Stormwater Permits Affecting the Construction Industry

(Handout)

Rogers County Home Builders Association

Claremore, OK

August 19, 2013

Richard Smith, INCOG

INCOG
Regional Partners - Regional Solutions

Green Country Stormwater Alliance
Give Clean Water a Helping Hand

Who is Here? Knowledge of…

- **Who are you?**
  - Builders and contractors
  - Developers
  - Architects, engineering design
  - Government: planners, stormwater, public works
- **What do you know?**
  - EPA stormwater rules overall
  - ODEQ's general permits: OKR10, OKR04, OKR05
  - Phase I stormwater permits: Tulsa / Oklahoma City
  - SWP3: Stormwater Pollution Prevention Plans

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 WQ Issues

- **Part 3**: Special Conditions and Effluent Limitations.
- **Part 4**: SWP3 requirements.
- **Addendum A**: ARC descriptions and locations.
- **Addendum F:** ORW map locations.
- **Addendum I:** Buffers.
- 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.

303(d) and Species – What These Trigger

- OKR10 now finalized, will be template for OKR04.
- ARC – Aquatic Resources of Concern.
- ORW – Outstanding Resource Waters.
- 303(d) Impaired Streams and final TMDLs.
- Buffers,
- Extra BMPs,
- More documentation,
- Coordinate with ODEQ (not US FWS),
- Greatest affect is on construction.

OKR10 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).

OKR10 Defs: "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.*

OKR10 Defs: 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 a 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

OKR10 Stabilization Requirements (Part 3.3.2)

- **A.1 Deadline to Initiate** – "immediately" (i.e., by the end of the next working day) whenever earth-disturbing activities have ceased and will not resume for a period exceeding 14 days.

- **A.2 Deadline to Complete** – no later than 14 days after initiation under 3.3.2.A.1 (7 days if you discharge to a ARC, ORW or 303(d) impaired water).

- **Part 3.3.2.B Criteria for Stabilization** – explains the 70% rule and other requirements.

OKR10 Sediment Basin Requirements

Part 3: Special Conditions and Effluent Limitations.

Part 3.3: Non-Numeric Technology-Based Effluent Limitations.

Part 3.3.1: Erosion and Sediment Control Requirements.

Part 3.3.1.K: Sediment Basins.

Part 3.5.2: Discharges to waters identified as an Outstanding Resource Water (ORW) or Aquatic Resource of Concern (ARC)

OKR10 Sediment Basin Requirements

Part 4: Pollution Prevention Plans (SWP3).

Part 4.5: Contents of Plan.

Part 4.5.11: Controls to Reduce Pollutants.

Part 4.5.11.A: Stormwater Control Measures.

Part 4.5.11.A.3: Structural Practices.

OKR10 Sediment Basin Requirements

Part 3.3.1.K: Sediment Basins: If you install a sediment basin, you must comply with the following:

1. Design requirements. Provide storage for either the calculated volume of runoff from a 2-year, 24-hour storm, or 3,600 cubic feet per acre drained;

2. When discharging from the sediment basin, utilize outlet structures that withdraw water from the surface in order to minimize the discharge of pollutants, unless infeasible;

3. Prevent erosion of the sediment basin using stabilization controls (e.g., erosion control blankets), and the inlet/outlet using erosion controls and velocity dissipation devices; and

4. Sediment basins must be situated outside of surface waters and any natural buffers established under Parts 1.3.2.E and 3.3.1.A.

OKR10 Sediment Basin Requirements

Part 3.5.2: Discharges to [ARC and ORW]:

B. For drainage locations serving five (5) or more acres disturbed at one time, a temporary (or permanent) sediment basin and/or sediment traps shall be used to minimize sediment discharges within the areas of the Outstanding Resource Waters or Aquatic Resources of Concern…

A temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2 year, 24 hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. [There are additional siting requirements]

OKR10 Sediment Basin Requirements

Part 4.5.11.A.3: Structural Practices:

a. For common drainage locations that serve an area with ten (10) or **more** acres disturbed at one time (or 5 acres if required by Part 3.5.2), a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2 year, 24 hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. [There are additional siting requirements]

