

A serene sunset scene over a body of water. The sun is low on the horizon, casting a golden glow across the sky and reflecting on the water's surface. Silhouettes of trees and bushes are visible along the shoreline in the background.

# Benefits of Regional Coalitions in Stormwater Program Management

*Richard Smith, INCOG Contractor*  
*OCLWA Annual Conference*  
*April 4-5, 2018*

# *INCOG Background*

INCOG is 1 of 11 “Substate Planning Districts” in Oklahoma.

## **INCOG:**

Voluntary  
Regional Planning  
Tulsa Metro

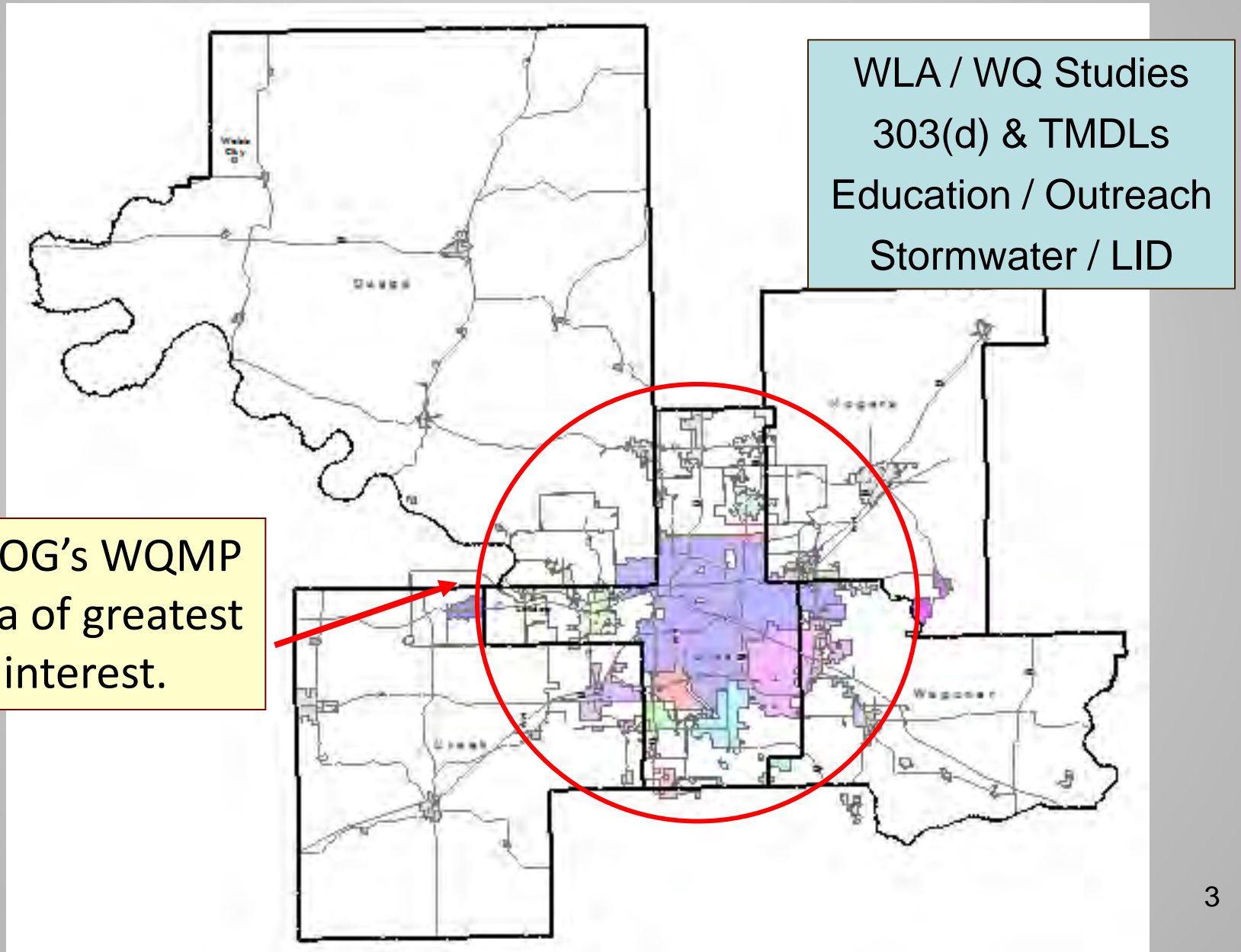
## **Services:**

Transportation  
Alt. Energy  
Water Quality  
Zoning / Code  
Community

## **Membership:**

Over 50 Cities & 5 Counties  
Creek, Osage, Cherokee Nations

# *INCOG's WQ Planning Area Since 1974*



# *INCOG's State & Regional Network*

## State / Regional Work Groups:

- ODEQ's 303(d) TMDL Work Group
- ODEQ's Stormwater Permit Work Groups
- OWRB's WQS and Wetlands Work Groups
- OCC's Nonpoint Source Work Group
- EPA's Nutrient Regional Technical Advisory Group
- Tulsa Regional Water Planning Steering Committee

## Board Memberships:

- Oklahoma Clean Lakes & Watersheds Association
- Tulsa Area Conservation Foundation

