an unnamed tributary that flows under Harvey Rd. from Thomas Park into the Wolf Pen Creek park greenway immediately upstream of George Bush Dr. East. A more detailed assessment of intensive monitoring results is available in Gregory et al. 2016b.

shields *E. coli* from direct sunlight and prevents the inactivation of cells through UV exposure. Additionally, stormwater infrastructure could also intercept wastewater leaking from a failing sewer line or from an illicit connection. One example of stormwater infrastructure being a suspected source of *E. coli* in the watershed is the Wolf Pen Creek tributary that is formed near the Bonfire Memorial. Water collected from this stormwater outfall had a considerably higher *E. coli* concentration than the adjacent site and downstream sites. The headwaters of Bee Creek also showed high *E. coli* concentrations where the stream drains out of Spence Park on the TAMU campus. In addition to storm water infrastructure, the ongoing renovations to Kyle Field (at the time of sampling) represent a potential influence on the elevated *E. coli* concentrations. Further sampling at this location now that the Kyle Field renovations are complete may illustrate different *E. coli* concentrations.

Waterbody shading may also influence *E. coli* concentrations observed in stream. In some cases, increases were observed where the stream flowed through predominantly shaded areas. Subsequently, when stream flowed into areas where there is limited or no shade and the stream is shallow, the *E. coli* levels begin to fall again. An example of a segment with extensive shade on the stream is the upper portion of Bee Creek between George Bush Dr. and Glade St. In this reach, *E. coli* concentrations increase rapidly before beginning to slowly decline. Other inputs of bacteria within this reach are possible and likely given the drastic increase in observed *E. coli* concentrations. Wastewater infrastructure is also a potential source at many of the observed segments; however, there was no evidence of leakage during sampling or stream surveys. Several locations had unpleasant odors, but it is unknown whether the source of these smells came from wastewater infrastructure or another source. Inspection by the appropriate wastewater personnel is recommended to further investigate potential sources *E. coli* sources in these segments.

After sampling data assessment and review, several areas should be considered for further investigation. City or TAMU personnel with knowledge of the potential sources of *E. coli* in these areas (stormwater or wastewater infrastructure) would be the ideal persons to perform these inspections as they may be able to identify problems that can be readily addressed. Also, if infrastructure smoke testing or camera inspections that are currently underway in the watershed could be applied in these areas, they too may be able to identify the underlying cause of the observed *E. coli* loading in these areas.

## **Summary**

Efforts to improve knowledge regarding the spatial and temporal variation in *E. coli* concentrations across the Carters Creek watershed were evaluated throughout the course of this project. Water quality monitoring combined with a watershed survey and

## References

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- Jonescu, B., Gregory, L., Gitter, A., Wagner, K. 2016. Carters Creek Total Maximum Daily Load Implementation Project: Routine, Reconnaissance and Stormwater Monitoring Report: Tasks 4 and 5. Texas Water Resources Institute. Technical Report 485.
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- Morrison, M.A. and J.V. Bonta. 2008. Development of Duration-Curve Based Method for Quantifying Variability and Change in Watershed Hydrology and Water Quality. U.S. EPA Office of Research and Development, National Risk Management Research Laboratory, Cincinnati, OH, EPA/600/R-08/065, May 2008.

**Attachment 3 – City of Bryan WWTP Performance**

**Attachment 2**  
**City of Bryan WWTP Performance**

Burton Creek WWTP  
*E. coli* Monitoring (CFU/100 mL)

	Geomean	Max
Oct-17	3	6
Nov-17	2	5
Dec-17	16	26
Jan-18	1	1
Feb-18	5	13
Mar-18	4	16
Apr-18	2	3
May-18	2	3
Jun-18	2	6
Jul-18	2	4
Aug-18	5	11
Sep-18	2	12

**Attachment 2**  
**City of Bryan WWTP Performance**

Still Creek WWTP  
*E. coli* Monitoring (CFU/100 mL)

	Geomean	Max
Oct-17	9	13
Nov-17	14	20
Dec-17	11	18
Jan-18	6	6
Feb-18	9	11
Mar-18	10	16
Apr-18	7	12
May-18	6	38
Jun-18	7	12
Jul-18	16	39
Aug-18	3	11
Sep-18	9	13

**Attachment 2**  
**City of Bryan WWTP Performance**

Thompsons Creek WWTP  
*E. coli* Monitoring (CFU/100 mL)

	Geomean	Max
Oct-17	4	13
Nov-17	2	15
Dec-17	1	8
Jan-18	1	7
Feb-18	1	8
Mar-18	1	7
Apr-18	1	4
May-18	1	16
Jun-18	1	7
Jul-18	1	25
Aug-18	1	1
Sep-18	1	1

**Attachment 4 – City of Bryan SSOI**



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

October 30, 2018

Mr. Ryan Byer, Coordinator  
Order Compliance Team, MC 149A  
Enforcement Division  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, TX 78711-3087

Subject: 2018 Annual Report for SSOI Agreement Case No. 37476

This letter is to document the progress the City of Bryan has made on provisions 2 through 6 of the Sanitary Sewer Agreement signed on August 11, 2009.

**Provision No. 2:** The City shall implement and complete the list of projects contained within Attachment A of the Agreement.

**Progress:** Please find attached in Appendix A, a table that summarizes the progress of the projects to date included in the compliance agreement. Also included in this table is a final estimate of the completed length of each project for comparison to the original estimated length as listed in the Agreement. The City has acquired the easement for the Wells Fargo project. Engineering staff is wrapping up the design and it should be by January 2017. The easement had been held up by the land owner. Appendix A has also been expanded to include project previously completed as well as projects that are under construction which were not a part of the original compliance agreement.

**Provision No. 3:** Establish the causes of SSOs by:

- i. Utilizing GIS mapping to develop a visual reference of SSOs by type and location
- ii. Establish performance indicators and benchmarks

**Progress:** Please find attached in Appendix B, a map showing a sample of the GIS mapping used to locate public and private SSOs by type and location. The map is for reference and visual identification of causes.

Below is a list of performance measures. These measures have been incorporated into the work order system so they can be viewed in GIS for reference purposes. Tracking these measures over the timeframe of this agreement will allow the effectiveness of the program to be measured and benchmarks established.

3. Number of dry weather overflows by:

- (a) Volume: <100 gallons; 100 to 999 gallons; 1000 to 9999 gallons; >10,000 gallons.
- (b) Cause: roots, grease, debris, pipe failure, pump station failure, capacity.
- (c) Location – Private versus Public.

**See appendix C**

4. Number of wet weather overflows by:

- (a) Volume: <100 gallons; 100 to 999 gallons; 1000 to 9999 gallons; >10,000 gallons.
- (b) Cause: roots, grease, debris, pipe failure, pump station failure, capacity.
- (c) Location – Private versus Public.