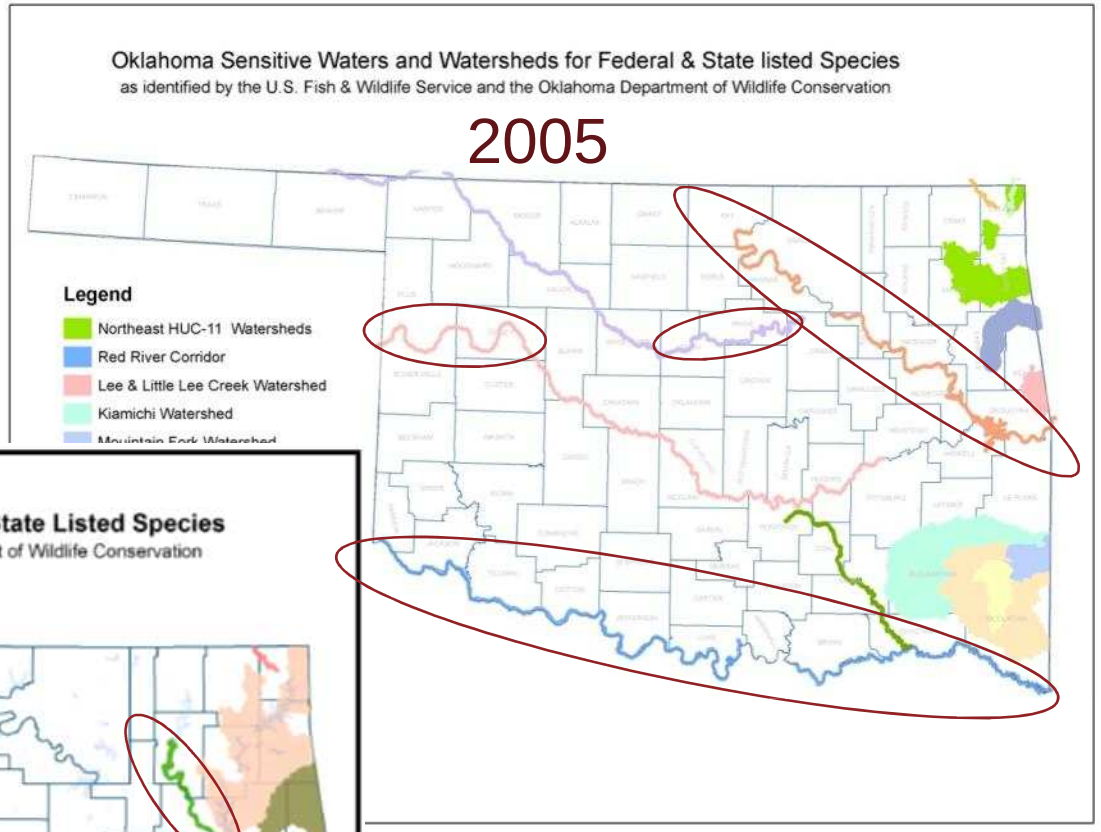
b. For drainage locations serving **less** than 10 acres, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries… [There are additional requirements]

