#### Phase II MS4 Annual Report

For



# Stormwater Management Program Year 2

(January 1, 2020 – December 31, 2020)
Permit Authorization Number: TXR040103

**Prepared For** 



#### **Texas Commission on Environmental Quality**

March 2021

Prepared By



5237 N. Riverside Drive, Suite 100 Fort Worth, TX 76137 (817) 336-5773

TNP PROJECT # EVR 17284



### A. General Information

Authorization Number: TXR040103						
Reporting Year: Year 2						
Annual Report Year: Calendar Year						
Beginning and End Dates: January 1, 2020 – December 31, 2020	)					
MS4 Operator Level: Level 1						
Name of MS4/Permittee: City of Everman MS4						
Contact Name: Mr. Jeff Reed, Director of Streets and Parks						
Telephone Number: 817-293-0525						
Mailing Address: 212 North Race Street Everman, TX 76140						
Email Address: <u>ireed@evermantx.net</u>						
A copy of the annual report was submitted to the TCEQ Region.						
Yes No						
Region the annual report was submitted to: TCEQ Region 4.						
<ul> <li>B. Status of Compliance with the MS4 GP and SWMP (Pa</li> <li>1. Provide information on the status of complying with permi</li> </ul>						
1. Trovide information on the states of complying with permit	1 1	·	`			
	Yes	No	Explain			
Permittee is currently in compliance with the SWMP as submitted to and approved by the TCEQ.	×					
Permittee is currently in compliance with recordkeeping and reporting requirements.						
Permittee meets the eligibility requirements of the permit (e.g., TMDL requirements, Edward Aquifer limitations, compliance history, etc.).	×					
Permittee conducted an annual review of its SWMP in conjunction with preparation of the annual report.	×					



2. Provide a general assessment of the appropriateness of the selected BMPs. Use table below or attach a summary, as appropriate:

MCM	ВМР	BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.
1	Educational Brochures	Yes, educating the public about stormwater is an important part of reducing pollution that enters into stormwater runoff.
1	Park Cleanup	Yes, cleaning up litter, and educating residents about stormwater pollution reduces the amount of pollutants that may enter into storm drains.
1	Pet Waste Management	Yes, by teaching residents to pick up after their pets, the amount of bacteria entering local waterways can be decreased
1	Storm Drain Marking	Yes, a marker on the storm drains will remind residents that storm drains discharge directly to creeks and streams. This can prevent and may prevent dumping and discharge of pollutants into the storm drain.
1	Youth Education	Yes, educating children about stormwater pollution increases awareness and reinforces what can be done to reduce it.
1	Stormwater Education	Yes, it is important to educate residents about the importance of the program.
1	SWMP Annual Review	No, however, it is important to review the program annually to ensure the program is clear, specific, and measurable.
2	Illicit Discharge Ordinance	Yes, regulating and enforcing illicit discharges is important in reducing pollution.
2	Storm Drainage Outfall Map	Yes, being able to easily identify the source of illicit discharges is vital to protecting stormwater quality.
2	Education & Training on Illicit Discharges	Yes, educating the City staff on identifying and taking corrective actions can eliminate future illicit discharges.
2	Public Reporting and Response Procedures	Yes, enabling citizens to report illicit discharges is very important for the City to locate and address the discharges in a timely manner.
2	Source Investigation & Elimination	Yes, determining the source of an illicit discharge is important in order to begin corrective actions and eliminate future discharges.
3	Erosion and Sediment Control Ordinance	Yes, by allowing the City to enforce erosion and sediment control on construction sites, pollutants from stormwater runoff are reduced.
3	Construction Plan Review Procedures	Yes, by ensuring that construction sites are enacting appropriate erosion and sediment control BMPs.



мсм	ВМР	BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.
3	Construction Site Inspections & Enforcement	Yes, performing the site inspections will ensure proper installation and maintenance of erosion and sediment controls and reduce transport of sediment load.
3	Construction Stormwater Training	Yes, stormwater pollution can reduced by properly training staff to identify, report, and correct improper erosion control practices on construction sites.
4	Post-Construction Ordinance	Yes, allows the City to enforce post-construction and long term maintenance requirements, reducing the amount of pollution that might enter the storm drain from runoff.
4	Long-Term Maintenance of Post-Construction BMPs	Yes, developing long-term operation and maintenance requirements ensures that post-construction BMPs will be maintained according to the City's criteria.
5	Facility & Stormwater Control Inventory	Yes, maintaining an inventory of City-owned facilities and stormwater controls identifies facilities and controls of concern in order to establish pollution prevention measures and sources of pollution.
5	Municipal Employee Training Program	Yes, by training employees to identify, and properly record, and respond to any illicit discharges or illegal dumping around the city, stormwater pollution may be reduced.
5	Contractor Requirements & Oversight	Yes, developing contractual requirements will ensure that contractors are using appropriate control measures and standard operating procedures when working within the MS4.
5	Municipal Operation & Maintenance Activities	Yes, performing the assessment identifies possible pollutants and solutions to prevent pollution.



3. Describe progress towards reducing the discharge of pollutants to the maximum extent practicable. Summarize any information used (such as visual observation, amount of materials removed or prevented from entering the MS4, or if required monitoring data, etc.) to evaluate reductions in the discharge of pollutants. Use a table or attach a narrative description as appropriate.

MCM	ВМР	Information Used	Quantity	Units	Does BMP Demonstrate a Direct Reduction in Pollutants? (yes or no, explain)
1	Educational Brochures	City Event	0	Event	No, but educating the public about stormwater pollution is an important part of the stormwater program.
1	Park Cleanup	Cleanup Event	0	Event	Yes, picking up litter is a direct reduction of pollutants
1	Pet Waste Management	City Event	0	Event	No, but educating the public about stormwater pollution is necessary for a successful program.
1	Storm Drain Marking	Inlets Inspected	4	Inlets	No, but by marking storm drains, it could deter residents/commercial businesses from putting waste down the storm drain, which leads to less pollution in the waterways.
1	Youth Education	Number of Educational Material Distributed	0	Educational Brochures	No, but educating the youth on stormwater pollution is an important part of the stormwater program.
1	SWMP Annual Review	BMPs Reviewed	21	BMPs	No, however, reviewing the program and BMPs annually ensures the program is compliant with TPDES permit.
2	Illicit Discharge Ordinance	Number of Violations	1	Violations	No, but the City needs to be able to enforce the ordinance to deter the public from putting pollutants in waterways.
2	Storm Drainage Outfall Map	Outfalls Mapped	100%	Outfalls	No, but the BMP allows staff to easily track and respond to illicit discharges.
2	Education & Training on Illicit Discharges	Number of Training Attendees	1	Attendee	No, but providing educational information allows the staff to identify and take corrective actions on illicit discharges.



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мсм	ВМР	Information Used	Quantity	Units	Does BMP Demonstrate a Direct Reduction in Pollutants? (yes or no, explain)	
2	Public Reporting and Response Procedures	Number of Illicit Discharge Inspection	0	Illicit Discharge Inspection	No, but public reporting allows the City to have a quicker response to any illicit discharges.	
2	Source Investigation & Elimination	Number of Violations	1	Violations	No, but it is important that the City follows proper procedures for addressing the source of an illicit discharge to prevent any future illicit discharges.	
3	Erosion and Sediment Control Ordinance	Number of Construction Sites	0	Construction Inspections	No, but placing requirements on construction sites reduces the amount of pollution in the storm drains from site runoff.	
3	Construction Plan Review Procedures	Number of Construction Plans Reviewed	1	Construction Plans	No, but it is important the City have proper review procedures to ensure that construction sites are enacting appropriate pollutant reducing BMPs.	
3	Construction Site Inspections & Enforcement	Number of Construction Sites	0	Construction Inspections	No, but it is important for the City to have proper inspection procedures to ensure the construction sites are complying the City's Erosion and Sediment Control Ordinance.	
3	Construction Stormwater Training	Number of Training Attendees	1	Attendee	No, but it is important that inspectors be trained such that they can identify and correct improper erosion control practices and prevent stormwater pollution from construction sites.	
4	Post-Construction Ordinance	Number of Post- Construction Inspections	0	Post- Construction Inspections	No, but requiring developers to install post-construction runoff control measures reduces the amount of pollution from the site long term	
4	Long-Term Maintenance of Post-Construction BMPs	Number of Maintenance Plan Implemented	0	Maintenance Plans	Yes, developing long-term operation and maintenance requirements ensures post-construction BMPs will be maintained according to the City's criteria.	



MCM	ВМР	Information Used	Quantity	Units	Does BMP Demonstrate a Direct Reduction in Pollutants? (yes or no, explain)
5	Facility and Stormwater Control Inventory	Facilities & Stormwater Controls	12	Controls	No, however it is important to identify City-owned facilities and stormwater controls in order to establish pollution prevention measures and sources of pollution.
5	Municipal Employee Training Program	Number of Training Attendees	1	Attendee	No, but training the employees is important so that stormwater pollution may be prevented or reduced.
5	Contractor Requirements & Oversight	Number of Contractual Requirements	0	Contractual Requirements	No, but implementing contractual requirements and oversight ensures that MS4-hired contractors are accountable to the MS4'd pollution reduction goals.
5	Municipal Operations & Maintenance Activities	Number of Inspections	0	Inspections	No, however performing the assessment on municipal operations and maintenance activities identifies possible pollutants and will help develop standard operating procedures to reduce and minimize pollutant discharges.