**See appendix C**

5. Average response time:

- (a) SSO – 22:22 min: sec

**See appendix D**

6. Number of cave-ins – 12

8. Miles of sewer line smoke tested:

Smoke Testing (FY 2018)	CLEANOUTS Broken/Missing	PRIVATE SIDE Defects	CITY SEWER MAIN Defects	MANHOLES Broken/Damaged	Miles of Pipe
	8	206	27	1	31.1

Miles per fiscal year:     FY 2017: 10  
                                      FY 2016: 51

The City of Bryan continues to proactively smoke test the collection system. For fiscal years 2016 to 2018, staff smoke tested 3% to 13% of the collection system per year looking for problems on both the public and private side. Staff has implemented a program to ensure all private defects are corrected by providing a financial mechanism that residents can utilize to fund repairs. With the majority of the problems on the private side, addressing these issues is paramount to reducing I&I into the collection system and the resulting wet weather overflows.

9. Miles of sewer line cleaned (Goal is 20% of the system or approximately 80 miles):

Roughly 89 of the 405 miles, or 22% of the system, were cleaned in FY 2018. For this report, the length of line as mapped in GIS was used to determine the total, rather than the estimated footage provided by field crews.

Miles per fiscal year:     FY 2017: 96 or 24%  
                                      FY 2016: 76 or 19%

10. Number of manholes repaired – 42 (FY 2018)

11. Number of Grease Traps:

- (a)     Inspections – 44 (FY 2018)
- (b)     Violations – 0 (FY 2018)

**Progress:** The City is utilizing the information collected during its I/I analysis to evaluate public and private defects within the system. This information helps focus repair locations to minimize the amount of rainwater entering the collection system. The larger line replacements are being designed, bid, and constructed by contractors. Smaller repairs are being completed by in-house staff. Staff is also smoke testing high priority basins based on the I/I study, as well as mobile home parks to identify public and private defects and missing private cleanout caps. The City continues to do visual inspections of the system during rain events to identify system problems. When other problematic areas are brought to our attention, staff is smoke testing, visually inspecting the pipe, and developing solutions to identify and eliminate the problem.

**Provision No. 6:** The City shall evaluate the effectiveness of its corrective actions on a yearly basis.

**Progress:** The City continues to evaluate the progress of the program through field observations, work orders, and reports from citizens. Staff reviews work order history to determine if problems are still evident. This past year, several projects were completed within the collection system through pipe bursting efforts. Staff has just recently awarded another pipe bursting project to replace approximately 24,800 linear feet of small diameter collection lines. Staff will continue monitoring areas associated with the projects within this Agreement, as well as areas not included. The effectiveness of the corrective actions will be documented through the duration of this agreement.

Currently the City of Bryan experienced a reduction in overflows from 116 in 2010 to 49 in 2018. A review of the data shows that the most significant decrease in overflows was in the "pipe debris" category. This may be attributed to the cleaning program the City implemented on cleaning the collection system. While the first year in 2010 did not meet expectations with respect to the number of miles cleaned, a more focused effort from 2011 to the present did achieve the goal for the number of miles of pipe cleaned. This area of work will continue to be monitored for its effectiveness on the overflows and sewer stops within the system. The City of Bryan will continue to be proactive in its efforts of smoke testing the system and identifying defects and proactively addressing the defects both on the private and public side of the sewer system.

This is a summary report of the actions taken by the City of Bryan to comply with the Agreement. If you should have any questions or need additional information related to information contained within this letter, please contact me at (979) 209-5929 or [jbarfknecht@bryantx.gov](mailto:jbarfknecht@bryantx.gov).