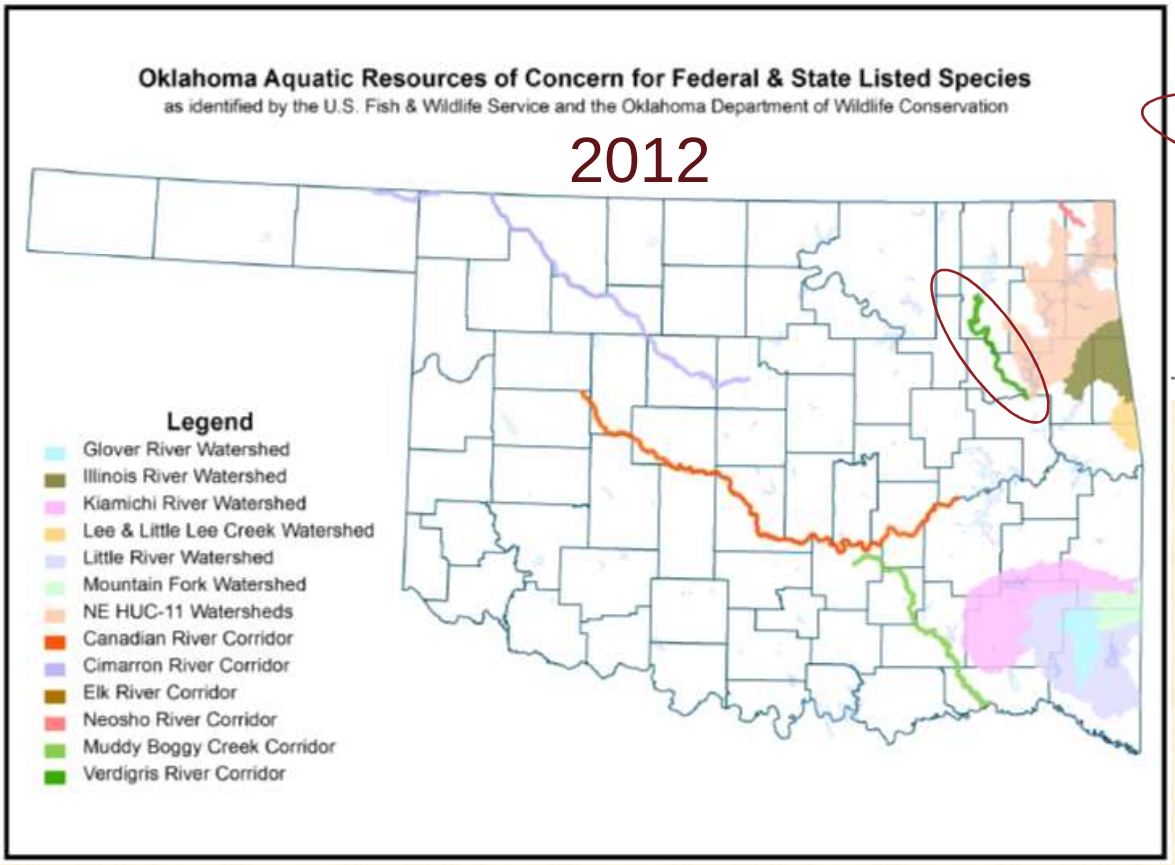
Where To Apply OKR10 Coverage

There are various phrases used in different passages of OKR10.
Be mindful of the "location" requirements.

- "on or immediately adjacent to"
- "within one stream mile of"
- "discharging to" or "discharges into"
- "are within areas of"
- "is located on or immediately adjacent to"
- "within or in the immediate vicinity of"
- "in proximity to"

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."

SWP3: Other Changes

- Added the non-numeric requirements that were in EPA's Construction General Permit.
- These, in turn, came from EPA's Effluent Limitation Guidelines (ELGs) for construction.
- The 280 NTU numeric limit was not added.
- Straw and hay bales are no longer accepted for use as stand alone sediment and erosion control BMPs.

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 between the waterbody's edge and 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.

Latest OKR04 Timeline

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.

