Future OKR04 Changes and Possible New EPA Regulations

Green Country Stormwater Alliance

Employee Training Workshop

September 10, 2013

Tulsa Technology Center, Broken Arrow

Status of OKR04 Renewal

This timeline may change.

January 2014: Draft OKR04 is finalized.

January 2014: ODEQ letters to permittees: 90 days to submit NOIs. New permittees have 180 days.

April 2014: NOIs sent to ODEQ by existing permittees.

May 2014: ODEQ starts issuing Discharge Authorizations to existing permittees.

July 2014: NOIs sent to ODEQ by new permittees.

August 2014: ODEQ starts issuing Discharge Authorizations to new permittees.

Important EPA Definitions

These definitions likely will not change.

MS4

40 CFR 122.26(b)(8) "municipal separate storm sewer [system] means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains)…"

Illicit Discharge

40 CFR Part 122.26(b)(2) "Illicit discharge means any discharge to a municipal separate storm sewer that is not composed entirely of storm water…"

What's Driving the New EPA ?

Historically:

- 1990 & 1999 – Phase I & II regulations.
- EPA guidance, memorandums, etc.
- General Permits for each State.

Now:

- Construction ELG's = rulemaking.
- Lawsuits = court mandates.
- Continued urban pollution & 303(d) problems.
- Fear of more TMDL lawsuits.
- New types of TMDLs that address urban NPS.
- National Research Council's stinging report.
- Political climate in Washington.

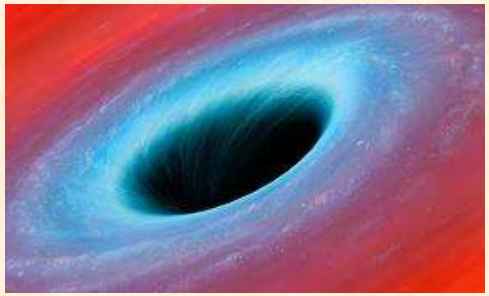
NRC Report to EPA

Quotes from NAS' National Research Council 2008 Press Release.

- The volume of discharges is generally not regulated at all by EPA.
- permit programs could be predicated on … changes in impervious cover.
- conserving natural areas, reducing hard surfaces …, and retrofitting urban areas with features that hold and treat stormwater.

The NRC Report appears to be strongly influencing EPA's justification for new guidance, MOUs and possible rulemaking.

Future Stormwater Rules and Permits



New EPA Rulemaking: (when? What?)

- ~~Draft 6/10/2013 & final 12/10/2014.~~
- Will address NRC criticisms and EPA's new strategy.
- Will focus on LID and flow attenuation.

Revised General Permits:

- OKR05 (industrial activities) finalized 9/5/11.
- OKR10 (construction activities) finalized 9/13/12.

OKR04 (Phase II MS4s) finalized in early 2014?

EPA's New Stormwater Rule Concepts

- More permittees, larger areas covered by permits.
- Create federal LID and GI requirements for new development and redevelopment.
- Same requirements for all MS4s; no more Phase I or II rules.
- Retrofitting existing storm systems and drainage areas to reduce runoff.
- Special stormwater provisions to protect sensitive areas.

Current Standards for Volume Retention

State or Locality (date enacted)	SizeThreshold	Standard
Vermont (2003,draft 2010)	1acre	Capture 90 percent of the annual storm events.
New Hampshire (2009)	1 acre/100,000 sq ft outside MS4	Infiltrate, evapotranspireor capture first1.0 inch from 24-hr storm.
Wisconsin (2010)	1acre	Infiltrate runoff to achieve 60% -90% of predevelopment volume based on impervious cover level.
West Virginia (2009)	1 acre	Keep and manage on site 1" rainfall from 24-hour storm preceded by 48 hours of no rain.
Montana (2009)	1 acre	Infiltrate, evapotranspire, or capture for reuse runoff from first 0.5" of rain.
Portland,OR (1990)	500 sq ft of impervious cover	Infiltrate 10-yr, 24-hr storm.
Anchorage,AK (2009)	10,000 sq ft	Keep and manage the runoff generated from the first 0.52 inches of rainfall from a 24 hour event preceded by 48 hours of no measureable precipitation.