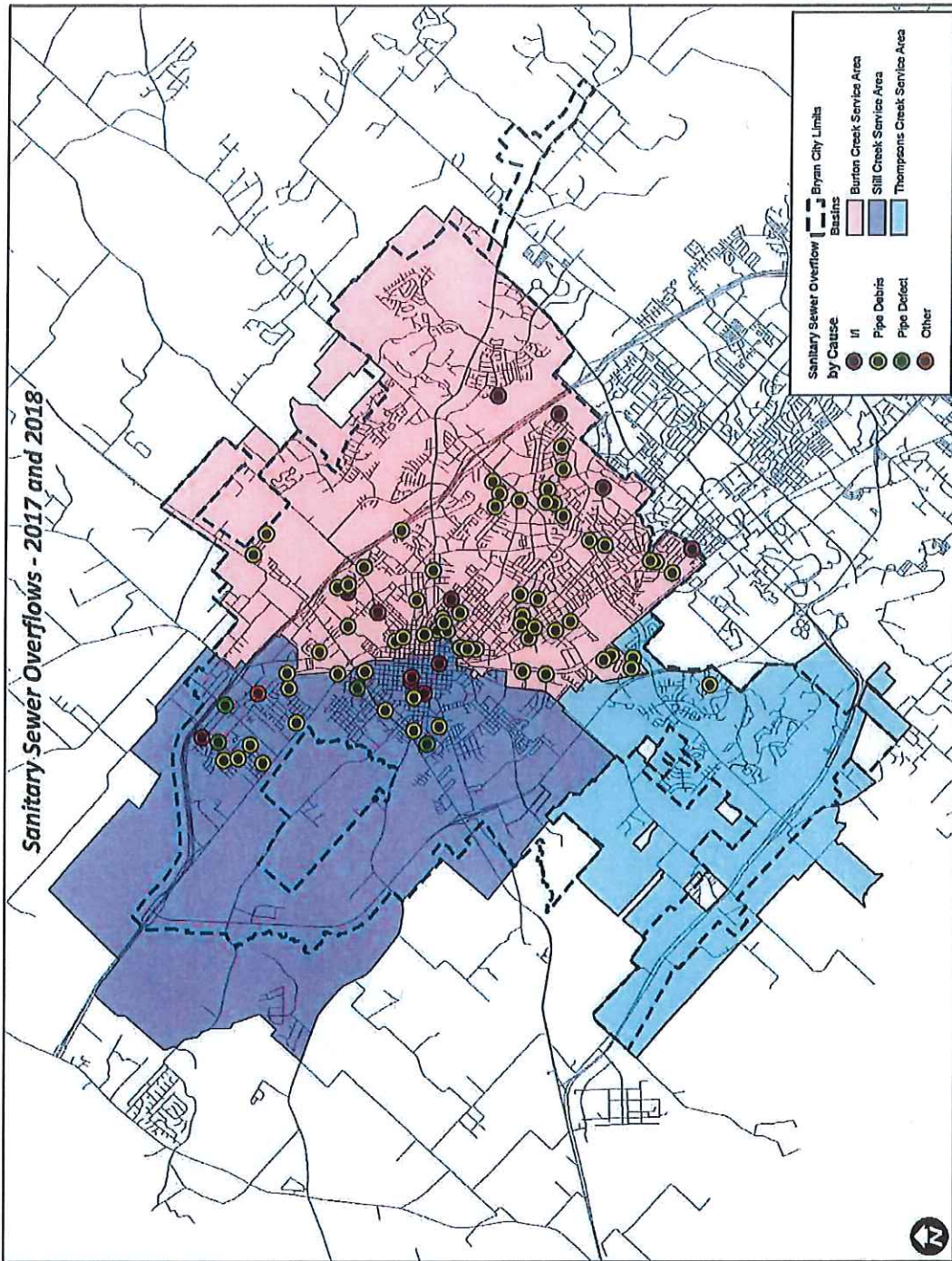
Best Regards,

  
Jayson Barfknecht, P.E., Ph.D.  
Public Works Director

XC: Mr. Richard Monreal, Manager, Water Section, TCEQ Waco Regional Office

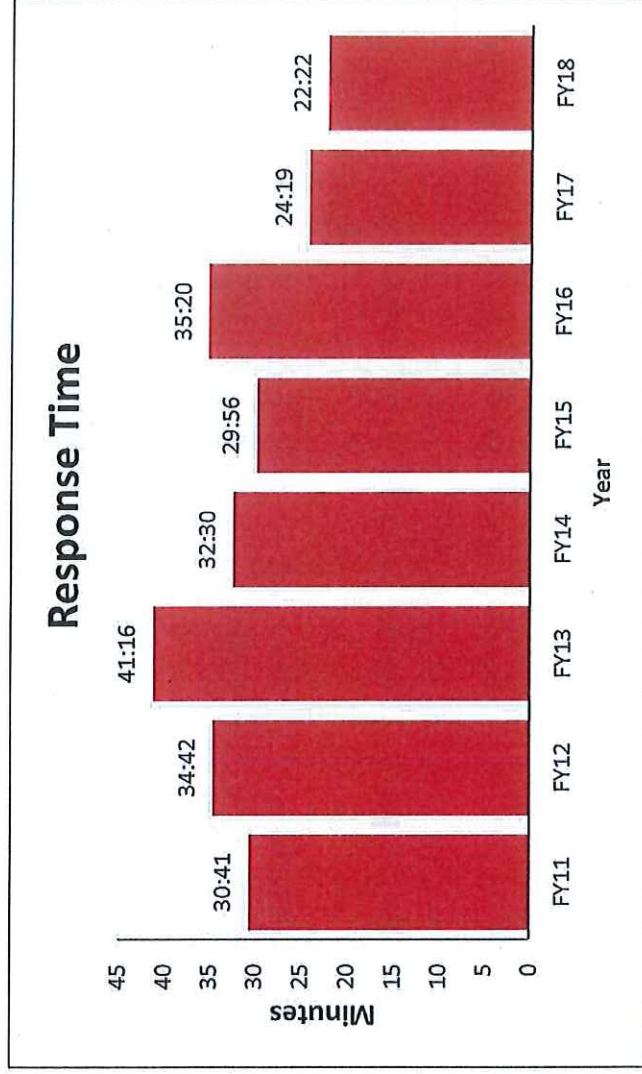
Bonham Drive	Still Creek	2014	Complete	647
Villa Maria Rd	Burton Creek	2014	Complete	96
Coulter Drive	Burton Creek	2014	Complete	510
McCulloch Street	Still Creek	2015	Complete	1550
E. 23 <sup>rd</sup> Street	Burton Creek	2015	Complete	980
Helena Street	Burton Creek	2015	Complete	900
Pauline Street	Still Creek	2015	Complete	540
Avondale Ave	Burton Creek	2015	Complete	300
Briar Bend Ct	Burton Creek	2016	Complete	450
West 26 <sup>th</sup> Street	Still Creek	2016/2017	Complete	1895
Alamo Ave	Still Creek	2016/2017	Complete	560
Reed Ave	Still Creek	2016/2017	Complete	550
Baylor Ave	Still Creek	2016/2017	Complete	485
27 <sup>th</sup> Street	Still Creek	2016/2017	Complete	130
Congress St	Still Creek	2016/2017	Complete	500
Randolph Ave	Still Creek	2016/2017	Complete	490
Sterling Ave	Still Creek	2016/2017	Complete	600
Logan Ave	Still Creek	2016/2017	Complete	400
Sims Ave	Still Creek	2016/2017	Complete	540
Garden Ln	Burton Creek	2016/2017	Complete	1335
Skrivanek Dr	Burton Creek	2016/2017	Complete	1510
Esther Blvd	Burton Creek	2016/2017	Complete	450
Carter Creek Pkwy	Burton Creek	2016/2017	Complete	1350
Esther 2 Blvd	Burton Creek	2016/2017	Complete	1825
Avon Street	Burton Creek	2016/2017	Complete	550
Villa Maria Rd	Burton Creek	2016/2017	Complete	1185
Kent Street	Burton Creek	2016/2017	Complete	295
Devonshire Street	Burton Creek	2016/2017	Complete	705
Oxford Street	Burton Creek	2016/2017	Complete	480
Kent Street 2	Burton Creek	2016/2017	Complete	485
Kent Street 3	Burton Creek	2016/2017	Complete	740
Bristol Street	Burton Creek	2016/2017	Complete	765
Ruskin Dr	Burton Creek	2016/2017	Complete	875
Dona Dr	Burton Creek	2016/2017	Complete	950
Carter Creek Pkwy 2	Burton Creek	2016/2017	Complete	490
Barak Ln	Burton Creek	2016/2017	Complete	670
Broadmoor Dr	Burton Creek	2016/2017	Complete	735
Freeman Av	Burton Creek	2016/2017	Complete	770
Graham Dr	Still Creek	2016/2017	Complete	775
Aspen St	Burton Creek	2018/2019	In Construction	1070
Foch St	Burton Creek	2018/2019	In Construction	915
Greenway Dr	Burton Creek	2018/2019	In Construction	1050
Nagle St	Burton Creek	2018/2019	In Construction	715
Oaklawn St	Burton Creek	2018/2019	In Construction	715
Redbud St	Burton Creek	2018/2019	In Construction	955
Woodson Dr	Burton Creek	2018/2019	In Construction	900
Barak Ln	Burton Creek	2018/2019	In Construction	1730
Briar Oaks Ln	Burton Creek	2018/2019	In Construction	1930
Greenridge Cir	Burton Creek	2018/2019	In Construction	810
Hillside Dr	Burton Creek	2018/2019	In Construction	1570

