

# MS4 ANNUAL TRAINING

## UPDATE TO THE STORMWATER MANUAL

*Environmental Quality and Public Works Committee*

*September 20, 2016*



**LEXINGTON**



## Overview

- Introductions
- Background
- Stakeholder Process
- Reasons for Updating the Manual
- Key Changes
- Next Steps



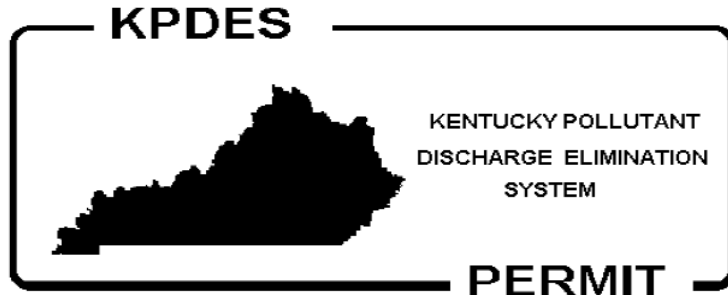
### **Stormwater Manual**

**Lexington-Fayette Urban County Government  
Lexington, Kentucky**

**October 1, 2016**



# Municipal Separate Storm Sewer (MS4) Permit



Permit No.: KYS000002  
AI No.: 74551

## AUTHORIZATION TO DISCHARGE UNDER THE KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to Authority in KRS 224,

Lexington-Fayette Urban County Government (LFUCG)  
200 East Main Street  
Lexington, Kentucky 40507

is authorized to discharge stormwater runoff from a large municipal separate storm sewer system (MS4) to receiving waters of the Commonwealth in accordance with the monitoring requirements and other conditions set forth in PARTS I, II, III, and IV hereof. The permit consists of this cover sheet, a table of contents, and PART I 4 pages, PART II 29 pages, PART III 4 pages, PART IV 1 page.

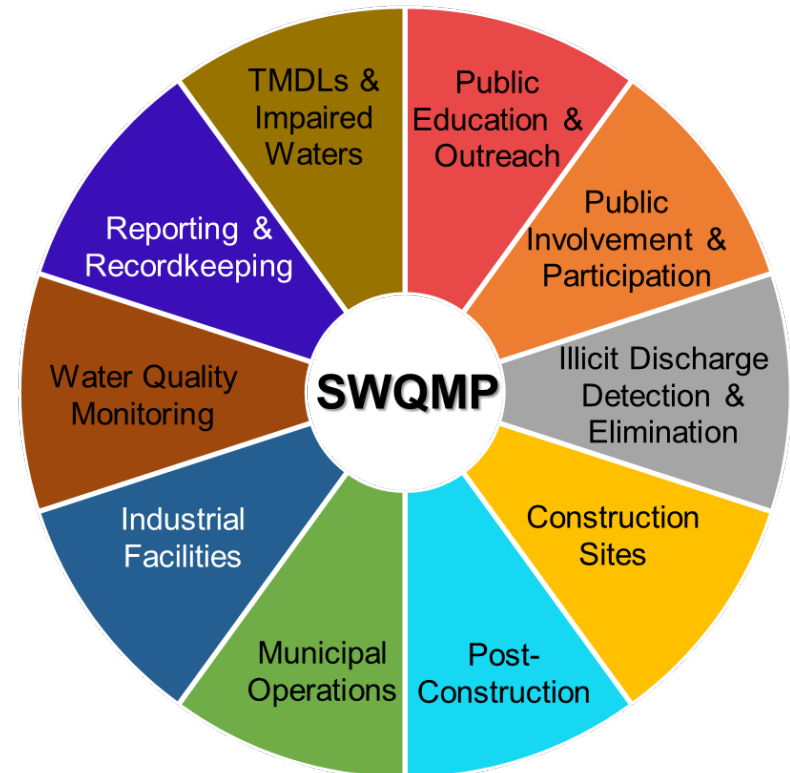
This permit shall become effective on June 1, 2015.

This permit and the authorization to discharge shall expire at midnight, May 31, 2020.

May 1, 2015

Date signed

Peter T. Goodman, Director  
Division of Water





## Background on the Stormwater Manual

- First edition in 2001, along with 6 other Manuals.
- Updates in 2002, 2004, 2005, 2009, and 2011.
- Contains the design and construction standards for stormwater infrastructure in new development and redevelopment.



## Purpose of the Stormwater Manual

- Prevent new flooding problems as a result of new development
- Reduce pollution in stormwater runoff
- Establish uniform design and construction standards
  - Detention basins
  - Water quality BMPs
  - Erosion and sediment control





## Stakeholder Process - Internal

- Group was comprised of staff from DOE, DWQ, & DES
- Met monthly for a year
- Comprehensive review / clarify content
  - Addressed “lessons learned” over the last 15 years
- Group discussed and resolved issues related to:
  - Redevelopment
  - Green Infrastructure
  - Underground Detention
  - EPA / FEMA / Kentucky Division of Water Regulations



## **Stakeholder Process - External**

- Group formed in 2015
- 25 stakeholders comprised of:
  - Staff from Planning, DOE, DWQ, & DES
  - Home Builders Association of Lexington
  - Commerce Lexington
  - Engineering Firms
  - Stormwater Stakeholder Advisory Committee
- Group met five times from September '15 to March '16
- Stakeholder input was instrumental and essential



