


**TULSA
COUNTY**
Engineering
Division

MEMORANDUM

DATE: February 20, 2019
TO: Board of County Commissioners
FROM: Tom Rains, Engineer 
SUBJECT: ODEQ Stormwater Pollution Prevention Plan

We present for your approval Tulsa County's updated Stormwater Pollution Prevention Plan as required by ODEQ's OK R04 stormwater permit regulations.

We would recommend approval of this plan.

TR:bd
Attachments

Original: Michael Willis, County Clerk, for February 25, 2019

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Phase II
Stormwater Management Program
(SWMP)

for

Tulsa County, Oklahoma



Effective Date:
February 27th, 2019

SIGNATURES OF RESPONSIBLE OFFICIALS

for Tulsa County, Oklahoma

Per OKR04 Part VI.H, the following certification is hereby made in order to comply with the signatory requirements of the State of Oklahoma's Phase II Stormwater General Permit for Small Municipalities (OKR04).

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.

Commission Chair

Date


County Engineer

2-20-19
Date

ATTEST:

County Clerk

Date

EXECUTIVE SUMMARY

Tulsa County has prepared this Stormwater Management Program (SWMP) document which provides descriptions of all activities that will be conducted on behalf of Tulsa County to meet its obligations under the Oklahoma Department of Environmental Quality (ODEQ) General Permit for Phase II Small Municipal Separate Storm Sewer System Discharges Within the State of Oklahoma (OKR04), having an effective date of November 1, 2015.

Copies of this SWMP will be kept in-house for review by ODEQ upon request. Per OKR04 Part IV.A, this SWMP document will be kept up to date during the term of the permit. Interim progress will be made in developing and implementing program elements during the term of the permit.

All six Minimum Control Measures (MCMs) have been addressed in this SWMP. In addition, Tulsa County has elected to participate in the "Optional Permit Requirements for Municipal Construction Activities" (OKR04 Part VIII).

Each MCM has a number of Best Management Practices (BMPs) that constitute the core activities pertaining to each MCM. Appendices summarize the BMPs and provide Measurable Goals for each BMP, along with activity descriptions and implementation schedules. In addition, the SWMP text provides additional information about the MCMs.

Every reasonable effort has been made to comply with all requirements in the State's OKR04 General Permit for Small Municipal Separate Storm Sewer Systems (SMS4s). This SWMP document will be amended as needed to reflect program and implementation changes per requirements of ODEQ and the OKR04 permit.

To help implement certain aspects of the Phase II requirements, particularly regarding public education, public participation and training of city staff and crews, Tulsa County will receive assistance from the Indian Nations Council of Governments (INCOG) as a member of INCOG's Green Country Stormwater Alliance (GCSA). Through GCSA, INCOG will provide regional services related to stormwater education, employee training and technical support. INCOG's activities are described where appropriate in the SWMP.

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I. INTRODUCTION

In 1990 the U.S. Environmental Protection Agency (EPA) promulgated regulations for establishing water quality based municipal stormwater programs to address stormwater runoff from certain industrial and construction activities and from medium and large Municipal Separate Storm Sewer Systems (MS4s) serving populations of 100,000 or greater. These “Phase I” regulations were incorporated into the existing National Pollutant Discharge Elimination System (NPDES) permit rules that address point source dischargers. As a result, urban nonpoint source runoff became regulated as point source discharges. On December 8, 1999, EPA published final “Phase II” stormwater regulations that addressed urban stormwater runoff from cities under 100,000 population and counties that lie within the Urbanized Area (UA) as designated by the latest US Bureau of Census. Phase II permits were also required for certain non-UA cities designated by the Oklahoma Department of Environmental Quality (ODEQ).

The 1999 EPA Phase II regulations required that all permitted cities and counties must develop a comprehensive Stormwater Management Program (SWMP) that addresses six “Minimum Control Measures” (MCMs). These are:

1. *Public Education and Outreach*
2. *Public Participation and Involvement*
3. *Illicit Discharge Detection and Elimination*
4. *Construction Site Stormwater Runoff Control*
5. *Post Construction Management in New Development and Re-Development*
6. *Pollution Prevention and Good Housekeeping*

The ODEQ has primary jurisdiction over permitting and enforcement of the Phase II Stormwater Program for Oklahoma. On February 8, 2005, the ODEQ finalized the first General Permit for Phase II Small Municipal Separate Storm Sewer System Discharges Within the State of Oklahoma (OKR04). On October 1, 2015 ODEQ reauthorized OKR04 with an effective date of November 1, 2015. The revised OKR04 permit reflects new requirements from EPA and the latest practices for controlling urban stormwater pollution.

OKR04 requires that each permittee submit a Notice of Intent (NOI) to apply for coverage and develop a Stormwater Management Program (SWMP) document that specifies, for each MCM, what activities will be performed as Best Management Practices (BMPs), along with BMP implementation schedules and Measurable Goals.

This SWMP document fulfills the OKR04 General Permit requirement to prepare a detailed plan of how Tulsa County will address non-stormwater discharges within its permitted MS4 and Urbanized Area.

II. SWMP OVERVIEW AND SPECIAL REQUIREMENTS

II.A Regulatory Authority

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et. seq.) as required under Section 122.34(d)(2) of the Storm Water Phase II Rule, and with the provisions under the Oklahoma Pollutant Discharge Elimination System, OAC 252:606-1-3(b)(3) incorporating by reference 40 CFR §122.26 and 122.30 through 122.35, operators of Small Municipal Separate Storm Sewer Systems (SMS4s) are authorized to discharge in accordance with the conditions and requirements set forth in the OKR04 permit and this SWMP. The Phase II regulations issued by the EPA can be found in FR Vol. 64 No. 235, December 8, 1999, beginning on page 68722, and became effective on February 7, 2000.

The 2015 OKR04 General Permit is a reissuance by the ODEQ with an effective date of November 1, 2015. The OKR04 General Permit and the authorization to discharge shall expire November 1, 2020. As provided in the permit, operators of SMS4s who submit a Notice of Intent (NOI) and a description of their Storm Water Management Program (SWMP) in accordance with PART IV of the general permit are authorized to discharge pollutants to waters of the State in accordance with the conditions and requirements set forth in the general permit.

The OKR04 permit authorizes discharges of storm water and certain non-storm water discharges from SMS4s, as defined in OAC 252:606-1-3(b)(3) incorporating by reference 40 CFR §122.26(b)(16). This includes MS4s designated under 40 CFR §122.32(a)(1) and 40 CFR §122.32(a)(2) that describes the referenced area with a population of at least 10,000 but not exceeding 100,000, and SMS4s located in Urbanized Areas (UA). Other operators of SMS4s located outside of a UA have also been designated by ODEQ as a regulated MS4.

This SWMP document specifies all of the actions that Tulsa County will take to comply with the stormwater regulations and address the six “Minimum Control Measures” required by EPA and OKR04 for a successful stormwater program.

All information contained in this SWMP represents a good faith effort on the part of Tulsa County to comply with all requirements of the ODEQ’s Phase II General Permit for Small MS4s (OKR04). Per Parts IV.A and IV.D of OKR04, this SWMP will be reviewed annually and amended, as needed, to provide greater efficiency and for meeting additional requirements that may be forthcoming under OKR04 or from other regulatory changes.

II.B SWMP Organization

Tulsa County will participate in INCOG’s Green Country Stormwater Alliance (GCSA), a regional coalition of stormwater permitted cities and counties in Oklahoma. Members of INCOG’s GCSA will collectively fund through annual membership dues certain regional activities and technical assistance provided by INCOG that are described in this SWMP.

INCOG's support services will include assistance in the following areas:

- Public education and participation;
- Mapping of MS4s, 303(d) waterbodies and TMDLs;
- Employee training on OKR04-required topics and technical, scientific and legal issues;
- Sampling, monitoring and quality assurance;
- GCSA member education about water quality, sensitive waterbodies, TMDLs, etc.
- Educating local councils, commissions and management about OKR04 requirements.
- Development of local codes and ordinances, and
- Data management and reporting.

This SWMP addresses all elements of the ODEQ's General Permit for MS4s (OKR04). The six Minimum Control Measures from OKR04 Part IV.C are addressed in the SWMP Section III. Appendix A is a summary table of all BMPs to be used in Tulsa County's program, including year-by-year schedules of implementation and Measurable Goals for each BMP. Appendix B documents the endangered species protection determination for Tulsa County. Section II.K of the SWMP provides a Plan of how Tulsa County will address the impairments of 303(d) listed waterbodies within the MS4. Section II.L of the SWMP discusses how the requirements under Total Maximum Daily Load (TMDL) studies or Watershed Plans within the MS4 area will be met by the permittee. Appendix C contains a map of the MS4 boundaries for Tulsa County. The map also shows the Waters of the State, 303(d) waterbodies, ARC waterbodies, and completed TMDL waterbodies that are within the MS4.

II.C Authorized Allowable Non-Stormwater Discharges – OKR04 Part I.B

INCOG NOTE: OKR04 Part I.B provides for local allowance of non-stormwater discharges, and OKR04 lists 24 types that ODEQ and EPA consider to be allowable. OKR04 also requires that the permittee *"have not determined these sources to be substantial contributors of pollutants to your small MS4. Your list of allowable non-stormwater discharges and determination documentation must be included in your SWMP."* To satisfy the listing and documentation requirements, INCOG suggests that the paragraphs below this note should be sufficient to meet these requirements.

Tulsa County has determined that the following non-storm water sources are not substantial contributors of pollutants to the MS4 or result from activities to protect public health and safety and are therefore allowed (see assessment summary table below):

- Water line flushing;
- Landscape irrigation;
- Diverted stream flows;
- Rising ground waters;
- Residential building wash water without detergents;
- Uncontaminated pumped ground water;
- Uncontaminated ground water infiltration;

- h. Discharges from potable water sources;
- i. Foundation drains;
- j. Air conditioning condensate;
- k. Irrigation water;
- l. Springs;
- m. Water from crawl space pumps;
- n. Footing drains;
- o. Lawn watering;
- p. Individual residential car washing;
- q. De-chlorinated swimming pool discharges;
- r. Street wash water;
- s. Fire hydrant flushings;
- t. Non-commercial or charity car washes;
- u. Discharges from riparian areas and wetlands;
- v. Discharges in compliance with a separate Oklahoma Pollutant Discharge Elimination System (OPDES) or National Pollutant Discharge Elimination System (NPDES) permit.
- w. Unless otherwise permitted or regulated by DEQ discharges of gray water from municipal splash pads (aka, spray parks or spray grounds) as defined in Oklahoma Statutes §27A-2-6-107 provided the discharges comply with all applicable municipal or county ordinances enacted pursuant to law, Discharges from recirculating systems shall be de-chlorinated prior to discharge; and
- x. Discharges or flows from emergency firefighting activities provided procedures are in place for the Incident Commander, Fire Chief, or other on-scene firefighting official in charge to make an evaluation regarding potential releases of pollutants from the scene. Measures must be taken to reduce any such pollutant releases to the maximum extent practicable subject to all appropriate actions necessary to ensure public health and safety. These procedures must be documented in your SWMP. Discharges or flows from firefighting training activities are not authorized by this Permit.

Firefighting Activities: The local incident commander at the firefighting scene will report to Tulsa County stormwater coordinator any observed releases of chemicals into the MS4 and/or waterbodies. If local remediation is possible, the following will be implemented by the highway district in which the occurrence occurs and consist of deploying absorbents, chemical neutralizers and/or booms and water skimmers to contain, neutralize and/or remove the chemicals. If the release is beyond the capability of local resources to safely and effectively remediate, then Tulsa County will contact the Tulsa Area Emergency Management Agency at 918-596-9899 for large-scale hazardous waste remediation.

The list of occasional, incidental, allowable non-stormwater discharges will be periodically reviewed by Tulsa County and updated, as needed, in this SWMP. Any local controls or discharge conditions required by Tulsa County on these incidental discharges will also be placed in this SWMP. The following table summarizes the assessments made by Tulsa County for each of the allowable non-stormwater discharges.

ALLOWABLE DISCHARGE	SAFETY (1)	IMPACT (2)	NATURAL (3)	PERMIT (4)
a. Water line flushing	X			
b. Landscape irrigation		X		
c. Diverted stream flows	X		X	
d. Rising ground waters			X	
e. Residential building wash water, no detergents		X		
f. Uncontaminated pumped ground water		X	X	
g. Uncontaminated ground water infiltration			X	
h. Discharges from potable water sources	X			
i. Foundation drains	X			
j. Air conditioning condensate		X		
k. Irrigation water		X		
l. Springs			X	
m. Water from crawl space pumps	X			
n. Footing drains	X			
o. Lawn watering		X		
p. Individual residential car washing		X		
q. De-chlorinated swimming pool discharges		X		
r. Street wash water	X			
s. Fire hydrant flushings	X			
t. Non-commercial or charity car washes		X		
u. Discharges from riparian areas and wetlands			X	
v. Discharges with a OPDES or NPDES permit				X
w. Gray water from municipal splash pads	X	X		
x. Discharges or flows from emergency firefighting	X			

- (1) Overriding public health and safety concerns make this allowable.
- (2) Flow or source is intermittent or small; not considered to be a significant source.
- (3) Flow from natural processes, mostly intermittent; not considered a significant source.
- (4) Authorized and allowed under another OPDES or NPDES permit.

II.D Historic Preservation – OKR04 Part I.D

The Oklahoma DEQ's OPDES permitting activities are not Federal undertakings and, therefore, are not subject to review under Section 106 of the National Historic Preservation Act. However, applicants and permittees must comply with the Oklahoma State Register of Historic Places Act ([53 O.S. § 361](#)), where applicable, and the Burial Disturbance Law ([21 Oklahoma Statutes \(O.S.\)](#)

[§§ 1168.0-1168.6](#)), as well as with any applicable local laws concerning the identification and protection of historic properties.

OKR04 permittees who receive Federal funding or other Federal assistance in the completion of their OKR04-related projects may have to comply with Section 106 of the Historic Preservation Act. For information about the Section 106 review process in Oklahoma, Oklahoma properties listed on or eligible for the National Register of Historic Places, and related topics, the following shall be contacted:

State Historic Preservation Office

(contact info listed in Part I.D of the OKR04 permit)

Oklahoma Archeological Survey

(contact info listed in Part I.D of the OKR04 permit)

Tulsa County will comply with OKR04 Part I.D (Historic Preservation) whenever permit related activities require such action. This will include communications with the State Historic Preservation Office and Oklahoma Archeological Survey to discuss what actions Tulsa County may have to take to comply with rules governing preservation of historical sites and resources, including compliance with the Oklahoma State Register of Historic Places Act and the Burial Disturbance Law of Oklahoma. It is understood that normal OKR04 permit-compliance actions taken by Tulsa County under OKR04 do not require Section 106 review under the National Historic Preservation Act.

II.E Meeting Eligibility Criteria for Endangered Species – OKR04 Part I.E

Tulsa County has reviewed the eligibility criteria and requirements of OKR04's Part I.E and has determined that no part of Tulsa County's MS4 lies within areas of Aquatic Resources of Concern (ARC) as shown on the Exhibit 1 map in OKR04. The appropriate Criterion has been specified in Item 7 of the NOI Form.

OKR04 Part I.E.2.d requires that: *"The information used to make the eligibility determination must be documented and included as part of the SWMP."* Appendix B provides the methods and documentation of the assessment used by Tulsa County to select Criterion A.

II.F Information on the MS4 – OKR04 Part II.B.2

Urbanized Area (UA) or Core Municipality: For permitted cities, the MS4 is all of the area within the city corporate boundaries. For counties, only the Urbanized Area (UA) within county unincorporated areas as defined by the 2010 US Bureau of Census is the permitted MS4 area.

Appendix C contains a map of Tulsa County's MS4 area. The following latitude-longitude coordinates are of Tulsa County's approximate MS4 center:

Latitude: 36.149314
 Longitude: -95.993634

Names of Major Receiving Waters: Tulsa County's MS4 discharges to the following major receiving waters; the table notes the designations of 303(d), ORW, TMDL and ARC for each:

Waterbody Name	WBID (1)	303(d) (2)	ORW (3)	TMDL (4)	ARC (5)
Bird Creek	OK121300010010_00	X		X	
Ranch Creek	OK121300010060_00	X		X	
Coal Creek	OK121300010090_00	X		X	
Delaware Creek	OK121300010150_00	X			
Arkansas River	OK120420010130_00	X		X	
Arkansas River	OK120420010010_10	X		X	
Arkansas River	OK120420010010_00	X			
Arkansas River	OK120410010080_00	X		X	
Bigheart Creek	OK120420010140_00	X			
Harlow Creek	OK120420010170_00	X			
Mooser Creek	OK120420010070_00	X			
Nickel Creek	OK120420020040_00	X			
Flat Rock Creek	OK121300010120_00	X			
Polecat Creek	OK120420020010_00			X	
Polecat Creek	OK120420020050_00	X		X	
Childres Creek	OK120420020160_00	X			
Haikey Creek	OK120410010210_00	X		X	
Sahoma Lake	OK120420020130_00	X			

(1) WBID = Waterbody ID identifier, used by ODEQ and other agencies in Oklahoma.

(2) 303(d) = Waterbody is on the 2016 303(d) list of impaired waterbodies.

(3) ORW = Waterbody is listed by the OWRB as an Outstanding Resource Water.

(4) TMDL = Waterbody has a completed and EPA/ODEQ approved TMDL study.

(5) ARC = Aquatic Resources of Concern; see ARC list and map in OKR04 Exhibit 1.

303(d) and Completed TMDL Waterbodies: Tulsa County has reviewed the latest lists of waterbodies from ODEQ within its MS4 boundaries that have 303(d) impairment and/or completed Total Maximum Daily Loads (TMDLs). The table above lists which of the major receiving waters are listed as 303(d) impaired, have a completed TMDL, are designated as Aquatic Resources of Concern (ARC), or are listed as Outstanding Resource Waters (ORW). The SWMP describes how each of these special conditions will be addressed by Tulsa County.

II.G Relying on Another Government Entity – OKR04 Parts II.B.3, IV.A.5, V.C.1.g

OKR04 Part II.B.3 requires that the permittee indicate if “another government entity already regulated under the stormwater regulations” will be relied upon to “satisfy one or more of your permit obligations”. Part IV.A.5 requires written acceptance if “another governmental entity” will implement “one or more of your stormwater MCMs”, but does not apply to implementing individual BMPs. Part V.C.1.g (regarding Annual Report contents) requires a written agreement with “another government entity” if you are relying on them “to satisfy some of your permit obligations”.

Tulsa County herein indicates in the tables below all entities with whom we are working collaboratively. Appendix D contains copies of all written agreements from the entities identified below to accomplish MCMs and BMPs on behalf of Tulsa County.

OKR04 Part II.B.3: Another Permitted Government Entity Already Regulated:

Government Entity	Permit Obligation to be Completed by Permitted Entity
none	none

OKR04 Part IV.A.5: Another Government Entity Responsible for MCMs:

Government Entity	MCM(s) to be Completed by Entity
none	none

OKR04 Part V.C.1.g: Another Government Entity Reported in Annual Report:

Government Entity	Permit Obligations to be Completed by Entity
INCOG	Host GCSA regional stormwater website: www.stormwaterok.net
INCOG	Conduct Employee Training on OKR04-required topics.
M.E.T.	Hosting of two county wide collection events at T.C. fairgrounds.
M.E.T.	Helps coordinate and run drop-off recycling centers in the county.
OCC	Manage Blue Thumb volunteer stream monitoring program.
OCC	Manage Blue Thumb public school education outreach program.

II.H Certification of Compliance with Part III – OKR04 Part II.B.2.c

Tulsa County hereby certifies compliance with all Part III requirements by taking the actions as stated in the various parts of this signed SWMP. This certification declaration is required to be made under OKR04 Part II.B.2.c.

II.I Co-Permittees – OKR04 Part II.D

Tulsa County has elected not to share OKR04 compliance with another entity as a co-permittee.

II.J Compliance with Water Quality Standards - OKR04 Part III.A

OKR04 Part III.A.1 has seven action items (1.a through 1.g) that must be addressed in the SWMP to protect 303(d) listed waters. These are covered in Section II.K of the SWMP and are referenced by their OKR04 Parts. Appendix C contains a map of the MS4 including the locations of 303(d) impaired waters, ARC and TMDL waterbodies.

II.K Addressing 303(d) Impaired Waterbodies – OKR04 Part III.A.1

Part III.A of OKR04 requires that each SWMP “document... how you will comply with the following requirements:” Part III.A.1 states, “If you discharge to waters identified on the latest CWA 303(d) list of impaired waters,” then Part III.A.1 requires that the SWMP “...must include all necessary BMPs that will ensure that the impairment caused by identified pollutants... in your receiving waters will not cause, have the reasonable potential to cause, or contribute to an in-stream exceedance of water quality standards.” Appendix C includes the MS4 map and location of all 303(d) waterbodies. Part III.A.1 has seven sub-parts (Items 1.a – 1.g) that must be addressed in the SWMP. These are presented below:

OKR04 Part III.A.1.a: (303d Plan)

In order to protect 303(d) impaired waters and not cause or contribute to a violation of water quality standards, Tulsa County has created the following Plan which lists BMPs to be implemented to reduce the 303(d) pollutants of concern. These special BMPs have been selected by Tulsa County as being the most effective for reducing pollutants of concern in stormwater runoff. Appendix C contains a map of the MS4 with respect to 303(d) waterbodies.

At the time of preparing this SWMP, the 2014 303(d) List was in effect in Oklahoma. After reviewing this list, Tulsa County identified the following impairments within the MS4 (see the map in Appendix C which shows the locations of all 303(d) waterbodies within the MS4):

2016 303(d) Listed Waterbodies Within Tulsa County MS4:

Waterbody Name	WBID	Impairment Causes
Bird Creek	OK102400011010_00	Enterococcus, E. Coli
Ranch Creek	OK121300010060_00	E. Coli
Coal Creek	OK121300010090_00	Benthic Macroinvertebrates, E. Coli
Delaware Creek	OK121300010050_00	Benthic Macroinvertebrates, Enterococcus

Waterbody Name	WBID	Impairment Causes
Arkansas River	OK120420010130_00	Turbidity
Arkansas River	OK120420010010_10	Cadmium
Arkansas River	OK120420010010_00	Enterococcus, Turbidity
Arkansas River	OK120410010080_00	Enterococcus
Bigheart Creek	OK120420010140_00	E. Coli, Fish Bioassessment
Harlow Creek	OK120420010170_00	Benthic Macroinvertebrates, E. Coli, Fish Bioassessment
Mooser Creek	OK120420010070_00	E. Coli, Fish Bioassessment
Nickel Creek	OK120420020040_00	E. Coli
Polecat Creek	OK120420020050_00	Benthic Macroinvertebrates, Enterococcus
Childres Creek	OK120420020160_00	Chloride
Haikey Creek	OK120410010210_00	Benthic Macroinvertebrates, Diazinon, E. Coli, Diazinon, Dissolved Oxygen
Flat Rock Creek	OK121300010120_00	Benthic Macroinvertebrates
Sahoma Lake	OK120420020130_00	Turbidity

The table of BMPs that follows represents the BMP implementation approach Tulsa County will take to address 303(d) impairment. These special BMPs will be implemented to ensure that stormwater discharges from the MS4 will not cause, have the reasonable potential to cause, or contribute to an in-stream exceedance of water quality standards.

Table of BMPs and Pollutant Reduction Expectations for Addressing 303(d) Impairments:

303(d) Pollutant(s)	Best Management Practice (BMP)	Pollutant Reduction Expectations
Lead, Turbidity, bacteria, D.O.	Develop pollutant source inventory in 303(d) watershed(s) and set priority areas.	Expect to have unique, pollutant-specific source inventories and priority areas within each watershed due to how different types of sources affect pollutant runoff differently.
Lead, Turbidity, bacteria, D.O.	Increase dry weather field screening (DWFS) site inspections in 303(d) watershed priority areas.	Illicit discharges can be directly observed at time of DWFS and traced to the source for removal.
Lead, Turbidity, bacteria	Reduce exposure of materials to rainfall at municipal facilities.	Pollutant reductions from municipal facilities will be significant. This BMP will require periodic inspections and employee education.

303(d) Pollutant(s)	Best Management Practice (BMP)	Pollutant Reduction Expectations
Lead	Inspect industrial facilities for potential to have exposure of metals in runoff.	This BMP will rely upon sampling data and facility information about potential discharges. Facilities will receive pollution control education.
Lead, Turbidity, bacteria, D.O.	Conduct employee education for municipal inspectors on pollution in runoff.	This BMP will cover all potential pollution sources within a typical MS4 and the OKR04 compliance strategies required for reducing runoff contamination.
Lead, Turbidity, bacteria, D.O.	Distribute print education materials to local businesses about controlling pollution in runoff.	This BMP will rely upon how well the local business or facility uses the practices recommended in the education material.
D.O.	Distribute print education materials to lawn care businesses about controlling fertilizer applications.	This BMP will rely upon how well the local businesses use the practices recommended in the education material.
Bacteria	Adopt a Pet Waste Ordinance.	This BMP will target homeowners. It will provide information on controlling pet waste disposal on residential properties to reduce bacteria in runoff.
Chloride	Reduction of the use of salt as an ice melt.	This will target county crews during winter storm events. Sand, instead of salt, will be used.

OKR04 Part III.A.1.b: (Target Audiences)

Tulsa County has selected its public education and outreach BMPs and activities based upon the types of residential, industrial, commercial and institutional pollutant sources that are known or anticipated to exist within the MS4 and also have the greatest potential to discharge pollutants in their stormwater runoff. By focusing the types of education materials on high priority target audiences, Tulsa County will have greater success in reducing pollution through its education outreach program.

OKR04 Part III.A.1.c: (Non-Stormwater Discharges)

Tulsa County has examined potential non-stormwater discharges within its MS4 that could likely contribute significant pollutants to 303(d) impaired waters. No non-stormwater discharges have been observed. (Table to be edited when non-stormwater discharges are observed.) The following potential discharge sources have been identified within the MS4:

Source Identifier	Location	303(d) Pollutants	Notes
(Fill when determined)	(Fill when determined)	(Fill when determined)	(Fill when determined)

OKR04 Part III.A.1.d: (Inspect Illicit Discharges in Priority Areas)

Tulsa County has established a program to inspect for and enforce against illicit discharges within the MS4. Priority areas for potential pollutants of concern within the impaired watersheds have been established, and they are identified in SWMP Section III.C. Tulsa County has a BMP to conduct inspections within these 303(d) priority areas at increased frequency to identify and characterize the sources of the 303(d) pollutants of concern. In addition, data from other agencies and sources, if available, will be obtained and used to assess potential sources. Details of this inspection and enforcement program are presented in Section III.C of this SWMP. Tulsa County will also prepare a Standard Operating Procedure (SOP) document containing the methods to be used for these types of inspections. The SOP is referenced in Section III.C of this SWMP.

OKR04 Part III.A.1.e: (Operation & Maintenance; Assess New & Existing Flood Management Projects)

Tulsa County has a Flood Plain Management division and a Flood Plain Manager in place. In regards to projects that take place in a flood plain, a permit system is in place to make sure that all requirements are met in Tulsa County's jurisdiction.

1. Operation and Maintenance (O&M) for Structural and Non-Structural Controls:

Tulsa County has developed the following procedures to address O&M of all county-owned flood management structural controls required in OKR04 Part III.A.1.e. O&M of privately owned structures is discussed separately below, followed by a discussion of O&M of non-structural controls.

O&M of County-Owned Structural Stormwater Controls:

Tulsa County defines city-owned structural stormwater controls to mean any physical structure owned and maintained by Tulsa County, including: wet and dry retention and detention basins and ponds; culverts and open channels that are owned by or within Tulsa County's easements or rights-of-way and for which Tulsa County has an obligation under the county's flood plain management policies to maintain; and physical stormwater structures owned by Tulsa County that are designed for managing stormwater flow and direction.

The following table summarizes the O&M program for county-owned structures. Tulsa County may in the future develop formal written procedures of the steps outlined in the table below. Once developed, these procedures will be referenced in this SWMP in an SWMP document update, and the procedures will be kept with the SWMP document.

Summary of O&M Procedures for City-Owned Structures:

O&M Procedure	Frequency	Methods	Limitations
Detention / Retention Ponds	Annual visual inspections; maintenance as needed. (1)	Visual inspection using city staff. Maintenance depending on factors (1).	High priority given to structures that are new with a projected long life and greater usefulness.
Large Culverts and Channels (2)	Annual visual inspections; maintenance as needed. (1)	Annual visual inspections; maintenance as needed. (1)	Modifications to structure may need to be coordinated with other changes in the flood basin.
Storm Inlets and Pipes (1)	Annual visual inspections; maintenance as needed. (1)	Annual visual inspections; maintenance as needed. (1)	Annual visual inspections; maintenance as needed. (1)

- (1) Decision on repair / replacement of features will depend upon factors such as cost, age, future effectiveness of structure, and availability of materials and resources.
- (2) Large culverts are defined as being 36" or larger in diameter. Large channels are those with hard surface lining, at least 5' bottom width and either vertical or sloped sides.

O&M of Privately-Owned Structural Stormwater Controls:

Tulsa County defines privately-owned structural stormwater controls to mean any physical structure not owned and maintained by Tulsa County, instead being owned and maintained by a private interest, such as a business, individual or Homeowners Association. Types of privately-owned stormwater structures will include: wet and dry retention and detention basins and ponds; culverts and open channels that are privately owned and for which the owner or association has an obligation under city ordinance to maintain; and physical stormwater structures privately owned that are designed for managing stormwater flow and direction.

The following table summarizes the O&M program for privately-owned structures. Tulsa County will offer to assist the private owner with development of formal written procedures of the steps outlined in the table below. Once developed, these procedures will be referenced in this SWMP in an SWMP document update, and the procedures will be kept with the SWMP document as well as with the owner.

Summary of O&M Procedures for Privately-Owned Structures:

O&M Procedure	Frequency	Methods	Limitations
Detention / Retention Ponds	Annual visual inspections; maintenance as needed. (1)	Visual inspection by owner with county staff assistance. Maintenance depending on factors (1).	High priority given to structures that are new with a projected long life and greater usefulness. Owner must abide by all local codes and ordinances.
Large Culverts and Channels (2)	Annual visual inspections; maintenance as needed. (1)	Visual inspection by owner with county staff assistance. Maintenance depending on factors (1).	Modifications to structure will need to be coordinated with the county regarding how the project will impact the flood basin.
Storm Inlets and Pipes (1)	Annual visual inspections; maintenance as needed. (1)	Visual inspection by owner with county staff assistance. Maintenance depending on factors (1).	Annual visual inspections; maintenance as needed. (1)

- (1) Decision on repair / replacement of features will depend upon factors such as cost, age, future effectiveness of structure, and availability of materials and resources.
- (2) Large culverts are defined as being 36" or larger in diameter. Large channels are those with hard surface lining, at least 5' bottom width and either vertical or sloped sides.

O&M of County-Owned Non-Structural Stormwater Controls:

Tulsa County defines county-owned non-structural stormwater controls to mean any stormwater-related program implemented by Tulsa County, including: preservation of open space; expanding disconnections of impervious surfaces; expansion of vegetation and natural systems; grass swales and other types of natural, vegetated infiltration areas; and protection and expansion of riparian stream buffers. Tulsa County will not impose requirements of non-structural controls on private property. Hence there will be no O&M actions needed regarding privately-owned non-structural controls. Instead, Tulsa County will encourage and provide education about such programs as private development expands within Tulsa County.

The following table summarizes the O&M program for county-owned non-structural controls. Tulsa County may in the future develop formal written procedures of the steps outlined in the table below. Once developed, these procedures will be referenced in this SWMP in an SWMP document update, and the procedures will be kept with the SWMP document.

Summary of O&M Procedures for County-Owned Non-Structural Controls:

O&M Procedure	Frequency	Methods	Limitations
Preserving Open Space; Enhancing Swales and Infiltration Areas.	Annual visual inspections; maintenance as needed. (1)	Visual inspection using city staff. Maintenance depending on factors (1).	High priority given to areas that are new with a projected long life and greater usefulness.
Disconnections of impervious surfaces; buffers and riparian protection.	Annual visual inspections; maintenance as needed. (1)	Visual inspection using city staff. Maintenance depending on factors (1).	Maintenance of feature may need to be coordinated with other changes in the flood basin.

(1) Decision on repair / replacement of features will depend upon factors such as cost, age, future effectiveness of feature, and availability of materials and resources.

