

Pre-Construction Planning of BMPs Lexington Case Study

April 13, 2018

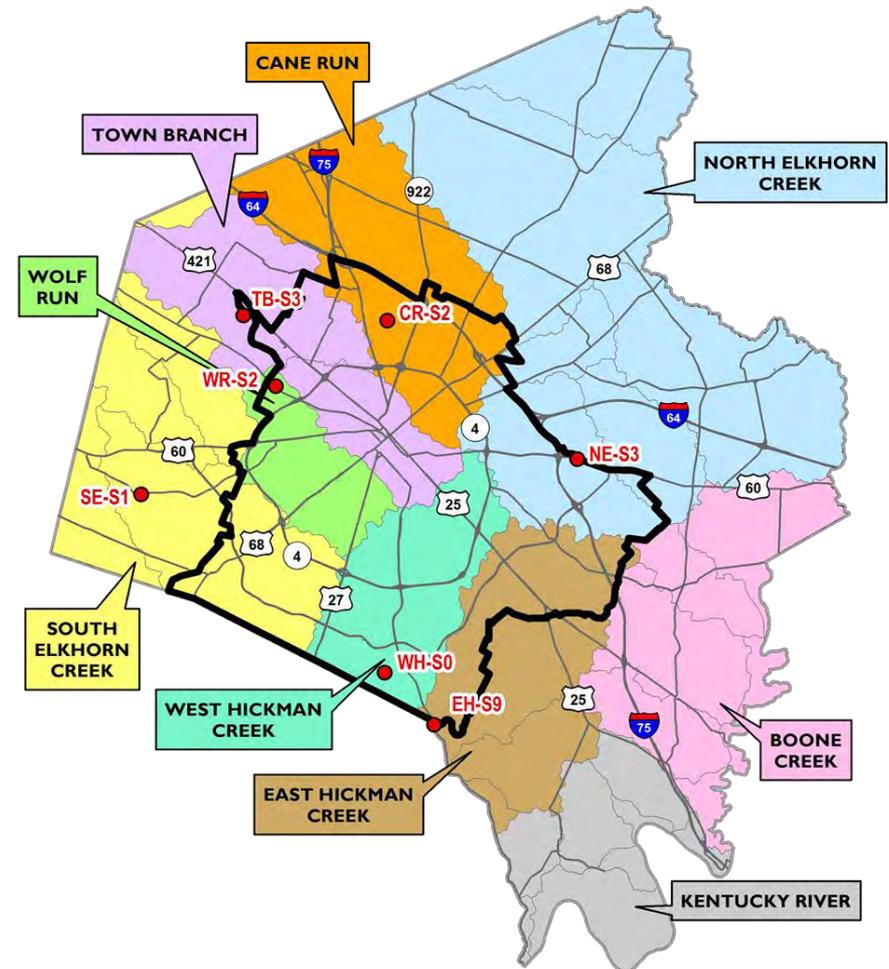


LEXINGTON

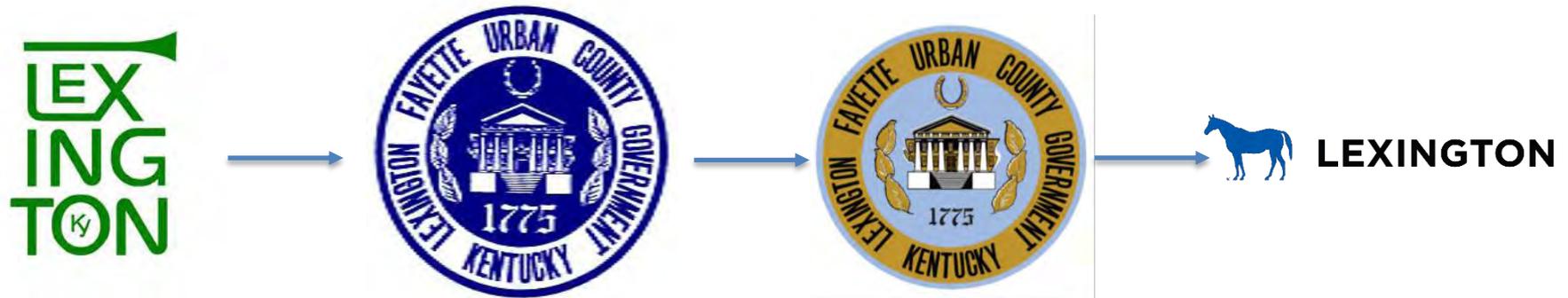


A Bit About Lexington

- Officially: Lexington-Fayette Urban County Government
- USA / RSA
- Sits on a hill / no major river
- Population > 310,000
- Other MS4s
 - UK
 - KYTC

