

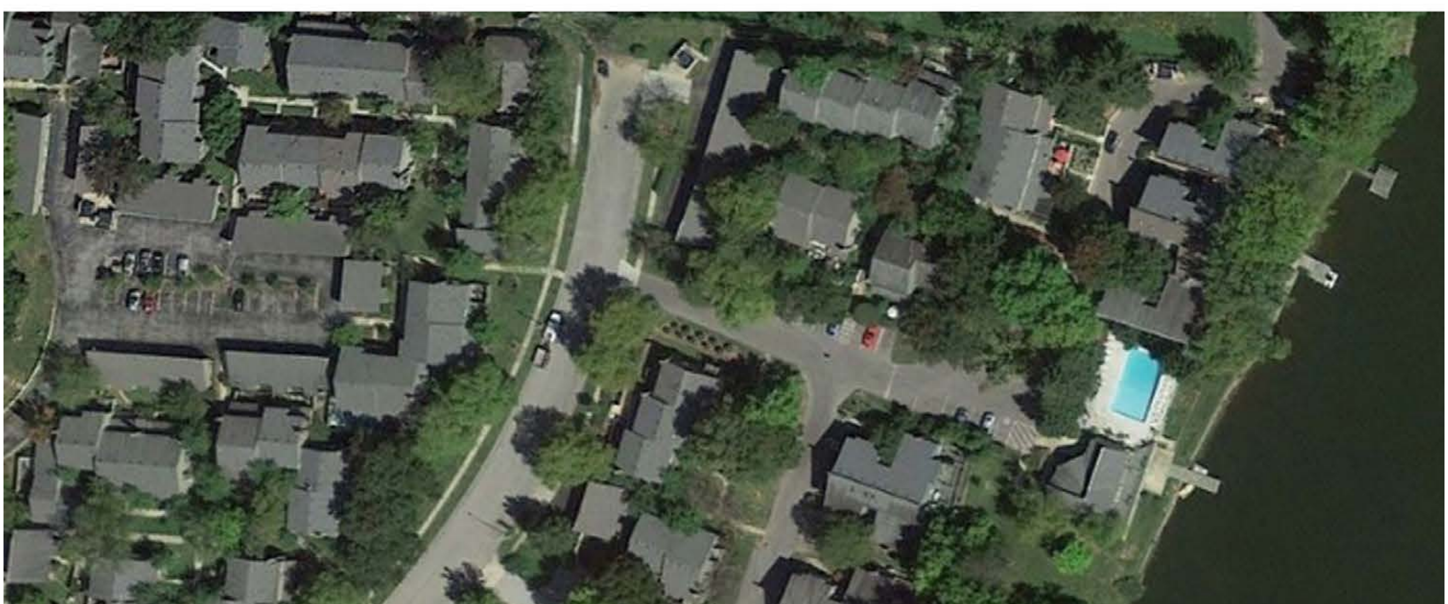


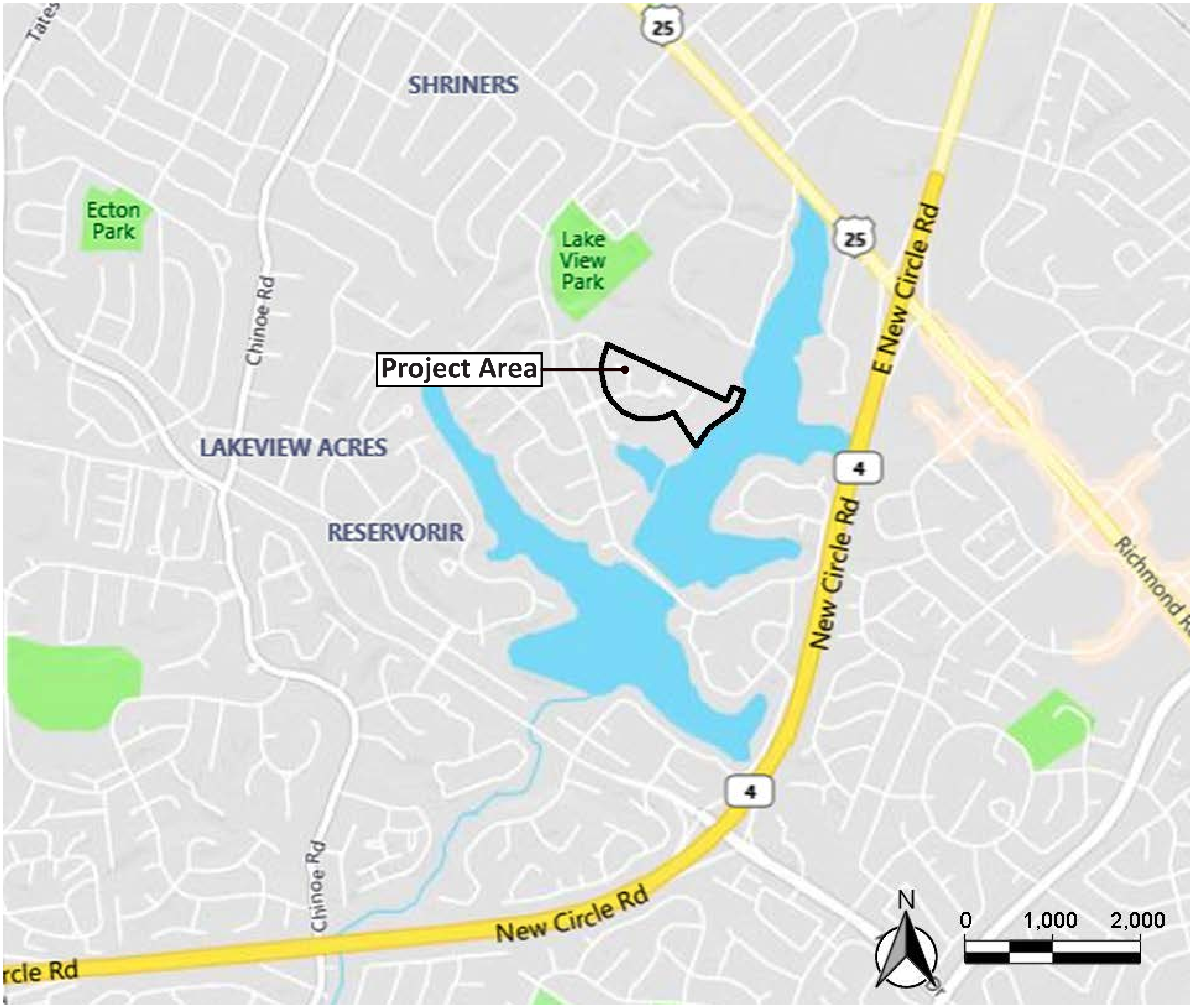
Lakeshore Village

Water Quality Incentive Grant
Feasibility Study

cdp

June 2019

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Lakeshore Village History:

Lakeshore Village a condominium community situated on Lake Fontaine was built in 1975. The lakes, originally built in the late 1800s and early 1900s, provided drinking water to the city of Lexington. This unique community setting created by the original designers continues on today. The Lakeshore Village development was one of the earliest built planned unit developments in the city. This feasibility study serves as a guide to future projects and their priority. Each green infrastructure project will help improve the water quality flowing into the lake and West Hickman Watershed.

Purpose:

The purpose of the Lakeshore Village Green Infrastructure Feasibility Study is to develop a comprehensive understanding and vision for implementing environmentally and financially sustainable stormwater management practices within the Lakeshore Village Community. This plan includes a set of tools to guide property managers and landowners in selecting best management practices to reduce their operational costs while improving the quality of stormwater and reducing runoff. This study's broad goal is to create a guide for improving the quality of life for the residents through mitigating storm water related issues.

Goals and Objectives:

- Provide educational baseline information and data on Green Infrastructure practices to the community.
- Employ GIS analysis to determine the feasibility of implementing Green Infrastructure practices within the Lakeshore Village community.
- Provide site case studies of Green Infrastructure practices and masterplan priorities for the development.