# Appendix B



Wet Weather				
Year	Cause	Location	Volume (gallons)	Number of Occurrences
<b>2017</b>				
	Grease	Public	< 100	0
	Grease	Public	100 to 999	0
	Grease	Public	1000 to 9999	0
	Grease	Public	>10,000	0
	Roots	Public	< 100	0
	Roots	Public	100 to 999	0
	Roots	Public	1000 to 9999	0
	Roots	Public	>10,000	0
	Pipe Capacity	Public	< 100	0
	Pipe Capacity	Public	100 to 999	2
	Pipe Capacity	Public	1000 to 9999	0
	Pipe Capacity	Public	>10,000	6
	Pump Failure	Public	< 100	0
	Pump Failure	Public	100 to 999	0
	Pump Failure	Public	1000 to 9999	0
	Pump Failure	Public	>10,000	0
	Pipe Debris	Public	< 100	0
	Pipe Debris	Public	100 to 999	0
	Pipe Debris	Public	1000 to 9999	0
	Pipe Debris	Public	>10,000	0
<b>Total</b>				<b>8</b>
<b>2018</b>				
	Grease	Public	< 100	0
	Grease	Public	100 to 999	0
	Grease	Public	1000 to 9999	0
	Grease	Public	>10,000	0
	Roots	Public	< 100	0
	Roots	Public	100 to 999	0
	Roots	Public	1000 to 9999	0
	Roots	Public	>10,000	0
	Pipe Capacity	Public	< 100	0
	Pipe Capacity	Public	100 to 999	5
	Pipe Capacity	Public	1000 to 9999	0
	Pipe Capacity	Public	>10,000	0
	Pump Failure	Public	< 100	0
	Pump Failure	Public	100 to 999	0
	Pump Failure	Public	1000 to 9999	0
	Pump Failure	Public	>10,000	0
	Pipe Debris	Public	< 100	0
	Pipe Debris	Public	100 to 999	0
	Pipe Debris	Public	1000 to 9999	0
	Pipe Debris	Public	>10,000	0
<b>Total</b>				<b>5</b>

## Appendix D



WF0690934	7/15/2018	2	SSO	GPU	18:00:00	18:15:00	0:15:00
WF0690936	7/18/2018	2	SSO	GPU	18:30:00	19:00:00	0:30:00
WF0692837	8/2/2018	2	SSO	DPU	11:40:00	11:55:00	0:15:00
WF0693304	8/7/2018	2	SSO	DPU	11:05:00	11:45:00	0:40:00
WF0696491	8/30/2018	2	SSO	GPU	16:00:00	16:15:00	0:15:00
WF0696662	9/2/2018	2	SSO	GPU	12:45:00	13:00:00	0:15:00
WF0696876	9/4/2018	2	SSO	GPU	8:30:00	8:45:00	0:15:00
WF0698282	9/14/2018	2	SSO	GPU	14:40:00	14:50:00	0:10:00
WF0698312	9/15/2018	2	SSO	IIPU	17:30:00	17:50:00	0:20:00
WF0699118	9/24/2018	2	SSO	GPU	14:45:00	15:05:00	0:20:00
<b>Average Response Time:</b>							<b>0:22:22</b>

**Attachment 5 – Code Enforcement**

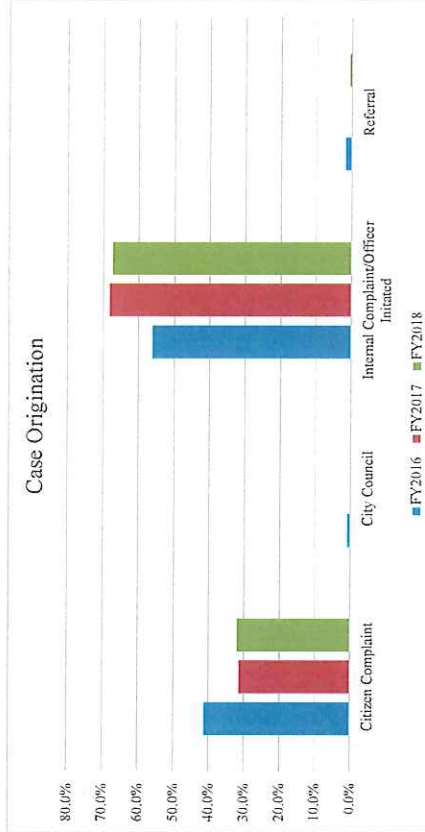
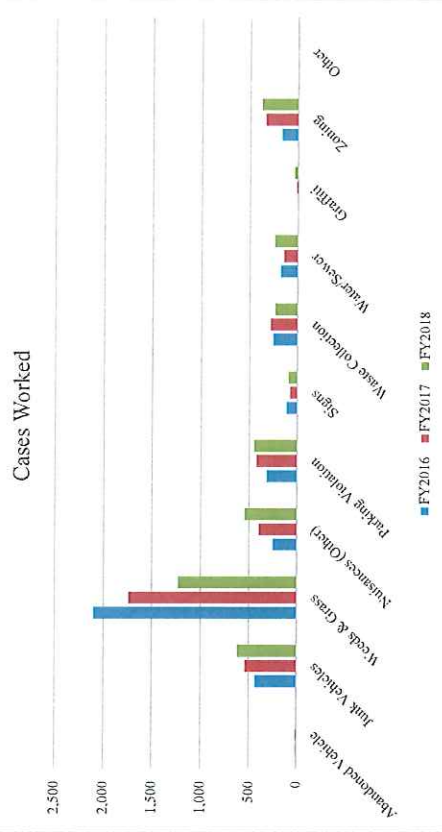
Code Enforcement Performance  
October 2017 - September 2018

Cases Worked:	October - September		
	FY2016	FY2017	FY2018
Abandoned Vehicle	10	9	8
Junk Vehicles	434	542	622
Weeds & Grass	2,102	1,743	1,232
Nuisances (Other)	249	397	549
Parking Violation	315	422	448
Signs	110	76	91
Waste Collection	252	283	234
Water/Sewer	177	147	241
Graffiti	8	12	35
Zoning	167	339	375
Other	2	0	0
Total	3,826	3,970	3,835

% Change Cases Worked FY17:FY18 -3%

	October - September		
	FY2016	FY2017	FY2018
Working Days:	260	260	260
Cases/Day:	14.7	15.3	14.8

Case Origination:	October - September				
	FY2016	FY2017	FY2018	FY2016	FY2018
Citizen Complaint	1,580	1,249	1,228	41.3%	31.5%
City Council	32	4	2	0.8%	0.1%
Internal Complaint/Officer Initiated	2,148	2,708	2,588	56.1%	68.2%
Referral	66	9	17	1.7%	0.2%
	3,826	3,970	3,835	100%	100%



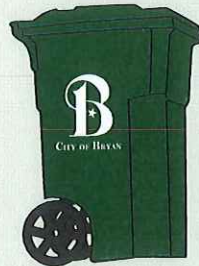
**Attachment 6 – Education**

# COMMON CODE VIOLATIONS



**Junked, wrecked or abandoned vehicles and equipment** are not allowed to be parked, stored, or kept on any public or private property visible from the street or other public place.

**Vehicles and trailers** must be parked on an improved surface and may not be parked, stored, or kept on grass or dirt.



**Garbage containers** may not be stored at the street and must be returned back to the dwelling no later than 12 hours after collection.