4. Provide the measurable goals for each of the MCMs, and an evaluation of the success of the implementation of the measurable goals.

MCM	Measurable Goal	Success
1	Provide brochures to the public at City facilities. Distribute brochures to at least one City event each year.	Did not meet goal – City events were canceled due to COVID. The City was unable to distribute brochures.
1	Advertise the cleanup at least once on the City's website.	Did not meet goal – City events were canceled due to COVID.
1	Coordinate at least once annual cleanup event.	Did not meet goal – City events were canceled due to COVID.
1	Provide educational material about pet waste at 1 City event annually.	Did not meet goal – City events were canceled due to COVID.
1	Annually inspect 20% of marked inlets. Perform any maintenance.	Met goal. The City inspected 20% (4) of marked inlets.
1	Distribute educational material to local schools.	Did not meet goal – Schools were either closed or had limited contact due to COVID.
1	Post SWMP on City's website no later than 30 days after the approval date.	Will post on website once SWMP is approved.
1	Post annual report on City's website no later than 30 days after the due date.	Did not meet goal – The City will post the annual reports on City website this year.
1	Annually review SWMP to ensure compliance.	Met goal – The City reviewed the program and deemed no changes necessary.
2	Conduct 100% of illicit discharge inspections.	Met goal — The City conduct an illicit discharge inspection.
2	Investigate 100% of illicit discharges reported.	Met goal – The City investigated 1 illicit discharge reported.
2	Annually update the storm drainage system maps as necessary.	Met goal – 100% of the outfalls have been mapped.
2	Provide annual IDDE training at least once a year for designated City staff and new hires.	Met goal – A City staff member attended NCTCOG training on February 26, 2020.
2	Investigate 100% of illicit discharges reported.	Met goal – The City investigated 1 illicit discharge reported.



мсм	Measurable Goal	Success
2	Conduct 100% of illicit discharge inspections.	Met goal – The City conduct an illicit discharge inspection.
2	Investigate 100% of illicit discharges reported.	Met goal – The City investigated 1 illicit discharge reported.
3	Inspect 100% of construction sites each year.	There was no active construction to inspect this year.
3	Inspect 100% of complaints driven site each year.	There was no active construction to inspect this year.
3	Administer the construction plan review process for 100% of new regulated construction projects.	Met Goal – The City engineer administered construction plan review for 1 new regulated construction projects.
3	Inspect 100% of construction sites each year.	There was no active construction to inspect this year.
3	Inspect 100% of complaint driven site each year.	There was no active construction to inspect this year.
3	Conduct annual construction stormwater training at least once a year for designated City staff and new hires.	Met goal – A City staff member attended NCTCOG training on February 26, 2020.
4	Investigate 100% of post-construction violations or complaints.	Met goal — There are currently no post- construction BMPs installed.
4	Implement maintenance plans for new owners or operators once post-construction BMPs is installed.	Met goal – The City has requirements set in place for long-term maintenance and operations.
5	Maintain an inventory of City-owned and operated facilities and stormwater controls and update as necessary.	Met goal — City maintains inventory of City- owned and operated facilities.
5	Provide annual municipal employee training at least once a year for designated staff and new hires.	Met goal – A City staff member attended NCTCOG training on February 26, 2020.
5	Implement contractual requirements to new contractors.	Met goal – The City has requirements set in place for contractors. However, the City only occupies contractor for emergency maintenance.
5	Maintain contracts with current contractors and revise as necessary.	Met goal – The City has requirements in place for contractors to comply with current stormwater requirements.
5	Inspect 100% of municipal operations and facilities once a year.	Did not meet goal – City facilities were closed to prevent the spread of COVID.



#### C. Stormwater Data Summary (Part IV Section B.2. (b))

1. Provide a summary of all information used, including any lab results (if sampling was conducted) to assess the success of the SWMP at reducing the discharge of pollutants to the MEP.

The following BMPs were used to evaluate the success of the SWMP at reducing pollutants to the maximum extent practicable.

- Public Reporting & Response Procedures
  - The City actively encourages, tracks, and responds to residents observations of illicit discharges. While this does not require City forces to actively monitor, it allows for more "boots on the ground", more visual coverage, and city awareness and response.
- O Source Investigation and Elimination
  - The City has developed written procedures for responding to illicit discharges including inspections, investigations, and corrective actions. Additionally, City staff that are routinely exposed to pollutant sources are trained to monitor and observe conditions as part of their day-to-day operations.
- Construction Site Inspections and Enforcement
  - This BMP requires city stormwater personnel to be actively monitoring construction sites for stormwater pollutants.
- Municipal Operation and Maintenance Activities
  - Observing the municipal operations and maintenance activities identifies possible pollutants that can be discharged into storm drains. In future years, the City has identified a BMP that will define monitoring and inspection frequencies which will result in active monitoring and observance of potential pollution.

#### D. Impaired Waterbodies (Part IV Section B.2. (c))

- Identify whether an impaired water within the permitted area was added to the latest EPA-approved 303(d) list of the Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d). List any newly-identified impaired waters below by including the name of the waterbody and cause of impairment.
  - The City of Everman discharges into North Fork Chambers Creek, South Fort Chamber Creek and Village Creek. The state classified waterbody that ultimately receives the discharge from Everman is Lake Arlington (#0828). While this waterbody is not located within a TMDL watershed, Village Creek is listed as impaired on the TCEQ 2014 303d Impaired Waterbodies list for bacteria. The City of Everman has implemented BMPs specifically targeting bacteria, including Pet Waste Management and Park Cleanups. The City will monitor and determine the effectiveness of these BMPs throughout the permit term and make any changes as needed.
- 2. If applicable, explain below any activities taken to address the discharge to impaired waterbodies, including any sampling results and a summary of the small MS4's BMPs used to address the pollutant of concern.
  - Not applicable. The City of Everman discharges into an impaired water body (Village Creek)
    without an approved TMDL by TCEQ or EPA.



- 3. Describe the implementation of targeted controls if the small MS4 discharges to an impaired waterbody with an approved TMDL.
  - Not applicable. The City of Everman discharges into an impaired water body (Village Creek) without an approved TMDL by TCEQ or EPA.
- 4. Report the benchmark identified by the MS4 and assessment activities:
  - Not applicable. The City of Everman discharges into an impaired water body (Village Creek) without an approved TMDL by TCEQ or EPA.
- 5. Provide an analysis of how the selected BMPs will be effective in contributing to achieving the benchmark:
  - Not applicable. The City of Everman discharges into an impaired water body (Village Creek) without an approved TMDL by TCEQ or EPA.
- 6. If applicable, report on focused BMPs to address impairment for bacteria:

Description of bacteria-focused BMP	Comments/ Discussion
Park Cleanup	The program reduces the amount of trash in the local waterways.
Pet Waste Management	Informing residents above picking up after their pets can decrease the amount of bacteria entering local waterways.
Source Investigation and Elimination	The City has developed written procedures for responding to illicit discharges including inspections, investigations, and corrective actions. Additionally, City staff that are routinely exposed to pollutant sources are trained to monitor and observe conditions as part of their day-to-day operations.

- 7. Access the progress to determine BMP's effectiveness in achieving the benchmark.
  - Not applicable. The City of Everman discharges into an impaired water body (Village Creek) without an approved TMDL by TCEQ or EPA.



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

Describe any stormwater activities the MS4 operator has planned for the next reporting year.

MCM	ВМР	Stormwater Activity	Description/Comments*
1	Educational Brochures	Provide brochures to the public at City facilities. Distribute brochures to at least one City event each year.	The City will continue to provide educational brochures to City residents.
1	Park Cleanup	Advertise the cleanup at least once of the City's website.	The City will continue to advertise the cleanup on the City's website.
1	Park Cleanup	Coordinate at least once annual cleanup event.	The City will continue to host an annual cleanup event.
1	Pet Waste Management	Provide educational material pet waste at 1 City events annually.	The City will distribute educational material about pet waste management to residents.
1	Storm Drain Marking	Annually inspect 20% of marked inlets. Perform any maintenance if necessary.	The City will continue to maintain storm drains each year.
1	Youth Education	Distribute educational material to local schools.	The City will continue to educate material to local schools.
1	Stormwater Education	Post SWMP on City's website no later than 30 days after the approval date.	The City will post the SWMP once the program is approved.
1	Stormwater Education	Post annual reports on City's website no later than 30 days after the due date.	The City will post the annual reports on the City's website.
1	SWMP Annual Review	Annually review SWMP to ensure compliance.	The City will annually review the SWMP to ensure compliance.
2	Illicit Discharge Ordinance	Conduct 100% of illicit discharge inspections.	The City will continue to enforce the illicit discharge ordinance and document any actions taken.