Data from 2010 EPA PowerPoint

Multi-Pollutant TMDLs? Reduce Flow!

New EPA strategy: Reducing flow reduces all pollutant loads.

- **Reduce flow by**:
  1. *Removing impervious cover,*
  2. *Disconnecting impervious cover,*
  3. *Increase use of porous surfaces,*
  4. *Attenuate impervious cover using flow-based LID.*

Virginia District Court ruled water is not a pollutant, therefore EPA has no jurisdiction to control.

- **TMDL goal**: Avoids individual pollutant TMDL goals.
- **Already being done** in several EPA Regions.

EPA will not appeal. How does this affect EPA-6 and Oklahoma?

Future Monitoring in OKR04 ?

EPA is considering requiring sampling for several purposes:

- Demonstrate BMP effectiveness.
- Compliance with TMDL implementation plans.
- Demonstrate attainment of WQS.
- Document overall program effectiveness.

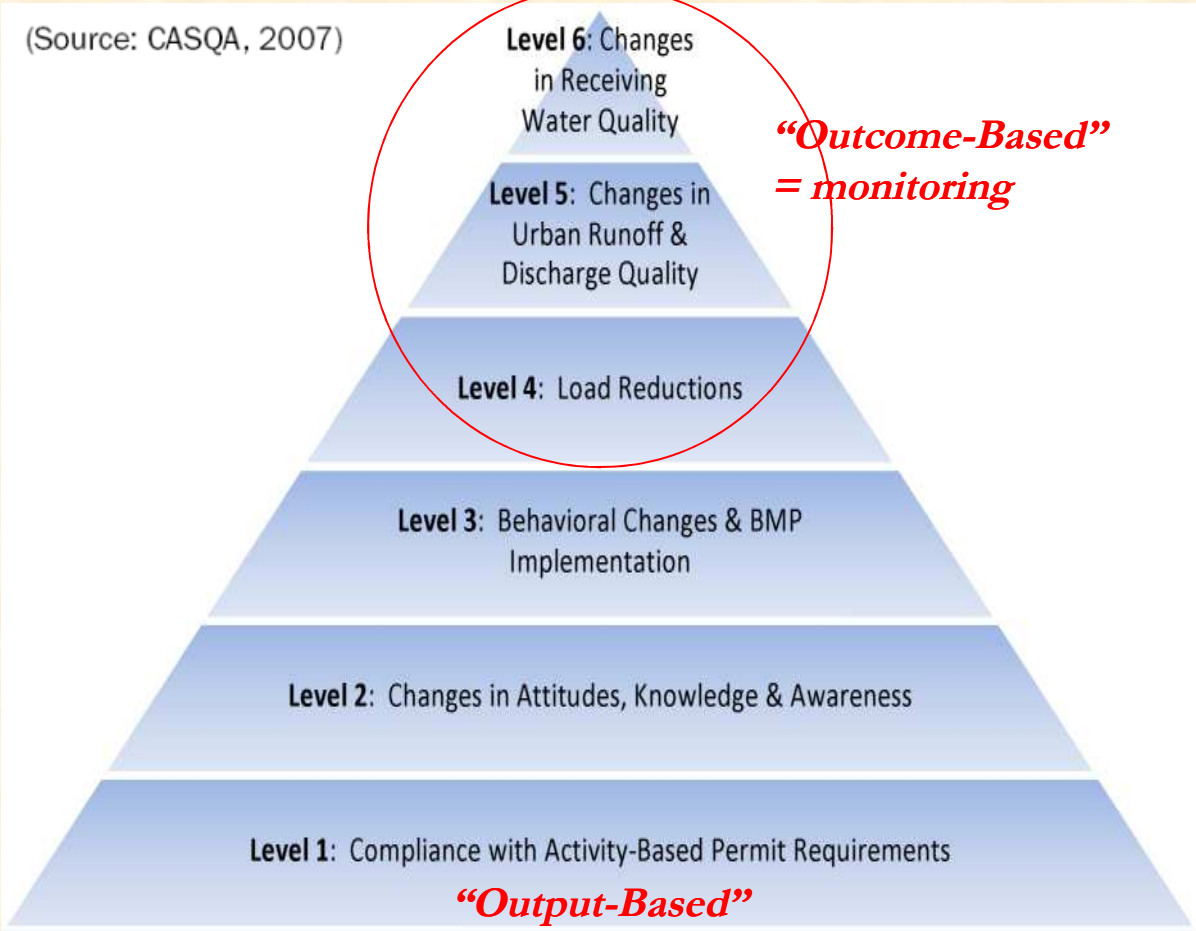


Image by Richard Smith, INCOG

How the December 2009 ELG Changed

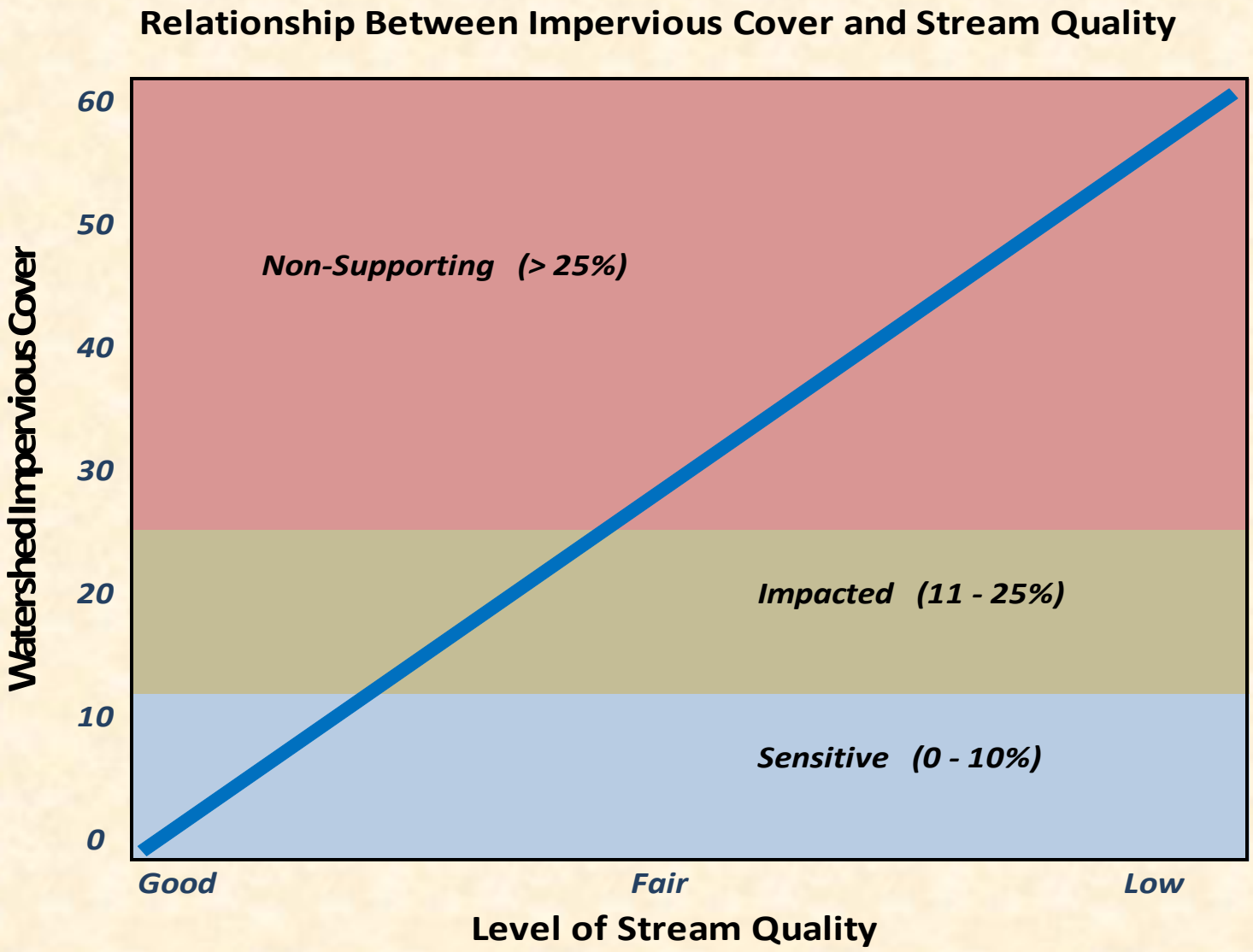
- **2010 court agreement** – EPA withdrew **280 NTU** (poor science).
- **All other "non-numeric"** provisions of ELG still apply:

a) *Erosion & sediment controls,*
b) *Soil stabilization,*
c) *Dewatering,*
d) *Pollution prevention measures,*
e) *Prohibited discharges,*
f) *Surface outlets.*

These "non-numeric" ELG provisions are now in OKR10; will be in OKR04 when finalized.

- **EPA withdrew its intent** to develop **future** numerical criteria.
- Industry agrees, environmental groups may yet challenge.

Impervious Cover & Runoff Quality



Graph by Richard Smith, INCOG

LID and GI Requirements

Low Impact Development & Green Infrastructure

- Techniques that manage stormwater on-site and promote infiltration.
- Results in pollution reduction as well as volume reduction.
- Usually addressed in terms of "Best Management Practices" (BMPs).
- Can be regional, but usually are localized to the property (on-site management).

Photo by Vernon Seaman, INCOG

Present OKR04 Post-Construction Text

- [must]…"Develop, implement and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre…"
- [must]…"Develop and implement strategies which include a combination of structural and/or non-structural…BMPs …"
- [must]…"Use an ordinance…to address post-construction runoff…"
- [must]…"Ensure adequate long-term operation and maintenance of BMPs."

OKR04 Examples of Structural BMPs

- Wet ponds
- Extended-detention outlet structures
- Grassed swales
- Bio-retention cells
- Sand filters
- Filter strips
- Infiltration basins and trenches

= LID and GI

From Present ODEQ MS4 General Permit (OKR04)

OKR04 Examples of Non-Structural BMPs

Policies and ordinances that:

1. Direct growth to identified areas.
2. Protect sensitive areas (e.g. wetlands, riparian areas).
3. Maintain or increase open space.
4. Provide buffers along sensitive water bodies.
5. Minimize impervious surfaces.
6. Minimize disturbance of soils and vegetation.
7. Encourage infill development in higher density urban areas.

From Present ODEQ MS4 General Permit (OKR04)

OKR04 Proposed Text and LID / GI

Part IV.C.4.b. MCM 4th Construction – Recommendations

(2) Develop outreach program for the local development community, including incentives for developers/builders, such as "green developer" recognition.

Part IV.C.5.a. MCM 5th Post-Construction – Requirements

(4) You must review local ordinances and regulations, and identify the barriers to Low Impact Development (LID). Develop a schedule to remove those barriers that prohibit LID practices in the permit term.

(6) You must include an education component for developers and the public about project designs that minimize water quality impacts, including LID strategies.

OKR04 Proposed Text and LID / GI

Part IV.C.4.b MCM 5th Post-Construction – Recommendations

(2) Consider requirements …to direct growth to identified areas, protect sensitive areas …increase open space … provide buffers … minimize impervious surfaces, …encourage infill development …

(3) Assess … street design and parking lot guidelines … that affect …impervious cover. Determine if …standards … can be modified to support LID design options.

(4) Complete an inventory of impervious area …determine the areas that may have the potential to be retrofitted with BMPs (such as LID) … to reduce the frequency, volume and peak intensity of storm water runoff to and from your MS4.