2. Assess Water Quality Impacts from New Flood Management Projects:

The second requirement in OKR04 Part III.A.1.e applies to proposed new flood management projects that will be within 303(d) watersheds, and it addresses the pollutants of concern in the 303(d) listings. Tulsa County has prepared the following assessment procedures summary (below). If additional detailed written procedures are produced as a stand-alone document in the future, they will be kept with the SWMP, and the SWMP text will be updated to provide a reference to the written procedures. ODEQ will allow flexibility on the types of assessment methods in SWMPs, and for selecting the types of new flood management projects that will be assessed. ODEQ will also allow a phased approach for beginning assessments of projects that have the greatest potential to cause water quality impacts.

Tulsa County will implement an assessment program for new flood management projects that must be completed prior to issuance of building permits. To make this pre-design process work smoothly, Tulsa County will provide education materials to applicants of building permits so that they can have time to prepare their plans and specifications to meet all requirements of Tulsa County. A formal guideline document will be prepared for presentation to all building applicants as part of the education and outreach effort. This will allow applicants time to incorporate the local requirements regarding new flood management project water quality protections at the outset of

project design.

Tulsa County will apply the assessments to only MS4-owned projects initially. After the first few years of experience, Tulsa County will expand the procedures to certain types of privately owned projects which will be defined at that time.

The following methods will be used by Tulsa County for making Part III.A.1.e water quality impact assessments of new flood management projects:

- a. Identify the locations within the MS4 of all the 303(d) impairment watersheds, and identify the pollutants of concern (parameters) for each watershed.
- b. The following criteria will be used to select the types of new flood management projects that will be assessed:
 - 1) The project will be owned by Tulsa County;
 - 2) The project is in the pre-design phase and just being proposed for development;
 - 3) The project will be a physical structure;
 - 4) The project will be designed to have an inlet structure for collecting runoff from the upstream watershed and an outlet structure for discharging collected runoff; and
 - 5) The project will be designed to collect runoff from five or more acres.
- c. For each new flood management project that will be assessed, Tulsa County will review any documentation available through ODEQ, EPA and other sources on the potential for that type of project to reduce, have no effect on or possibly increase the 303(d) pollutant(s) in runoff.
- d. For each project, Tulsa County will examine the location of the project and determine its potential for runoff from the project's outlet to enter a 303(d) impaired waterbody. The assessment of potential impact will include consideration of the following:
 - 1) Small projects several stream miles upstream from the impaired waterbody on small tributary channels will not likely have any significant effect on 303(d) impairment, whereas
 - 2) Large projects directly next to the waterbody may be more likely to contribute pollution.
- e. Tulsa County will assess the new project's design and determine if there are some features that could be modified during construction to reduce pollutants in runoff. For example, can an LID structure or feature be constructed downstream of the project outlet? Can the project be altered to have greater pervious surface? Can the outlet flow be diverted to a pervious area for absorption of flow?

- f. Tulsa County will submit its assessment findings to the building applicant in a timely manner so that any design changes can be made without unduly affecting project deadlines or schedules.

Within a few years of program initiation, Tulsa County will expand the program to privately owned future projects.

3. Examine Existing Projects for Necessity of Additional Controls:

The third requirement in OKR04 Part III.A.1.e addresses existing flood management projects in 303(d) watersheds. ODEQ allows flexibility for local OKR04 permittees to decide which types of existing flood management projects will need to be assessed under Part III.A.1.e for applicable 303(d) pollutants of concern. Tulsa County will use the following criteria to select existing projects for examinations as required by Part III.A.1.e:

- a. The project is publicly owned;
- b. The project is a physical structure with definable inlet and outlet features;
- c. The project receives runoff from five or more acres upstream of the inlet;
- d. The project has a long projected life and function;
- e. The project has physical features with that can be realistically modified to benefit WQ;
- f. The project is privately owned, with owners that are willing to cooperate and assist with their own resources to make recommended modifications, and
- g. The project has a good benefit to cost ratio for making modifications.

Tulsa County has developed criteria for completing the *“examination of existing projects to determine if incorporating additional water quality protection devices and practices are necessary”* to affect improvements in 303(d) watersheds. The following examination criteria will be used for rejecting existing projects that were selected using the criteria above:

- a. The project has old structures and features with no effectiveness remaining,
- b. The project offers little to no potential WQ benefit,
- c. The project has poor benefit to cost ratio of the proposed modifications needed,
- d. The project is or likely will be scheduled for demolition or upgrades in the near future,
- e. The project has an unknown or no clear ownership, and
- f. The project is privately owned, and there is no clear legal authority to require making water quality improvements to private structures.

It is important to note that the “examination” of existing projects in Part III.A.1.e of OKR04 does not actually require that modifications be made once a project examination has been completed. Part III.A.1.e only requires that the examination be made. However, OKR04 does require that each permitted MS4 take all actions “to the Maximum Extent Practicable” (MEP) to protect 303(d) impaired waterbodies from further degradation, and protect water quality. Therefore, Tulsa County will utilize the procedures outlined above for making modifications to existing projects where feasible.

OKR04 Part III.A.1.f: (Selecting BMPs)

OKR04 Part III.A.1.f, which applies to selecting 303(d)-related BMPs, requires that “*You must choose BMPs from EPA’s menu or select others that can be used for managing the identified pollutants (e.g., nitrogen or phosphorus, bacteria) in your discharges. The details of the BMPs can be viewed from EPA’s website: <http://water.epa.gov/polwaste/npdes/swbamp/index.cfm>.*” Tulsa County will rely upon several sources for selecting 303(d)-BMPs, including: 1) the EPA database; 2) recommendations from agencies such as ODEQ and INCOG; 3) recommendations from other permittees; and 4) an assessment of feasibility based upon BMP reliability, affordability and suitability to local conditions.

OKR04 Part III.A.1.g: (BMPs to Address Bacteria 303(d) Waters)

OKR04 Part III.A.1.g requires that each permittee address five categories of activities regarding bacteria 303(d) pollutants. Tulsa County will take the actions specified below to address these five categories. Prior to implementing any of these BMPs, Tulsa County will send the proposed BMPs defined in the tables below to ODEQ for review and make any changes that ODEQ will require. The categories and sub-categories used below are taken directly from OKR04.

Category 1: Sanitary Sewer Systems:

Sub-Category in OKR04	Selected BMP	Implementation Notes
(a) Make improvements to sanitary sewers	Camera inspection of sewer lines.	Inspect 500 feet per year of lines 12” or greater in diameter.
(b) Make improvements to sanitary sewers	Repair and replace breaks in sewer lines and appurtenances.	Small repairs covered by annual budget; large projects must be special funded.
(c) Improve reporting of violations	Annual training of Sewer Dept. staff on timely reporting of sewer bypasses and upsets.	Implement staff training.
(d) Strengthen controls	Update spill response	Review spill response

	equipment and supplies as needed.	procedures, equipment, and supplies with the county districts.
(e) Strengthen controls	Annual training of spill response employees.	Implement staff training.

Category 2: On-Site Sewage Facilities (OSSFs):

Sub-Category in OKR04	Selected BMP	Implementation Notes
(a) Identify and address failing systems	Distribute OSSF operation brochure to residential properties.	Distribute as needed.
(b) Identify and address failing systems	Inspect MS4 for evidence of bypasses from OSSFs.	Yearly inspection of Tulsa County's MS4 facilities.
(c) Address inadequate maintenance of OSSFs	Distribute OSSF maintenance brochure to residential properties.	Distribute as needed.

Category 3: Illicit Discharges and Dumping:

Sub-Category in OKR04	Selected BMP	Implementation Notes
Additional effort to reduce waste sources of bacteria	Distribute brochure on septic system maintenance.	Distribute at Tulsa County stormwater display.
Additional effort to reduce waste sources of bacteria	Distribute brochure on grease trap cleaning and maintenance.	Distribute to businesses with grease traps.
Additional effort to reduce waste sources of bacteria	Distribute brochure on grit trap cleaning and maintenance.	Distribute to businesses with grit traps.

Category 4: Animal Sources:

Sub-Category in OKR04	Selected BMP	Implementation Notes
Expand existing management programs to identify and target new sources	Distribute pet waste door hangers to residential properties.	Distribute to homeowners in Tulsa County's MS4 area.
Expand existing management programs to identify and target new sources	Distribute brochures on livestock waste management.	Distribute to livestock ranchers in Tulsa County's MS4 area.
Expand existing management programs to identify and target new sources	Install and maintain "pooper-scooper" stations and signs in MS4-owned parks.	Look to install "pooper-scooper" stations at LaFortune park.

Category 5: Resident Education:

Sub-Category in OKR04	Selected BMP	Implementation Notes
Increase focus and resident education on bacteria discharges from residential sites.	Place web page on Tulsa County's website about bacteria discharge types and amounts from residential properties either as direct discharge or in runoff.	Develop a webpage for stormwater education under Tulsa County's website. Implement within 5 years, and update with new education information as needed.
Increase focus and resident education on overflows from sewer line clogs from fats, oils and grease.	Place web page on Tulsa County's website about bacteria contamination from sewer overflows caused by fats, oils and grease disposal to sewer lines.	Develop a webpage for stormwater education under Tulsa County's website. Implement within 5 years, and update with new education information as needed.
Increase focus and resident education on bacteria from pet waste.	Distribute pet waste door hangers to residential properties.	Distribute to homeowners in Tulsa County's MS4 area.

II.L TMDL Allocations and/or Watershed Plans – OKR04 Part III.B

OKR04 Part III.B requires that each permittee address all conditions specified in a completed TMDL or Watershed Plan for stormwater permitted dischargers. OKR04 Part III.B states that, *"if that TMDL includes a waste load allocation or load allocation for a parameter likely to be discharged by the MS4, your discharges must meet any limitations, conditions, or other requirements of the waste load allocation (WLA), load allocation and/or TMDLs associated implementation plan within any timeframes established in the TMDL or watershed plan. Monitoring and reporting of the discharges may also be required as appropriate to ensure compliance with the TMDL, or watershed plan. You must adopt any WLAs assigned to your discharges specified in the TMDL, or similar targets in the watershed plan, as measurable goals in your SWMP. The SWMP must be modified to implement the TMDL within the timeframe established in the TMDL or as otherwise specified in watershed plan. You must comply with any additional annual reporting or evaluating progress requirements in the TMDL or watershed plan."*

There are two ways to classify TMDLs in Oklahoma: 1) "notification TMDLs" versus "EPA approval TMDLs", and 2) TMDLs having "aggregate WLAs" versus "individual WLAs".

Notification versus EPA Approved: Until late 2013, all TMDLs with permitted MS4s stated that MS4 requirements would begin "upon notification by the Director". This meant that the MS4s

in the TMDL did not have to begin addressing the TMDL requirements until ODEQ notified them to begin implementation. ODEQ has not yet sent notifications, therefore permitted MS4s under these older TMDLs have not yet had to act on any TMDL requirements.

Starting with the finalized Lake Thunderbird TMDL in November 2013, the TMDL's MS4 Appendix now states "upon approval by EPA". All MS4s in these new TMDLs will have to start complying with Appendix requirements once EPA approves the TMDL; no ODEQ notification is necessary. ODEQ will begin notifying permitted MS4s in 2016 to begin complying with the older "notification TMDLs". ODEQ may first notify resource-rich permittees in a phased approach.

Aggregate WLA versus Individual WLA MS4 Requirements: Most older TMDLs have all of the permitted MS4s within the TMDL watershed lumped together ("aggregated") regarding assigned maximum daily pollutant loads (referred to as MS4 Wasteload Allocations or "MS4_WLAs"). For example, if a TMDL watershed has an MS4 aggregated TMDL maximum daily load for bacteria of 5 billion colonies per day, all MS4s collectively are assigned this maximum load limit, regardless of how many MS4s there are in the watershed. The new TMDLs now assign maximum load limits (MS4_WLAs) to individual permitted MS4s. Under OKR04 Part III.B, each permittee must make its assigned load limit a Measurable Goal in the MS4's Stormwater Management Program (SWMP) document. For permittees with aggregate WLAs, the aggregate becomes the Measurable Goal.

BMP-Based TMDLs: OKR04 Part III.B states, *"If the TMDL or watershed plan relies on a BMP-based approach, effective implementation of additional TMDL or watershed plan-related BMPs will be sufficient to implement applicable WLAs."* For BMP-based TMDLs, MS4s will not have to demonstrate that they are staying below the maximum daily load limit (MS4_WLA) in the TMDL. Thus far, all TMDLs written in Oklahoma are BMP-based TMDLs.

TMDL Implementation: The OKR04 permit does not have specific requirements for meeting TMDL implementation. Rather, OKR04 defers to the TMDL document itself to provide implementation requirements for permitted MS4s. These are found in an Appendix of each TMDL document. These include requiring a Monitoring Plan, a TMDL Pollutant Reduction Plan, and reporting data and status in the MS4's Annual Report.

Due to the individual nature of requirements within each TMDL document, Tulsa County will take the following actions regarding completed TMDLs within its MS4:

1. Review the latest list of completed TMDLs from ODEQ, and obtain all TMDL documents applicable to the MS4.
2. Determine the requirements placed upon Tulsa County in each TMDL's Appendix.
3. For Notification TMDLs, begin formulating a strategy to begin meeting the TMDL requirements once notification is received from ODEQ.
4. For EPA Approved TMDLs, begin developing the resources and written plans required by the TMDL.

5. Research the feasibility of joining a regional monitoring program if allowed by the TMDL. Otherwise, develop a means of conducting local monitoring as required by the TMDL.
6. Seek assistance from agencies and other resources, as needed, to develop all written procedures and documentation required by the TMDL.
7. Research and adopt the most effective and reasonable BMPs to include in the pollutant reduction plan required by the TMDL, and identify resources for BMP implementation.
8. Seek assistance from outside resources and begin implementing all TMDL requirements on schedule.
9. Modify the SWMP to include any assigned WLA for the MS4 as a Measurable Goal.

II.M Discharges to Outstanding Resource Waters (ORWs) – OKR04 Part III.C

For the present OKR04 2015-2020 permit cycle, there is only one Phase II permittee in Oklahoma that must meet ORW requirements under OKR04 Part III.C, the City of Tahlequah. Tahlequah's requirements are extensive, and the City has worked closely with ODEQ during the first OKR04 permit cycle to develop an extensive program to meet ORW requirements. The City of Tahlequah will attach the required documentation to their 2016 Notice of Intent (NOI) and continue to implement their program. Any changes to Tahlequah's BMPs to protect ORW will be made at this time and adopted upon ODEQ approval. No other Phase II permittee in Oklahoma has any obligations under OKR04 Part III.C.

III. MINIMUM CONTROL MEASURES

This SWMP provides information on the Best Management Practices (BMPs) and other activities that will be implemented to address each of the six Minimum Control Measures (MCMs). Quotations of relevant passages from the OKR04 permit are inserted as needed *in italics text* in this SWMP to indicate the context of permit compliance.

Existing permittees are assumed to have a fully implemented SWMP and all BMPs successfully implemented at time of Notice of Intent (NOI) submittal in early 2016. They may make changes to their SWMP and BMPs at the time of filing their NOI without having to perform OKR04 Part IV.D change requirements. All subsequent changes to BMPs and the SWMP must follow the requirements of Part IV.D. In addition, OKR04 Part IV.A.1 requires that, *"Modifications and updates shall be reflected in your SWMP and implemented within one (1) year of the effective date of this Permit, then as needed."*

New Permittees: OKR04 Part IV.A.2 requires that, *"You must provide program development, implementation and enforcement schedules for full implementation of the complete SWMP as soon as practicable, but no later than five (5) years from the effective date of this Permit"*. New permittees are not expected to have any BMPs implemented at the time of NOI submittal.

Both new and existing permittees will therefore have similar types of programs and requirements. The main difference between their two SWMP documents will be the BMP implementation schedules.

Tulsa County is a existing Permittee. As such, for each of the following Minimum Control Measures (MCMs) in the SWMP sub-sections A-F below, Tulsa County will implement new BMPs and continue implementing existing BMPs, develop implementation schedules, and establish Measurable Goals for each BMP. Per OKR04 Part V.C, an Annual Report will be submitted to ODEQ that documents implementation and BMP effectiveness under each of the six MCMs. Appendix A of the SWMP contains tables of the BMPs with assigned Measurable Goals, implementation schedules, and other BMP-related information.

III.A MCM 1: Public Education and Outreach:

OKR04 Part IV.C.1 requires Phase II cities to develop and implement a public education program *“to distribute information and education materials to the community”*, and to document a stormwater public outreach program by specifying BMPs and Measurable Goals for educating the general public target audience. Revisions to existing programs must be completed within the first year of effective date of the permit.

III.A.1 Best Management Practices for Public Education

Tulsa County will use a variety of public education BMPs to inform individuals and groups within the community about the steps they can take to reduce stormwater pollution and become involved in the stormwater program. Appendix A summarizes all BMPs that will be used for this MCM. Appendix A also lists the Measurable Goals and schedule of implementation assigned to each BMP.

III.A.2 Target Audience

The following target audiences were selected because Tulsa County considers them most likely to be significant sources of stormwater pollutants:

BMP Category or Type	Target Audience
Residential chemical use and disposal	Homeowners, renters, multi-family residents.
Commercial chemical use and disposal	Commercial retailers selling chemicals and construction sites.
Public school education	Primary and secondary grade levels.
Pet waste	Pet owners.
Home builder sites	Private Homeowners/Builders

Livestock waste runoff	Livestock Ranchers
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The secondary school education program will use Tulsa County staff and Blue Thumb Staff and volunteers. The program will focus on basic water quality impacts and options for pollutant disposal (e.g. recycling and collection events).

III.A.3 Target Pollutant Sources

Tulsa County's Public Education program will primarily address pollutants from residential neighborhoods by educating individual homeowners on the proper disposal of such household chemicals as:

- pesticides
- fertilizers
- detergents
- solvents
- motor oil
- antifreeze
- other motor and engine fluids
- oil-based paints
- rubbish ("floatable" materials)
- yard waste (grass clippings, leaves)

By encouraging the public to use local and regional recycling centers and household pollutant collection events, additional household chemicals such as heavy metals, solvents, acids and poisons can be safely disposed of. Proper storage, use and disposal of chemicals by local businesses will also be addressed in the education program.

III.A.4 Outreach Strategy

Tulsa County will participate in the regional stormwater education activities sponsored by INCOG's Green Country Stormwater Alliance (GCSA). Some education materials will be provided by INCOG from existing Federal, State or other sources while other materials will be developed collaboratively from all GCSA members. Tulsa County will also develop some public education BMPs locally.

Tulsa County's public education program will employ the following strategies:

- a. Homeowners will be educated on how to properly use and disposal of fertilizers and other household chemicals as well as proper septic system maintenance.
- b. The public education program will also provide information on how to get involved in stream cleanups, restoration activities and other local conservation efforts that may periodically be conducted within Tulsa County.

- c. Tulsa County will promote citizen participation in area-wide stream and city cleanup events, use of recycling centers in the vicinity, and participation in pollutant collection events.
- d. INCOG's GCSA regional stormwater web site (www.stormwaterok.net) will provide information to the general public about local and regional water quality and program issues as well as numerous web links to water quality resources.
- e. Secondary education grades will learn about water quality and urban sources of pollution through the Blue Thumb's "Storm Sewer In a Suitcase" classroom program for school children.
- f. The Blue Thumb volunteer stream monitoring program will emphasize student and adult education through practical hands-on experience with water quality sampling as well as by providing formal training in water quality, pollution effects and ecosystem health.
- g. Tulsa County's education program will develop written materials that target commercial and industrial enterprises that have business activities that may negatively impact the stormwater quality of the MS4.

Tulsa County's Public Education program has a goal of providing stormwater education material to at least half of its homeowner residents by the end of the five-year permit cycle.

III.A.5 Management Responsibility

Tulsa County has overall project management responsibility for implementing the Public Education and Outreach MCM. Berry Britton, engineer and stormwater manager will coordinate all local activities and implementation of all program elements for this MCM.

INCOG's GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to provide assistance to its GCSA members' educational programs. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG's role in providing technical support and various kinds of education materials, as well as maintenance of the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.A.6 Evaluating Program Effectiveness

OKR04 Part IV.C.1.b(6) lists "evaluating program effectiveness" as a Recommendation. Part IV.C.1.a(3) requires each permittee to "Assess your education and outreach program annually as required by Part V.C of this permit." Where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each Public Education BMP. These are summarized in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to

accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the general public and from local businesses. Feedback from the public (email, phone call, fax, letter or personal visit) will include requests for more information and any follow-up actions taken by MS4 staff to address problems or concerns. If pollution sources are abated as a result of the contact, then the abatement action will be logged as a BMP success for public education as well as removal of illicit discharges. Changes in types of issues reported by the general public and businesses over several years of BMP implementation should demonstrate effectiveness of this MCM.

III.B MCM 2: Public Participation and Involvement:

Some of the activities under the Public Education MCM also apply to the Public Participation and Involvement MCM. These include the Blue Thumb stream monitoring, use of recycling centers, participation in household pollutant collection events, and community cleanup events. Appendix A lists each Public Participation BMP including implementation schedules and Measurable Goals for each BMP.

The Public Participation MCM is different from the Public Education MCM in that the citizens of Tulsa County will actively participate in a program component such as stream cleanups or stormdrain marking. By participating, citizens not only learn about the urban stormwater quality issues but contribute towards improving water quality in their community.

III.B.1 Best Management Practices for Public Participation

Tulsa County will use several public participation BMPs to involve individuals and groups in activities and programs to reduce stormwater pollution and become involved in the stormwater program. Appendix A summarizes all BMPs that will be used for this MCM along with the Measurable Goals and schedule of implementation for each BMP.

III.B.2 Public Involvement in Program Development

In cooperation with ODEQ and INCOG, Tulsa County has taken a number of steps to inform and include the public in understanding and providing input in the development of the Phase II program. These include:

- a. Within the past 12 months, Tulsa County has presented staff and budget information about the Phase II program in County Commission meetings.
- b. County staff have responded to questions from the public, and the County has distributed information to the community upon request.
- c. The County has placed 0 article(s) in the _____, a local weekly / daily newspaper, about the program that includes requests for citizen input.
- d. As part of its existing Public Education and Outreach MCM, Tulsa County has provided information about the MS4 program to citizens, and encouraged them to contact the stormwater coordinator for additional information.
- e. The ODEQ hosted a public meeting and held a formal 30 day public comment period in April 2015 on the draft OKR04 General Permit; ODEQ responded to all comments in writing.
- f. The ODEQ has placed all relevant information about the Phase II program, including cities affected and activities required under Phase II, on their public website with links to various types of technical information for the public.
- g. INCOG's Green Country Stormwater Alliance (GCSA) website contains web pages for the public about the Phase II stormwater permit program, including invitations to contact local stormwater managers of each GCSA member to learn more about their own local program.
- h. The ODEQ will place a notice of the availability of the Notice of Intent (NOI) on the ODEQ web site, and provide a 30 day public comment period for any organization or individual to make formal comments or inquiries on the draft NOI and draft SWMP of each OKR04 applicant. Tulsa County will make available to any group or individual, upon request, a copy of the NOI and SWMP, and provide any other information upon request.

III.B.3 Public Involvement in Program Implementation

Throughout the coming five year permit cycle, Tulsa County will use several methods to educate the public about the Phase II program and opportunities for participation. These include:

- a. Tulsa County will continue to include in its Public Education brochures information on how individuals and organizations can become more fully informed and participate in water quality improvement efforts under the Phase II program.
- b. INCOG's regional GCSA stormwater web site will continue to provide updated information about local and regional activities in which citizens can participate.

- c. County Commission agenda items dealing with aspects of the program (e.g. budget approvals, approval of program activities) will be open to the public and receive public comment.

III.B.4 Target Audience

The public participation program will primarily target homeowners, Tulsa County adult residents, public school classes and organizations, non-profit organizations (e.g. Boy Scouts), and civic organizations (e.g. local Kiwanis Club). For school-age children, the participation program will focus on stormdrain marking using Blue Thumb resources. Regional waste collection events and community / stream cleanups will target individual residents in the MS4 by encouraging their participation, and providing event information. All ethnic and socio-economic groups will be encouraged to participate. The Phase II program for Tulsa County will benefit all residents and local enterprises.

III.B.5 Public Involvement Activities

Appendix A lists all of the Public Participation BMPs that will be used by Tulsa County, including the assigned Measurable Goals and implementation schedule for each BMP. Tulsa County will participate in and support INCOG's GCSA regional Public Participation and education activities. Some education materials will be provided by INCOG from Federal, State or other sources while other materials will be developed collaboratively by all GCSA members.

Tulsa County's Public Participation program will be conducted to promote and educate its citizens about opportunities to play an active role in water quality improvement efforts. Several of the Public Participation BMPs in Appendix A are joint ventures between Tulsa County and other agencies and organizations. The roles of the permittee and the organizations for each of these cooperative BMPs are presented below:

Cooperative BMPs for the Public Participation MCM

BMP or Activity	Outside Organization	Organization Role	MS4 Role
GCSA Website	INCOG	Host and update Public Participation web pages on GCSA website; solicit ideas and information from GCSA members.	Provide information; fund GCSA membership including website; promote website.
HHP Collection	The M.e.t.	Manage semi-annual regional collection events; promotes events regionally.	Promotes events locally; funds MS4 portion of event costs.

BMP or Activity	Outside Organization	Organization Role	MS4 Role
Stream Cleanup Events	OCC's Blue Thumb program	Provide supplies; solicit volunteers, coordinate events; provides for disposal.	Promote program locally; help fund supplies; provide staff for event and admin. work.
School Classroom Instruction	OCC's Blue Thumb program	Provide supplies, set classroom dates; solicit volunteers; help conduct training.	Help set classroom dates; helps with classroom training.
Recycling Center	The M.e.t.	Etc.	Etc.

III.B.6 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will act as stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG's GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Post-Construction Site Runoff Control program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG's role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.B.7 Evaluating Program Effectiveness

OKR04 Part IV.C.2.b(4) lists "evaluating program effectiveness" as a Recommendation. Part IV.C.2.a(4) requires each permittee to "Assess your public participation and involvement program annually as required by Part V.C of this permit." Where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each Public Participation BMP. These are summarized in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the general public and from cooperating agencies and organizations listed in the Cooperative BMPs table above. Feedback from the public, agencies and organizations (email, phone call, fax, letter or personal visit) including outputs and outcomes of Public Participation

events will be recorded in writing. Increased participation by citizens and/or increased pollution quantities collected over a period of several years of BMP implementation should demonstrate effectiveness of this MCM.

III.C. MCM 3: Illicit Discharge Detection and Elimination (IDDE):

Tulsa County will implement a comprehensive program to detect and eliminate illicit discharges following the requirements in the OKR04 General Permit. The program will rely upon a number of methods of pollutant detection. There are two categories of pollutants that will be addressed in different ways: 1) episodic incident with no determinable source, and 2) chronic or frequent incident with a potentially determinable source.

Untraceable Sources: The first category covers pollutants introduced into the MS4 from individuals in a one-time episode at a discrete point of entry in which the responsible party or source is not traceable. Examples of these are dumping of yard waste, motor oil, antifreeze or trash into a creek or stormdrain. The sources for these types of pollutants, when discovered in the MS4 or local stream, cannot be determined (e.g., finding the individual causing the pollution). Discovery of this type of pollution will be from incident reports from citizens, city crews, police and fire workers, businesses, and State and Federal agency field crews. Prevention of future episodic pollution incidents will rely upon implementation of the Public Education and Public Participation programs as defined in this SWMP.

Traceable Sources: The second category covers pollutants from sources that are frequently occurring or otherwise traceable through stream channels and the MS4 system using one or more methods of visual inspections, use of simple chemical field test kits and/or formal chemical sampling via laboratory analysis. Pollutants from these sources will be dispersed downstream as a detectable odor, visual color, increased turbidity, excessive algae growth, or changes in water chemistry (e.g. pH or conductivity) when compared to uncontaminated water elsewhere in the stream or MS4. These potentially traceable pollutants are amenable to “source tracking” inspections, and the sources are more likely to be found and remediated. The source tracking investigation methods are discussed below in the Dry Weather Field Screening (DWFS) Plan.

Types of Inspections: There are several parts of OKR04 Part IV.C.3.a that require conducting some type of field inspections under the IDDE MCM (underlines added for emphasis):

- a. OKR04 Part IV.C.3.a(2) requires the MS4 to “implement a *Dry Weather Field Screening [DWFS] Plan* to detect, investigate, and eliminate illicit discharges.”
- b. OKR04 Part IV.C.3.a(2)(c) (which is within the DWFS Plan requirements) requires the MS4 to develop “procedures for *tracing the source* of an illicit discharge, including the specific techniques you will use to detect the location of the source.”
- c. OKR04 Part IV.C.3.a(5) requires the MS4 to “Develop ... and implement a *plan to detect and address non-stormwater discharges*, including illegal dumping to your system.”

Tulsa County has developed a DWFS Plan, presented below, that addresses all three of these requirements in OKR04 Part IV.C.3.a. While this SWMP text covers these three requirements, in the future Tulsa County may prepare more detailed and formal Standard Operating Procedures (SOPs) as experience is gained in performing these permit requirements. If SOPs are prepared, they will be referenced in an update to the SWMP and replace the existing text.

III.C.1 Best Management Practices for Illicit Discharge Detection and Elimination

Tulsa County will use a number of Best Management Practices (BMPs) to implement an effective detection and elimination program for illicit discharges. Appendix A lists the BMPs that will be used for this MCM. Some BMPs will address administrative actions, such as adopting an ordinance to address pollution occurring locally, while other BMPs will address public education, pollution inspection program, employee training and protection of special waters such as 303(d) listed waterbodies.

III.C.2 Map Development and Update

OKR04 Part IV.C.3.a(3) requires the MS4 to develop and periodically update a map of the MS4. As part of ODEQ's program evaluations (audits), the following map attributes are expected:

- a. Outfall locations;
- b. Names and locations of Waters of the State receiving MS4 outfall discharges;
- c. Catch basin locations;
- d. Locations of MS4 pipes, ditches and conduits;
- e. Location of public stormwater facilities; and
- f. Location of private stormwater facilities.

Tulsa County will has completed a map of the MS4 system showing major drainage system features, major outfalls and prominent receiving streams. The MS4 system map is presently in AutoCAD format. Periodic updates of map data from substate planning agencies and State and Federal agencies will be used to make future changes to the MS4 map as needed. Map features will also be amended in the future as more system inspections are performed by MS4 staff. Updated map information, such as outfall locations and site descriptions, will be reviewed annually by city staff and reflected in the map updates.

The mapping process for both creating new maps and updating existing maps will involve:

- a. Collecting initial and updated map data from agencies and organizations;
- b. Collecting field data during inspections by city crews to verify locations and descriptions of MS4 spatial map attributes;

- c. Periodic review of MS4 system map data by the City Engineer and other city and outside professional staff, and updating maps as needed;
- d. Global Positioning System (GPS) will be used when needed to provide coordinate data for the MS4 system, facility locations and sampling sites, while other coordinate data will be collected using aerials and GIS map layers that show structures and sites;
- e. Digital and paper aerial photography, and USGS 7.5 Minute Quadrangle maps will be used to assist with locating outfalls and updating their positions; and
- f. INCOG will provide GIS data and digital and paper aerial photos of the County's MS4 upon request.

III.C.3 Ordinance

OKR04 Part IV.C.3.a(4) requires that an ordinance or other regulatory mechanism be adopted by the MS4 to effectively prohibit non-stormwater discharges. Tulsa County will adopt building and zoning codes prohibiting illicit discharges to the MS4 which will be evaluated periodically for potential modifications. Development and maintenance of a local illicit discharge code is a BMP listed in Appendix A along with the intended implementation schedule and Measurable Goals. The ordinance development and maintenance process will involve taking the following actions per the schedule presented in Appendix A:

- a. Obtain and review model stormwater pollution codes from other permitted MS4s and agencies;
- b. Compare model building and zoning codes to existing local codes and ordinances and make modifications to local codes;
- c. If needed, adopt a new local code or modify an existing code to address illicit discharge detection and elimination;
- d. Periodically evaluate code effectiveness and make changes when needed to the illicit discharge codes.

As a county, Tulsa County does not have an effective means of enforcing county ordinances for stormwater pollution violations. OKR04 Part IV.C.3.a(4) provides for the county to place in their SWMP "If you lack legal authority for direct enforcement action, you must include procedures to notify DEQ when a party fails to comply with the requirements. You may rely on DEQ for assistance in enforcement of this provision of the permit in these cases." Tulsa County will therefore implement the following procedures for taking enforcement action against illicit dischargers in cooperation with ODEQ:

- a. Within 24 hours of finding a discharge that requires ODEQ assistance as a potential violation, Tulsa County will contact ODEQ Enforcement Division by telephone and email.
- b. Tulsa County will collect any data and information that is requested by ODEQ

within the ability of local resources and promptly submit the data to ODEQ.