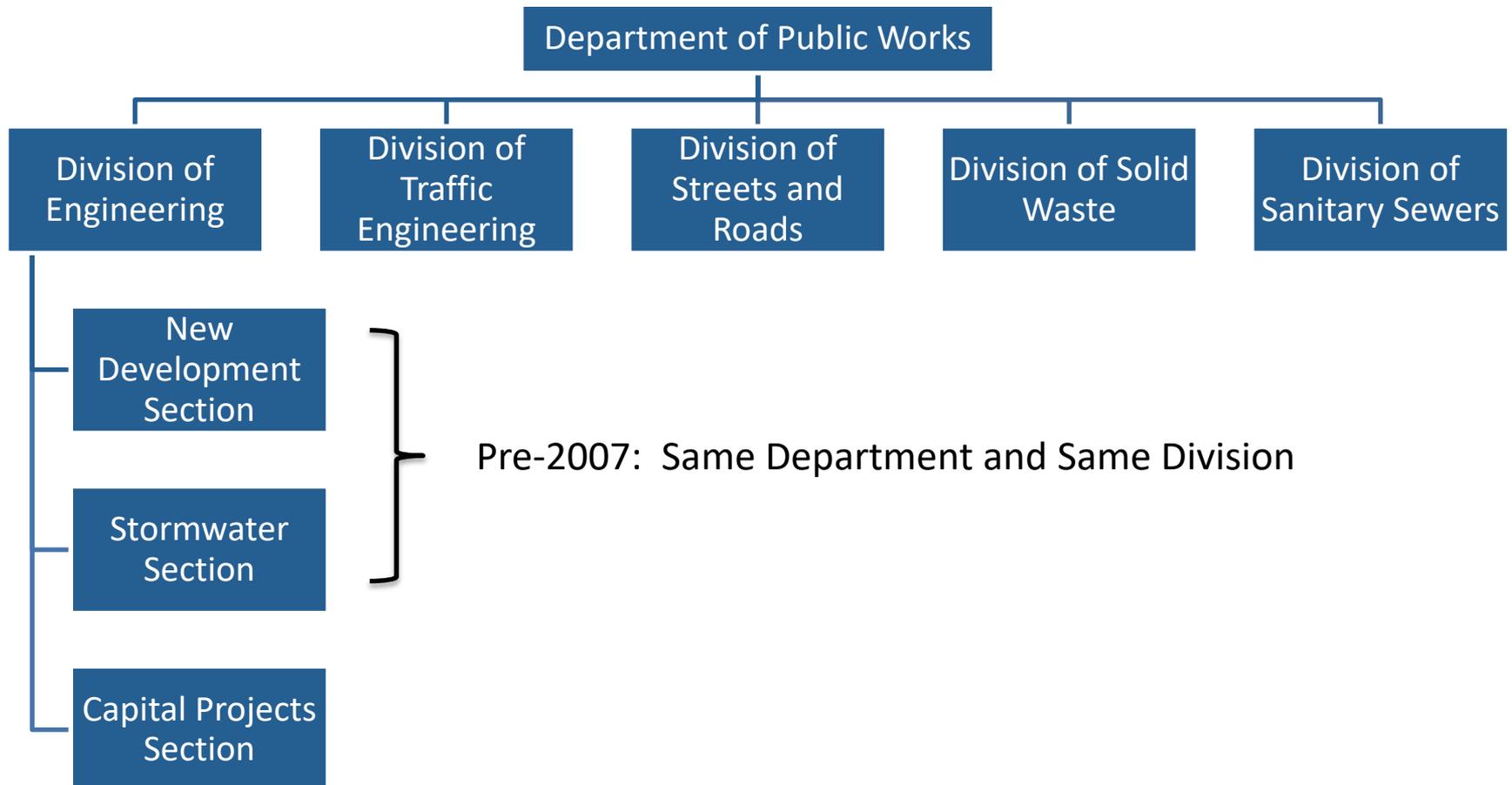


Why is BMP management a challenge?



