City of Wichita: NPDES Storm Water Permit and Management Program (SMP)

Communitywide Meetings

September 22 and 23, 2008

Regulatory Background

- 1972 Clean Water Act:
  - Point Source (Direct Pipe Waste Water) in 1970's and 1980's
  - Non Point Source (Indirect Stormwater) 1990's and 2000's
    - Phase I (Nov. 16, 1990) for Construction Industry and Large/Medium Municipalities
    - Phase II (Dec. 8, 1999) Small Municipals and New Requirements for all
- Ks Dept of Health and Environment (KDHE) is responsible for the NPDES Stormwater Program in Ks
- Wichita was identified as a Phase I - Large/Medium Municipality and received its first NPDES Permit in 1998
- Permit is usually for five years, but KDHE didn't renew the City's permit until last year.
- Second NPDES permit was finalized on Oct. 1st , 2007.
- Two permits are similar but 2007 Permit added Phase II requirements.

1998 NPDES Stormwater Permit

- Wichita's first NPDES stormwater permit (effective January 1, 1998) was extensive and detailed in requirements:
  - All areas within the corporate boundaries of Wichita are included and City of Wichita is legally responsible
  - Required ordinances for authority and inspections
  - Required a SWMP that included City to:
    - Operate <u>public streets, roads and highways</u> to minimize discharge of pollutants ;

1998 NPDES Stormwater Permit

- Reduce discharge of pesticides and herbicides;
- Provide public education for stormwater pollution prevention;
- Regulate development and redevelopment within areas under CoW jurisdiction in compliance with SWMP;
- Implement a site construction stormwater run-off program to reduce pollutant discharge including:
- Require construction best management practices (BMPs),
- Implement program to detect, report and remove illicit discharges into stormwater;

1998 NPDES Stormwater Permit

- Conduct quarterly stormwater event monitoring for a specified list of chemical constituents at four designated stormwater outfalls;
- Establish a spill prevention, containment, response and reporting program to address cleanup of spills to the storm sewer systems;
- Prohibit cross-connections between sanitary sewer and storm sewer system and immediately stop the flow of raw sewage if found;
- Inspect, monitor and report on stormwater at specific industrial facilities and high risk run-off activities; and
- Prepare an annual report to demonstrate compliance.

1998 NPDES Stormwater Permit

- Duty to comply along with heavy stipulated penalties including civil, administrative, and/or criminal including up to $50,000 per day per violation or up to $250,000 for endangerment and not more than 15 years in jail.

Construction Site Pollution Prevention Best Management Practices -

***Effective, Practical, Structural or Nonstructural methods which prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants from the land to surface or ground water*.**

Examples of "Good & Bad" BMP's

Back of Curb protection improperly installed & maintained

Back of Curb protection properly installed & maintained

Examples of "Good & Bad" BMP's

Silt Fence – not properly installed (stakes on wrong side of fabric)

Silt Fence – properly installed

Examples of “Good &Bad” BMP’s

No rock construction entrance

Properly installed & maintained rock construction entrance

Examples of Good & Bad BMP's

Improperly maintained construction entrance

Properly maintained construction entrance

Examples of Good & Bad BMP's

No inlet protection

Inlet protection installed

Examples of Good & Bad BMP's

Properly installed erosion control

No erosion control

2007 NPDES Stormwater Permit

- All requirements from 1998 Permit still apply but new format was instituted
- New requirements added are required to be phased in over a one to two year period through 2009
- New document called Stormwater Management Program (SMP) to replace SWMP – draft required by October 1, 2008
  - SMP was developed by City staff
  - Contains 1998 SWMP elements to satisfy requirements of new SMP

2007 NPDES Stormwater Permit

- Format changes include Best Management Practices (BMPs) with Measurable Goals to meet KDHE requirements for three areas:
- Section I BMPs for Six Minimum Control Measures
  1. Public Education and Outreach
  2. Public Involvement and Participation
  3. Illicit Discharge Detection and elimination
  4. Construction Site Stormwater Runoff Control

2007 NPDES Stormwater Permit

5. Post Construction Stormwater Management in new development and redevelopment including a full enforcement program identified below at a minimum for any project larger that one acre or part of a larger project
   - BMPs to prevent or minimize adverse water quality impacts;
   - Strategies to include a combination of structural and/or non – structural BMPs appropriate for the municipality;
   - Enact an ordinance to address post – construction run – off from new developments and redevelopment projects; and
   - Ensure adequate long-term operation and maintenance of BMPs
6. Pollution Prevention/Good Housekeeping for Municipal Operations