## INCOG Associations:

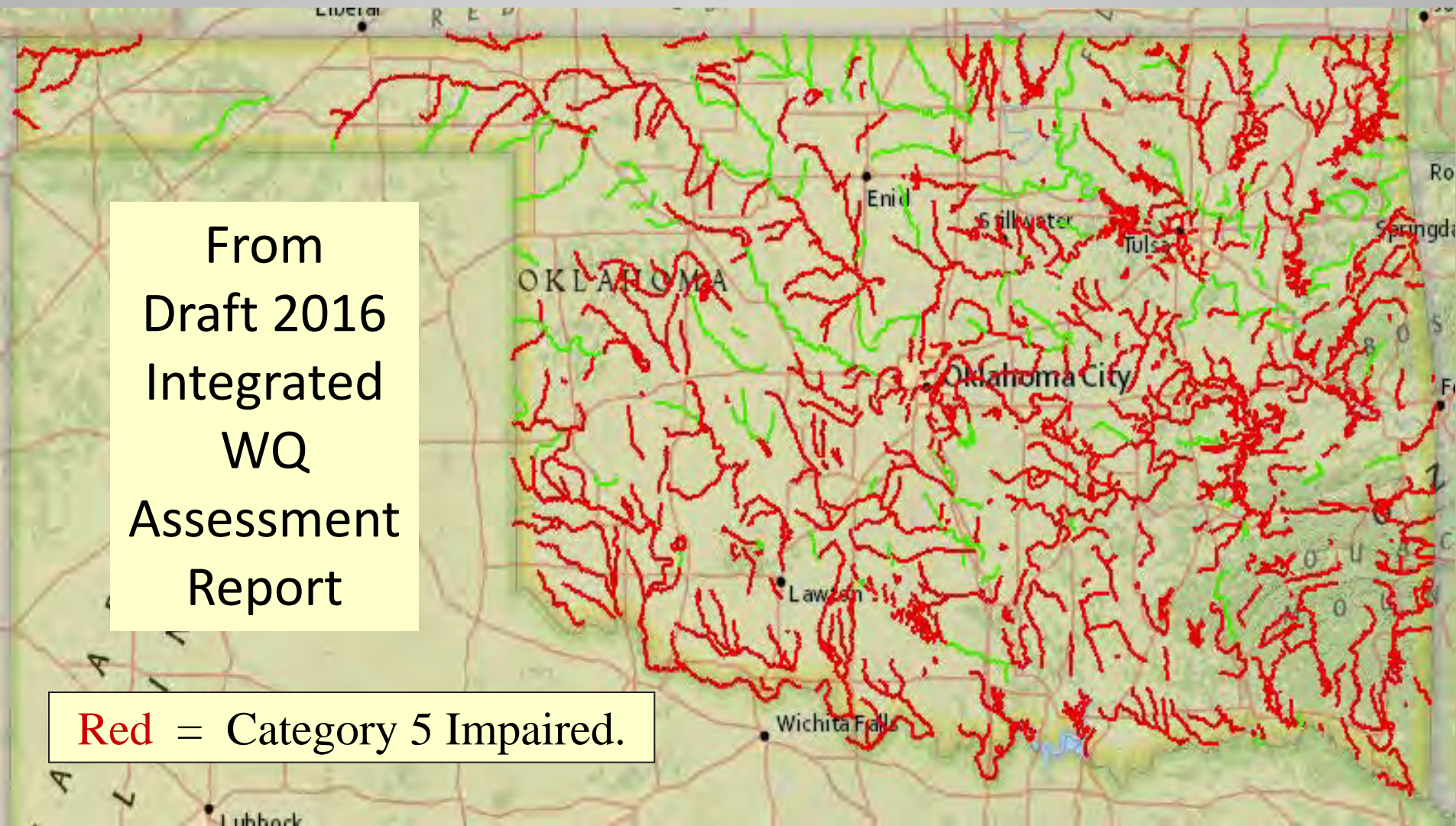
- **Green Country Stormwater Alliance (GCSA)**
- Arkansas River Master Plan & Development