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MCM	ВМР	Stormwater Activity	Description/Comments*
2	Illicit Discharge Ordinance	Investigate 100% of illicit discharges reported.	The City will continue to investigate 100% of illicit discharges.
2	Storm Drain Outfall Map	Annually update the storm drainage system maps as necessary.	The City will update the storm drain outfall map based on development or redevelopment.
2	Education and Training on Illicit Discharges	Provide annual IDDE training at least once a year for designated City staff and new hires.	The City will provide illicit discharge training for pertinent City staff and document attendees and training materials used.
2	Public Reporting and Response Procedures	Investigate 100% of illicit discharges reported.	The City will investigate 100% of illicit discharges reported.
2	Source Investigation and Elimination	Conduct 100% of illicit discharge inspections.	The City will conduct 100% of illicit discharge inspections.
2	Source Investigation and Elimination	Investigate 100% of illicit discharges reported.	The City will investigate 100% of illicit discharges reported.
3	Erosion and Sediment Control Ordinance	Inspect 100% of construction sites each year.	The City will inspect 100% of construction sites each year.
3	Erosion and Sediment Control Ordinance	Inspect 100% of complaints driven site each year.	The City will inspect 100% of complaint driven site each year.
3	Construction Plan Review Procedures	Administer the construction plan review process for 100% of new regulated construction projects.	The City will continue to administer the review process for all new construction.
3	Construction Site Inspections and Enforcement	Inspect 100% of construction sites each year.	The City's stormwater inspector(s) will administer the inspection and enforcement program and document construction site inspections and follow ups.
3	Construction Site Inspections and Enforcement	Inspect 100% of complaint driven site each year.	The City will inspect 100% of complaint driven site each year.



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MCM	ВМР	Stormwater Activity	Description/Comments*	
3	Construction Stormwater Training	Conduct annual construction stormwater training at least once a year for designated City staff and new hires.	The City will continue to implement and track the training program for the designated employees.	
4	Post Construction Ordinance	Investigate 100% of post- construction violations or complaints.	The City will implement and enforce the newly enacted Post-Construction Ordinance and document any enforcement actions taken.	
4	Long-Term Maintenance of Post-Construction BMPs	Implement maintenance plans for new owners or operators once post-construction BMPs is installed.	The City will develop requirements for the long-term operation and maintenance of structural controls installed on the development sites.	
5	Facility and Stormwater Control Inventory	Maintain an inventory of City-owned and operated facilities and stormwater controls and update as necessary.	The City will prepare and maintain an inventory of City-owned and operated facilities and stormwater controls.	
5	Municipal Employee Training Program	Provide annual municipal employee training at least once a year for designated staff and new hires.	The City will implement the municipal employee training program and maintain a training attendee list with signatures.	
5	Contractor Requirements and Oversight	Implement contract requirements to new contractors.	The City will develop contractual requirements for applicable contractor agreements and written oversight procedures.	
5	Contractor Requirements and Oversight	Maintain contracts with current contractors and revise as necessary.	The City will maintain contracts with current and new contractors.	
5	Municipal Operation and Maintenance Activities	Inspect 100% of municipal operations and facilities once a year.	The City will develop pollution prevention measures for municipal O&M activities and select inspection frequencies.	



### F. Stormwater Modifications (Part IV Section B.2.(e)) 1. The SWMP and MCM implementation procedures are reviewed each year. Nο 2. 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 If "Yes", report on changes made to measurable goals and BMPs: 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. No additional BMPs are anticipated for the City of Everman at this time. 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 2.a. Is the named permittee sharing a SWMP with other entities? Yes 2.b. If 'yes,' is this a system-wide annual report including information for all permittees? No Yes

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

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



2.b. If 'yes' then provide the following into for this	s permit year:
The number of municipal construction activities authorized under this general permit	N/A
The total number of acres disturbed for municipal	N/A

#### J. Certification

construction projects

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 person 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: Craig W. Spencer	Title: City Manager
Signature:	Date:



MC	M:	Public Education, Outreach,	& Involvement	
ВМ	P Title:	Educational Brochures		
Res	ponsible Department:	Public Works		
Med	Measurable Goal:  Year 2 — Provide brochures to the public at City facilities.  Distribute brochures to at least one City event each year.			
1.	Was the measurable goal accom (a) If so, explain what was done		Yes ⊠ goal.	No ⊠
!	(b) If not, why was the measurable	e goal not accomplished?		
	Stormwater Education flyers are Unfortunately, City events were odistributed.	available for residents and visi		
2.	Was this BMP appropriate to me	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be so (a) Please explain.	uccessful?	Yes ⊠	No ⊠
	The City understands that educate successful program and raises aw	• .		amount to a
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	ommended for the next	Yes □	No ⊠
	•			
5.	Will a Notice of Change (NOC) b	pe issued for this BMP?	Yes □	No ⊠



# Landscape Irrigation

A "TAKE CARE OF TEXAS" GUIDE

ne of the most important steps in maintaining a healthy landscape is effective irrigation. A properly watered lawn and garden is more resistant to pests and other lawn problems. However, much of the water used to maintain our landscapes is wasted through inefficient watering techniques. By developing a water-efficient lawn and garden, you can maintain a healthy and beautiful yard that benefits the environment.

#### Water-Efficient Landscapes

A water-efficient landscape starts with plant selection. Choosing plants adapted to the area will help make your landscape both beautiful and water-efficient. Plants native to your area typically require less maintenance and smaller amounts of pesticides, fertilizers, and supplemental water.

Keep in mind, though, that newly established landscaping will require

more water than an established area. Adjust your watering schedule according to the needs of your plants.\*

#### Watering Mistakes

Much of the water applied to lawns and gardens never gets absorbed by the plants. Common ways that water is wasted include:

- Runoff. Applying water too rapidly causes runoff, because grass and plants can only absorb so much water at a time. When runoff occurs, soil, fertilizers, and pesticides can be carried to nearby streams.
- Evaporation. Watering in the middle of the day or using a sprinkler that sprays a fine mist causes much of the water you apply to be lost through evaporation. Plants don't have enough time to absorb the water before it is evaporated by the sun.
- Underwatering. Watering too little is wasteful because it does

- little to alleviate any drought stress that the plants may have.
- Overwatering. Applying too much or too often causes the greatest waste of water. In addition to overwatering the plant, excessive irrigation can leach nutrients deep into the soil away from plant roots, which increases the chances of runoff pollution.

#### **Good Watering Techniques**

The key to watering lawns is to apply water infrequently, yet thoroughly. This creates a deep, well-rooted lawn that efficiently uses the water that is stored in the soil. To know when to water your lawn, simply observe the grass. Wilting and discoloration are signs of water stress. At the first sign of wilting, you have 24 to 48 hours before damage

To water properly, apply 1 inch of water to the lawn as rapidly as possible without runoff.

- An easy way to measure your application of water is to place a 6-ounce tuna can on your lawn.
   When the can is full, you have applied enough water.
- If you start to notice runoff before the can is full, turn off the water. Then, wait for approximately one hour to allow the grass to absorb the water, turn the water on again, and wait for the tuna can to fill.

Water early in the morning, before 10 a.m. Avoid watering from mid-morning to late afternoon, when you can lose one-third of your water to evaporation. Also avoid watering in the evening, because lawns and plants that are left wet overnight are more prone to disease.\*



\*Always comply with your water system's water-use restrictions.

#### **Irrigation Systems**

The goal of any irrigation system is to give plants a sufficient amount of water without wasting any. You can effectively achieve water conservation in your landscape using underground sprinkler, hoseend sprinkler, or drip irrigation systems.

To make sure your underground or drip irrigation system works properly and conserves water, discuss your land-scaping needs and plans with a licensed irrigator. You can design and install your own landscape irrigation system but it must meet required state and local design standards. You may also hire a licensed irrigator to install a system for you. To locate a licensed irrigator in Texas, visit <www2.tceq.texas.gov/lic\_dpa/>.

Please note that all built-in irrigation systems are required to be connected using an approved backflow-prevention method.

Spray systems can consist of "hose-end" sprinklers that you can set up and move around the yard, or can be built-in irrigation systems. Your area may have specific requirements for built-in irrigation systems, including obtaining

#### Rainwater Harvesting

Rainwater harvesting can offer you another effective way to conserve water in your yard. An easy way to begin harvesting rainwater is by directing a gutter downspout into a barrel and using the collected water in gardens or on potted plants. Rainwater is free, and it's better for your plants than treated water, because it does not contain hard minerals.

For more information, see the publications Rainwater Harvesting with Rain Barrels: A "Take Care of Texas" Guide (GI-383) < www.tceq. texas.gov/goto/gi-383> and Rainwater Harvesting (GI-404, reprinted courtesy of the Texas A&M AgriLife Extension Service) < www.tceq.texas.gov/goto/gi-404>.

a permit for the system and installing the appropriate backflow-prevention assembly.

Make sure that the hose-end sprinkler heads are adjusted so as to avoid watering sidewalks and driveways or other hard surfaces. A hose-end sprinkler head should spray large droplets of water instead of a fog of fine mist, which wastes water by evaporation and wind drift. Set a timer, so that you remember to turn off the hose-end sprinkler.

When used properly, built-in automatic sprinkler systems can help you water effectively. Many underground irrigation systems use timed controllers

that turn off the system when a measured amount of water is used. Moisture sensors help prevent watering in the rain and are now required in most Texas counties. Check with your local water supplier to make sure your irrigation system meets the requirements that are in place for your area.