- c. Tulsa County will assist ODEQ with any site visits and/or pollution inspections within the ability of local resources.
- d. Tulsa County will assist ODEQ with administrative tasks needed by ODEQ within the ability of local resources, including arranging meetings and processing reports.
- e. Tulsa County will document all actions taken by ODEQ and county staff for each incident, and report all incidents in Tulsa County's Annual Report.

III.C.4 Plan to Detect and Eliminate Illicit Discharges

OKR04 Part IV.C.3.a(2) requires the MS4 to develop a Dry Weather Field Screening (DWFS) Plan. Item (c) of this passage requires the MS4 to conduct "tracing the source" inspections. OKR04 Part IV.C.3.a(5) requires development of a more general plan to detect and address non-stormwater discharges. All three of these requirements are based upon conducting field inspections to look for pollution and their sources, and to take actions to eliminate the pollutant discharges from these sources.

IDDE Plan: Tulsa County has determined that the following actions will satisfy the OKR04 requirements to have an effective Illicit Discharge Detection and Elimination (IDDE) program. The IDDE Plan action items follow the OKR04 steps presented in OKR04 Part IV.C.3.a(2) items a – e.

a. Locating Priority Areas:

- (1) Examine maps of MS4 area to locate sites with high potential for pollutant discharges.
- (2) Delineate MS4 areas within each of the 303(d) watersheds, and identify high priority areas that have sources most likely to cause or have the reasonable potential to contribute the 303(d) pollutants of concern to the 303(d) listed waterbody.
- (3) Collect data on pollutant spills that have occurred in the MS4 within the past 5 years.
- (4) Identify areas in which there have been sewer system bypasses within the past 5 years.
- (5) Identify areas having the oldest sewer system lines and appurtenances.
- (6) Identify industrial, commercial and residential areas having the greatest potential to discharge pollutants.
- (7) Compile results of any ambient sampling and DWFS inspections that indicate potential pollutants being discharged.

- (8) Compile all of these data, and generate a map and description of areas in the MS4 having the greatest potential to discharge pollutants.
- (9) Of the overall MS4 high priority areas, identify high priority areas specifically associated with 303(d) waterbodies.

b. On-Site Sewage Disposal Systems:

- (1) Compile an inventory of all on-site sewage disposal systems (OSSDS) in the MS4.
- (2) Assess the approximate age and condition of the clusters of OSSDS (e.g., those within a given residential subdivision).
- (3) Obtain records from ODEQ and county agencies on OSSDS inspections and enforcement actions regarding system bypasses or failures and pollution episodes.
- (4) Identify areas within the MS4 that have the highest potential for OSSDS failures and pollution discharges, and conduct inspections of individual systems and of the receiving streams for evidence of sewage bypasses from OSSDS.

c. Tracing the Source of Illicit Discharges:

- (1) Develop Dry Weather Field Screen (DWFS) Standard Operating Procedures (SOPs) documents that list the methods to be used by field crews to conduct the DWFS inspections. The DWFS SOPs will include steps for selecting DWFS sites, making visual observations at each site, using simple field test kits, and recording data on field forms.
- (2) The DWFS SOPs and program will include special attention to 303(d) waters as required in OKR04 Part III.A.1.d.
- (3) Conduct DWFS inspections at least once per year at the sites identified in the SOPs, with special emphasis on all high priority areas in 303(d) watersheds as required in OKR04 Part III.A.1.d.
- (4) Upon discovery or after receiving a report of a pollutant in the MS4 or in a receiving water, prepare a Work Order to begin administratively tracking progress of the investigation.
- (5) Perform an initial visual observation at the site of the reported pollution event.
- (6) If pollutants are not found, log out the Work Order noting the inspection results.
- (7) If Pollutants are found, determine if it will be possible to trace the source by looking for evidence of pollutants upstream or coming from a discharge pipe or channel.
- (8) If the pollutants appear to be due to an episodic, one-time discarding action with no traceability, note the findings in the Work Order and proceed with cleanup.
- (9) If the pollutant source(s) can be traced, conduct further inspections using visual indicators and simple field test kits as necessary to trace the pollutant source. Document your inspection results carefully.

d. Removing the Source:

- (1) If the source is found, present your findings to the owner of the pollution source and proceed with enforcement steps as provided in the local IDDE ordinances and codes.
- (2) Depending upon the severity of the pollution event, an emergency meeting with the owner may be needed. Consult ODEQ for assistance if needed.
- (3) Consult with ODEQ if faced with refusal by owners of the pollutant source or if additional technical expertise is needed to help document pollution severity or extent.
- (4) Upon completion of all inspection and enforcement actions, close Work Order.

e. Program Evaluation and Assessment:

- (1) The assessment of the IDDE Plan and program will be the assessment required for the Annual Report, with additional evaluation for all inspections and pollutant reduction actions taken within the high priority areas in 303(d) watersheds.
- (2) Factors and information to consider include numbers of IDDE Work Orders performed, successful completion of Work Orders, resolution of problems, estimated quantities of pollutants eliminated from the MS4, documentation of any public health problems or complaints, input from ODEQ and county health department, and input from citizens concerning success of program effectiveness or unresolved issues.
- (3) Using the factors cited above, perform an overall assessment of the program.
- (4) Identify program changes needed in the future to increase effectiveness.

Administrative Actions to Support the IDDE Program: To facilitate the successful implementation of the IDDE Plan defined above, the following additional administrative actions will be taken by Tulsa County:

- a. Ensure that maps are effective by collecting map feature data during inspections to verify accuracy;
- b. Evaluate existing land uses in the MS4, and delineate high priority areas that have the greatest potential to discharge pollutants, with special consideration for 303(d) watersheds;
- c. Solicit and compile illicit discharge and pollution information from citizens, police and fire units, city public works crews, local businesses, other municipalities, non-profit organizations, volunteer stream monitors, students and educational institutions, construction contractors and workers, local building officials, floodplain administrator, and State and Federal agencies;
- d. Ensure that field and facility data are compiled in a manner that facilitates the inspection process (e.g. information about possible pollutants and/or sources are provided to MS4 inspectors in a timely fashion);
- e. Ensure that inspection results and field and laboratory data are properly documented with a level of quality assurance appropriate to the use of the data;

- f. Participate in INCOG's GCSA regional employee training on quality assurance, data management, use of field kits, analysis of chemical data and more;
- g. Implement procedures for helping with enforcement, including how to approach owners of potential sources for on-sight inspections, how to present field data to owners that confirms the source, and what procedures the owner must take to remove the discharge; and
- h. Periodically evaluate the inspection and enforcement program, and make modifications as necessary to improve program effectiveness.

Details of IDDE Inspections: The Dry Weather Field Screen (DWFS) and source tracking programs for potentially traceable sources will be described more fully in Tulsa County's DWFS SOPs. The SOPs will include methods to conduct a visual inspection program performed by MS4 crews, which may include use of one or more field test kits for parameters that monitor the most likely type of stormwater pollution that is indicated (e.g. chlorine residual, pH, dissolved oxygen, conductivity, etc.). The visual inspection will describe and/or quantify the extent of pollution (e.g. floatables, excess algae growth, dead or stressed stream vegetation and organisms, color of water, odors, sediments, etc.). The DWFS SOPs will include special actions to address high priority areas identified in 303(d) watersheds.

If source tracking requires scientifically defensible data for possible litigation and/or enforcement action, then Tulsa County will use either its properly trained field collection crews or contract professionals to conduct appropriate sampling and information gathering to locate sources and characterize pollution events. Outside agencies will be contacted, if necessary, to report potentially illegal discharges or to protect health, safety or the environment. All samples collected for transport to laboratories for analysis shall be collected under written Quality Assurance (QA) protocols, including use of Chain of Custody forms, appropriate sample bottles with labels, field forms describing sample collection sites and conditions, and proper sample preservation. All laboratory analyses will follow 40 CFR Part 136 methods.

Standard paper field forms and/or electronic field data recording devices (e.g. laptops, PDAs, GPS or Tablet PCs) will be used to make data collection systematic. Data will be entered and/or downloaded into computer databases for analysis, sharing and reporting. As needed, field data will be linked to MS4 map attributes. If requested to do so by ODEQ, certain monitoring data will be reported to ODEQ on ODEQ's Discharge Monitoring Report (DMR) forms.

III.C.5 Administrative Procedures for Source Control

Untraceable Pollution: When episodic incidental pollution is reported to Tulsa County (e.g. motor oil dumped into a stormdrain), the MS4 stormwater staff will record the date, location, information source, and description of the event. If necessary, a public works crewman will be sent to investigate to determine if the site should be cleaned (e.g. removal of yard waste, oil spill cleanup, etc.). After inspection and/or cleanup, MS4 staff will keep a record of all actions

taken regarding the pollution incident. These data will be included in Tulsa County's Annual Report and used to evaluate program effectiveness.

Traceable Pollution: When potentially traceable pollution is reported, the same incident information will be recorded, and MS4 staff will be sent to investigate. If the source is not immediately obvious, the MS4 staff will initiate a source tracing inspection and/or hire professional investigation of the site and attempt to trace the source upstream from the pollutant incident. If the source is located, MS4 staff will contact the owner / responsible party to request that the source be abated within a reasonable time in accordance with local ordinance.

The MS4 will perform a follow-up inspection to confirm that the source of pollution has been abated. If not, then the MS4 will take increasingly more strict action leading up to assessment of penalties, and possibly to include ODEQ and EPA enforcement as well. Throughout the administrative and investigative process, MS4 staff will document all major actions in writing to permanent files. Data from all such incidents will be included in Tulsa County's Annual Report and used to evaluate program effectiveness.

III.C.6 Inform Employees and the Public

OOKR04 Part IV.C.3.a(6) requires the MS4 to, *"Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. Promote, publicize and facilitate the reporting of illicit discharges"*. Appendix A lists the types of education and outreach BMPs that will be used for the public community and municipal employees. Those activities specifically targeting the requirements in OKR04 Part IV.C.3.a(6) are listed below.

- a. Distribute brochures to encourage proper use and disposal of household chemicals, maintenance of on-site sewage disposal systems, and recycling;
- b. Support a regional public seminar dealing with one or more Phase II stormwater issues;
- c. Discuss the Phase II program in a city council meeting open to the public;
- d. Provide information on INCOG's GCSA / the MS4's local website about pollutant reduction;
- e. Support local stream clean-up events conducted by non-profits, organizations or agencies;
- f. Support local Blue Thumb volunteer monitoring and public education programs;
- g. Support local Blue Thumb stormdrain marking program;
- h. Support regional household pollutant collection; and
- i. Support local and regional recycling of wastes.

III.C.7 Authorized Occasional Incidental Non-Stormwater Discharges

OKR04 Part IV.C.3.a(7) requires the MS4 to *“Maintain a list of occasional incidental non-stormwater discharges or flows as allowed in [OKR04] Part I – B2 that will not be addressed as illicit discharges.”* Tulsa County’s list of allowable non-stormwater discharges is presented at the beginning of Section III.C of this SWMP, along with a description of the actions to be taken to address pollutant releases from firefighting activities.

III.C.8 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will act as stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG’s GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Post-Construction Site Runoff Control program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG’s role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.C.9 Evaluating Program Effectiveness

OKR04 Part IV.C.3.a(9) requires the MS4 to, *“Evaluate the appropriateness of your identified BMPs for this minimum control measure. Your evaluation shall verify compliance with permit requirements and more importantly, document that efforts have been made towards achieving your identified measurable goals and reducing the impacts of stormwater runoff from the small MS4. Document the evaluation of your illicit discharge detection and elimination program annually as required by Part V.C of this Permit”*, where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each IDDE BMP. These are listed in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the general public and from agencies and organizations involved with the IDDE program. Feedback from the public, agencies and organizations (email, phone call, fax, letter or personal visit) including outputs and outcomes of education events will be recorded in writing. Tulsa County will record all pollution abatement episodes as described in the SWMP, including date, location, pollutant, observations, measurements, interviews, photos, field form data, abatement steps taken, and results of each investigation. The increased number of pollution

discharge quantities removed from the environment over a period of several years of BMP implementation and inspections conducted should demonstrate effectiveness of this MCM.

III.D. MCM 4: Construction Site Stormwater Runoff Control:

Tulsa County will implement a comprehensive education, inspection and enforcement program to address the pollution of stormwater runoff from active construction sites. Tulsa County will develop an ordinance prohibiting the discharge of pollutants and sediment from construction sites, and require the deployment of adequate sediment and erosion control measures. The MS4's building inspector and other staff will perform periodic site inspections for compliance with local stormwater codes either as part of other construction inspections or in response to complaints about site runoff contamination.

III.D.1 Best Management Practices for Construction Site Runoff Control

Tulsa County will use a number of Best Management Practices (BMPs) to implement an effective erosion and pollutant control program for active construction sites. Appendix A provides a description of each BMP, along with Measurable Goals and schedule of implementation. The BMPs presented in Appendix A include an education component, and include administrative actions, such as ordinance development. There are also BMPs for performing inspections and taking enforcement actions.

III.D.2 Ordinance

OKR04 Part IV.C.4.a(1) requires the MS4 to develop an ordinance to control erosion and sediment at construction sites. Tulsa County will adopt a code prohibiting construction related discharges to the MS4. The code will be periodically evaluated and modifications made as needed. The code will mirror requirements contained in ODEQ's statewide stormwater permit for construction activities (OKR10). Local code adoption and updating will involve:

- a. An initial code development and update action will be taken during the first year of OKR04 authorization.
- b. The initial process will compare model construction codes to existing County codes and drafting modifications that will be needed to local codes;
- c. Inspection and administrative staffing needs will be assessed, and additional resources will be sought, if needed, to ensure that the County will be able to implement all provisions in the codes;
- d. Local construction codes will be updated as needed;
- e. Key staff persons will be identified to manage all inspection and enforcement activities; and
- f. Program effectiveness will be assessed annually, and changes made to the program pertaining to ordinance requirements and County resources and manpower.

III.D.3 Plan to Ensure Compliance by Site Operators

OKR04 Part IV.C.4.a(2) requires the MS4 to, *"implement and enforce requirements for construction site operators to implement BMPs for erosion and sediment control"*. Part IV.C.4.a(3) requires the MS4 to, *"implement and enforce requirements for construction site operators to ... control waste at the construction site..."*. Tulsa County will take the following actions to address construction related activities as defined in OKR04 Part IV.C.4.a to ensure that construction site operators implement proper erosion and sediment control measures and control wastes at construction sites. These will include:

- a. Provide education materials for construction site operators that they will be required through local ordinance to establish erosion and sediment controls and controls of site waste;
- b. The MS4 will incorporate this education into the initial plan review and building permit application process;
- c. The MS4 will establish guidelines and requirements for erosion and sediment control Best Management Practices (BMPs) and methods to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste; and
- d. The MS4 will ensure compliance from site operators through the site inspection and enforcement process. Increasing severity of penalties will result when corrective action has been ignored or not fully achieved.

III.D.4 Procedures for Site Plan Review

OKR04 Part IV.C.4.a(4) requires the MS4 to, *"develop, ... implement and enforce procedures for site plan review which incorporate consideration of potential water quality impacts..."*. To meet this OKR04 permit requirement, Tulsa County will take the following actions:

- a. Include in the MS4's regular site plan review process additional steps to ensure that the draft plans are consistent with local erosion and sediment control requirements;
- b. Require all new development and redevelopment construction plans to consider potential impacts on water quality from construction activities. Areas to be addressed include sediment and erosion control and control of on-site wastes that can impact water quality.
- c. Ensure that the proposed construction plans and activities are in compliance with local floodplain ordinances.

III.D.5 Procedures for Public Input

OKR04 Part IV.C.4.a(5) requires the MS4 to, *"implement and enforce procedures for receipt and consideration of information submitted by the public"*. Tulsa County will establish the following administrative process for taking input from the public:

- a. Designating one or more MS4 staff as the primary contact person for stormwater communications from the general public;
- b. Creating and periodically updating as needed a written and/or computer based form that allows efficient collection of the information being provided from the public;
- c. Educating MS4 staff on how to coordinate contacts from the public with the designated MS4 staff person.
- d. Processing of input from the public will be allowed from all sources, including emails, letters, faxes, phone calls and personal contacts;
- e. The MS4 will document the response actions taken to resolve each request for assistance; and
- f. The public input program will be part of the annual program assessment for the Annual Report and include evaluating success and follow-up actions taken on unresolved problems.

III.D.6 Construction Site Inspections

OKR04 Part IV.C.4.a(6) requires the MS4 to, *"implement and enforce procedures for site inspection and enforcement of control measures"*. To comply with this requirement, Tulsa County will develop a program for inspection of construction sites. Stormwater control inspections will be performed by MS4 building inspectors and their qualified designates. Inspections will be performed when a complaint is received from the public about a stormwater pollution incident, and periodically during the other MS4 construction inspection activities. The following stormwater inspection procedures will be used:

- a. A stormwater inspection form will be created and periodically updated as needed to document inspection results of each site visit;
- b. Stormwater inspection staff will be identified and trained to perform stormwater inspections.
- c. A stormwater inspection will be conducted whenever a complaint is received, and periodically during the routine construction inspections by the MS4 inspector;
- d. The stormwater inspection form will document the adequacy of the erosion and sediment control measures being used and note any remedial action needed;
- e. Inspection data from the forms as well as all follow-up actions, including enforcement, will be entered into a computer and also stored in paper files;
- f. Enforcement will rely upon initially encouraging remediation by the construction owner / operator, followed by a warning to remediate within a reasonable time, followed by issuance of a fine under authority of the local ordinance; and
- g. Any immediate and significant threat to health, safety or the environment will be enforced immediately using best professional judgment of the inspector and/or administrative or public works management, including police and fire personnel, as the situation merits. ODEQ will be notified as deemed necessary to report the violation for OKR10 enforcement.

III.D.7 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will act as stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG's GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Post-Construction Site Runoff Control program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG's role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.D.8 Evaluating Program Effectiveness

OKR04 Part IV.C.4.a(8) requires the MS4 to, *"Evaluate the appropriateness of your identified BMPs for this MCM. Your evaluation shall verify compliance with permit requirements and more importantly, document that efforts have been made towards achieving your identified measurable goals and reducing the impacts of stormwater runoff from the small MS4 (as required by Part V.C of this Permit)"*, where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each construction site control BMP. These are listed in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the general public and from agencies and organizations involved with the construction site control program. Feedback from the public, agencies and organizations (email, phone call, fax, letter or personal visit) including outputs and outcomes of education events will be recorded in writing. Tulsa County will record all construction site inspections and pollution abatement episodes as described in the SWMP, including date, location, pollutant, observations, measurements, interviews, photos, field form data, abatement and enforcement steps taken, and results of each investigation. The increased number of pollution discharge quantities removed from the environment over a period of several years of BMP implementation and inspections conducted should demonstrate effectiveness of this MCM.

III.D.9 7th MCM Optional Permit Requirements for County Construction

Tulsa County has elected to use the alternative provided in Part VIII of OKR04 relating to construction activities on land owned by the MS4 and to activities that are directly controlled by Tulsa County. By selecting this option, all municipal construction discharges are herein authorized so long as the County meets all terms and requirements under OKR04 Part VIII. Tulsa County will develop, for each MS4 construction project of one acre or greater in size, a Stormwater Pollution Prevention Plan (SWP3) that meets all requirements of OKR04 and applies to all municipal construction activities within the MS4's county limits. This option applies to all MS4 construction activities where the MS4 meets the definition of "construction site operator" as defined in OKR04.

Tulsa County will have potentially several types of construction activities in the future: 1) new buildings, 2) cleared and/or paved areas such as parking lots or park ball fields, and 3) utility line entrenchment. Tulsa County will either hire a contractor to perform the work or use county crews and equipment. Standard construction practices will be used on all projects. Local conditions include construction in accessible areas with sufficient easement and/or city ownership of property. Appendix C shows a map of the MS4 boundaries within which this option applies.

Tulsa County's Project Manager will ensure that the project-specific SWP3 is developed and a copy kept at the construction site for review. When Tulsa County hires a contractor to perform the work, the contractor will be required to prepare and maintain access to the SWP3, and this will be verified by the construction inspector or other MS4 official. The project site will be inspected as with any other construction project as described above in the SWMP. Part of this inspection process will be to ensure that all SWP3 requirements are being met. The MS4's SWP3 contents will meet all requirements of OKR04 Part VIII.

III.E. MCM 5: Post-Construction Management:

Post-construction stormwater management in new development and redevelopment focuses on implementation of controls and practices that are designed to maintain good water quality conditions after an area has been developed and after construction activities have been completed.

III.E.1 Best Management Practices for Post Construction Runoff Control

OKR04 Part IV.C.5.a(1) requires the MS4 to develop, "*strategies which include a combination of structural and/or non-structural BMPs appropriate for your community*". Appendix A lists the BMPs that will be used by Tulsa County to address the Post-Construction MCM including the Measurable Goals and implementation schedules for each BMP.

BMP Strategy: Tulsa County has developed the following strategy for addressing post-construction control of runoff:

- a. Attempt to maintain pre-development runoff conditions;
- b. Ensure that controls are in place that will prevent or minimize water quality impacts;
- c. Define pre-development not as conditions that existed before any manmade disturbance, but rather the condition of development that exists just prior to commencing the present development activities;
- d. Develop and implement structural and/or non-structural BMPs appropriate for the MS4 community;
- e. Implement BMPs that are appropriate for the local site conditions and selected to minimize water quality impacts;
- f. Review local codes and ordinances and identify barriers to Low Impact Development (LID), and remove those barriers that are incompatible with local community standards;
- g. Develop and Implement a program that ensures adequate long-term operation and maintenance of the BMPs;
- h. Develop and implement an education program for developers and the general public about the benefits of LID; and
- i. Encourage and provide incentives for implementation of LID practices by private developers before and during the building permit application and pre-design phases of projects.

Additional details of the Post-Construction BMP Strategy are presented below.

III.E.2 Ordinance

OKR04 Part IV.C.5.a(2) requires the MS4 to develop a Post-Construction ordinance to control pollutants in runoff from the final project once construction has been completed. Tulsa County cannot adopt ordinances, so a code will be adopted. Tulsa County will adopt a Post-Construction code which will be assessed and updated in the future as needed. Local code adoption and updating will involve:

- g. An initial code development and update action will be taken during the first year of OKR04 authorization.
- h. The initial process will compare model construction codes to existing County codes and drafting modifications that will be needed to local codes in the near future;
- i. Inspection and administrative staffing needs will be assessed, and additional resources will be sought, if needed, to ensure that the County will be able to implement all provisions in the codes;
- j. Local construction codes will be updated as needed;
- k. Code effectiveness will be assessed annually, and changes made when necessary.

III.E.3 Review Local Codes for LID Barriers

OKR04 Part IV.C.5.a(3) requires the MS4 to, *“Review local ordinances and regulations, and identify any legal/regulatory barriers to Low Impact Development (LID). Develop a schedule to remove those barriers that prohibit LID practices selected by the MS4, or provide a justification for each barrier not removed”*. Tulsa County will comply with this requirement by taking the following actions:

- a. Educate MS4 staff on LID practices and on the types of requirements in local codes that are barriers to implementing certain types of LID;
- b. Identify all of the local codes, policies, guidance and ordinances that must be reviewed.
- c. Review each of these, and list all LID-related provisions that must be considered further.
- d. Decide whether or not the LID-related provision in each code is a barrier to LID implementation.
- e. Assess each of the LID barrier code provisions that can be deleted or modified to make LID implementation possible or more beneficial.
- f. Prepare a summary of findings of the code research, including a list of recommendations for code changes.
- g. Develop a schedule for making the recommended code changes. Priorities can be assigned to the list of LID barriers to be removed, and the schedule can be done in phases. All changes must be implemented within 5 years of the effective date of OKR04.
- h. For each code the MS4 determines should not or cannot be changed, prepare a written justification as to why the barrier must stay in place.

III.E.4 BMP Long-Term Operation and Maintenance (O&M)

OKR04 Part IV.C.5.a(4) requires the MS4 to, *“ensure adequate long-term operation and maintenance of BMPs that are installed during and left in place after the completion of a construction project, including inspections of each BMP”*. ODEQ considers that this provision shall apply to both privately owned and public facilities, and that the provision applies to all types of flood control projects, including detention basins, not just to LID-type projects. ODEQ also considers that the inspections should be conducted as visual observations of each facility’s condition and adequacy of maintenance. Characteristics of the inspections are presented below.

O&M Inspection and Enforcement Program: Tulsa County will comply with this permit requirement by taking the following actions:

- a. Summarize all limitations and exclusions under existing codes and ordinances pertaining to entry on private property by the MS4. This will include the following:
 - 1) Research MS4 codes and ordinances and identify all rights and obligations of private owners to maintain the BMPs that will be included in this permit requirement.
 - 2) Compile a list of actions the MS4 can take under existing MS4 codes and ordinances to enforce O&M of privately owned BMPs.
 - 3) Determine the MS4's authority under existing codes and ordinances regarding the rights of entry to perform inspections of privately owned BMPs. This will include delineating any MS4 rights-of-way and easements that may apply to the private structure.
- b. Compile a list of all LID and flood control structures within the MS4 that are to be assessed.
- c. Research basic data and information about each structure, such as:
 - 1) Ownership of property and responsible party for maintenance.
 - 2) Type of structure.
 - 3) Purpose of structure and any associated land uses served by the structure (e.g., subdivision or commercial center).
 - 4) Watershed in which structure is located.
 - 5) Age and present estimated condition of structure.
- d. Prepare inspection schedules based upon priority of importance for protecting water quality.
- e. Conduct visual inspections of each structure according to priority schedule; including:
 - 1) Mowing and weeding;
 - 2) Sediment buildup and erosion;
 - 3) Fencing, pathways, signage, public safety;
 - 4) Evidence of vandalism;
 - 5) Structural integrity;
 - 6) Vegetation health, ground cover, rock, concrete surfaces;
 - 7) Inlet and Outlet damage, blockage, condition;
 - 8) Debris, tree limbs, trash buildup;
 - 9) Function of pervious surfaces.
- f. MS4-Owned Structures: Schedule and acquire resources and funding for making any needed repairs or upgrades.
- g. Privately-owned Structures: Within the authority granted by local codes and ordinances, negotiate with the private responsible party on the types of maintenance and upgrades that the MS4 has determined are needed, and take any enforcement actions allowable under local codes and ordinances for failure of the responsible party to perform the required tasks.

III.E.5 Education Program for Developers and the Public

OKR04 Part IV.C.5.a(5) requires the MS4 to, *“Participate in an education program for developers and the public about project designs that minimize water quality impacts, including LID strategies”*. Tulsa County participates in INCOG’s regional stormwater education program implemented on behalf of its Green Country Stormwater Alliance (GCSA). The GCSA website (www.stormwaterok.net) contains a number of public education materials and information about protecting water quality and about LID specifically that is periodically updated by INCOG.

The GCSA website has webpages that target developers and the public on many water quality protection issues. The GCSA website is periodically updated with new information as needed. In addition, Tulsa County, in cooperation with INCOG’s GCSA, helps sponsor water quality conferences and workshops that target developers and the public about water quality protection at construction sites, household chemicals, urban stormwater pollution issues, and the benefits of LID. Several of these MS4 activities are listed in Appendix A as specific BMPs under the Public Education and Public Participation MCMs.

INCOG prepares an annual summary GCSA Fact Sheet that reports on all of the LID education and outreach activities accomplished by INCOG on behalf of its GCSA members. These Fact Sheets are kept by each GCSA member in their stormwater files and attached to or summarized in their Annual Reports.

III.E.6 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will act as stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG’s GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Post-Construction Site Runoff Control program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG’s role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.E.7 Evaluating Program Effectiveness

OKR04 Part IV.C.5.a(7) requires the MS4 to, *“Evaluate the appropriateness of your identified BMPs for this MCM. Your evaluation shall verify compliance with permit requirements and more importantly, document that efforts have been made towards achieving your identified measurable goals and reducing the impacts of stormwater runoff from the small MS4 (as required by Part V.C of this Permit)”*, where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each post-construction BMP. These are listed in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the development community, the general public and from agencies and organizations involved with construction and post-construction. Feedback from developers, the public, agencies and organizations (email, phone call, fax, letter or personal visit) including outputs and outcomes of education events will be recorded in writing. Tulsa County will record all post-construction site inspections and structural maintenance and improvements as described in this SWMP, including date, location, affected pollutants, observations, measurements, interviews, photos, field form data, abatement and enforcement steps taken, and results of each investigation and maintenance project. The increased number of structural maintenance and improvements made over a period of several years of BMP implementation and inspections conducted should demonstrate effectiveness of this MCM.

III.F. MCM 6: Pollution Prevention / Good Housekeeping:

The “Pollution Prevention / Good Housekeeping For MS4 Operations” Minimum Control Measure (MCM) addresses the operation and maintenance (O&M) of the MS4 and municipal facilities, and requires training of municipal employees. Performing municipal activities in a careful and proper manner prevents or reduces pollutant runoff. Municipal operations addressed by this “Good Housekeeping” MCM include parks and open space maintenance, buildings for storage and maintenance of fleet vehicles and other public works vehicles and equipment, new construction and land disturbances, and stormwater system maintenance.

Tulsa County will address OKR04 Part IV.C.6.a requirements with the following program. Appendix A contains a list of all BMPs for the Good Housekeeping MCM, along with Measurable Goals and implementation schedules for each BMP.

III.F.1 Employee Training and Education Program

OKR04 Part IV.C.6.a(1) requires the MS4 to implement, *“employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance”*. OKR04 Part IV.C.6.a(2) requires the MS4 to implement, *“a municipal employee training and education program that you will use to prevent and reduce stormwater pollution from MS4 activities”*. The following actions will be taken by Tulsa County to meet these permit requirements:

- a. Tulsa County participates in the INCOG regional GCSA program which includes periodic (at least every other year, and locally if requested) employee training on the following topics:
 - 1) Park and open space maintenance;
 - 2) Fleet and building maintenance;
 - 3) New construction and land disturbances;
 - 4) Stormwater system maintenance;
 - 5) Urban water quality, pollution and OKR04 requirements;
 - 6) Construction permit requirements under OKR10;
 - 7) OSHA requirements on MSD forms and labels;
 - 8) Storage and disposal of chemicals at city facilities; and
 - 9) Reporting of local pollution to municipal officials.
- b. INCOG's GCSA employee training 1-day workshops are held approximately three times per year. Certificates of Training and for engineer Professional Development Hours (PDH) are issued. At least once a year, INCOG provides ODEQ's 4-hour operator license renewal training certificates for one of the workshops.
- c. One or more meeting handouts are distributed by INCOG at the GCSA employee training workshops, or are emailed to GCSA members prior to each workshop.
- d. INCOG prepares GCSA Fact Sheets and GCSA News Bulletins annually on a variety of topics, many concerning pollution issues at municipal operations or within the MS4. These are distributed by email to GCSA members as well as posted on the GCSA website.
- e. INCOG has prepared a number of GCSA brochures, several of which pertain to municipal operations and educating city councils and county commissions about the OKR04 permit program. These are posted on the GCSA website in pdf format for download and local printing by each GCSA member.
- f. Tulsa County has placed several signs in work areas noting the proper way of disposing of waste materials.

INCOG's regional GCSA employee training workshops cover a wide variety of topics and issues facing stormwater permittees. These are presented as workshop themes, such as for field sampling and safety, OKR04-required training, construction site BMPs and OKR10, LID and post-construction in OKR04, stormwater 101 for new employees, and preparing documents and data management. Appendix A lists a number of employee training BMPs and BMPs for public education and outreach that include topics important for the Good Housekeeping MCM.

III.F.2 List of Industrial Permitted Facilities

Part IV.C.6.a(3) requires the MS4 to, *"Maintain a list of industrial facilities you own or operate that are subject to the DEQ Multi-Sector General Permit or individual OPDES or NPDES permits for discharges of stormwater associated with industrial activity that ultimately discharge to your small MS4"*. The following facilities are owned and operated by Tulsa County that are subject

to the ODEQ Multi-Sector General Permit for Industrial Activities (OKR05) or individual OPDES or NPDES permits for discharges of stormwater associated with industrial activity that ultimately discharge to the MS4:

- None WWTP Auth. No. _____
- None Airport Auth. No. _____
- None Municipal Landfill Auth. No. _____
- None Power Plant Auth. No. _____

OKR04 Part IV.C.6.a(3) requires that, for each facility, the MS4, *"Include the authorization number or a copy of the Industrial NOI form for each facility. You must review this inventory annually and update as necessary"*. The authorization number (OKR05 permit number assigned by ODEQ) for each facility is provided above. Tulsa County will review the status of each permitted municipal facility annually and update the SWMP information as needed.