## Chapters in the Manual

Chapter 1 – Stormwater Management Requirements (for new development and redevelopment, does not apply to capital projects)

Chapter 2 – Permits

Chapter 3 – Watershed Studies

Chapter 4 – Design Documentation

Chapter 5 – Hydrology

Chapter 6 – Inlets/Storm Sewers/Manholes

Chapter 7 – Culverts and Bridges

Chapter 8 – Constructed Channels

Chapter 9 – Streambank Stabilization

Chapter 10 – Post-Construction Stormwater Controls

Chapter 11 – Erosion and Sediment Control

~~Chapter 12 – Maintenance~~

\*Most of the changes were in Chapters 1 and 10





## Key Changes: Stream Buffer Width

- Increased stream buffer width from 25 feet to 50 feet
  - Current requirement in Kentucky's general construction permit for streams with sediment impairments
  - Based on streams as defined by the Corps of Engineers
  - Mirrors requirements in Ohio and Tennessee



## Key Changes: Green Infrastructure

- Required by MS4 permit
- Promotes infiltration
- Reduces runoff volume





## **Key Changes: Rainfall Data**

- Analyzed historical rainfall data
- Updated design storms and the rainfall depth used to size stormwater infrastructure
- Added the September 23, 2006 storm event to the set of storm events to be analyzed during design
  - 6.8 inches in 24 hours

## Key Changes: Inspection on Commercial Sites

- Design engineer must inspect construction of stormwater controls and infrastructure on commercial projects
- This is now consistent with residential projects







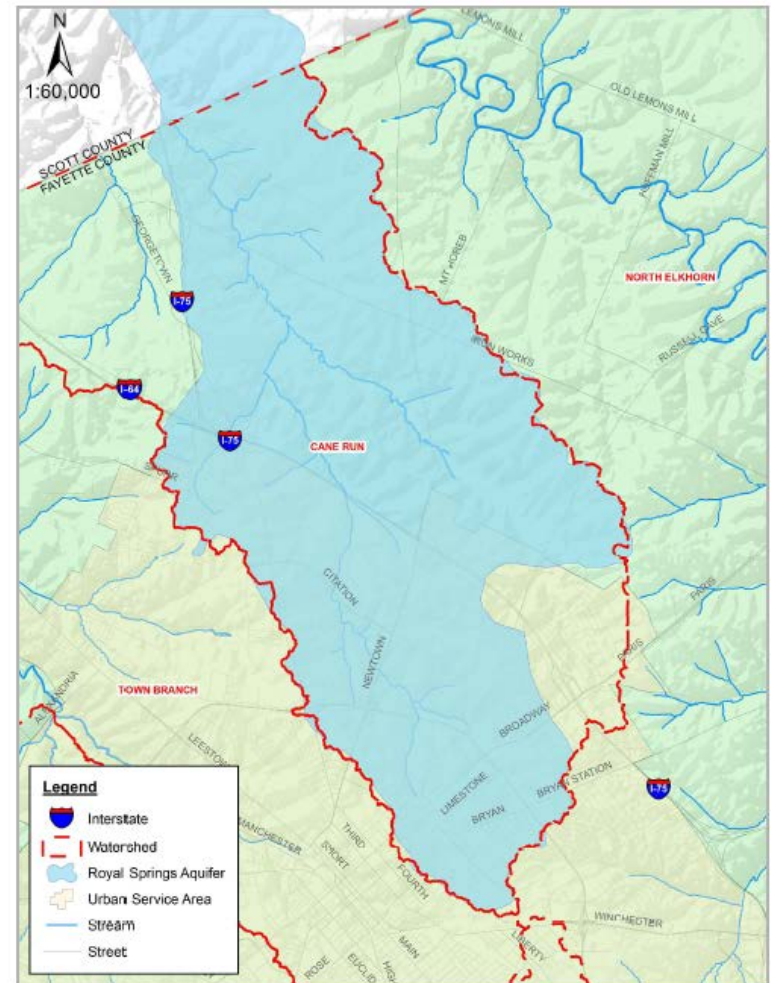
## Key Changes: Manufactured Devices

- Established a uniform design standard
- Must be certified by New Jersey DEP

Stormwater Management Manufactured Treatment Devices Certified by NJDEP	MTD Laboratory Test Certifications	Field Test Certifications	Superseded Certifications	Certified TSS Removal Rate	Maintenance Plan
AquaFilter Filtration Chamber by AquaShield, Inc.		Certification	Superseded	80%	Plan
Aqua-Swirl Concentrator By Aqua-Shield. Inc.		Certification	Superseded	50%	Plan
Continuous Deflective Separator (CDS) Unit by CONTECH Stormwater Solutions, Inc.	Certification	Certification	Superseded	50%	Plan
Downstream Defender by Hydro International, Inc.	Certification		Superseded	50%	Plan
Dual Vortex Separator by Oldcastle Stormwater Solutions	Certificaton			50%	Plan

## Key Changes: Royal Spring Aquifer

- Added requirements from the ***Fayette and Scott County Wellhead Protection Plan***





## Next Steps: Other Changes Underway

- Minor cleanup changes to the Zoning Ordinance, Subdivision Regulations, and Code of Ordinances
- Updates to the Procedures Manual to:
  - Reflect current organization of LFUCG
  - Ensure consistency with Stormwater Manual
  - Clarify role of the Engineer in commercial development

# Questions?



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