# *303(d) Impaired Waters in Oklahoma*

From  
Draft 2016  
Integrated  
WQ  
Assessment  
Report

**Red** = Category 5 Impaired.

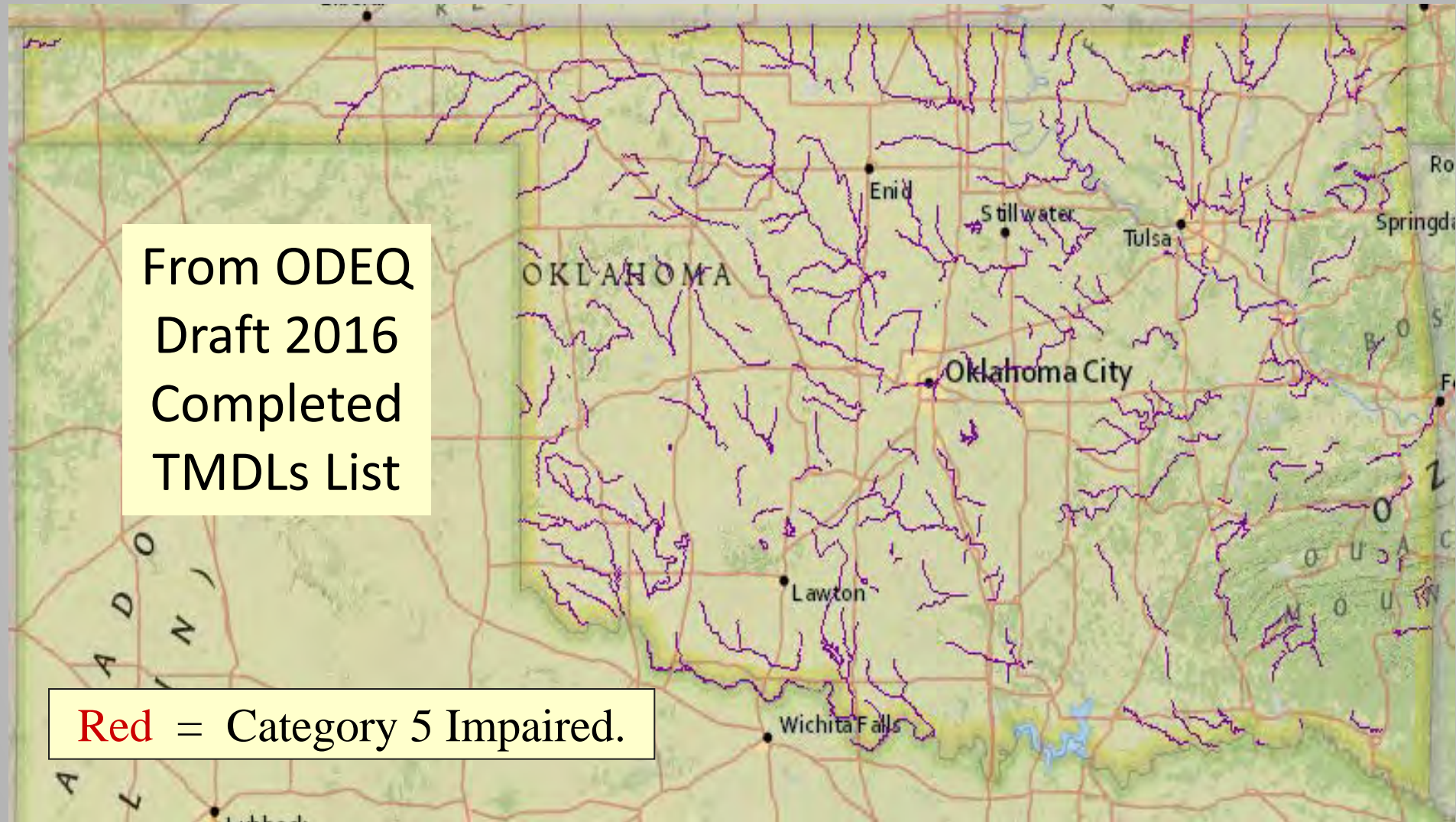




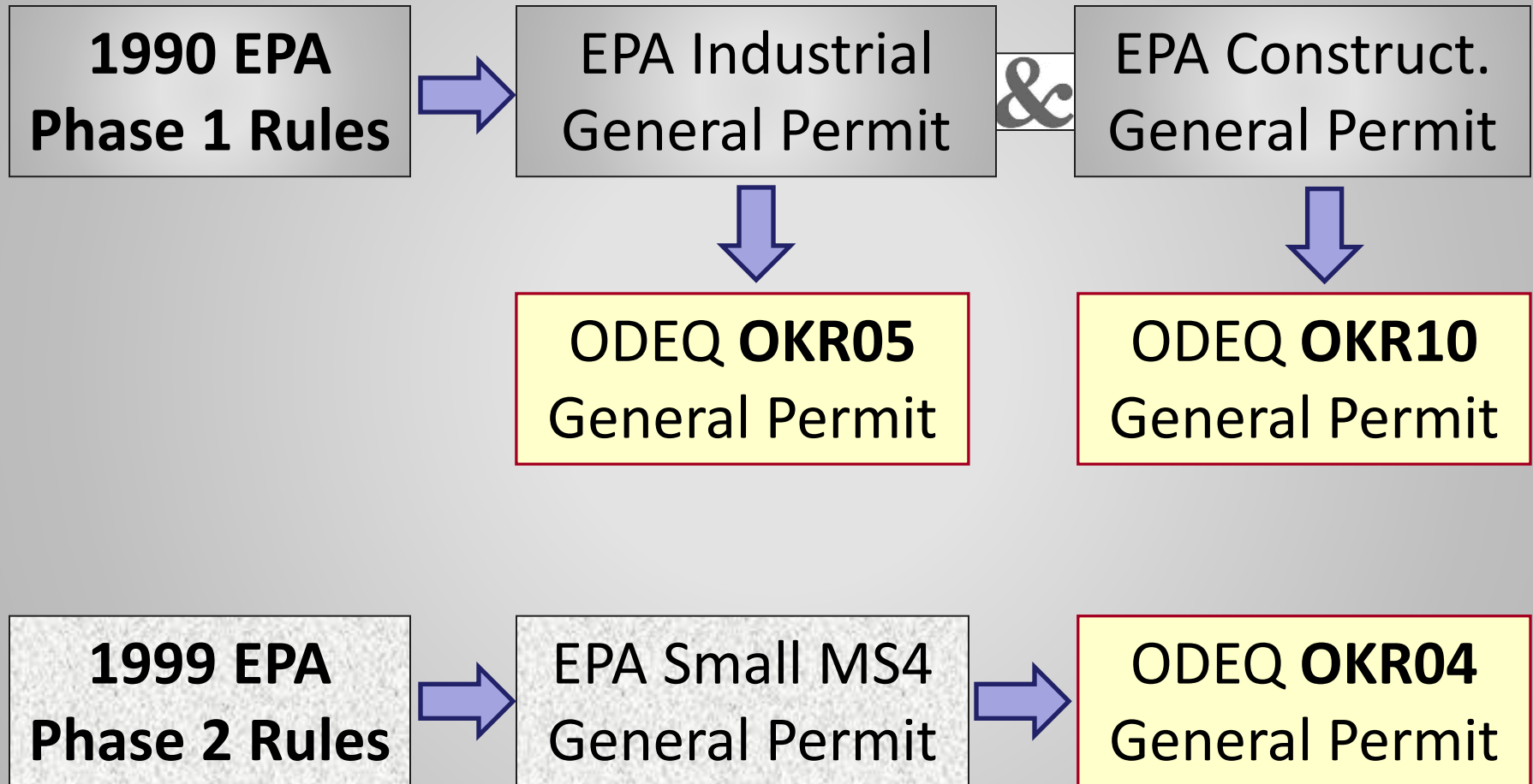
# *Completed TMDLs in Oklahoma*

From ODEQ  
Draft 2016  
Completed  
TMDLs List

