

Farmer, Chair
Mossotti, Vice Chair
Gorton
Ellinger
Kay
Ford
Lawless
Beard
Clarke
Henson

A G E N D A

Planning & Public Works Committee

February 11, 2014

1:00 P.M.

1. January 14, 2014 Committee Summary (1-2)
2. Downtown 2-Way Traffic Study - Farmer (3-22)
3. Greenway Manual & Plan - Mossotti (23-83)
4. 4 Way Stop Glendover & Valley – Beard (84-90)
5. Todd's Road Widening Project Update – Stinnett
6. Items Referred (91)

“Planning & Public Works Committee, to which should be referred matters relating to the Division of Planning and including, but not limited to matters related to housing, infill and redevelopment, purchase of development rights and historic privation, and any related partner agencies and the Department of Public Works and its related divisions, including capital improvement projects and any related partner agencies”

-Council Rules & Procedures, Section 2.102(1)

2014 Meeting Schedule

January 14	June 10
February 11	July 1
March 4	August 12
April 8	September 9
May 6	October 7

Planning & Public Works Committee
January 14 2014
Summary

Farmer called the meeting to order at 1:03 PM. All committee members were in attendance except Lawless. Stinnett also attended.

1. November 12, 2013 Committee Summary

On a motion by Gorton, second by Ellinger the substitute November 12, 2013 Committee summary was approved unanimously.

2. Merge Streets & Roads and Traffic Engineering

Farmer stated he referred the item at the request of the Administration.

Martin addressed the item. He stated that the Administration has reconsidered the merger and is now recommending that the divisions be left unchanged. He stated that the plan will consist of 3 actions: 1. Re advertise the vacant Director of Traffic Engineering; 2. Work with Human Resources to reclassify the vacant Director of Streets & Roads to remove the requirement of a Professional Engineer's license; and 3. Advertise the vacant Director of Streets & Roads position based on the outcome of the reclassification process.

Martin stated that the reclassification process will require Council authorization.

On a motion by Mossotti, second by Gorton the issue of Merging Streets & Roads with Traffic Engineering was removed from the Committee Referral List. The motion passed unanimously.

3. Design Excellence Update

Gorton stated that she appreciated concerns raised by the Committee were incorporated into the new draft. She also was supportive of the item being moved as a package rather than in pieces.

Kay provided background on the item. He stated that the Design Excellence Task Force met after the Council presentation to address outstanding issues. Kay stated that the Lexington Downtown Authority will conduct an economic analysis of residential and retail markets and develop an economic incentive program proposal in early spring.

Kay also stated that the Lexington Parking Authority will develop a 10-year capital improvement plan for new garages and other public parking facilities.

In response to a question from Farmer Fugate stated that the DDA will utilize internal funds to hire the consultant and their recommendations should be finalized in the March-April time period.

On a motion by Kay, second by Gorton, the Design Excellence text amendments was moved to the full Council to be initiated and submitted to the Planning Commission. The motion passed unanimously.

4. Development Fee Structure

Paulsen presented the fee structure issue. He stated that the scope includes permits and associated fees in the Department of Planning, Preservation and Development, except the exaction fees assessed in the expansion areas.

Paulsen stated that the fees seem to be reasonable and business friendly compared to surrounding communities. Paulsen stated that he is recommending that the residential permit fees be left unchanged. He also stated that the commercial permit fees need further examination before a recommendation is made.

In response to a question from Mossotti, Paulsen discussed the commercial fee structure and make up.

In response to a question from Farmer, Paulsen stated that they can come back in March to further discuss the fee structure.

5. Items Referred

On a motion by Clarke, second by Gorton the issue of Utility Poles in Right-of-Way was removed from the Committee Referral List. The motion passed unanimously.

On a motion by Clarke, second by Gorton the issue of the Re Paving program was removed from the Committee Referral List. The motion passed unanimously.

On a motion by Ellinger, second by Gorton the issue of Working with Fayette County Schools to Sustain Road Salt Services from the Committee Referral List. The motion passed unanimously.

On a motion by Gorton, second by Mossotti the issue of Alternative Fuels was removed from the Committee Referral List. The motion passed unanimously.

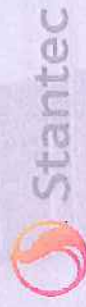
On a motion by Gorton, second by Henson the issue of Performance Bonds was removed from the Committee Referral List. The motion passed unanimously.

The meeting adjourned at 1:55 PM.

Downtown Lexington Traffic Movement & Revitalization Study Progress Update

Presented to the Lexington-Fayette Urban County
Council

Planning and Public Works Committee



February 11, 2014

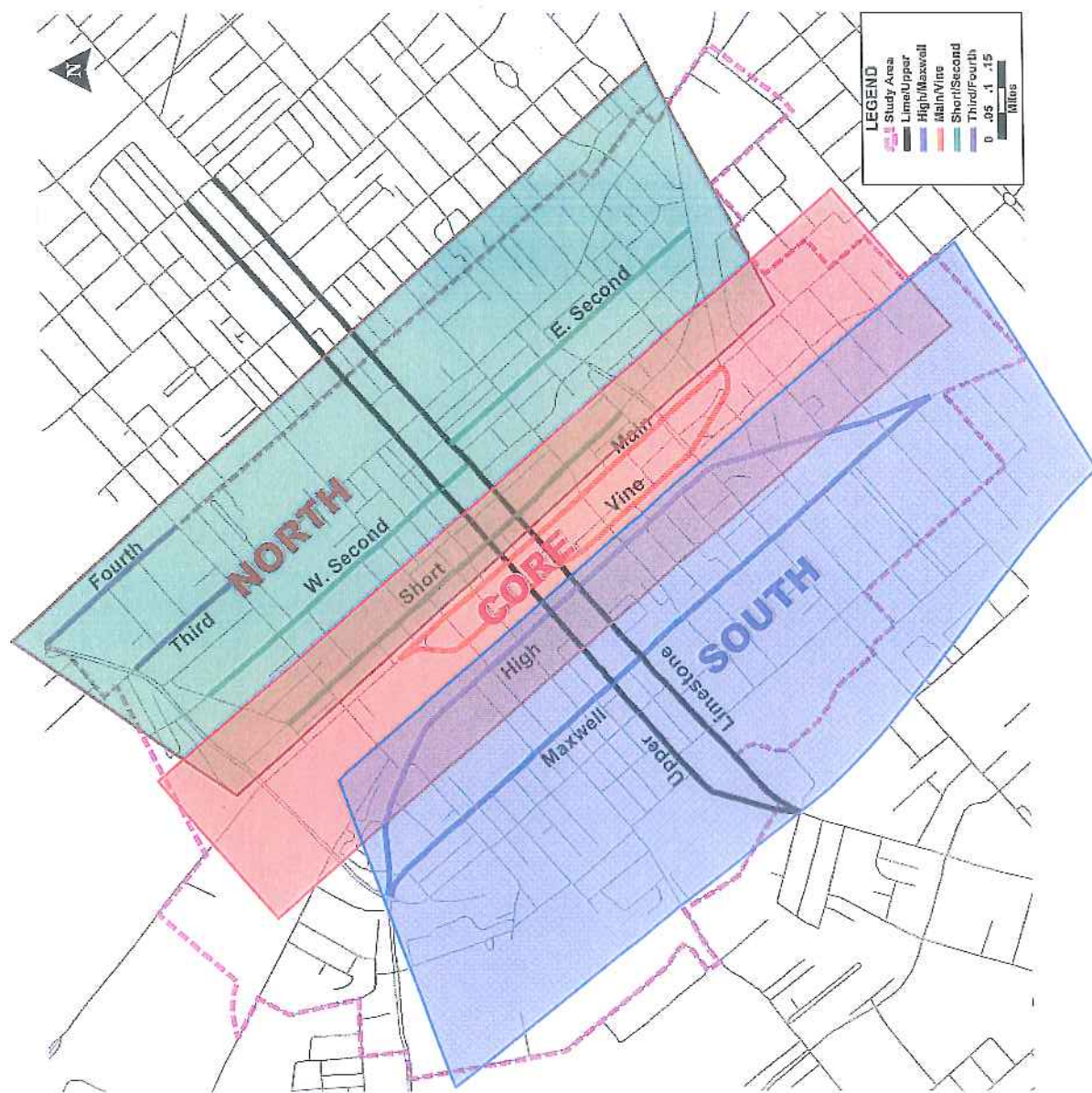
Agenda

- 1 Focus Area Summaries
- 2 Remaining Activities
- 3 Planned Schedule

1 Focus Area Summaries

Focus Areas

- North Area
- Core Area
- South Area



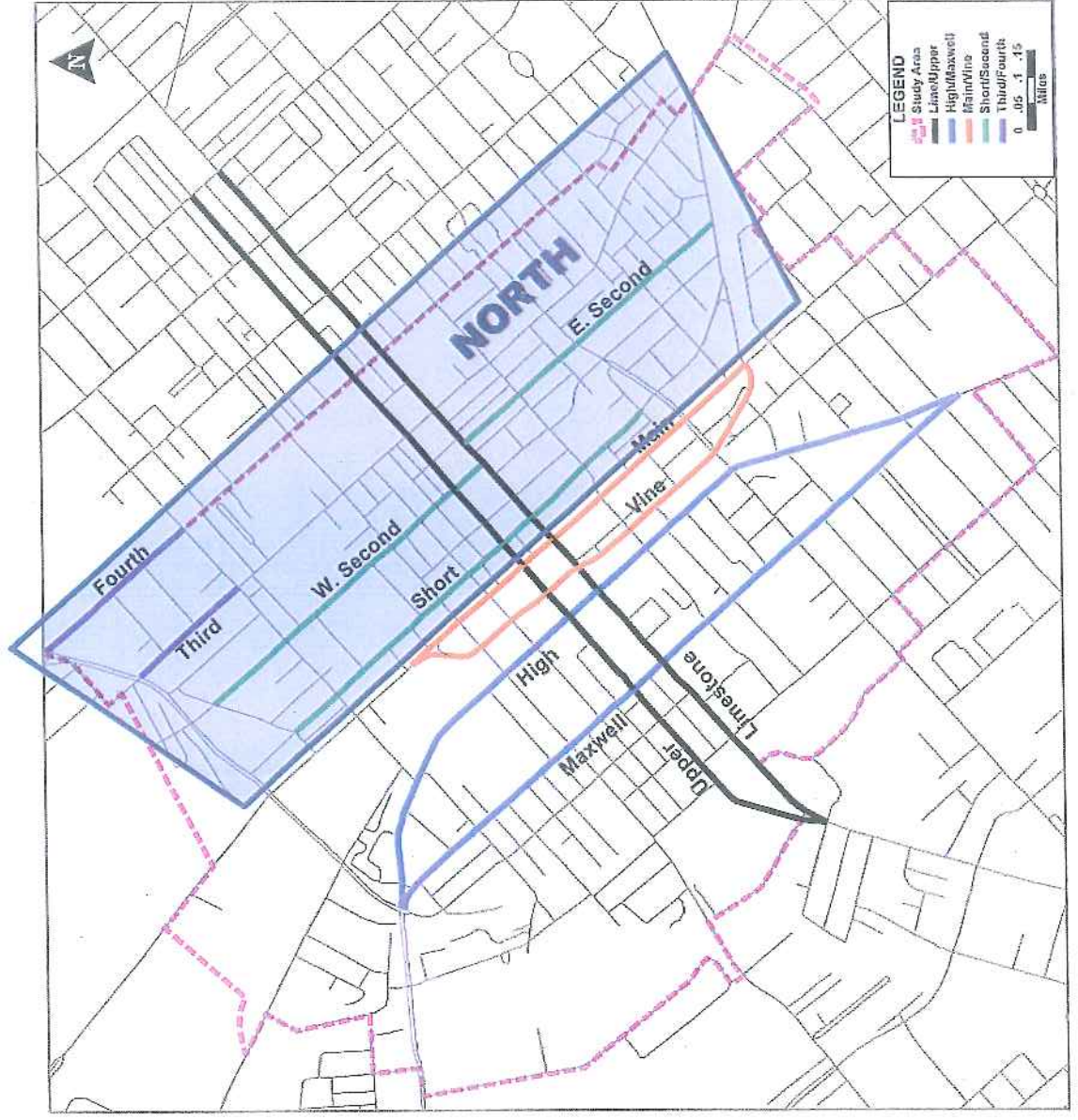
North Area Analysis

Streets

- Fourth
- Third
- N. Limestone
- N. Upper
- Short
- W. Second
- E. Second

Evaluation Criteria

- Traffic Operations
- Safety
- Bus/Bike/Ped
- Stakeholder Input



North Area Findings

- N. Limestone, N. Upper, Short Street, West Second – could be converted without significant operational impacts
- Areas of Concern – Special Needs
 - Opera House block
 - N. Limestone schools
- Potential impacts on transit bus routing, school bus operations, fire truck operations
- Short Street – loading zones around Cheapside
- Potential benefits – traffic calming, detour opportunities, visibility

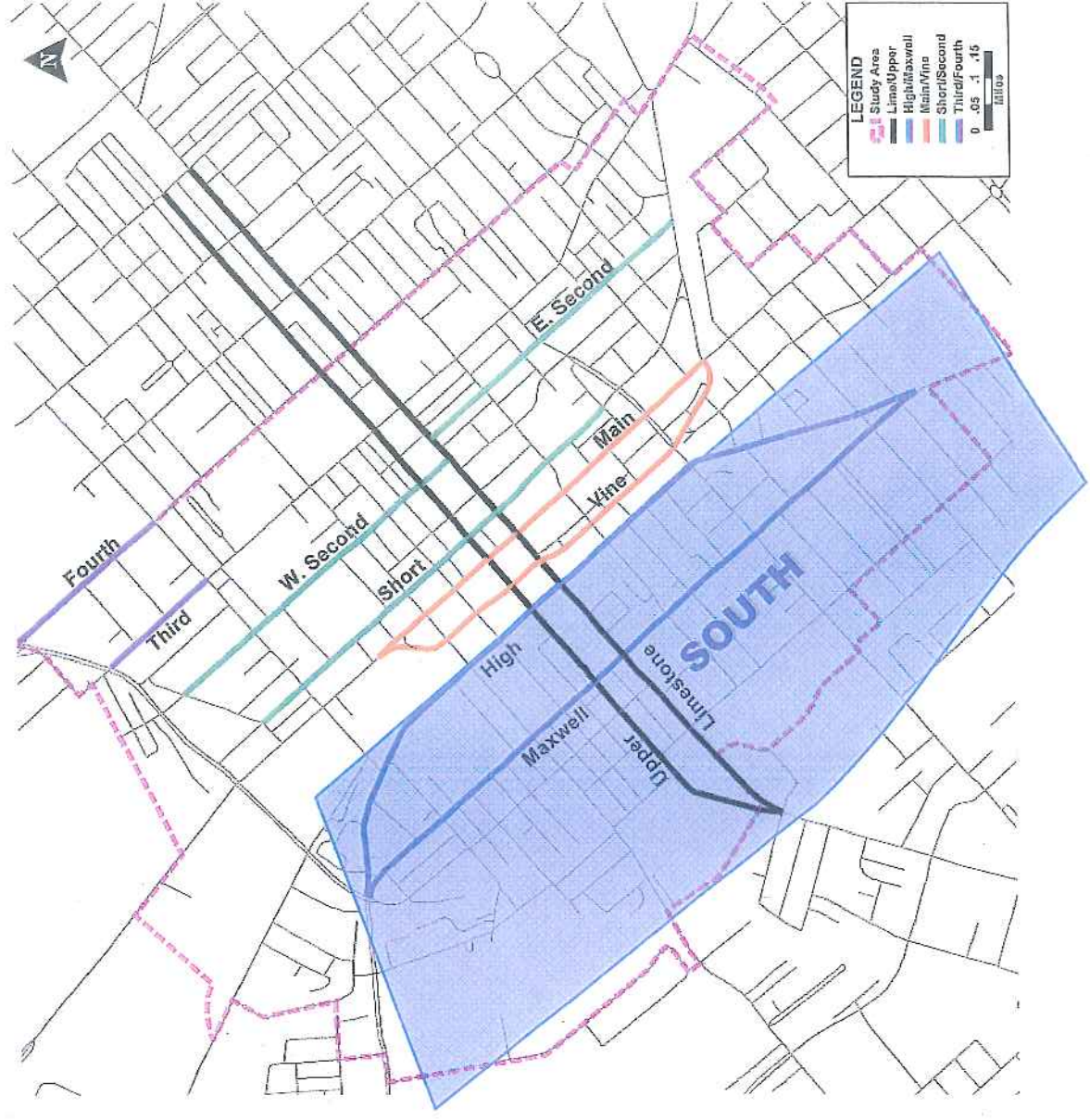
South Area Analysis

Streets

- S. Limestone
- S. Upper
- Maxwell
- High

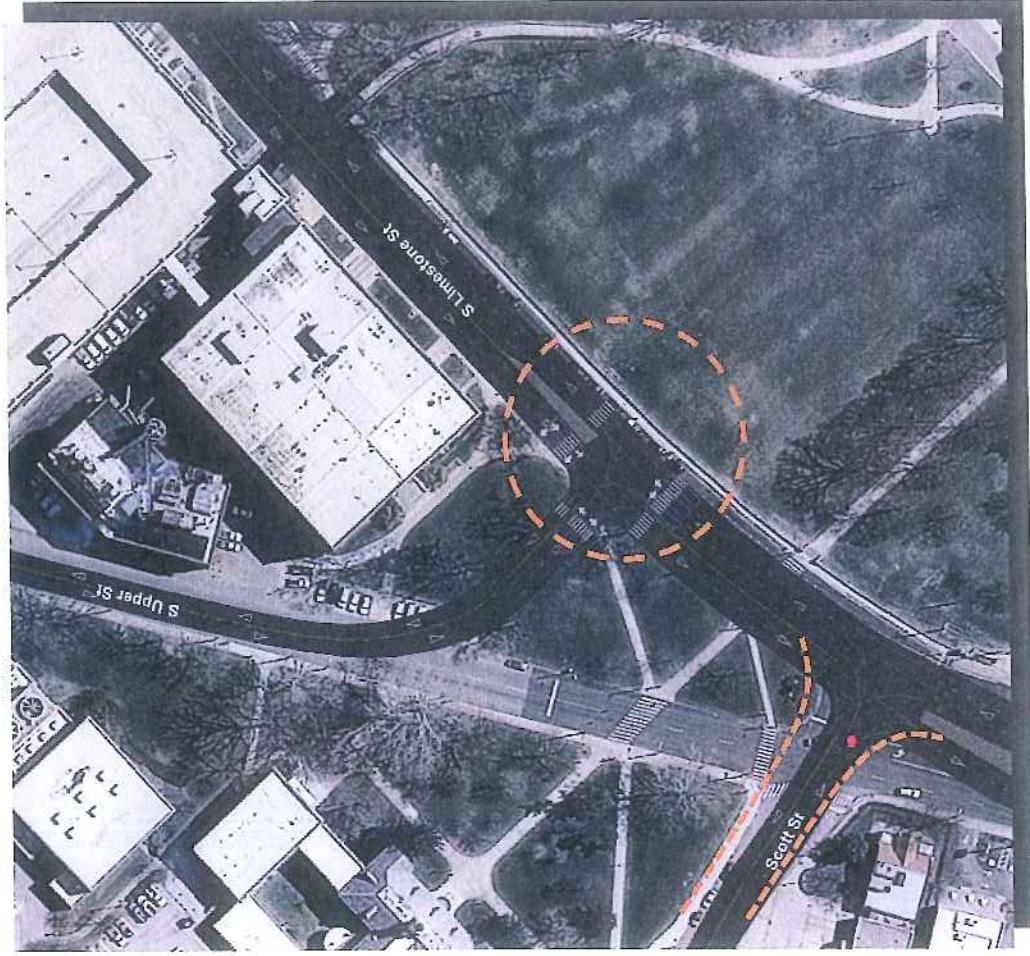
Evaluation Criteria

- Traffic Operations
- Safety
- Bus/Bike/Ped
- Stakeholder/Public Input



South Area Network Assumptions

- S. Limestone, S. Upper become two-way
- Maxwell, High become two-way
- S. Upper at S. Limestone - signalized "T" intersection
- Scott Street - future terminus for Scott Street Connector