- Provide a Green Infrastructure model for shoreline erosion protection where small boats/kayaks launch and at pipe outfalls.
- Map existing improvements and create a living BMP document.
- Provide designs for erosion control BMP's at the ends of sea walls and certain erosion prone zones along Lake Fontaine.
- Provide solutions to flooding.
- Prioritize areas that flood for remediation using BMP techniques.
- Develop and prioritize guidelines for future water quality projects.
- Meet with Lakeshore Estates Lake Association (LELA) prior to final report issuance.

Potential Green Infrastructure Practices:

a. French Drain/Drywells with stone filters
b. Bioswales, retention and detention zones, and rain gardens
c. Removing Impervious Areas – reducing runoff.
d. Improving or re-establishing natural drainage flows that have been changed
e. Vegetative roofs
f. Permeable pavement

Watershed:

The West Hickman watershed covers south-central Fayette County and northeastern Jessamine County. This watershed is in the Bluegrass physiographic region. The watershed lies mainly in the inner subregion of the Bluegrass, characterized by undulating terrain and moderate rates of both surface runoff and groundwater drainage. A portion of the watershed's southern reach of West Hickman Creek in Jessamine County, lies in the hills of the bluegrass subregion. These physical conditions are characterized by hilly terrain, very rapid surface runoff, and slow groundwater drainage. Most of the watershed lies above thick layers of easily dissolved limestone that form carbonate aquifers. Groundwater flows through channels in the limestone, so caves and springs are common in regions with this geology. Other areas lie above interbedded limestones and shales (>20% limestone, allowing groundwater flow where the clay content is low enough).