III.F.3 Controlling Pollutants from MS4 Systems and Facilities

Part IV.C.6.a(4) requires the MS4 to, *"Implement procedures for controlling, reducing or eliminating the discharge of pollutants from streets, roads, highways, parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas you operate"*.

To comply with this OKR04 requirement, Tulsa County will implement a program to control, reduce or eliminate pollutants discharged from the MS4. The following areas will be addressed:

- City streets and roads;
- Municipal parking lots;
- City maintenance and storage yards;
- City operated waste transfer stations;
- City fleet maintenance shops with outdoor storage areas;
- municipal salt/sand storage locations; and
- municipal snow disposal areas.

List of MS4 Facilities: The following facilities are owned by Tulsa County and are subject to the requirements of this MCM:

Facility	Location / Address	Notes
District #2 Maintenance Garage	5300 W 31 st Street South	Maintenance vehicles, public works vehicles, equipment, fueling station, service bays, outdoor stock pile of sand.
County Construction Maintenance Garage	6601 N. 115 th East Avenue	Public Works vehicles, equipment, service bays, fueling station, outdoor stock piles of sand and salt.

Procedures for Controlling Pollutants: The facilities listed above all pertain to the requirements in OKR04 Part IV.C.6.a((4)). They are herein categorized as to Municipal Facilities (e.g., buildings, parking lots, storage yards, etc.), and MS4 System (e.g., roads, streets, roadside ditches, culverts, and large stormwater conduits). Tulsa County will take the following actions to reduce or eliminate pollutants from these systems and areas.

Municipal Facilities:

- a. Tulsa County will perform an initial inspection of its facilities to determine potential pollutant sources via stormwater into the MS4;
- b. Where possible, all exposed materials will be moved under removable covers (e.g., tarps) or inside a building to prevent contact with stormwater runoff.
- c. For those materials that cannot be sheltered, such as salt piles for snow removal, structural BMPs will be used where feasible to control contaminated runoff from the storage areas. These will include use of silt fencing, grassy swales, sediment ponds and/or other measures as deemed appropriate.
- d. At least once a year, an inspection of these areas will be made to ensure that the BMPs and storage controls are deployed properly and working.

MS4 System:

- a. The public education MCM is expected to reduce the amount of trash and chemical pollutants placed on city streets. This program will include educating citizens about not disposing of chemicals and yard waste into the streets and drop inlets.
- b. Misdemeanant labor will also be used. Workers will be assigned from local courts to work with MS4 crews for trash pickups along streets when necessary.
- c. Tulsa County leases street sweeping equipment that is used at least 2 times per year to remove floatables, trash and sediment from streets.
- d. MS4 Public Works crews will be trained to report observed pollution problems and/or trash buildup on city streets and in the City's stormwater collection system. When reported, MS4 crews will remove debris and trash from streets and the MS4 system as necessary.
- e. Removed debris and waste materials will be disposed of by transporting the material to the City of Tulsa's Mulch Site for disposal. The material to be disposed of includes street sweeper collections, dredged material from drainage systems and creeks, sediment cleanups from streets and lots, floatables removed from culverts and streams, materials from drop inlet cleanouts, and other types of debris removed from the MS4 system.

III.F.4 New Flood Management Projects

Part IV.C.6.a(5) requires the MS4 to, *“Implement procedures to ensure that new flood management projects are assessed for impacts on water quality”*. Tulsa County will ensure that all municipally-owned new flood management projects are assessed for impacts on water quality. The City’s Floodplain Administrator and Public Works staff will evaluate each proposed new municipal project for potential water quality impacts during the technical review of the proposed project plans and specifications. If it is feasible and cost effective to add water quality protection features to the project design, a recommendation will be made to incorporate the features before final plans are developed.

III.F.5 Inspection and Maintenance of BMPs

OKR04 Part IV.C.6.a(6) requires the MS4 to, *“Implement inspection/maintenance for structural and non-structural BMPs, including maintenance activities, maintenance schedules and long term inspection procedures for controls to reduce floatables and other pollutants discharged to your small MS4”*. This OKR04 requirement applies to municipally owned facilities under the Good Housekeeping MCM. Structural BMPs at municipal facilities include sediment basins, various types of containers for disposal of wastes and fluids, constructed swales and shallow depressions designed to collect runoff and allow infiltration, wet and dry detention basins having inlet and outlet structures, and various types of pervious surfaces used in parking lots and storage areas that allow infiltration of runoff.

Non-structural BMPs at municipal facilities include stormwater-related programs implemented by Tulsa County, including: preservation of open space; expanding disconnections of impervious surfaces; expansion of vegetation and natural systems; natural grass swales and other types of unconstructed, vegetated infiltration areas; and protection and expansion of riparian stream buffers.

BMP Maintenance: Structural BMP maintenance will be according to need and availability of funds and resources. High maintenance priority will be given to structures that have the greatest potential to improve water quality and have a high feasibility of success using available funds. Maintenance will be scheduled upon acquisition of funds and materials, and when manpower and necessary permits are obtained. Projects that have a low chance of improving water quality after maintenance will be considered for replacement or decommissioned. Tulsa County will make every effort to address maintenance issues identified in the BMP inspection program. Non-structural BMP maintenance, such as assessing ordinance effectiveness, will be made annually.

BMP Inspections: Tulsa County will inspect structural BMPs annually or within 4 hours after a report of a stormwater contamination problem at a municipal facility. Inspections of structural BMPs will rely upon visual indicators, such as accumulation of trash and debris, breaks and cracks, misalignments of headwalls and inflow and outflow devices, excessive accumulation of sediment, excessive erosion of slopes, failure of fencing and other public safety features, etc.

Inspections of non-structural BMPs will consist of annual reviews of stormwater programs and the corresponding codes and ordinances, and annual inspections of natural features within the MS4 such as riparian areas along creeks and natural swales and infiltration areas.

Results of all inspections and maintenance will be reported to the stormwater staff and recorded in computer and paper files. The Annual Report will include a summary of these activities.

III.F.6 Best Management Practices for Good Housekeeping

Appendix A contains a list of all BMPs that will be performed for this MCM, and includes Measurable Goals and implementation schedules for each BMP.

III.F.7 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will serve as the stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG's GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Good Housekeeping program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG's role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.F.8 Evaluating Program Effectiveness

OKR04 Part IV.C.6.a(9) requires the MS4 to, *"Evaluate the appropriateness of your identified BMPs for this MCM. Your evaluation shall verify compliance with permit requirements and more importantly, document that efforts have been made towards achieving your identified measurable goals and reducing the impacts of stormwater runoff from the small MS4 (as required by Part V.C of this Permit)", where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:*

Measurable Goals have been established for each Good Housekeeping BMP. These are listed in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from city staff, the general public and from agencies and organizations using city owned facilities and impacted by the MS4 system conditions. Feedback from city staff, the public, agencies and organizations

(email, phone call, fax, letter or personal visit) including outputs and outcomes of education events will be recorded in writing. Tulsa County will record results of all Good Housekeeping site inspections and structural maintenance and improvements as described in this SWMP, including date, location, affected pollutants, observations, measurements, interviews, photos, field form data, abatement and enforcement steps taken, and results of each investigation and maintenance project. The increased number of structural maintenance and improvements made over a period of several years of BMP implementation and inspections conducted should demonstrate effectiveness of this MCM.

APPENDIX A: BEST MANAGEMENT PRACTICES FOR THE SIX MCMs

TABLE 1: BEST MANAGEMENT PRACTICES

BEST MANAGEMENT PRACTICES	PUB. ED.	PUB. PAR.	IL. DSCH.	CNST.	POST CNST.	GOOD HSKP.	PERSON RESPONSIBLE FOR BMP IF DIFFERENT THAN DESIGNATEE
Education Materials							
Water quality impacts from urban stormwater	X	X	X				
Household chemical disposal options	X	X	X				
Proper on-site sewage disposal system maintenance	X	X	X				
Chemical storage and disposal at businesses	X	X	X				
Construction / erosion control BMPs				X	X		
Builder Education on Construction Pollution			X	X	X	X	
Post-construction / erosion control BMPs					X		
County good house-keeping options						X	
How to become involved in stormwater program	X	X	X				
Recycling and re-use benefits	X	X	X				
Chemical storage and disposal at County facilities						X	
Training Topics for County Staff							
Storage and disposal of chemicals at County facilities			X			X	
Water quality impacts and regulations	X					X	
Data quality and data management			X				
How to conduct inspections effectively			X	X	X	X	
Stormwater and County activities						X	
MS4 Mapping							
Develop MS4 map with outfalls and streams			X				
Collect map data and set priority areas			X				

BEST MANAGEMENT PRACTICES	PUB. ED.	PUB. PAR.	IL. DSCH	CNST.	POST CNST.	GOOD HSP.	PERSON RESPONSIBLE FOR BMP IF DIFFERENT THAN DESIGNATEE
Administrative							
Adopt illicit discharge ordinance			X				
Adopt construction ordinance				X			
Adopt post-construction ordinance					X		
Comply with state and local public notification	X	X					
Program to receive information from the public	X	X	X				
Site Plan review to include water quality				X	X		
Support regional agency-sponsored seminars	X	X	X	X	X	X	
Discuss Phase II in County Commission meetings	X	X	X	X	X		
Collect local and regional pollution data			X				
Develop regional stormwater web site	X	X	X	X	X	X	
Community Involvement							
Create display board for public meetings	X						
Create signs for community education	X						
Create signs for County work areas						X	
Blue Thumb school presentations	X	X					
Blue Thumb volunteer stream monitoring	X	X	X				
Blue Thumb stormdrain marking	X	X	X			X	
Blue Thumb stream cleanup events	X	X	X				
Promote household pollutant collection event	X	X	X				
Promote use of recycling centers	X	X	X				
Promote Adopt Your Watershed Program	X	X	X				
Distribute items with water quality logos	X						
Inspections							
Complaint investigations for MS4 system			X			X	
Source tracking of pollutants in MS4 system			X			X	

Inspection of construction sites and activities			X	X	X		
Good housekeeping inspections of County property			X			X	

* **INCOG/GCSA** = INCOG providing assistance to permittee as a GCSA member.

Note 1: Brochures include, pamphlets, flyers, fact sheets, and booklets. See **Table A** for present list of materials used by Tulsa County.

Note 2: Give-Away Items with GCSA logo and website address presently include: cups, pens, refrigerator magnets.

Note 3: Street Signs are metal signs with image of an aquatic theme with a message about protecting the watershed.

Note 4: Types of inspections and monitoring for all MCMs are listed in **Table B**.

Note 5: Pollution controls include a combination of public education, employee training, MS4 inspections and enforcement.

Note 6: GCSA Employee Training workshop topics are presented in **Table C**.

TABLE A: List of Brochures, Fact Sheets and Education Materials

Education Materials Used By Tulsa County *
General Public and Community:
EPA: After the Storm
EPA: Plug Into E-Cycling
EPA: Protecting Water Quality from Urban Runoff
EPA: The Solution to Pollution
EPA: Stormwater Structures and Mosquitoes Fact Sheet
GCSA: Oil, Grease and Fat
GCSA: How to Protect Your Local Watershed
Residential and Homeowner:
EPA: Greenscaping Your Lawn & Garden
EPA: A Homeowner's Guide to Septic Systems
EPA: Household Hazardous Waste: Steps to Safe Management
GCSA: Origins and Fate of PPCPs In the Environment Fact Sheet

GCSA: Community Car Wash Events Fact Sheet
GCSA: A Homeowner's Guide to Protecting Our Water
GCSA: A Homeowner's Guide to Recycling and Reuse
GCSA: A Pet Owner's Guide to Protecting Our Water
Municipal Employee and City Officials:
GCSA: Phase II Stormwater: Information for City and County Officials
GCSA: Handling and Disposal of Chemicals at Municipal Sites
GCSA: Green Country Stormwater Alliance
GCSA: Municipal Best Management Practices that Protect Our Water
Local Retailers and Businesses:
GCSA: A Retailers Guide to Pesticide Basics
GCSA: A Food Service Guide to Waste Disposal
Construction Industry:
GCSA: Final Stabilization at Construction Sites: OKR10 Requirements
GCSA: A Homebuilder's Guide to Erosion Control
OSU: Using Vegetation for Erosion Control on Construction Sites

** New materials for additional topics will be produced periodically.*

TABLE B: OKR04-Required Types of Inspections and Monitoring

Types of Inspections and Monitoring Performed by Tulsa County
Dry Weather Field Screening (DWFS) inspection program
Complaint-response inspection program of the MS4 system
Source tracking inspection program of pollutants in MS4 system
Construction site inspection program
Good housekeeping inspection program of city properties
Inspection program of pollutants of concern in high priority areas
Inspection program of long-term maintenance of LID BMPs
Inspection program for catch basins, streets, parking lots, etc.
Monitoring program to meet TMDL requirements

TABLE C: GCSA Employee and Community Training Topics

GCSA Training Topics Given for Tulsa County Employees & Officials
Urban water quality, pollution and stormwater permit requirements
Data quality and data management
Conducting inspections and monitoring; field safety
Hazardous Waste Operations and Emergency Response (HAZWOPER)
Test kits and environmental chemistry basics
Stormwater 101 for new employees and city officials
BMPs, low impact development (LID), and post-construction
TMDLs and 303(d) impaired waterbodies
Construction permit requirements and changes to OKR10
OSHA required training on MSDS forms and container labels
CLEET and environmental law for stormwater enforcement
Municipal parks and open space maintenance pollution control
Storage and disposal of chemicals at city facilities
Pollution control at municipal fleet maintenance
Pollution control for municipal land disturbance activities
Pollution control for MS4 maintenance (streets and drainage)
Looking for and reporting local pollution episodes by city crew and staff

TABLE D: Types of Pollution Signs Used at County Work Areas

Pollution Prevention Sign Topics Used by Tulsa County
Keep Dumpster Lids Closed
Do Not Dispose of Waste – Drains to Creek
Dispose of Chemicals Properly
Clean Up Spills Immediately
Do Not Wash Chemicals Into Floor Inlets

APPENDIX A, TABLE 2: MEASURABLE GOALS AND IMPLEMENTATION SCHEDULES FOR EACH BMP IN TABLE 1

Numbers for each year represent quarters in which BMP will be deployed: 1st = Jan-Mar; 2nd = Apr-Jun; 3rd = Jul-Sep; 4th = Oct-Dec.

BMP MEASURABLE GOALS AND IMPLEMENTATION SCHEDULES	Annual Measurable Goal	2016	2017	2018	2019	2020
1. Develop printed <u>education materials</u> , begin distribution at County hall, County maintenance areas, local businesses, local festival.	20 each type	All year	All year	All year	All year	All year
2. Attend regional <u>training seminars</u> of appropriate County staff and public works crews, 20% attendance goal first year.	20% of eligible staff and crew attend.	2 nd , 4 th	2 nd , 4 th	2 nd , 4 th	2 nd , 4 th	2 nd , 4 th
3. Review and update revised MS4 system <u>map</u> , receiving streams and outfalls.	Amendments to map if needed.	All year	All year	All year	All year	All year
4. Investigate changes to county zoning and building codes.	Review and update codes if needed.	Once per year.	Once per year.	Once per year.	Once per year.	Once per year.
5. Review usefulness of <u>public information process</u> and update, if needed.	Amendments if needed.	All year	All year	All year	All year	All year
6. Review and amend process for including water quality consideration in <u>site plan reviews</u> .	Amendments if needed.	All year	All year	All year	All year	All year
7. Promote and attend a <u>regional seminar</u> or conference on phase II stormwater or urban water quality issues.	At least 2 crew/staff attend.	Once per year	Once per year	Once per year	Once per year	Once per year
8. Discuss Phase II stormwater and stormwater quality topics in <u>public meetings</u> .	Outside agency report to County Commission.	Once per year	Once per year	Once per year	Once per year	Once per year
9. Collect local and regional <u>pollution data</u> from various resources.	Assist INCOG with GIS-based data on potential pollution sources.	All year	All year	All year	All year	All year
10. Help develop / participate in regional stormwater website.	INCOG, as needed	All year	All year	All year	All year	All year
11. Use regional <u>display board</u> for one or more public meetings.	1 mtg, yearly at T.C. Inspections office	2 nd	2 nd	2 nd	2 nd	2 nd

BMP MEASURABLE GOALS AND IMPLEMENTATION SCHEDULES	Annual Measurable Goal	2016	2017	2018	2019	2020
12. Encourage citizens and businesses to participate in EPA's Adopt Your Watershed program.	25 brochures	Develop	1 st	1 st	1 st	1 st
13. <u>Blue Thumb school education</u> program: promote and coordinate data.	1 event	2 nd	2 nd	2 nd	2 nd	2 nd
14. <u>Blue Thumb volunteer stream monitoring</u> program: promote and coordinate data.	12 monitoring events per year.	All year	All year	All year	All year	All year
15. Use GCSA website and brochures to educate builders on construction site pollution.	Website, 2 brochures	All year	All year	All year	All year	All year
16. <u>Blue Thumb stream clean-up</u> event: sponsor, County crew participate in local stream or roadside clean-up event.	Host/participate in local clean-up event.	2 nd	2 nd	2 nd	2 nd	2 nd
17. Household <u>Pollutant Collection Event</u> : promote and help fund County portion of regional.	Two regional events held.	2 per year.	2 per year.	2 per year.	2 per year.	2 per year.
18. <u>Recycling Center</u> : funding and promotion of local recycling center in County.	Materials recycled and brochures used.	Daily	Daily	Daily	Daily	Daily
19. <u>Give-away items</u> with water quality logos: distribute at public events and meetings.	Distribute 200 items during year.	Daily	Daily	Daily	Daily	Daily
20. Conduct Dry Weather Screening of MS4 Outfalls.	Inspect 25% of the Outfalls.	25%	25%	25%	25%	25%
21. Conduct <u>MS4 inspections</u> based upon incident reports and observations made by County crews.	Reduced number of problems	Daily	Daily	Daily	Daily	Daily
22. Conduct <u>construction site inspections</u> based upon incident reports and observations made by County crews.	Reduced number of problems	Daily	Daily	Daily	Daily	Daily
23. Conduct <u>inspections of County facilities</u> and maintenance yards for control of chemicals.	Reduced number of problems	2 per year.	2 per year.	2 per year.	2 per year.	2 per year.

Numbers for each year represent quarters in which BMP will be deployed: 1st = Jan-Mar; 2nd = Apr-Jun; 3rd = Jul-Sep; 4th = Oct-Dec

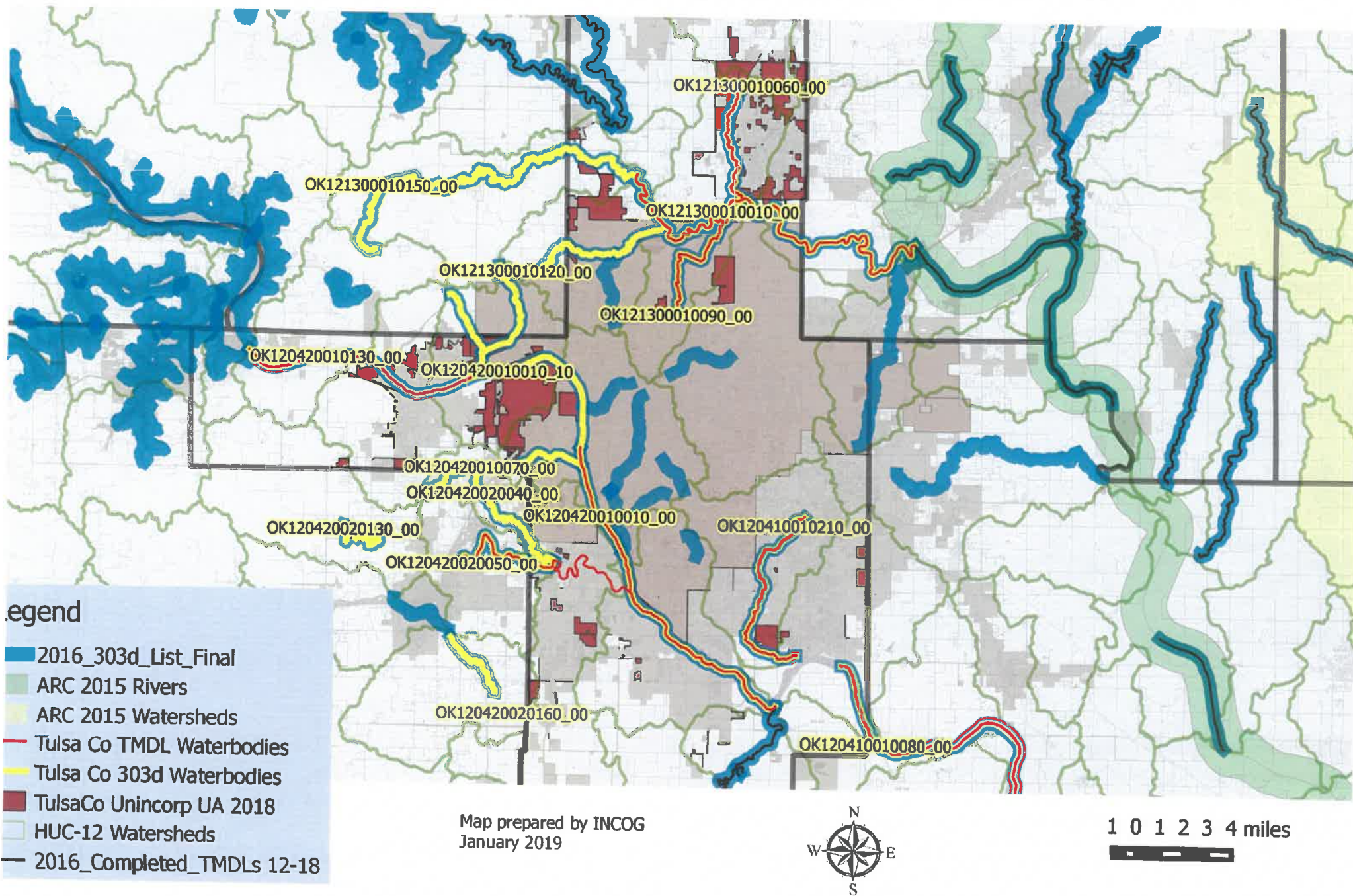
APPENDIX B: Documentation of Selection Criteria for Protected Species

Procedures for and Documentation of the Selection of Criteria to Meet Eligibility for Protection of Endangered Species per Part I.E. of OKR04

After comparing ARC delineations in Exhibit 1 with our MS4 boundaries, it was determined that no part of the MS4 lies within any portion of an ARC. Therefore we have no stormwater discharges that will likely affect endangered species or critical habitat.

APPENDIX C: Map of MS4 and Water Features

Tulsa County MS4 2016 303(d) and TMDL Waterbodies



APPENDIX D: Written Agreement(s) By Another Governmental Entity

INCOG SERVICES TO GREEN COUNTRY STORMWATER ALLIANCE (GCSA) MEMBERS

The following is a summary of services performed by INCOG annually on behalf of its GCSA membership. INCOG does not implement Minimum Control Measures as defined in the ODEQ stormwater permit (OKR04). The table identifies which activities are for technical research / assistance and which can be considered Best Management Practices to be claimed by GCSA members (employee training on OKR04-required topics and hosting the regional GCSA website at www.stormwaterok.net). OKR04's Part V.C.1.g requires a written agreement with "another government entity" if the permittee is relying on them "to satisfy some of your permit obligations". This document satisfies OKR04 Part V.C.1.g requirements.

INCOG Activity	BMP or Support	Notes
Co-host water quality and stormwater conferences	Support	Works with other agencies as co-host. Frequent speaker or line up other speakers for variety of topics.
Employee training workshops	BMP	Organize and hold workshops on OKR04-required topics.
Education materials	Support	Develop, acquire and make available to GCSA members. Post downloadable files on GCSA website.
Research legal and technical issues	Support	Research via document reviews, emails, meetings on all technical and legal issues important to GCSA members.
Maintain GCSA website	BMP	Annual refresh of website materials, updated as needed.
Prepare documents, templates	Support	Variety of technical documents for member support.
News Bulletins, Fact Sheets	Support	Prepares monthly GCSA bulletins and fact sheets on important stormwater topics for GCSA members.
LID education support	Support	Speaks at conferences, prepares documents on LID and co-hosts events on LID issues. Summarizes annually.
Mapping	Support	Prepares regional and MS4 maps for members, provides map data and GIS layers upon request.
Screening inspections	Support	Develops field forms; trains on equipment, procedures and safety; assists in field upon request.
GCSA member meetings	Support	Hosts 2-3 member meeting annually on numerous topics.

OKR04-Required Certification Statement:

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.



 INCOG Executive Director

1/19/16

 Date



Oklahoma Conservation Commission
Blue Thumb Water Quality Education Program
128 E. 3rd Avenue
Bristow, OK 74010
918-398-1804
<http://www.bluethumbok.com/>

January 25, 2016

Municipalities with OKR04 Permit Requirements

To Whom It May Concern:

The Oklahoma Conservation Commission's Blue Thumb Water Quality Education Program has two primary responsibilities; 1) support Blue Thumb volunteers who perform monthly chemical stream monitoring, benthic macroinvertebrate collections (winter and summer), and fish collections (every four or five years); 2) provide education to the citizens of Oklahoma on reducing the amount of nonpoint source pollution that enters our waterways. We work with many communities across Oklahoma to provide both of these services. In order to help you fulfill your stormwater permit requirements the Blue Thumb program can offer the following support services as another government entity for your permit:

1. Co-host water quality and stormwater conferences.
2. Develop and make available educational materials. Materials will be available on our website and cities can print these and distribute them.
3. Maintain Blue Thumb website with education information, instructional videos and calendar of events.
4. Train city employees and local volunteers to perform stream monitoring. Blue Thumb provides all equipment and supplies necessary to complete monthly chemical monitoring and Blue Thumb staff is involved in the biological collections and quarterly quality assurance sessions. Additionally, Blue Thumb staff works with volunteers (including city employees) to write data interpretations reports that are then made available to the public via our website.
5. Train city employees and help organize local volunteers to do a storm drain marking campaign. (We do not provide materials).
6. Provide tools, materials and staff to do outreach to schools and other entities within your community.

We hope these programs can help you meet requirements for your OKR04 permit and we look forward to working with you.

Sincerely,

Cheryl

Cheryl Cheadle, Blue Thumb Coordinator
Oklahoma Conservation Commission



January 13, 2016

Tulsa County
500 S. Denver
Tulsa, OK 74103

To Whom It May Concern:

The Metropolitan Environmental Trust (The M.e.t.) is a public trust authority set up with eleven governments to support its programs. Tulsa County is one of the eleven governments and beneficiary of such programs. Since 1994, The M.e.t. has provided bi-yearly collection events for the collection of household hazardous waste. The M.e.t. also has eleven drop-off recycling centers in the Tulsa County area. As part of the recycling drop-off program, we collect cooking grease, used motor oil, batteries, and potential floatables such as bottles and cans. Finally, The M.e.t. conducts related education through traditional/social media, educational events, and other personal educational opportunities. All of these items aid in our water quality issues.

Respectfully,

Graham Brannin
Executive Director



Williams Tower One, One West 3rd St., Suite 110 Tulsa, Oklahoma 74103 918/584-0584 www.MetRecycle.com

BIXBY BROKEN ARROW CLAREMORE COLLINSVILLE COWETA GLENPOOL JENKS OWASSO SAND SPRINGS TULSA TULSA COUNTY

APPENDIX E: ACRONYMS

Refer to OKR04 Part VII for a list of definitions of terms used in the OKR04 stormwater permit program. The following list of acronyms was compiled by INCOG. These pertain to contents of this SWMP and include terms involved with specific activities, such as assessing laboratory data and technical reports from other agencies.

%Sat	Percent saturation of dissolved oxygen in a water sample.
303(d)	Section 303(d) of the Clean Water Act requiring biannual assessment of beneficial uses.
BMP	Best Management Practice, particularly regarding pollution controls.
BOD	Biochemical oxygen demand; a test of potential for a water sample to use up oxygen.
BUMP	Beneficial Use Monitoring Program; OWRB's sampling program to support USAP.
°C	Degrees centigrade or Celsius; the most common unit of measure for temperature.
CBOD5	Carbonaceous BOD, incubated 5 days; common NPDES permit requirement for WWTPs.
CBOD20	CBOD incubated 20 days; equivalent to "ultimate" (maximum) CBOD in a water sample.
COE	US Army Corps of Engineers.
col/100mL	Colonies per 100 milliliters of water sample; a unit of quantification for bacteria samples.
COSWA	Central Oklahoma Storm Water Alliance.
CPP	Continuing Planning Process; a standards and procedures summary document.
CWA	Clean Water Act; more formally the Federal Water Pollution Control Act.
Diurnal	24 hour cycle, particularly related to how DO changes over a 24 hour period.
DMR	Discharge Monitoring Report; ODEQ's form for filing sampling results.
DO	Dissolved oxygen.
EA / EIS	Environmental Assessment / Environmental Impact Statement.
EPA	US Environmental Protection Agency.
FWS	US Fish and Wildlife Service.
GCSA	Green Country Stormwater Alliance; INCOG's coalition of stormwater permittees.
GIS	Geographic Information System; computer system that relates map features to data.
GPS	Global Positioning System; measuring x and y coordinates (location) from satellites.
HUC	Hydrologic Unit Code, used to classify watershed sizes.
INCOG	Indian Nations Council of Governments; 5-county Tulsa area sub-state planning agency.
LA	Load Allocation; nonpoint source numerical discharge quantity in a TMDL.
MCM	Minimum Control Measure; six categories of permit actions under EPA/ODEQ rules.
mg/L	Milligrams per liter; approximately equivalent to parts per million.
MS4	Municipal Separate Storm Sewer System; also used to designate a stormwater permittee.
NH3-N	Ammonia nitrogen; amount of nitrogen as ammonia.
NO2-N	Nitrite nitrogen; amount of nitrogen as nitrite.
NO3-N	Nitrate nitrogen; amount of nitrogen as nitrate.

NOI	Notice of Intent; application form and process to apply for stormwater permit coverage.
NPDES	National Pollutant Discharge Elimination System; federal discharge permit program.
NWI	National Wetlands Inventory by the US Fish and Wildlife Service
OAC	Oklahoma Administrative Code
OCC	Oklahoma Conservation Commission.
ODEQ	Oklahoma Department of Environmental Quality.
OKR04	ODEQ's stormwater general permit for small MS4s.
OKR05	ODEQ's stormwater general permit for industrial activities.
OKR10	ODEQ's stormwater general permit for construction activities.
OPDES	Oklahoma Pollutant Discharge Elimination System; the state discharge permit program.
OWRB	Oklahoma Water Resources Board.
QAPP	Quality Assurance Project Plan; formal documentation about ensuring data integrity.
RCRA	Resource Conservation and Recovery Act; for control of hazardous substances.
SOP	Standard Operating Procedure; description of repetitive tasks such as inspections.
s.u.	Standard Unit for pH measurements.
SWMP	Stormwater Management Program document required by stormwater permits.
SWP3	Stormwater Pollution Prevention Plan; required by construction stormwater permit.
TDS	Total dissolved solids; reflects on presence of salts and conductivity in a water sample.
TKN	Total Kjeldahl Nitrogen; amount of organic nitrogen plus ammonia in a water sample.
TMDL	Total Maximum Daily Load; study accounting for all point and nonpoint sources.
TP	Total phosphorus.
TRI	Toxics Release Inventory; national database of releases of over 650 chemical types.
ug/L	Micrograms per liter; approximately equivalent to parts per billion.
USAP	Use Support Assessment Protocol; methods used in 303(d) assessments.
USGS	United States Geological Survey.
WBID	Waterbody Identification; Oklahoma's system of classifying streams.
WLA	Wasteload allocation; point source numerical quantity in a TMDL and discharge permits.
WQS	Water quality standards.
WWTP	Wastewater treatment plant; also referred to as POTW (publicly owned treatment works).

Phase II
Stormwater Management Program
(SWMP)

for

Tulsa County, Oklahoma



Effective Date:
February 27th, 2019

SIGNATURES OF RESPONSIBLE OFFICIALS

for Tulsa County, Oklahoma

Per OKR04 Part VI.H, the following certification is hereby made in order to comply with the signatory requirements of the State of Oklahoma's Phase II Stormwater General Permit for Small Municipalities (OKR04).