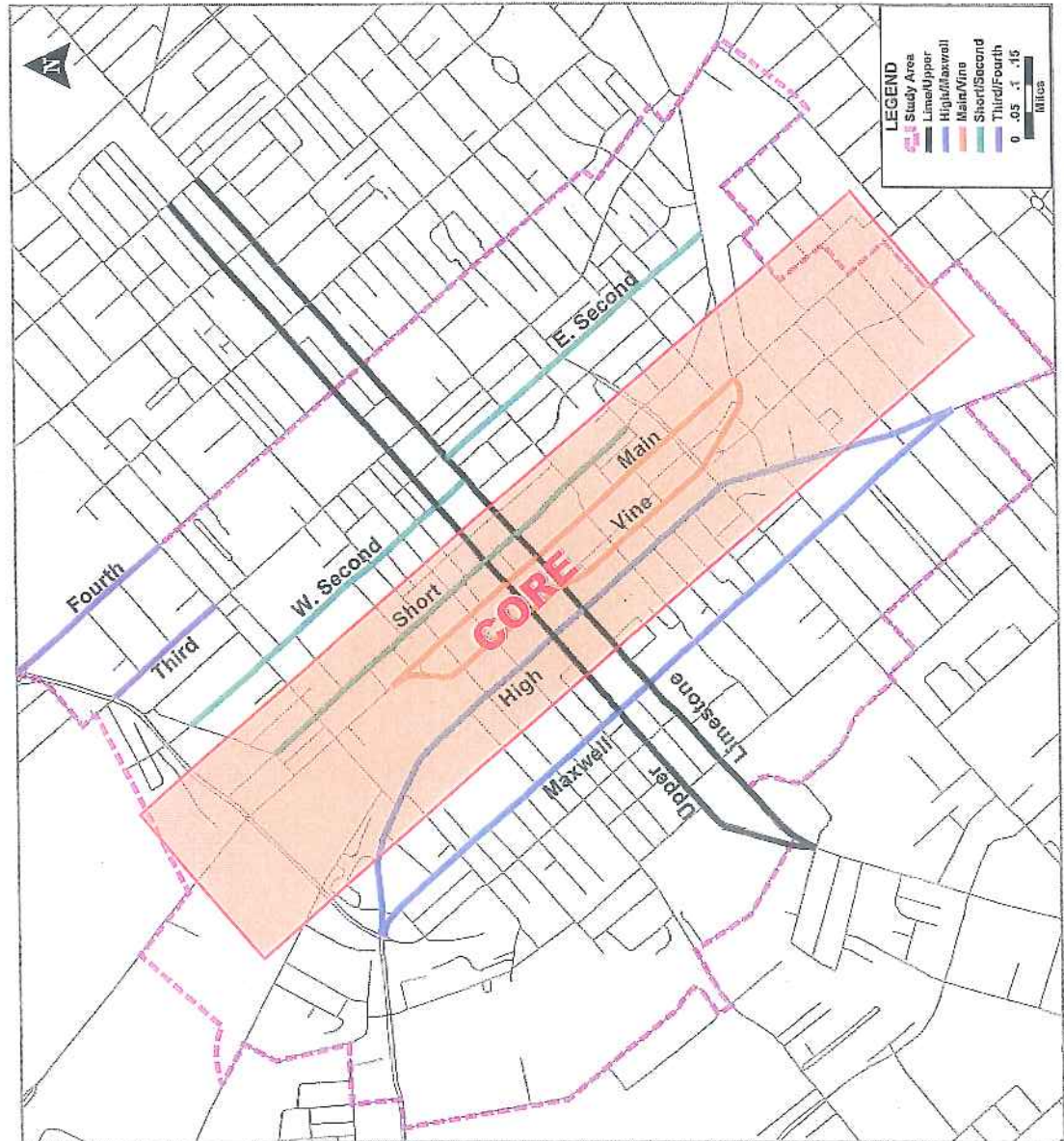
South Area Analysis Conclusions

- Higher travel times (if converted to two-way)
- Lower travel speeds
- Higher delay
- More stops
- South Limestone backups expected to increase (particularly A.M. peak)
- Possible lost parking (limited basis) - Maxwell and High
- Lost bike lanes
- Several unknowns remain

South Area Remaining Activities

- Finalize performance metrics
- Policy Advisory Group meeting
- Stakeholders meeting

Core Area Analysis



- Main Street
- Vine Street

Core Area Key Objectives

- Preserve Mobility
- Accommodate All Modes
- Preserve On-Street Parking
- Improve Safety (Autos, Pedestrians, Cyclists)
- Provide Access

Two-Way Options

- Several alternatives/combinations evaluated
- Two identified for final evaluation and comparison
 - Alternative 1- "Complete Street"
 - Alternative 3 - Optimized Traffic Network

Alternative 1

- "Complete Street" alternative
- One lane each direction with center left turn lane
- Maintains on-street parking and bike lanes
- Most significant peak hour traffic impacts



Two-Way Concept

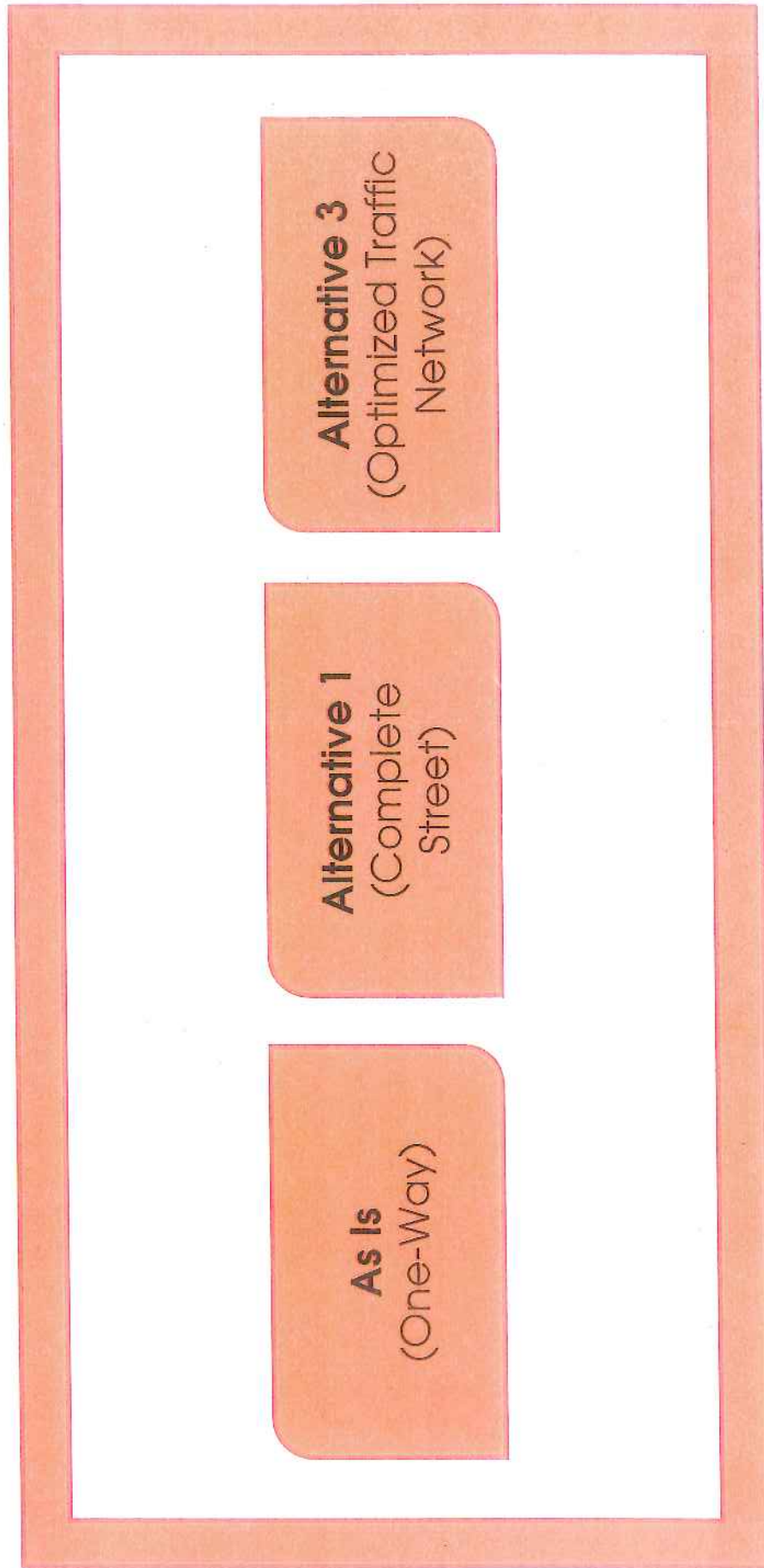
Alternative 3

- Optimized Traffic Network → minimizes congestion, emission impacts
- Two lanes each direction
- Peak period left-turn prohibition
- Center left-turn lanes at critical intersections
- Potential loss of on-street parking, bike lane



Two-Way Concept

Framework for Comparison



Framework for Comparison (cont.)

- Simple metrics (trip speed, delay per trip, number of stops per trip, etc.)
- Multimodal impacts
 - Autos
 - Pedestrians/Bicyclists
 - Transit Bus Riders
- Input for decision makers

2 Remaining Activities

- North Area prioritization
- Finalize South Area analysis
- South Area stakeholder meeting
- Finalize Core Area analysis
- Core Area Stakeholder meeting(s)
- Policy Advisory Group meetings
- Public meeting(s)
- Coordination between LFUCG and Kentucky Transportation Cabinet
- Develop Mobility Plan

3 Planned Schedule

- Complete South Area Analysis - February
- Complete Core Area Analysis - March
- Meetings (Policy Advisory Group, Stakeholders, Public) - April/May
- Mobility Plan - June

Questions?



Greenway Update

Presentation to Urban County Council
Planning & Public Works Committee
February 11, 2014

Significant Benefits of Greenways



- Environmental Responsibility
- Water Quality Benefits
- Neighborhood & Community Character
- Recreation
- Multimodal Transportation Alternatives

Significant Issues

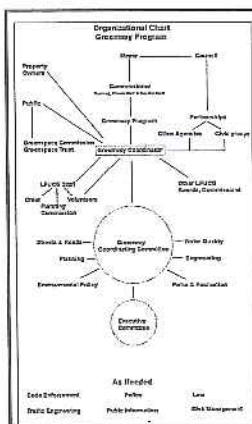


- Program Management – LFUCG has never addressed holistically
- Treatment of Properties During and After Development
- Acquisition Policies
- Maintenance Budget

LFUCG Divisions Involved



- Environmental Policy
- Water Quality
- Engineering
- Planning
- Parks and Recreation
- Department of Public Works
- Streets & Roads
- Others consulted as necessary



Recommendations

Issue:

Program Management

- Create a position of "Greenway Coordinator" to be housed in Department of Planning, Preservation & Development
- Duties:
 - coordinator role
 - management plans
 - education
 - enforcement

Recommendations

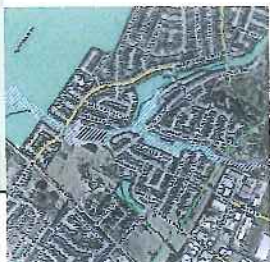
Issue: Treatment During and Post Development



- Adopt and Implement "Greenway Manual" as a part of LFUCG Development Manuals
- Adopt "Greenway Operational Handbook" as internal LFUCG management policy

Recommendations

Issue: Acquisition Policies



- Begin Systematic Program Of Acceptance Of Committed Greenway Parcels
- Look To Greenway Coordinator To Develop Priority Acquisitions Scaled To Budget Realities

Recommendations

Issue: Maintenance Budget



- Develop and Implement Maintenance Program (administered by Parks)
- Individualized Management Plan for each Greenway
- Unit Cost Approach to Greenway Maintenance Budget

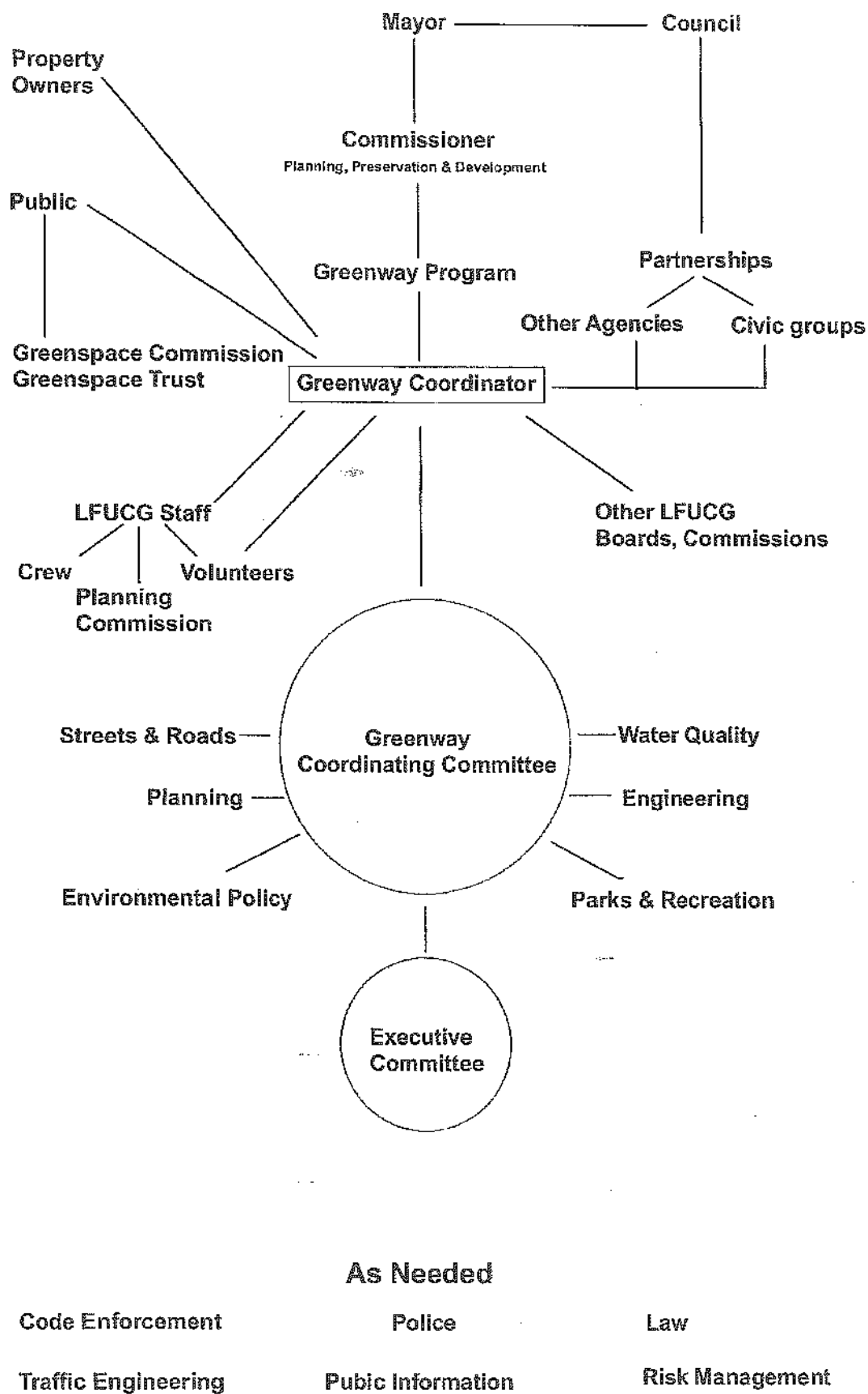
Recommendations

Immediate Next Steps



- Refer Draft Greenway Manual to Engineering Manual Update Process (including stakeholder engagement)
- FY 15 Budget Process
 - Seek Coordinator Position Funding
 - Maintenance Funding

Organizational Chart Greenway Program





DRAFT

Greenway Manual

Lexington-Fayette Urban County Government
Lexington, Kentucky

January 31, 2014

1 Table of Contents

CHAPTER 1, INTRODUCTION	4
1.1 Purpose	4
1.2 Applicability	4
1.3 Authority	5
1.4 Exceptions	6
2 CHAPTER 2, GREENWAY FACILITY PLANNING AND DESIGN	7
2.1 Conservation Greenways	7
2.1.1 General	7
2.1.2 Water Resources and Flood Control	8
2.1.3 Vegetation, Erosion Control and Microclimate Regulation	9
2.1.4 Wildlife Habitat	12
2.1.5 Uses	13
2.2 Greenway Trails	14
2.2.1 General Principles,	14
2.2.2 Standards	14
2.2.3 Guidelines	15
3 CHAPTER 3, LAND USE DEVELOPMENT AND CONSTRUCTION	17
3.1 Development Patterns and Construction	17
3.1.1 Principles	17
3.1.2 Standards	17
3.1.3 Guidelines	18
3.2 Erosion and Environmental Control during Construction	19
3.2.1 Principles	19
3.2.2 Standards	19
3.3 Greenway Access	20
3.3.1 Principles	20
3.3.2 Standards	21
3.3.3 Guidelines	21
3.4 Greenway Dimensions	22
3.4.1 Principles	22
3.4.2 Standards	22
3.4.3 Guidelines	23
3.5 Crossing Greenways	23
3.5.1 Standards	23

3.5.2	Guidelines.....	24
3.6	Utilities in Greenways	24
3.6.1	Standards	24
3.6.2	Guidelines.....	24
3.7	Encroachments.....	25
3.7.1	Standards	25
3.8	Remediation.....	25
3.9	Development, Grading, and Improvement Plans	26
3.9.1	Process.....	26
3.9.2	Greenway Plans	27
3.10	Post-Development Management of Future LFUCG Greenways	30
3.10.1	Management Standards.....	30
3.10.2	Vegetation.....	31
3.10.3	Transfer of Ownership.....	31

Chapter 1, Introduction

1.1 Purpose

The purpose of the Greenway Manual (Manual) is to provide direction on the use and development of greenways during construction; and on post-construction use and maintenance for those greenways determined for future LFUCG acquisition. The Manual should reduce uncertainty, improve consistency, and establish a common frame of reference based on the Greenway Master Plan, best known science and management practices (BMPs) in the form of principles, standards and guidelines.