**Red** = Category 5 Impaired.



# *History of EPA Rules and State Permits*





# *Phase II Stormwater (OKR04 Permit)*

*INCOG Began Stormwater Support in 2000.*



*EPA's 1999 Final Rules.  
What services could  
INCOG provide ?*

*Education Outreach  
Technical Help  
Permit Compliance*





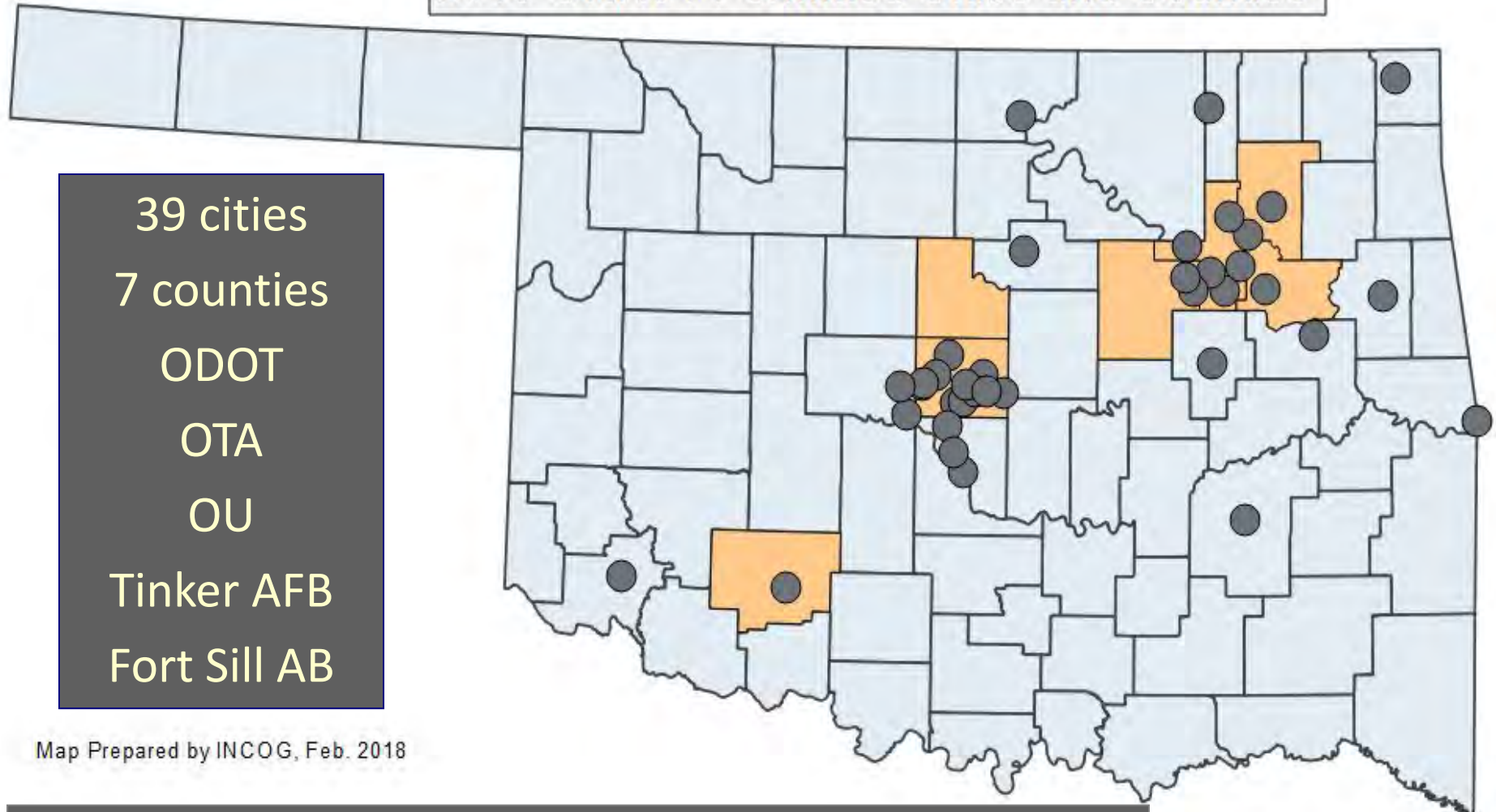
# *OKR04's Six "Minimum Control Measures"*