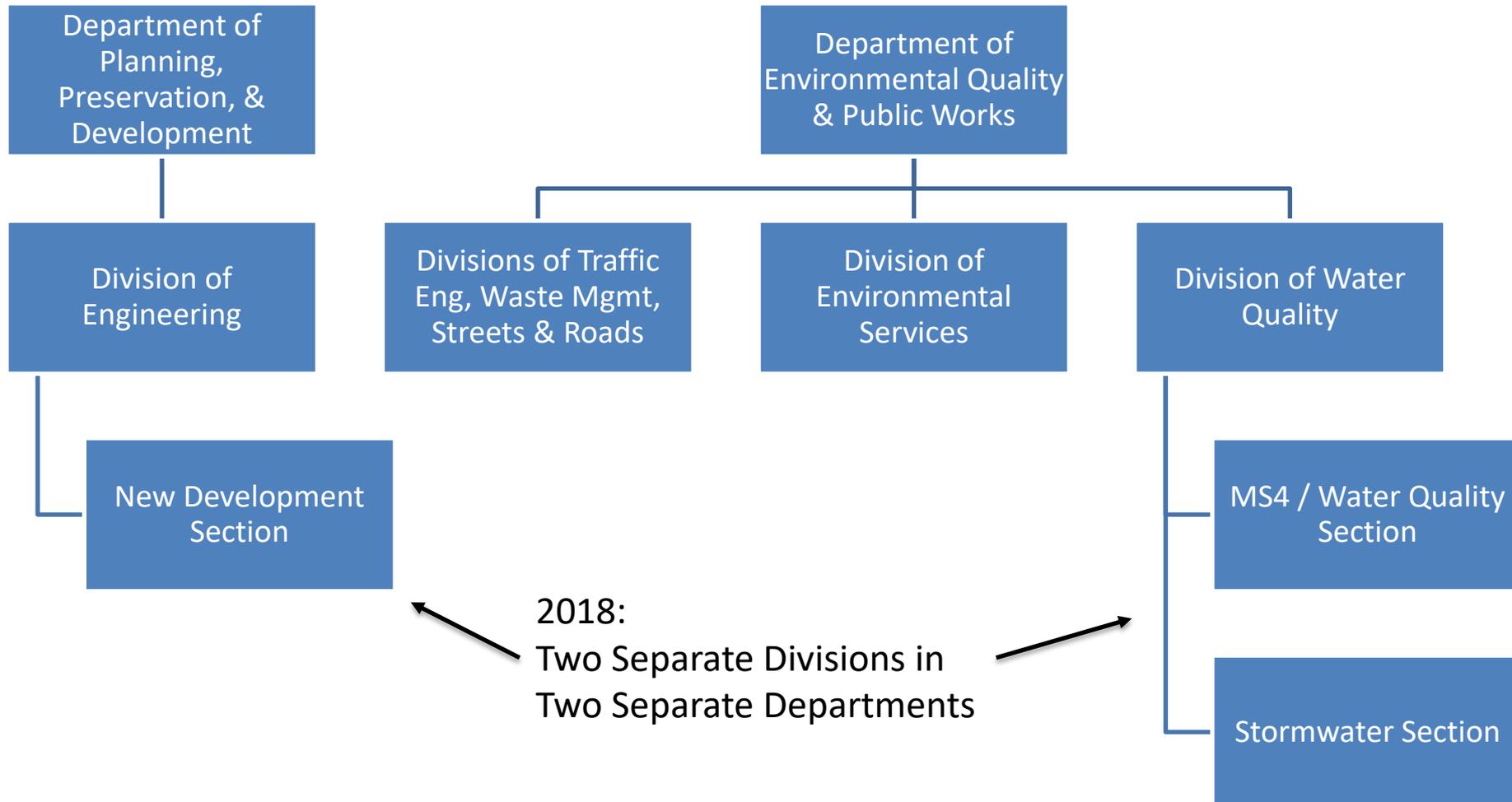


Why is BMP management a challenge?