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.

Commission Chair

Date



County Engineer

2-20-19

Date

ATTEST:

County Clerk

Date

EXECUTIVE SUMMARY

Tulsa County has prepared this Stormwater Management Program (SWMP) document which provides descriptions of all activities that will be conducted on behalf of Tulsa County to meet its obligations under the Oklahoma Department of Environmental Quality (ODEQ) General Permit for Phase II Small Municipal Separate Storm Sewer System Discharges Within the State of Oklahoma (OKR04), having an effective date of November 1, 2015.

Copies of this SWMP will be kept in-house for review by ODEQ upon request. Per OKR04 Part IV.A, this SWMP document will be kept up to date during the term of the permit. Interim progress will be made in developing and implementing program elements during the term of the permit.

All six Minimum Control Measures (MCMs) have been addressed in this SWMP. In addition, Tulsa County has elected to participate in the "Optional Permit Requirements for Municipal Construction Activities" (OKR04 Part VIII).

Each MCM has a number of Best Management Practices (BMPs) that constitute the core activities pertaining to each MCM. Appendices summarize the BMPs and provide Measurable Goals for each BMP, along with activity descriptions and implementation schedules. In addition, the SWMP text provides additional information about the MCMs.

Every reasonable effort has been made to comply with all requirements in the State's OKR04 General Permit for Small Municipal Separate Storm Sewer Systems (SMS4s). This SWMP document will be amended as needed to reflect program and implementation changes per requirements of ODEQ and the OKR04 permit.

To help implement certain aspects of the Phase II requirements, particularly regarding public education, public participation and training of city staff and crews, Tulsa County will receive assistance from the Indian Nations Council of Governments (INCOG) as a member of INCOG's Green Country Stormwater Alliance (GCSA). Through GCSA, INCOG will provide regional services related to stormwater education, employee training and technical support. INCOG's activities are described where appropriate in the SWMP.

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I. INTRODUCTION

In 1990 the U.S. Environmental Protection Agency (EPA) promulgated regulations for establishing water quality based municipal stormwater programs to address stormwater runoff from certain industrial and construction activities and from medium and large Municipal Separate Storm Sewer Systems (MS4s) serving populations of 100,000 or greater. These “Phase I” regulations were incorporated into the existing National Pollutant Discharge Elimination System (NPDES) permit rules that address point source dischargers. As a result, urban nonpoint source runoff became regulated as point source discharges. On December 8, 1999, EPA published final “Phase II” stormwater regulations that addressed urban stormwater runoff from cities under 100,000 population and counties that lie within the Urbanized Area (UA) as designated by the latest US Bureau of Census. Phase II permits were also required for certain non-UA cities designated by the Oklahoma Department of Environmental Quality (ODEQ).

The 1999 EPA Phase II regulations required that all permitted cities and counties must develop a comprehensive Stormwater Management Program (SWMP) that addresses six “Minimum Control Measures” (MCMs). These are:

1. *Public Education and Outreach*
2. *Public Participation and Involvement*
3. *Illicit Discharge Detection and Elimination*
4. *Construction Site Stormwater Runoff Control*
5. *Post Construction Management in New Development and Re-Development*
6. *Pollution Prevention and Good Housekeeping*

The ODEQ has primary jurisdiction over permitting and enforcement of the Phase II Stormwater Program for Oklahoma. On February 8, 2005, the ODEQ finalized the first General Permit for Phase II Small Municipal Separate Storm Sewer System Discharges Within the State of Oklahoma (OKR04). On October 1, 2015 ODEQ reauthorized OKR04 with an effective date of November 1, 2015. The revised OKR04 permit reflects new requirements from EPA and the latest practices for controlling urban stormwater pollution.

OKR04 requires that each permittee submit a Notice of Intent (NOI) to apply for coverage and develop a Stormwater Management Program (SWMP) document that specifies, for each MCM, what activities will be performed as Best Management Practices (BMPs), along with BMP implementation schedules and Measurable Goals.

This SWMP document fulfills the OKR04 General Permit requirement to prepare a detailed plan of how Tulsa County will address non-stormwater discharges within its permitted MS4 and Urbanized Area.

II. SWMP OVERVIEW AND SPECIAL REQUIREMENTS

II.A Regulatory Authority

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et. seq.) as required under Section 122.34(d)(2) of the Storm Water Phase II Rule, and with the provisions under the Oklahoma Pollutant Discharge Elimination System, OAC 252:606-1-3(b)(3) incorporating by reference 40 CFR §122.26 and 122.30 through 122.35, operators of Small Municipal Separate Storm Sewer Systems (SMS4s) are authorized to discharge in accordance with the conditions and requirements set forth in the OKR04 permit and this SWMP. The Phase II regulations issued by the EPA can be found in FR Vol. 64 No. 235, December 8, 1999, beginning on page 68722, and became effective on February 7, 2000.

The 2015 OKR04 General Permit is a reissuance by the ODEQ with an effective date of November 1, 2015. The OKR04 General Permit and the authorization to discharge shall expire November 1, 2020. As provided in the permit, operators of SMS4s who submit a Notice of Intent (NOI) and a description of their Storm Water Management Program (SWMP) in accordance with PART IV of the general permit are authorized to discharge pollutants to waters of the State in accordance with the conditions and requirements set forth in the general permit.

The OKR04 permit authorizes discharges of storm water and certain non-storm water discharges from SMS4s, as defined in OAC 252:606-1-3(b)(3) incorporating by reference 40 CFR §122.26(b)(16). This includes MS4s designated under 40 CFR §122.32(a)(1) and 40 CFR §122.32(a)(2) that describes the referenced area with a population of at least 10,000 but not exceeding 100,000, and SMS4s located in Urbanized Areas (UA). Other operators of SMS4s located outside of a UA have also been designated by ODEQ as a regulated MS4.

This SWMP document specifies all of the actions that Tulsa County will take to comply with the stormwater regulations and address the six “Minimum Control Measures” required by EPA and OKR04 for a successful stormwater program.

All information contained in this SWMP represents a good faith effort on the part of Tulsa County to comply with all requirements of the ODEQ’s Phase II General Permit for Small MS4s (OKR04). Per Parts IV.A and IV.D of OKR04, this SWMP will be reviewed annually and amended, as needed, to provide greater efficiency and for meeting additional requirements that may be forthcoming under OKR04 or from other regulatory changes.

II.B SWMP Organization

Tulsa County will participate in INCOG’s Green Country Stormwater Alliance (GCSA), a regional coalition of stormwater permitted cities and counties in Oklahoma. Members of INCOG’s GCSA will collectively fund through annual membership dues certain regional activities and technical assistance provided by INCOG that are described in this SWMP.

INCOG's support services will include assistance in the following areas:

Public education and participation;

Mapping of MS4s, 303(d) waterbodies and TMDLs;

Employee training on OKR04-required topics and technical, scientific and legal issues;

Sampling, monitoring and quality assurance;

GCSA member education about water quality, sensitive waterbodies, TMDLs, etc.

Educating local councils, commissions and management about OKR04 requirements.

Development of local codes and ordinances, and

Data management and reporting.

This SWMP addresses all elements of the ODEQ's General Permit for MS4s (OKR04). The six Minimum Control Measures from OKR04 Part IV.C are addressed in the SWMP Section III. Appendix A is a summary table of all BMPs to be used in Tulsa County's program, including year-by-year schedules of implementation and Measurable Goals for each BMP. Appendix B documents the endangered species protection determination for Tulsa County. Section II.K of the SWMP provides a Plan of how Tulsa County will address the impairments of 303(d) listed waterbodies within the MS4. Section II.L of the SWMP discusses how the requirements under Total Maximum Daily Load (TMDL) studies or Watershed Plans within the MS4 area will be met by the permittee. Appendix C contains a map of the MS4 boundaries for Tulsa County. The map also shows the Waters of the State, 303(d) waterbodies, ARC waterbodies, and completed TMDL waterbodies that are within the MS4.

II.C Authorized Allowable Non-Stormwater Discharges – OKR04 Part I.B

INCOG NOTE: OKR04 Part I.B provides for local allowance of non-stormwater discharges, and OKR04 lists 24 types that ODEQ and EPA consider to be allowable. OKR04 also requires that the permittee *"have not determined these sources to be substantial contributors of pollutants to your small MS4. Your list of allowable non-stormwater discharges and determination documentation must be included in your SWMP."* To satisfy the listing and documentation requirements, INCOG suggests that the paragraphs below this note should be sufficient to meet these requirements.

Tulsa County has determined that the following non-storm water sources are not substantial contributors of pollutants to the MS4 or result from activities to protect public health and safety and are therefore allowed (see assessment summary table below):

- a. Water line flushing;
- b. Landscape irrigation;
- c. Diverted stream flows;
- d. Rising ground waters;
- e. Residential building wash water without detergents;
- f. Uncontaminated pumped ground water;
- g. Uncontaminated ground water infiltration;

- h. Discharges from potable water sources;
- i. Foundation drains;
- j. Air conditioning condensate;
- k. Irrigation water;
- l. Springs;
- m. Water from crawl space pumps;
- n. Footing drains;
- o. Lawn watering;
- p. Individual residential car washing;
- q. De-chlorinated swimming pool discharges;
- r. Street wash water;
- s. Fire hydrant flushings;
- t. Non-commercial or charity car washes;
- u. Discharges from riparian areas and wetlands;
- v. Discharges in compliance with a separate Oklahoma Pollutant Discharge Elimination System (OPDES) or National Pollutant Discharge Elimination System (NPDES) permit.
- w. Unless otherwise permitted or regulated by DEQ discharges of gray water from municipal splash pads (aka, spray parks or spray grounds) as defined in Oklahoma Statutes §27A-2-6-107 provided the discharges comply with all applicable municipal or county ordinances enacted pursuant to law, Discharges from recirculating systems shall be de-chlorinated prior to discharge; and
- x. Discharges or flows from emergency firefighting activities provided procedures are in place for the Incident Commander, Fire Chief, or other on-scene firefighting official in charge to make an evaluation regarding potential releases of pollutants from the scene. Measures must be taken to reduce any such pollutant releases to the maximum extent practicable subject to all appropriate actions necessary to ensure public health and safety. These procedures must be documented in your SWMP. Discharges or flows from firefighting training activities are not authorized by this Permit.

Firefighting Activities: The local incident commander at the firefighting scene will report to Tulsa County stormwater coordinator any observed releases of chemicals into the MS4 and/or waterbodies. If local remediation is possible, the following will be implemented by the highway district in which the occurrence occurs and consist of deploying absorbents, chemical neutralizers and/or booms and water skimmers to contain, neutralize and/or remove the chemicals. If the release is beyond the capability of local resources to safely and effectively remediate, then Tulsa County will contact the Tulsa Area Emergency Management Agency at 918-596-9899 for large-scale hazardous waste remediation.

The list of occasional, incidental, allowable non-stormwater discharges will be periodically reviewed by Tulsa County and updated, as needed, in this SWMP. Any local controls or discharge conditions required by Tulsa County on these incidental discharges will also be placed in this SWMP. The following table summarizes the assessments made by Tulsa County for each of the allowable non-stormwater discharges.

ALLOWABLE DISCHARGE	SAFETY (1)	IMPACT (2)	NATURAL (3)	PERMIT (4)
a. Water line flushing	X			
b. Landscape irrigation		X		
c. Diverted stream flows	X		X	
d. Rising ground waters			X	
e. Residential building wash water, no detergents		X		
f. Uncontaminated pumped ground water		X	X	
g. Uncontaminated ground water infiltration			X	
h. Discharges from potable water sources	X			
i. Foundation drains	X			
j. Air conditioning condensate		X		
k. Irrigation water		X		
l. Springs			X	
m. Water from crawl space pumps	X			
n. Footing drains	X			
o. Lawn watering		X		
p. Individual residential car washing		X		
q. De-chlorinated swimming pool discharges		X		
r. Street wash water	X			
s. Fire hydrant flushings	X			
t. Non-commercial or charity car washes		X		
u. Discharges from riparian areas and wetlands			X	
v. Discharges with a OPDES or NPDES permit				X
w. Gray water from municipal splash pads	X	X		
x. Discharges or flows from emergency firefighting	X			

- (1) Overriding public health and safety concerns make this allowable.
- (2) Flow or source is intermittent or small; not considered to be a significant source.
- (3) Flow from natural processes, mostly intermittent; not considered a significant source.
- (4) Authorized and allowed under another OPDES or NPDES permit.

II.D Historic Preservation – OKR04 Part I.D

The Oklahoma DEQ's OPDES permitting activities are not Federal undertakings and, therefore, are not subject to review under Section 106 of the National Historic Preservation Act. However, applicants and permittees must comply with the Oklahoma State Register of Historic Places Act ([53 O.S. § 361](#)), where applicable, and the Burial Disturbance Law ([21 Oklahoma Statutes \(O.S.\)](#)

[§§ 1168.0-1168.6](#)), as well as with any applicable local laws concerning the identification and protection of historic properties.

OKR04 permittees who receive Federal funding or other Federal assistance in the completion of their OKR04-related projects may have to comply with Section 106 of the Historic Preservation Act. For information about the Section 106 review process in Oklahoma, Oklahoma properties listed on or eligible for the National Register of Historic Places, and related topics, the following shall be contacted:

State Historic Preservation Office

(contact info listed in Part I.D of the OKR04 permit)

Oklahoma Archeological Survey

(contact info listed in Part I.D of the OKR04 permit)

Tulsa County will comply with OKR04 Part I.D (Historic Preservation) whenever permit related activities require such action. This will include communications with the State Historic Preservation Office and Oklahoma Archeological Survey to discuss what actions Tulsa County may have to take to comply with rules governing preservation of historical sites and resources, including compliance with the Oklahoma State Register of Historic Places Act and the Burial Disturbance Law of Oklahoma. It is understood that normal OKR04 permit-compliance actions taken by Tulsa County under OKR04 do not require Section 106 review under the National Historic Preservation Act.

II.E Meeting Eligibility Criteria for Endangered Species – OKR04 Part I.E

Tulsa County has reviewed the eligibility criteria and requirements of OKR04's Part I.E and has determined that no part of Tulsa County's MS4 lies within areas of Aquatic Resources of Concern (ARC) as shown on the Exhibit 1 map in OKR04. The appropriate Criterion has been specified in Item 7 of the NOI Form.

OKR04 Part I.E.2.d requires that: *"The information used to make the eligibility determination must be documented and included as part of the SWMP."* Appendix B provides the methods and documentation of the assessment used by Tulsa County to select Criterion A.

II.F Information on the MS4 – OKR04 Part II.B.2

Urbanized Area (UA) or Core Municipality: For permitted cities, the MS4 is all of the area within the city corporate boundaries. For counties, only the Urbanized Area (UA) within county unincorporated areas as defined by the 2010 US Bureau of Census is the permitted MS4 area.

Appendix C contains a map of Tulsa County's MS4 area. The following latitude-longitude coordinates are of Tulsa County's approximate MS4 center:

Latitude: 36.149314

Longitude: -95.993634

Names of Major Receiving Waters: Tulsa County's MS4 discharges to the following major receiving waters; the table notes the designations of 303(d), ORW, TMDL and ARC for each:

Waterbody Name	WBID (1)	303(d) (2)	ORW (3)	TMDL (4)	ARC (5)
Bird Creek	OK121300010010_00	X		X	
Ranch Creek	OK121300010060_00	X		X	
Coal Creek	OK121300010090_00	X		X	
Delaware Creek	OK121300010150_00	X			
Arkansas River	OK120420010130_00	X		X	
Arkansas River	OK120420010010_10	X		X	
Arkansas River	OK120420010010_00	X			
Arkansas River	OK120410010080_00	X		X	
Bigheart Creek	OK120420010140_00	X			
Harlow Creek	OK120420010170_00	X			
Mooser Creek	OK120420010070_00	X			
Nickel Creek	OK120420020040_00	X			
Flat Rock Creek	OK121300010120_00	X			
Polecat Creek	OK120420020010_00			X	
Polecat Creek	OK120420020050_00	X		X	
Childres Creek	OK120420020160_00	X			
Haikey Creek	OK120410010210_00	X		X	
Sahoma Lake	OK120420020130_00	X			

(1) WBID = Waterbody ID identifier, used by ODEQ and other agencies in Oklahoma.

(2) 303(d) = Waterbody is on the 2016 303(d) list of impaired waterbodies.

(3) ORW = Waterbody is listed by the OWRB as an Outstanding Resource Water.

(4) TMDL = Waterbody has a completed and EPA/ODEQ approved TMDL study.

(5) ARC = Aquatic Resources of Concern; see ARC list and map in OKR04 Exhibit 1.

303(d) and Completed TMDL Waterbodies: Tulsa County has reviewed the latest lists of waterbodies from ODEQ within its MS4 boundaries that have 303(d) impairment and/or completed Total Maximum Daily Loads (TMDLs). The table above lists which of the major receiving waters are listed as 303(d) impaired, have a completed TMDL, are designated as Aquatic Resources of Concern (ARC), or are listed as Outstanding Resource Waters (ORW). The SWMP describes how each of these special conditions will be addressed by Tulsa County.

II.G Relying on Another Government Entity – OKR04 Parts II.B.3, IV.A.5, V.C.1.g

OKR04 Part II.B.3 requires that the permittee indicate if “*another government entity already regulated under the stormwater regulations*” will be relied upon to “*satisfy one or more of your permit obligations*”. Part IV.A.5 requires written acceptance if “*another governmental entity*” will implement “*one or more of your stormwater MCMs*”, but does not apply to implementing individual BMPs. Part V.C.1.g (regarding Annual Report contents) requires a written agreement with “*another government entity*” if you are relying on them “*to satisfy some of your permit obligations*”.

Tulsa County herein indicates in the tables below all entities with whom we are working collaboratively. Appendix D contains copies of all written agreements from the entities identified below to accomplish MCMs and BMPs on behalf of Tulsa County.

OKR04 Part II.B.3: Another Permitted Government Entity Already Regulated:

Government Entity	Permit Obligation to be Completed by Permitted Entity
none	none

OKR04 Part IV.A.5: Another Government Entity Responsible for MCMs:

Government Entity	MCM(s) to be Completed by Entity
none	none

OKR04 Part V.C.1.g: Another Government Entity Reported in Annual Report:

Government Entity	Permit Obligations to be Completed by Entity
INCOG	Host GCSA regional stormwater website: www.stormwaterok.net
INCOG	Conduct Employee Training on OKR04-required topics.
M.E.T.	Hosting of two county wide collection events at T.C. fairgrounds.
M.E.T.	Helps coordinate and run drop-off recycling centers in the county.
OCC	Manage Blue Thumb volunteer stream monitoring program.
OCC	Manage Blue Thumb public school education outreach program.

II.H Certification of Compliance with Part III – OKR04 Part II.B.2.c

Tulsa County hereby certifies compliance with all Part III requirements by taking the actions as stated in the various parts of this signed SWMP. This certification declaration is required to be made under OKR04 Part II.B.2.c.

II.I Co-Permittees – OKR04 Part II.D

Tulsa County has elected not to share OKR04 compliance with another entity as a co-permittee.

II.J Compliance with Water Quality Standards - OKR04 Part III.A

OKR04 Part III.A.1 has seven action items (1.a through 1.g) that must be addressed in the SWMP to protect 303(d) listed waters. These are covered in Section II.K of the SWMP and are referenced by their OKR04 Parts. Appendix C contains a map of the MS4 including the locations of 303(d) impaired waters, ARC and TMDL waterbodies.

II.K Addressing 303(d) Impaired Waterbodies – OKR04 Part III.A.1

Part III.A of OKR04 requires that each SWMP “document... how you will comply with the following requirements:” Part III.A.1 states, “If you discharge to waters identified on the latest CWA 303(d) list of impaired waters,” then Part III.A.1 requires that the SWMP “...must include all necessary BMPs that will ensure that the impairment caused by identified pollutants... in your receiving waters will not cause, have the reasonable potential to cause, or contribute to an in-stream exceedance of water quality standards.” Appendix C includes the MS4 map and location of all 303(d) waterbodies. Part III.A.1 has seven sub-parts (Items 1.a – 1.g) that must be addressed in the SWMP. These are presented below:

OKR04 Part III.A.1.a: (303d Plan)

In order to protect 303(d) impaired waters and not cause or contribute to a violation of water quality standards, Tulsa County has created the following Plan which lists BMPs to be implemented to reduce the 303(d) pollutants of concern. These special BMPs have been selected by Tulsa County as being the most effective for reducing pollutants of concern in stormwater runoff. Appendix C contains a map of the MS4 with respect to 303(d) waterbodies.

At the time of preparing this SWMP, the 2014 303(d) List was in effect in Oklahoma. After reviewing this list, Tulsa County identified the following impairments within the MS4 (see the map in Appendix C which shows the locations of all 303(d) waterbodies within the MS4):

2016 303(d) Listed Waterbodies Within Tulsa County MS4:

Waterbody Name	WBID	Impairment Causes
Bird Creek	OK102400011010_00	Enterococcus, E. Coli
Ranch Creek	OK121300010060_00	E. Coli
Coal Creek	OK121300010090_00	Benthic Macroinvertebrates, E. Coli
Delaware Creek	OK121300010050_00	Benthic Macroinvertebrates, Enterococcus

Waterbody Name	WBID	Impairment Causes
Arkansas River	OK120420010130_00	Turbidity
Arkansas River	OK120420010010_10	Cadmium
Arkansas River	OK120420010010_00	Enterococcus, Turbidity
Arkansas River	OK120410010080_00	Enterococcus
Bigheart Creek	OK120420010140_00	E. Coli, Fish Bioassessment
Harlow Creek	OK120420010170_00	Benthic Macroinvertebrates, E. Coli, Fish Bioassessment
Mooser Creek	OK120420010070_00	E. Coli, Fish Bioassessment
Nickel Creek	OK120420020040_00	E. Coli
Polecat Creek	OK120420020050_00	Benthic Macroinvertebrates, Enterococcus
Childres Creek	OK120420020160_00	Chloride
Haikey Creek	OK120410010210_00	Benthic Macroinvertebrates, Diazinon, E. Coli, Diazinon, Dissolved Oxygen
Flat Rock Creek	OK121300010120_00	Benthic Macroinvertebrates
Sahoma Lake	OK120420020130_00	Turbidity

The table of BMPs that follows represents the BMP implementation approach Tulsa County will take to address 303(d) impairment. These special BMPs will be implemented to ensure that stormwater discharges from the MS4 will not cause, have the reasonable potential to cause, or contribute to an in-stream exceedance of water quality standards.

Table of BMPs and Pollutant Reduction Expectations for Addressing 303(d) Impairments:

303(d) Pollutant(s)	Best Management Practice (BMP)	Pollutant Reduction Expectations
Lead, Turbidity, bacteria, D.O.	Develop pollutant source inventory in 303(d) watershed(s) and set priority areas.	Expect to have unique, pollutant-specific source inventories and priority areas within each watershed due to how different types of sources affect pollutant runoff differently.
Lead, Turbidity, bacteria, D.O.	Increase dry weather field screening (DWFS) site inspections in 303(d) watershed priority areas.	Illicit discharges can be directly observed at time of DWFS and traced to the source for removal.
Lead, Turbidity, bacteria	Reduce exposure of materials to rainfall at municipal facilities.	Pollutant reductions from municipal facilities will be significant. This BMP will require periodic inspections and employee education.

303(d) Pollutant(s)	Best Management Practice (BMP)	Pollutant Reduction Expectations
Lead	Inspect industrial facilities for potential to have exposure of metals in runoff.	This BMP will rely upon sampling data and facility information about potential discharges. Facilities will receive pollution control education.
Lead, Turbidity, bacteria, D.O.	Conduct employee education for municipal inspectors on pollution in runoff.	This BMP will cover all potential pollution sources within a typical MS4 and the OKR04 compliance strategies required for reducing runoff contamination.
Lead, Turbidity, bacteria, D.O.	Distribute print education materials to local businesses about controlling pollution in runoff.	This BMP will rely upon how well the local business or facility uses the practices recommended in the education material.
D.O.	Distribute print education materials to lawn care businesses about controlling fertilizer applications.	This BMP will rely upon how well the local businesses use the practices recommended in the education material.
Bacteria	Adopt a Pet Waste Ordinance.	This BMP will target homeowners. It will provide information on controlling pet waste disposal on residential properties to reduce bacteria in runoff.
Chloride	Reduction of the use of salt as an ice melt.	This will target county crews during winter storm events. Sand, instead of salt, will be used.

OKR04 Part III.A.1.b: (Target Audiences)

Tulsa County has selected its public education and outreach BMPs and activities based upon the types of residential, industrial, commercial and institutional pollutant sources that are known or anticipated to exist within the MS4 and also have the greatest potential to discharge pollutants in their stormwater runoff. By focusing the types of education materials on high priority target audiences, Tulsa County will have greater success in reducing pollution through its education outreach program.

OKR04 Part III.A.1.c: (Non-Stormwater Discharges)

Tulsa County has examined potential non-stormwater discharges within its MS4 that could likely contribute significant pollutants to 303(d) impaired waters. No non-stormwater discharges have been observed. (Table to be edited when non-stormwater discharges are observed.) The following potential discharge sources have been identified within the MS4:

Source Identifier	Location	303(d) Pollutants	Notes
(Fill when determined)	(Fill when determined)	(Fill when determined)	(Fill when determined)

OKR04 Part III.A.1.d: (Inspect Illicit Discharges in Priority Areas)

Tulsa County has established a program to inspect for and enforce against illicit discharges within the MS4. Priority areas for potential pollutants of concern within the impaired watersheds have been established, and they are identified in SWMP Section III.C. Tulsa County has a BMP to conduct inspections within these 303(d) priority areas at increased frequency to identify and characterize the sources of the 303(d) pollutants of concern. In addition, data from other agencies and sources, if available, will be obtained and used to assess potential sources. Details of this inspection and enforcement program are presented in Section III.C of this SWMP. Tulsa County will also prepare a Standard Operating Procedure (SOP) document containing the methods to be used for these types of inspections. The SOP is referenced in Section III.C of this SWMP.

OKR04 Part III.A.1.e: (Operation & Maintenance; Assess New & Existing Flood Management Projects)

Tulsa County has a Flood Plain Management division and a Flood Plain Manager in place. In regards to projects that take place in a flood plain, a permit system is in place to make sure that all requirements are met in Tulsa County's jurisdiction.

1. Operation and Maintenance (O&M) for Structural and Non-Structural Controls:

Tulsa County has developed the following procedures to address O&M of all county-owned flood management structural controls required in OKR04 Part III.A.1.e. O&M of privately owned structures is discussed separately below, followed by a discussion of O&M of non-structural controls.

O&M of County-Owned Structural Stormwater Controls:

Tulsa County defines city-owned structural stormwater controls to mean any physical structure owned and maintained by Tulsa County, including: wet and dry retention and detention basins and ponds; culverts and open channels that are owned by or within Tulsa County's easements or rights-of-way and for which Tulsa County has an obligation under the county's flood plain management policies to maintain; and physical stormwater structures owned by Tulsa County that are designed for managing stormwater flow and direction.

The following table summarizes the O&M program for county-owned structures. Tulsa County may in the future develop formal written procedures of the steps outlined in the table below. Once developed, these procedures will be referenced in this SWMP in an SWMP document update, and the procedures will be kept with the SWMP document.

Summary of O&M Procedures for City-Owned Structures:

O&M Procedure	Frequency	Methods	Limitations
Detention / Retention Ponds	Annual visual inspections; maintenance as needed. (1)	Visual inspection using city staff. Maintenance depending on factors (1).	High priority given to structures that are new with a projected long life and greater usefulness.
Large Culverts and Channels (2)	Annual visual inspections; maintenance as needed. (1)	Annual visual inspections; maintenance as needed. (1)	Modifications to structure may need to be coordinated with other changes in the flood basin.
Storm Inlets and Pipes (1)	Annual visual inspections; maintenance as needed. (1)	Annual visual inspections; maintenance as needed. (1)	Annual visual inspections; maintenance as needed. (1)

- (1) Decision on repair / replacement of features will depend upon factors such as cost, age, future effectiveness of structure, and availability of materials and resources.
- (2) Large culverts are defined as being 36" or larger in diameter. Large channels are those with hard surface lining, at least 5' bottom width and either vertical or sloped sides.

O&M of Privately-Owned Structural Stormwater Controls:

Tulsa County defines privately-owned structural stormwater controls to mean any physical structure not owned and maintained by Tulsa County, instead being owned and maintained by a private interest, such as a business, individual or Homeowners Association. Types of privately-owned stormwater structures will include: wet and dry retention and detention basins and ponds; culverts and open channels that are privately owned and for which the owner or association has an obligation under city ordinance to maintain; and physical stormwater structures privately owned that are designed for managing stormwater flow and direction.

The following table summarizes the O&M program for privately-owned structures. Tulsa County will offer to assist the private owner with development of formal written procedures of the steps outlined in the table below. Once developed, these procedures will be referenced in this SWMP in an SWMP document update, and the procedures will be kept with the SWMP document as well as with the owner.

Summary of O&M Procedures for Privately-Owned Structures:

O&M Procedure	Frequency	Methods	Limitations
Detention / Retention Ponds	Annual visual inspections; maintenance as needed. (1)	Visual inspection by owner with county staff assistance. Maintenance depending on factors (1).	High priority given to structures that are new with a projected long life and greater usefulness. Owner must abide by all local codes and ordinances.
Large Culverts and Channels (2)	Annual visual inspections; maintenance as needed. (1)	Visual inspection by owner with county staff assistance. Maintenance depending on factors (1).	Modifications to structure will need to be coordinated with the county regarding how the project will impact the flood basin.
Storm Inlets and Pipes (1)	Annual visual inspections; maintenance as needed. (1)	Visual inspection by owner with county staff assistance. Maintenance depending on factors (1).	Annual visual inspections; maintenance as needed. (1)

- (1) Decision on repair / replacement of features will depend upon factors such as cost, age, future effectiveness of structure, and availability of materials and resources.
- (2) Large culverts are defined as being 36" or larger in diameter. Large channels are those with hard surface lining, at least 5' bottom width and either vertical or sloped sides.

O&M of County-Owned Non-Structural Stormwater Controls:

Tulsa County defines county-owned non-structural stormwater controls to mean any stormwater-related program implemented by Tulsa County, including: preservation of open space; expanding disconnections of impervious surfaces; expansion of vegetation and natural systems; grass swales and other types of natural, vegetated infiltration areas; and protection and expansion of riparian stream buffers. Tulsa County will not impose requirements of non-structural controls on private property. Hence there will be no O&M actions needed regarding privately-owned non-structural controls. Instead, Tulsa County will encourage and provide education about such programs as private development expands within Tulsa County.

The following table summarizes the O&M program for county-owned non-structural controls. Tulsa County may in the future develop formal written procedures of the steps outlined in the table below. Once developed, these procedures will be referenced in this SWMP in an SWMP document update, and the procedures will be kept with the SWMP document.

Summary of O&M Procedures for County-Owned Non-Structural Controls:

O&M Procedure	Frequency	Methods	Limitations
Preserving Open Space; Enhancing Swales and Infiltration Areas.	Annual visual inspections; maintenance as needed. (1)	Visual inspection using city staff. Maintenance depending on factors (1).	High priority given to areas that are new with a projected long life and greater usefulness.
Disconnections of impervious surfaces; buffers and riparian protection.	Annual visual inspections; maintenance as needed. (1)	Visual inspection using city staff. Maintenance depending on factors (1).	Maintenance of feature may need to be coordinated with other changes in the flood basin.

(1) Decision on repair / replacement of features will depend upon factors such as cost, age, future effectiveness of feature, and availability of materials and resources.

2. Assess Water Quality Impacts from New Flood Management Projects:

The second requirement in OKR04 Part III.A.1.e applies to proposed new flood management projects that will be within 303(d) watersheds, and it addresses the pollutants of concern in the 303(d) listings. Tulsa County has prepared the following assessment procedures summary (below). If additional detailed written procedures are produced as a stand-alone document in the future, they will be kept with the SWMP, and the SWMP text will be updated to provide a reference to the written procedures. ODEQ will allow flexibility on the types of assessment methods in SWMPs, and for selecting the types of new flood management projects that will be assessed. ODEQ will also allow a phased approach for beginning assessments of projects that have the greatest potential to cause water quality impacts.

