

CHAPTER I. INTRODUCTION

A. Watershed Background

To tell the history of the Wolf Run Watershed is to tell the history of Lexington. Lexington was first founded in 1775 by William McConnell at what is now known as McConnell Springs in the Wolf Run Watershed. As Lexington has developed, the land use and water quality of the Wolf Run Watershed have changed. While environmental concerns, including water quality, were not a public priority for most of the watershed history, the last 30 years have seen a marked increase in public concern for the impact of land use changes on the streams and groundwater resources of the Wolf Run Watershed.

To highlight some of these changes, we begin with the passage of sinkhole regulation in 1982 to protect karst drainages. In 1993, McConnell Springs Park was established as a public park and significantly restored largely as a result of this ordinance. In 1991, the University of Kentucky created the Arboretum, partly located within the Wolf Run Watershed, showcasing native plants of all regions of the state. In 1999, a weed ordinance was passed allowing native plants next to streams, swales, and karst areas to grow and remain unmowed. In 2001, Lexington adopted its first stormwater manual and floodplain management plan, and in 2002 adopted a greenway master plan. Each of these has been a step of progress towards improving the relationship between urban development and water quality.

Wolf Run was first listed as impaired for swimming use in the 1998 303(d) list of Kentucky impaired waters. This impaired status has remained since then, with additional impairments identified in subsequent years. The impairment of Wolf Run, in addition to other Lexington streams, led the US Environmental Protection Agency (USEPA) and the Kentucky Environmental and Public Protection Cabinet (KY EPPC) to file a lawsuit (United States 2006) against Lexington over violations of the Clean Water Act in 2006. The lawsuit was due to failure of the city to maintain the sanitary and storm sewer systems, causing raw sewer discharges into streams. On March 14, 2008, Lexington lodged a Consent Decree in order to resolve this lawsuit (United States 2008). Within the Consent Decree, Lexington agreed to make extensive improvements to its sewer systems, address sanitary sewer overflows and associated Municipal Separate Storm Sewer System (MS4) permit violations, as well as to reduce the discharge of pollutants via stormwater. With the Consent Decree in place, Lexington is furthering its efforts to improve water quality in Wolf Run.

The citizens of Lexington, especially those in the Wolf Run Watershed, share this interest in water quality improvement. The Friends of Wolf Run, a community based watershed group, became active in the watershed in 1997, prior to the first impaired listing of Wolf Run, educating the community about stream health and making initial steps towards a cleaner watershed. This group continues to be an outspoken proponent of improving the water quality in Wolf Run. The Friends of Wolf Run sponsors the Wolf Run Watershed Council, consisting of groups and individuals working to improve the watershed.

This watershed plan is being developed in order to provide a comprehensive assessment of the health of the watershed, citizen and stakeholder concerns, watershed remediation strategies, and implementation plans for the future. It is being developed under a Section 319(h) Nonpoint Source Implementation Program Cooperative Agreement (#C9994861-09) awarded by the Commonwealth of Kentucky, Energy and Environment Cabinet, Department for Environmental Protection, Division of Water (KDOW) to the Lexington-Fayette Urban County Government (LFUCG) based on an approved work plan. These federal funds were awarded to KDOW from the USEPA under Section 319 of the Clean Water Act. Third Rock Consultants, LLC (Third Rock) was selected as the environmental consultant for this grant under a request for proposal issued by LFUCG. Friends of Wolf Run was also issued grant funding through a memorandum

of agreement with LFUCG, primarily to engage, educate, and solicit input from the public during the development of this plan.

This watershed based plan presents the collaborative culmination of an extensive data collection and analysis effort, recruitment of partners and stakeholders in watershed interests, and remediation strategy development. The Wolf Run Watershed Council has outlined a comprehensive plan to address the watershed issues. This document is intended to address the nine minimum elements required in the USEPA's *Handbook for Developing Watershed Plans to Restore and Protect Our Waters* (USEPA 2008). These nine elements are as follows:

1. An identification of the causes and sources or groups of similar sources that will need to be controlled to achieve the load reductions estimated in this watershed based plan (and to achieve any other watershed goals identified in the watershed based plan), as discussed in item (b) immediately below. Sources that need to be controlled should be identified at the significant subcategory level with estimates of the extent to which they are present in the watershed (*e.g.*, X numbers of dairy cattle feedlots needing upgrading, including a rough estimate of the number of cattle per facility; Y acres of row crops needing improved nutrient management or sediment control; or Z linear miles of eroded stream bank needing remediation).
2. An estimate of the load reductions expected for the management measures described under paragraph (c) below (recognizing the natural variability and the difficulty in precisely predicting the performance of management measures over time). Estimates should be provided at the same level as in item (a) above (*e.g.*, the total load reduction expected for dairy cattle feedlots; row crops; or eroded stream banks).
3. A description of the nonpoint source management measures that will need to be implemented to achieve the load reductions estimated under paragraph (b) above (as well as to achieve other watershed goals identified in this watershed based plan), and an identification (using a map or a description) of the critical areas in which those measures will be needed to implement this plan.
4. An estimate of the amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied upon, to implement this plan. As sources of funding, States should consider the use of their Section 319 programs, State Revolving Funds, US Department of Agriculture's (USDA) EQIP and Conservation Reserve Program, and other relevant federal, state, local, and private funds that may be available to assist in implementing this plan.
5. An information/education component that will be used to enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing the nonpoint source management measures that will be implemented.
6. A schedule for implementing the nonpoint source management measures identified in this plan that is reasonably expeditious.
7. A description of interim, measurable milestones for determining whether nonpoint source management measures or other control actions are being implemented.
8. A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made towards attaining water quality standards and, if not, the criteria for determining whether this watershed based plan needs to be revised or, if a nonpoint source TMDL has been established, whether the nonpoint source TMDL needs to be revised.
9. A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under item (h) immediately above.

B. Partners and Stakeholders

The Wolf Run Watershed Council, formed in December 6, 2010 comprises the team of partners and stakeholders who will work together to support the plan sponsor, LFUCG, and accomplish the remediation activities detailed in this plan. The following organizations took an active role in participation of the the Watershed Council and the development of this watershed plan:

- Kentucky Division of Water
- Lexington-Fayette Urban County Government Division of Water Quality
- Lexington-Fayette Urban County Government Division of Environmental Policy
- Lexington-Fayette Urban County Government Parks and Recreation
- 10th District Urban County Council Member Doug Martin
- 11th District Urban County Council Member Peggy Henson
- Friends of Wolf Run
- University of Kentucky College of Agriculture
- University of Kentucky Water Resource Research Institute
- University of Kentucky Environmental Research and Training Laboratory
- Bluegrass Community and Technical College Environmental Science Technology
- Kentucky Geological Survey
- Kentucky River Basin Coordinator
- Fayette County Public Schools
- Red Mile Racetrack
- Calumet Farm
- Three Chimneys Farm
- Good Foods Market and Café
- Southland Association
- Port Royal Neighborhood Association
- Picadome Neighborhood Association
- Harrods Park Townhomes Association
- Cardinal Valley Neighborhood Association
- Gardenside Neighborhood
- Bluegrass PRIDE
- Kentucky Waterways Alliance
- Bluegrass Raingarden Alliance
- Eastway Wetland Committee
- Preston Springs Group
- Third Rock Consultants
- CDP Engineers
- Cedar Creek Engineering
- EcoGro
- Montgomery Plumbing
- National Environmental Compliance
- Leachman Landscape Design