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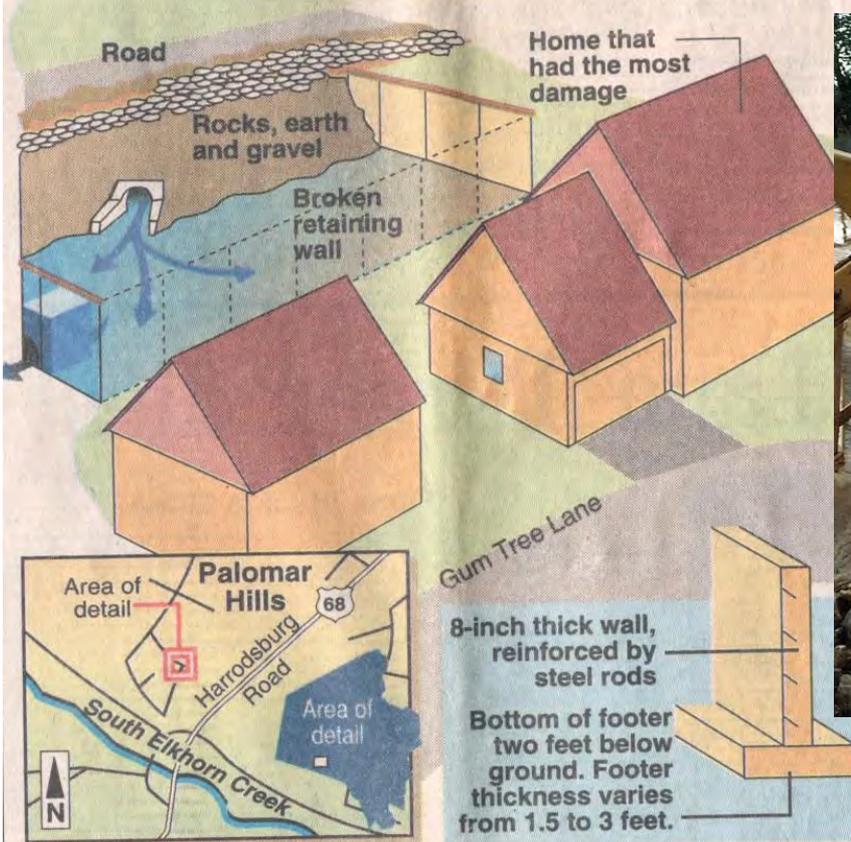




Engineering Manuals adopted in 2001

FLOOD SITE

This is an outline of the Gum Tree Lane site that flooded when an 8-foot high retaining wall broke during a storm Monday. The developer built the wall to hold water in the basin, then let it drain slowly. Instead the wall failed with water two feet from the top.





Engineering Manuals

Procedures Manual for Infrastructure Development (2016)

Construction Inspection Manual (2005)

Geotechnical Manual (2005)

Roadway Manual (2005)

Structures Manual (2005)

Sanitary Sewer and Pumping Station Manual (2009)

Stormwater Manual (2016)



Stormwater Manual History

2001	<ul style="list-style-type: none">• Manual adopted - <i>design standards for water quantity and water quality</i>.• Revised hydrologic modeling standards and curb inlet design standards later in 2001
2002	<ul style="list-style-type: none">• Revised standards for inlets, manholes, extended detention ponds, downspout disconnections, and prefabricated treatment devices• Clarified requirements for mitigating stream construction impacts• Clarified hydrologic modeling methods• Added National Flood Insurance Program requirements
2004	<ul style="list-style-type: none">• Added redevelopment standards• Added program that allows a fee-in-lieu of on-site stormwater management
2005	<ul style="list-style-type: none">• Clarified water quality design requirements• Revised modeling standards• Updated design storm rainfall values• Revised standards for inlets, channels, sediment ponds, detention basins, and ESC
2009	<ul style="list-style-type: none">• Added National Flood Insurance program requirements• Added concrete washout standards for sediment control
2011	<ul style="list-style-type: none">• Revised Chapters 2 and 11 to reflect the requirements of the new erosion control ordinance
2014	<ul style="list-style-type: none">• Implemented Stormwater Management Executive Summary Form
2016	<ul style="list-style-type: none">• Major update



**EXECUTIVE SUMMARY
STORMWATER MANAGEMENT PLAN
FOR**

Name of New Development Project

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Page 4 – Detention Requirements
Page 5 – Detention Basin Data Form
Page 6 – Summary of Peak Outflows
Page 7 – Water Quality Requirements
Page 8 – Water Quality Data Form
Page 9 – Submittal Checklist
Page 10 – List of Supplemental Information Provided in the Appendix

Certification:

I certify that this executive summary was prepared by me or others under my supervision, and that a copy is being provided to the New Development Section in the Division of Engineering and the MS4 Water Quality Manager in the Division of Water Quality.