1. Public Education and Outreach
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Runoff Control
6. Pollution Prevention and Good Housekeeping

*OKR04 has many more requirements, e.g., 303(d), TMDLs, LID, protected species and local enforcement.*

# 2015 Phase II Stormwater Permittees

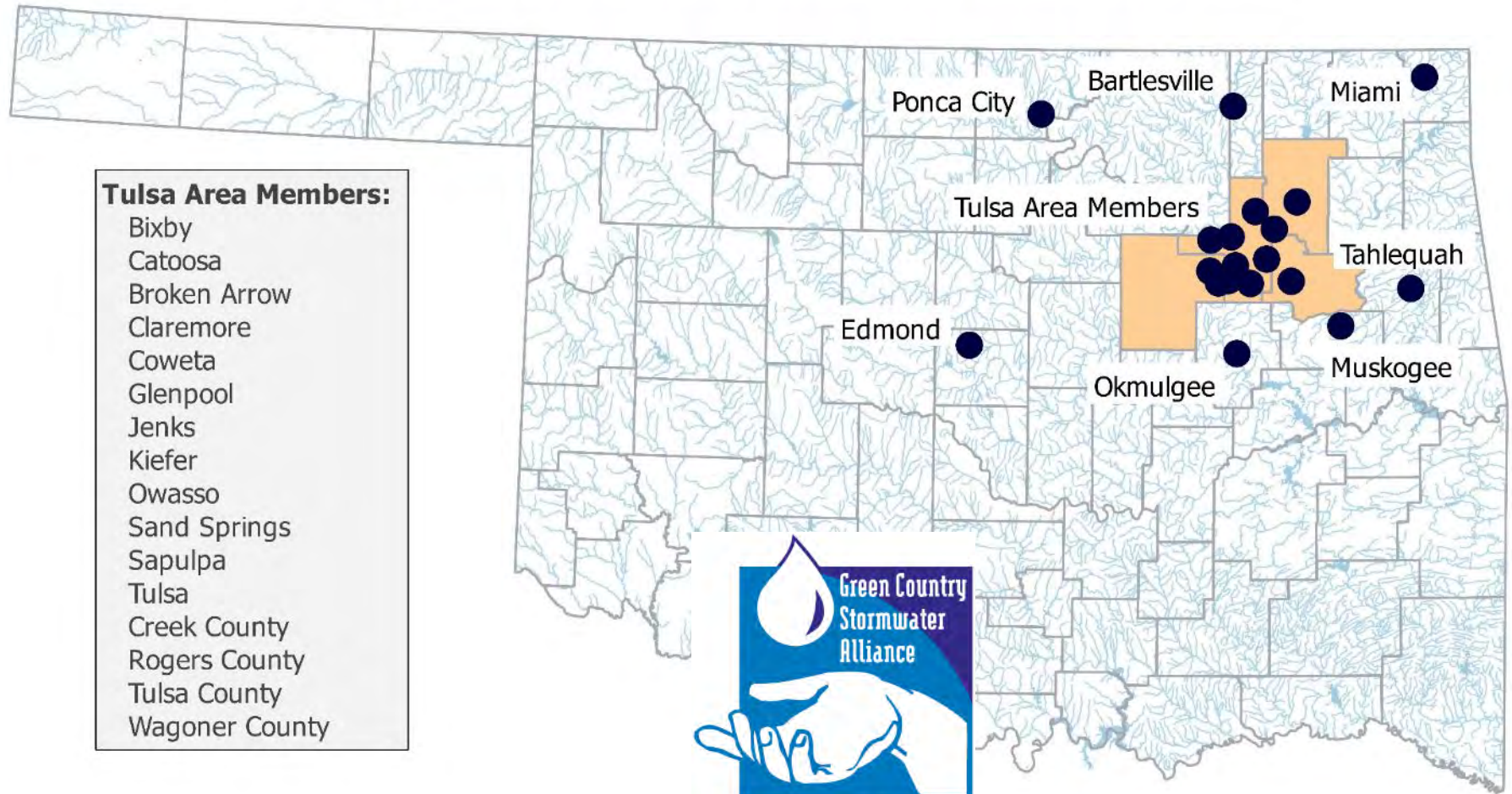
2015 OKR04 Permitted Cities and Counties



Map Prepared by INCOG, Feb. 2018

5-Year waivers were granted to several others

# *GCSA Members for FY2017-18*





# INCOG Regional Stormwater Assistance

Goal – address those Phase II activities that are suited to a regional approach.

- *Public Education and Participation Materials and Activities;*
- *Regional Mapping and Data Management;*
- *Assistance with MS4 Inspection Programs;*
- *Regional stormwater website;*
- *Help with local ordinances and amendments;*
- *Assist with Annual Reports and SWMP amendments;*
- *Employee Training Programs;*
- *Research technical issues and make reports to GCSA.*

INCOG's GCSA focus is on OKR04, but some support provided for OKR05 and OKR10 compliance.

# *GCSA Templates and Procedures*

- The OKR04 permit requires **many types** of documents and written procedures.
- INCOG prepares templates for these, with guidance.
- INCOG hosts workshops on use of the templates.
- INCOG prepares documentation on OKR04-required written procedures and hosts training workshops.
- This is an on-going challenge for stormwater permittees; it requires much research to know.
- There are no existing sources for much of what is needed.