1.2 Applicability

The Greenway Manual shall apply to greenways as defined in the Greenway Master Plan and in which an application for a Development Plan or Land Disturbance Permit has been submitted to LFUCG, including:

- greenways that will be dedicated to LFUCG,
- non-LFUCG property with a greenway (during site planning/construction), or
- property adjacent to an LFUCG greenway (or future LFUCG greenway) where construction could impact the greenway.

The Greenway Manual informs applicants regarding the following:

- land use development surrounding a greenway,
- the usage of greenways during construction,
- remediation,
- greenway development, and
- the post-construction use and maintenance of greenways to be dedicated to LFUCG prior to property transfer.

The Greenway Master Plan identifies the two main types of greenways, which are based upon the foremost function and intended use. The types of greenways are:

- A. Conservation greenways, including:
 - 100-year post development or FEMA floodplains, and
 - Blue line streams and associated riparian zone.
- B. Greenway trails, including:
 - Trail network (primary, secondary, tertiary trails, rural road bike routes and water-based trails), and
 - On-road (e.g. bike lanes and shared roadways) and off-road facilities (e.g. floodplains, abandoned roads, utility rights-of-ways, abandoned/active rail corridors).

The Greenway Master Plan identifies associated areas that may be considered for greenway development and management, including:

- Impaired stream tributaries or drainage ways,

- Urban encroachment into floodplains,
- Wildlife corridors, wildlife habitat,
- Other environmentally sensitive areas,
- Trailheads, staging areas and access connectors,
- Recreational areas,
- Areas of repetitive structural flooding, and
- Stream, as defined in the Stormwater Manual. This includes tributaries or drainage ways that have a drainage area of 50 acres or more.

Designation of land as a particular "type" of greenway should not be construed as establishing a priority or hierarchy of importance.

Greenway trails are designated for specific public uses which may include walkers, cyclists, skaters, runners, equestrian riders or boaters for the purpose of transportation, recreation, health and fitness, utilitarian trips and commuting trips.

See Appendix A for a glossary of terms.

1.3 Authority

The 2013 Comprehensive Plan includes conservation greenways and greenway trails as components of green infrastructure. Like 'gray' infrastructure, designating natural resources and green corridors as *infrastructure* elevates them equally as essential and necessary to the functioning of the community.

For implementation of The Greenway Master Plan, the Plan calls for the creation and adoption of standards used in greenway facility design, construction and maintenance.

The Greenway Manual is intended to complement other regulations pertinent to the usage, development and management of greenways. One purpose of these principles, standards, and guidelines is to comply with State, Federal and local mandates for water resource protection through BMPs during construction in or around greenways. Local regulations applicable to greenways include, but are not limited to, the Zoning Ordinance: Article 19 (Floodplains), Article 23 (Expansion Area), Subdivision Regulations, the Engineering Manuals, the Expansion Area Stormwater Management Plan, the Comprehensive Parks and Recreation Master Plan, the Bicycle and Pedestrian Master Plan and the Parks Design Standards Manual. In case of a conflict, the Greenway Coordinating Committee will determine the best practice. Considerations will include, but not limited to, intended user groups, greenway functions, and relevant ordinances, regulations, policies and plans.

Where applicable, the procedures and minimum standards established in this Manual *shall* be followed. The expectation for principles and guidelines is that they *should* be followed to the maximum extent practical. A deviation from a standard will require a request and approval for an exemption; a deviation from a guideline will require a request and approval for an alternative approach (See Exceptions, 1.4).

LFUCG may make requests of developers to facilitate the intended uses, development and management of the greenway prior to LFUCG's acquisition of the greenway. An example may include a request by LFUCG that the grading after utility work be done to accommodate a future trail.

1.4 Exceptions

Exceptions include a request for an exemption from a standard or an alternative approach to a guideline. Both require staff review; how they differ is in the level of consequences and burden of proof.

Standards set minimum requirements; therefore an exemption to them should be rare and under very unique circumstances. An exemption to a standard will often require remediation. On the other hand, guidelines are intended to be flexible because each greenway is unique and an alternative approach (new or adjusted practice) may achieve the same intended objective or service in a better manner for that particular greenway. Little or no remediation should be necessary for an alternative approach to a guideline.

A request for an exemption to a standard or guideline by an applicant shall be submitted with the Greenway Plan (see 3.9.2) (or to the Greenway Coordinator) prior to construction or other affected activity. The Greenway Coordinator will relay the request for an exception to the Greenway Coordinating Committee, who will determine its approval.

The request for an exception may be descriptive, indicated on design drawings, or indicated on the Greenway Plan (see 3.4, Improvement Plans), and must include pertinent information on which the Committee will base its review.

Not all design criteria or possible BMPs are specified in this Manual; some sources containing further explanation and details of BMPs are listed in Appendix B. Design criteria or BMPs not in the Manual and from the listed references or other sources incorporated herein by reference may be considered for approval without the need for an exception if they meet the principles, standards and guidelines. LFUCG shall review the design or BMP for appropriateness. The applicant should specify on the Greenway Plan, design drawings, or narrative where the design criteria or BMP applies, and identify the references. If the reference is from the applicant and not this Manual, then an exception is required. If the BMP or design criteria is replacing a standard or guideline in this Manual, then an exception must be requested.

Approval of an exemption to a standard or alternative approach to a guideline must meet the principles and intention of the standard or guideline that is the subject of the exception.

Approval of an exception to a standard or guideline may be based on, but not limited to, the following information:

- purpose of the exception, (such as restrictive topography or a alternative BMP),
- anticipated duration (temporary or permanent),
- extent and magnitude of disturbance or activity,

- site conditions (i.e. soils, existing vegetation, water resources, habitat, slope, naturalized areas or other environmentally sensitive feature), and impacts on them,
- proposed and existing greenway use, type and management,
- materials (eco-friendly?),
- the degree of conformance with relevant principles and standard or guideline,
- if an alternative BMP, documentation to proposed effectiveness and source,
- if an exemption, reason or proof as to why the standard cannot be met, or
- remediation measures.

2 Chapter 2, Greenway Facility Planning and Design

The following Principles, Standards and Guidelines establish the Best Management Practices (BMP) in the planning, design, and management of greenways in Fayette County.

In addition to this Manual, engineering, land use and related activities within greenways are controlled by other regulatory documents. See 1.3 for listing of documents.

See 1.4 for exceptions to standards or guidelines; or to use an alternative source.

2.1 Conservation Greenways

2.1.1 General

2.1.1.1 Principles

The stewardship ethic for the development of conservation greenways shall be for the protection of water resources, flora, and terrestrial and aquatic habitats.

The ability of the riparian zone to function properly is based on the status of stream overflow, upstream vegetation, upland land use and the successional stage of vegetation within the zone itself.

Altering the land, vegetation or stream in a greenway (such as filling in a floodplain, stripping off vegetation, removing plants/trees, frequent mowing, compacting soils or channelization) has a negative effect on water quality and habitat.

It is encouraged that the upland zone of a floodplain be used, developed and managed as a conservation area. Restrictions to land use and activities in floodplains, as specified in Article 19 of the Zoning Ordinance and the Stormwater Manual, shall apply. Limits for construction activity are reference in Chapter 3.

A green infrastructure network is composed of hubs and corridors. Hubs are sites such as natural areas, working lands, parks, and urban greenspace. Corridors serve as biological, migratory, and recreational channels that connect hubs; they include greenways,

transportation and utility corridors. Together, hubs and corridors maintain vital ecological processes, provide cultural, social and economic value, and connect people to the outdoors. Isolated hubs impede the full range of benefits and functions they could provide. A network of interconnected corridors brings together separate patches that support each other and multiplies the number of benefits.

BMPs are established to protect or, when necessary, improve/restore/rehabilitate water quality, floodplains, terrestrial and aquatic ecosystems.

2.1.1.2 Guidelines

Preservation or conservation practices should be implemented in all designated conservation greenways.

Greenways in good to excellent condition should be conserved to maintain streams and associated floodplains, wetlands and habitats in a proper functioning condition (see NRCS "Stream Corridor Restoration Manual", see Appendix B). Good, excellent or pristine conditions may be interpreted as a greenway that has had restoration or rehabilitation projects, or is a tree preservation area. It may have a successional forest or greater than 50 percent tree canopy coverage with a natural understory. It may be a greenway with manageable invasive or exotic species; smaller tree stands, natural meadows or edge habitats. Wetlands function properly, streams support aquatic habitat, and good channel stability.

Where needed, streams and floodplains should be rehabilitated or restored to improve function, as per standards in the Stormwater Manual.

Streambanks should be stabilized where and when necessary. Measures taken to stabilize banks require prior approval by LFUCG.

2.1.2 Water Resources and Flood Control

2.1.2.1 Principles

Because streams flow through many parcels of land and feed into larger streams within a watershed, it is important for landowners/developers to recognize that their actions in and along the stretch of the stream on their property affect the function and health of the water body upstream, downstream and throughout the watershed.

Wetlands provide storage, infiltration, habitat and improved water quality.

2.1.2.2 Standards

Piping or containment of a stream in a concrete flume or similar structure shall not be permitted. An exception may be considered, as described in 1.4, where piping or containment is the **only** feasible alternative and meets the requirements of the Stormwater Manual. If the exception is granted, mitigation shall be required to address the loss of aquatic habitat and pollutant removal value of an open stream system. It is preferred that

the piping be designed for the low-flow passage of aquatic organisms. The Kentucky Division of Water and the U.S. Army Corps of Engineers approvals also are required for alterations to a stream.

The relocation of streams shall not be permitted. An exception may be considered, as described in 1.4, **only** if the requesting party demonstrates that the existing stream channel, water quality and wildlife/aquatic habitats will be improved. In addition to Federal and State regulations, LFUCG will determine if the proposed changes to the stream are in compliance with this Manual and the Stormwater Manual.

Wetlands and springs shall be preserved. Exceptions to this prohibition and remediation must be approved by LFUCG, the Kentucky Division of Water, and the U.S. Corps of Engineering, as described in 1.4. Natural wetlands may be defined by the Army Corps of Engineers, the Natural Resources Conservation Service, or the LFUCG.

2.1.2.3 Guidelines

Factors to be considered for allowing a proposed change to a stream (described in 2.1.2), include, but are not limited to, the following:

- Size of the watershed,
- Priority of stream on 303(d) Impaired Stream List; water quality data,
- Hydrology of the watershed (i.e., sinkholes, karst, groundwater),
- Existing channel geomorphology,
- Existing riparian zone,
- Existing terrestrial and aquatic wildlife,
- Existing and proposed adjacent land use,
- Existing flood hazard, and
- Projected maintenance cost savings.

2.1.3 Vegetation, Erosion Control and Microclimate Regulation

2.1.3.1 Principles

Vegetation in greenways serves a number of invaluable environmental, economic, social, educational and aesthetic functions, such as:

- Restoring and maintaining the chemical, physical and biological integrity of water resources:
- shading streams, cooling water and reducing algae growth,
- removing pollutants from urban runoff,
- reducing erosion and sediment from entering the stream,
- stabilizing streambanks;
- maintaining base flow of streams;
- contributing to the organic matter (which is a source of food and energy)
- decreasing the velocity of stream flows (which reduces downstream flooding and damage);

- providing wildlife habitat, privacy screening, a natural refuge from urban development, biodiversity, scenic value, aesthetic appeal and tree canopy;
- increasing livability;
- increasing property value;
- improving air quality;
- buffering incompatible uses.

Frequent mowing of floodplains decreases the effectiveness of vegetation's ability to provide the above functions; especially its ability to stabilize streambanks, filter pollutants and provide wildlife habitat.

2.1.3.2 Standards

Plants native to the Bluegrass Region shall be selected for new plantings in all conservation greenways. Exotic plant species shall not be planted. Refer to Appendix D for an approved list of native plants.

Existing native vegetation shall not be removed and shall be incorporated into site design. Reasons such as construction of facilities (i.e. trails, headwalls), disease, obstruction or hazard may be considered by LFUCG in its review of a proposed exception submitted by an owner.

There shall be no clear cutting of trees or shrubs in greenways. Tree Protection Standards for riparian buffers and greenways shall be followed as stated in sec. 26-6 of the Zoning Ordinance. Turf mowing may be allowed along trails, recreational areas, and in other areas with the approval of LFUCG.

The riparian zone vegetation shall not be disturbed. Exceptions may be considered by LFUCG for reasons such as the following: removal of non-native species, wildlife management, native grass management, site preparation, planting of native species, or trails. When removing or replanting vegetation, care must be taken to prevent erosion and protect water quality.

Vegetative disturbance shall be restricted to approved areas, and surfaces shall be exposed for as short a time as possible, but no more than the time allowed in the Stormwater Manual for temporary and/or permanent seeding criteria.

After a disturbance, trees, shrubs and/or native grasses shall be planted as soon as possible but during the appropriate season for the selected species. An approved cover crop may be necessary.

Only approved seed mixes, forbs, shrubs or trees shall be planted for remediation, restoration or as a ground cover shall be used after a disturbance. The planting of turf grass in a Riparian Zone shall not be allowed.

Erosion control devices shall be removed per the Stormwater Manual.

Trees and shrubs removed, damaged or destroyed in a greenway during site preparation or construction shall be replaced in that greenway, or in another greenway within the same watershed, at a rate based on the tree canopy value of the material removed, damaged or destroyed. Basis of value, replacement species and conditions (such as warranties, size of material, location and timing of planting) shall require approval by LFUCG prior to the removal of the trees or shrubs, and/or prior to the replacement of damaged or destroyed plants.

See 3.8 for remediation in conservation greenways.

2.1.3.3 Guidelines

Planning and design of vegetation in greenways depend upon the type of ecosystem (i.e., natural grass meadow, woodland edge, riparian or mature forest) desired. Vegetation should be selected that will create, preserve or rehabilitate the desired ecosystem. Criteria to consider include:

- the width of the greenway,
- zone (riparian, upland, transition),
- existing vegetation,
- stream characteristics,
- topography, aspect,
- soils,
- intensity of human interaction,
- adjacent land use,
- desired wildlife species,
- goals for the entire watershed,
- growth characteristics (i.e., height, width, texture, form, flower, fruit, color),
- maintenance requirements (such as mowing, pruning and watering), and
- disease resistance of plant species also should be considered.

Natural succession is permitted; however, with this process there is less control over the species of plants that propagate, and it may take longer to achieve the desired results.

For riparian areas where there is no existing tree or shrub vegetation, LFUCG may require, after disturbance during construction, planting trees or shrubs for conservation purposes (such as streambank stability, water quality improvement, stormwater management or wildlife habitat).

Non-native species and noxious weeds (e.g., field thistle, ragweed) should be removed and replaced with native species. Refer to the list of invasive/exotic plants from the Kentucky Exotic Plant Pest Plant Council (see Appendix B). Removal may be done in phases, or on a periodic basis to control regeneration.

Methods to minimize reseeding by invasive species should be considered in the planning of vegetation.

Because it is preferred that all types of greenways incorporate conservation practices, native species should be used in non-conservation greenways where possible; and turf grass should be limited to areas around sidewalks, trails, recreation or gathering spaces.

Noninvasive ornamental plant species may be acceptable in non-conservation greenways that have intense human use.

For sustainable vegetation management, the selection of plants and design should require no or limited chemical applications or watering.

2.1.4 Wildlife Habitat

2.1.4.1 Principles

Greenways provide wildlife habitat and act as corridors linking habitat patches. The preservation, creation or enhancement of aquatic and terrestrial habitat is an important goal identified by the Greenway Master Plan.

Healthy stream systems produce an abundance of beneficial aquatic organisms, including those that protect the public from disease spreading insects and those that form the food chain for recreational fishing downstream.

Snags and hollow trees are vital to many types of wildlife.

Native grass meadow, woodland edge and mature forest provide unique habitats that support different species of wildlife.

With some species, as human contact increases, the numbers of animals decrease.

2.1.4.2 Guidelines

The preservation, creation or enhancement of aquatic and terrestrial habitat should be a program element for all planning and design of greenways.

Snags and hollow trees should be protected for wildlife use. However, they should be removed from areas where they pose a risk to human life, property or stream flow.

Where possible, create a combination of habitats such as woodlands, shrub borders, meadows and pools within a greenway to attract and support terrestrial and aquatic species.