West Hickman Watershed:

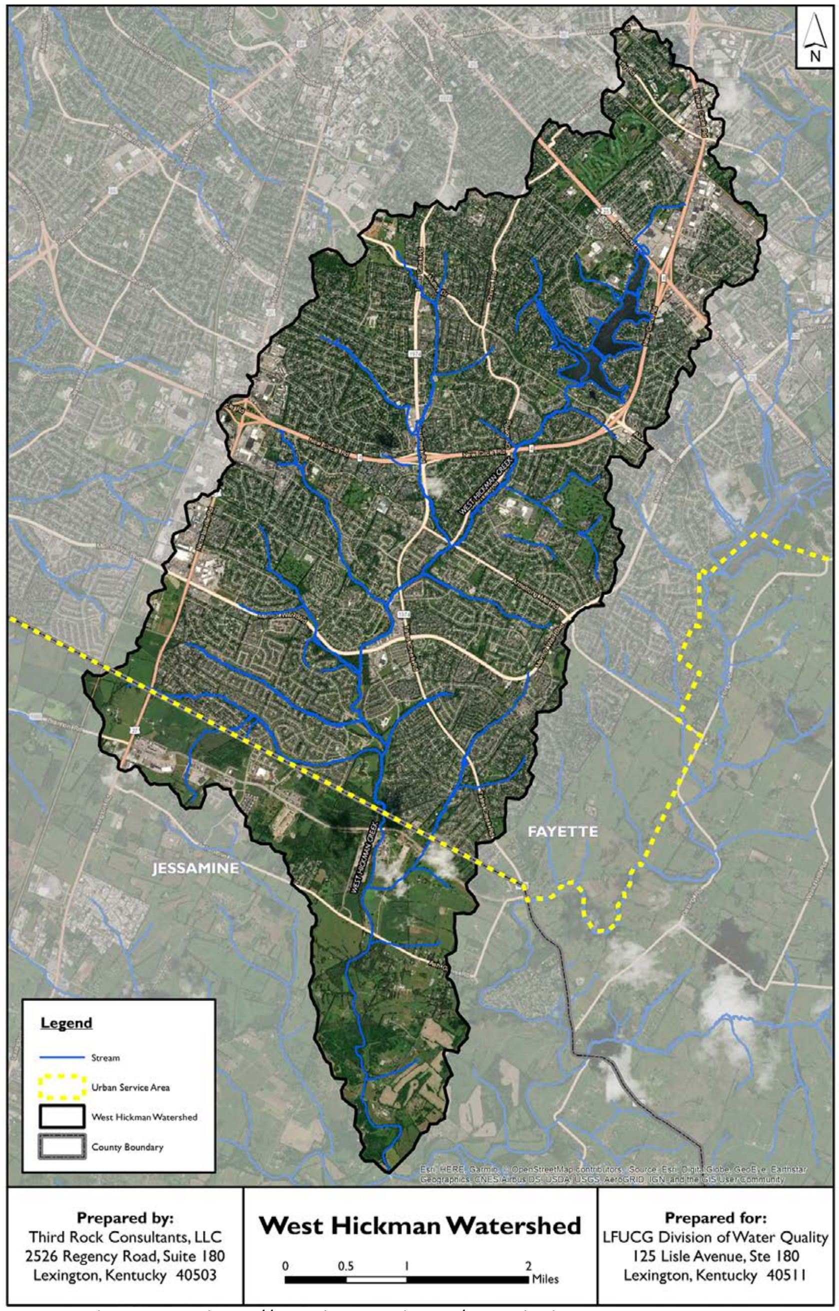


image credit: LFUCG - https://www.lexingtonky.gov/watersheds-0

FEMA Floodplain:

Lakeshore Village borders the FEMA floodplain along the shoreline. The diagram below, overlaid on the aerial map, illustrates the floodplain just above the lakes water surface with a 100-Year Base Flood Elevation (BFE) of 973.00 Mean Surface Level (MSL). In recent years, several floodplain studies have been conducted to update the floodplain (blue dotted area on map). These updates have adjusted the floodplain elevations and thus the location of the floodplain. The last revision for this panel was 3/3/2014.