# *Assist with Mapping MS4*

*Receiving Streams  
System & Outfalls  
Open Channels, Pipes  
Detention Ponds  
Watersheds*





# *Education and Outreach to GCSA*

- Turnover of GCSA stormwater staff is frequent.
- Information overload requires periodic refreshing.
- INCOG uses a variety of GCSA outreach media:
  - *News Bulletins*
  - *Fact Sheets*
  - *Announcements*
  - *Emails*
  - *Self-Teaching Modules*
- INCOG hosts at least quarterly GCSA meetings, some of which are 1-day Employee Training Workshops.
- Developing a “Transition Plan” to help new staff.
- INCOG incorporates its other WQ work into GCSA.

# *Help Plan and Co-Host Conferences*

- INCOG networks with state and federal agencies to help plan and co-host conferences and seminars.
- INCOG hosts ODEQ speakers for local workshops whenever ODEQ re-issues any of their stormwater permits.
- INCOG presents information about GCSA and stormwater programs at state venues.
- INCOG's GCSA Contacts List extends to agencies and consultants working on behalf of GCSA members.

# *GCSA Member Employee Training*

- Material storage and disposal in the workplace.
- Chemical handling at municipal operations (e.g., fleet maintenance).
- Data quality and quality assurance.
- 303(d) and TMDL requirements in stormwater permits.
- Hazardous Waste Operations and Emergency Response (24h & 8h HAZWOPER).
- Dry weather field screen and source tracking inspections.
- Chemical data interpretation, biological indicators.
- Sampling conditions and requirements, field safety.
- Regulations and permit requirements.



# *GCSA Work Groups and Issues*

- Ordinance Work Group
- Inspection Work Group
- Researched numerous technical issues:
  - *Power washing of parking lots and service bays.*
  - *Commercial lawn care (fertilizers and pesticides).*
  - *Community charity car washes.*
  - *Implementing Smart Growth and LID.*
  - *Fire-fighting impacts on water quality.*
  - *Winter road salt application impacts on water quality.*
  - *Swimming pool draining.*
  - *Developing program costs for local stormwater programs.*
  - *TMDL and 303(d) impacts on local stormwater programs.*

# GCSA Issues (cont.)

- Dry weather field screen monitoring and inspection programs.
- How to conduct water quality monitoring.
- Construction site BMPs.
- Developing map features and selecting mapping tools.
- Legal issues and liabilities of stormwater program actions.
- Data management, quality assurance and communication issues.
- Safety of chemical exposure at work sites.
- Safety aspects of field work.
- Mosquito spraying in neighborhoods and drainage systems.
- Yard waste water quality impacts and proper disposal.
- Pet waste management and bacteria pollution in urban areas.
- Pollution from vehicle maintenance (private and commercial).

# GCSA Website for Citizens & Permittees

[www.stormwaterok.net](http://www.stormwaterok.net)

GCSA Program Background
GCSA Member Communities
Educational Materials
Getting Involved
Household Pollutant Collection
Internet Resources
Recycling
Resources for Construction
Resources for Homeowners
Resources for Local Businesses
Oklahoma Water Plan
Stormwater Permit Basics
Water Quality in Northeast Oklahoma
Resources for Phase II Permittees

Stormwater Permittee Main Page
What's New for Permittees
Forms
Permittees in Oklahoma
Regulations
Guidance Documents and Resources
PowerPoint Presentations



**GreenCountryStormwaterAlliance**  
Give Clean Water a Helping Hand

*Website is undergoing extensive revision in 2018.*



# Public Education and Participation



Booths at local festivals and events  
Stormdrain marking  
Volunteer stream monitoring  
Brochures, newsletters  
Pens, cups, magnets, clips, openers

Adopt a watershed  
Adopt a stream  
Household Pollutant Collections  
Scouts, Camp Fire, etc.  
Local school clubs & classes

**Clean-ups**

*TV, Radio, Print – future?*



# Blue Thumb Program

(Public Education and Volunteer Monitoring)