Wildlife water holes should not be confused with farm ponds. Areas for drinking water should be strategically located to maximize benefit. Even vernal pools that stay dry part of the year are breeding grounds for amphibians.

See 2.1.2.1 for information about piping a stream.

Characteristics such as greenway width, size of connecting patches, vegetation, buffers, type and intensity of human use, adjacent land use, water source and management technique are factors that should be considered to attract and support certain wildlife species.

2.1.5 Uses

2.1.5.1 Standards

The primary use allowed in a conservation greenway shall be protective measures for water resources, flora, and/or terrestrial and aquatic habitats, and other environmentally sensitive areas within the greenway such as steep slopes and sinkholes. This implies inherent protection of water quality, terrestrial and aquatic ecosystems or wildlife corridors for migration.

Community gardens are not permitted in floodplains or within other environmentally sensitive areas without an approved exception.

Private vegetable or flower gardens are not permitted in publically-owned greenways.

2.1.5.2 Guidelines

Conservation greenways should provide greenspace for residents. Access may be limited to specific areas.

Conservation greenways may provide floodplain management

Conservation greenways may provide protection of other associated environmentally sensitive areas or geologic hazards.

Development of conservation greenways may include stream, habitat restoration, mitigation, vegetative plantings in the riparian, upland and transition zones.

Trails, boardwalks and interpretative signage may be allowed in conservation greenways to provide public access for educational, recreational or transportation purposes as long as they do not interfere with conservation measures. Also for educational purposes, outdoor classrooms, interpretive signs and natural amphitheaters may be appropriate.

In areas with sensitive habitats, human presence and access should be restricted.

Other uses may be permitted in conservation greenways as appropriate (see Appendix C).

2.2 Greenway Trails

2.2.1 General Principles

All trails are not designed the same. Corridor planning, trail alignment and specifications, such as surface composition, clearance zone, radius, slope, width, level of difficulty and designated user type, will vary based on:

- Requirements for different users (i.e., walking, running, skating, cycling, boating and maintenance/emergency crews) or special user groups (i.e., persons with disabilities, children, and the elderly),
- Management (i.e., maintenance, cost and enforcement),
- Buffering needs between a trail and residential property, hazard or incompatible land use,
- Physical characteristics of the land (i.e., slope, aspect, environmental sensitive area, existing vegetation),
- Intensity of use,
- Orientation and convenience, and
- Areas with scenic overlooks, environmental restoration, and historic/cultural features.

Investment in quality construction and amenities (including art) promotes public acceptance, trail use, environmental awareness, understanding of cultural/historic context, community pride, greenway identity and trails as destinations.

Directional and interpretive signage are important components to trail design.

2.2.2 Standards

The planned alignments for primary and secondary trails, length of water trails and exact location of trailheads in the Greenway Master Plan are conceptual (see Chapter 4). Final alignments and locations shall be determined in future Greenway Trail Corridor Master Plans, during the land use planning process, with capital improvement projects, or as individual greenway projects are identified and funded. The location of tertiary trails, staging areas, access and connectors will also be identified likewise.

Trails shall not be allowed in riparian zones or floodways, except for approved exception.

AASHTO standards and the Engineering Roadway Manual shall be followed for shared used trails, including primary and secondary trails.

The use of motorized vehicles shall not be allowed on a trail, access or connector, except for mobility for impaired individuals, maintenance vehicles and emergency vehicles.

Maintenance and environmental impacts shall be considered in the design and construction of trails or other recreational activities.

2.2.3 Guidelines

2.2.3.1 Trail Corridors, General

Included in the greenway trail system are on-road trail connections and rural road bike routes, and support facilities as designated in the Greenway Master Plan. These facilities should be installed as individual projects or folded into funded right-of-way or capital improvement projects.

It is preferred that trails located in floodplains be located at the highest possible elevation. However, depending on the adjacent land use, it may be prudent to keep trails out of the transition zone for the comfort of the adjacent landowner or safety of trail users.

Trails should be aligned to avoid disturbing environmentally sensitive areas. If unavoidable, trail development should be designed to limit disturbance and minimize impact on these areas.

Trail crossings of streams should be limited. However, when necessary, stream crossings should allow for the free migration of aquatic organisms and create no downstream impact. Construction of stream crossings shall meet standards in the Engineering Manuals and with Kentucky Division of Water approval if required.

In general, trails are to be designed for use during daylight hours. However, lighting may be appropriate on trails frequented by commuters or students, or where extended hours will increase use. Lighting should not spill onto adjacent properties and should be pedestrian in scale.

Buffering may be accomplished where necessary with berms, vegetation or structures. In general, structural buffers such as fencing and walls are not used for the purpose of privacy because of costs and lack of openness. Plank fencing is appropriate to show right-of-way boundaries. Security fencing may be appropriate for trails along a farm, an active rail line, busy highway or other hazard.

Trees and shrubs should not be planted adjacent to trails if they have surface roots, nuts, or fruits; or they require excessive pruning, raking, or watering.

Trails should be designed to avoid multi-user conflicts. Solutions to resolve multi-user conflict may include signage, trail design and education. Trail etiquette signs should be posted to show protocols for yielding right-of-way. Rules of conduct which clarify expectations from all types of users also should be posted at appropriate locations.

Trails and trail access should be designed for safety. Where necessary, the following treatment may be prudent:

- Access for emergency crews, maintenance crews and patrols for emergency and routine use,
- Signage, posted phone numbers and lighting for safety and security,

- Pavement markings, textured pavement, user-specified lanes or signage to minimize conflicts between trail users,
- Signage or diverging entrances to minimize conflict at street intersections,
- Berms, barriers or fences around hazards,
- Tall shrubs and coniferous trees placed more than 12 feet off of the trail for visibility, 12'?
- Trail specifications (clearance, sight distance, surface, shoulders, curves, positive drainage) for different user groups,
- Bridge crossings and railings for safety,
- Mile markers for orientation (usually 0.2 mile spacing) and street addressing for use in emergencies.
- Signage and other treatments where trails intersect with roads
- Bollards used as a last resort
- Lighting

2.2.3.2 Water Trail Corridors

Trailheads and staging areas should be designed to provide ample motor vehicle parking and space to unload/launch boats. The grade and surface should easily accommodate launching boats into the water.

Efforts should be made to incorporate water trails into a regional network.

Docks, staging and portage areas should be designed for minimum disturbance and impact.

Access points should have clearly visible signage to inform users about the trail. Signage should include information such as:

- International Scale of River Difficulty Rating,
- Map with access points and portages,

Public Safety and Law Enforcement, including rescue access points,

- Runnable River Level (minimum and maximum);
- Gauge locations,
- Hazards (strainers, rapids, flash floods, water quality, felled trees),
- Respect for Private Property,
- Rules of the Water (i.e., use life vests, no alcohol, hours of operation, no camping, no littering),
- Points of Interest along the stream,
- Hold Harmless Language.

2.2.3.3 Equestrian Trails

Equestrian trails may be grass, dirt, crushed stone or harden surface adjacent to a shared-use trail, or may be a "foot and hoof"-friendly shared-use trail.

Efforts should be made to incorporate equestrian trails into a regional network.

Equestrian paths should be signed for no use during wet weather to prevent damage to the trail surface.

Design of equestrian trails should take into consideration the Equestrian Design Guidebook for Trails, Trailheads and Campgrounds published in cooperation with the Recreational Trails Program of the Federal Highway Administration, U.S. Department of Transportation. Design considerations may include signage, multi-user conflict, fencing, staging areas, amenities and protection of environmental areas including stream crossings.

3 Chapter 3, Land Use Development and Construction

The following Principles, Standards and Guidelines establish the Best Management Practices (BMP) during construction in and around greenways.

In addition to this Manual, engineering, land use and related activities within greenways are controlled by other regulatory documents. See 1.3 for listing of documents.

See 1.4 for exceptions to standards or guidelines; or to use an alternative source to this Manual.

3.1 Development Patterns and General Construction

3.1.1 Principles

Conservation greenways (environmentally sensitive areas, including but not limited to, riparian and upland zones) are fragile landscapes and ecosystems that need protection.

Heavy equipment compacts soil, creates ruts, causes erosion, compresses roots and destroys existing vegetation.

Low Impact Development (LID) strives to emulate pre-development watershed hydrology (storage and infiltration) through modified street cross-sections, right-of-way and parking lot design, landscaping, construction materials and open, natural drainage systems close to their source.

Greenways provide important greenspace for neighborhoods, connect parks and other destinations, and help attract a skilled workforce to the community.

3.1.2 Standards

Planning, design, construction and usage in Conservation and Trail Greenways shall adhere to the principles, standards and guidelines in Chapter 2.

Incorporate greenways into new development and redevelopment (as discussed in this Manual and as indicated in the Greenway Master Plan, Chapter 4).

No construction activity within a greenway shall be allowed without an approved Greenway Plan. See 3.4, Development, Grading and Improvement Plans.

Vehicles, supplies, equipment, fill material, construction materials, concrete, paint, chemicals or other foreign materials shall not be placed, stored or disposed of within a greenway.

Greenways shall not be used by vehicles moving between job sites during construction except at approved crossings, as approved on the Greenway Plan.

Barriers (i.e. fencing) at the property line or within the greenway shall not be removed or cut for access at unauthorized locations.

Grading of new lots or redevelopments shall not spill over into a greenway. If grading from the adjacent lot is desired, it must be shown on the Greenway Plan and approved, as described in 3.4, Development, Grading, and Improvement Plans, along with a request for an exemption from this standard, as described in 1.4.

Trees to be removed due to construction, hazard or disease shall not be included in the calculations for required tree canopy; if they are included, then describe how canopy coverage will be remediated to maintain compliance with the requirement. See 3.8, Remediation.

Sediment traps, sediment ponds and check dams will not be allowed in the greenway. An exception may be granted by LFUCG as described in 1.4 if it is clearly proven by the developer that these facilities cannot be practicably located outside of the greenway and the proposed structure is sited and designed to minimize disturbance in the greenway. If an exception is granted, vegetation may be required around the structure and remediation measures shall be required and approved by LFUCG.

3.1.3 Guidelines

Where possible, development patterns adjacent to greenways should minimize negative visual impact from within the greenway.

Future LFUCG greenways should be located on single-loaded streets for easier public access, streetscape enhancement, better protection of the greenway, and better separation between the public greenway and residential uses. Where a future LFUCG greenway cannot be located on a single-loaded street, then adjacent residential lots should be a minimum 150 feet in depth to provide better protection for the greenway and better separation between the public greenway and residential use.

It is preferred that floodplains in new developments should be owned by a public or semi-public entity to achieve consistent, uniform management.

Information on factors such as slope, proximity to stream, condition of existing plant material, species diversity, planned conservation measures, existing wildlife habitat, size of woodland, or riparian vegetation may be considered by LFUCG before granting approval for disturbance in a conservation greenway.

Because greenways are a long-term investment, the lifecycle of materials should be considered in design and construction techniques.

To decrease the impact of development on water quality, wildlife aquatic habitats, air quality and stormwater management, incorporating sustainable development patterns are recommended. It is preferred that new development that discharges stormwater into a greenway should utilize LID practices to the maximum extend practical.

Greenways in new developments should be platted as one parcel, except where interrupted by a street right-of-way or when under separate ownership.

Trails and trail access identified as part of the greenway system and held in private ownership should be built with the development infrastructure improvements..

3.2 Erosion and Environmental Control during Construction

3.2.1 Principles

It is important to protect greenways from intrusion by adjacent development during construction. It is equally important to minimize impact from development within a greenway, such as utility work, stream crossing or trail construction.

Stormwater runoff affects infiltration, groundwater recharge, water quality, pollutant loads, and stream channels. Construction practices should minimize these affects through prevention and/or slowing of runoff to reduce quantity and frequency of bankfull flow.

3.2.2 Standards

A temporary protective barrier shall be constructed at the greenway perimeter to prevent negative impacts, such as soil compaction, vegetation damage, erosion, and dumping of construction debris from any construction occurring adjacent to a greenway. The exact location of the barrier shall be approved by LFUCG and must be in place before a Land Disturbance Permit is issued for work within the greenway or on the adjacent land (if determined the work would impact the adjacent greenway). The barrier may be located a couple of feet inside the greenway perimeter within the transition zone if LFUCG determines that it will not be detrimental to the greenway.

Temporary or permanent protective barriers shall be installed by the owner/developer and with approval by LFUCG.

Depending upon the type and intensity of adjacent development or construction within the greenway, barriers may include silt fencing, tree protection fencing, wire mesh fencing or other material that is durable and easily recognized. Selected barrier material shall be approved by LFUCG.

Access through greenways during grading and construction shall be allowed only in those locations approved by LFUCG.

Significant trees, native tree species greater than 6 inches in diameter, and tree stands of significant and/or native species (woodland with minimum 51% native species), shall be preserved and protected from construction. Exceptions to this standard may be granted by LFUCG for severely damaged or diseased trees, trees posing a hazard, or trees blocking utilities, bridges, trails or other approved construction projects.

Drainage discharging into a greenway shall be per the Engineering Manuals. Streams shall be protected by designing culverts to assure minimum impact, such as "streambed simulation" culverts, non-embedded culverts, or embedded bottomless arched culverts.

If clearing of vegetation is allowed, it shall be as minimal as possible and limited to the permitted area only, as shown on the Greenway Plan.

There shall be no storage of "borrow" material in the greenway.

Steep slopes of 15 percent or more shall not be disturbed. An exception may be granted by LFUCG (as described in 3.4).

There shall be no dumping of any material into a greenway.

Utility and other construction near a trail shall be closely monitored to ensure that mud or debris is not deposited onto the trail. If mud or debris accumulates on the trail, it shall be immediately cleaned by the developer/owner for the safety of trail users.

The developer shall remove all temporary erosion control and other protective barriers, and complete required remediation prior to the release of bonds.

3.3 Greenway Access

3.3.1 Principles

Greenway access and connectors are important components in the greenway trail system and neighborhood pedestrian circulation.

Access to greenways is necessary for various users, including maintenance crews, emergency crews and the public. The location of access to greenways should not be a hardship on intended users.

It is advantageous that midblock access and connectors in close proximity to housing be constructed before adjacent development or structures are occupied

3.3.2 Standards

Access shall be provided to all public greenways. Access may be at the intersections of greenways with streets, at midblock or through an easement.

Minimum width for a midblock access or connector shall be 40 feet wide when located between houses. LFUCG may adjust the width, based on easements, slope, proximity to adjacent structures, or anticipated type or volume of use. Trees, drainage easements, drainage structures, or utility facilities shall not interfere with the alignment of the pavement or buffering within an access or connector. The width of the access or easement is for the land area, not width of pavement. .

It is the goal that all hard surface greenway access and connectors will be constructed to meet applicable American with Disabilities Act. Design specifications will be chosen by LFUCG, based on type of greenway and proximity to other ADA access locations.

In new development, midblock access and connectors shall be built by developers before a Certificate of Occupancy is issued for more than 50% of the adjoining structures. Until a midblock access is built, a sign shall be posted by the developer giving notice of the location and impending construction for the access. Until a connector is built, a sign shall be posted by the developer along the alignment at approximately every 100 feet, to inform prospective buyers of adjacent property of the connector alignment and impending construction. In circumstances when the access or connector cannot be built before the occupancy of adjacent structures, a bond to ensure completion of the construction shall be required.

Access to greenways shall be reflected on Preliminary and Final Development Plans as part of the greenway trail system and neighborhood pedestrian circulation.

See 3.3 Greenway Trail Corridors for additional reference to access and connectors.

When a fence or vegetative screen is used to provide a buffer or demark property lines with adjacent properties, access to the greenway shall be provided to property owners. (see Trail Corridor Guidelines 2.1).

3.3.3 Guidelines

The spacing between greenway access locations will depend upon factors such as:

- topography,

- greenway functions (trail, conservation, stormwater, habitat, etc.)
- proximity to destinations,
- adjacent land use,
- safety (i.e. emergency response time)
- street configuration and
- type of user (i.e., pedestrian, commuter, horseback rider, boater, emergency or maintenance access needs)

Midblock access locations to conservation greenways should be provided if determined by LFUCG to be necessary due to additional need, public access, or feasibility for maintenance and emergency crew use.

Additional criteria LFUCG may consider in the approval of access locations for greenway trails include:

- Access to urban shared use trails should be provided every 600 feet to a quarter mile. Primary and secondary trails with heavier use may need more frequent access points (i.e., 600 feet).
- Generally, there are more access points in a residential neighborhood and commercial areas than an industrial zone.
- Trails in rural areas will be restricted to access at endpoints, unless a public facility or destination is located midpoint.
- Greenways located in hilly areas need access points located in a closer proximity.
- Usually, greenways with street frontage are easily accessible (as long as the grade from the street is acceptable).
- Access points should be located across from street T-intersections to maximize use and orientation for users.

3.4 Greenway Dimensions

3.4.1 Principles

The dimensions of a greenway depend upon the intended uses, functions and goals established for that greenway.

Greenways adjacent to residential uses, incompatible land uses and hazards require buffering.

3.4.2 Standards

With new development outside of an established neighborhood, the conservation greenway minimum width shall be the greater of (a) the post-development floodplain (FEMA floodplain, if post-development elevation is not available) or (b) 100 feet from the top of the streambank on each side of the stream perpendicular to the stream flow. See the Stormwater Manual Figure 9-1 and 9-2.

In existing developed or infill areas, the conservation greenway minimum width shall be the post-development floodplain. If the post-development floodplain is unavailable, then the greater of the FEMA floodplain or riparian zone shall be used for the determination. See Appendix A, Glossary for Riparian Zone definition. Greenway boundaries are planned in the Expansion Area Master Plan and Expansion Area Stormwater Management Plan.

The width for a primary or secondary trail right-of-way that is not located within a conservation greenway shall be a minimum of 50 feet.

Wetlands shall require a minimum 25 foot buffer around the wetland.

Floodplain setbacks shall conform to the standards set in the Zoning Ordinance, Article 19-7(b).

3.4.3 Guidelines

LFUCG may request an increase in the width of a greenway because of environmentally sensitive features, such as steep slope, erodible soils, wetlands, sinkholes, caves, significant trees, woodland, significant wildlife/aquatic habitats, wildlife corridors, endangered or threatened plant or animal species, significant plant community, unique geology, or intermittent tributaries.