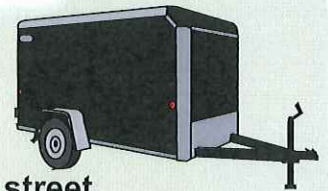
**Garage sale signs, advertisements, and other signage** may not be placed in the public right-of-way, on power poles, light poles, or other public property.



**Grass clippings and leaves** may not be blown or swept into the street or gutter.



**Commercial vehicles, RVs, and trailers** may not be parked, stored, or kept on the street.



Property owners, agents, occupants, and renters have a duty and responsibility to **keep their property clean and free of trash and litter.**

**For more information, or to report a code violation, call 209-5900 or visit us online:**

**[www.bryantx.gov/codeenforcement](http://www.bryantx.gov/codeenforcement)**

The City of Bryan Code Enforcement department is responsible for handling code violations. Reporting a violation improves our ability to keep Bryan looking its best by focusing attention on our citizen's needs and concerns. Leaving contact information is vital to a thorough investigation.

# VIOLACIONES COMUNES AL CÓDIGO



No está permitido que **vehículos y equipos desechados, destrozados y abandonados** sean estacionados, almacenados o mantenidos en cualquier propiedad pública o privada visible desde la calle u otro lugar público.

**Vehículos y remolques** deben ser estacionados en una superficie adecuada y no pueden ser estacionados, almacenados o mantenidos en el césped o la tierra.



**Los recipientes de basura** no pueden ser almacenados en la calle y deben ser devueltos de nuevo a la vivienda a más tardar 12 horas después de la recolección.

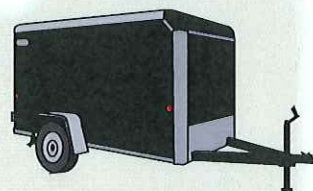
**Los carteles de venta de garaje, anuncios, y cualquier otra señalización** no pueden ser colocados en la vía pública, postes de electricidad, postes de luz, o en otro tipo de propiedad pública.



**Los recortes de césped y las hojas** no pueden ser soplados o barridos hacia la calle o alcantarillado.



**Los vehículos comerciales, vehículos recreativos, y remolques** no podrán ser estacionados, almacenados o guardados en la calle.



Los dueños, agentes, ocupantes e inquilinos de las propiedades tienen el deber y la responsabilidad de **mantener la propiedad limpia y libre de basura y desperdicios.**

**Para obtener más información, o para reportar una violación del código, llame al 209-5900 o visítenos en línea:**

**[www.bryantx.gov/codeenforcement](http://www.bryantx.gov/codeenforcement)**

El departamento de Cumplimiento del Código de la Ciudad de Bryan es responsable del manejo de violaciones de código. Reportar una violación mejora nuestra capacidad para mantener el aspecto de Bryan lo mejor posible, centrando la atención en las necesidades y preocupaciones de nuestros ciudadanos. Dejar la información de contacto es vital para una investigación a fondo.

C.C. REPRESENTATIVE: \_\_\_\_\_





1800 Shiloh Avenue  
 Bryan, Texas 77803  
 Phone: 979.693.9664  
 Toll Free: 800.324.1268  
 Fax: 979.823.4301  
 Web: cccreationsusa.com

# INVOICE

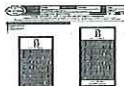
Page#	1
Invoice#	N277412
Customer#	21435
Invoice Date	02/28/2018
Due Date	03/30/2018
Customer PO#	180714 Magnets
Buyer	Carlos Carpio

## Bill To:

CITY OF BRYAN - CODE ENFORCEMENT  
 Attn: Melanie Tigerina, Accounts Payable  
 PO Box 1000  
 Email Invoices: accountinginvoices@bryantx.gov  
 Bryan, TX 77805

## Ship To:

CPU

Order#	Due Date	Order Due Date	Event Date	Terms	Ship Via	Phone	Fax	Agent		
S376489	03/30/2018	03/09/2018		NET 30	Customer Pickup	979-693-9664	979.209.5095	163		
21435-0002 Code Enforcement Mangets										
				<b>Design Detail</b>						
				ASI Products Promotional Products: Code Enforcement Mangets			315			
<b>Description</b>				<b>QTY</b>	<b>OS</b>			<b>Total</b>	<b>Price</b>	<b>Extended</b>
ASI The Magnet Group- #S403- 5"x3" Magnet				315				315	0.66	207.90
								<b>Total</b>	<b>Price</b>	<b>Extended</b>
Inbound Freight								1	13.82	13.82
				<b>Total</b>			315	221.72		

001-3401-420-2105  
 SE3072

## PROOF OF DELIVERY OR PICK-UP

SIGNATURE: \_\_\_\_\_

PRINTED NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

C.C. REPRESENTATIVE: \_\_\_\_\_



1800 Shiloh Avenue  
 Bryan, Texas 77803  
 Phone: 979.693.9664  
 Toll Free: 800.324.1268  
 Fax: 979.823.4301  
 Web: cccreationsusa.com

# INVOICE


Page#	1
Invoice#	N277217
Customer#	21479
Invoice Date	02/27/2018
Due Date	03/29/2018
Customer PO#	180715 Hydrant
Buyer	Carlos Carpio

## Bill To:

CITY OF BRYAN - WATER SERVICES  
 Attn: Melanie Tigerina  
 PO Box 1000  
 Email Invoices: accountinginvoices@bryantx.gov  
 Bryan, TX 77805

## Ship To:

CPU

Order#	Due Date	Order Due Date	Event Date	Terms	Ship Via	Phone	Fax	Agent			
S376656	03/29/2018	03/09/2018	03/01/2018	NET 30	Customer Pickup	979-209-5914	979.209.5095	163			
00056-0190 City of Bryan-Fire Hydrant Stress											
				Design Detail							
				ASI Products Promotional Products: City of Bryan-Fire Hydrant Stress			500				
Description				QTY	OS				Total	Price	Extended
ASI Anga Supply- MCN-047- Fire Hydrant Stress				500					500	1.36	680.00
									Total	Price	Extended
Setup Charges									1	20.00	20.00
Inbound Freight									1	18.00	18.00
									Total	500	718.00

515-4525-754-2102  
 SE3072

## PROOF OF DELIVERY OR PICK-UP

SIGNATURE: \_\_\_\_\_

PRINTED NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

C.C. REPRESENTATIVE: \_\_\_\_\_



1800 Shiloh Avenue  
 Bryan, Texas 77803  
 Phone: 979.693.9664  
 Toll Free: 800.324.1268  
 Fax: 979.823.4301  
 Web: cccreationsusa.com

# INVOICE

Page#	1
Invoice#	N277210
Customer#	21435
Invoice Date	02/27/2018
Due Date	03/29/2018
Customer PO#	180714 Pencils
Buyer	Carlos Carpio