Built-in sprinkler systems require maintenance and adjustments. This can be done by you or a licensed irrigator or plumber.

Don't just set the built-in system in the spring and leave it on all season. Check your settings periodically to make sure that water is being applied properly, and make adjustments as needed. Many times, you can reduce the amount of time that your irrigation system is operating by 25 percent without affecting the health of your plants.

Check your sprinkler heads regularly. Remove any dirt or debris that may be clogging the nozzle and make sure that water is flowing at the proper pressure. Check for leaks, and repair them promptly.

Not all areas of your yard will necessarily have the same watering requirements. Some plants and trees may require less water than grass does; make sure you reduce the sprinkler run time for these areas.

For more information on irrigation systems, see *Landscape Irrigation: A Consumer's Guide to Landscape Irrigation in Texas* (TCEQ publication GI-390) < www.tceq.texas.gov/goto/gi-390>.

#### **Drip Irrigation**

Drip irrigation can offer a more efficient method of watering than a sprinkler can, particularly in small areas. Installation can be inexpensive and, with maintenance, a drip system can last as long as other irrigation systems. You can install



drip irrigation systems on or below the ground's surface, so consider the use and care of the area being irrigated. Consult a licensed irrigator to determine the appropriate type of drip irrigation system for your needs.

Drip irrigation applies water to the soil slowly. The water flows under low pressure through emitters, bubblers, or spray heads placed at intervals. Because drip irrigation systems distribute water slowly, the run time may be significantly longer than that for a traditional sprinkler system. However, there will be less evaporation and loss due to runoff.

There are many benefits to drip irrigation:

- With proper management, drip irrigation reduces water loss by 60 percent or more, compared with traditional watering methods. Because drip irrigation applies water just where it is needed, there is little chance of waste through evaporation or runoff.
- The soil moisture remains relatively constant.
- Water contact with the leaves, stems, and fruit of plants is minimized, preventing disease.
- Rows between plants remain dry, which reduces weed growth.
- Once installed, little labor is required to operate or maintain a drip irrigation system.

Operating a drip system is mostly a matter of deciding how often to turn it on and how long to leave it on. The object is to maintain adequate soil moisture without wasting water by applying too much.

- For newly seeded gardens, the system should run only a short time every day for a few days, to keep the surface soil from drying out.
- Plants loaded with fruit will need an inch of water every other day.

Use drip irrigation for watering vegetables, ornamental and fruit trees, shrubs, vines, and container-grown plants outdoors. Drip irrigation is not well suited for solid plantings of shallow-rooted plants such as grass and some ground covers.\*

#### Soaker Hoses

Soaker hoses can offer an easier and cheaper alternative to drip irrigation. A soaker hose is a porous hose that you can connect to an outside faucet, garden hose, or rain barrel and lay out along the base of plants. This system works well with plants that are close together, like ornamental beds with clumped flowers or ground covers.

However, you should not use a soaker hose to irrigate plants, trees, or shrubs that are spaced far apart,

because the area between the plants will be excessively watered, which wastes water and could lead to weaker plants.

### Cross-Connection Control and Backflow Prevention

To help maintain the quality of our drinking-water supplies, it is important that all Texas homeowners and land-scapers help ensure the proper control of cross-connections and the prevention of possible backflow when using any irrigation system.

#### What is a cross connection?

A cross-connection is a physical connection between drinkable water and a liquid or gas that could make the water unsafe to drink.

#### What is backflow?

Backflow is water flowing against its intended direction, which can contaminate the water supply. Backflow can be caused by either a loss of pressure in the supply lines or an increase in pressure on the customer's side.

There are several ways that you can prevent backflow in your irrigation system:

- Make sure that the end of your garden hose is never submerged in water not suitable for drinking.
- Install a hose bibb vacuum breaker on each of your outside faucets. These inexpensive devices are available in most hardware stores and are designed to allow water to flow in only one direction.
- Schedule a licensed tester of backflow-prevention assemblies to perform a test to confirm that your backflow-prevention assembly is operating properly. Keep in mind that you must have the licensed tester examine all backflow-prevention assemblies upon installation.\*\* Check with your water provider about more stringent regulations that may apply, which could require annual testing of backflow prevention assemblies.



<sup>\*</sup> Always comply with your water system's water-use restrictions.

<sup>\*\*</sup> Property owners who are not connected to a public water system, such as those using only their own well, may be exempt from this requirement.

#### For More Information

If you are thinking about installing your own irrigation system or would like to know more about the requirements for irrigation systems and licensed landscape irrigators, the rules explaining those requirements can be found in Title 30, Texas Administrative Code, Chapter 344.

The TCEQ's Landscape Irrigation Program: Implementation (RG-466) < www. tceq.texas.gov/goto/rg-466> explains the new rules (effective Jan. 1, 2009) relating to landscape irrigation for both licensed professionals and customers.

The Environmental Protection Agency's *Cross-Connection Control Manual* <water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/crossconnectioncontrol\_manual.cfm> offers information on cross-connection controls and methods of backflow prevention.

Always contact your local water supplier before planning or installing an irrigation system to ensure that you comply with any requirements.

Landscape Irrigation complements the "Take Care of Texas" Guide to Yard Care, which is meant to be a general overview of ways you can help take care of Texas in your own yard. For more detailed information, see the following other TCEQ "Take Care of Texas" guides at <TakeCareOfTexas.org/news-publications/publications>:

- The "Take Care of Texas" Guide to Yard Care (GI-28)
- Mulching and Composting (GI-36)
- Rainwater Harvesting with Rain Barrels (GI-383)
- Managing 10 Common Texas Yard Pests (GI-405)
- Managing Lawn Problems in Texas (GI-407)

#### **Additional Resources**

#### **General Information**

Texas Commission on Environmental Quality www.tceg.texas.gov

Texas Water Development Board www.twdb.texas.gov

Texas A&M AgriLife Extension Service agrilifeextension.tamu.edu

#### **Vard Care**

Texas A&M AgriLife Extension, EarthKind earthkind.tamu.edu

#### For more information, contact:

Pollution Prevention and Education, MC 108
Texas Commission on Environmental Quality
PO Box 13087
Austin TX 78711-3087
512-239-3143
www.tceq.texas.gov

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# Managing Lawn Problems in Texas

A "TAKE CARE OF TEXAS" GUIDE

#### **Choose Your Landscape**

When choosing a landscape for your yard, it is important to consider not only what you want your yard to look like, but the amount of resources and time necessary to maintain it. Lawn alternatives, such as drought tolerant native plants, can save water and energy as well as time and money by requiring little maintenance. For more information on selecting a landscape, visit <earthkind. tamu.edu>.

If you decide to have a lawn, consider planting a less extensive grass landscape and choose a turf that is right for your region and environment.

#### **Choose Your Turf**

When properly maintained, turfgrass can have a positive impact on the environment. Turfgrass that is actively

growing can be beneficial to your yard and the environment by helping to:

- stabilize soil;
- conserve water;
- filter air- and water-borne pollutants;
- suppress and control dust, glare, and noise; and
- dissipate heat.

Choosing the right type of turfgrass is an important first step in maintaining a healthy lawn. The most commonly used grasses in Texas are St. Augustine, Bermuda, buffalo, centipede, tall fescue, and zoysia, which are generally compatible with the state's diverse climate conditions. When choosing what type of grass to use, keep in mind its tolerance to shade, drought, traffic, cold, salinity, and disease. Properly adapted turfgrass will require less maintenance and smaller amounts of fertilizer and supplemental water.

For more information on selecting grasses, visit Aggie Turf, at <aggieturf.tamu.edu>.

#### **Maintain Your Lawn**

Maintaining a healthy turf will help you avoid many common lawn problems, as well as the need for many pesticides—including insecticides, herbicides, and fungicides. The following tips will help you keep your lawn healthy and beautiful:

- Choose the correct turf for your light conditions and lawn use.
- Establish an adequate depth of healthy soil (at least 6 inches under your turf).
- Aerate your lawn once a year to improve drainage and reduce soil compaction.
- Irrigate efficiently, making sure to:
  - » water in the morning, before 10 a.m.,\*
  - » wet the soil to a depth of 4–6 inches, and
  - » allow the soil to dry out between watering.
- Mow properly, taking no more than one-third of the grass blade off with each mowing.
- Be careful not to overfertilize, which can weaken turf, as well as contribute to water pollution by causing excess nutrients to be released into rainfall runoff. Choose natural or organic fertilizers, such as compost, which typically slowrelease their nutrients and can often be used in smaller amounts.
- Test your soil periodically to determine which nutrients re lacking, before you decide whether or not to fertilize.

\*Always comply with your water system's water-use restrictions.

#### **Common Lawn Problems**

#### **Fungal Diseases**



#### Take-All Patch

Take-all patch first appears as a yellowing of the grass and a darkening of the grass roots, followed by a thinning of the turf in irregular shapes. The darkening of the roots indicates rotting, and the roots can rot so extensively that the grass can be easily pulled up.