*"Dump No Waste Drains to River"*





# Purchase of Education Materials



Display board, light bar,  
signs and case



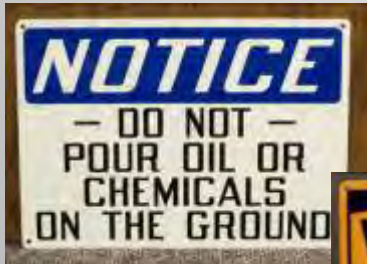
Watershed signs



GCSA Brochures



Give-away items  
with logos



Signs for city facilities





# *Dry Weather Field Screen and Construction Site Inspections*



*Visual  
observations*

*Chemical test  
kits*

*Forms &  
Documentation*

*Interpretation &  
follow-up*

# *Source-Tracking and Facility Inspections*



*OKR04 requirements*

*Starting local programs*

*Adopting local codes*



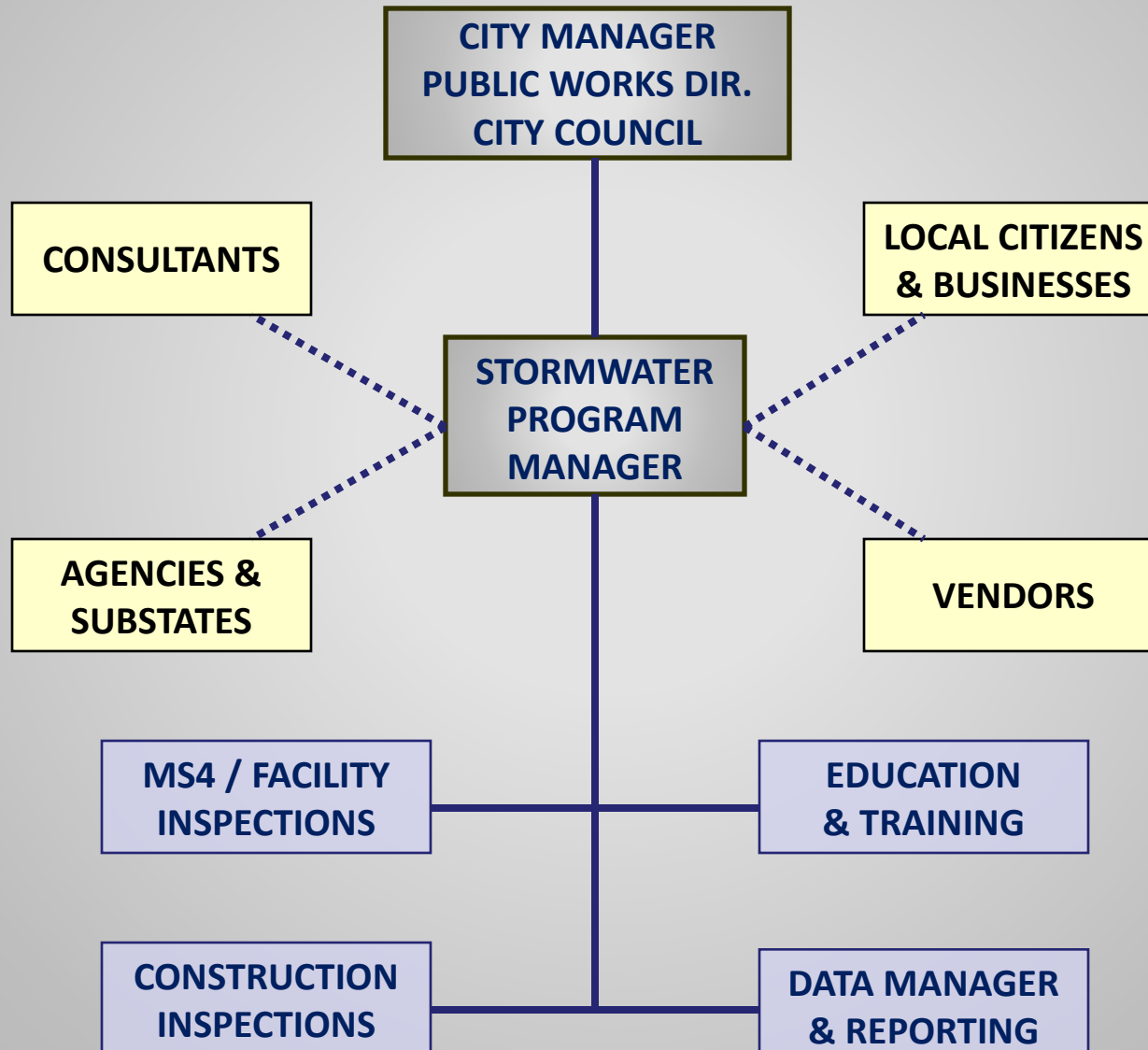
*Training & Resources*

*Field Safety*

*Enforcement*



# *Educating New Local Staff*





# PHASE 2 STORMWATER SPREADSHEET FOR CALCULATING PROGRAM COSTS

Manhour Unit Cost (salary, fringe, indirects):						Total Cost	
Item	Unit	Annual Cost	Annual Manhours	Manhour Total Cost			
<b>PUBLIC EDUCATION / PARTICIPATION</b>							
Use Display Board at Public Events			20	\$600			
Distribute Brochures / Flyers			40	\$1,600			
Coordinate Stormwater Marking			40	\$1,600			
Coordinate Volunteer Monitoring			40	\$1,600			
Coordinate School Education Events			40	\$1,600			
Coordinate Local Public Meetings			40	\$1,600			
Provide Low Impact Development			40	\$1,600			
Host Public Water Quality Meetings			40	\$1,600			
BMP Record-keeping			40	\$1,600			
Cost: Newspaper Ads / Articles	2	\$300		\$600			
Cost: Radio / TV Announcements	2	\$500		\$1,000			
Cost: Print Education Materials	1000	\$0		\$0			
Cost: Display Board / Table	1	\$800		\$800			
Cost: Graphic Art/Work Contract	1	\$700		\$700			
					340	\$15,350	
<b>CONSTRUCTION INSPECTIONS</b>							
Initial Inspections			120	\$4,800			
Enforcement Actions			100	\$4,000			
Closure of Episodes			80	\$3,200			
Coordinate Events with CDEQ			20	\$800			
BMP Record-keeping			40	\$1,600			
					300	\$13,600	
<b>DRY WEATHER FIELD SCREENING</b>							
Location of Outfalls			180	\$6,000			
Annual Outfall Inspections			100	\$4,000			
Map Preparation / Updates			100	\$4,000			
BMP Record-keeping			20	\$800			
					370	\$14,800	
<b>SOURCE TRACKING INSPECTIONS</b>							
Initial Inspections			200	\$8,000			
Enforcement Actions			100	\$4,000			
Follow-up Inspections			100	\$4,000			
Closure of Episodes			60	\$2,400			
Coordinate Events with CDEQ			20	\$800			
BMP Record-keeping			20	\$800			
					500	\$20,000	
<b>FACILITY INSPECTIONS</b>							
Maintenance Facilities							
Park and Recreation Areas			4	\$160			
Ball Courts			4	\$160			
Storage Areas			4	\$160			
Wastewater Treatment Plant			4	\$160			
Water Treatment Plant			4	\$160			
BMP Record-keeping			20	\$800			
					44	\$1,760	
<b>EQUIPMENT (Items over \$500)</b>							
Cost: Field Test Kits (test chemistry)	4	\$600		\$2,400			
Cost: Field Test Instruments (probes)	2	\$1,000		\$2,000			
Cost: Computer	1	\$1,500		\$1,500			
Cost: Computer Upgrades / Supplies	1	\$500		\$500			
Cost: GPS Unit and Supplies	1	\$1,500		\$1,500			
Cost: Vehicle (annual)	1	\$1,200		\$1,200			
Cost: Stormwater Gauge	1	\$3,000		\$3,000			
Cost: GIS or Other Map Software	1	\$2,000		\$2,000			
					0	\$14,100	
<b>SUPPLIES (Items under \$500)</b>							
Cost: Field Test Kits	4	\$200		\$800			
Cost: Sampling Devices	4	\$100		\$400			