**Bill To:**

CITY OF BRYAN - CODE ENFORCEMENT  
 Attn: Melanie Tigerina, Accounts Payable  
 PO Box 1000  
 Email Invoices: [accountinginvoices@bryantx.gov](mailto:accountinginvoices@bryantx.gov)  
 Bryan, TX 77805

**Ship To:**

CPU

Order#	Due Date	Order Due Date	Event Date	Terms	Ship Via	Phone	Fax	Agent			
S376493	03/29/2018	03/09/2018		NET 30	Customer Pickup	979-693-9664	979.209.5095	163			
21435-0003 City of Bryan Code Enforcement Pencils											
				Design Detail							
				ASI Products Promotional Products: City of Bryan Code Enforcement Pencils			500				
Description				QTY	OS				Total	Price	Extended
ASI Gold Bond-BEW-Buy Write Pencil- Royal Blue				500					500	0.14	70.00
										Total	Price
Setup Charges									1	9.38	9.38
Inbound Freight									1	17.10	17.10
Total								500	96.48		

001-3401-420-2105  
 SE3072

**PROOF OF DELIVERY OR PICK-UP**

SIGNATURE: \_\_\_\_\_  
 PRINTED NAME: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 C.C. REPRESENTATIVE: \_\_\_\_\_

C.C. REPRESENTATIVE: \_\_\_\_\_

C.C. REPRESENTATIVE: \_\_\_\_\_



1800 Shiloh Avenue  
 Bryan, Texas 77803  
 Phone: 979.693.9664  
 Toll Free: 800.324.1268  
 Fax: 979.823.4301  
 Web: cccreationsusa.com

# INVOICE


Page#	1
Invoice#	N276335
Customer#	21435
Invoice Date	02/20/2018
Due Date	03/22/2018
Customer PO#	180714 Money Pen
Buyer	Carlos Carpio

**Bill To:**

CITY OF BRYAN - CODE ENFORCEMENT  
 Attn: Melanie Tigerina, Accounts Payable  
 PO Box 1000  
 Email Invoices: accountinginvoices@bryantx.gov  
 Bryan, TX 77805

**Ship To:**

CPU

Order#	Due Date	Order Due Date	Event Date	Terms	Ship Via	Phone	Fax	Agent				
S376556	03/22/2018	03/09/2018		NET 30	Customer Pickup	979-693-9664	979.209.5095	163				
00056-0197 city of bryan-money pens												
				Design Detail								
				ASI Products Promotional Products: city of bryan-money pens			250					
Description				QTY	OS					Total	Price	Extended
ASI Cameo Line- 160M- Money Pen				250						250	1.21	302.50
											Total	Price
Setup Charges										1	10.00	10.00
Inbound Freight										1	22.09	22.09
Total										250	334.59	

001-3401-420-2105  
 SE3072

**PROOF OF DELIVERY OR PICK-UP**

SIGNATURE: \_\_\_\_\_  
 PRINTED NAME: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 C.C. REPRESENTATIVE: \_\_\_\_\_



**Attachment 7 – Used Oils and Fluids**

City of Bryan  
Fleet Services Fluids

FY2018

OIL			FILTERS			Antifreeze	
5/3/2017	275		7/31/2017	1		7/31/2017	1
5/17/2017	250		7/31/2017	1		8/24/2017	0
9/20/2017	180		8/24/2017	1		9/18/2017	0
9/25/2017	528		9/18/2017	1		5/30/2018	0
10/4/2017	150		10/18/2017	1		11/15/2017	0
10/18/2017	310		11/15/2017	1		12/11/2017	0
11/1/2017	220		12/11/2017	0		1/11/2018	0
11/15/2017	150		1/11/2018	1		2/5/2018	0
11/15/2017	200		2/5/2018	1		3/5/2018	0
12/13/2018	169		3/5/2018	0		4/2/2018	0
12/27/2017	150		4/2/2018	2		4/30/2018	0
1/10/2018	190		4/30/2018	0		5/29/2018	0
1/10/2018	230		5/19/2018	2		6/24/2018	0
1/24/2018	140		5/19/2018	2		6/29/2018	0
2/7/2018	120		5/24/2018	0		8/23/2018	0
2/21/2018	250		5/29/2018	1		9/17/2018	0
3/7/2018	160		5/30/2018	0		10/1/2018	0
3/9/2018	169		5/30/2018	0		10/16/2018	0
3/21/2018	220		6/24/2018	2			
4/4/2018	131		6/25/2018	0			
4/18/2018	175		6/29/2018	1			
			8/24/2018	0			
			9/17/2018	2			
			10/16/2018	0			

Used Oil                      4,367 gallons  
Used Filters                20 drums  
Antifreeze                 1 collection

**Attachment 8 – KBB Trash Off**

**City of Bryan  
Trash Off Results**

Location	Volunteers Participated	# of Bags Collected	# of Tires Collected
1. Grosebeck - Bittle 1.27 Miles	12	13	1
2. Newton St - 0.77 Miles	3	5	13
3. Kemp Carver Elementary - Muckleroy - 1.14 Miles*	0	0	0
4A. Austin's Colony - 0.81 Miles	36	36	1
4B. Sam Rayburn - 0.8 Miles	8	6	0
5. Clear Leaf - Silkwood - 1.23 Miles	5	5	0

Total Number of Volunteers	64
Volunteer Hours Served	128
Board Members Volunteering with Litter Collection	0
Total Pounds of Litter Collected	975
Number of Tires collected	15
Total Miles Cleaned (Both sides of roadways cleaned)	4.88
Total Acres of Parks/public land/open spaces	13.3
Miles of Waterways	0

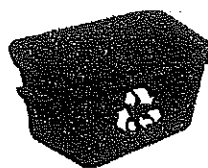
*Keep Texas Beautiful Weight Conversion*

*30-gallon bag of litter = est. 15 lbs.*

*All calculations/measurements are estimated using the best information available*

*\*Team did not show up to location*

March 3, 2018  
Litter Collection Times: 9:00 am – 11:00 am



## Litter Tool Box Check Out

The below named person agrees to return all property listed to the Keep Brazos Beautiful office within one week of completion of the clean-up. Loss or damage to tools will result in a charge for repair/replacement.