#### Infestation and Attack

Take-all patch most commonly affects St. Augustine, zoysia, and Bermuda grasses, and can rot roots so badly that it eventually kills the entire lawn. It spreads mainly during the fall, winter, and spring, when there is more moisture and cool or mild temperatures. However, the symptoms generally do not appear until the hot, stressful days of summer.

#### **Prevention and Solutions**

- Maintain good drainage in your lawn area.
- Avoid overfertilization of turf areas, as excessive nitrogen seems to promote take-all patch.
- Raise the mowing height on your mower to reduce stress to your turf.
- Avoid the use of broadleaf herbicides, which may weaken your turf.
- Avoid urea-based fertilizers.



#### **Brown Patch**

Brown patch first causes circular patterns of dead grass blades; in two to three weeks, new leaves may emerge in the center of the circular patch, giving diseased areas a donut-shaped appearance. The affected grass turns brown and grass blades rot and break off from the runners.

#### Infestation and Attack

Brown patch most commonly attacks St. Augustine grass and can spread in an area of 1 to 50 square feet. It occurs in late fall through early spring and is promoted by wet weather or frequent irrigation.

#### **Prevention and Solutions**

- Avoid overfertilization or overwatering of your lawn.
- Aerate your lawn once a year.
- At the first sign of the disease, apply a fungicide to the affected area.

#### **Lawn Stresses**



#### **Shade Stress**

Turf grass that is affected by shade stress (lack of sunlight) thins and disappears, leaving bare patches of soil and/or areas of weeds.

#### Infestation and Attack

Buffalo and Bermuda grasses do not grow well in shaded areas—these grasses are the most susceptible to shade stress.

#### **Prevention and Solutions**

- For planting in shady areas, choose shade-tolerant groundcovers or shade-tolerant turf grasses (such as St. Augustine or zoysia).
- Thin out tree branches a bit to "brighten" shady areas.
- Raise the mowing height on your mower to allow more grass blade to capture sunlight.





#### Iron Chlorosis

Iron Chlorosis causes the blades of the grass to develop green and yellow stripes, or to turn completely yellow. It occurs in alkaline (high pH) soils with high phosphorus levels, and under cool and wet soil conditions.

#### Infestation and Attack

St. Augustine grass is most susceptible to Iron Chlorosis.

#### **Prevention and Solutions**

- Do not use fertilizers that are high in phosphorus.
- Topdress your turf with 1/4- to 1/3-inch of compost.
- Aerate your lawn once a year.
- For temporary relief, try adding iron supplements to your lawn.



#### **Drought Stress**

Grass affected by drought stress looks blue-green or silverish, and individual blades curl. Footprints remain in the lawn after you step on it. The soil under the lawn is dry.

#### **Tolerance to Drought**

All turf can survive some drought stress, although some types of turf require less water than others.

- St. Augustine: drought tolerant in shade only
- Bermuda, zoysia: drought tolerant
- Buffalo: very drought tolerant

#### **Prevention and Solutions**

- Choose drought-tolerant turf grass.
- Irrigate efficiently.
- For sloped areas, consider alternatives to turf.

#### Weeds -

The two most common types of weeds are:

- Grassy. Grassy weeds have jointed, hollow stems. Their leaf blades have veins parallel to the margins and are several times longer than they are wide. Their roots are fibrous and multibranching and their flowers are usually inconspicuous.
- Broadleaf. Broadleaf weeds often have showy flowers. Their leaves have a network of veins at diverse angles to one another. Their stems are often pithy and they usually have a taproot.

#### Infestation and Attack

Weeds are often the result of poor-quality turf, rather than being the cause of it. Weeds are aggressive and reproduce quickly, enabling them to invade areas of thin, weak turf.

#### **Prevention and Solutions**

- Keep plants healthy—this will help them outcompete weeds.
- Do not let weeds flower or go to seed—this will greatly increase their potential population.
- Do not bring soil with weed seeds or weed roots on-site.
- Use drip irrigation in beds so that you apply water only where you want it—remember, weeds also need water to grow.
- Monitor and remove weeds regularly, before they are established.
- Prevent weeds from growing by blocking light from them or by creating a physical barrier to impede their growth.
- Minimize foot traffic or pet activity in shady areas.





Grass and other plants can be weak and unhealthy for a variety of reasons, including over-application of fertilizer. The best and only sure way to know if the soil in your yard lacks sufficient nutrients is to get a soil test from a qualified soil lab. A soil test can tell you just what your soil needs, and how much of it.

A basic soil test covers soil hydrogen ion concentration (pH or acidity/alkalinity) and the primary nutrients: nitrogen, phosphorus, and potassium (NPK). For an additional fee, you can request testing for micronutrients, organic matter, and soil texture. Your county Texas A&M AgriLife Extension agent can help you get an inexpensive soil test, go over the results with you, and advise you on the best subsequent course of action. For information on your local Texas A&M AgriLife Extension office, visit <agrilifeextension.tamu.edu>.

If you do encounter a problem in your lawn, try solving it using natural, non-invasive methods.

#### FREQUENTLY ASKED QUESTIONS

### What can I do to make sure my soil is healthy?

A soil test is the best way to find out which nutrients your soil lacks. Contact your local Texas A&M AgriLife Extension office for assistance in obtaining a test.

In most cases, compost is the best soil additive you can use. Compost contains micronutrients—such as iron and manganese—that are often absent in synthetic fertilizers. Compost also balances both acidic and alkaline soils, bringing pH levels into the optimum range for nutrient availability.

For more information, see *Mulching* and *Composting: A "Take Care of Texas"* Guide (GI-36) <TakeCareOfTexas.org/publications>.

#### Is it okay to use some pesticides?

Synthetic chemical pesticides can be effective at wiping out pests, but rarely provide long-term solutions, and may create additional problems by wiping out beneficial plants and animals along with the pests. Ensuring that your lawn and soil are healthy, as well as using native and adapted plants, will help you reduce the need for pesticides.

If you decide to use pesticides:

- Look for the least-toxic products that will do the job, and make sure they target the particular pest you're facing.
- Read the label first, including all precautions and restrictions, and then follow the directions carefully.

### How frequently should I fertilize my yard?

The best times to apply fertilizer, if it's needed, are at the beginning and end of the growing season, which will vary according to the temperature range in your region. To prevent runoff, do not overwater after applying fertilizer and avoid fertilizing just before a rainstorm.

#### What are some tips for mowing?

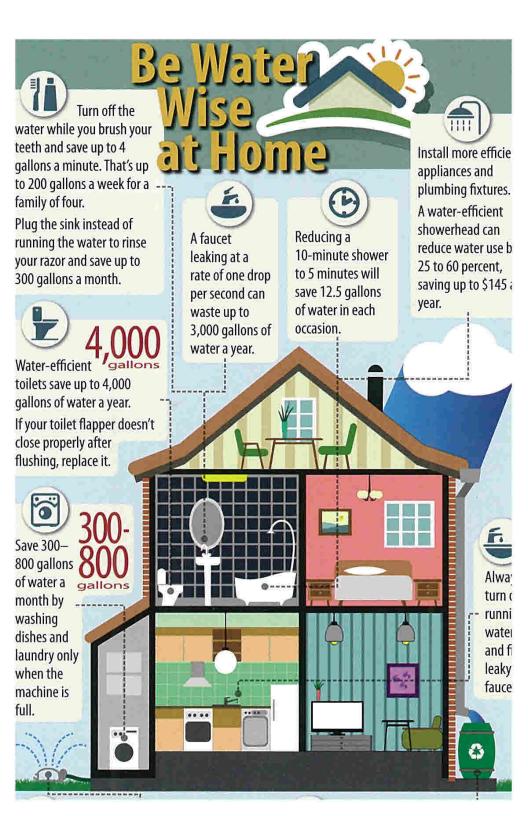
- Avoid cutting grass too short. Mow often enough that each mowing removes no more than one-third of the grass blade. For example, if you set your cutting height at 2 inches, then cut before the grass is more than 3 inches tall.
- Keep your mower's blades sharp and clean, and mow when the grass is dry.
- Mow over leaves, so that they will decompose along with the grass clippings.
- Consider using mulching blades/ kits to shred clippings and leaves as you mow.
- Consider use of more efficient equipment to help keep our air clean. Hand tools, such as push reel mowers, are lightweight, quiet, and easy to use and do not generate emissions.

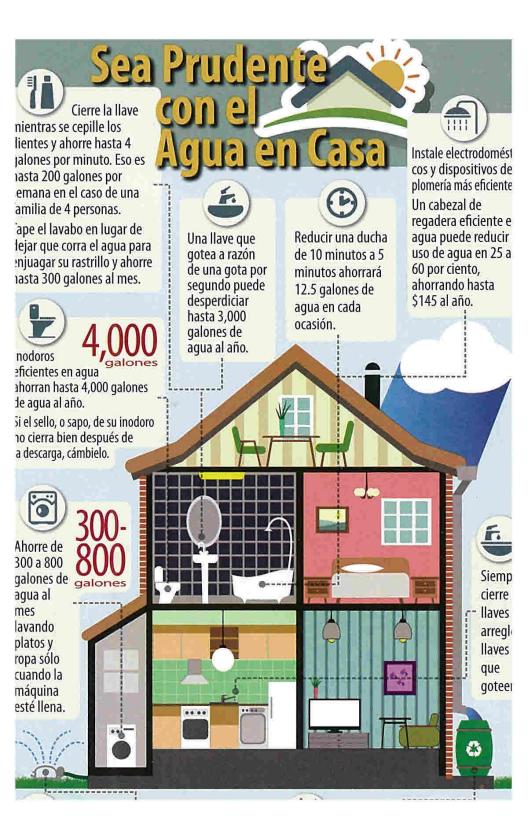
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- Managing 10 Common Texas Yard Pests (GI-405)
- Landscape Irrigation (GI-409)

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# Morrar agua ahorra dinero.