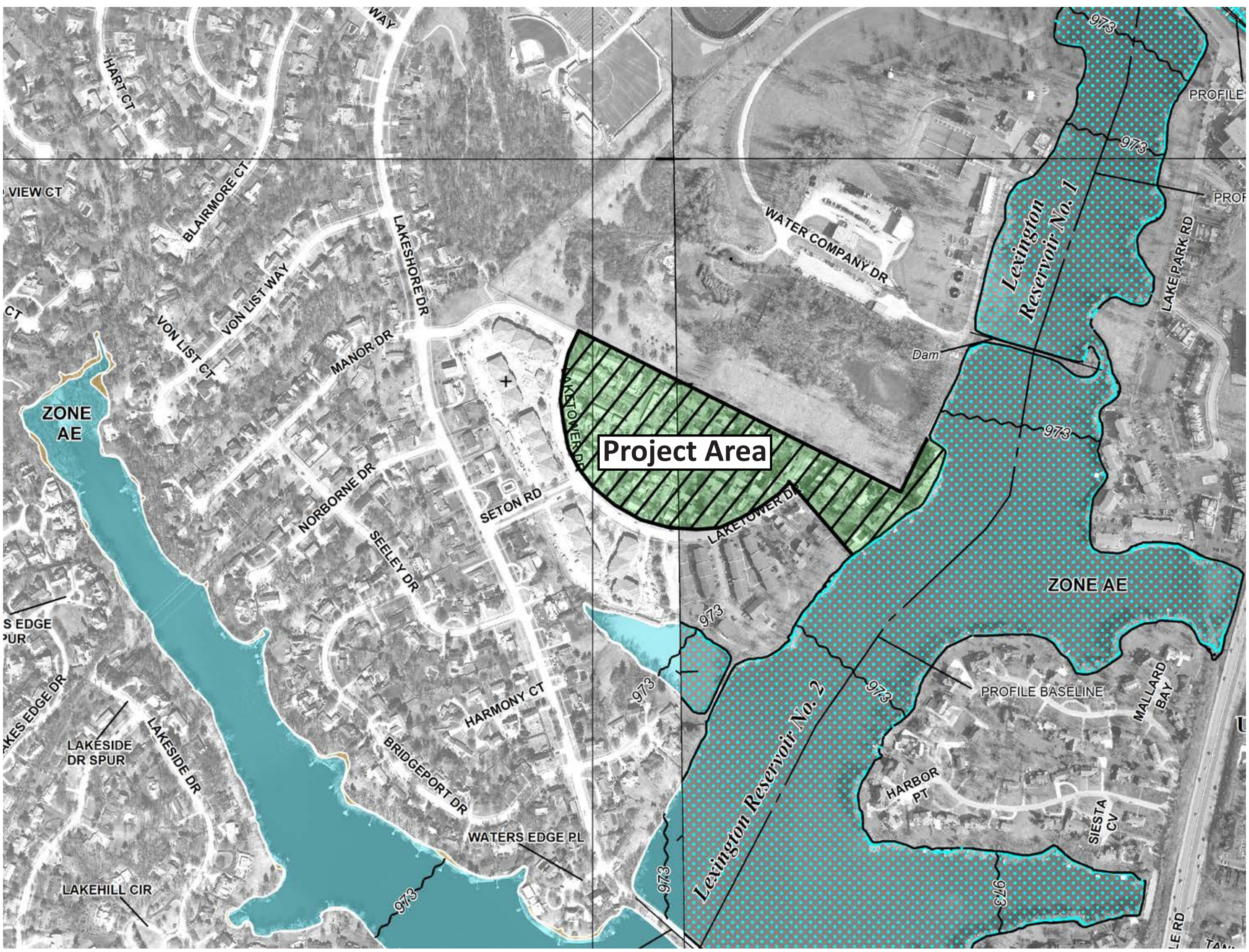


image credit: FEMA -FIRM PANEL 2100670139E