LFUCG may also request an increase in width to buffer human activity or use, increase area for recreation, protect from impervious runoff, or preserve an historic or cultural feature. Greenways may be enlarged to include environmentally sensitive areas, geologic hazard areas, or cultural/historic features.

With approval by LFUCG, averaging widths is an acceptable means to adjust the standard width of a greenway, particularly for cliffs.

The width of the transition zone may vary with each greenway. However, they usually range between 10 and 20 feet, depending on the adjacent land use and need for a buffer zone.

Criteria for the inclusion of steep slopes and erodible land in a greenway may include the soil type, percent of slope, the length of the run and the square footage. .

3.5 Crossing Greenways

3.5.1 Standards

In order to protect greenways, this Manual and the Engineering Manuals will be followed when designing utility, vehicular and pedestrian crossings to minimize impact and limit disturbance to the stream, floodplain and vegetation.

3.5.2 Guidelines

Stream crossings (i.e., trails, roads, utilities, private accesses) should be reviewed for environmental impacts upon the riparian zone, aquatic habitat, adjacent wetlands and channel hydraulics, along with BMPs, plans for mitigation, restoration and contingencies,

In addition to their primary function as transportation linkages, bridges add visual character, landmarks, and spatial form. Bridges should be aesthetically pleasing from the greenway and shall be reviewed by LFUCG prior to construction for visual impact to the greenway.

Embankments for vehicular and pedestrian bridges should provide access into the greenway and follow AASHTO and ADA guidelines to the maximum extent possible.

Private access crossings may be allowed with the permission of the Greenway Coordinator. LFUCG may impose reasonable measures or conditions, as necessary, to provide safe intersections with trails.

When fencing is necessary and access is needed for private use, a self-closing or latching gate located between a greenway and adjacent property should be used to ensure closure.

When necessary to bridge a stream, the crossing should allow for the free migration of aquatic organisms and create no downstream impact because of the restriction of flow per Engineering Manuals. Construction shall meet Engineering Manuals, Kentucky Division of Water, US Army Corps of Engineers, or FEMA as necessary.

3.6 Utilities in Greenways

3.6.1 Standards

To protect the riparian vegetation, no utility easements running parallel to a stream shall be allowed within 50 feet from the top of the streambank. Utilities crossing a stream shall be perpendicular to the centerline of the stream.

3.6.2 Guidelines

Greenways should not be encumbered by utilities. Where it is necessary that a utility be placed in a greenway, an exception may be granted if the requesting party can demonstrate that there is no alternative location available. If the exception is granted, lines, electric boxes structures, poles, and transformers shall be placed in such a way that impact is minimized and future development is not impaired.

Where appropriate, opportunities for communication lines or fiber optic lines may be provided in a greenway. Criteria to evaluate appropriate locations may include topography, environmentally sensitive areas, adjacent land use, future trail alignment and feasibility of maintenance.

3.7 Encroachments

3.7.1 Standards

Encroachments into a greenway shall be prohibited without an approval by the Greenway Coordinating Committee.

A Greenway Encroachment Permit application, shall be submitted to the Greenway Coordinator, along with a Greenway Plan or other drawing for review by the Greenway Coordinating Committee. Factors for granting an encroachment may include (but not limited to):

- site conditions (i.e. soils, existing vegetation, water resources, habitat, slope or other environmentally sensitive feature),
- compatibility with the proposed or existing greenway type, uses condition and management,
 - purpose of the encroachment and any alternatives
- impacts, extent and magnitude of disturbance,
- materials and construction techniques (life cycle, eco-friendly?)
- principles of this Manual upheld; and
- proposed remediation (see 3.8).

In some cases, a surety bond may be required if noted in the encroachment approval. Release of the bond shall not occur until after a LFUCG inspection determines that remediation is complete.

Activity, use or construction of facilities by others, but in partnership with LFUCG, are not considered as an encroachment.

See the LFUCG Operational Handbook for further information.

3.8 Remediation

Remediation shall be required for areas disturbed or damaged during construction. Remediation may include grading; area stabilization, seeding; planting of trees or native shrubs; streambank stabilization (i.e. due to vegetation removal, channel work or damage from stream crossings); drainage repairs; bridge, dam or headwall repairs; corrective measures from illegal storage/dumping of construction debris, trash, junk, or rock; or removal of hazards.

See 2.1.3. for information concerning re-vegetation after a disturbance. There are several references to remediation in this Manual, including 1.4 for an exemption to a standard, and in 3.7 for an encroachment permit.

The finished grade shall be topsoil with very little rock content. See Appendix E, Finish Grade.

The Greenway Coordinator will consult with appropriate staff prior to issuing approval of an applicant's remediation plans.

For remediation in greenways already restored or in pristine condition, the area of disturbance shall be returned to the original, pre-disturbance/encroachment condition. For remediation in greenways that have not been restored or in pristine condition; or a new use is planned:

- remediation shall be required for an area twice the size of the disturbance (not necessarily all in one location), and
- the location and type of remediation is at the discretion of LFUCG. For instance, LFUCG may direct remediation to include laying the base for a trail with regrading for utility work, or repair existing erosion damage.

LFUCG must approve the plans for remediation, which may include watering and maintenance of replanted vegetation, at the expense and responsibility of the applicant, through one year.

LFUCG shall approve replacement species and location for trees killed or severely damaged during construction. Remediation for the loss of trees greater than six inches in diameter, or calculated from loss tree canopy shall be at the following rate:

- 1.75" ball and burlap tree for replacement of a 10 inch DBH (diameter at breast height), or
- 1.75" ball and burlap for every six inches of stump diameter at ground level

Other remediation measures for tree loss (such as the use of whips or seedlings) shall follow standards and guidelines for 2.2.2 Vegetation, remediation standards as described here; and if LFUCG deems appropriate for the site.

Remediation in a greenway for any approved construction work, unapproved activity (resulting in degradation), failure of constructed facilities, or dead/dying vegetation shall be completed by the owner/developer before the release of performance bonds and/or transfer of ownership to LFUCG. Upon completion of remediation, the work shall be warranted and the responsibility of the owner/developer/applicant through one calendar year.

3.9 Plan and Permit Review

3.9.1 Process

It is a requirement that an applicant meets with LFUCG staff upon the submission of a Preliminary Development Plan Final Development Plan (when there was not a meeting for the associated Preliminary DP), or Land Disturbance Permit that includes a future LFUCG greenway. The purpose of the meeting is for Staff to discuss with the applicant proposed uses, disturbance, construction and maintenance to ensure compliance with this Manual and goals for the greenway. The applicant shall be notified by the Greenway Coordinator,

who will meet with the applicant or arrange for other LFUCG staff to conduct the meeting. The required meeting must occur before the Plan can proceed.

The meeting with the Greenway Coordinator should occur prior to the completion of Improvement Plans or Permit.

For applicable non-LFUCG greenways and properties adjacent to LFUCG greenways, applicants must comply with this Manual during construction; however, it is recommended, but not mandatory, to meet with the Greenway Coordinator.. Once a Plan or Permit for an applicable greenway has been submitted, compliance with the Greenway Manual shall be expected. For instance, removal of vegetation within the greenway shall not occur prior to the approval of the Improvement Plans or Land Disturbance Permit.

Applications for grading or construction within or adjacent to a greenway will precipitate specific review of the plan, permit, by LFUCG. For instance, land disturbance and construction by property owners adjacent to an existing greenway property shall be reviewed to demonstrate that construction shall not encroach or negatively impact the greenway. Development Plans for these properties are also reviewed for development patterns and greenway access that affects the adjacent greenway.

Once the construction process is completed, property owners and developers of greenways that will remain in non-LFUCG ownership are encouraged to comply with the principles, standards and guidelines in this Manual. Staff may distribute educational materials to the applicant about post-construction management practices.

3.9.2 Greenway Plan Requirements

Information shall be provided to the Division of New Development in order to demonstrate that any use or activity involving an applicable greenway will conform to the principles, standards and guidelines of this Manual. The information will be shown on a separate Greenway Plan submitted with prepared Improvement Plans (or a separate sheet if Improvement Plans/Construction Drawings are not required).

Development Plans and Land Disturbance Permits for applicable greenways (see 1.2) shall be reviewed for compliance with this Manual. Additional information on a Greenway Plan shall be required for some greenways. Staff review includes:

1. Land Disturbance Permits without Greenway Disturbance:
 - Site preparation and construction that will occur only outside of the greenway shall require Permit review of drawings that show (but not limited to) the floodplain (greenway), limits of disturbance, erosion control measures and protective barriers. The Division of New Development shall approve the drawings and inform the Greenway Coordinator of their approval.
 - The Coordinator will send the applicant a document that summarizes pertinent standards or guidelines that the applicant reads, signs, dates, and returns to the Coordinator. See Appendix F.

2. Land Disturbance Permits with Greenway Disturbance:
 - A Grading Plan will be required regardless of the requirement for a full set of Improvement Plans. See 3.9.2.
3. Development Plans for any applicable greenway listed in 1.2:
 - A Grading Plan will be required and included with the required Improvement Plans. See 3.9.2

A Greenway Plan may also be requested for an Encroachment Permit.

LFUCG will review Improvement Plan applications to protect the public health, safety and welfare of residents and the functioning of the greenway and associated areas.

Exemptions to the requirement for a Greenway Plan are for the following conditions:

- A property with a stream (conservation greenway) and Water Quality Plan (as required by the Natural Resource Conservation Service in the Rural Service Area). However, a copy of the Water Quality Plan shall be provided upon request by LFUCG.
- Conservation greenways that are managed for conservation purposes (i.e. Purchase of Agricultural Conservation Easement (PACE), Purchase of Development Rights (PDR) easement, Bluegrass Conservancy or The Nature Conservancy).

The Division of New Development shall notify the Greenway Coordinator when a Greenway Plan has been submitted for review, and the Coordinator will notify the appropriate reviewers. Potential reviewers may be Staff from the Division who will manage the greenway (if for LFUCG acquisition); other Staff based on proposed land uses or activities, such as the planning and design for trails, conservation or stormwater management.

It is preferred for a greenway that is split due to phasing, the entire greenway is shown with the first phase that includes greenway and revised with subsequent phases if necessary.

Information may be conveyed with maps, graphs, narrative, or other drawn documents to enable LFUCG to reasonably review the plan for compliance. The information should be included on a separate greenway sheet, which can include references to information found on sheets already required, such as grading plans, utility plans, or sediment and erosion control plans.

Where applicable, the following information shall be included on the Greenway Plan. Show existing and proposed changes to conditions for the greenway, including but not limited to:

- Data Block: acreage, uses and maintenance,
- Contours,
- Vegetation location: significant trees (species and diameter), woodlands (acreage), naturalized area or Tree Protection Area,
- Structures and impervious surface,
- Water resources: streams, ponds, wetlands, springs, seeps,

- Trails or other recreational facilities,
- Easement boundaries,
- Post-development or FEMA floodplain,
- Adjacent land use, (if not on a Development Plan),
- If known, areas of wildlife habitat, such as snags, logs, brush piles, rock outcrops, rock cover, pools, wetlands,
- Historic and cultural resources, (such as stone fences, springhouses, etc.),
- Any special site constraints,
- Utilities,
- Environmentally Sensitive Areas

Describe or show all proposed:

- Construction Activities. **This refers to any construction within the greenway, such as basins; new utility lines; stream crossings (i.e., trails, roads, utilities); bridge detail, or recreational facilities (trails, docks, boardwalks, etc. location and detail),**
- Areas of disturbance,
- Crossing (permanent or temporary),
- Basins (permanent or temporary),
- Areas of mitigation, description, timing and party responsible,
- Conservation activities (i.e., vegetative planting, bank stabilization, stream restoration, exotic species eradication),
- Erosion control and other protective barriers,
- Use and disposal of any hazardous chemicals or materials; description of removal of other hazards (such as dead trees, tree limbs, underground storage tanks); description of method to control spray from herbicides,
- Buffering to adjacent property (distance and type of screening); indicate if it is permanent or temporary,
- Phasing of projects, if any,
- Post Development note (see Post-Development Management of Future LFUCG Greenways Section 3.10)

Include with the Greenway Plan applications for exceptions or encroachments, or previously approved exceptions or encroachments pertaining to the greenway. See 1.4 and 3.7.

Include with the Greenway Plan (if not already submitted with Improvement Plans) other pertinent information, including:

- Any state or federal permits applied for or received related to the greenway area,
- Storm Water Pollution and Prevention Plan (SWPPP)

3.10 Post-Development Management of Future LFUCG Greenways

3.10.1 Management Standards

Greenways are long-term investments and an integral component to the green infrastructure of Lexington-Fayette County. Greenways should be maintained to enhance and maximize their unique value as natural, recreational, educational, cultural, and transportation resources.

For greenways that will be dedicated to LFUCG, the owner/developer shall be responsible for the management of the greenway in the manner described in this Manual and in agreement with LFUCG until such time that the greenway is transferred to LFUCG ownership.

At the time of the initial meeting between LFUCG staff and the plan/permit applicant (see 3.9.1), post-construction management of future LFUCG greenways will be discussed to ensure that the applicant is aware of minimum standards and any guidelines or practices that are deemed appropriate for that greenway.

Each greenway is unique, and the management regime shall be based on the intended use and function of the greenway, such as flood control, water quality, wildlife habitat, recreation, alternative transportation, buffering or education.

Included on the Greenway Plan shall be a note that indicates that the planned post-development management of the greenway has been approved by LFUCG. Include signature lines for the Greenway Coordinator and the owner or his/her designee who will be responsible for post-construction maintenance.

Include with the Greenway Plan details on how future LFUCG greenways will be managed until the transfer of ownership. Details may include the following:

- Maintenance schedule for trash pick-up and removal; and vegetation management;
- Maintenance as needed, such as: drainage repair; streambank erosion; stormwater structure maintenance; re-vegetation of areas for erosion control; or repair/replace signage.

To ensure that proper management is enforced, the owner/applicant may be required to post signage. Such signage may be needed to denote "No Mowing", "No dumping of grass clippings", or other messages to adjacent property owners.

The owner/developer shall be responsible for the removal or pruning of hazardous or diseased trees; and other safety hazards.

Maintain berms, vegetation, fences or walls within a greenway for the purposes of screening.

3.10.2 Vegetation

When a safety issue is discovered, trees and overgrown shrubs should be pruned for sight distance and hazardous trees or shrubs removed as soon as possible.

Mowing is also permissible throughout the greenway on a rotating schedule for invasive/exotic species control, wildlife management or native grass management.

Mowing turf grass along a trail edge is permissible.

A determination by the Greenway Coordinator of whether mowing is feasible and permitted depends upon factors such as location, timing, type of vegetation, frequency and type of mowing and impact on water quality, streambank stabilization or wildlife habitat.

Mowing or use of brush hog to control invasive species is permitted.

Mowing shall not be allowed within 25 feet of the top of the streambank unless approved by the Greenway Coordinator, such as to control invasive species.

Depositing or dumping grass clippings, leaves and other yard waste in a greenway is prohibited.

3.10.3 Transfer of Ownership

A note shall be required on the Final Record Plat or Final Development Plan to indicate that the greenway shall be dedicated to LFUCG; and, the property owner or designee is responsible for the greenway maintenance until the property is transferred to LFUCG.

In greenways that will become LFUCG property, and prior to the final inspection by LFUCG, permanent visible greenway markers for survey monuments shall be approved by LFUCG and installed by the owner/developer. The intent is that markers are visible. The markers will aid LFUCG and adjacent property owners in identification of the greenway boundary.

Remediation must be completed prior to the transfer of ownership to LFUCG. See 3.8, Remediation

All erosion control fencing and protective barriers must be removed prior to LFUCG acceptance of the greenway. If seeding or plantings have already occurred, damage to the ground, seeds or plants in the removal of the fencing shall be remedied.

Initiation of the transfer of ownership of a greenway to LFUCG shall begin with a request from the developer to LFUCG for punch list items within the greenway. LFUCG may accept the greenway if all punch list items have been completed by the developer.

Once the punch list items are satisfied, the owner shall warranty the completed work in the greenway for one year to correct any issues that arise until LFUCG is ready to accept the

property. LFUCG shall create a new punch list that will require correcting by the owner prior to acceptance.

If the transfer of property takes, or is anticipated to take, longer than one year, then the developer may transfer it to an entity of the developer's choice for maintenance purposes and with the intent (in writing) that the entity shall 1) adhere to the LFUCG approved management regime, as agreed on with the owner/developer; and 2) the greenway shall be promptly transferred to LFUCG upon request by LFUCG. Property shall not be transferred by the developer without LFUCG approval.

Until such time that LFUCG acquires ownership, private individuals or non-profit organizations may be permitted to use greenways with the approval by the Greenway Coordinating Committee. A Memorandum of Agreement may include conditions on uses, such as easements, maintenance responsibilities, liability and termination. Examples of permissible activities may be use of the greenway for educational purposes, recreation, or building trails for public use.



DRAFT

LFUCG Greenway Operational Handbook

Lexington-Fayette Urban County Government
Lexington, Kentucky
January 31, 2014

Table of Contents

1	GENERAL	4
1.1	Purpose	4
1.2	Applicability	4
1.3	Authority	4
2	GREENWAY PROGRAM	5
2.1	Implementation of the Greenway Master Plan	5
3	STAFFING AND SUPPORT	5
3.1	Greenway Coordinator	5
3.2	Support Staff	6
3.3	Greenway Coordinating Committee:	7
3.4	Greenspace Commission:	8
3.5	Greenspace Trust:	8
4	PUBLIC OUTREACH/EDUCATION	9
5	PARTNERSHIPS	10
6	ENFORCEMENT	11
7	EVALUATION	11
8	ACQUISITION OF GREENWAYS	12
8.1	Identification of Property	12
8.2	Timing of Acquisition	15
8.3	Methods of Acquisition	16

9	GREENWAY FACILITY PLANNING AND DESIGN	17
9.1	General	17
9.2	Uses	18
9.3	Planning and Design	18
10	ENCROACHMENTS	20
11	GREENWAY MANAGEMENT	21
11.1	General	21
11.2	Management Plans	22
11.3	Safety and Risk Management	23
11.4	Inspection of greenways	23
11.5	Maintenance of Greenways	24
11.6	Vegetation	24

1 General

1.1 Purpose

The purpose of the LFUCG Greenway Operational Handbook (Handbook) is to outline the Greenway Program and its operations. The Program should facilitate all aspects of greenways owned by the Lexington-Fayette Urban County Government (LFUCG). The Handbook should reduce uncertainty, improve consistency, and establish a common frame of reference for operating LFUCG greenway properties.