Pruebe estas sencillas sugerencias que le ayudarán a conservar agua y a ahorrar dinero en su cuenta también.

# Riegue prudentemente.

El riego del pasto y el jardín forma el 40% del uso total de agua en el hogar. Riegue su jardín a fondo, pero sólo según sea necesario: por lo general no más de una pulgada, una vez por semana.\* Considere usar riego por goteo para plantas y jardines, y riegue temprano por la mañana para minimizar la evaporación.

# Revise las llaves y los inodoros para ver si tienen goteras.

Una llave que gotea puede desperdiciar hasta 3,000 galones de agua al año. Las tazas que gotean: hasta 73,000 galones de agua al año.

# Instale artefactos de plomería que usen agua eficientemente y aireadores para las llaves.

Artefactos de plomería que usen agua eficientemente pueden reducir el consumo de agua entre 25 y 60%. Instalar aireadores reducirá por la mitad la cantidad de agua usada por cada llave.

La Comision de Calidad Ambiental de Texas (TUEQ) por el nombre en inglés) es un empleador con igualdad de opertunidades. La apencia tiene prohibide la discriminación por motivos de raza, color de piel, religión organ nacional, sexia, discapacidad, edad, orientación sexual o condición de veterano.

# .ave cargas completas de ropa.

Lavando sólo cargas completas de ropa puede ahorrar hasta 3,400 galones de agua al año. ¿Necesita una nueva lavadora? Invierta en un modelo calificado como Energy Star, que típicamente usa 50% menos agua y 37% menos energía.

# Pruebe plantas nativas en su paisaje y use agua de lluvia captada.

Plantas nativas tipicamente requieren menores cantidades de agua, pesticidas, fertilizantes y mantenimiento. Recolectar agua de lluvia para usar en el jardín no sólo es buenísimo para las plantas, sino que también le puede ahorrar agua y dinero.

# ¿Cómo cuida usted a Texas?

Visite <Cuidea Texas.org> para más sugerencias sobre la conservación del agua y otras maneras de hacer su parte. iEntre al internet y comprométase a Cuidar a Texas!

\*Siempre cumpla con las restricciones sobre el uso de agua de su departamento de servicio de agua.

# Cuidea Texas. org

¿Cómo le parece nuestro servicio al cliente? www.tceq.texas.gov/encuesta







# Saving Water Saves Money.

Try these simple tips to help you conserve water and save money on your bill, too.

# Water Wisely.

using drip irrigation for plants and gardens, and water early in household water use. Water your yard thoroughly, but only as Lawn and garden watering make up as much as 40% of total needed-usually no more than 1 inch, once a week\* Consider the morning to minimize evaporation.

# **Check Faucets and Toilets for Leaks**,

A leaky faucet can waste up to 3,000 gallons of water per year. Toilet leaks: up to 73,000 gallons a year.

# Install Water-Efficient Plumbing Fixtures and Faucet Aerators.

cut in half the amount of water used by each faucet. consumption by 25% to 60%. Installing aerators will Water-efficient plumbing fixtures can reduce water

not allow descrimination on the basis of race, color, religion, national origin, sex, disability, age, sexual The Texas Commission on Environmental Quality is an equal opportunity employer. The agency does onentation, or veteran status.

# Wash Full Loads of Laundry.

gallons of water each year. Need a new clothes washer? Invest in an Energy Star-qualified model, which typically Washing only full loads of laundry can save up to 3,400 uses 50% less water and 37% less energy per load

# Try a Native Landscape and **Use Collected Rainwater.**

Collecting rainwater for landscape use is not only great for amounts of water, pesticides, fertilizers, and maintenance. Plants that are native to Texas typically require lesser the plants, but can save you water and money.

# **How Do You Take Care of Texas?**

Visit <TakeCareOfTexas.org> for more water-conservation tips and other ways to do your part. Go online and pledge to Take Care of Texas!

'Always comply with your water system's water-use restrictions.

# Take Care Of Texas.org

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GI-400 (Revised 6/13)

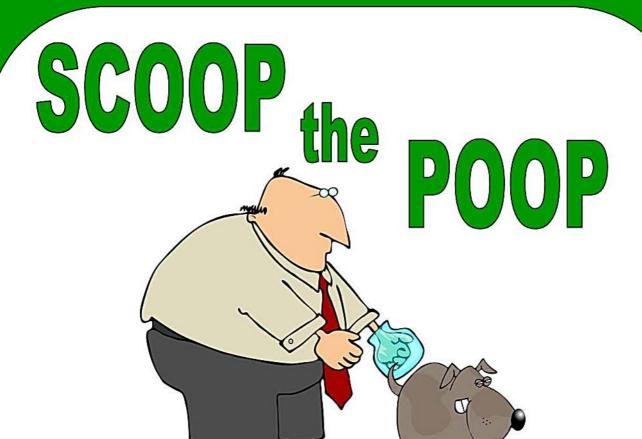




MC	M:	Public Education, Outreach,	& Involvement	
ВМІ	P Title:	Park Cleanup		
Res	ponsible Department:	Public Works		
Med	asurable Goal:	Year 2 – Advertise the cleanup at least once on the City's website. Coordinate at least once annual cleanup event.		
1.	Was the measurable goal accom (a) If so, explain what was done	•	Yes □ goal.	No ⊠
	(b) If not, why was the measurable Unfortunately, due to COVID all City will try to coordinate another	City events were canceled to r	educe the spread	of the virus. The
2.	Was this BMP appropriate to me	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be so (a) Please explain.	uccessful?	Yes □	No ⊠
	The BMP is considered unsuccessf streams and channels clear from t			eeping the City's
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠
	, , , , , , , , , , , , , , , , , , ,			
5.	Will a Notice of Change (NOC) k	pe issued for this BMP?	Yes □	No ⊠



MC	M:	Public Education, Outreach,	& Involvement	
вмі	P Title:	Title: Pet Waste Management		
Res	ponsible Department:	Public Works		
Med	asurable Goal:	Year 2 – Provide educational material about pet waste at 1 City events annually.		
1.	Was the measurable goal according (a) If so, explain what was done		Yes ⊠ goal.	No ⊠
'	(b) If not, why was the measurab	le goal not accomplished?		
	The BMP was partially completed. The City continues to provide educational flyer at City Hall about proper pet waste disposal and the harmful effects pet waste has in waterbodies. However, the City was unable to distribute educational material to City events due to COVID.			oodies.
2.	Was this BMP appropriate to me	eet the intended MCM(s)?	Yes ⊠	No 🗆
3.	Was this BMP considered to be a (a) Please explain.	successful?	Yes ⊠	No ⊠
	The BMP is partially successful because educational material is provided at City Hall, but not distributed at City events. The City understands the importance of educating the public about how pet waste impacts stormwater quality.			,
4.	Are any changes to this BMP rec permit term? (a) If so, please explain.	ommended for the next	Yes □	No ⊠
			_	_
5.	Will a Notice of Change (NOC)	be issued for this BMP?	Yes □	No ⊠





Always use a bag or scooper to clean up your pet's waste.



Poop left on the ground washes into local streams, lakes & rivers.



Dog droppings are a leading cause of E.coli pollution in local waters.

Do your part: Scoop the Poop to keep our water clean!



MCM: Public Education, Outreach, & Involvement				
ВМІ	P Title:	Title: Storm Drain Marking		
Res	ponsible Department:	nsible Department: Public Works		
Med	asurable Goal:	Year 2 – Annually inspect 20% of maintenance if necessary.	f marked inlets. P	erform any
1.	• • •	o accomplish the measurable goal.		No □
	The City has inspected 20% (4) of	f marked inlets. Marking is still visil	oie.	
ļ	(b) If not, why was the measurable	e goal not accomplished?		
2.	Was this BMP appropriate to mee	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be su (a) Please explain.	ccessful?	Yes ⊠	No □
Marking storm drains is a great way to deter residents or commercial businesses from dumping waste or pollutants. Storm drain message reminds residents the storm drain goes straight to the creek, not a wastewater treatment plant.				
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠
5.	Will a Notice of Change (NOC) b	e issued for this BMP?	Yes □	No ⊠



MC	MCM: Public Education, Outreach, & Involvement			
BM	P Title:	itle: Youth Education		
Res	ponsible Department:	e Department: Public Works		
Med	asurable Goal:	Year 2 — A minimum of 20% of all schools will be educated every year on stormwater pollution by providing local schools in the City with materials, including brochures, coloring books, and other media.		ing local schools
1.	Was the measurable goal accomp (a) If so, explain what was done t	• •	Yes □ goal.	No ⊠
	(b) If not, why was the measurable goal not accomplished?			
	The City did not distribute education limited contact due to COVID. Education in the contact due to COVID.			ed or has
2.	Was this BMP appropriate to mee	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be su (a) Please explain.	occessful?	Yes □	No ⊠
	The City understands providing stored of the stormwater program. The magnetic pollutants in stormwater will occur	nore people that are educate		
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠
5.	Will a Notice of Change (NOC) b	e issued for this BMP?	Yes □	No ⊠