2007 NPDES Stormwater Permit

- Section II – BMPs for Principal Pollutants of Concern (PPoC)
- KDHE identified pollutants from previous stormwater testing
  - At a minimum must implement at least one BMP for each of the PPoC throughout the permitted area - Five BMPs required
  - Pollutants are BOD, Total Recoverable Cadmium, Total Recoverable copper, Total Recoverable Zinc and E. Coli

2007 NPDES Stormwater Permit

- Section III - BMPs for TMDL Regulated Parameters
  - BMP's are required to reduce pollutants identified by established Total Maximum Daily Loads (TMDLs) at associated streams
  - Each BMP must identify the pollutant it is reducing

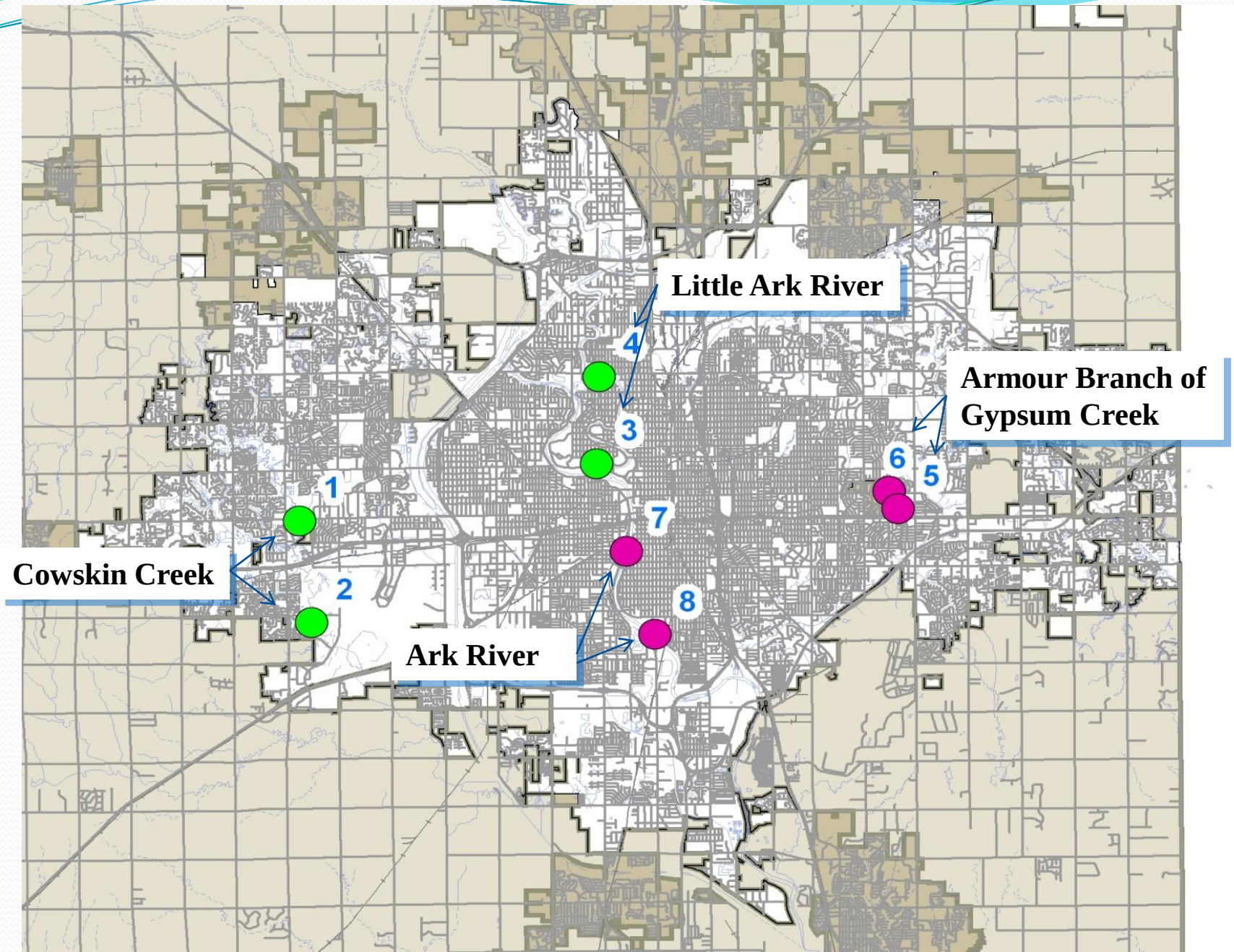
TMDL Regulated Parameter	Associated Stream
Total Phosphorus	Little Ark River & Cowskin Creek
Total Nitrogen	Little Ark River and Cowskin Creek
Biological Oxygen Demand	Little Ark River and Cowskin Creek
Suspended Solids (Sediment)	Little Ark River and Cowskin Creek
Bacteria	Little Ark River, Cowskin Creek, Arkansas River and Whitewater River