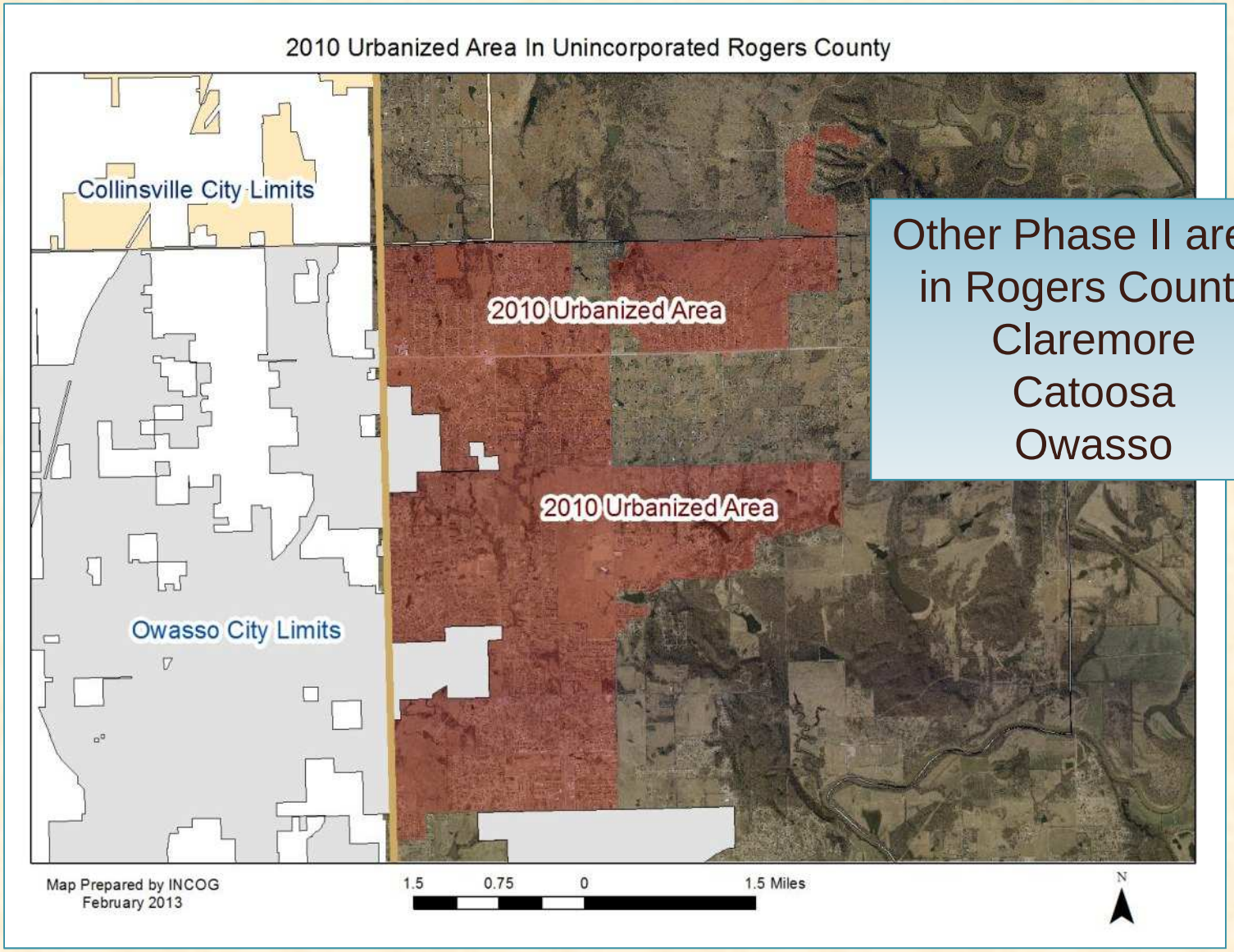
April 2014: NOIs sent to ODEQ by existing permittees.

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.

New OKR04 Permittee: Rogers County



Other Phase II areas in Rogers County:
Claremore
Catoosa
Owasso

Rogers County Phase II Permitted Areas

EPA 2002 Memorandum

From EPA Memorandum, November 22, 2002, "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs"

"EPA expects that most [water quality-based effluent limits] … will be in the form of BMPs, and that numeric limits will be used only in rare instances."