EPA & “Pre-Development” Concept

- “Pre-development refers to runoff conditions that exist onsite immediately before the planned development activities occur.”
- “Pre-development is not intended to be interpreted as that period before any human-induced land disturbance activity has occurred.”

LID Resources Needed in Oklahoma

- Design standards – local, statewide, etc.
- A & E firms with experience & credentials.
- Construction materials, especially proprietary mixes, blends and methods.
- Certification programs for consultants and suppliers.
- Education to enhance demand from builders, municipal officials and the public.
- Showcase successes.
- Cost / benefits, and incentives versus mandates.

New Construction Permit Requirements in OKR10

What is OKR10 ?

- Stormwater General Permit for active construction.
- Construction was 1 of 11 categories of "industrial activities" in EPA's original 1990 Phase I rules.
- OKR10 is renewed every 5 years; revising requirements as needed:
  - *As EPA/ODEQ feel are necessary.*
  - *To correct errors and omissions.*
  - *To comply with latest EPA rules*.
- Latest revision was effective September 2012.
- Has EPA "Effluent Limitation Guidelines" (ELGs).

Major Changes to OKR10 This Round

- Definitions.
- Impaired waters, ARC and ORW.
- Concrete and asphalt batch plants.
- SWP3 contents.
- Buffers.
- Forms and fees.

Definitions: "Stabilization"

- Now parsed into "temporary" and "final" stabilization.
- **Temporary** – for exposed portions of the site:
  - *During establishment and growth of vegetation.*
  - *Where earth-disturbing activities will occur again.*
- **Final** – for exposed portions of the site:
  - *Using practices that provide permanent cover, and*
  - *Qualify the permittee for permit termination.*

OKR10 definition has a half page of how to do stabilization (including the "70%" concept).

Definitions: "Owner" and "Operator"

- Clarifies distinction between "owner" and "operator".
- **Owner** – the party that owns the structure being built.
  - *Ownership does not necessarily imply "operator".*
- **Operator** – must meet either one of the following:
  - *Have operational control over construction plans and specifications including ability to modify;* ***or***
  - *Have day-to-day operational control necessary to ensure SWP3 compliance.*

Definitions: Primary / Secondary Operator

- Used mainly for large "Common Plan of Development" sites where there are multiple operators.
- **Primary** – responsible for all discharges at the site.
  - *Prepares SWP3 and identifies all secondary operators.*
  - *Ensures SWP3 compliance of all secondary operators.*
- **Secondary** – does not have own SWP3 or OKR10 permit.
  - *Abide by primary operator's SWP3 and notify them when doing own disturbance activities.*
  - *Avoid damaging BMP effectiveness.*