Tulsa County will implement an assessment program for new flood management projects that must be completed prior to issuance of building permits. To make this pre-design process work smoothly, Tulsa County will provide education materials to applicants of building permits so that they can have time to prepare their plans and specifications to meet all requirements of Tulsa County. A formal guideline document will be prepared for presentation to all building applicants as part of the education and outreach effort. This will allow applicants time to incorporate the local requirements regarding new flood management project water quality protections at the outset of

project design.

Tulsa County will apply the assessments to only MS4-owned projects initially. After the first few years of experience, Tulsa County will expand the procedures to certain types of privately owned projects which will be defined at that time.

The following methods will be used by Tulsa County for making Part III.A.1.e water quality impact assessments of new flood management projects:

- a. Identify the locations within the MS4 of all the 303(d) impairment watersheds, and identify the pollutants of concern (parameters) for each watershed.
- b. The following criteria will be used to select the types of new flood management projects that will be assessed:
 - 1) The project will be owned by Tulsa County;
 - 2) The project is in the pre-design phase and just being proposed for development;
 - 3) The project will be a physical structure;
 - 4) The project will be designed to have an inlet structure for collecting runoff from the upstream watershed and an outlet structure for discharging collected runoff; and
 - 5) The project will be designed to collect runoff from five or more acres.
- c. For each new flood management project that will be assessed, Tulsa County will review any documentation available through ODEQ, EPA and other sources on the potential for that type of project to reduce, have no effect on or possibly increase the 303(d) pollutant(s) in runoff.
- d. For each project, Tulsa County will examine the location of the project and determine its potential for runoff from the project's outlet to enter a 303(d) impaired waterbody. The assessment of potential impact will include consideration of the following:
 - 1) Small projects several stream miles upstream from the impaired waterbody on small tributary channels will not likely have any significant effect on 303(d) impairment, whereas
 - 2) Large projects directly next to the waterbody may be more likely to contribute pollution.
- e. Tulsa County will assess the new project's design and determine if there are some features that could be modified during construction to reduce pollutants in runoff. For example, can an LID structure or feature be constructed downstream of the project outlet? Can the project be altered to have greater pervious surface? Can the outlet flow be diverted to a pervious area for absorption of flow?

- f. Tulsa County will submit its assessment findings to the building applicant in a timely manner so that any design changes can be made without unduly affecting project deadlines or schedules.

Within a few years of program initiation, Tulsa County will expand the program to privately owned future projects.

3. Examine Existing Projects for Necessity of Additional Controls:

The third requirement in OKR04 Part III.A.1.e addresses existing flood management projects in 303(d) watersheds. ODEQ allows flexibility for local OKR04 permittees to decide which types of existing flood management projects will need to be assessed under Part III.A.1.e for applicable 303(d) pollutants of concern. Tulsa County will use the following criteria to select existing projects for examinations as required by Part III.A.1.e:

- a. The project is publicly owned;
- b. The project is a physical structure with definable inlet and outlet features;
- c. The project receives runoff from five or more acres upstream of the inlet;
- d. The project has a long projected life and function;
- e. The project has physical features with that can be realistically modified to benefit WQ;
- f. The project is privately owned, with owners that are willing to cooperate and assist with their own resources to make recommended modifications, and
- g. The project has a good benefit to cost ratio for making modifications.

Tulsa County has developed criteria for completing the *“examination of existing projects to determine if incorporating additional water quality protection devices and practices are necessary”* to affect improvements in 303(d) watersheds. The following examination criteria will be used for rejecting existing projects that were selected using the criteria above:

- a. The project has old structures and features with no effectiveness remaining,
- b. The project offers little to no potential WQ benefit,
- c. The project has poor benefit to cost ratio of the proposed modifications needed,
- d. The project is or likely will be scheduled for demolition or upgrades in the near future,
- e. The project has an unknown or no clear ownership, and
- f. The project is privately owned, and there is no clear legal authority to require making water quality improvements to private structures.

It is important to note that the “examination” of existing projects in Part III.A.1.e of OKR04 does not actually require that modifications be made once a project examination has been completed. Part III.A.1.e only requires that the examination be made. However, OKR04 does require that each permitted MS4 take all actions “to the Maximum Extent Practicable” (MEP) to protect 303(d) impaired waterbodies from further degradation, and protect water quality. Therefore, Tulsa County will utilize the procedures outlined above for making modifications to existing projects where feasible.

OKR04 Part III.A.1.f: (Selecting BMPs)

OKR04 Part III.A.1.f, which applies to selecting 303(d)-related BMPs, requires that “*You must choose BMPs from EPA’s menu or select others that can be used for managing the identified pollutants (e.g., nitrogen or phosphorus, bacteria) in your discharges. The details of the BMPs can be viewed from EPA’s website: <http://water.epa.gov/polwaste/npdes/swbmp/index.cfm>.*” Tulsa County will rely upon several sources for selecting 303(d)-BMPs, including: 1) the EPA database; 2) recommendations from agencies such as ODEQ and INCOG; 3) recommendations from other permittees; and 4) an assessment of feasibility based upon BMP reliability, affordability and suitability to local conditions.

OKR04 Part III.A.1.g: (BMPs to Address Bacteria 303(d) Waters)

OKR04 Part III.A.1.g requires that each permittee address five categories of activities regarding bacteria 303(d) pollutants. Tulsa County will take the actions specified below to address these five categories. Prior to implementing any of these BMPs, Tulsa County will send the proposed BMPs defined in the tables below to ODEQ for review and make any changes that ODEQ will require. The categories and sub-categories used below are taken directly from OKR04.

Category 1: Sanitary Sewer Systems:

Sub-Category in OKR04	Selected BMP	Implementation Notes
(a) Make improvements to sanitary sewers	Camera inspection of sewer lines.	Inspect 500 feet per year of lines 12” or greater in diameter.
(b) Make improvements to sanitary sewers	Repair and replace breaks in sewer lines and appurtenances.	Small repairs covered by annual budget; large projects must be special funded.
(c) Improve reporting of violations	Annual training of Sewer Dept. staff on timely reporting of sewer bypasses and upsets.	Implement staff training.
(d) Strengthen controls	Update spill response	Review spill response

	equipment and supplies as needed.	procedures, equipment, and supplies with the county districts.
(e) Strengthen controls	Annual training of spill response employees.	Implement staff training.

Category 2: On-Site Sewage Facilities (OSSFs):

Sub-Category in OKR04	Selected BMP	Implementation Notes
(a) Identify and address failing systems	Distribute OSSF operation brochure to residential properties.	Distribute as needed.
(b) Identify and address failing systems	Inspect MS4 for evidence of bypasses from OSSFs.	Yearly inspection of Tulsa County's MS4 facilities.
(c) Address inadequate maintenance of OSSFs	Distribute OSSF maintenance brochure to residential properties.	Distribute as needed.

Category 3: Illicit Discharges and Dumping:

Sub-Category in OKR04	Selected BMP	Implementation Notes
Additional effort to reduce waste sources of bacteria	Distribute brochure on septic system maintenance.	Distribute at Tulsa County stormwater display.
Additional effort to reduce waste sources of bacteria	Distribute brochure on grease trap cleaning and maintenance.	Distribute to businesses with grease traps.
Additional effort to reduce waste sources of bacteria	Distribute brochure on grit trap cleaning and maintenance.	Distribute to businesses with grit traps.

Category 4: Animal Sources:

Sub-Category in OKR04	Selected BMP	Implementation Notes
Expand existing management programs to identify and target new sources	Distribute pet waste door hangers to residential properties.	Distribute to homeowners in Tulsa County's MS4 area.
Expand existing management programs to identify and target new sources	Distribute brochures on livestock waste management.	Distribute to livestock ranchers in Tulsa County's MS4 area.
Expand existing management programs to identify and target new sources	Install and maintain "pooper-scooper" stations and signs in MS4-owned parks.	Look to install "pooper-scooper" stations at LaFortune park.

Category 5: Resident Education:

Sub-Category in OKR04	Selected BMP	Implementation Notes
Increase focus and resident education on bacteria discharges from residential sites.	Place web page on Tulsa County's website about bacteria discharge types and amounts from residential properties either as direct discharge or in runoff.	Develop a webpage for stormwater education under Tulsa County's website. Implement within 5 years, and update with new education information as needed.
Increase focus and resident education on overflows from sewer line clogs from fats, oils and grease.	Place web page on Tulsa County's website about bacteria contamination from sewer overflows caused by fats, oils and grease disposal to sewer lines.	Develop a webpage for stormwater education under Tulsa County's website. Implement within 5 years, and update with new education information as needed.
Increase focus and resident education on bacteria from pet waste.	Distribute pet waste door hangers to residential properties.	Distribute to homeowners in Tulsa County's MS4 area.

II.L TMDL Allocations and/or Watershed Plans – OKR04 Part III.B

OKR04 Part III.B requires that each permittee address all conditions specified in a completed TMDL or Watershed Plan for stormwater permitted dischargers. OKR04 Part III.B states that, *“if that TMDL includes a waste load allocation or load allocation for a parameter likely to be discharged by the MS4, your discharges must meet any limitations, conditions, or other requirements of the waste load allocation (WLA), load allocation and/or TMDLs associated implementation plan within any timeframes established in the TMDL or watershed plan. Monitoring and reporting of the discharges may also be required as appropriate to ensure compliance with the TMDL, or watershed plan. You must adopt any WLAs assigned to your discharges specified in the TMDL, or similar targets in the watershed plan, as measurable goals in your SWMP. The SWMP must be modified to implement the TMDL within the timeframe established in the TMDL or as otherwise specified in watershed plan. You must comply with any additional annual reporting or evaluating progress requirements in the TMDL or watershed plan.”*

There are two ways to classify TMDLs in Oklahoma: 1) “notification TMDLs” versus “EPA approval TMDLs”, and 2) TMDLs having “aggregate WLAs” versus “individual WLAs”.

Notification versus EPA Approved: Until late 2013, all TMDLs with permitted MS4s stated that MS4 requirements would begin “upon notification by the Director”. This meant that the MS4s

in the TMDL did not have to begin addressing the TMDL requirements until ODEQ notified them to begin implementation. ODEQ has not yet sent notifications, therefore permitted MS4s under these older TMDLs have not yet had to act on any TMDL requirements.

Starting with the finalized Lake Thunderbird TMDL in November 2013, the TMDL's MS4 Appendix now states "upon approval by EPA". All MS4s in these new TMDLs will have to start complying with Appendix requirements once EPA approves the TMDL; no ODEQ notification is necessary. ODEQ will begin notifying permitted MS4s in 2016 to begin complying with the older "notification TMDLs". ODEQ may first notify resource-rich permittees in a phased approach.

Aggregate WLA versus Individual WLA MS4 Requirements: Most older TMDLs have all of the permitted MS4s within the TMDL watershed lumped together ("aggregated") regarding assigned maximum daily pollutant loads (referred to as MS4 Wasteload Allocations or "MS4_WLAs"). For example, if a TMDL watershed has an MS4 aggregated TMDL maximum daily load for bacteria of 5 billion colonies per day, all MS4s collectively are assigned this maximum load limit, regardless of how many MS4s there are in the watershed. The new TMDLs now assign maximum load limits (MS4_WLAs) to individual permitted MS4s. Under OKR04 Part III.B, each permittee must make its assigned load limit a Measurable Goal in the MS4's Stormwater Management Program (SWMP) document. For permittees with aggregate WLAs, the aggregate becomes the Measurable Goal.

BMP-Based TMDLs: OKR04 Part III.B states, *"If the TMDL or watershed plan relies on a BMP-based approach, effective implementation of additional TMDL or watershed plan-related BMPs will be sufficient to implement applicable WLAs."* For BMP-based TMDLs, MS4s will not have to demonstrate that they are staying below the maximum daily load limit (MS4_WLA) in the TMDL. Thus far, all TMDLs written in Oklahoma are BMP-based TMDLs.

TMDL Implementation: The OKR04 permit does not have specific requirements for meeting TMDL implementation. Rather, OKR04 defers to the TMDL document itself to provide implementation requirements for permitted MS4s. These are found in an Appendix of each TMDL document. These include requiring a Monitoring Plan, a TMDL Pollutant Reduction Plan, and reporting data and status in the MS4's Annual Report.

Due to the individual nature of requirements within each TMDL document, Tulsa County will take the following actions regarding completed TMDLs within its MS4:

1. Review the latest list of completed TMDLs from ODEQ, and obtain all TMDL documents applicable to the MS4.
2. Determine the requirements placed upon Tulsa County in each TMDL's Appendix.
3. For Notification TMDLs, begin formulating a strategy to begin meeting the TMDL requirements once notification is received from ODEQ.
4. For EPA Approved TMDLs, begin developing the resources and written plans required by the TMDL.

5. Research the feasibility of joining a regional monitoring program if allowed by the TMDL. Otherwise, develop a means of conducting local monitoring as required by the TMDL.
6. Seek assistance from agencies and other resources, as needed, to develop all written procedures and documentation required by the TMDL.
7. Research and adopt the most effective and reasonable BMPs to include in the pollutant reduction plan required by the TMDL, and identify resources for BMP implementation.
8. Seek assistance from outside resources and begin implementing all TMDL requirements on schedule.
9. Modify the SWMP to include any assigned WLA for the MS4 as a Measurable Goal.

II.M Discharges to Outstanding Resource Waters (ORWs) – OKR04 Part III.C

For the present OKR04 2015-2020 permit cycle, there is only one Phase II permittee in Oklahoma that must meet ORW requirements under OKR04 Part III.C, the City of Tahlequah. Tahlequah's requirements are extensive, and the City has worked closely with ODEQ during the first OKR04 permit cycle to develop an extensive program to meet ORW requirements. The City of Tahlequah will attach the required documentation to their 2016 Notice of Intent (NOI) and continue to implement their program. Any changes to Tahlequah's BMPs to protect ORW will be made at this time and adopted upon ODEQ approval. No other Phase II permittee in Oklahoma has any obligations under OKR04 Part III.C.

III. MINIMUM CONTROL MEASURES

This SWMP provides information on the Best Management Practices (BMPs) and other activities that will be implemented to address each of the six Minimum Control Measures (MCMs). Quotations of relevant passages from the OKR04 permit are inserted as needed *in italics text* in this SWMP to indicate the context of permit compliance.

Existing permittees are assumed to have a fully implemented SWMP and all BMPs successfully implemented at time of Notice of Intent (NOI) submittal in early 2016. They may make changes to their SWMP and BMPs at the time of filing their NOI without having to perform OKR04 Part IV.D change requirements. All subsequent changes to BMPs and the SWMP must follow the requirements of Part IV.D. In addition, OKR04 Part IV.A.1 requires that, *"Modifications and updates shall be reflected in your SWMP and implemented within one (1) year of the effective date of this Permit, then as needed."*

New Permittees: OKR04 Part IV.A.2 requires that, *"You must provide program development, implementation and enforcement schedules for full implementation of the complete SWMP as soon as practicable, but no later than five (5) years from the effective date of this Permit"*. New permittees are not expected to have any BMPs implemented at the time of NOI submittal.

Both new and existing permittees will therefore have similar types of programs and requirements. The main difference between their two SWMP documents will be the BMP implementation schedules.

Tulsa County is a existing Permittee. As such, for each of the following Minimum Control Measures (MCMs) in the SWMP sub-sections A-F below, Tulsa County will implement new BMPs and continue implementing existing BMPs, develop implementation schedules, and establish Measurable Goals for each BMP. Per OKR04 Part V.C, an Annual Report will be submitted to ODEQ that documents implementation and BMP effectiveness under each of the six MCMs. Appendix A of the SWMP contains tables of the BMPs with assigned Measurable Goals, implementation schedules, and other BMP-related information.

III.A MCM 1: Public Education and Outreach:

OKR04 Part IV.C.1 requires Phase II cities to develop and implement a public education program *“to distribute information and education materials to the community”*, and to document a stormwater public outreach program by specifying BMPs and Measurable Goals for educating the general public target audience. Revisions to existing programs must be completed within the first year of effective date of the permit.

III.A.1 Best Management Practices for Public Education

Tulsa County will use a variety of public education BMPs to inform individuals and groups within the community about the steps they can take to reduce stormwater pollution and become involved in the stormwater program. Appendix A summarizes all BMPs that will be used for this MCM. Appendix A also lists the Measurable Goals and schedule of implementation assigned to each BMP.

III.A.2 Target Audience

The following target audiences were selected because Tulsa County considers them most likely to be significant sources of stormwater pollutants:

BMP Category or Type	Target Audience
Residential chemical use and disposal	Homeowners, renters, multi-family residents.
Commercial chemical use and disposal	Commercial retailers selling chemicals and construction sites.
Public school education	Primary and secondary grade levels.
Pet waste	Pet owners.
Home builder sites	Private Homeowners/Builders

The secondary school education program will use Tulsa County staff and Blue Thumb Staff and volunteers. The program will focus on basic water quality impacts and options for pollutant disposal (e.g. recycling and collection events).

III.A.3 Target Pollutant Sources

Tulsa County's Public Education program will primarily address pollutants from residential neighborhoods by educating individual homeowners on the proper disposal of such household chemicals as:

- pesticides
- fertilizers
- detergents
- solvents
- motor oil
- antifreeze
- other motor and engine fluids
- oil-based paints
- rubbish ("floatable" materials)
- yard waste (grass clippings, leaves)

By encouraging the public to use local and regional recycling centers and household pollutant collection events, additional household chemicals such as heavy metals, solvents, acids and poisons can be safely disposed of. Proper storage, use and disposal of chemicals by local businesses will also be addressed in the education program.

III.A.4 Outreach Strategy

Tulsa County will participate in the regional stormwater education activities sponsored by INCOG's Green Country Stormwater Alliance (GCSA). Some education materials will be provided by INCOG from existing Federal, State or other sources while other materials will be developed collaboratively from all GCSA members. Tulsa County will also develop some public education BMPs locally.

Tulsa County's public education program will employ the following strategies:

- a. Homeowners will be educated on how to properly use and disposal of fertilizers and other household chemicals as well as proper septic system maintenance.
- b. The public education program will also provide information on how to get involved in stream cleanups, restoration activities and other local conservation efforts that may periodically be conducted within Tulsa County.

- c. Tulsa County will promote citizen participation in area-wide stream and city cleanup events, use of recycling centers in the vicinity, and participation in pollutant collection events.
- d. INCOG's GCSA regional stormwater web site (www.stormwaterok.net) will provide information to the general public about local and regional water quality and program issues as well as numerous web links to water quality resources.
- e. Secondary education grades will learn about water quality and urban sources of pollution through the Blue Thumb's "Storm Sewer In a Suitcase" classroom program for school children.
- f. The Blue Thumb volunteer stream monitoring program will emphasize student and adult education through practical hands-on experience with water quality sampling as well as by providing formal training in water quality, pollution effects and ecosystem health.
- g. Tulsa County's education program will develop written materials that target commercial and industrial enterprises that have business activities that may negatively impact the stormwater quality of the MS4.

Tulsa County's Public Education program has a goal of providing stormwater education material to at least half of its homeowner residents by the end of the five-year permit cycle.

III.A.5 Management Responsibility

Tulsa County has overall project management responsibility for implementing the Public Education and Outreach MCM. Berry Britton, engineer and stormwater manager will coordinate all local activities and implementation of all program elements for this MCM.

INCOG's GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to provide assistance to its GCSA members' educational programs. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG's role in providing technical support and various kinds of education materials, as well as maintenance of the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.A.6 Evaluating Program Effectiveness

OKR04 Part IV.C.1.b(6) lists "evaluating program effectiveness" as a Recommendation. Part IV.C.1.a(3) requires each permittee to "Assess your education and outreach program annually as required by Part V.C of this permit." Where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each Public Education BMP. These are summarized in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to

accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the general public and from local businesses. Feedback from the public (email, phone call, fax, letter or personal visit) will include requests for more information and any follow-up actions taken by MS4 staff to address problems or concerns. If pollution sources are abated as a result of the contact, then the abatement action will be logged as a BMP success for public education as well as removal of illicit discharges. Changes in types of issues reported by the general public and businesses over several years of BMP implementation should demonstrate effectiveness of this MCM.

III.B MCM 2: Public Participation and Involvement:

Some of the activities under the Public Education MCM also apply to the Public Participation and Involvement MCM. These include the Blue Thumb stream monitoring, use of recycling centers, participation in household pollutant collection events, and community cleanup events. Appendix A lists each Public Participation BMP including implementation schedules and Measurable Goals for each BMP.

The Public Participation MCM is different from the Public Education MCM in that the citizens of Tulsa County will actively participate in a program component such as stream cleanups or stormdrain marking. By participating, citizens not only learn about the urban stormwater quality issues but contribute towards improving water quality in their community.

III.B.1 Best Management Practices for Public Participation

Tulsa County will use several public participation BMPs to involve individuals and groups in activities and programs to reduce stormwater pollution and become involved in the stormwater program. Appendix A summarizes all BMPs that will be used for this MCM along with the Measurable Goals and schedule of implementation for each BMP.

III.B.2 Public Involvement in Program Development

In cooperation with ODEQ and INCOG, Tulsa County has taken a number of steps to inform and include the public in understanding and providing input in the development of the Phase II program. These include:

- a. Within the past 12 months, Tulsa County has presented staff and budget information about the Phase II program in County Commission meetings.
- b. County staff have responded to questions from the public, and the County has distributed information to the community upon request.
- c. The County has placed 0 article(s) in the _____, a local weekly / daily newspaper, about the program that includes requests for citizen input.
- d. As part of its existing Public Education and Outreach MCM, Tulsa County has provided information about the MS4 program to citizens, and encouraged them to contact the stormwater coordinator for additional information.
- e. The ODEQ hosted a public meeting and held a formal 30 day public comment period in April 2015 on the draft OKR04 General Permit; ODEQ responded to all comments in writing.
- f. The ODEQ has placed all relevant information about the Phase II program, including cities affected and activities required under Phase II, on their public website with links to various types of technical information for the public.
- g. INCOG's Green Country Stormwater Alliance (GCSA) website contains web pages for the public about the Phase II stormwater permit program, including invitations to contact local stormwater managers of each GCSA member to learn more about their own local program.
- h. The ODEQ will place a notice of the availability of the Notice of Intent (NOI) on the ODEQ web site, and provide a 30 day public comment period for any organization or individual to make formal comments or inquiries on the draft NOI and draft SWMP of each OKR04 applicant. Tulsa County will make available to any group or individual, upon request, a copy of the NOI and SWMP, and provide any other information upon request.

III.B.3 Public Involvement in Program Implementation

Throughout the coming five year permit cycle, Tulsa County will use several methods to educate the public about the Phase II program and opportunities for participation. These include:

- a. Tulsa County will continue to include in its Public Education brochures information on how individuals and organizations can become more fully informed and participate in water quality improvement efforts under the Phase II program.
- b. INCOG's regional GCSA stormwater web site will continue to provide updated information about local and regional activities in which citizens can participate.

- c. County Commission agenda items dealing with aspects of the program (e.g. budget approvals, approval of program activities) will be open to the public and receive public comment.

III.B.4 Target Audience

The public participation program will primarily target homeowners, Tulsa County adult residents, public school classes and organizations, non-profit organizations (e.g. Boy Scouts), and civic organizations (e.g. local Kiwanis Club). For school-age children, the participation program will focus on stormdrain marking using Blue Thumb resources. Regional waste collection events and community / stream cleanups will target individual residents in the MS4 by encouraging their participation, and providing event information. All ethnic and socio-economic groups will be encouraged to participate. The Phase II program for Tulsa County will benefit all residents and local enterprises.

III.B.5 Public Involvement Activities

Appendix A lists all of the Public Participation BMPs that will be used by Tulsa County, including the assigned Measurable Goals and implementation schedule for each BMP. Tulsa County will participate in and support INCOG's GCSA regional Public Participation and education activities. Some education materials will be provided by INCOG from Federal, State or other sources while other materials will be developed collaboratively by all GCSA members.

Tulsa County's Public Participation program will be conducted to promote and educate its citizens about opportunities to play an active role in water quality improvement efforts. Several of the Public Participation BMPs in Appendix A are joint ventures between Tulsa County and other agencies and organizations. The roles of the permittee and the organizations for each of these cooperative BMPs are presented below:

Cooperative BMPs for the Public Participation MCM

BMP or Activity	Outside Organization	Organization Role	MS4 Role
GCSA Website	INCOG	Host and update Public Participation web pages on GCSA website; solicit ideas and information from GCSA members.	Provide information; fund GCSA membership including website; promote website.
HHP Collection	The M.e.t.	Manage semi-annual regional collection events; promotes events regionally.	Promotes events locally; funds MS4 portion of event costs.

BMP or Activity	Outside Organization	Organization Role	MS4 Role
Stream Cleanup Events	OCC's Blue Thumb program	Provide supplies; solicit volunteers, coordinate events; provides for disposal.	Promote program locally; help fund supplies; provide staff for event and admin. work.
School Classroom Instruction	OCC's Blue Thumb program	Provide supplies, set classroom dates; solicit volunteers; help conduct training.	Help set classroom dates; helps with classroom training.
Recycling Center	The M.e.t.	Etc.	Etc.

III.B.6 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will act as stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG's GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Post-Construction Site Runoff Control program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG's role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.B.7 Evaluating Program Effectiveness

OKR04 Part IV.C.2.b(4) lists "evaluating program effectiveness" as a Recommendation. Part IV.C.2.a(4) requires each permittee to "Assess your public participation and involvement program annually as required by Part V.C of this permit." Where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each Public Participation BMP. These are summarized in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the general public and from cooperating agencies and organizations listed in the Cooperative BMPs table above. Feedback from the public, agencies and organizations (email, phone call, fax, letter or personal visit) including outputs and outcomes of Public Participation

events will be recorded in writing. Increased participation by citizens and/or increased pollution quantities collected over a period of several years of BMP implementation should demonstrate effectiveness of this MCM.

III.C. MCM 3: Illicit Discharge Detection and Elimination (IDDE):

Tulsa County will implement a comprehensive program to detect and eliminate illicit discharges following the requirements in the OKR04 General Permit. The program will rely upon a number of methods of pollutant detection. There are two categories of pollutants that will be addressed in different ways: 1) episodic incident with no determinable source, and 2) chronic or frequent incident with a potentially determinable source.

Untraceable Sources: The first category covers pollutants introduced into the MS4 from individuals in a one-time episode at a discrete point of entry in which the responsible party or source is not traceable. Examples of these are dumping of yard waste, motor oil, antifreeze or trash into a creek or stormdrain. The sources for these types of pollutants, when discovered in the MS4 or local stream, cannot be determined (e.g., finding the individual causing the pollution). Discovery of this type of pollution will be from incident reports from citizens, city crews, police and fire workers, businesses, and State and Federal agency field crews. Prevention of future episodic pollution incidents will rely upon implementation of the Public Education and Public Participation programs as defined in this SWMP.

Traceable Sources: The second category covers pollutants from sources that are frequently occurring or otherwise traceable through stream channels and the MS4 system using one or more methods of visual inspections, use of simple chemical field test kits and/or formal chemical sampling via laboratory analysis. Pollutants from these sources will be dispersed downstream as a detectable odor, visual color, increased turbidity, excessive algae growth, or changes in water chemistry (e.g. pH or conductivity) when compared to uncontaminated water elsewhere in the stream or MS4. These potentially traceable pollutants are amenable to “source tracking” inspections, and the sources are more likely to be found and remediated. The source tracking investigation methods are discussed below in the Dry Weather Field Screening (DWFS) Plan.

Types of Inspections: There are several parts of OKR04 Part IV.C.3.a that require conducting some type of field inspections under the IDDE MCM (underlines added for emphasis):

- a. OKR04 Part IV.C.3.a(2) requires the MS4 to “implement a *Dry Weather Field Screening [DWFS] Plan* to detect, investigate, and eliminate illicit discharges.”
- b. OKR04 Part IV.C.3.a(2)(c) (which is within the DWFS Plan requirements) requires the MS4 to develop “procedures for tracing the source of an illicit discharge, including the specific techniques you will use to detect the location of the source.”
- c. OKR04 Part IV.C.3.a(5) requires the MS4 to “Develop ... and implement a plan to detect and address non-stormwater discharges, including illegal dumping to your system.”

Tulsa County has developed a DWFS Plan, presented below, that addresses all three of these requirements in OKR04 Part IV.C.3.a. While this SWMP text covers these three requirements, in the future Tulsa County may prepare more detailed and formal Standard Operating Procedures (SOPs) as experience is gained in performing these permit requirements. If SOPs are prepared, they will be referenced in an update to the SWMP and replace the existing text.

III.C.1 Best Management Practices for Illicit Discharge Detection and Elimination

Tulsa County will use a number of Best Management Practices (BMPs) to implement an effective detection and elimination program for illicit discharges. Appendix A lists the BMPs that will be used for this MCM. Some BMPs will address administrative actions, such as adopting an ordinance to address pollution occurring locally, while other BMPs will address public education, pollution inspection program, employee training and protection of special waters such as 303(d) listed waterbodies.

III.C.2 Map Development and Update

OKR04 Part IV.C.3.a(3) requires the MS4 to develop and periodically update a map of the MS4. As part of ODEQ's program evaluations (audits), the following map attributes are expected:

- a. Outfall locations;
- b. Names and locations of Waters of the State receiving MS4 outfall discharges;
- c. Catch basin locations;
- d. Locations of MS4 pipes, ditches and conduits;
- e. Location of public stormwater facilities; and
- f. Location of private stormwater facilities.

Tulsa County will has completed a map of the MS4 system showing major drainage system features, major outfalls and prominent receiving streams. The MS4 system map is presently in AutoCAD format. Periodic updates of map data from substate planning agencies and State and Federal agencies will be used to make future changes to the MS4 map as needed. Map features will also be amended in the future as more system inspections are performed by MS4 staff. Updated map information, such as outfall locations and site descriptions, will be reviewed annually by city staff and reflected in the map updates.

The mapping process for both creating new maps and updating existing maps will involve:

- a. Collecting initial and updated map data from agencies and organizations;
- b. Collecting field data during inspections by city crews to verify locations and descriptions of MS4 spatial map attributes;

- c. Periodic review of MS4 system map data by the City Engineer and other city and outside professional staff, and updating maps as needed;
- d. Global Positioning System (GPS) will be used when needed to provide coordinate data for the MS4 system, facility locations and sampling sites, while other coordinate data will be collected using aerials and GIS map layers that show structures and sites;
- e. Digital and paper aerial photography, and USGS 7.5 Minute Quadrangle maps will be used to assist with locating outfalls and updating their positions; and
- f. INCOG will provide GIS data and digital and paper aerial photos of the County's MS4 upon request.

III.C.3 Ordinance

OKR04 Part IV.C.3.a(4) requires that an ordinance or other regulatory mechanism be adopted by the MS4 to effectively prohibit non-stormwater discharges. Tulsa County will adopt building and zoning codes prohibiting illicit discharges to the MS4 which will be evaluated periodically for potential modifications. Development and maintenance of a local illicit discharge code is a BMP listed in Appendix A along with the intended implementation schedule and Measurable Goals. The ordinance development and maintenance process will involve taking the following actions per the schedule presented in Appendix A:

- a. Obtain and review model stormwater pollution codes from other permitted MS4s and agencies;
- b. Compare model building and zoning codes to existing local codes and ordinances and make modifications to local codes;
- c. If needed, adopt a new local code or modify an existing code to address illicit discharge detection and elimination;
- d. Periodically evaluate code effectiveness and make changes when needed to the illicit discharge codes.

As a county, Tulsa County does not have an effective means of enforcing county ordinances for stormwater pollution violations. OKR04 Part IV.C.3.a(4) provides for the county to place in their SWMP "If you lack legal authority for direct enforcement action, you must include procedures to notify DEQ when a party fails to comply with the requirements. You may rely on DEQ for assistance in enforcement of this provision of the permit in these cases." Tulsa County will therefore implement the following procedures for taking enforcement action against illicit dischargers in cooperation with ODEQ:

- a. Within 24 hours of finding a discharge that requires ODEQ assistance as a potential violation, Tulsa County will contact ODEQ Enforcement Division by telephone and email.
- b. Tulsa County will collect any data and information that is requested by ODEQ

within the ability of local resources and promptly submit the data to ODEQ.

- c. Tulsa County will assist ODEQ with any site visits and/or pollution inspections within the ability of local resources.
- d. Tulsa County will assist ODEQ with administrative tasks needed by ODEQ within the ability of local resources, including arranging meetings and processing reports.
- e. Tulsa County will document all actions taken by ODEQ and county staff for each incident, and report all incidents in Tulsa County's Annual Report.