1.2 Applicability

The Handbook should be used by all departments within LFUCG for guidance in the planning, acquisition, use, development and management of LFUCG greenways. The Handbook pertains to aspects of greenway operations for those LFUCG currently owns, and the for planning and acquisition of greenways to be owned by LFUCG. Future LFUCG greenways include those that are recorded on Final Record Plats and awaiting acquisition by LFUCG, and those that are not recorded but known to become greenways at some time.

Future LFUCG greenways are most often associated with land use development, so the principles, standards and guidelines in the Greenway Manual will guide developers on greenway matters through the planning and engineering process. To avoid duplication, LFUCG staff must refer to both this Handbook and the Greenway Manual for guidance on the planning, use, design, construction and management in its greenways.

This Handbook is intended to complement other LFUCG, State and Federal regulations that pertain to greenways. Other local regulations applicable to greenways include, but are not limited to, the Roadway Manual, Stormwater Manual, Zoning Ordinance: Article 19 (Floodplains), Article 23 (Expansion Area), Subdivision Regulations, the Expansion Area Stormwater Management Plan, the Comprehensive Parks and Recreation Master Plan, individual Park Plans, the Bicycle and Pedestrian Master Plan and the Parks Design Standards Manual. In case of a conflict, the Greenway Coordinating Committee will determine the best practice. Considerations will include, but not limited to, intended user groups, greenway functions, and relevant ordinances, regulations, policies and plans.

See Appendix A for a glossary of terms.

1.3 Authority

The adopted Lexington-Fayette County Greenway Master Plan recommends the development of a greenway system, establishment of a Greenway Program and creation of a technical manual.

2 Greenway Program

2.1 Implementation of the Greenway Master Plan

Actions that may be taken by LFUCG to facilitate greenway best practices may include planning and acquisition; public/private projects; regulation; enforcement; facility development and management; and public outreach/education. The Handbook guides staff in these operational actions, through the establishment of the Greenway Program.

Achieving the goals in the Greenway Master Plan will require coordination of greenway activities, funding and staffing among the various LFUCG divisions, committees and commissions; public outreach; and, partnerships with non-profit organizations and other stakeholders.

The Greenway Program and Coordinator office will reside under the Commissioner of Planning, Preservation and Development. Funding sources and LFUCG staffing of the Program are distributed throughout the government (see Staffing and Support).

The Greenway Program should consist of the necessary staffing and budget.

3 Staffing and Support

3.1 Greenway Coordinator

Minimum staffing for the Program should include a Greenway Coordinator, who is the primary administrator for the Greenway Program and coordinates all aspects of projects and activities pertaining to greenways.

The roles and responsibilities of the Greenway Coordinator include:

Coordinates Greenway Program Administration, including:

- coordinating the implementation of and updates to the Greenway Master Plan and compliance with the Greenway Ordinance and Manual,
- coordinating and assisting in annual budget preparation and CIP,
- coordinating in the planning, development and management of greenways,
- coordinating in scheduling for evaluations and monitoring of projects, inspections and maintenance of greenways,
- maintaining repository of greenway data, statistics, website and files, such as property information, project status, Management Plans, Maintenance and Inspection Reports, Trail Corridor Master Plans, Greenway Master Plan, Greenway Manual, permits, reports, citizen involvement, complaints, etc.,

- identifying potential funding sources and grant application deadlines, and writing grants
- identifying opportunities to leverage or maximize funds by coordinating with capital improvement projects, public outreach projects or other activities in which a greenway component could be included
- serving as point-person for violations and enforcement,
- serving as point-person for safety issues
- serving as point-person for waivers, exceptions and encroachments applications,
- supervising administrative assistant and support staff related to the completion of duties,
- supervising volunteers when necessary,
- coordinating with the Divisions of Planning and New Development to track greenway plans through the development process.

Coordinates with others for the benefit of greenways, including:

- chairing the Greenways Coordinating Committee,
- serving as the liaison among other LFUCG staff, Administration, Council, Boards and Commissions,
- working with local groups, non-profit organizations and citizens,
- working with staff and organizations towards the planning, development and management of regional and statewide greenways that have a local connection,
- working with property owners and spearheading LFUCG greenway acquisitions,
- identifying, forming and managing public/private partnerships to benefit greenways and leverage funding.

Coordinates communications about greenways, including:

- serving as the official spokesperson,
- promoting community engagement and volunteerism,
- conducting public outreach & education,
- advocating for greenways throughout LFUCG and the community (includes marketing),
- serving as the initial contact for the public concerning all matters within greenways.
The Coordinator will be responsible for informing the appropriate LFUCG staff to address issues brought by the public, and is responsible for following through its resolution with those concerned,
- preparing annual reports

3.2 Support Staff

Minimum staffing for the Program should include an administrative assistant to provide clerical support to the Greenway Coordinator. As necessary to complete Program goals, staffing should be added.

3.3 Greenway Coordinating Committee:

The management of greenway properties and easements is spread through various divisions within LFUCG. The Greenway Coordinating Committee should be represented by at least one staff person from the following Divisions. Staffing and their responsibilities shall not be limited to those listed below, nor does the list indicate a hierarchy of responsibilities; but rather that the division might perform this function:

Department of Environmental Quality:

- Division of Water Quality: representative to address conservation greenways, including stormwater management, water quality and erosion control, stream bank stabilization, maintenance, project administration, conservation greenways restoration, management, and Watershed Plans/Assessment Reports.
- Division of Environmental Policy: representative to address environmental review, forestry, reforestation, review of Greenway Plan, conservation education and public outreach.

Department of Public Works:

- Division of Streets and Roads: representative to address maintenance, inspections and construction.
- Division of Traffic Engineering: representative to address signage, street systems and multi-modal facilities.

Department of General Services:

- Division of Parks and Recreation: representative to address planning, trail design and construction, project administration, maintenance, inspections, and recreational/event programming, and conservation greenways restoration and management. It is the lead agency for most greenway maintenance.

Department of Planning, Preservation and Development:

- Division of Planning: representative to address corridor master planning, regional planning, acquisition, grant writing, project design review, Development Plan review, Greenway Plan review, Planning Commission action, updates to plans and this Manual, updates to and creates GIS data, bike/pedestrian coordination.
- Division of Engineering: representative to address Greenway Plan (Improvement Plan) review and permits; stormwater management, erosion control, trail design and construction, project administration, planning, inspections and surveys, conservation greenway restoration and management.

Department of Public Safety:

- Division of Police: representative to address trail safety, enforcement.
- Division of Code Enforcement: representative to address nuisance violations.

To a lesser extent, other small greenways can be found on LFUCG properties (e.g. fire stations) whose primary purposes are not greenway management. The Greenway

Coordinator and the Greenway Coordinating Committee may provide advice and make recommendations to the various Divisions who manage these greenways.

The mission of the Greenway Coordinating Committee is for the seamless implementation of the greenway system through a cooperative effort among LFUCG Divisions. The Committee will act as a clearinghouse for all aspects of the Greenway Program and related projects.

Committee members will advise the Greenway Coordinator on greenway issues, such as the annual budget, priorities, acquisitions, plans and management concerns. Members are responsible for returning to their respective divisions with communication on matters concerning greenways.

Because the development and management of greenways involve multiple Divisions, the Committee structure provides a mechanism for input and information exchange on greenway projects, which will ensure uniformity and consistency in the application of the principles, standards and guidelines established in this Handbook and Greenway Manual.

The Committee should establish a regular meeting schedule and procedure for calling special meetings.

An Executive Committee may be established as a core group that confers on policy, budget, acquisition, maintenance, and other issues and concerns. The Executive Committee will be comprised of the primary LFUCG staff that are involved in the planning, implementation, and management of greenways.

3.4 Greenspace Commission:

The Greenspace Commission may advise LFUCG on the resolution of issues and establishment of policies for greenways, as permitted by the Code of Ordinances Section 2-334. Through the Greenway Coordinator, the Commission may send recommendations to the Greenway Coordinating Committee, LFUCG Divisions, Planning Commission, Administration or Council.

The Commission may work with non-profit groups, civic organizations, businesses and citizens to educate and advocate for greenway preservation, development and maintenance. Prior to conducting outreach on behalf of LFUCG, the Commission shall coordinate the educational message with the Greenway Coordinator.

The Commission may assist the Greenway Coordinating Committee upon request by the Committee in the evaluation and monitoring of greenway projects and program.

3.5 Greenspace Trust:

The Greenspace Trust is a 501(C)3 non-profit organization established by the Code of Ordinances Section 2-355 and comprised of Greenspace Commission members. Its purpose

is to support greenspace acquisition and management, which includes greenways. Support may include holding greenway property, holding public forums to gauge public sentiment, and soliciting contributions of land, money and services.

4 Public Outreach/Education

Public support is a key to successfully implementing the Greenway Master Plan and compliance with the Greenway Manual. The Greenway Coordinator shall be the primary point of contact related to all greenway issues. The Greenway Coordinator shall coordinate with other Divisions to implement Public Outreach/Education goals and strategies. LFUCG should create strategies to inform and mobilize the public, the development community, business community and elected officials about greenways.

LFUCG should involve stakeholders, such as advocacy groups and property owners, early in the greenway development and management planning process.

LFUCG should facilitate the creation of greenway advocacy groups and work with them to coordinate volunteer activities, public outreach, education and fundraising. LFUCG should build partnerships with a strong support base composed of individuals, non-profit organizations, neighborhoods, businesses, user groups and elected officials.

LFUCG and advocacy groups should utilize a wide range of educational, marketing and outreach strategies to increase public awareness. Several outlets may involve:

Fact sheets	Brochures
Presentations, workshops.	Displays.
Newsletters.	Events, festivals and tours.
Interpretive programs.	Ground breaking ceremonies.
Media plans.	School curricula.
Guest speakers.	Public Hearings.
Surveys.	Social Media
Website with plans, regulations, calendar of events, newsletter, projects, maps, etc.)	

LFUCG and advocacy groups should educate greenway and adjacent property owners on goals, regulations, allowable uses and restricted activities, including demonstrations of proper maintenance techniques that they can follow and how to recognize signs of erosion, pollution, and changes to stream channels.

LFUCG or advocacy groups should establish a one-on-one dialogue with concerned individuals to explain the benefits of greenways and to stress how the opponents' needs and concerns may be addressed through specific design and management practices.

LFUCG and advocacy groups should inform the public on how they can get involved with greenways, such as volunteering. Examples may include projects including:

- monitor for water quality,
- clean streams,
- conduct reforestation or habitat projects,
- begin or join advocacy groups,
- fundraise or lobby,
- provide routine maintenance,
- conduct routine patrols along greenways,
- inventory plants and animals,
- organize special events,
- lead tours or interpretive programs,
- start or participate in an "Adopt a Greenway" program,
- initiate and manage education and marketing activities, or
- promote the Greenway Program.

Events are an effective way to introduce the public to greenways. LFUCG and advocacy groups should plan celebrations after reaching milestones, and periodically thereafter, to maintain public involvement and interest.

Programs and events expand the use of greenways. Groups interested in the environment, education, historic preservation, bicycling, walking, boating and music may, with LFUCG's approval, program events, classes and workshops in greenways owned by LFUCG. However, the time, place and scope of these events must be consistent with the routine uses, goals and management of the greenway.

Through a combination of techniques, LFUCG and advocacy groups should encourage trail users to behave responsibly. This is an essential strategy for protecting natural resources and adjacent private property; and for providing opportunities for high-quality recreational experiences.

5 Partnerships

Partnerships build upon public support (as discussed in the previous section, Public Outreach and Education) through more formal arrangements. LFUCG may partner with non-profit groups, businesses or individuals in the use, ownership, and/or management of greenways.

LFUCG should participate in the creation of "Adopt-a-Trail" and "Adopt-a-Greenway" programs to partner with the public in activities such as: maintenance, small construction projects, events, monitoring, fundraising and citizen patrol of greenways (see Greenway Master Plan, Appendix J-2).

The formulation of a "Volunteer Greenway Corps" similar to one within the State Parks system, should be considered. The establishment of a Corps would also contain mechanisms for registration, specific guidelines for volunteers, and the ability to suspend volunteers who do not follow the principles of the program. The Corp would be a prudent use of the talents and ambitions of many LFUCG residents who are currently involved with beautification, conservation, and water quality throughout Fayette County. A structured Corp would also facilitate in documenting the number of volunteers and hours they work in order to fully appreciate the true costs of greenway development and management.

A Memorandum of Understanding (MOU) may be entered between LFUCG and a partner to stipulate conditions for the use, development and/or management of a greenway according to design and performance specifications. The MOU will spell out specific duties, responsibilities and activities of each party to the partnership. It will stipulate the conditions for inspections, enforcement and termination of the MOU, along with steps necessary for remediation and repairs.

6 Enforcement

Enforcement of greenway rules and regulations is important for the successful implementation of the Greenway Manual, and for the safety of those using greenways. Early enforcement establishes expectations on the proper operation of the greenway.

Enforcement activity may include efforts to remedy violations arising from noncompliance with the Greenway Manual or other applicable ordinances and regulations pertaining to greenways.

Enforcement activity may include violations of posted rules and regulations. The Division of Parks and Recreation may advise enforcement officers as to infractions.

Enforcement may be through the Greenway Coordinator or the Divisions of Police, Code Enforcement, or Engineering, depending upon the nature of the offense.

To promote goodwill, a courtesy notice should be considered for first-time offenders (depending upon the severity of the offense). Taking time to explain the reason behind the rule will facilitate in understanding and future compliance.

A system for fines, penalties and violation procedures shall be established by the LFUCG.

7 Evaluation

The Greenway Program should be evaluated periodically and the Handbook and Greenway Manual updated as needed. It is recommended that an Evaluation Plan be developed to monitor components of the Greenway Program, such as the following:

- number and size of acquisitions,
- maintenance data,
- miles of trail constructed, trail use,
- vegetation survival rate,
- water quality,
- habitat created, biodiversity,
- enforcement and violations cited
- Trail Corridor Master Plans completed
- Management Plans completed
- Acres restored and maintained

The Evaluation Plan should establish evaluation methodology, quality control procedures, indices, benchmarks and milestones. See the Greenway Master Plan (Chapter 5, 5.4) for additional recommendations.

The results of evaluations should be incorporated into the Annual Greenway Report, which is prepared by the Coordinator and given to the Urban County Council, Greenway Coordinating Committee and Greenspace Commission.

Components for an Evaluation Plan may include:

- Responsible party for monitoring, collecting and analyzing data,
- Goals, (broad or specific) and objectives,
- Actions,
- Inventory and baseline,
- Monitoring mechanisms based on clear methodology and schedule,
- Indicators, targets and benchmarks,
- Contingency plans for modification or remedial action in case goals are not met or below specified targets or benchmarks and/or
- Cost/benefits.

8 Acquisition of Greenways

8.1 Identification of Property

LFUCG Greenways are based on a system described in the Greenway Master Plan. The Plan identifies several types of greenways, depending upon the function and intended use. The two main types of greenways are:

Conservation greenways, including:

- 100-year post development or FEMA floodplains
- Blue line streams and associated riparian zone

Trail network, designated by trail type or situation

- Types: primary, secondary, tertiary trails, rural road bike routes equestrian, and water-based trails
- Situation: On-road (e.g. on-road trail connection, rural road bike routes) and off-road facilities (corridors in floodplains, abandoned roads, utility rights-of-ways, abandoned/active rail).

The Greenway Master Plan identifies associated areas that may be considered with greenway acquisition, development and management, including:

- Impaired stream tributaries or drainage ways
- Urban encroachment into floodplains
- Wildlife corridors, wildlife habitat
- Other environmentally sensitive areas
- Trailheads, staging areas and access connectors
- Recreational areas
- Areas of repetitive structural flooding
- Stream, as defined in the Stormwater Manual. (The definition includes tributaries or drainage ways that have a drainage area of 50 acres or more.)

Designation of land as a particular "type" of greenway should not be construed as establishing a priority or hierarchy of importance.

Property eligible for acquisition may be conceptually or specifically identified through various mechanisms, such as a part of, or in conjunction with the following:

- Greenway Master Plan, Chapter 4
- Expansion Area Master Plan
- Comprehensive Parks and Recreation Master Plan (and updates)
- Transportation Plans including the Bicycle and Pedestrian Master Plan
- Small Area Plans
- Division of Water Quality, Stormwater list of flood-prone property
- Watershed Assessment Reports and Plans
- Greenway Trail Corridor Master Plans
- Wildlife Management Plans
- Property along identified impaired streams, identified threats to drinking water source or environmentally sensitive areas associated with a floodplain
- Planning for transportation, stormwater, water quality or other capital improvement projects.
- Purchase of Development Rights Program (PDR)
- Neighborhood or developer-initiated greenway project
- Development and Site Plan review process
- Floodplain maps and tributary drainage analysis
- Green infrastructure network gap analysis

LFUCG shall pursue the acquisition of property, either by donation, dedication, fee or as an easement, on which a primary or secondary greenway trail is designated.

Designated greenways in the Expansion Area are mandated to be acquired by LFUCG. Other greenways, such as a conservation greenway, tertiary trail corridor, neighborhood connector, or greenway access should be acquired by LFUCG when deemed appropriate, and/or when it becomes available, such as with new development, grants, capital improvement projects, or designation as a high priority.

Maps

The *LFUCG Greenway Trail Map* shows existing, funded and proposed trails. Associated data includes date built; length; trail type and situation; and project status. Proposed alignments are conceptual, based on the Greenway Master Plan proposed trail system for primary and secondary trails. Tertiary trails, connectors and access points are added to the map as identified through trail projects or with new development. The Map shall be maintained by the Division of Planning.

The *LFUCG Greenway Map* shows existing and future LFUCG greenways, and greenways with a recorded plat yet to be acquired. Associated data includes the address, responsible Division, greenway type, functions, watershed and acreage. Associated data joined to the map may include maintenance and funding information. It shall be maintained by the Division of Planning.