Supply pick up date: 10/12/17  
Name of person picking up supplies: Tassie Hermann  
Organization: TAMU Stream Clean  
Phone number: 845-8761 Email: thermann@tamu.edu  
Address: \_\_\_\_\_

Clean up date: 10/14 Number of participants: 81  
Event description: Cleanup  
Location of event: White Creek + Henderson Park

Litter grabbers: <u>70</u>	Safety vests: <u>81</u>	First aid kit: <u>2</u>
Gloves: <u>75</u>	Trash bags: <u>100</u>	Shovels: <u>0</u>
Rakes: <u>0</u>	Brooms: <u>0</u>	Dust pans: <u>0</u>
Blue Recycling tubs: <u>1</u>	Safety Information Sheet: <u>1</u>	

RECIPIENT SIGNATURE: Jasmi Hermann  
SUPPLY RETURN DATE: 10/16/17  
Number of bags collected for TRASH during clean-up: 30  
Number of bags collected for RECYCLING during clean up: 5

KEEP BRAZOS BEAUTIFUL  
1713 BROADMOOR, SUITE 302  
BRYAN, TEXAS 77802  
979-775-3569

KBB STAFF Kay Bra



## KBB STAFF

AFF Raúl Brainer



## Keep Brazos Beautiful Litter Toolbox Checkout Form

The below person/organization agrees to return all property listed to the Keep Brazos Beautiful office within one week of completion of the clean-up. Loss or damage to tools will result in a charge for repair/replacement.

Name: Payton Ramirez

Organization: N/A

Phone Number: ( 979 ) 220-3638

Email: payton.ramirez@stu.bryanisd.org

Clean Up Date: 5/16/2018 + 5/18/2018

Clean Up Location: Tiffany Park ~~Wagoner~~ Sue Haswell Park

Number of Expected Participants: 2 Tentative Supply Pick Up Date: 5/15/2018

### Supplies Check Out

ITEM	Litter Grabbers	Rakes	Trash Bags	Recycle Bags	Gloves	First Aid Kit	Safety Sheet	Safety Vests	Collection Form
AMOUNT OUT	<u>2</u>	<u>0</u>	<u>8</u>	<u>0</u>	<u>8</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>1</u>
AMOUNT IN		<u>0</u>		<u>0</u>			N/A		

Supply Pick Up Date: 5/15/2018

Recipient Signature: Payton R.

Supply Return Date: 5/21/2018 Monday morning

Return Signature: Glenn Fraker - dropped off at door

### Post-Event Collection Information

CATEGORY NUMBER	Bags of Trash	Bags of Recycling	Participants
	<u>12</u>	<u>0</u>	<u>2</u>

### Keep Brazos Beautiful Staff Only

Were there any issues with return of items?

Yes

No

If yes, explain: \_\_\_\_\_

Staff Signature: Glenn Fraker

Keep Brazos Beautiful  
1713 Broadmoor Drive, Suite 302  
Bryan, TX 77802



## Keep Brazos Beautiful Litter Toolbox Checkout Form

The below person/organization agrees to return all property listed to the Keep Brazos Beautiful office within one week of completion of the clean-up. Loss or damage to tools will result in a charge for repair/replacement.

Name: Tricia Olivarez

Organization: Sul Ross Elementary - Kindergarten

Phone Number: (979) 422-8160

Email: tricia.olivarez@bryanisd.org

Clean Up Date: 5/8/2018 @ 9am

Clean Up Location: Tanglewood Park

Number of Expected Participants: 100 Tentative Supply Pick Up Date: 5/7/2018 @ 2pm

### Supplies Check Out

ITEM	Litter Grabbers	Rakes	Trash Bags	Recycle Bags	Gloves	First Aid Kit	Safety Sheet	Safety Vests	Collection Form
AMOUNT OUT	50	0	50	0	200	1	1	0	1
AMOUNT IN	50	0	48	0	0	1	N/A	0	0

Supply Pick Up Date: 5/7/2018

Recipient Signature: Tricia Olivarez

Supply Return Date: 5/9/2018 2pm

Return Signature: Danille Barron

### Post-Event Collection Information

CATEGORY NUMBER	Bags of Trash	Bags of Recycling	Participants
	<u>2</u>	<u>0</u>	<u>107</u>

430 action bags

### Keep Brazos Beautiful Staff Only

Were there any issues with return of items?

Yes

No

If yes, explain:

Staff Signature: [Signature]

Keep Brazos Beautiful  
1713 Broadmoor Drive, Suite 302  
Bryan, TX 77802

**Attachment 9 – Construction Inspections**

Stormwater Construction Inspections (Oct. 2017- Sept. 2018)

Cases Worked	# of Sites	# of Inspections
Residential	498	537
Commercial	79	458
Complaint	61	61
Total	638	1056

**Attachment 10 – Post-Construction Draft SOP**

## **Standard Operating Procedures (SOP's) for Post-Construction Stormwater Inspections**

### **I. Purpose**

This SOP details the procedures and responsibilities of the City in order to meet the post-construction inspection requirements in the City's Phase II Stormwater discharge permit and Stormwater Management Plan objectives. The post-construction requirements include:

- Inspection of public & private long-term BMPs
- Enforcement to address Stormwater violations
- Maintenance of LID & Green Infrastructure

### **II. Definitions/Abbreviations**

1. **BMP** – Best Management Practice
2. **Green Infrastructure** – Structural controls designed to reduce the impact of Stormwater created by development
3. **Informal Notice** – Verbal warning of deficiencies
4. **LID** – Low Impact Development, (includes structural controls such as Rain Gardens, Vegetated Swales) designed to reduce impact of Stormwater post-development.
5. **MS4** – Municipal Separate Storm Sewer System
6. **NOV** – Notice of Violation (written warning stating violations and includes timeframe to remedy)
7. **SOP** – Standard Operating Procedures
8. **SWMP** – Stormwater Management Plan

### **III. Pre-requisites**

#### **1. Training & Certification**

- 1.1 Internal Training of the City's MS4, SWMP, and Ordinance (Chapter 46)
- 1.2 Certified Inspector of Erosion & Sediment Controls – via external Stormwater Training Course
- 1.3 Access to City database and ability for record-keeping

#### **2. Supporting Documents**

- 2.1 Post-Construction Stormwater Inspection Checklist
- 2.2 Construction/ Development plans including BMP designs
- 2.3 City of Bryan SWMP

### **IV. Standard Operating Procedures**

## **MCM 5 – Standard Operating Procedures – Post Construction Stormwater Management**

City of Bryan

300 S Texas Ave, Bryan, TX 77803

All permanent Stormwater management BMPs for meeting post-construction Stormwater management are required to develop maintenance agreements and maintenance plans. After execution of the maintenance agreement, the City is required to ensure the conditions for post-construction Stormwater management continue to be met.

The City may conduct inspections of post-construction Stormwater BMPs once during each MS4 permit cycle to determine if the system(s) are functioning and permitted. The City will notify the owners of the post-construction Stormwater BMPs of the violations and determine a proper repair plan and timeline. If the post-construction BMP is not repaired in the required timeline set forth by City staff, the City's Enforcement Plan may take effect.

The following list is the minimum documentation required for reach private/public post-construction Stormwater BMP:

- Retain logs of all maintenance agreements that are filed with the City, along with their BMP locations
- Update BMP locations into GIS Annually to include both private and public post-construction
- Obtain as-built plans for all the public and private post-construction BMPs that are installed within the City
- Keep copies of all inspection reports
- Keep copies of escalating enforcement actions (Informal Notice, NoV, Stop Work Order)

## **V. Conclusion**

The guidelines provided are intended as a tool to be used by City staff to conduct post-construction inspections and familiarize staff with the practices of construction site erosion and sediment control.