Date

Engineer's Signature and Kentucky License No.

Printed Name

Name of Engineering Firm



Stormwater Manual (2016)

- Incorporated LFUCG's 2012 Low Impact Development Guidelines into manual
 - Requirement of 2015 MS4 permit
 - Promotes infiltration; reduces runoff volume
- Water Quality Volume and Runoff Reduction Volume
- Restricted the use of manufactured WQ devices
 - Established a uniform design standard
 - Must be certified by New Jersey DEP
- Required design engineer to inspect construction of BMPs on commercial projects
- *Removed BMP maintenance from the Stormwater Manual*



Procedures Manual (2016)

- Expanded to cover stormwater infrastructure on private property
- Expanded list of items that the surety covers to include Post-Construction Controls
- Updated the Commercial Agreement to Maintain Stormwater Controls

Lexington-Fayette Urban County Government
Post-Construction Stormwater Management Workshop
Fayette County Cooperative Extension Service
February 10, 2017
Agenda



LEXINGTON

8:00-8:30	Registration
8:30-8:50	Purpose of the Workshop – Jennifer Carey, LFUCG
8:50-10:10	<p>Underground Detention</p> <ul style="list-style-type: none"> • Considerations for the Design, Installation and Maintenance of Underground Detention – Samantha Brown, Contech (8:50-9:10) • What's on the Menu at the Underground Detention Café?: Exploring the Multitude of Product Types for Underground Detention – Sandy Collins-Camargo, ADS (9:10-9:30) • Performance of Underground Gravel Filter Media (UGF) as a Stormwater BMP Structure – Jihad Hallany, Vision (9:30-9:50) • Underground Detention Design Issues – Brian Hayes, LFUCG (9:50-10:10)
10:10-10:25	Break
10:25-10:55	Lifecycle of Urban Green Infrastructure: 5 Years After Pilot Implementation in New York City – Matthew Jones, Hazen and Sawyer
10:55-11:25	The Blurred Distinction Between Underground Detention, Permeable Pavements, and Green Infrastructure/LID – Sandy Collins-Camargo, ADS
11:25-11:55	Klausing Group: A Plethora of Green Infrastructure Practices Packed Onto One Parcel – Scott Southall, CDP and Dan Stever, Klausing Group
11:55-12:30	Lunch – Provided LFUCG's Stormwater Quality Projects Incentive Grant Program – Chris Dent, LFUCG
12:30-1:00	Translating Research Partnerships to Improved Bio-retention Basin Performances – Bret Lavey, Stantec
1:00-1:30	Rainwater Harvesting for Post-Construction Stormwater Management – Samantha Brown, Contech
1:30-2:00	Porous Asphalt – Mark S. Buncher, Asphalt Institute and Stephen Sewell, Palmer
2:00-2:15	Break
2:15-2:45	Pervious Concrete: No Maintenance, No Porosity – R. Finley Messick, Kentucky Ready Mixed Concrete Association
2:45-3:15	ODOT I-70/71 Interchange Case Study: Stormwater Management with Hydrodynamic Separation (HDS) for 75 cfs of Flow – Samantha Brown, Contech
3:15-3:45	Design and Management of Green Infrastructure – Russ Turpin, EcoGro
3:45-4:15	How Do You Clean Up Stormwater After It Has Already Reached the Stream?: A Case Study of Using Stream Restoration to Reduce Stormwater Pollution – Brad Redmon, EcoGro/Ridgewater
4:15-4:30	Wrap Up



Post Details

Reported stats may be delayed from what appears on posts



Live Green Lexington

Published by Jennifer Myatt [?] · February 10 at 1:21pm ·

At the Post-Construction Stormwater Management Workshop today, we learned about green infrastructure and best practices for preventing stormwater runoff.

The photo shows a presentation by Sandy Collins-Camargo of ADS about different types of underground water detention devices.