Not in Part 9 Definitions; in Part 3.6 Responsibilities of Operators

Water Quality, Protected Species, Habitat

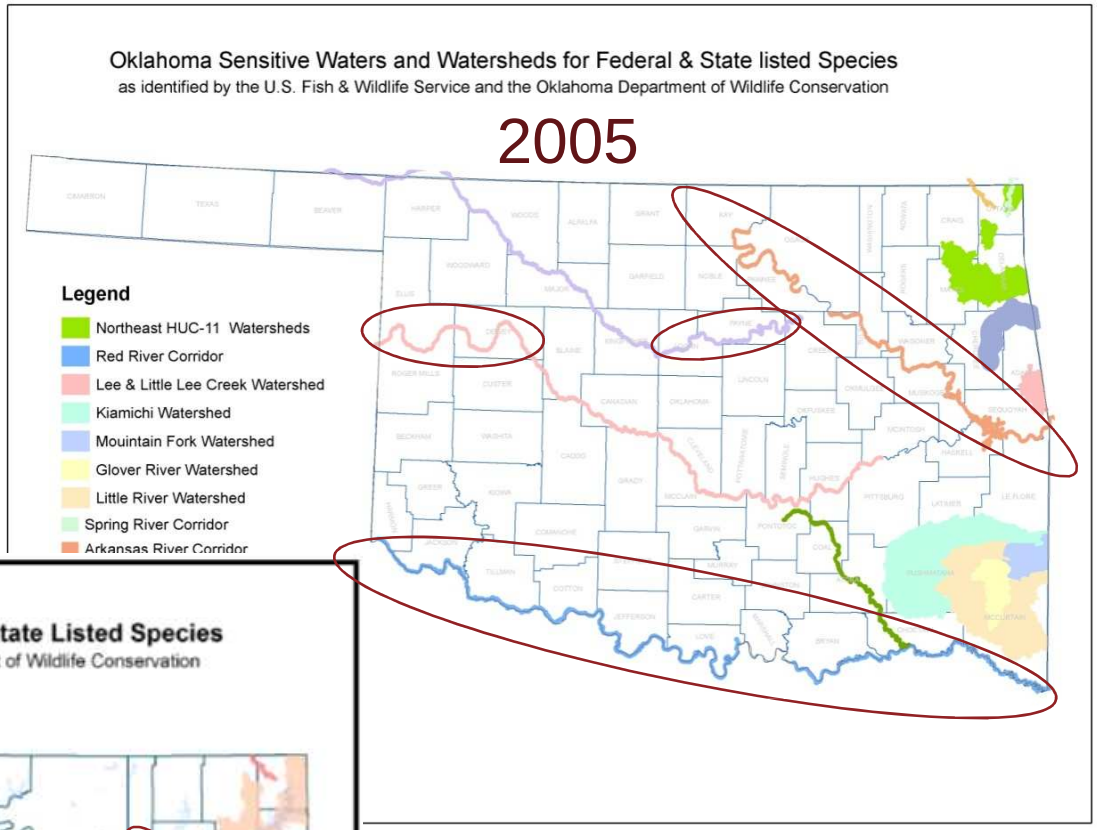
- Stormwater permits exist to protect "water quality".
- Authority is Clean Water Act, regulated by EPA.
- But "water quality protection" is complicated.
- Streams, lakes, ponds, wetlands, oceans, nearly all bodies of water.
- Includes protecting all "aquatic" biota: fish, insects, amphibians, mammals, plants, algae, etc.
- Includes protecting the "habitat" of all aquatic biota.
- Many species are federally listed as threatened or endangered = "sensitive" or "protected" species.