III.C.4 Plan to Detect and Eliminate Illicit Discharges

OKR04 Part IV.C.3.a(2) requires the MS4 to develop a Dry Weather Field Screening (DWFS) Plan. Item (c) of this passage requires the MS4 to conduct "tracing the source" inspections. OKR04 Part IV.C.3.a(5) requires development of a more general plan to detect and address non-stormwater discharges. All three of these requirements are based upon conducting field inspections to look for pollution and their sources, and to take actions to eliminate the pollutant discharges from these sources.

IDDE Plan: Tulsa County has determined that the following actions will satisfy the OKR04 requirements to have an effective Illicit Discharge Detection and Elimination (IDDE) program. The IDDE Plan action items follow the OKR04 steps presented in OKR04 Part IV.C.3.a(2) items a – e.

a. Locating Priority Areas:

- (1) Examine maps of MS4 area to locate sites with high potential for pollutant discharges.
- (2) Delineate MS4 areas within each of the 303(d) watersheds, and identify high priority areas that have sources most likely to cause or have the reasonable potential to contribute the 303(d) pollutants of concern to the 303(d) listed waterbody.
- (3) Collect data on pollutant spills that have occurred in the MS4 within the past 5 years.
- (4) Identify areas in which there have been sewer system bypasses within the past 5 years.
- (5) Identify areas having the oldest sewer system lines and appurtenances.
- (6) Identify industrial, commercial and residential areas having the greatest potential to discharge pollutants.
- (7) Compile results of any ambient sampling and DWFS inspections that indicate potential pollutants being discharged.

- (8) Compile all of these data, and generate a map and description of areas in the MS4 having the greatest potential to discharge pollutants.
- (9) Of the overall MS4 high priority areas, identify high priority areas specifically associated with 303(d) waterbodies.

b. On-Site Sewage Disposal Systems:

- (1) Compile an inventory of all on-site sewage disposal systems (OSSDS) in the MS4.
- (2) Assess the approximate age and condition of the clusters of OSSDS (e.g., those within a given residential subdivision).
- (3) Obtain records from ODEQ and county agencies on OSSDS inspections and enforcement actions regarding system bypasses or failures and pollution episodes.
- (4) Identify areas within the MS4 that have the highest potential for OSSDS failures and pollution discharges, and conduct inspections of individual systems and of the receiving streams for evidence of sewage bypasses from OSSDS.

c. Tracing the Source of Illicit Discharges:

- (1) Develop Dry Weather Field Screen (DWFS) Standard Operating Procedures (SOPs) documents that list the methods to be used by field crews to conduct the DWFS inspections. The DWFS SOPs will include steps for selecting DWFS sites, making visual observations at each site, using simple field test kits, and recording data on field forms.
- (2) The DWFS SOPs and program will include special attention to 303(d) waters as required in OKR04 Part III.A.1.d.
- (3) Conduct DWFS inspections at least once per year at the sites identified in the SOPs, with special emphasis on all high priority areas in 303(d) watersheds as required in OKR04 Part III.A.1.d.
- (4) Upon discovery or after receiving a report of a pollutant in the MS4 or in a receiving water, prepare a Work Order to begin administratively tracking progress of the investigation.
- (5) Perform an initial visual observation at the site of the reported pollution event.
- (6) If pollutants are not found, log out the Work Order noting the inspection results.
- (7) If Pollutants are found, determine if it will be possible to trace the source by looking for evidence of pollutants upstream or coming from a discharge pipe or channel.
- (8) If the pollutants appear to be due to an episodic, one-time discarding action with no traceability, note the findings in the Work Order and proceed with cleanup.
- (9) If the pollutant source(s) can be traced, conduct further inspections using visual indicators and simple field test kits as necessary to trace the pollutant source. Document your inspection results carefully.

d. Removing the Source:

- (1) If the source is found, present your findings to the owner of the pollution source and proceed with enforcement steps as provided in the local IDDE ordinances and codes.
- (2) Depending upon the severity of the pollution event, an emergency meeting with the owner may be needed. Consult ODEQ for assistance if needed.
- (3) Consult with ODEQ if faced with refusal by owners of the pollutant source or if additional technical expertise is needed to help document pollution severity or extent.
- (4) Upon completion of all inspection and enforcement actions, close Work Order.

e. Program Evaluation and Assessment:

- (1) The assessment of the IDDE Plan and program will be the assessment required for the Annual Report, with additional evaluation for all inspections and pollutant reduction actions taken within the high priority areas in 303(d) watersheds.
- (2) Factors and information to consider include numbers of IDDE Work Orders performed, successful completion of Work Orders, resolution of problems, estimated quantities of pollutants eliminated from the MS4, documentation of any public health problems or complaints, input from ODEQ and county health department, and input from citizens concerning success of program effectiveness or unresolved issues.
- (3) Using the factors cited above, perform an overall assessment of the program.
- (4) Identify program changes needed in the future to increase effectiveness.

Administrative Actions to Support the IDDE Program: To facilitate the successful implementation of the IDDE Plan defined above, the following additional administrative actions will be taken by Tulsa County:

- a. Ensure that maps are effective by collecting map feature data during inspections to verify accuracy;
- b. Evaluate existing land uses in the MS4, and delineate high priority areas that have the greatest potential to discharge pollutants, with special consideration for 303(d) watersheds;
- c. Solicit and compile illicit discharge and pollution information from citizens, police and fire units, city public works crews, local businesses, other municipalities, non-profit organizations, volunteer stream monitors, students and educational institutions, construction contractors and workers, local building officials, floodplain administrator, and State and Federal agencies;
- d. Ensure that field and facility data are compiled in a manner that facilitates the inspection process (e.g. information about possible pollutants and/or sources are provided to MS4 inspectors in a timely fashion);
- e. Ensure that inspection results and field and laboratory data are properly documented with a level of quality assurance appropriate to the use of the data;

- f. Participate in INCOG's GCSA regional employee training on quality assurance, data management, use of field kits, analysis of chemical data and more;
- g. Implement procedures for helping with enforcement, including how to approach owners of potential sources for on-sight inspections, how to present field data to owners that confirms the source, and what procedures the owner must take to remove the discharge; and
- h. Periodically evaluate the inspection and enforcement program, and make modifications as necessary to improve program effectiveness.

Details of IDDE Inspections: The Dry Weather Field Screen (DWFS) and source tracking programs for potentially traceable sources will be described more fully in Tulsa County's DWFS SOPs. The SOPs will include methods to conduct a visual inspection program performed by MS4 crews, which may include use of one or more field test kits for parameters that monitor the most likely type of stormwater pollution that is indicated (e.g. chlorine residual, pH, dissolved oxygen, conductivity, etc.). The visual inspection will describe and/or quantify the extent of pollution (e.g. floatables, excess algae growth, dead or stressed stream vegetation and organisms, color of water, odors, sediments, etc.). The DWFS SOPs will include special actions to address high priority areas identified in 303(d) watersheds.

If source tracking requires scientifically defensible data for possible litigation and/or enforcement action, then Tulsa County will use either its properly trained field collection crews or contract professionals to conduct appropriate sampling and information gathering to locate sources and characterize pollution events. Outside agencies will be contacted, if necessary, to report potentially illegal discharges or to protect health, safety or the environment. All samples collected for transport to laboratories for analysis shall be collected under written Quality Assurance (QA) protocols, including use of Chain of Custody forms, appropriate sample bottles with labels, field forms describing sample collection sites and conditions, and proper sample preservation. All laboratory analyses will follow 40 CFR Part 136 methods.

Standard paper field forms and/or electronic field data recording devices (e.g. laptops, PDAs, GPS or Tablet PCs) will be used to make data collection systematic. Data will be entered and/or downloaded into computer databases for analysis, sharing and reporting. As needed, field data will be linked to MS4 map attributes. If requested to do so by ODEQ, certain monitoring data will be reported to ODEQ on ODEQ's Discharge Monitoring Report (DMR) forms.

III.C.5 Administrative Procedures for Source Control

Untraceable Pollution: When episodic incidental pollution is reported to Tulsa County (e.g. motor oil dumped into a stormdrain), the MS4 stormwater staff will record the date, location, information source, and description of the event. If necessary, a public works crewman will be sent to investigate to determine if the site should be cleaned (e.g. removal of yard waste, oil spill cleanup, etc.). After inspection and/or cleanup, MS4 staff will keep a record of all actions

taken regarding the pollution incident. These data will be included in Tulsa County's Annual Report and used to evaluate program effectiveness.

Traceable Pollution: When potentially traceable pollution is reported, the same incident information will be recorded, and MS4 staff will be sent to investigate. If the source is not immediately obvious, the MS4 staff will initiate a source tracing inspection and/or hire professional investigation of the site and attempt to trace the source upstream from the pollutant incident. If the source is located, MS4 staff will contact the owner / responsible party to request that the source be abated within a reasonable time in accordance with local ordinance.

The MS4 will perform a follow-up inspection to confirm that the source of pollution has been abated. If not, then the MS4 will take increasingly more strict action leading up to assessment of penalties, and possibly to include ODEQ and EPA enforcement as well. Throughout the administrative and investigative process, MS4 staff will document all major actions in writing to permanent files. Data from all such incidents will be included in Tulsa County's Annual Report and used to evaluate program effectiveness.

III.C.6 Inform Employees and the Public

OOKR04 Part IV.C.3.a(6) requires the MS4 to, *"Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. Promote, publicize and facilitate the reporting of illicit discharges"*. Appendix A lists the types of education and outreach BMPs that will be used for the public community and municipal employees. Those activities specifically targeting the requirements in OKR04 Part IV.C.3.a(6) are listed below.

- a. Distribute brochures to encourage proper use and disposal of household chemicals, maintenance of on-site sewage disposal systems, and recycling;
- b. Support a regional public seminar dealing with one or more Phase II stormwater issues;
- c. Discuss the Phase II program in a city council meeting open to the public;
- d. Provide information on INCOG's GCSA / the MS4's local website about pollutant reduction;
- e. Support local stream clean-up events conducted by non-profits, organizations or agencies;
- f. Support local Blue Thumb volunteer monitoring and public education programs;
- g. Support local Blue Thumb stormdrain marking program;
- h. Support regional household pollutant collection; and
- i. Support local and regional recycling of wastes.

III.C.7 Authorized Occasional Incidental Non-Stormwater Discharges

OKR04 Part IV.C.3.a(7) requires the MS4 to *"Maintain a list of occasional incidental non-stormwater discharges or flows as allowed in [OKR04] Part I – B2 that will not be addressed as illicit discharges."* Tulsa County's list of allowable non-stormwater discharges is presented at the beginning of Section III.C of this SWMP, along with a description of the actions to be taken to address pollutant releases from firefighting activities.

III.C.8 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will act as stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG's GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Post-Construction Site Runoff Control program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG's role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.C.9 Evaluating Program Effectiveness

OKR04 Part IV.C.3.a(9) requires the MS4 to, *"Evaluate the appropriateness of your identified BMPs for this minimum control measure. Your evaluation shall verify compliance with permit requirements and more importantly, document that efforts have been made towards achieving your identified measurable goals and reducing the impacts of stormwater runoff from the small MS4. Document the evaluation of your illicit discharge detection and elimination program annually as required by Part V.C of this Permit"*, where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each IDDE BMP. These are listed in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the general public and from agencies and organizations involved with the IDDE program. Feedback from the public, agencies and organizations (email, phone call, fax, letter or personal visit) including outputs and outcomes of education events will be recorded in writing. Tulsa County will record all pollution abatement episodes as described in the SWMP, including date, location, pollutant, observations, measurements, interviews, photos, field form data, abatement steps taken, and results of each investigation. The increased number of pollution

discharge quantities removed from the environment over a period of several years of BMP implementation and inspections conducted should demonstrate effectiveness of this MCM.

III.D. MCM 4: Construction Site Stormwater Runoff Control:

Tulsa County will implement a comprehensive education, inspection and enforcement program to address the pollution of stormwater runoff from active construction sites. Tulsa County will develop an ordinance prohibiting the discharge of pollutants and sediment from construction sites, and require the deployment of adequate sediment and erosion control measures. The MS4's building inspector and other staff will perform periodic site inspections for compliance with local stormwater codes either as part of other construction inspections or in response to complaints about site runoff contamination.

III.D.1 Best Management Practices for Construction Site Runoff Control

Tulsa County will use a number of Best Management Practices (BMPs) to implement an effective erosion and pollutant control program for active construction sites. Appendix A provides a description of each BMP, along with Measurable Goals and schedule of implementation. The BMPs presented in Appendix A include an education component, and include administrative actions, such as ordinance development. There are also BMPs for performing inspections and taking enforcement actions.

III.D.2 Ordinance

OKR04 Part IV.C.4.a(1) requires the MS4 to develop an ordinance to control erosion and sediment at construction sites. Tulsa County will adopt a code prohibiting construction related discharges to the MS4. The code will be periodically evaluated and modifications made as needed. The code will mirror requirements contained in ODEQ's statewide stormwater permit for construction activities (OKR10). Local code adoption and updating will involve:

- a. An initial code development and update action will be taken during the first year of OKR04 authorization.
- b. The initial process will compare model construction codes to existing County codes and drafting modifications that will be needed to local codes;
- c. Inspection and administrative staffing needs will be assessed, and additional resources will be sought, if needed, to ensure that the County will be able to implement all provisions in the codes;
- d. Local construction codes will be updated as needed;
- e. Key staff persons will be identified to manage all inspection and enforcement activities; and
- f. Program effectiveness will be assessed annually, and changes made to the program pertaining to ordinance requirements and County resources and manpower.

III.D.3 Plan to Ensure Compliance by Site Operators

OKR04 Part IV.C.4.a(2) requires the MS4 to, *"implement and enforce requirements for construction site operators to implement BMPs for erosion and sediment control"*. Part IV.C.4.a(3) requires the MS4 to, *"implement and enforce requirements for construction site operators to ... control waste at the construction site..."*. Tulsa County will take the following actions to address construction related activities as defined in OKR04 Part IV.C.4.a to ensure that construction site operators implement proper erosion and sediment control measures and control wastes at construction sites. These will include:

- a. Provide education materials for construction site operators that they will be required through local ordinance to establish erosion and sediment controls and controls of site waste;
- b. The MS4 will incorporate this education into the initial plan review and building permit application process;
- c. The MS4 will establish guidelines and requirements for erosion and sediment control Best Management Practices (BMPs) and methods to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste; and
- d. The MS4 will ensure compliance from site operators through the site inspection and enforcement process. Increasing severity of penalties will result when corrective action has been ignored or not fully achieved.

III.D.4 Procedures for Site Plan Review

OKR04 Part IV.C.4.a(4) requires the MS4 to, *"develop, ... implement and enforce procedures for site plan review which incorporate consideration of potential water quality impacts..."*. To meet this OKR04 permit requirement, Tulsa County will take the following actions:

- a. Include in the MS4's regular site plan review process additional steps to ensure that the draft plans are consistent with local erosion and sediment control requirements;
- b. Require all new development and redevelopment construction plans to consider potential impacts on water quality from construction activities. Areas to be addressed include sediment and erosion control and control of on-site wastes that can impact water quality.
- c. Ensure that the proposed construction plans and activities are in compliance with local floodplain ordinances.

III.D.5 Procedures for Public Input

OKR04 Part IV.C.4.a(5) requires the MS4 to, *"implement and enforce procedures for receipt and consideration of information submitted by the public"*. Tulsa County will establish the following administrative process for taking input from the public:

- a. Designating one or more MS4 staff as the primary contact person for stormwater communications from the general public;
- b. Creating and periodically updating as needed a written and/or computer based form that allows efficient collection of the information being provided from the public;
- c. Educating MS4 staff on how to coordinate contacts from the public with the designated MS4 staff person.
- d. Processing of input from the public will be allowed from all sources, including emails, letters, faxes, phone calls and personal contacts;
- e. The MS4 will document the response actions taken to resolve each request for assistance; and
- f. The public input program will be part of the annual program assessment for the Annual Report and include evaluating success and follow-up actions taken on unresolved problems.

III.D.6 Construction Site Inspections

OKR04 Part IV.C.4.a(6) requires the MS4 to, *"implement and enforce procedures for site inspection and enforcement of control measures"*. To comply with this requirement, Tulsa County will develop a program for inspection of construction sites. Stormwater control inspections will be performed by MS4 building inspectors and their qualified designates. Inspections will be performed when a complaint is received from the public about a stormwater pollution incident, and periodically during the other MS4 construction inspection activities. The following stormwater inspection procedures will be used:

- a. A stormwater inspection form will be created and periodically updated as needed to document inspection results of each site visit;
- b. Stormwater inspection staff will be identified and trained to perform stormwater inspections.
- c. A stormwater inspection will be conducted whenever a complaint is received, and periodically during the routine construction inspections by the MS4 inspector;
- d. The stormwater inspection form will document the adequacy of the erosion and sediment control measures being used and note any remedial action needed;
- e. Inspection data from the forms as well as all follow-up actions, including enforcement, will be entered into a computer and also stored in paper files;
- f. Enforcement will rely upon initially encouraging remediation by the construction owner / operator, followed by a warning to remediate within a reasonable time, followed by issuance of a fine under authority of the local ordinance; and
- g. Any immediate and significant threat to health, safety or the environment will be enforced immediately using best professional judgment of the inspector and/or administrative or public works management, including police and fire personnel, as the situation merits. ODEQ will be notified as deemed necessary to report the violation for OKR10 enforcement.

III.D.7 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will act as stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG's GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Post-Construction Site Runoff Control program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG's role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.D.8 Evaluating Program Effectiveness

OKR04 Part IV.C.4.a(8) requires the MS4 to, *"Evaluate the appropriateness of your identified BMPs for this MCM. Your evaluation shall verify compliance with permit requirements and more importantly, document that efforts have been made towards achieving your identified measurable goals and reducing the impacts of stormwater runoff from the small MS4 (as required by Part V.C of this Permit)"*, where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each construction site control BMP. These are listed in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the general public and from agencies and organizations involved with the construction site control program. Feedback from the public, agencies and organizations (email, phone call, fax, letter or personal visit) including outputs and outcomes of education events will be recorded in writing. Tulsa County will record all construction site inspections and pollution abatement episodes as described in the SWMP, including date, location, pollutant, observations, measurements, interviews, photos, field form data, abatement and enforcement steps taken, and results of each investigation. The increased number of pollution discharge quantities removed from the environment over a period of several years of BMP implementation and inspections conducted should demonstrate effectiveness of this MCM.

III.D.9 7th MCM Optional Permit Requirements for County Construction

Tulsa County has elected to use the alternative provided in Part VIII of OKR04 relating to construction activities on land owned by the MS4 and to activities that are directly controlled by Tulsa County. By selecting this option, all municipal construction discharges are herein authorized so long as the County meets all terms and requirements under OKR04 Part VIII. Tulsa County will develop, for each MS4 construction project of one acre or greater in size, a Stormwater Pollution Prevention Plan (SWP3) that meets all requirements of OKR04 and applies to all municipal construction activities within the MS4's county limits. This option applies to all MS4 construction activities where the MS4 meets the definition of "construction site operator" as defined in OKR04.

Tulsa County will have potentially several types of construction activities in the future: 1) new buildings, 2) cleared and/or paved areas such as parking lots or park ball fields, and 3) utility line entrenchment. Tulsa County will either hire a contractor to perform the work or use county crews and equipment. Standard construction practices will be used on all projects. Local conditions include construction in accessible areas with sufficient easement and/or city ownership of property. Appendix C shows a map of the MS4 boundaries within which this option applies.

Tulsa County's Project Manager will ensure that the project-specific SWP3 is developed and a copy kept at the construction site for review. When Tulsa County hires a contractor to perform the work, the contractor will be required to prepare and maintain access to the SWP3, and this will be verified by the construction inspector or other MS4 official. The project site will be inspected as with any other construction project as described above in the SWMP. Part of this inspection process will be to ensure that all SWP3 requirements are being met. The MS4's SWP3 contents will meet all requirements of OKR04 Part VIII.

III.E. MCM 5: Post-Construction Management:

Post-construction stormwater management in new development and redevelopment focuses on implementation of controls and practices that are designed to maintain good water quality conditions after an area has been developed and after construction activities have been completed.

III.E.1 Best Management Practices for Post Construction Runoff Control

OKR04 Part IV.C.5.a(1) requires the MS4 to develop, "*strategies which include a combination of structural and/or non-structural BMPs appropriate for your community*". Appendix A lists the BMPs that will be used by Tulsa County to address the Post-Construction MCM including the Measurable Goals and implementation schedules for each BMP.

BMP Strategy: Tulsa County has developed the following strategy for addressing post-construction control of runoff:

- a. Attempt to maintain pre-development runoff conditions;
- b. Ensure that controls are in place that will prevent or minimize water quality impacts;
- c. Define pre-development not as conditions that existed before any manmade disturbance, but rather the condition of development that exists just prior to commencing the present development activities;
- d. Develop and implement structural and/or non-structural BMPs appropriate for the MS4 community;
- e. Implement BMPs that are appropriate for the local site conditions and selected to minimize water quality impacts;
- f. Review local codes and ordinances and identify barriers to Low Impact Development (LID), and remove those barriers that are incompatible with local community standards;
- g. Develop and Implement a program that ensures adequate long-term operation and maintenance of the BMPs;
- h. Develop and implement an education program for developers and the general public about the benefits of LID; and
- i. Encourage and provide incentives for implementation of LID practices by private developers before and during the building permit application and pre-design phases of projects.

Additional details of the Post-Construction BMP Strategy are presented below.

III.E.2 Ordinance

OKR04 Part IV.C.5.a(2) requires the MS4 to develop a Post-Construction ordinance to control pollutants in runoff from the final project once construction has been completed. Tulsa County cannot adopt ordinances, so a code will be adopted. Tulsa County will adopt a Post-Construction code which will be assessed and updated in the future as needed. Local code adoption and updating will involve:

- g. An initial code development and update action will be taken during the first year of OKR04 authorization.
- h. The initial process will compare model construction codes to existing County codes and drafting modifications that will be needed to local codes in the near future;
- i. Inspection and administrative staffing needs will be assessed, and additional resources will be sought, if needed, to ensure that the County will be able to implement all provisions in the codes;
- j. Local construction codes will be updated as needed;
- k. Code effectiveness will be assessed annually, and changes made when necessary.

III.E.3 Review Local Codes for LID Barriers

OKR04 Part IV.C.5.a(3) requires the MS4 to, *“Review local ordinances and regulations, and identify any legal/regulatory barriers to Low Impact Development (LID). Develop a schedule to remove those barriers that prohibit LID practices selected by the MS4, or provide a justification for each barrier not removed”*. Tulsa County will comply with this requirement by taking the following actions:

- a. Educate MS4 staff on LID practices and on the types of requirements in local codes that are barriers to implementing certain types of LID;
- b. Identify all of the local codes, policies, guidance and ordinances that must be reviewed.
- c. Review each of these, and list all LID-related provisions that must be considered further.
- d. Decide whether or not the LID-related provision in each code is a barrier to LID implementation.
- e. Assess each of the LID barrier code provisions that can be deleted or modified to make LID implementation possible or more beneficial.
- f. Prepare a summary of findings of the code research, including a list of recommendations for code changes.
- g. Develop a schedule for making the recommended code changes. Priorities can be assigned to the list of LID barriers to be removed, and the schedule can be done in phases. All changes must be implemented within 5 years of the effective date of OKR04.
- h. For each code the MS4 determines should not or cannot be changed, prepare a written justification as to why the barrier must stay in place.

III.E.4 BMP Long-Term Operation and Maintenance (O&M)

OKR04 Part IV.C.5.a(4) requires the MS4 to, *“ensure adequate long-term operation and maintenance of BMPs that are installed during and left in place after the completion of a construction project, including inspections of each BMP”*. ODEQ considers that this provision shall apply to both privately owned and public facilities, and that the provision applies to all types of flood control projects, including detention basins, not just to LID-type projects. ODEQ also considers that the inspections should be conducted as visual observations of each facility’s condition and adequacy of maintenance. Characteristics of the inspections are presented below.

O&M Inspection and Enforcement Program: Tulsa County will comply with this permit requirement by taking the following actions:

- a. Summarize all limitations and exclusions under existing codes and ordinances pertaining to entry on private property by the MS4. This will include the following:
 - 1) Research MS4 codes and ordinances and identify all rights and obligations of private owners to maintain the BMPs that will be included in this permit requirement.
 - 2) Compile a list of actions the MS4 can take under existing MS4 codes and ordinances to enforce O&M of privately owned BMPs.
 - 3) Determine the MS4's authority under existing codes and ordinances regarding the rights of entry to perform inspections of privately owned BMPs. This will include delineating any MS4 rights-of-way and easements that may apply to the private structure.
- b. Compile a list of all LID and flood control structures within the MS4 that are to be assessed.
- c. Research basic data and information about each structure, such as:
 - 1) Ownership of property and responsible party for maintenance.
 - 2) Type of structure.
 - 3) Purpose of structure and any associated land uses served by the structure (e.g., subdivision or commercial center).
 - 4) Watershed in which structure is located.
 - 5) Age and present estimated condition of structure.
- d. Prepare inspection schedules based upon priority of importance for protecting water quality.
- e. Conduct visual inspections of each structure according to priority schedule; including:
 - 1) Mowing and weeding;
 - 2) Sediment buildup and erosion;
 - 3) Fencing, pathways, signage, public safety;
 - 4) Evidence of vandalism;
 - 5) Structural integrity;
 - 6) Vegetation health, ground cover, rock, concrete surfaces;
 - 7) Inlet and Outlet damage, blockage, condition;
 - 8) Debris, tree limbs, trash buildup;
 - 9) Function of pervious surfaces.
- f. MS4-Owned Structures: Schedule and acquire resources and funding for making any needed repairs or upgrades.
- g. Privately-owned Structures: Within the authority granted by local codes and ordinances, negotiate with the private responsible party on the types of maintenance and upgrades that the MS4 has determined are needed, and take any enforcement actions allowable under local codes and ordinances for failure of the responsible party to perform the required tasks.

III.E.5 Education Program for Developers and the Public

OKR04 Part IV.C.5.a(5) requires the MS4 to, *“Participate in an education program for developers and the public about project designs that minimize water quality impacts, including LID strategies”*. Tulsa County participates in INCOG’s regional stormwater education program implemented on behalf of its Green Country Stormwater Alliance (GCSA). The GCSA website (www.stormwaterok.net) contains a number of public education materials and information about protecting water quality and about LID specifically that is periodically updated by INCOG.

The GCSA website has webpages that target developers and the public on many water quality protection issues. The GCSA website is periodically updated with new information as needed. In addition, Tulsa County, in cooperation with INCOG’s GCSA, helps sponsor water quality conferences and workshops that target developers and the public about water quality protection at construction sites, household chemicals, urban stormwater pollution issues, and the benefits of LID. Several of these MS4 activities are listed in Appendix A as specific BMPs under the Public Education and Public Participation MCMs.

INCOG prepares an annual summary GCSA Fact Sheet that reports on all of the LID education and outreach activities accomplished by INCOG on behalf of its GCSA members. These Fact Sheets are kept by each GCSA member in their stormwater files and attached to or summarized in their Annual Reports.

III.E.6 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will act as stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG’s GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Post-Construction Site Runoff Control program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG’s role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.E.7 Evaluating Program Effectiveness

OKR04 Part IV.C.5.a(7) requires the MS4 to, *“Evaluate the appropriateness of your identified BMPs for this MCM. Your evaluation shall verify compliance with permit requirements and more importantly, document that efforts have been made towards achieving your identified measurable goals and reducing the impacts of stormwater runoff from the small MS4 (as required by Part V.C of this Permit)”*, where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each post-construction BMP. These are listed in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from individuals and stakeholders in the development community, the general public and from agencies and organizations involved with construction and post-construction. Feedback from developers, the public, agencies and organizations (email, phone call, fax, letter or personal visit) including outputs and outcomes of education events will be recorded in writing. Tulsa County will record all post-construction site inspections and structural maintenance and improvements as described in this SWMP, including date, location, affected pollutants, observations, measurements, interviews, photos, field form data, abatement and enforcement steps taken, and results of each investigation and maintenance project. The increased number of structural maintenance and improvements made over a period of several years of BMP implementation and inspections conducted should demonstrate effectiveness of this MCM.

III.F. MCM 6: Pollution Prevention / Good Housekeeping:

The "Pollution Prevention / Good Housekeeping For MS4 Operations" Minimum Control Measure (MCM) addresses the operation and maintenance (O&M) of the MS4 and municipal facilities, and requires training of municipal employees. Performing municipal activities in a careful and proper manner prevents or reduces pollutant runoff. Municipal operations addressed by this "Good Housekeeping" MCM include parks and open space maintenance, buildings for storage and maintenance of fleet vehicles and other public works vehicles and equipment, new construction and land disturbances, and stormwater system maintenance.

Tulsa County will address OKR04 Part IV.C.6.a requirements with the following program. Appendix A contains a list of all BMPs for the Good Housekeeping MCM, along with Measurable Goals and implementation schedules for each BMP.

III.F.1 Employee Training and Education Program

OKR04 Part IV.C.6.a(1) requires the MS4 to implement, *"employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance"*. OKR04 Part IV.C.6.a(2) requires the MS4 to implement, *"a municipal employee training and education program that you will use to prevent and reduce stormwater pollution from MS4 activities"*. The following actions will be taken by Tulsa County to meet these permit requirements:

- a. Tulsa County participates in the INCOG regional GCSA program which includes periodic (at least every other year, and locally if requested) employee training on the following topics:
 - 1) Park and open space maintenance;
 - 2) Fleet and building maintenance;
 - 3) New construction and land disturbances;
 - 4) Stormwater system maintenance;
 - 5) Urban water quality, pollution and OKR04 requirements;
 - 6) Construction permit requirements under OKR10;
 - 7) OSHA requirements on MSD forms and labels;
 - 8) Storage and disposal of chemicals at city facilities; and
 - 9) Reporting of local pollution to municipal officials.
- b. INCOG's GCSA employee training 1-day workshops are held approximately three times per year. Certificates of Training and for engineer Professional Development Hours (PDH) are issued. At least once a year, INCOG provides ODEQ's 4-hour operator license renewal training certificates for one of the workshops.
- c. One or more meeting handouts are distributed by INCOG at the GCSA employee training workshops, or are emailed to GCSA members prior to each workshop.
- d. INCOG prepares GCSA Fact Sheets and GCSA News Bulletins annually on a variety of topics, many concerning pollution issues at municipal operations or within the MS4. These are distributed by email to GCSA members as well as posted on the GCSA website.
- e. INCOG has prepared a number of GCSA brochures, several of which pertain to municipal operations and educating city councils and county commissions about the OKR04 permit program. These are posted on the GCSA website in pdf format for download and local printing by each GCSA member.
- f. Tulsa County has placed several signs in work areas noting the proper way of disposing of waste materials.

INCOG's regional GCSA employee training workshops cover a wide variety of topics and issues facing stormwater permittees. These are presented as workshop themes, such as for field sampling and safety, OKR04-required training, construction site BMPs and OKR10, LID and post-construction in OKR04, stormwater 101 for new employees, and preparing documents and data management. Appendix A lists a number of employee training BMPs and BMPs for public education and outreach that include topics important for the Good Housekeeping MCM.

III.F.2 List of Industrial Permitted Facilities

Part IV.C.6.a(3) requires the MS4 to, "*Maintain a list of industrial facilities you own or operate that are subject to the DEQ Multi-Sector General Permit or individual OPDES or NPDES permits for discharges of stormwater associated with industrial activity that ultimately discharge to your small MS4*". The following facilities are owned and operated by Tulsa County that are subject

to the ODEQ Multi-Sector General Permit for Industrial Activities (OKR05) or individual OPDES or NPDES permits for discharges of stormwater associated with industrial activity that ultimately discharge to the MS4:

- None WWTP Auth. No. _____
- None Airport Auth. No. _____
- None Municipal Landfill Auth. No. _____
- None Power Plant Auth. No. _____

OKR04 Part IV.C.6.a(3) requires that, for each facility, the MS4, *"Include the authorization number or a copy of the Industrial NOI form for each facility. You must review this inventory annually and update as necessary"*. The authorization number (OKR05 permit number assigned by ODEQ) for each facility is provided above. Tulsa County will review the status of each permitted municipal facility annually and update the SWMP information as needed.

III.F.3 Controlling Pollutants from MS4 Systems and Facilities

Part IV.C.6.a(4) requires the MS4 to, *"Implement procedures for controlling, reducing or eliminating the discharge of pollutants from streets, roads, highways, parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas you operate"*.