AND 2100670138F

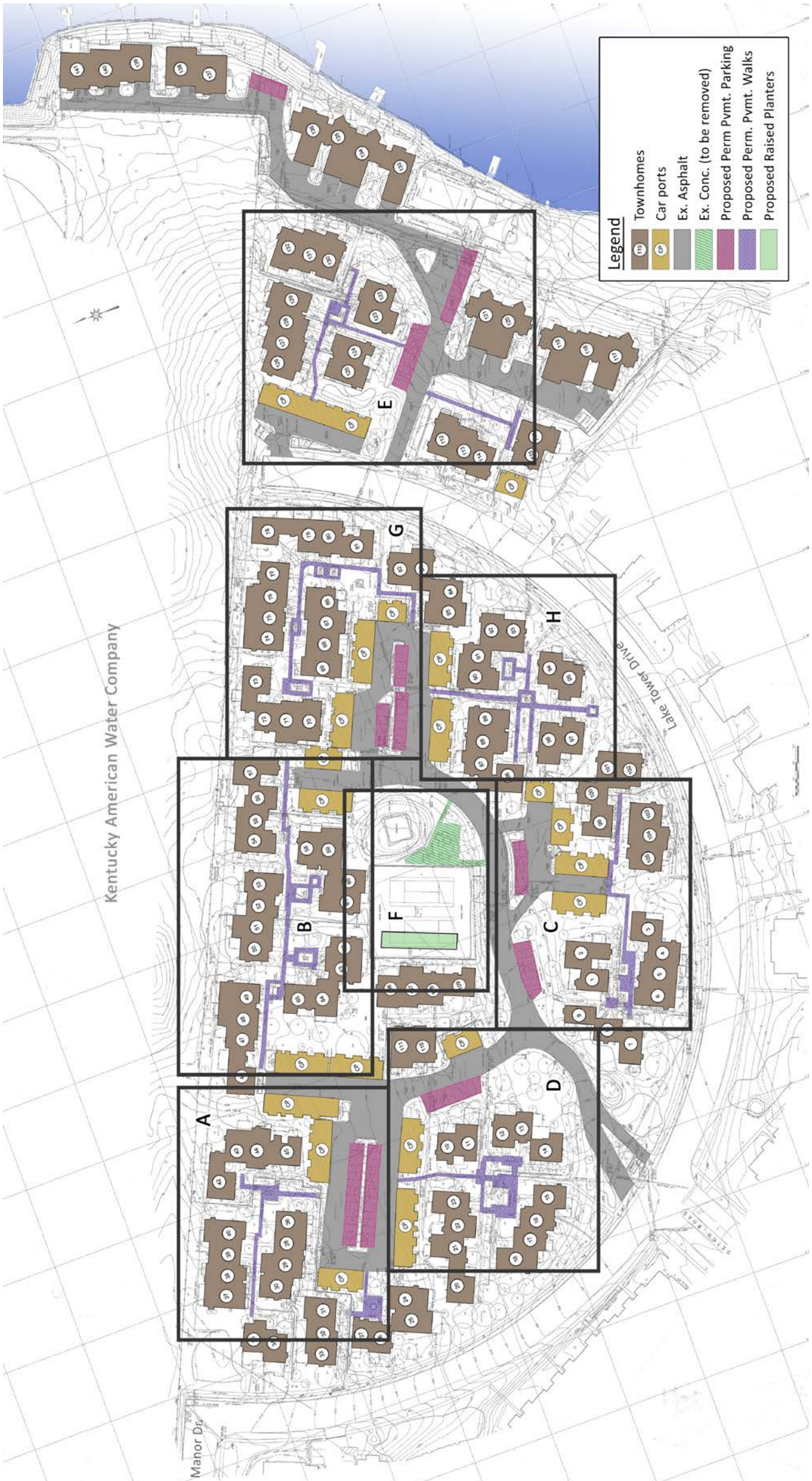
Existing Conditions:

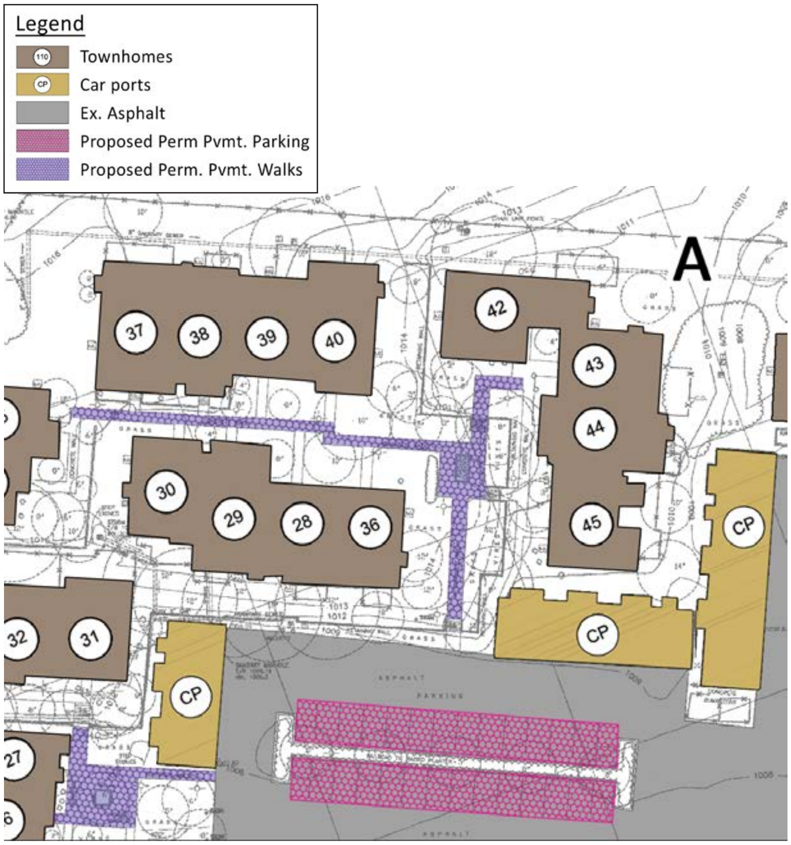
The property is a unique Planned Unit Development (PUD) with open courtyard areas arranged in picturesque forms throughout the site. Large railroad tie retaining walls are a predominate theme of the landscape and the forms work well to enhance the natural landscape of the area. The community has concluded that these railroad tie walls have reached their lifespan and are being replaced with modular concrete walls.

The site slopes, generally, from east to west towards the lake. The property boundary adjoining Kentucky American Water Company (KAWC) to the north has formed a ridge line over time disrupting the natural flow of water from the rear of these units, creating standing water for extended periods of time along this property line. As with most developments constructed in the 1970's, stormwater management consisted of minimum infrastructure and few inlets. The development has two main storm lines running through the middle of the site. The lack of stormwater connectivity has lead to many areas with ponding water creating numerous issues for the community.

On the upper portion of the property (Units 1-10 and Units 30-80) stormwater from roof downspouts flow into small confined courtyards. With minimum to no grade change in these areas, standing water has become a major concern for the residents and a hazard during freezing conditions. In several locations, drywells have been installed to mitigate the standing water issue but during heavy rain events the drywells become overwhelmed and create additional hazards.

Proposed Conditions:





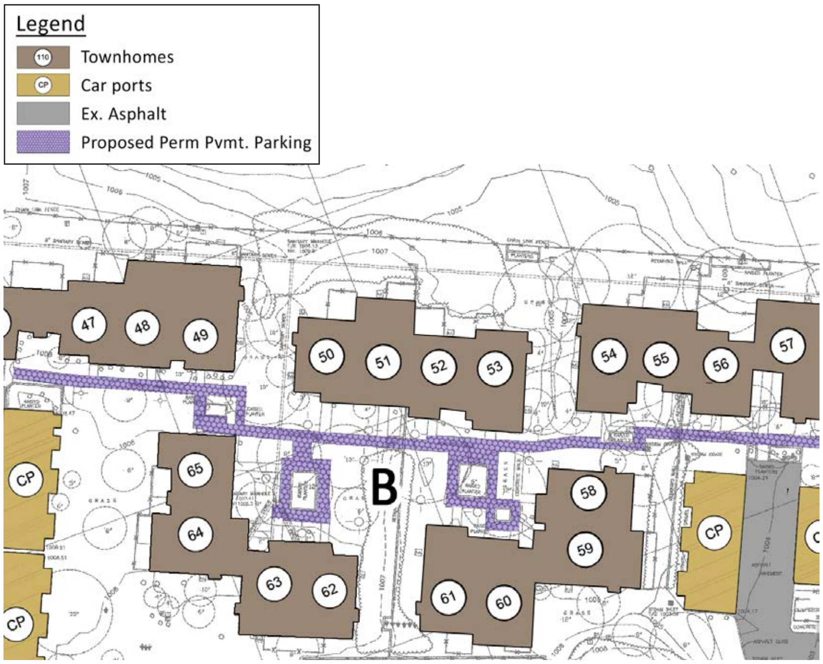
Area A

Issues:

- Surface ponding on pavement
- Depressed topography prevents runoff from paved areas.
- Lack of storm sewer infrastructure

Recommendations:

- Work with KAWC to restore natural drainage pattern along the property line.
- Replace impervious pavement with permeable pavement.
- Direct downspouts to permeable pavement.
- Replace parking spaces with permeable pavement.
- Replace asphalt shingle roof with vegetative roof.