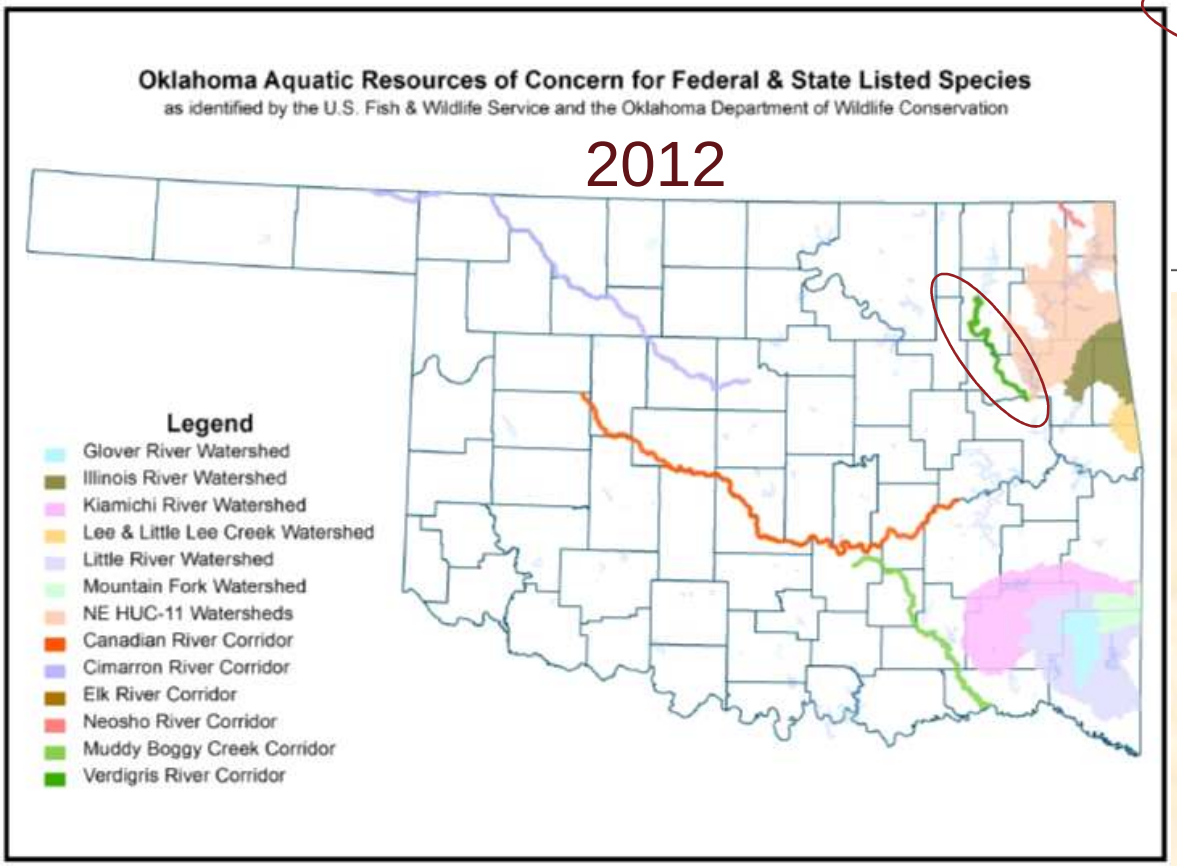
How OKR10 Addresses These Issues

- **Part 3**: Special Conditions and Effluent Limitations.
- **Part 4**: SWP3 requirements.
- **Addendum A**: ARC descriptions and locations.
- **Addendum F:** ORW map locations.
- OKR10 uses various **terminology**:
  - *303(d) listings; impaired waters.*
  - *ARC = Aquatic Resources of Concern*
  - *ORW = Outstanding Resource Waters*
  - *Sensitive or protected species, rare and endangered species, listed species, critical habitat.*

Terms and provisions are scattered throughout OKR10.

ARC Map Changes in OKR10 Revision





Aquatic Resources of Concern (ARC) are determined by US Fish and Wildlife Service and Oklahoma Dept. of Wildlife Conservation after consultations with ODEQ.

SWP3: Practice of Engineering

ODEQ added the following to Part 4.1.2:

"SWP3s should be prepared in accordance with good engineering practices. Use of a licensed professional engineer (PE) for SWP3 preparation is not required by the permit. However, if any part of the SWP3 involves the practice of engineering5 , then those engineering practices and designs are required to be prepared by a licensed professional engineer."

Buffers: Overview

- Must be used under certain circumstances, dealing with special water quality protection situations, such as ARC, ORW, etc.
- Buffer requirements are in numerous places in OKR10.
- Two types: 50' and 100' "natural" buffers.
- Purpose is to provide a vegetated area from the waterbody's edge upland towards the site that will act as a pollutant filter.
- Addendum I provides guidance on employing buffers, and describes alternatives when natural buffers are not possible.

Types of Streams Determine Buffer Size

Perennial

- *Flows year-round.*

Intermittent

- *Flows periodically/seasonally when there is enough water from various sources.*

Ephemeral

- *Exist for short periods of time, usually during a rainy period.*
- *No refuge pools to sustain aquatic community.*
- *May not have defined channels when they are dry.*

Buffers: Three Alternative Situations

Alternative 1: Full buffer is possible. Provide and maintain a 50/100-foot natural buffer.

Alternative 2: Partial buffer is possible. Provide and maintain < 50/100-foot buffer, and install additional erosion and sediment controls per Addendum I.

Alternative 3: No buffer is possible. Implement equivalent erosion and sediment controls to achieve the same sediment load reduction as provided by a 50/100 foot natural buffer if natural buffer of any size is infeasible per Addendum I.