MC	CM: Public Education, Outreach, & Involvement  MP Title: SWMP Annual Review			
ВМ				
Res	ponsible Department:	partment: Public Works		
Me	asurable Goal:	Year 2 — Annually review SWMP to ensure compliance.		
1.	Was the measurable goal accom (a) If so, explain what was done The City of Everman reviewed the	to accomplish the measurable  Stormwater Management Pro	<u> </u>	No □
	BMPs. No revisions were deemed	·		
	(b) If not, why was the measurabl	e goal not accomplished?		
2.	Was this BMP appropriate to me	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be so (a) Please explain.	uccessful?	Yes ⊠	No □
	It is important to review the SWN	NP annually to ensure BMPs are	e clear, specific, ar	nd measurable.
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	ommended for the next	Yes □	No ⊠
5.	Will a Notice of Change (NOC) b	ne issued for this RMP?	Yes 🗆	No ⊠



MCI	M:	Illicit Discharge Detection and	Elimination	
BMP Title:		Illicit Discharge Ordinance		
Res	ponsible Department:	Public Works		
Med	ısurable Goal:	<u>Year 2</u> – Conduct 100% of illic Investigate 100% of illicit disch		ctions.
1.	Was the measurable goal accon	to accomplish the measurable g		No □
	The City continues to enforce the dumping reported in Year 2. A c	<del>-</del>		-
	(b) If not, why was the measurab	le goal not accomplished?		
2.	Was this BMP appropriate to me	eet the intended MCM(s)?	Yes ⊠	No 🗆
3.	Was this BMP considered to be s (a) Please explain.	successful?	Yes ⊠	No □
	Having an ordinance to enforce management program. It allows	<del>-</del>		
4.	Are any changes to this BMP recopermit term?  (a) If so, please explain.	ommended for the next	Yes □	No ⊠
				_
5	Will a Notice of Change (NOC)	ha issued for this RMP2	Ves $\square$	No ⊠

#### **Erica Ramirez**

From: Jeff Reed <jreed@evermantx.net>
Sent: Thursday, March 11, 2021 8:06 AM

To: Erica Ramirez

**Subject:** [EXTERNAL EMAIL] RE: Year 2 Annual Report

Hi erica,

We are monitoring our marked inlets.

We have an illicit discharge into our creek which citations were issued.

The violator removed the items from the creek

Our Ordnance governing storm water management is still in compliance

Training of new employees has not been performed as of yet.

I will distribute brochures to 20% of our schools today.

From: Erica Ramirez <eramirez@tnpinc.com> Sent: Wednesday, March 10, 2021 9:06 AM

To: Lisa Minnis (Iminnis@evermantx.net) < Iminnis@evermantx.net>; Jeff Reed (jreed@evermantx.net)

<jreed@evermantx.net>
Subject: Year 2 Annual Report

### Good Morning Lisa and Jeff,

Its that time again! I have attached the checklist for Year 2. Please let me know if COVID prevented the City from performing any of the BMPs. I will make note of it in the report.

Thanks, Erica



Civil Engineer



**\** 817.336.5773 main | 817.665.7154 direct

> 5237 N. Riverside Drive, Suite 100 | Fort Worth, TX 76137

eramirez@tnpinc.com www.tnpinc.com



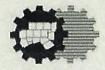
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MC	M:	Illicit Discharge Detection and Elimination		
ВМ	P Title:	Storm Drainage Outfall Map		
Res	ponsible Department:	Public Works		
Measurable Goal:		Year 2 — Annually update the map to include any new outfall from development or redevelopment		ny new outfall
1.	Was the measurable goal accomp (a) If so, explain what was done t	o accomplish the measurable		No 🗆
	The City mapped 100% of the ou include any outfalls from develop	•	w and update the	outfall map
	(b) If not, why was the measurable	e goal not accomplished?		
2.	Was this BMP appropriate to med	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes ⊠	No □
	The storm drainage outfall map is elimination program. The map is a when performing the dry weather	used to track the location of up	•	
4.	Are any changes to this BMP reco permit term?	mmended for the next	Yes □	No ⊠
	(a) If so, please explain.			
5	Will a Notice of Change (NOC) h	as issued for this RMP?	Ves 🗆	No ⊠



MC	M:	Illicit Discharge Detection and Elimination  Education and Training on Illicit Discharges		
ВМ	P Title:			
Res	ponsible Department:	Public Works		
Measurable Goal:		Year 2 — Provide annual IDDE training at least once a year for designated City staff and new hires.		once a year
1.	Was the measurable goal accomp (a) If so, explain what was done to A City employee attended a 7-ho	o accomplish the measurable g		No □
	(b) If not, why was the measurable	e goal not accomplished?		
2.	Was this BMP appropriate to med	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes ⊠	No □
	The City understands educating a identifies any possible illicit dischadischarges happen can result in m	arges and how to resolve them.	Reporting and a	
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠
5.	Will a Notice of Change (NOC) b	oe issued for this BMP?	Yes □	No ⊠



# North Central Texas Council of Governments

# Training & Development Institute

Be it known that on Wednesday, February 26, 2020

## Floyd Reed

Has successfully completed the required curriculum for

Stormwater Pollution Prevention Practices During Construction

Mike Just Director

Monto Manor

Hours: 7



MC	M:	Illicit Discharge Detection and Elimination		
вм	P Title:	Public Reporting & Response P	Procedures	
Res	ponsible Department:	Public Works		
Me	asurable Goal:	<u>Year 2</u> – Investigate 100% o	of illicit discharges	reported.
1.	Was the measurable goal accom (a) If so, explain what was done t	•	Yes ⊠ goal.	No □
The City has a posted number for residents and businesses to report illegal dum discharges on the City website. This year, no reports were received, but the City residents to report any type of illicit discharge.			•	
	(b) If not, why was the measurable	e goal not accomplished?		
2.	Was this BMP appropriate to med	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes ⊠	No □
	Allowing the public to be part of a timely manner. City staff alone, times.			_
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠
	V / / II II			
5	Will a Notice of Change (NOC) h	na issued for this RMP?	Yes □	No ⊠

#### **Public Reporting and Response Procedures**





MC	M:	Illicit Discharge Detection and Elimination		
BMI	P Title:	Source Investigation and Elimination		
Res	ponsible Department:	Public Works		
Measurable Goal:		Year 2 – Conduct 100% of illicit discharge inspections. Investigate 100% of illicit discharges reported.		ections.
1.	Was the measurable goal accor	to accomplish the measurable		No □
	The City inspected 100% (1) of illicit discharges inspections and illicit discharges reported. The City address the illicit discharges in a timely manner.		reported. The	
	(b) If not, why was the measurab	le goal not accomplished?		
2.	Was this BMP appropriate to me	eet the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be (a) Please explain.	successful?	Yes ⊠	No □
	It is important for residents to be Reporting and acting when disch streams.			
4.	Are any changes to this BMP rec permit term? (a) If so, please explain.	ommended for the next	Yes □	No ⊠
5.	Will a Notice of Change (NOC)	be issued for this BMP?	Yes □	No ⊠

#### SOP FOR ILLICIT DISCHARGE A ILLEGAL DUMPING

Record name, phone number, and address of complainant, if available.

Try to arrive at area and inspect the site while the illicit discharge or illegal dumping is taking place.

Determine the type of discharge. (Never approach what appears to be a toxic discharge. Contact proper agency for this type of discharge and removal.)

Take a photo of the location.

Leave written notice of violation with person responsible for discharge or dumping, a summons to the municipal court may be due to a repeat offender.

Require immediate removal of discharge/dumping. This may include assisting the offender with contacting property owner, an illicit discharge/ dumping removal company, city contractors and/or other enforcement agencies.

Take photo of the area after discharge/ dumping has been removed

Educate the violators on the importance of how maintaining a clean environment helps watersheds stay healthy and keeps the cost of clean drinking water down.

If arriving on the site after the violator has gone, contact the owner of the property and advised them of the situation. (Never approach any toxic waste. contact proper agency for this type of discharge and removal)

Take photo of before and after the removal.

Give written notice of offense to property owner allowing a time frame to remove illegal dumping.

Encourage the property owner to post "No Dumping. Violators Will Be Prosecuted." signs at locations Known for illegal dumping.

Continue to monitor location in order to discourage future dumping.