Cost: Set of Sample Bottles	1	\$50		\$150			
Cost: Set of Chemicals for Test Kits	1	\$200		\$200			
Cost: Sample Preservatives	1	\$50		\$50			
Cost: Field Safety Supplies	1	\$100		\$100			
Cost: Purchase Documents	5	\$20		\$100			
Cost: Office Supplies	50	\$5		\$250			
Cost: Stormdrain Markers	50	\$8		\$400			
Cost: Volunteer Monitoring Test Kits	1	\$600		\$600			
					0	\$3,300	
<b>HAZMAT CLEANUP COSTS</b>							
Employee Involvement							
Cost: Unrecoverable cleanup costs	2	\$200		\$400			
Cost: Minor spill cleanup costs	3	\$200		\$600			
Cost: Materials and Supplies on Hand	5	\$200		\$1,000			
Cost: HAZWOPER Training	1	\$500		\$500			
					80	\$5,000	
<b>HOUSEHOLD POLLUTANT COLLECTIONS</b>							
Employee Participation							
Cost: MEI Annual Fee	1	\$2,000		\$2,000			
Cost: Local Events Space Lease	1	\$500		\$500			
Cost: Disposal for Local Events	1	\$2,000		\$2,000			
					20	\$5,300	
<b>TRASH PICKUP DAYS</b>							
Employee Participation							
Cost: Local Events Space Lease	1	\$500		\$500			
Cost: Disposal for Local Events	1	\$2,000		\$2,000			
					20	\$3,300	
<b>STREET SWEEPING</b>							
Employee Participation							
Cost: Trucks and Equipment (annual)	1	\$5,000		\$5,000			
Cost: Disposal of Debris	1	\$1,000		\$1,000			
Cost: Maintenance of Equipment	1	\$2,000		\$2,000			
					100	\$12,000	
<b>STORM SYSTEM MAINTENANCE</b>							
Employee Participation							
Cost: Trucks and Equipment (annual)	1	\$3,000		\$3,000			
Cost: Disposal of Debris	1	\$500		\$500			
Cost: Maintenance of Equipment	1	\$1,000		\$1,000			
					100	\$5,500	
<b>LABORATORY SERVICES</b>							
Employee Negotiations with Lab							
Cost: Metals	10	\$20		\$200			
Cost: BOD / COD / TOC	10	\$40		\$400			
Cost: Nutrients	10	\$20		\$200			
Cost: Organics	5	\$100		\$500			
Cost: Petroleum Screening Tests	10	\$50		\$500			
Cost: Minerals	5	\$20		\$100			
Cost: Other Misc. Pollutant Tests	10	\$20		\$200			
					40	\$3,700	
<b>ENGINEERING / CONSULTING SERVICES</b>							
RFP Preparation / Bids							
Overnight of Contract / Progress							
Cost: Contract Price	1	\$5,000		\$5,000			
					40	\$5,600	
<b>ADMINISTRATIVE</b>							
Attend Stormwater Meetings							
Attend Training Classes							
Record-keeping							
Annual Report							
Audit							
Reports to Management							
Reports to Citizens / Media							
Research Issues							
Acquiring supplies / data							
Receiving / Processing Complaints							
Develop / Amend Ordinances							
Software Training							
Create / Update Forms							
Cost: Employee Travel Expenses	1	\$500		\$500			
Cost: Employee Certifications	2	\$100		\$200			
Cost: Dues to Green Co. Stw. Alliance	1	\$3,500		\$3,500			
					600	\$28,200	
<b>PROGRAM TOTAL:</b>							
					2,554	\$156,510	
					manhours	cost	

## Developed Program Cost Estimator

Covered manpower, printing, consultants, waste disposal, supplies, lab, admin. and annualized major purchases (e.g., trucks).

# *Thank You !*

## *For More Information:*

Vernon Seaman  
INCOG

Two West 2<sup>nd</sup> St.  
Suite 800

Tulsa, OK 74103

[vseaman@incog.org](mailto:vseaman@incog.org)

(918) 579-9451

### Stormwater Services

Richard B. Smith

Stormwater & Water Quality Consultant

(918) 636-3460 (cell)

stormwaterRS@gmail.com