2007 NPDES Stormwater Permit

Four major changes include:

- Record keeping and Reporting Requirements
  - Annual report still required to be prepared but no longer with all records by April 1st.
  - Goals measures must be report annually with implementation schedule for additional activities
- Additional Monitoring Requirements
  - Increases quarterly stormwater sampling locations from 4 to 8, beginning in 2009
  - Some current sampling parameters are no longer required

NPDES Stream Monitoring Locations



2007 NPDES Stormwater Permit

- Development of pollution prevention program for municipal operations
  - Evaluate facilities
  - Implement programs as required
  - Train employees

2007 NPDES Stormwater Permit

- Post Construction BMPs for areas of development and redevelopment
  - City hired technical consultant and formed a City/County Task Force is developing this program
  - City has held two Task Force meetings and will formulate a manual
  - Will require significant public input and new ordinance(s)

Permanent BMPs in areas of development and redevelopment

Structural BMP with porous pavement

Rain garden & porous concrete sidewalk

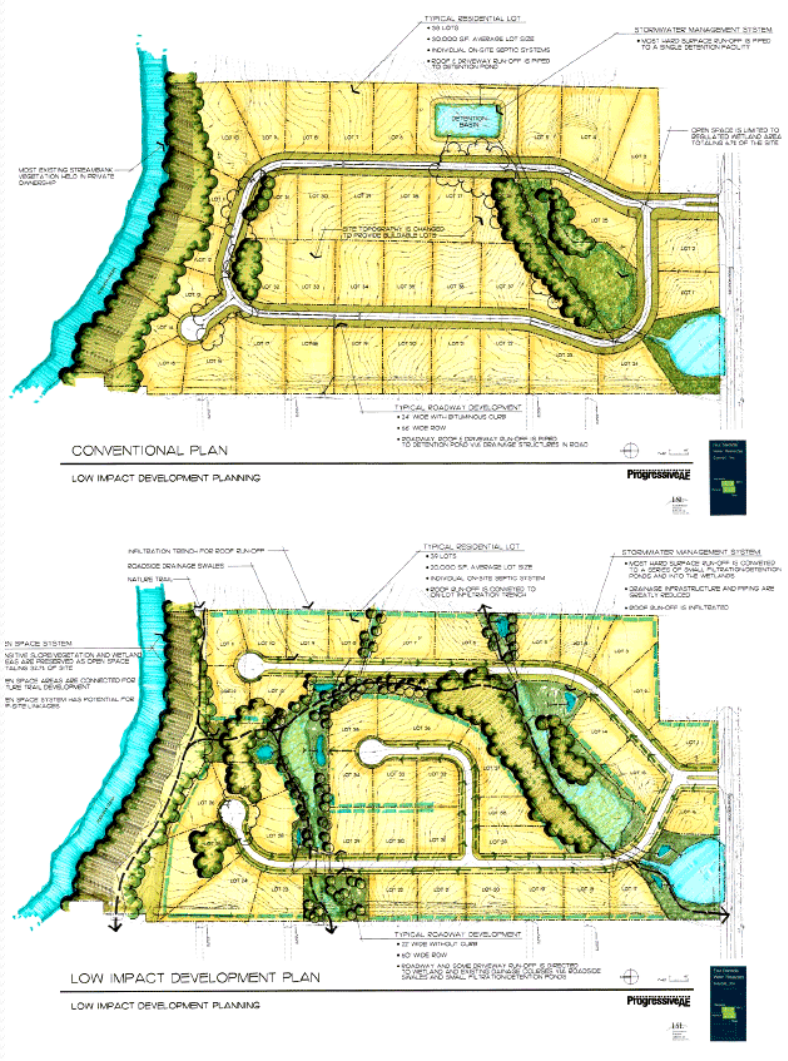
Rain garden

Bio infiltration trench

Bio infiltration trench

Bio infiltration trench

Bio swale



Cluster development

Native landscaping

Parking lot swale

Rain garden

Street side rain garden

Storm Water Management Program

DRAFT SMP Schedule

- City will receive comments until October 27, 2008
- Send comments to:

  Public Works – Scott Lindebak, 268-4545

  Environmental Services – Kay Johnson, 268-8351

  kjohnson@ wichita.gov
- City will provide final document to KDHE on Dec. 1, 2009