Not all future greenway property has been identified, and it is expected that criteria for acquisition might change. For instance, all floodplain buyouts were once included on the Greenway Map. As it became apparent that a few of the parcels were isolated without the possibility of further acquisition around them, they were removed from the "greenway system". Adjustments to selection criteria may be necessary for circumstances such as a modified trail alignment; or changes to standards/guidelines, such as stream buffer width; minimum greenway width; or distance to an access.

Current criteria for inclusion on the Greenway Map include:

- A parcel or easement designated as a LFUCG greenway on a recorded plat or deed,
- Area not yet recorded but shown as a greenway on a Development Plan or in the Expansion Area Master Plan,
- 100 year FEMA or post-development floodplain/floodway on LFUCG property,
- Buffered HY-Stream from Stream or Waterway GIS data for streams on LFUCG property (without a mapped floodplain),
- Parcels, easements or ROW acquired for trails, trailheads or staging areas, or
- Buyouts if the parcel is in a floodplain.

If an isolated parcel has a ditched stream, it is evaluated on a case-by-case basis (i.e. Eastland Parkway, Dantzler, St. Ann).

The greenway is not mapped if the following conditions exist:

- The floodplain is on a single lot or two without the possibility for public ownership of the greenway on adjacent properties; and the maintenance will be mowing only; and the lot is not needed for trail connectivity, trailhead or staging area,
- The parcel is not needed for future stream/riparian restoration work, or
- The floodplain is completely paved.

For acreage purposes, the greenway may be redrawn using aerial photography to remove structures in a floodplain.

Buffering around stream or waterway does not include historical or hidden streams. The buffer is 25 feet on each side of the stream except in the Expansion Area, where the buffer width is 50 feet on each side from the stream centerline.

A separate shapefile is maintained showing non-LFUCG greenways on school, State, Federal, HOA and other properties to track acreage not in individual property ownership; to indicate a critical mass with publically owned greenways; and to identify potential partners on greenway projects.

8.2 Timing of Acquisition

Ownership of greenways shall be determined prior to the approval of the Final Record Plat or Final Development Plan where applicable.

Acquisition of greenways to be owned by LFUCG may be initiated by the property owner or by LFUCG. Property owners must provide clear title to the property (removing all liens and other encumbrances) in a manner acceptable to the Department of Law. A punch list shall be created by LFUCG staff, and all items must be corrected to the satisfaction of staff prior to the initiation of acquisition proceedings by LFUCG.

It is most advantageous for LFUCG to acquire greenways (and if possible build trails and/or manage conservation greenways as intended) prior to when occupancy permits are issued for adjacent properties. The advantage is for prospective adjacent property owners to know up front how the greenway will be used and managed. If the timing of acquisition is later than occupancy of adjacent properties, then signs should be posted at the property line to indicate that the property is a greenway.

If acquisition of the greenway cannot occur within one year after the Final Record Plat is recorded, then the developer may transfer the property to an HOA or other entity, on the conditions that LFUCG is notified of the intent and approves the transfer; that the HOA or other entity shall deed the property to LFUCG upon request by LFUCG for the property; and that all parties know that a new punch list of items will be expected to be rectified prior to LFUCG acquisition.

Property designated as greenway must be properly used and managed by the property owner (or his/her agent) until the transfer of ownership to LFUCG by following the

principles, standards and guidelines in the Greenway Manual. Staff shall assist the property owner or developer in crafting a maintenance regime. See Greenway Manual.

8.3 Methods of Acquisition

The Greenway Coordinating Committee may need to prioritize greenway properties for acquisition. A template for scoring greenways was created in the Greenway Master Plan. Additional criteria the Greenway Coordinating Committee should consider are timing factors, such as grant applications, mandatory acquisitions, and the length of time since the greenway became ready for acquisition. See *The Greenway Master Plan's Appendix H.2, Land Acquisition Procedures, Scoring Criteria*.

Examples of various methods to acquire greenways are described in the Greenway Master Plan. See *The Greenway Master Plan's Appendix H, Land Acquisition Procedures*.

LFUCG may acquire a greenway through a purchase or donation of the property as a whole or by easement.

The preferred method of acquisition for greenways in new developments is through dedication on a Final Record Plat and conveyance of a general warranty deed to the LFUCG. Elsewhere, it is preferred that greenway property be donated to LFUCG. Greenways vital to the greenway system that are not dedicated and conveyed or donated should be purchased by LFUCG, pending the availability of funding.

Regulatory Measures

Acquisition of greenways by LFUCG will follow CAO Policy # 30, "Real Property Acquisition Guidelines".

Through the planning process, development plans and plats are reviewed by LFUCG staff and the Greenway Coordinating Committee to determine if the property should be acquired, in compliance with this Handbook and other adopted plans, ordinances, regulation, or policies. Review includes the following:

- Make recommendations to the Planning Commission and Urban County Council
- Facilitate the dedication of greenway property where required (i.e., Expansion Area)
- Negotiate and process donations of property or easement for greenways
- Request and negotiate greenway reservations
- Negotiate and process the purchase of property or easement
- Negotiate density transfer involving potential greenway
- Negotiate density averaging involving potential greenway
- Negotiate greenway donation or dedication to fulfill zoning requirements for recreation, open space or buffering
- Negotiate greenway donation or dedication to fulfill subdivision requirements for alternative transportation (i.e., trail in-lieu of sidewalk)
- Determine greenway location, size, dimensions, access locations, intended usage, crossings, etc.

- Require notes on plans and plats pertaining to the ownership, management, intended usage and timing of greenway acquisition
- Review Improvement Plans and associated Grading Plan, Erosion Control Plan or Stormwater Protection Plan (SWPP), and Greenway Plan (see Greenway Manual)
- Determine timing for acquisition
- Ensure condition of greenway property prior to acquisition

Upon approval by the Administration to accept the greenway, the Department of Law prepares necessary legal documents (i.e., deeds, purchase agreements) and initiates the administrative review process to obtain Urban County Council authorization of acquisition. (Note: occasionally, the owner or developer's legal council will prepare the deeds).

When necessary, a temporary construction easement to build a trail, pedestrian access, dock, trailhead or staging area may be obtained prior to acquisition.

9 Greenway Facility Planning and Design

For LFUCG Greenways Only

9.1 General

All departments within LFUCG should use its best efforts to comply with this Operational Handbook and the Greenway Manual to the maximum extent practicable.

LFUCG should evaluate each greenway for appropriate uses, purpose and goals, based on approved plans (e.g. Greenway Master Plan, Small Area Plans, Watershed Plans). Unique Trail Corridor or Greenway Management Plans should be produced in order to tailor development and management for each greenway according to the evaluation.

If a Trail Corridor Master Plan or Greenway Management Plan has not been adopted, then LFUCG should rely on the goals and objectives established in the Greenway Master Plan; provisions in this Handbook; and the principles, standards and guidelines of the Greenway Manual for evaluation and planning purposes.

Each greenway is unique and the level of compliance with principles, standards and guidelines may require a flexible and cooperative approach to best accommodate site-specific conditions, satisfy objectives, provide intended services or offset other factors listed in the Greenway Manual, 1.4 Exceptions.

An exception to a standard, guideline or use should be indicated on the Management Plan for that particular greenway, with pertinent information such as the reason for the exception, the anticipated duration and mitigation measures.

Additional guidance for the planning, use and development of LFUCG greenways is located in the Greenway Manual.

9.2 Uses

Greenway use is based on the type of greenway, as defined in the Greenway Master Plan and referenced in this Handbook, 8.1, Identification of Property.

All LFUCG greenways shall be open to the public. Conservation greenways, however, may be restricted to trails or an observation area.

Notwithstanding any other section of the Handbook or Greenway Manual, LFUCG-owned greenways may be used for various purposes undertaken by the LFUCG in the interest of the general public health, safety and welfare. Such uses shall include transportation facilities, recreational facilities, stormwater and sanitary sewer facilities and similar facilities and services provided by the LFUCG. LFUCG agencies administering such activities within designated greenways shall attempt to construct and manage facilities in compliance with the provisions of this Handbook and the Greenway Manual and shall attempt to abide by the principles therein.

It is understood that there may be desirable public uses which may conflict with provisions within this Handbook and the Greenway Manual, and in such cases, the use may proceed upon approval and at the direction of the appropriate Department Commissioner, who shall attempt to adhere to the applicable principles to the greatest extent feasible.

A separate, working list of permitted uses and activities for conservation and trail greenways should be flexible and adjusted as needed. See Appendix B.

9.3 Planning and Design

Greenways are most successful when adjacent property owners are involved in the planning and design of a conservation or recreational greenway; therefore, adjacent property owners should be engaged from the outset of greenway development.

Greenways should be considered and incorporated into other planning efforts such as park master plans, new development, redevelopment, transportation planning, small area planning, and right-of-way improvements.

Conservation Greenways

General needs for the nine major watersheds were identified in the Greenway Master Plan. See Appendix C.

Plan, design and manage conservation greenways by recognizing that natural systems are always changing.

The function and health of a stream is dependent upon human interaction, its geomorphology, floodplain and riparian vegetation. Virtually all streams in Lexington,

Fayette County have been modified from their natural condition and would benefit from restoration or rehabilitation.

Entrenched streams need to be reconnected to their floodplains.

Streams should be assessed for their condition and, when possible, restored to their naturalized state.

Access to water may need to be limited to certain locations.

Trail Greenways

LFUCG shall be responsible for the development and management of designated primary and secondary trails. LFUCG may partner with others for the development and/or management, but ownership and ultimate responsibility shall be that of LFUCG.

For primary trails converging downtown, the trailhead hub shall be the point where mileage begins.

Primary trails should be designed as signature trails that reflect their importance as destinations.

Benches, public art and other amenities are appropriate along greenway trails.

Signs for orientation, interpretation, direction and rules should be placed at major entrances and intersections, and other locations as appropriate. Signage should be uniform throughout the system, including an LFUCG greenway logo (and/or logo for individual greenways). Mileage should be indicated by markings or signage on primary, equestrian and water trails. See AASHTO for additional guidance.

A Trail Corridor Master Plan should be developed by LFUCG for each of the primary and water trails identified in the Greenway Master Plan Chapter 4. Feasibility of the proposed trails (or portions thereof) should be verified in the Trail Corridor Master Plans, and they should include recommendations for associated secondary trails, tertiary trails, trailheads, staging areas, boating access and pedestrian access. An inventory of vegetation, wildlife, water resources, portage locations, historic/cultural features, destinations/linkages, viewsheds, ownership and environmentally sensitive areas should be conducted and analyzed for master planning of each trail. Trail Corridor Master Plans should identify goals, alignments, concepts and recommendations for the development and management of the corridors based on the opportunities and restraints identified in the inventory, plus program elements based on projected level of use, types of users (walkers, hikers, cyclists, skaters, equestrian, boaters, special populations, winter use, commuters), phasing, management and cost considerations.

Rest areas with benches and shade should be spaced and located based on characteristics such as distance from access locations, slope of the trail, user groups and viewsheds.

Trash receptacles should be placed at access locations, trailheads, or rest areas as needed.

Trailheads should be planned and designed to provide way-finding, access, parking (vehicular and bicycle), restrooms, drinking fountains, and trail information. Types of information that should be provided at trailheads may include maps, calendars of events, rules of the trail and safety contacts. Trailheads may include specialized facilities, such as lockers and showers for commuter use or water troughs for equestrian use.

Rules of the trail should be posted at major access points, and may include the following:

- Rules for times of operation,
- Rules prohibiting trespassing on adjacent property,
- Rules requiring users to stay on the trail except in designated areas,
- Rules prohibiting alcoholic beverages,
- Rules requiring pets on leashes; removal of their waste,
- Rules or promoting trash be carried out; no littering,
- Rules for designated types of users allowed,
- Rules restricting motorized vehicles,
- Rules for sharing the trail, yielding and stopping protocol,
- Rules against fires or fireworks, and
- Rules to not disturb wildlife or vegetation.
- Speed limits for bicyclists
- Directional signs
- No loitering
- Sign in/Sign out (where applicable)
- KRS Harmless statement.

10 Encroachments

Community organizations, businesses, or adjacent property owners may submit a request to the Greenway Coordinator (or greenway manager) for an encroachment to use an LFUCG greenway.

Encroachments may be for an activity or new use and are temporary in nature. If the encroachment request includes construction, then additional information in Encroachments and Improvement Plans in the Greenway Manual will also be part of the application review.

Approval for the encroachment shall be by the Greenway Coordinating Committee. The purpose must benefit the community at large and should not negatively impact the health, safety and welfare of the public, or have a detrimental effect on the greenway, water quality, or adjacent properties.

Factors for granting an encroachment may include (but not limited to):

- site conditions (i.e. soils, existing vegetation, water resources, habitat, slope or other environmentally sensitive feature),
- compatibility with the proposed or existing greenway type, uses, condition and management,
- purpose of the encroachment (how it benefits the greenway and/or community),
- impacts, extent and magnitude of disturbance or encroachment,
- materials and construction techniques (eco-friendly)
- principles in the Greenway Manual upheld,
- management of facility, activity or use*, and
- approval of construction as per the Greenway Manual.

In some cases, a surety bond may be required if noted in the encroachment approval. Release of the bond shall not occur until after a LFUCG inspection determines that remediation is complete.

See Appendix D for Encroachment Request Form and 3.7 Encroachments in the Greenway Manual for more information.

11 Greenway Management

For LFUCG Greenways Only

11.1 General

Vegetation, stormwater and trail facilities may be relatively inexpensive to maintain; however, because of poor design, a lack of funding, or absence of a management plan, the greenway can become degraded.

Greenway management that results in low maintenance costs, no safety incidences and reaching benchmarks and goals begins with good planning, design and construction. The principles, standards and guidelines stated in the Greenway Manual for Facility Planning, Design and Development apply equally to management practices.

Investment in quality workmanship and materials will pay off with reduced maintenance costs and greater user enjoyment. Likewise, proper maintenance is the best way to protect the initial investment in the greenway.

Maintenance should be scheduled periodically to ensure the long term life and durability of facilities. Repairs and improvements to existing facilities greatly enhance user experience, increase public support and maximize efficient use of dollars.

Greenways are long-term investments and an integral component to the green infrastructure of Lexington-Fayette County. Greenways should be maintained to enhance

and maximize their unique value as natural, recreational, educational, cultural and transportation resources.

Each greenway is unique, and a management regime should be chosen based on the intended use and function of the greenway, such as flood control, water quality, wildlife habitat, recreation, alternative transportation, buffering or education. Management regimes need to take into consideration how the land, water, vegetation, facilities and amenities will be used and maintained, and how overall goals will be achieved. Greenways are dynamic, evolving resources, and management must respond accordingly.

Successful management of greenway properties usually includes the following provisions: adequate budgeting, safety, risk management, inspection, maintenance, remediation, enhancement, programming, enforcement and evaluation.

LFUCG staff should be trained in proper greenway maintenance. It is advantageous to have a dedicated maintenance crew devoted to greenway management to ensure BMPs will be followed.

Until greenway ownership is transferred to LFUCG, the owner/developer is responsible for its management as per the Greenway Manual. LFUCG shall assist the owner/development in setting the proper management for the greenway. See the Greenway Manual for details.

For LFUCG greenways in which LFUCG is in partnership with another entity for management of the greenway, LFUCG shall assist those owners/managers in selecting proper management techniques to ensure the goals for the greenway are met.

Just as greenways change over time, so do recreational equipment, trends, demographics and types of trail use. It may be necessary to adapt trail management practices to meet changing needs of the greenway, trail users and community.

For vegetation management of greenways, see references about vegetation in the Greenway Manual.

Maintenance in LFUCG owned greenways may, by agreement with LFUCG, be performed by non-profit organizations, neighborhood organizations and other individuals on a routine basis or during special events. The Greenway Coordinator will approve such maintenance activities in conjunction with the Greenway Coordinating Committee and enter into MOUs where appropriate.

11.2 Management Plans

For proper management and enforcement, restrictions in use or activities shall be clearly signed, posted or denoted in LFUCG greenways.

A Management Plan should be developed and followed for each greenway. The Greenway Coordinator will be responsible for the Plan's preparation. Drafts should be submitted to

the Greenway Coordinating Committee for input. Copies of Management Plans shall be kept in the Greenway Coordinator's office.

The Management Plan should show how management practices will support particular uses and functions.

See the Greenway Master Plan Appendix J, "Facility Management", for additional guidance.

A template for the LFUCG Management Plan is located in Appendix E.

11.3 Safety and Risk Management

- A safety and risk management program may include the following:
 - a) Responsible party
 - b) Patrol and emergency procedures,
 - c) A policy to eliminate or mark hazards,
 - d) Frequent and scheduled monitoring and inspection of greenways,
 - e) A policy to provide a detour or other remedy when use of a trail is disrupted (e.g. by downed trees, stormwater drainage, or construction projects),
 - f) Insurance for intended uses and risks for greenways,
 - g) A posted telephone phone number and website address for ease in reporting problems by trail users, neighborhood maintenance crews or patrols,
 - h) Signs warning users along trails prone to flash flooding,

When a safety concern is discovered, it should be verified, evaluated and resolved as soon as possible.

Trees and overgrown shrubs should be pruned for sight distance and hazardous trees or shrubs removed as soon as possible.

For additional recommendations on safety and security see the Greenway Master Plan (Appendix J3-7)

11.4 Inspection of greenways

Greenways should be inventoried so that features and vegetation may be scheduled for routine and remedial maintenance, monitoring and evaluation.

Greenways should be periodically inspected to monitor the integrity and function of the greenway. Safety and maintenance problems, such as drainage, fallen trees, breaks in pavement or overgrown vegetation, may require immediate action.

Inspections of Greenway will occur on a regular basis to monitor for encroachment, vandalism, and destruction of property, whether through inappropriate use or weather related events. Any condition observed will be recorded on a work order and corrective action will occur as soon as possible. Greenways should be inspected after severe storms.

11.5 Maintenance of Greenways

Maintenance schedules should include specific maintenance activities, frequency, time and material costs per activity, and responsibility for performing the activities.

Routine Maintenance may include the following:

- Minor drainage and stream channel maintenance, stormwater structure maintenance, erosion control,
- Sweeping debris, mud, obstructions, and leaves off trails,
- Trash pick-up and removal,
- Vegetation management,
- Minor repairs or replacement of signs, amenities and safety features,
- Minor equipment repairs,
- Minor trail repair,
- Minor trailhead maintenance of bathrooms, parking lots, kiosks, etc.