**Attachment 11 – Monthly Building Reports**

**OCTOBER 2017**

Permit Type	Total	U	Value
Residential - Single Family - Detached	26		\$4,244,337.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00
Residential - Add/Alter/Reno	46		\$444,786.00
Manufactured Homes	11		\$315,400.00
Demolition	5		\$0.00
Commercial - New Construction	7		\$7,325,000.00
Commercial - Add/Alter/Reno	13		\$8,412,517.00
Swimming Pools	5		\$230,000.00
Signs	8		\$0.00
<b>TOTALS</b>	<b>121</b>		<b>\$20,972,040.00</b>

**NOVEMBER 2017**

Permit Type	Total	U	Value
Residential - Single Family - Detached	31		\$5,373,882.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00
Residential - Add/Alter/Reno	31		\$258,324.00
Manufactured Homes	20		\$508,518.00
Demolition	16		\$0.00
Commercial - New Construction	8		\$4,414,950.00
Commercial - Add/Alter/Reno	12		\$671,380.00
Swimming Pools	3		\$130,000.00
Signs	16		\$0.00
<b>TOTALS</b>	<b>137</b>		<b>\$11,357,054.00</b>

**DECEMBER 2017**

Permit Type	Total	U	Value
Residential - Single Family - Detached	37		\$5,453,470.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00
Residential - Add/Alter/Reno	34		\$330,438.00
Manufactured Homes	10		\$349,637.00
Demolition	8		\$0.00
Commercial - New Construction	3		\$5,450,000.00
Commercial - Add/Alter/Reno	8		\$1,358,210.00
Swimming Pools	1		\$45,000.00

Signs	6		\$0.00
<b>TOTALS</b>	<b>107</b>		<b>\$12,986,755.00</b>

## JANUARY 2018

Permit Type	Total		Value
Residential - Single Family - Detached	51		\$7,898,671.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	1		\$2,002,000.00
Residential - Add/Alter/Reno	30		\$234,573.00
Manufactured Homes	5		\$119,900.00
Demolition	9		\$0.00
Commercial - New Construction	1		\$1,696,325.00
Commercial - Add/Alter/Reno	11		\$1,910,350.00
Swimming Pools	0		\$0.00
Signs	28		\$0.00
<b>TOTALS</b>	<b>136</b>		<b>\$13,861,819.00</b>

## FEBRUARY 2018

Permit Type	Total		Value
Residential - Single Family - Detached	32		\$5,348,736.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00
Residential - Add/Alter/Reno	38		\$836,404.00
Manufactured Homes	6		\$191,738.00
Demolition	11		\$0.00
Commercial - New Construction	1		\$12,700.00
Commercial - Add/Alter/Reno	10		\$2,589,854.00
Swimming Pools	2		\$68,400.00
Signs	24		\$0.00
<b>TOTALS</b>	<b>124</b>		<b>\$9,047,832.00</b>

## MARCH 2018

Permit Type	Total		Value
Residential - Single Family - Detached	24		\$3,825,192.00
Residential - Single Family - Attached	4		\$704,000.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	10		\$20,231,090.00
Residential - Add/Alter/Reno	54		\$619,658.00
Manufactured Homes	12		\$475,900.00
Demolition	0		\$0.00
Commercial - New Construction	18		\$4,446,157.00

Commercial - Add/Alter/Reno	18		\$737,500.00
Swimming Pools	2		\$80,000.00
Signs	8		\$0.00
<b>TOTALS</b>	<b>150</b>		<b>\$31,119,497.00</b>

## APRIL 2018

Permit Type	Total		Value
Residential - Single Family - Detached	37		\$6,946,476.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00
Residential - Add/Alter/Reno	219		\$2,439,827.00
Manufactured Homes	13		\$589,076.00
Demolition	11		\$0.00
Commercial - New Construction	2		\$5,869,300.00
Commercial - Add/Alter/Reno	21		\$2,401,237.00
Swimming Pools	5		\$287,900.00
Signs	14		\$0.00
<b>TOTALS</b>	<b>322</b>		<b>\$18,533,816.00</b>

## MAY 2018

Permit Type	Total		Value
Residential - Single Family - Detached	27		\$5,452,049.00
Residential - Single Family - Attached	4		\$770,000.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00
Residential - Add/Alter/Reno	217		\$2,183,270.00
Manufactured Homes	4		\$181,900.00
Demolition	5		\$0.00
Commercial - New Construction	13		\$1,689,341.00
Commercial - Add/Alter/Reno	18		\$20,142,400.00
Swimming Pools	2		\$100,200.00
Signs	30		\$0.00
<b>TOTALS</b>	<b>320</b>		<b>\$30,519,160.00</b>

## JUNE 2018

Permit Type	Total		Value
Residential - Single Family - Detached	28		\$5,713,359.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00
Residential - Add/Alter/Reno	147		\$1,679,969.00
Manufactured Homes	6		\$237,103.00

Demolition	11		\$0.00
Commercial - New Construction	4		\$435,000.00
Commercial - Add/Alter/Reno	19		\$2,858,233.00
Swimming Pools	4		\$150,000.00
Signs	20		\$0.00
<b>TOTALS</b>	<b>239</b>		<b>\$11,073,664.00</b>

## JULY 2018

Permit Type	Total		Value
Residential - Single Family - Detached	54		\$8,065,793.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00
Residential - Add/Alter/Reno	200		\$1,699,016.00
Manufactured Homes	15		\$574,946.00
Demolition	3		\$0.00
Commercial - New Construction	9		\$1,791,594.00
Commercial - Add/Alter/Reno	16		\$797,818.00
Swimming Pools	5		\$172,000.00
Signs	6		\$0.00
<b>TOTALS</b>	<b>308</b>		<b>\$13,101,167.00</b>

## AUGUST 2018

Permit Type	Total		Value
Residential - Single Family - Detached	112		\$17,558,777.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00
Residential - Add/Alter/Reno	117		\$1,028,045.00
Manufactured Homes	8		\$274,000.00
Demolition	9		\$0.00
Commercial - New Construction	8		\$7,048,257.00
Commercial - Add/Alter/Reno	19		\$797,977.00
Swimming Pools	3		\$190,700.00
Signs	14		\$0.00
<b>TOTALS</b>	<b>290</b>		<b>\$26,897,756.00</b>

## SEPTEMBER 2018

Permit Type	Total		Value
Residential - Single Family - Detached	31		\$5,100,301.00
Residential - Single Family - Attached	0		\$0.00
Residential - New 2 Unit Bldgs	0		\$0.00
Residential - New 3-4 Unit Bldgs	0		\$0.00
Residential - New 5+ Unit Bldgs	0		\$0.00

