LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
DIVISION OF ENGINEERING

EXECUTIVE SUMMARY

STORMWATER MANAGEMENT PLAN
FOR

_____

*Name and Address of **New Development** Project*

EXECUTIVE SUMMARY
STORMWATER MANAGEMENT PLAN
FOR

_____

Name of New Development Project

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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

GENERAL INFORMATION

Project Name:

Site Address:

Owner/Developer (Name, email address, phone number):

Engineer (Name, email address, phone number):

Watershed:

☐ Boone Creek ☐ Cane Run ☐ East Hickman ☐ KY River
☐ North Elkhorn ☐ South Elkhorn ☐ Town Branch ☐ West Hickman
☐ Wolf Run

☐ Royal Spring Wellhead Protection Area

U. S. Army Corps of Engineers Jurisdictional Streams and Wetlands

Stream Length (feet): _____

Wetland Area (square feet): _____

Type of New Development Project: ☐ Residential ☐ Commercial

Limits of Disturbance (LOD) in acres: _____

(Land disturbance includes demolition, removal of pavements, and other activities that temporarily expose soil. It does not include repaving or remodeling.)

Proposed Impervious Area within the LOD (acres): _____

No. of Outfalls (pipe or open channel at the property line): _____

DETENTION REQUIREMENTS

Complete the applicable box below

Box 1

☐ **Detention basins are proposed to reduce the peak flows to baseline (pre-development) levels for the design storms in Chapter 5 of the Stormwater Manual (1.6.3). In areas where downstream flooding is known to be a problem, LFUCG may require that peak flows be less than pre-development (1.6.2).**

Complete the Detention Basin Data Form for each basin.
Complete the Summary of Peak Flows for each outfall (pipe or open channel at the property line).

Article 16-2(g) of the Zoning Ordinance (check one box below):

☐ Stormwater management facilities are provided for off-street parking areas containing five (5) or more parking spaces and/or more than 1,800 square feet.

☐ Off-street parking area is 1,800 square feet or less, or less than 5 parking spaces.

Box 2

☐ **On-site detention is not required (at least one box below must be checked, Section 1.6.2 of the Manual).**

☐ The Engineer has conducted a Downstream Study and all of the following apply within the study area:

- there will be no effect (practically interpreted to be less than 0.10 feet for modeling purposes) on the water surface elevations within the DSA for the design storms for flood control structures in Table 5-1, and the 25yr-24hr storm
- the downstream drainage system within the DSA has sufficient capacity as defined in Table 1-5

Note: The Downstream Study Area (DSA) means the area beginning at the property line and extending downstream to a point where the proposed development area comprises 10 percent of the total watershed area draining to that point.

☐ The Engineer has conducted a Downstream Study and determined that on-site detention will increase flood elevations in the DSA.

☐ Detention is provided in existing facilities as part of a regional stormwater quantity master plan:

☐ Expansion Area 2 ☐ Beaumont Centre ☐ Coldstream
☐ Hamburg ☐ Reynolds Road ☐ Masterson Station
☐ Other _____

☐ Detention is provided offsite in existing facilities (explain in the Appendix).

☐ Supporting documentation attached, including map of offsite detention basin.

DETENTION BASIN DATA FORM

Detention Basin No. _____ (Complete for each Basin)

Type of Detention Facility:

☐ Detention Basin ☐ Underground Detention ☐ Wet Pond ☐ Extended Detention
☐ Green Infrastructure w/detention volume: ☐ Infiltration Trench ☐ Bioretention ☐ Bioinfiltration Swale
☐ Permeable Pavement

Proposed Total Detention Volume: _____ cubic feet (top of embankment to bottom of basin)

Peak Flow Attenuation Design			
Design Storm	**Peak Flows**		
	Pre-Development	**Basin Inflow**	**Basin Outflow**
10yr-6hr			
100yr-6hr			
2006 actual storm			
1995 actual storm			

100yr-24hr storm:
Peak Stage _____ (assuming no flow through the principal spillway)
Emergency Spillway Elevation _____

Elevation of Normal Pool of Wet (Retention) Ponds _____
☐ Wet Ponds are designed with anti-seep collars

SUMMARY OF PEAK FLOWS

Outfall No.		Peak Flow (cfs)			
		10yr-6hr	100yr-6hr	2006	1995
1	Pre-Development				
	Post Development				
2	Pre-Development				
	Post Development				
3	Pre-Development				
	Post Development				
4	Pre-Development				
	Post Development				
5	Pre-Development				
	Post Development				
6	Pre-Development				
	Post Development				
7	Pre-Development				
	Post Development				
8	Pre-Development				
	Post Development				
9	Pre-Development				
	Post Development				
10	Pre-Development				
	Post Development				

WATER QUALITY REQUIREMENTS

Complete the applicable box below

Box 1

☐ Stormwater Controls (SWCs) are proposed to meet the water quality requirements (Section 1.7 of the Stormwater Manual).