To comply with this OKR04 requirement, Tulsa County will implement a program to control, reduce or eliminate pollutants discharged from the MS4. The following areas will be addressed:

- City streets and roads;
- Municipal parking lots;
- City maintenance and storage yards;
- City operated waste transfer stations;
- City fleet maintenance shops with outdoor storage areas;
- municipal salt/sand storage locations; and
- municipal snow disposal areas.

List of MS4 Facilities: The following facilities are owned by Tulsa County and are subject to the requirements of this MCM:

Facility	Location / Address	Notes
District #2 Maintenance Garage	5300 W 31 st Street South	Maintenance vehicles, public works vehicles, equipment, fueling station, service bays, outdoor stock pile of sand.
County Construction Maintenance Garage	6601 N. 115 th East Avenue	Public Works vehicles, equipment, service bays, fueling station, outdoor stock piles of sand and salt.

Procedures for Controlling Pollutants: The facilities listed above all pertain to the requirements in OKR04 Part IV.C.6.a((4)). They are herein categorized as to Municipal Facilities (e.g., buildings, parking lots, storage yards, etc.), and MS4 System (e.g., roads, streets, roadside ditches, culverts, and large stormwater conduits). Tulsa County will take the following actions to reduce or eliminate pollutants from these systems and areas.

Municipal Facilities:

- a. Tulsa County will perform an initial inspection of its facilities to determine potential pollutant sources via stormwater into the MS4;
- b. Where possible, all exposed materials will be moved under removable covers (e.g., tarps) or inside a building to prevent contact with stormwater runoff.
- c. For those materials that cannot be sheltered, such as salt piles for snow removal, structural BMPs will be used where feasible to control contaminated runoff from the storage areas. These will include use of silt fencing, grassy swales, sediment ponds and/or other measures as deemed appropriate.
- d. At least once a year, an inspection of these areas will be made to ensure that the BMPs and storage controls are deployed properly and working.

MS4 System:

- a. The public education MCM is expected to reduce the amount of trash and chemical pollutants placed on city streets. This program will include educating citizens about not disposing of chemicals and yard waste into the streets and drop inlets.
- b. Misdemeanant labor will also be used. Workers will be assigned from local courts to work with MS4 crews for trash pickups along streets when necessary.
- c. Tulsa County leases street sweeping equipment that is used at least 2 times per year to remove floatables, trash and sediment from streets.
- d. MS4 Public Works crews will be trained to report observed pollution problems and/or trash buildup on city streets and in the City's stormwater collection system. When reported, MS4 crews will remove debris and trash from streets and the MS4 system as necessary.
- e. Removed debris and waste materials will be disposed of by transporting the material to the City of Tulsa's Mulch Site for disposal. The material to be disposed of includes street sweeper collections, dredged material from drainage systems and creeks, sediment cleanups from streets and lots, floatables removed from culverts and streams, materials from drop inlet cleanouts, and other types of debris removed from the MS4 system.

III.F.4 New Flood Management Projects

Part IV.C.6.a(5) requires the MS4 to, *"Implement procedures to ensure that new flood management projects are assessed for impacts on water quality"*. Tulsa County will ensure that all municipally-owned new flood management projects are assessed for impacts on water quality. The City's Floodplain Administrator and Public Works staff will evaluate each proposed new municipal project for potential water quality impacts during the technical review of the proposed project plans and specifications. If it is feasible and cost effective to add water quality protection features to the project design, a recommendation will be made to incorporate the features before final plans are developed.

III.F.5 Inspection and Maintenance of BMPs

OKR04 Part IV.C.6.a(6) requires the MS4 to, *"Implement inspection/maintenance for structural and non-structural BMPs, including maintenance activities, maintenance schedules and long term inspection procedures for controls to reduce floatables and other pollutants discharged to your small MS4"*. This OKR04 requirement applies to municipally owned facilities under the Good Housekeeping MCM. Structural BMPs at municipal facilities include sediment basins, various types of containers for disposal of wastes and fluids, constructed swales and shallow depressions designed to collect runoff and allow infiltration, wet and dry detention basins having inlet and outlet structures, and various types of pervious surfaces used in parking lots and storage areas that allow infiltration of runoff.

Non-structural BMPs at municipal facilities include stormwater-related programs implemented by Tulsa County, including: preservation of open space; expanding disconnections of impervious surfaces; expansion of vegetation and natural systems; natural grass swales and other types of unconstructed, vegetated infiltration areas; and protection and expansion of riparian stream buffers.

BMP Maintenance: Structural BMP maintenance will be according to need and availability of funds and resources. High maintenance priority will be given to structures that have the greatest potential to improve water quality and have a high feasibility of success using available funds. Maintenance will be scheduled upon acquisition of funds and materials, and when manpower and necessary permits are obtained. Projects that have a low chance of improving water quality after maintenance will be considered for replacement or decommissioned. Tulsa County will make every effort to address maintenance issues identified in the BMP inspection program. Non-structural BMP maintenance, such as assessing ordinance effectiveness, will be made annually.

BMP Inspections: Tulsa County will inspect structural BMPs annually or within 4 hours after a report of a stormwater contamination problem at a municipal facility. Inspections of structural BMPs will rely upon visual indicators, such as accumulation of trash and debris, breaks and cracks, misalignments of headwalls and inflow and outflow devices, excessive accumulation of sediment, excessive erosion of slopes, failure of fencing and other public safety features, etc.

Inspections of non-structural BMPs will consist of annual reviews of stormwater programs and the corresponding codes and ordinances, and annual inspections of natural features within the MS4 such as riparian areas along creeks and natural swales and infiltration areas.

Results of all inspections and maintenance will be reported to the stormwater staff and recorded in computer and paper files. The Annual Report will include a summary of these activities.

III.F.6 Best Management Practices for Good Housekeeping

Appendix A contains a list of all BMPs that will be performed for this MCM, and includes Measurable Goals and implementation schedules for each BMP.

III.F.7 Management Responsibility

Tulsa County has overall project management responsibility. Berry Britton, an engineer with Tulsa County will serve as the stormwater manager and will coordinate all local activities and implementation of all program elements. INCOG's GCSA program will be managed by the Environmental and Energy Division at INCOG. Tulsa County will provide sufficient funds for INCOG to assist its GCSA members with their Good Housekeeping program. INCOG will submit an annual written scope of services to Tulsa County that will specify INCOG's role in providing technical support and activities, as well as maintain the GCSA stormwater web site on behalf of Tulsa County and other GCSA members.

III.F.8 Evaluating Program Effectiveness

OKR04 Part IV.C.6.a(9) requires the MS4 to, *"Evaluate the appropriateness of your identified BMPs for this MCM. Your evaluation shall verify compliance with permit requirements and more importantly, document that efforts have been made towards achieving your identified measurable goals and reducing the impacts of stormwater runoff from the small MS4 (as required by Part V.C of this Permit)",* where Part V.C is the requirement to submit an Annual Report. Tulsa County will employ the following strategy to assess program effectiveness in the Annual Report:

Measurable Goals have been established for each Good Housekeeping BMP. These are listed in Appendix A and include implementation schedules and milestones for each BMP. The Measurable Goals and target dates for the BMPs were selected by Tulsa County to accommodate local resources with the intent of establishing BMPs efficiently and cost effectively. Sufficient time was built into the implementation schedules to allow for corrective actions to be taken to have an improved program by the end of the permit cycle.

BMP effectiveness will be demonstrated by keeping records of feedback from city staff, the general public and from agencies and organizations using city owned facilities and impacted by the MS4 system conditions. Feedback from city staff, the public, agencies and organizations

(email, phone call, fax, letter or personal visit) including outputs and outcomes of education events will be recorded in writing. Tulsa County will record results of all Good Housekeeping site inspections and structural maintenance and improvements as described in this SWMP, including date, location, affected pollutants, observations, measurements, interviews, photos, field form data, abatement and enforcement steps taken, and results of each investigation and maintenance project. The increased number of structural maintenance and improvements made over a period of several years of BMP implementation and inspections conducted should demonstrate effectiveness of this MCM.

APPENDIX A: BEST MANAGEMENT PRACTICES FOR THE SIX MCMs

TABLE 1: BEST MANAGEMENT PRACTICES

BEST MANAGEMENT PRACTICES	PUB. ED.	PUB. PAR.	IL. DSCH.	CNST.	POST CNST.	GOOD HSKP.	PERSON RESPONSIBLE FOR BMP IF DIFFERENT THAN DESIGNATEE
Education Materials							
Water quality impacts from urban stormwater	X	X	X				
Household chemical disposal options	X	X	X				
Proper on-site sewage disposal system maintenance	X	X	X				
Chemical storage and disposal at businesses	X	X	X				
Construction / erosion control BMPs				X	X		
Builder Education on Construction Pollution			X	X	X	X	
Post-construction / erosion control BMPs					X		
County good house-keeping options						X	
How to become involved in stormwater program	X	X	X				
Recycling and re-use benefits	X	X	X				
Chemical storage and disposal at County facilities						X	
Training Topics for County Staff							
Storage and disposal of chemicals at County facilities			X			X	
Water quality impacts and regulations	X					X	
Data quality and data management			X				
How to conduct inspections effectively			X	X	X	X	
Stormwater and County activities						X	
MS4 Mapping							
Develop MS4 map with outfalls and streams			X				
Collect map data and set priority areas			X				

BEST MANAGEMENT PRACTICES	PUB. ED.	PUB. PAR.	IL. DSCH	CNST.	POST CNST.	GOOD HSKP.	PERSON RESPONSIBLE FOR BMP IF DIFFERENT THAN DESIGNATEE
Administrative							
Adopt illicit discharge ordinance			X				
Adopt construction ordinance				X			
Adopt post-construction ordinance					X		
Comply with state and local public notification	X	X					
Program to receive information from the public	X	X	X				
Site Plan review to include water quality				X	X		
Support regional agency-sponsored seminars	X	X	X	X	X	X	
Discuss Phase II in County Commission meetings	X	X	X	X	X		
Collect local and regional pollution data			X				
Develop regional stormwater web site	X	X	X	X	X	X	
Community Involvement							
Create display board for public meetings	X						
Create signs for community education	X						
Create signs for County work areas						X	
Blue Thumb school presentations	X	X					
Blue Thumb volunteer stream monitoring	X	X	X				
Blue Thumb stormdrain marking	X	X	X			X	
Blue Thumb stream cleanup events	X	X	X				
Promote household pollutant collection event	X	X	X				
Promote use of recycling centers	X	X	X				
Promote Adopt Your Watershed Program	X	X	X				
Distribute items with water quality logos	X						
Inspections							
Complaint investigations for MS4 system			X			X	
Source tracking of pollutants in MS4 system			X			X	

Inspection of construction sites and activities			X	X	X		
Good housekeeping inspections of County property			X			X	

* **INCOG/GCSA** = INCOG providing assistance to permittee as a GCSA member.

Note 1: Brochures include, pamphlets, flyers, fact sheets, and booklets. See **Table A** for present list of materials used by Tulsa County.

Note 2: Give-Away Items with GCSA logo and website address presently include: cups, pens, refrigerator magnets.

Note 3: Street Signs are metal signs with image of an aquatic theme with a message about protecting the watershed.

Note 4: Types of inspections and monitoring for all MCMs are listed in **Table B**.

Note 5: Pollution controls include a combination of public education, employee training, MS4 inspections and enforcement.

Note 6: GCSA Employee Training workshop topics are presented in **Table C**.

TABLE A: List of Brochures, Fact Sheets and Education Materials

Education Materials Used By Tulsa County *
General Public and Community:
EPA: After the Storm
EPA: Plug Into E-Cycling
EPA: Protecting Water Quality from Urban Runoff
EPA: The Solution to Pollution
EPA: Stormwater Structures and Mosquitoes Fact Sheet
GCSA: Oil, Grease and Fat
GCSA: How to Protect Your Local Watershed
Residential and Homeowner:
EPA: Greenscaping Your Lawn & Garden
EPA: A Homeowner's Guide to Septic Systems
EPA: Household Hazardous Waste: Steps to Safe Management
GCSA: Origins and Fate of PPCPs In the Environment Fact Sheet

GCSA: Community Car Wash Events Fact Sheet
GCSA: A Homeowner's Guide to Protecting Our Water
GCSA: A Homeowner's Guide to Recycling and Reuse
GCSA: A Pet Owner's Guide to Protecting Our Water
Municipal Employee and City Officials:
GCSA: Phase II Stormwater: Information for City and County Officials
GCSA: Handling and Disposal of Chemicals at Municipal Sites
GCSA: Green Country Stormwater Alliance
GCSA: Municipal Best Management Practices that Protect Our Water
Local Retailers and Businesses:
GCSA: A Retailers Guide to Pesticide Basics
GCSA: A Food Service Guide to Waste Disposal
Construction Industry:
GCSA: Final Stabilization at Construction Sites: OKR10 Requirements
GCSA: A Homebuilder's Guide to Erosion Control
OSU: Using Vegetation for Erosion Control on Construction Sites

** New materials for additional topics will be produced periodically.*

TABLE B: OKR04-Required Types of Inspections and Monitoring

Types of Inspections and Monitoring Performed by Tulsa County
Dry Weather Field Screening (DWFS) inspection program
Complaint-response inspection program of the MS4 system
Source tracking inspection program of pollutants in MS4 system
Construction site inspection program
Good housekeeping inspection program of city properties
Inspection program of pollutants of concern in high priority areas
Inspection program of long-term maintenance of LID BMPs
Inspection program for catch basins, streets, parking lots, etc.
Monitoring program to meet TMDL requirements

TABLE C: GCSA Employee and Community Training Topics

GCSA Training Topics Given for Tulsa County Employees & Officials
Urban water quality, pollution and stormwater permit requirements
Data quality and data management
Conducting inspections and monitoring; field safety
Hazardous Waste Operations and Emergency Response (HAZWOPER)
Test kits and environmental chemistry basics
Stormwater 101 for new employees and city officials
BMPs, low impact development (LID), and post-construction
TMDLs and 303(d) impaired waterbodies
Construction permit requirements and changes to OKR10
OSHA required training on MSDS forms and container labels
CLEET and environmental law for stormwater enforcement
Municipal parks and open space maintenance pollution control
Storage and disposal of chemicals at city facilities
Pollution control at municipal fleet maintenance
Pollution control for municipal land disturbance activities
Pollution control for MS4 maintenance (streets and drainage)
Looking for and reporting local pollution episodes by city crew and staff

TABLE D: Types of Pollution Signs Used at County Work Areas

Pollution Prevention Sign Topics Used by Tulsa County
Keep Dumpster Lids Closed
Do Not Dispose of Waste – Drains to Creek
Dispose of Chemicals Properly
Clean Up Spills Immediately
Do Not Wash Chemicals Into Floor Inlets

APPENDIX A, TABLE 2: MEASURABLE GOALS AND IMPLEMENTATION SCHEDULES FOR EACH BMP IN TABLE 1

Numbers for each year represent quarters in which BMP will be deployed: 1st = Jan-Mar; 2nd = Apr-Jun; 3rd = Jul-Sep; 4th = Oct-Dec.

BMP MEASURABLE GOALS AND IMPLEMENTATION SCHEDULES	Annual Measurable Goal	2016	2017	2018	2019	2020
1. Develop printed <u>education materials</u> , begin distribution at County hall, County maintenance areas, local businesses, local festival.	20 each type	All year	All year	All year	All year	All year
2. Attend regional <u>training seminars</u> of appropriate County staff and public works crews, 20% attendance goal first year.	20% of eligible staff and crew attend.	2 nd , 4 th	2 nd , 4 th	2 nd , 4 th	2 nd , 4 th	2 nd , 4 th
3. Review and update revised MS4 system <u>map</u> , receiving streams and outfalls.	Amendments to map if needed.	All year	All year	All year	All year	All year
4. Investigate changes to county zoning and building codes.	Review and update codes if needed.	Once per year.	Once per year.	Once per year.	Once per year.	Once per year.
5. Review usefulness of <u>public information process</u> and update, if needed.	Amendments if needed.	All year	All year	All year	All year	All year
6. Review and amend process for including water quality consideration in <u>site plan reviews</u> .	Amendments if needed.	All year	All year	All year	All year	All year
7. Promote and attend a <u>regional seminar</u> or conference on phase II stormwater or urban water quality issues.	At least 2 crew/staff attend.	Once per year	Once per year	Once per year	Once per year	Once per year
8. Discuss Phase II stormwater and stormwater quality topics in <u>public meetings</u> .	Outside agency report to County Commission.	Once per year	Once per year	Once per year	Once per year	Once per year
9. Collect local and regional <u>pollution data</u> from various resources.	Assist INCOG with GIS-based data on potential pollution sources.	All year	All year	All year	All year	All year
10. Help develop / participate in regional stormwater website.	INCOG, as needed	All year	All year	All year	All year	All year
11. Use regional <u>display board</u> for one or more public meetings.	1 mtg, yearly at T.C. Inspections office	2 nd	2 nd	2 nd	2 nd	2 nd

BMP MEASURABLE GOALS AND IMPLEMENTATION SCHEDULES	Annual Measurable Goal	2016	2017	2018	2019	2020
12. Encourage citizens and businesses to participate in EPA's Adopt Your Watershed program.	25 brochures	Develop	1 st	1 st	1 st	1 st
13. <u>Blue Thumb school education</u> program: promote and coordinate data.	1 event	2 nd	2 nd	2 nd	2 nd	2 nd
14. <u>Blue Thumb volunteer stream monitoring</u> program: promote and coordinate data.	12 monitoring events per year.	All year	All year	All year	All year	All year
15. Use GCSA website and brochures to educate builders on construction site pollution.	Website, 2 brochures	All year	All year	All year	All year	All year
16. <u>Blue Thumb stream clean-up</u> event: sponsor, County crew participate in local stream or roadside clean-up event.	Host/participate in local clean-up event.	2 nd	2 nd	2 nd	2 nd	2 nd
17. Household <u>Pollutant Collection Event</u> : promote and help fund County portion of regional.	Two regional events held.	2 per year.	2 per year.	2 per year.	2 per year.	2 per year.
18. <u>Recycling Center</u> : funding and promotion of local recycling center in County.	Materials recycled and brochures used.	Daily	Daily	Daily	Daily	Daily
19. <u>Give-away items</u> with water quality logos: distribute at public events and meetings.	Distribute 200 items during year.	Daily	Daily	Daily	Daily	Daily
20. Conduct Dry Weather Screening of MS4 Outfalls.	Inspect 25% of the Outfalls.	25%	25%	25%	25%	25%
21. Conduct <u>MS4 inspections</u> based upon incident reports and observations made by County crews.	Reduced number of problems	Daily	Daily	Daily	Daily	Daily
22. Conduct <u>construction site inspections</u> based upon incident reports and observations made by County crews.	Reduced number of problems	Daily	Daily	Daily	Daily	Daily
23. Conduct <u>inspections of County facilities</u> and maintenance yards for control of chemicals.	Reduced number of problems	2 per year.	2 per year.	2 per year.	2 per year.	2 per year.

Numbers for each year represent quarters in which BMP will be deployed: 1st = Jan-Mar; 2nd = Apr-Jun; 3rd = Jul-Sep; 4th = Oct-Dec

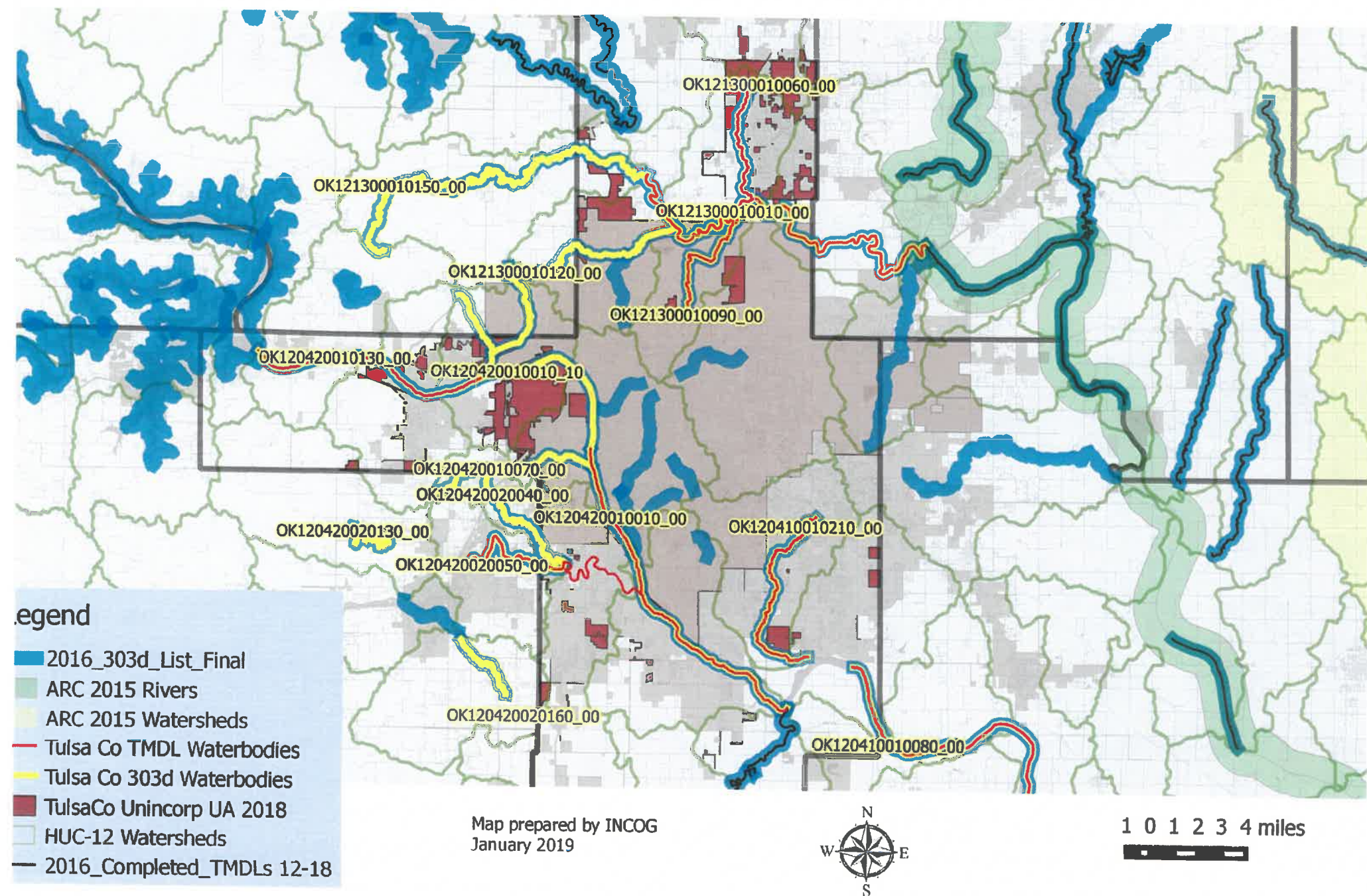
APPENDIX B: Documentation of Selection Criteria for Protected Species

Procedures for and Documentation of the Selection of Criteria to Meet Eligibility for Protection of Endangered Species per Part I.E. of OKR04

After comparing ARC delineations in Exhibit 1 with our MS4 boundaries, it was determined that no part of the MS4 lies within any portion of an ARC. Therefore we have no stormwater discharges that will likely affect endangered species or critical habitat.

APPENDIX C: Map of MS4 and Water Features

Tulsa County MS4 2016 303(d) and TMDL Waterbodies



APPENDIX D: Written Agreement(s) By Another Governmental Entity

INCOG SERVICES TO GREEN COUNTRY STORMWATER ALLIANCE (GCSA) MEMBERS

The following is a summary of services performed by INCOG annually on behalf of its GCSA membership. INCOG does not implement Minimum Control Measures as defined in the ODEQ stormwater permit (OKR04). The table identifies which activities are for technical research / assistance and which can be considered Best Management Practices to be claimed by GCSA members (employee training on OKR04-required topics and hosting the regional GCSA website at www.stormwaterok.net). OKR04's Part V.C.1.g requires a written agreement with "another government entity" if the permittee is relying on them "to satisfy some of your permit obligations". This document satisfies OKR04 Part V.C.1.g requirements.

INCOG Activity	BMP or Support	Notes
Co-host water quality and stormwater conferences	Support	Works with other agencies as co-host. Frequent speaker or line up other speakers for variety of topics.
Employee training workshops	BMP	Organize and hold workshops on OKR04-required topics.
Education materials	Support	Develop, acquire and make available to GCSA members. Post downloadable files on GCSA website.
Research legal and technical issues	Support	Research via document reviews, emails, meetings on all technical and legal issues important to GCSA members.
Maintain GCSA website	BMP	Annual refresh of website materials, updated as needed.
Prepare documents, templates	Support	Variety of technical documents for member support.
News Bulletins, Fact Sheets	Support	Prepares monthly GCSA bulletins and fact sheets on important stormwater topics for GCSA members.
LID education support	Support	Speaks at conferences, prepares documents on LID and co-hosts events on LID issues. Summarizes annually.
Mapping	Support	Prepares regional and MS4 maps for members, provides map data and GIS layers upon request.
Screening inspections	Support	Develops field forms; trains on equipment, procedures and safety; assists in field upon request.
GCSA member meetings	Support	Hosts 2-3 member meeting annually on numerous topics.

OKR04-Required Certification Statement:

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.



 INCOG Executive Director

1/19/16

 Date



Oklahoma Conservation Commission
Blue Thumb Water Quality Education Program
128 E. 3rd Avenue
Bristow, OK 74010
918-398-1804
<http://www.bluethumbok.com/>

January 25, 2016

Municipalities with OKR04 Permit Requirements

To Whom It May Concern:

The Oklahoma Conservation Commission's Blue Thumb Water Quality Education Program has two primary responsibilities; 1) support Blue Thumb volunteers who perform monthly chemical stream monitoring, benthic macroinvertebrate collections (winter and summer), and fish collections (every four or five years); 2) provide education to the citizens of Oklahoma on reducing the amount of nonpoint source pollution that enters our waterways. We work with many communities across Oklahoma to provide both of these services. In order to help you fulfill your stormwater permit requirements the Blue Thumb program can offer the following support services as another government entity for your permit:

1. Co-host water quality and stormwater conferences.
2. Develop and make available educational materials. Materials will be available on our website and cities can print these and distribute them.
3. Maintain Blue Thumb website with education information, instructional videos and calendar of events.
4. Train city employees and local volunteers to perform stream monitoring. Blue Thumb provides all equipment and supplies necessary to complete monthly chemical monitoring and Blue Thumb staff is involved in the biological collections and quarterly quality assurance sessions. Additionally, Blue Thumb staff works with volunteers (including city employees) to write data interpretations reports that are then made available to the public via our website.
5. Train city employees and help organize local volunteers to do a storm drain marking campaign. (We do not provide materials).
6. Provide tools, materials and staff to do outreach to schools and other entities within your community.

We hope these programs can help you meet requirements for your OKR04 permit and we look forward to working with you.

Sincerely,

Cheryl

Cheryl Cheadle, Blue Thumb Coordinator
Oklahoma Conservation Commission



January 13, 2016

Tulsa County
500 S. Denver
Tulsa, OK 74103

To Whom It May Concern:

The Metropolitan Environmental Trust (The M.e.t.) is a public trust authority set up with eleven governments to support its programs. Tulsa County is one of the eleven governments and beneficiary of such programs. Since 1994, The M.e.t. has provided bi-yearly collection events for the collection of household hazardous waste. The M.e.t. also has eleven drop-off recycling centers in the Tulsa County area. As part of the recycling drop-off program, we collect cooking grease, used motor oil, batteries, and potential floatables such as bottles and cans. Finally, The M.e.t. conducts related education through traditional/social media, educational events, and other personal educational opportunities. All of these items aid in our water quality issues.

Respectfully,

Graham Brannin
Executive Director



Williams Tower One, One West 3rd St., Suite 110 Tulsa, Oklahoma 74103 918/584-0584 www.MetRecycle.com
BIXBY BROKEN ARROW CLAREMORE COLLINSVILLE COWETA GLENPOOL JENKS OWASSO SAND SPRINGS TULSA TULSA COUNTY

APPENDIX E: ACRONYMS

Refer to OKR04 Part VII for a list of definitions of terms used in the OKR04 stormwater permit program. The following list of acronyms was compiled by INCOG. These pertain to contents of this SWMP and include terms involved with specific activities, such as assessing laboratory data and technical reports from other agencies.

%Sat	Percent saturation of dissolved oxygen in a water sample.
303(d)	Section 303(d) of the Clean Water Act requiring biannual assessment of beneficial uses.
BMP	Best Management Practice, particularly regarding pollution controls.
BOD	Biochemical oxygen demand; a test of potential for a water sample to use up oxygen.
BUMP	Beneficial Use Monitoring Program; OWRB's sampling program to support USAP.
°C	Degrees centigrade or Celsius; the most common unit of measure for temperature.
CBOD5	Carbonaceous BOD, incubated 5 days; common NPDES permit requirement for WWTPs.
CBOD20	CBOD incubated 20 days; equivalent to "ultimate" (maximum) CBOD in a water sample.
COE	US Army Corps of Engineers.
col/100mL	Colonies per 100 milliliters of water sample; a unit of quantification for bacteria samples.
COSWA	Central Oklahoma Storm Water Alliance.
CPP	Continuing Planning Process; a standards and procedures summary document.
CWA	Clean Water Act; more formally the Federal Water Pollution Control Act.
Diurnal	24 hour cycle, particularly related to how DO changes over a 24 hour period.
DMR	Discharge Monitoring Report; ODEQ's form for filing sampling results.
DO	Dissolved oxygen.
EA / EIS	Environmental Assessment / Environmental Impact Statement.
EPA	US Environmental Protection Agency.
FWS	US Fish and Wildlife Service.
GCSA	Green Country Stormwater Alliance; INCOG's coalition of stormwater permittees.
GIS	Geographic Information System; computer system that relates map features to data.
GPS	Global Positioning System; measuring x and y coordinates (location) from satellites.
HUC	Hydrologic Unit Code, used to classify watershed sizes.
INCOG	Indian Nations Council of Governments; 5-county Tulsa area sub-state planning agency.
LA	Load Allocation; nonpoint source numerical discharge quantity in a TMDL.
MCM	Minimum Control Measure; six categories of permit actions under EPA/ODEQ rules.
mg/L	Milligrams per liter; approximately equivalent to parts per million.
MS4	Municipal Separate Storm Sewer System; also used to designate a stormwater permittee.
NH3-N	Ammonia nitrogen; amount of nitrogen as ammonia.
NO2-N	Nitrite nitrogen; amount of nitrogen as nitrite.
NO3-N	Nitrate nitrogen; amount of nitrogen as nitrate.

NOI	Notice of Intent; application form and process to apply for stormwater permit coverage.
NPDES	National Pollutant Discharge Elimination System; federal discharge permit program.
NWI	National Wetlands Inventory by the US Fish and Wildlife Service
OAC	Oklahoma Administrative Code
OCC	Oklahoma Conservation Commission.
ODEQ	Oklahoma Department of Environmental Quality.
OKR04	ODEQ's stormwater general permit for small MS4s.
OKR05	ODEQ's stormwater general permit for industrial activities.
OKR10	ODEQ's stormwater general permit for construction activities.
OPDES	Oklahoma Pollutant Discharge Elimination System; the state discharge permit program.
OWRB	Oklahoma Water Resources Board.
QAPP	Quality Assurance Project Plan; formal documentation about ensuring data integrity.
RCRA	Resource Conservation and Recovery Act; for control of hazardous substances.
SOP	Standard Operating Procedure; description of repetitive tasks such as inspections.
s.u.	Standard Unit for pH measurements.
SWMP	Stormwater Management Program document required by stormwater permits.
SWP3	Stormwater Pollution Prevention Plan; required by construction stormwater permit.
TDS	Total dissolved solids; reflects on presence of salts and conductivity in a water sample.
TKN	Total Kjeldahl Nitrogen; amount of organic nitrogen plus ammonia in a water sample.
TMDL	Total Maximum Daily Load; study accounting for all point and nonpoint sources.
TP	Total phosphorus.
TRI	Toxics Release Inventory; national database of releases of over 650 chemical types.
ug/L	Micrograms per liter; approximately equivalent to parts per billion.
USAP	Use Support Assessment Protocol; methods used in 303(d) assessments.
USGS	United States Geological Survey.
WBID	Waterbody Identification; Oklahoma's system of classifying streams.
WLA	Wasteload allocation; point source numerical quantity in a TMDL and discharge permits.
WQS	Water quality standards.
WWTP	Wastewater treatment plant; also referred to as POTW (publicly owned treatment works).