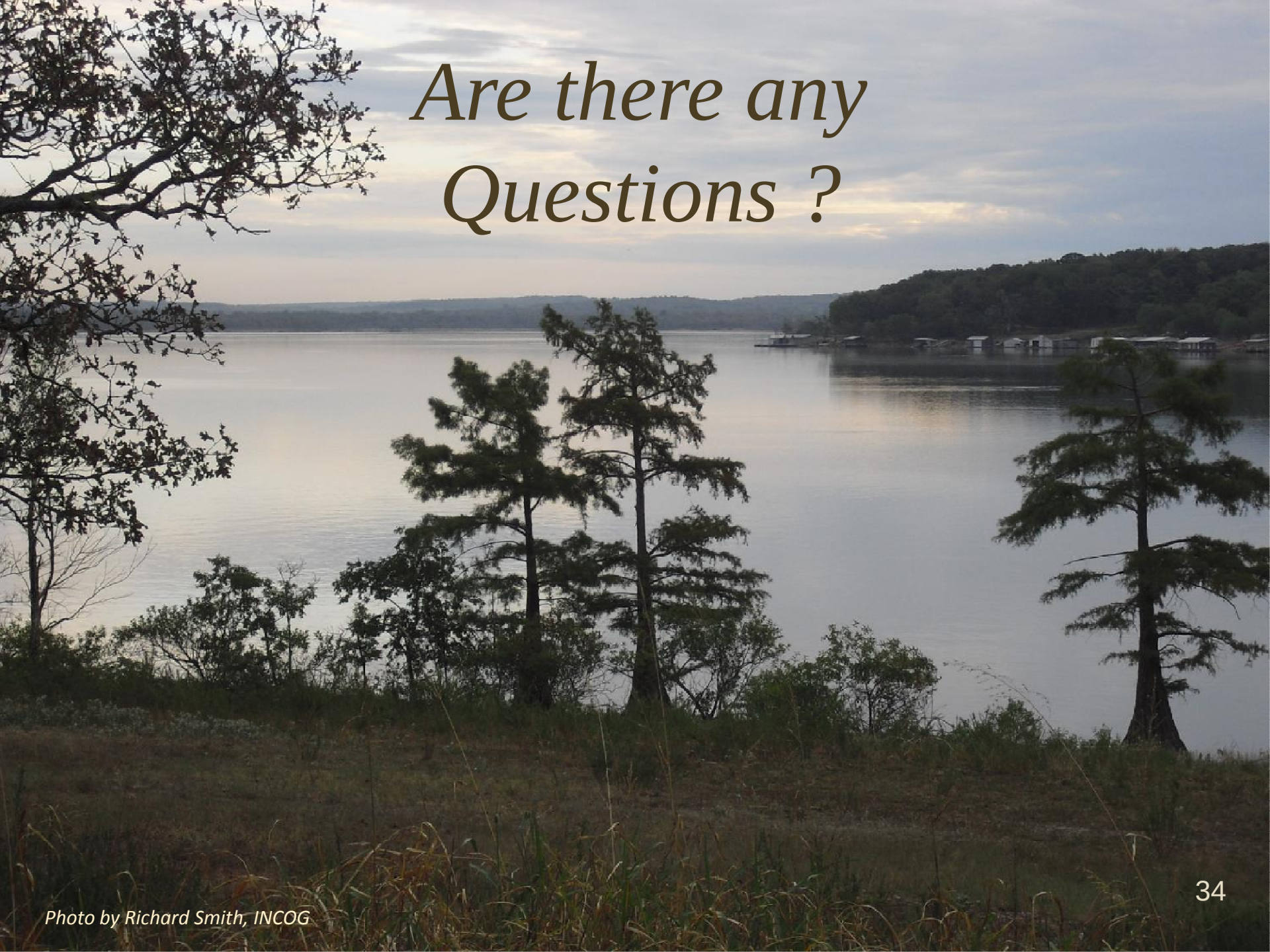


Photo by Richard Smith, INCOG