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Boost this post for \$18 to reach up to 3,700 people.

2,068 people reached

Boost Post

Jim Conner and Theresa Maynard

Like Comment Share

2,068 People Reached

2 Likes, Comments & Shares

2 Likes	2 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
0 Shares	0 On Post	0 On Shares

17 Post Clicks

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In the works . . .

LFUCG INFRASTRUCTURE DEVELOPMENT PROCESS

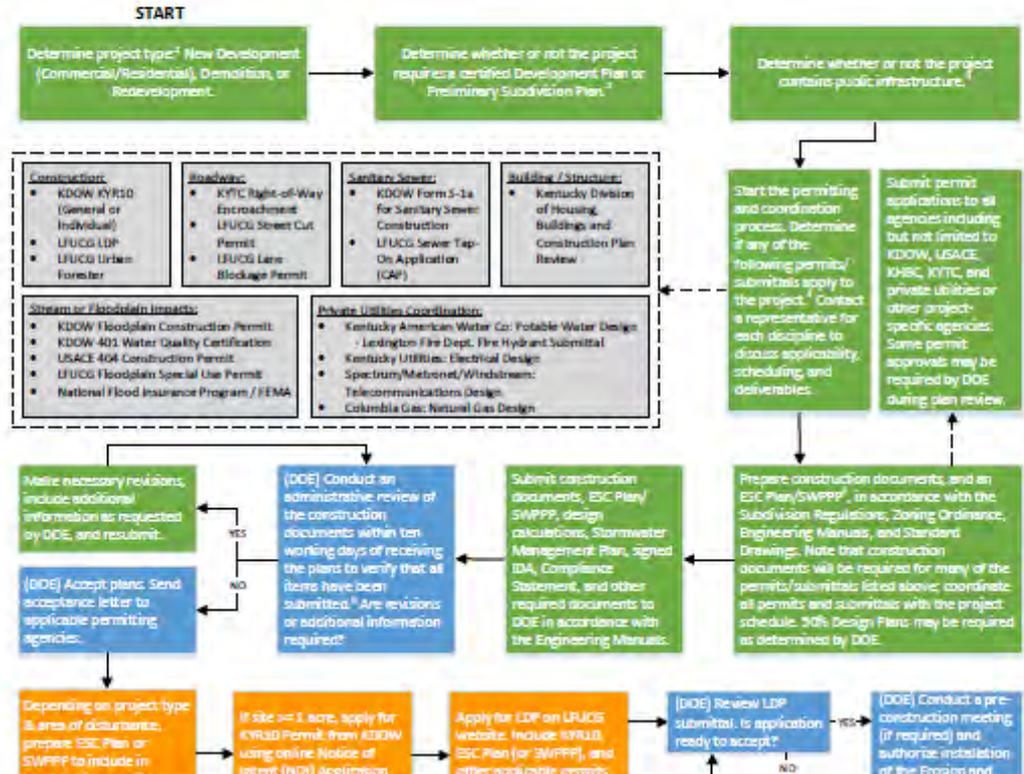
Responsibilities	
LFUCG	
Developer/Engineer	
Contractor	

List of Acronyms:

BMP – Best Management Practice
 CAP – Capacity Assurance Program
 DBI – Division of Building Inspection
 DES – Division of Environmental Services
 DOE – Division of Engineering
 DWQ – Division of Water Quality
 ESC – Erosion and Sediment Control

FEMA – Federal Emergency Management Agency
 IDA – Infrastructure Development Agreement
 KAWC – Kentucky American Water Company
 KDOW – Kentucky Division of Water
 KHBC – Kentucky Housing, Buildings and Construction
 KYR10 – Kentucky General Construction Permit
 KYTC – Kentucky Transportation Cabinet

LDP – Land Disturbance Permit
 LFUCG – Lexington-Fayette Urban County Government
 NFP – National Flood Insurance Program
 NOT – Notice of Termination
 NOV – Notice of Violation
 SWPPP – Stormwater Pollution Prevention Plan
 USACE – United States Army Corps of Engineers



Pre-Design Planning, Permitting, and Project Design



Begin with the End in Mind

- Coordination
- Cooperation
- Communication



LEXINGTON

FOR MORE INFORMATION

www.lexingtonky.gov

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MS4 / Water Quality Section Manager

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