1. Compute the Required Water Quality Volume (WQV) and Runoff Reduction Volume (RRV) based on the type of development:

☐ **Residential Subdivision with Lots 6,000 sf or larger:**
Impervious Area (IA), not counting roofs, = _____ sf
WQV = IA x 1.2”/12 = _____ cf
RRV = IA x 0.8”/12 = _____ cf (enter 0.0 if RRV is not feasible)

☐ **Commercial (and Residential Subdivision with lots less than 6000 sf)**
Impervious Area (IA), including roofs = _____ sf
WQV = IA x 1.2”/12 = _____ cf
RRV = IA x 0.8”/12 = _____cf (enter 0.0 if RRV is not feasible)

2. Complete the Water Quality Data Form for each outfall (pipe or open channel at the property line).

3. Provide SWCs to meet the Required WQV and RRV from above.

☐ Check this box if Runoff Reduction is not feasible because <u>all</u> of the following conditions are present:

- the soil infiltration rate is less than 0.5 inches per hour
  - infiltration rate of the on-site soils = _____inches/hour
- subdrains are not feasible for applicable Green Infrastructure practices
- no other Green Infrastructure practices are feasible

Box 2

☐ **On-site SWCs are not required (at least one box below must be checked, Section 1.7.2 of the Stormwater Manual).**

☐ Less than one acre of land will be disturbed.

☐ Existing SWCs are in place as part of a regional stormwater quality master plan.

☐Expansion Area 2 (Facility No. _____) ☐Coldstream

☐Other _____

WATER QUALITY DATA FORM

Outfall No. _____ (Complete for each Outfall)

Required WQV from previous page = _____ cubic feet (cf)
Required RRV from previous page = _____cf

RRV Provided by Green Infrastructure	
Description	**RRV (cf)**
Impervious Area Disconnection to Developed Green Space	
Impervious Area Disconnection to Protected Natural Areas (including floodplains)	
Bioretention and Rain Gardens	
Permeable Pavement	
Bioinfiltration Swales	
Infiltration Basins and Trenches	
Tree Trenches and Planter Boxes	
Rainwater Harvesting	
Vegetated Roofs	
Riparian Buffer Restoration	
Constructed Wetlands	
Total	

WQV Provided by Other Stormwater Controls	
Description	**WQV (cf)**
Extended Detention Basins	
Wet Ponds	
Underground Detention	
Total	

WQV Provided by Manufactured Treatment Devices		
Description	**Impervious Drainage Area (sf)**	**WQV (Imp. Area x 1.2”/12)**
Total		

Summary Table of Stormwater Controls	
RRV provided by Green Infrastructure (cf)	
WQV Provided by Extended Detention, Wet Ponds, or Underground Detention	
WQV Provided by MTDs (cf)	
Total (cf)	

SUBMITTAL CHECKLIST

Engineer's Drainage Report/Plans (Stormwater Manual Chapter 4 design documentation)

- ☐ Watershed map with sub-watersheds delineated and labeled (4.3.1)
- ☐ Location map of the stormwater controls and outfalls (4.3.1)
- ☐ Pre-development and post-development drainage map (4.3.1)
- ☐ Streams, wetlands, and other environmentally sensitive areas are shown on the plan (4.3.1)
- ☐ Detention basin design calculations and schematics (4.3.2)
- ☐ Proposed Stormwater Controls are in an easement/stormwater management area (1.5.6)
- ☐ Pre-Development and Post-Development runoff hydrographs with supporting data and analysis (4.3.2)
- ☐ Hydraulic analysis of the proposed storm sewers, inlets, culverts, and channels (4.3.2, 1.6.5)
- ☐ Water quality volume and BMP design calculations and schematics (4.3.2)
- ☐ Detailed design of control structures and embankments (4.3.2)
- ☐ Erosion prevention measures are provided at pipe outfalls (Section 1.7.6)
- ☐ Channel protection measures are provided to prevent bank erosion (8.2.2)
- ☐ Manufacturer's design and maintenance standards for stormwater manufactured treatment devices (4.3.2)
- ☐ If detention is not proposed, a hydraulic analysis is provided of the downstream drainage system that demonstrates sufficient capacity (1.6.2)

Projects In or Along a Stream/Floodplain

- ☐ LFUCG's FEMA Floodplain Administrator has reviewed the plans
- ☐ FEMA Effective Special Flood Hazard Area is shown on the plan (1.5.12)
- ☐ The 100-year floodplain has been determined for streams that have not been mapped by FEMA, and is shown on the plans (1.4.5)
- ☐ Flood Protection Elevations are shown for structures (1.6.6)
- ☐ Structures are at least 25 feet from the floodplain (1.6.7)
- ☐ Plans conform to Tables 1-9 and 1-10 regarding allowable uses in the floodplain (1.10)
- ☐ Placing fill in the 100-year floodplain will have no adverse impact on contiguous property (1.5.4)
- ☐ Vegetative buffers are shown on the plan (1.10)
- ☐ Greenways are shown on the plan (4.3.1)

Federal, State, and Local Permits related to proposed construction in a stream or floodplain

- ☐ LFUCG Division of Engineering Stormwater Permitting Checklist
- ☐ USACE 404 Permit
- ☐ KYDOW 401 Water Quality Certification
- ☐ KY Stream Construction/Floodplain Permit
- ☐ FEMA LOMR or CLOMR
- ☐ Special Permit from LFUCG for construction in the floodplain

General

- ☐ Adequate vehicle access provided to maintain BMPs (driving surface within 10 feet of the BMP)
- ☐ Maintenance agreement for commercial projects

Appendix

- ☐ Related drainage studies that affect the stormwater management plan of this project
- ☐ Narrative of known downstream flooding problems from LFUCG studies or Engineer's downstream study
- ☐ Copies of Waivers or Variances from LFUCG

Note: If a box is not checked, provide explanation in the Appendix

List of Supplemental Information Provided in the Appendix