If location of offense has occurred on city or public property, such as a roadway, right of way or city park, contact proper city department for removal. (Never approach any toxic material. Contact proper illicit discharge agency)



MC	M:	Construction Site Stormwater Runoff Control		
вм	P Title:	Erosion & Sediment Control Ordinance		
Res	ponsible Department:	Public Works		
Me	asurable Goal:	Year 2 – Inspect 100% of construction sites each year. Inspe 100% of complaints driven site each year.		th year. Inspect
1.	Was the measurable goal accomp (a) If so, explain what was done t	o accomplish the measurable go		No 🗆
	The City continues to enforce the abeen no active construction of 1 a			
	(b) If not, why was the measurable	e goal not accomplished?		
2.	Was this BMP appropriate to mee	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes ⊠	No □
	It is important for the City to be a control on construction sites. Proposition from site runoff.	• • • • • • • • • • • • • • • • • • •		
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠
5.	Will a Notice of Change (NOC) b	e issued for this BMP?	Yes □	No ⊠



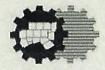
MC	M:	Construction Site Stormwater Runoff Control  Construction Plan Review Procedures  Public Works		
ВМ	P Title:			
Res	ponsible Department:			
Measurable Goal:		<u>Year 2</u> – Administer the construction plan review process for 100% of new regulated construction projects.		v process for
1.	Was the measurable goal accomp (a) If so, explain what was done t		Yes ⊠ goal.	No 🗆
The City administered a review processeveral new and redevelopment. The construction plan.			•	
	(b) If not, why was the measurable	e goal not accomplished?		
2.	Was this BMP appropriate to mee	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes ⊠	No □
	It is important to ensure the City's the renewed TCEQ permit in orde		rocedures are in co	mpliance with
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠
5	Will a Natice of Change (NOC) h	to issued for this RAAD?	Voc 🗆	No ⊠



MC	M:	Construction Site Stormwater Runoff Control		
ВМ	P Title:	Construction Site Inspections and Enforcement		
Res	ponsible Department:	Public Works		
Measurable Goal:		Year 2 – Inspect 100% of con 100% of complaints driven sit		year. Inspect
1.	Was the measurable goal accomp	o accomplish the measurable g		No 🗆
	There has been no active construc	non of 1 acre of more in the Ci	ity for fear 2.	
	(b) If not, why was the measurable	e goal not accomplished?		
2.	Was this BMP appropriate to mee	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be su (a) Please explain.	occessful?	Yes ⊠	No □
	Implementing the erosion and sed and waterways.	iment controls prevent pollutant	ts from entering stor	m drains
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠
	, , , , ,			
5	Will a Notice of Change (NOC) h	a issued for this RMP2	Vos 🗆	No ⊠



MC	M:	Construction Site Stormwater Runoff Control		
ВМ	P Title:	Construction Stormwater Training		
Res	ponsible Department:	Public Works		
Ме	asurable Goal:	Year 2 – Conduct annual construction stormwater training at least once a year for designated City staff and new hires.		_
1.	Was the measurable goal accom (a) If so, explain what was done to A City employee attended a 7-ha	to accomplish the measurable go		No □
	(b) If not, why was the measurabl	le goal not accomplished?		
2.	Was this BMP appropriate to me	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be so (a) Please explain.	uccessful?	Yes ⊠	No □
	City understands the importance of to prevent stormwater pollution for		ing on constructic	n stormwater
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	ommended for the next	Yes □	No ⊠
	•			
5	Will a Notice of Change (NOC) b	an issued for this RAAD?	Ves 🗆	No ⊠



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MC	M:	Post-Construction Stormwate Development and Redevelo		n New
ВМ	P Title:	Post-Construction Ordinance		
Res	ponsible Department:	Public Works		
Me	asurable Goal:	$\underline{\underline{Year\ 2}}$ – Investigate 100% of post-construction violations or complaints.		
1.	Was the measurable goal accomp (a) If so, explain what was done t	• •	Yes ⊠ goal.	No □
	The City continues to implement a incidents to report.	nd enforce the post-constructio	n ordinance. There	e have been no
	(b) If not, why was the measurable	e goal not accomplished?		
2.	Was this BMP appropriate to med	et the intended MCM(s)?	Yes ⊠	No □
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes ⊠	No □
	It is important the City be able to development, and renewed develong term.	<u>.</u>	•	
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠
5.	Will a Notice of Change (NOC) b	pe issued for this BMP?	Yes □	No ⊠



MC	M:	Post-Construction Stormwater Management in New Development and Redevelopment			
ВМ	P Title:	Long-Term Maintenance of Post-Construction BMPs			
Res	ponsible Department:	Public Works  Year 2 — Implement maintenance plans for new owners or operators once post-construction BMPs is installed.			
Me	asurable Goal:				
1.	Was the measurable goal accom (a) If so, explain what was done The City has developed requirem have been no construction of post  (b) If not, why was the measurable	to accomplish the measurable ents for long-term maintenance-construction BMPs.		No □	
2.	Was this BMP appropriate to me	et the intended MCM(s)?	Yes ⊠	No □	
3.	Was this BMP considered to be so (a) Please explain.	uccessful?	Yes ⊠	No □	
	It is important to maintain long-te prevent stormwater pollution.	rm BMPs as per City criteria to	ensure proper di	rainage and	
4.	Are any changes to this BMP recopermit term?  (a) If so, please explain.	ommended for the next	Yes □	No ⊠	
5.	Will a Notice of Change (NOC) b	ne issued for this BMP?	Yes □	No ⊠	



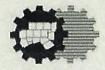
MC	M:	Pollution Prevention and Good Housekeeping for Municipal Operations			
ВМ	P Title:	Facility and Stormwater Control Inventory Public Works			
Res	ponsible Department:				
Measurable Goal:		<u>Year 2</u> – Maintain an inventory of City-owned and operated facilities and stormwater controls and update as necessary.			
1.	Was the measurable goal accomp (a) If so, explain what was done to The City has prepared an invento	o accomplish the measurable g		No □	
	facilities list includes, parks, maint	· · · · · · · · · · · · · · · · · · ·			
	(b) If not, why was the measurable	e goal not accomplished?			
2.	Was this BMP appropriate to mee	et the intended MCM(s)?	Yes ⊠	No □	
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes ⊠	No □	
	Preparing and maintaining an inv pollutants within the MS4.	entory of City-owned facilities	tracks possible so	urces or	
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes 🗆	No ⊠	
5	Will a Notice of Change (NOC) h	ne issued for this RMP2	Yes 🗆	No ⊠	

### City of Everman

Parks



MC	M:	Pollution Prevention and Good Municipal Operations	d Housekeeping	for						
BMP Title: Responsible Department: Measurable Goal:		Municipal Employee Training Program  Public Works  Year 2 — Provide annual municipal employee training at least once a year for designated staff and new hires.								
						1.	Was the measurable goal accom	o accomplish the measurable god		No 🗆
							A City employee attended a 7-ho	our NCICOG training on Februar	y 26, 2020.	
	(b) If not, why was the measurable									
2.	Was this BMP appropriate to med	et the intended MCM(s)?	Yes ⊠	No □						
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes □	No ⊠						
	The City understands the importance of educating staff about pollution prevention and good housekeeping can reduce pollution and possible pollutants.									
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠						
			_	_						
5.	Will a Notice of Change (NOC) b	pe issued for this BMP?	Yes □	No ⊠						



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MCM: BMP Title: Responsible Department: Measurable Goal:		Pollution Prevention and Good Housekeeping for Municipal Operations								
		Contractors Requirements and Oversight  Public Works  Year 2 — Implement contract requirements to new contractors.  Maintain contract with current contractors and revise as necessary.								
						1.	Was the measurable goal accompany (a) If so, explain what was done t	o accomplish the measurable		No □
							The City has contractual agreements in place for contractors to comply with the City's stormwater requirements. However, the City only hire contractors for emergency maintenance only.			
,	(b) If not, why was the measurable goal not accomplished?									
2.	Was this BMP appropriate to med	et the intended MCM(s)?	Yes ⊠	No □						
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes □	No ⊠						
	It is important to implement contractual requirements to ensure that contractors are using appropriate control measures and standard operating procedures when working within the MS4.									
4.	Are any changes to this BMP reco permit term? (a) If so, please explain.	mmended for the next	Yes □	No ⊠						
				_						
5.	Will a Notice of Change (NOC) b	pe issued for this BMP?	Yes □	No ⊠						



MC	M:	Pollution Prevention and Go Municipal Operations	od Housekeeping	g for						
BMP Title: Responsible Department: Measurable Goal:		Municipal Operation and Maintenance Activities  Public Works  Year 2 – Inspect 100% of municipal operations and facilities once a year.								
						1.	Was the measurable goal accomp (a) If so, explain what was done t	• •	Yes □ oal.	No ⊠
•	(b) If not, why was the measurable goal not accomplished?									
	City facilities were closed due to Unfortunately, the City was unabl facilities.	•								
2.	Was this BMP appropriate to med	et the intended MCM(s)?	Yes ⊠	No □						
3.	Was this BMP considered to be su (a) Please explain.	uccessful?	Yes □	No ⊠						
	The BMP is considered unsuccessful because the City did not conduct inspections for municipal facilities or operations. The City understands the importance of developing pollution prevention measures for municipal O&M activities can reduce stormwater pollution within the MS4 facilities and maintenance.									
4.	Are any changes to this BMP recopermit term?  (a) If so, please explain.	mmended for the next	Yes □	No ⊠						
	· · · · · · · · · · · · · · · · · · ·									
5.	Will a Notice of Change (NOC) b	e issued for this BMP?	Yes □	No ⊠						