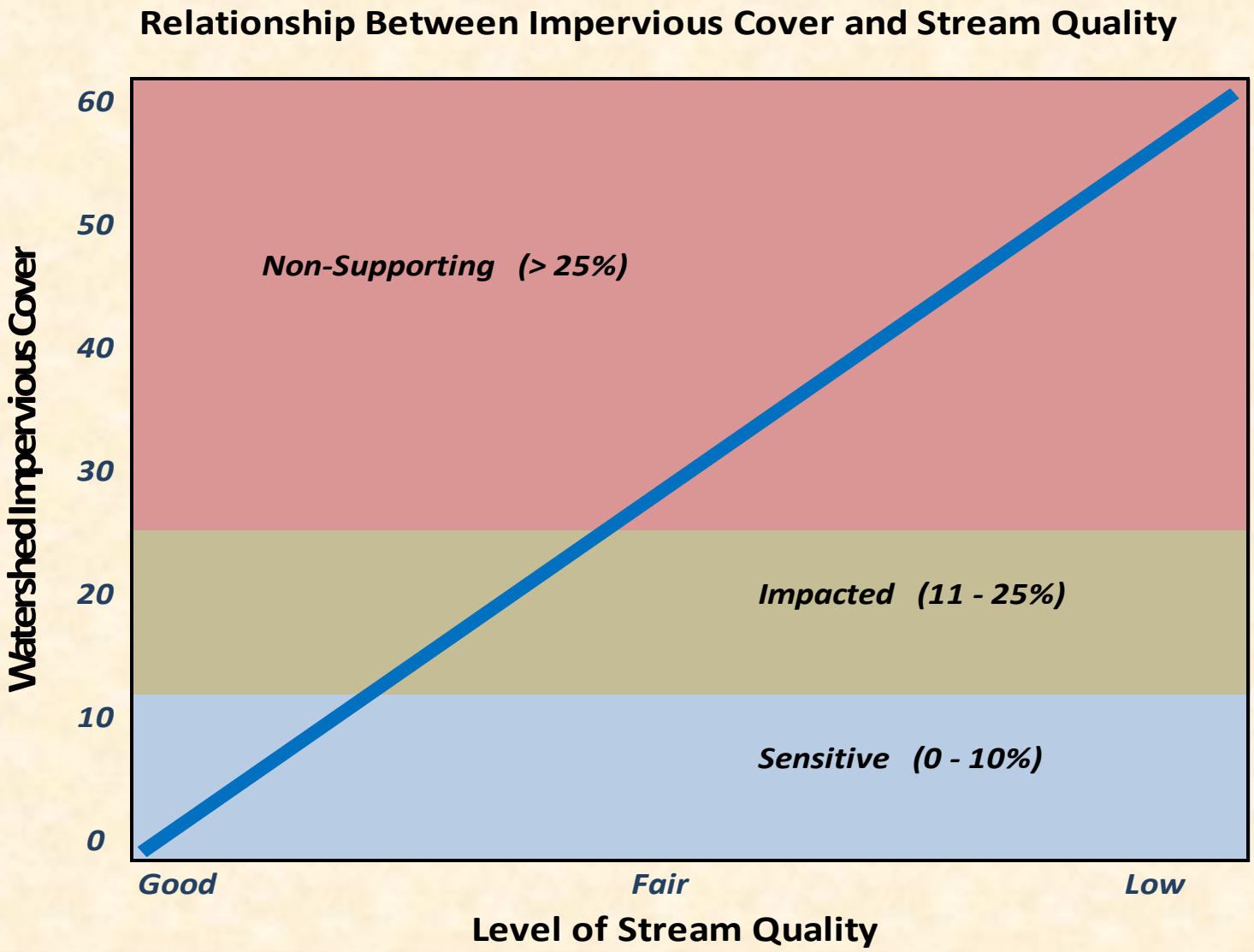
"EPA's policy recognizes that …storm water discharges are … not easily characterized, only in rare cases will it be feasible or appropriate to establish numeric limits for municipal and small construction storm water discharges."

EPA 2010 Memorandum

- "Since 2002, States and EPA have obtained considerable experience in developing TMDLs and WLAs …. The technical capacity to monitor stormwater and its impacts …has increased."
- Where discharges have the reasonable potential to cause water quality problems, permits should contain numeric effluent limitations.
- Measurable Goals should be enforceable provisions.
- PAs should consider BMP numeric benchmarks and monitoring for estimating BMP effectiveness.

This controversial memo was pulled for further consideration.

Impervious Cover & Runoff Quality



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

From Present ODEQ MS4 General Permit (OKR04)

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

= LID and GI

OKR04 Examples of Non-Structural BMPs

From Present ODEQ MS4 General Permit (OKR04)

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.

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."

Future Stormwater Rules and Permits

New EPA Rulemaking:

- 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 Oklahoma General Permits:

- ✔ **OKR05** (industrial activities) finalized 9/5/11.
- ✔ **OKR10** (construction activities) finalized 9/13/12.
-  **OKR04** (Phase II MS4s) finalized in early 2014 ?

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.

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 storm systems and drainage areas to reduce runoff.
- Special stormwater provisions to protect sensitive areas.

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.

Will US Supreme Court rule on EPA jurisdiction over water flow ?

Current Standards for Volume Retention

Data from 2010 EPA PowerPoint

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.