Remediation projects in greenways are for maintenance of facilities and resources that occur less frequently than routine maintenance and are usually larger in scope and cost.

Projects may include the following:

- Stream channel relocation, remediation or restoration,
- Bank stabilization,
- Stormwater projects; flood control,
- Bridge repair,
- Creation of terrestrial or aquatic habitat,
- Vegetation management,
- Major trail repair or realignment,
- Major trailhead repair or reconstruction.

Enhancement projects refine or improve facilities and resources. Enhancement projects may be recommended in Watershed Plans, Trail Corridor Master Plans or by prioritization lists. They also may be identified in response to observed patterns of use, recreational trends, new BMPs, and changing conditions or needs of the greenway.'

11.6 Vegetation

Eradication of non-native plants requires an intensive effort and expense during the first couple of years to remove the majority of biomass. Annual routine maintenance should control the exotic species thereafter. It is important to manage exotic species after the initial removal.

Woodlands should be managed for sustainability. It is recommended that plants be added to reach goals for canopy coverage. Once goals are reached, ten percent of the total number of trees and shrubs in the greenway should be planted in new trees or shrubs annually to

maintain the coverage. An alternative approach is to annually inspect each greenway to determine if there has been any changes that require additional plants for maintaining the goal. Replenishment of stock will replace dead or diseased specimens and also improve nutrient uptake through younger specimens.

Benchmarks for a successful vegetation strategy may include the following:

- Mean percent canopy cover per acre,
- Specific survival rate from approved planted species,
- No single species exceeding 25% of surviving species (within each class of canopy, understory and groundcover),
- Wetland sites or habitat areas meeting federal guidelines for hydrophytic vegetation.

SHNA OFFICERS
 Laura Stouffer, President
laurab167002@yahoo.com

Eileen O'Brien, Vice President
eileen.obrien@skofirm.com

Rachel Steckler, Secretary
rachelsteckler@gmail.com

Karen Burns, Treasurer
karkb@hotmail.com



SOUTHERN HEIGHTS NEIGHBORHOOD ASSOCIATION

BOARD OF DIRECTORS
 Jeremy Kelley
jeremy@kelleybuildingcompany.com

Dave Weisrock
weisrock2@gmail.com

Russ Williamson
rwilliamson77@yahoo.com

Melanie-Tyner Wilson
tynerwilso@aol.com

October 25, 2013

ATTN: Mr. Jim Woods
 LFUCG
 Traffic Engineering
 Traffic Management Center
 200 E. Main Street
 Lexington, KY 40507

Re: Southern Heights Neighborhood, Traffic Survey Recommendations

Dear Mr. Woods:

I'm writing on behalf of the Southern Heights Neighborhood Association (SHNA) as the chair of the Traffic Committee. We've spoken before about the Southern Heights neighborhood and associated traffic issues this wonderful neighborhood faces. SHNA is looking into the issue as well. Upon our review of a recent neighborhood traffic survey, the SHNA Traffic Committee finds that the majority approves a proposal to install stop signs at two specific locations: (1) a three-way stop at the Glendover/Valley intersection, and (2) a three-way stop at McDonald and Shady Lane.

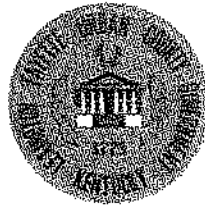
The overall consensus was to address traffic issues using a variety of traffic calming measures. There are options for additional stop signs and traffic calming measures which SHNA and the Traffic Committee will continue to discuss and explore but the greatest agreement was for the stop signs requested above.

Thank you for your assistance with this matter and your help with our neighborhood

Sincerely,

Jeremy Kelley

SHNA Board of Directors, Traffic Committee Chair
jeremy@kelleybuildingcompany.com



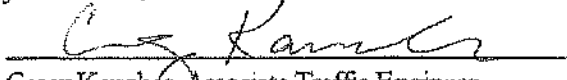
Lexington-Fayette Urban County Government
DEPARTMENT OF ENVIRONMENTAL QUALITY & PUBLIC WORKS

Jim Gray
Mayor

Richard Moloney
Commissioner

MEMORANDUM

TO: Julian Beard, 4th District Councilmember

FROM: 
Casey Kaucher, Associate Traffic Engineer

DATE: December 8, 2012

SUBJECT: Multiway Stop Analysis at Intersection of Glendover Road and Valley Road

Based on a request from your office a warrant study has been completed at the intersection of Glendover Road and Valley Road to determine the feasibility of installing a multiway stop at this intersection. *Manual on Uniform Traffic Control Devices (MUTCD) – 2003 Edition* criteria were used in the analysis of the intersection to determine if a multi-way stop was warranted at this location. The following is the warrant criteria used in the analysis:

Guidance:

The decision to install multiway stop control should be based on an engineering study.

The following criteria should be considered in the engineering study for a multiway STOP sign installation:

- A. Where traffic control signals are justified, the multiway stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
- B. A crash problem, as indicated by 5 or more reported crashes in a 12-month period that are susceptible to correction by a multiway stop installation. Such crashes include right- and left-turn collisions as well as right-angle collisions.
- C. Minimum volumes:
 1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and
 2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour, but
 3. If the 85th-percentile approach speed of the major-street traffic exceeds 65 km/h or exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the above values.
- D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Option:

Other criteria that may be considered in an engineering study include:

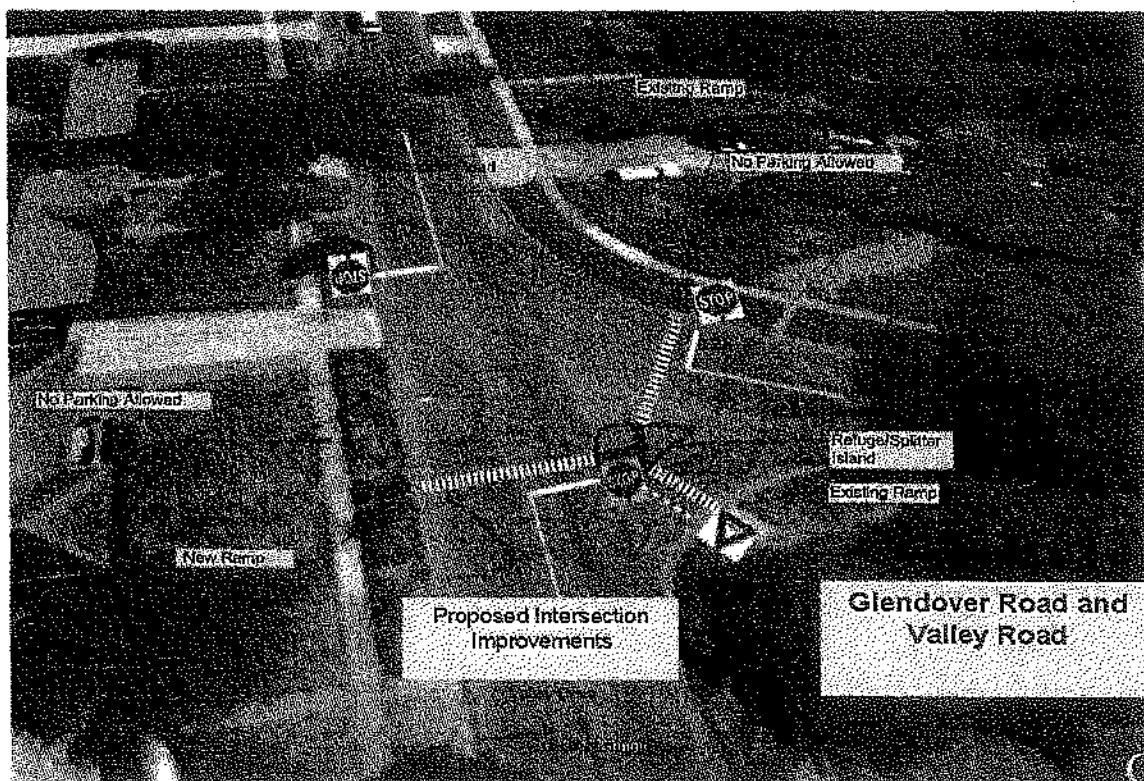
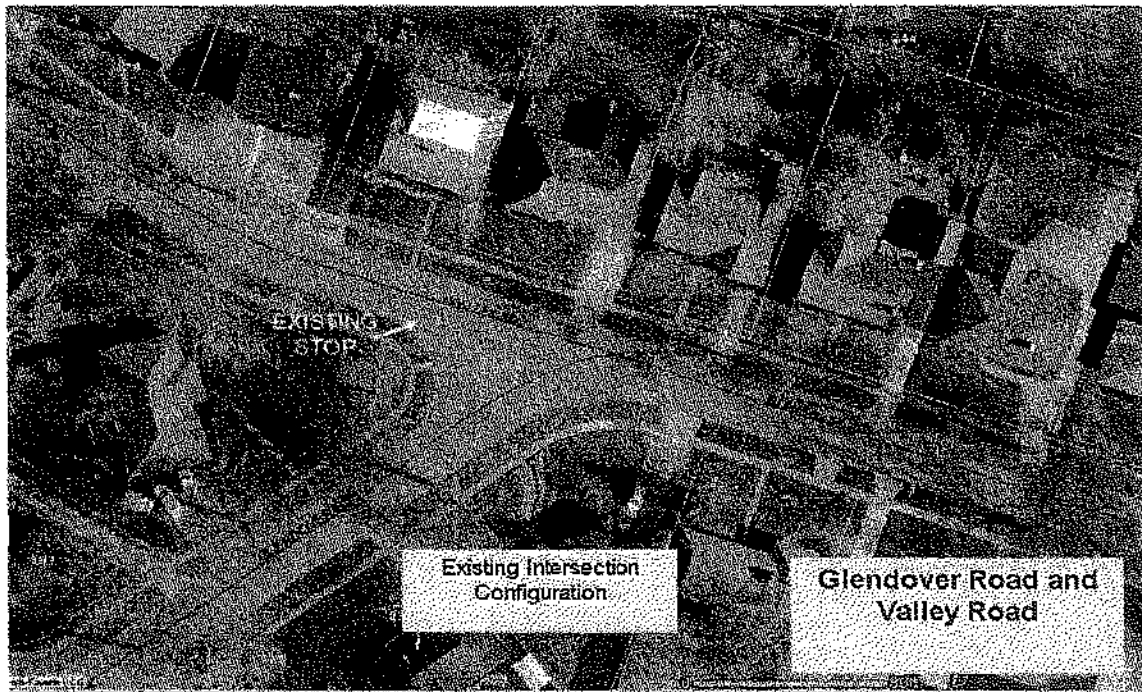
- A. The need to control left-turn conflicts;
- B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
- C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop; and
- D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multiway stop control would improve traffic operational characteristics of the intersection.

Multiway stop signs comprise a form of intersectional control that may enhance or diminish traffic safety. The *Manual on Uniform Traffic Control Devices (MUTCD)* defines warrant criteria to determine whether multiway stop signs would have a greater potential for a positive or a negative impact on traffic conditions. The *MUTCD's* warrants for multiway stop controls focus on two areas of concern: (1) traffic volumes and congestion and (2) a collision history that would be susceptible to correction with the installment of multiway stop signs.

Speed data was collected on Glendover Road. Data revealed that the 85th percentile speeds were 29.56 mph on eastbound Glendover Road and 36.08 mph on westbound Glendover Road. Based on this speed data, there would not be a reduction in the volume requirements as allowed in the *MUTCD* warrant criteria. The average 8-hour traffic volume which was collected on the major approaches of Glendover Road revealed 184.3 vehicles per hour or 61% of the volume required. The average 8-hour traffic volume which was collected on the minor approach of Valley Road revealed a total of 144.5 vehicles per hour or 72% of the volume required. The major and minor street approach volumes fall short of the warrant criteria. Therefore, the volume warrants are not met at this time.

A review of the collision history at this intersection revealed 1 collision in the 3 years prior to this analysis. Based on the warrant criteria, that is, a collision history of five (5) or more collisions in a 12-month period that are susceptible to correction by installation of a multiway stop, the collision warrant is not met at the intersection of Glendover Road and Valley Road.

Glendover Road and Valley Road are classified as local streets. Both roadways are lined with utility strips and sidewalks along both sides of the road. The intersection of Glendover Road and Valley Road is a three leg intersection. Motorist traveling on Glendover Road have the right of way and the stopping condition is located on the Valley Road approach. The roadways intersect at an angle as opposed to the more traditional 90 degree intersection. This geometry creates a large amount of pavement within the intersection and a large distance between stop and yield conditions. Installing a multiway stop at the intersection of Glendover Road and Valley Road without further intersection improvements would increase the potential for collisions. Improvements may be made to shrink and better define the intersection through construction of a raised island, handicap ramps and installation of enhanced crosswalks and signage. Below are pictures of the existing intersection configuration and potential intersection improvements.



Based on the intersection's unique geometry, The Division of Traffic Engineering would not object to the installation of a multiway stop at the intersection of Glendover Road and Valley Road if installed along with the above intersection improvements.

If you have any questions, please contact me anytime.

Casey Kaucher
Division of Traffic Engineering

xc: Richard Moloney, Commissioner of Environmental Quality & Public Works
Melissa Lueker
Willy Fogle, 4th District Legislative Aide
Jim Woods, P.E., P.L.S.
Brad Frazier, P.E.
Officer Doug Smith
Robyn Miller, Southern Heights Neighborhood Association President

Request for Proposals

The Lexington-Fayette Urban County Government hereby requests proposals for **RFP/Q xx-2013 VERSAILLES ROAD LANDSCAPING DESIGN-BUILD SERVICES** to be provided in accordance with terms, conditions and specifications established herein.

Sealed proposals will be received in the Division of Central Purchasing, Room 338, Government Center, 200 East Main Street, Lexington, KY 40507, until x:00 PM, prevailing local time, on xxxx x, 2013.

Proposals received after the date and time set for opening proposals will not be considered for award of a contract and will be returned unopened to a Proposer. It is the sole responsibility of the Proposer to assure that his/her proposal is received by the Division of Central Purchasing before the date and time set for opening proposals.

Proposals must be sealed in an envelope and the envelope prominently marked:
RFP xx-2013 VERSAILLES ROAD LANDSCAPING DESIGN-BUILD SERVICES

The proposal must be addressed to:

Purchasing Director
Lexington-Fayette Urban County Government
Room 338, Government Center
200 East Main Street
Lexington, KY 40507

Additional copies of this request for proposal/qualifications are available from the Division of Central Purchasing, Room 338 Government Center, 200 East Main Street, Lexington, KY 40507, (859)-258-3320, at no charge.

Proposals, once submitted, may not be withdrawn for a period of sixty (60) calendar days.

PRE-PROPOSAL MEETING AND QUESTIONS

A non-mandatory pre proposal meeting to be held on Xxx, Xxx, xx, 2014 at xx:xx AM local time, at _____.

Until the pre proposal meeting, questions about the project may be submitted to the LFUCG Economic Engine website. Deadline for questions after the Pre-Proposal meeting shall be Xxx, Xxx xx, at x:00 PM.

Following the pre proposal meeting, all questions from the meeting, as well as those received via the website, will be addressed and posted on Economic Engine. No questions will be entertained or responded to verbally.

Request for Proposals
For Design Build Services
For Landscaping the Versailles Rd (US 60) corridor

The Lexington-Fayette Urban County Government (LFUCG) is seeking a consultant to provide conceptual design, final design, construction documents, planting and oversight and maintenance for landscaping on Versailles Rd (US 60) from New Circle Rd to Man O' War Blvd.

The current budget for the project is \$ 140,000. Design fee, construction budget, overhead, 2 year maintenance and profit should be calculated in your budget.

The project goal is to enhance the corridor with landscaping. It is anticipated that native vegetation will be emphasized and bare root planting techniques will be utilized. If Proposal includes alternative planting techniques those specific techniques shall be included in the proposal.

It is anticipated that the planting will occur within the State right-of-way. The successful consultant will be responsible for submitting encroachment permit applications on behalf of the owner LFUCG.

It is expected that the successful consultant will work with the affected property owners, including at least the Bluegrass Airport, the Keeneland Association; the Versailles Road Corridor Coalition; the LFUCG Urban Forester and related staff; the Mayor's Office; and the Corridors Commission. The successful consultant is expected to organize and host two public meetings. These meetings are expected to introduce interested parties to the proposed landscaping theme and solicit input from the public.

Alternative public involvement proposals will be considered if they are cost effective.

Landscaping is an important element in defining the image of any community. The City of Lexington hopes to use this project to elevate the importance of quality landscape design and construction in order to maintain and enhance a positive aesthetic image. We hope to use this project as a model for landscape techniques that can be used throughout the community.

The successful proposal will include a proposed timeline, appropriate resumes, references, proposed project methodology and proposed budget.

Planning and Public Works Committee Referrals

<u>Item</u>	<u>Referred</u>	<u>Date</u>	<u>Status</u>
Review Street Tree & Tree Protection Ordinances	9.27.11	11.20.12	11.20.12
Possible Revision of Sign Ordinance	Farmer	6.12.12	Mar 2014
Private Streets: Enforcement, Maintenance & Specifications	Mossotti	1.129.13	
H-1 Notification Process	Myers	1.19.13	
Maintenance of Major Roadways	Stinnett	4.16.13	
Greenway Manual & Plan	Mossotti	10.8.13	Feb 2014
Fees to Offset Historic Preservation Services	Gorton	12.5.13	Mar 2014
Explore Providing Assistance to Low Income Homeowners with Code Compliance	Gorton	12.5.13	
Examine Fee Structure for Planning, Preservation & Development Services	Gorton	12.5.13	Mar 2014
Homeowner Associations Rights & Responsibilities	Akers	12.3.13	Feb 2014
Leaf Collection Review	Stinnett	1.14.14	
Multi-Way Stop Glendover Rd @ Valley Rd	Beard	1.30.14	Feb 2014
<u>Item</u>	<u>Referred</u>	<u>Date</u>	<u>Status</u>
Oliver Lewis Way Update	Blues	4.9.09	Mar 2014
Todd's Road Widening Phase II	Stinnett	4.15.09	Feb 2014
Downtown Traffic Study	Farmer		Feb 2014
Design Excellence Update	Kay	4.8.14	Moved to Planning Commission Apr 2014