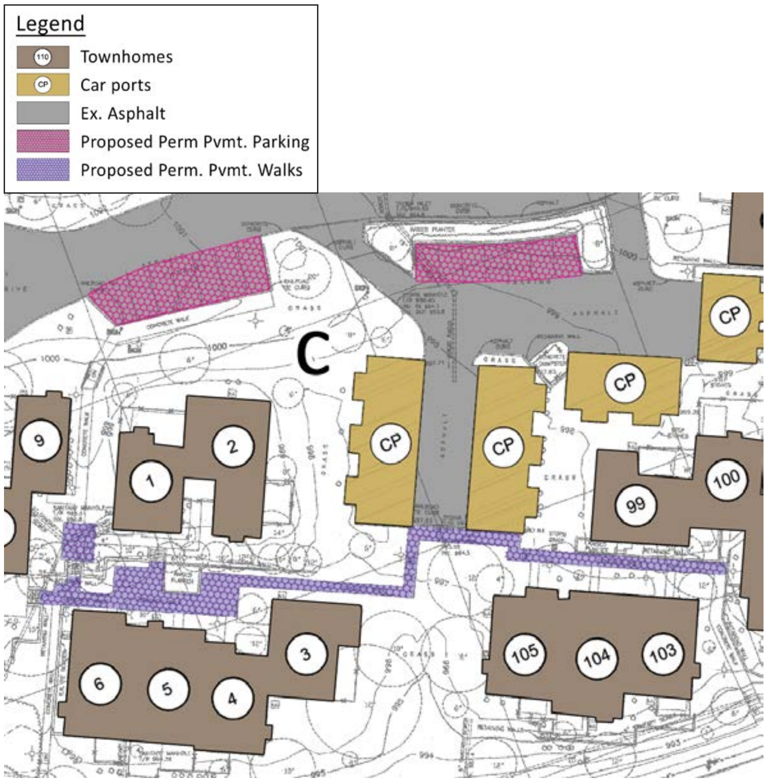
Area B

Issues:

- Surface ponding on pavement
- Depressed topography prevents runoff from paved areas.
- Lack of storm sewer infrastructure

Recommendations:

- Work with KAWC to restore natural drainage pattern along the property line.
- Replace impervious pavement with permeable pavement.
- Direct downspouts to permeable pavement.
- Replace parking spaces with permeable pavement.
- Replace asphalt shingle roof with vegetative roof.



Area C

Issues:

- Surface ponding on pavement
- Depressed topography prevents runoff from paved areas.
- Lack of storm sewer infrastructure

Recommendations:

- Work with KAWC to restore natural drainage pattern along the property line.
- Replace impervious pavement with permeable pavement.
- Direct downspouts to permeable pavement.
- Replace parking spaces with permeable pavement.
- Replace asphalt shingle roof with vegetative roof.

Area D

Issues:

- Surface ponding on pavement
- Depressed topography prevents runoff from paved areas.
- Lack of storm sewer infrastructure

Recommendations:

- Work with KAWC to restore natural drainage pattern along the property line.
- Replace impervious pavement with permeable pavement.
- Direct downspouts to permeable pavement.
- Replace parking spaces with permeable pavement.
- Replace asphalt shingle roof with vegetative roof.

Area E

Issues:

- Surface ponding on pavement
- Depressed topography prevents runoff from paved areas.
- Lack of storm sewer infrastructure

Recommendations:

- Work with KAWC to restore natural drainage pattern along the property line.
- Replace impervious pavement with permeable pavement.
- Direct downspouts to permeable pavement.
- Replace parking spaces with permeable pavement.
- Replace asphalt shingle roof with vegetative roof.

Area F

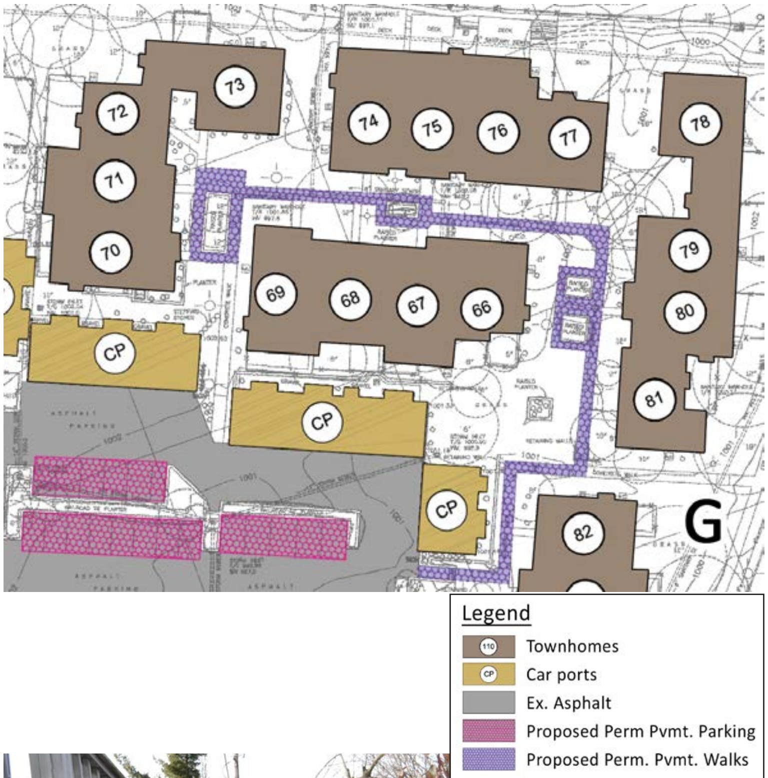
Issues:

- Surface ponding on pavement
- Depressed topography prevents runoff from paved areas.
- Lack of storm sewer infrastructure

Recommendations:

- Work with KAWC to restore natural drainage pattern along the property line.
- Replace impervious pavement with permeable pavement.
- Direct downspouts to permeable pavement.
- Replace parking spaces with permeable pavement.
- Replace asphalt shingle roof with vegetative roof.
- Remove existing pavement.





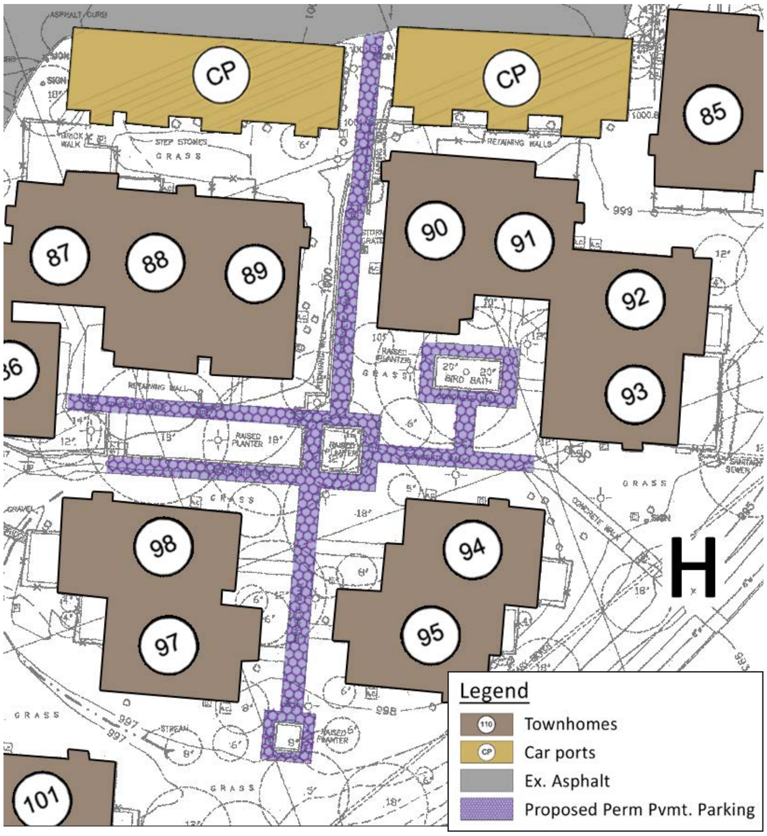
Area G

Issues:

- Surface ponding on pavement
- Depressed topography prevents runoff from paved areas.
- Lack of storm sewer infrastructure

Recommendations:

- Work with KAWC to restore natural drainage pattern along the property line.
- Replace impervious pavement with permeable pavement.
- Direct downspouts to permeable pavement.
- Replace parking spaces with permeable pavement.
- Replace asphalt shingle roof with vegetative roof.



Area H

Issues:

- Surface ponding on pavement
- Depressed topography prevents runoff from paved areas.
- Lack of storm sewer infrastructure

Recommendations:

- Work with KAWC to restore natural drainage pattern along the property line.
- Replace impervious pavement with permeable pavement.
- Direct downspouts to permeable pavement.
- Replace parking spaces with permeable pavement.
- Replace asphalt shingle roof with vegetative roof.

Recommendations:

The overall site drainage is failing in several ways and some common areas need extensive work. The city sewer, lighting and site conditions are adequate. Maintenance on individual structures is outstanding since each owner has taken great steps to keep their units attractive and maintained. The overall site character is in good shape and in general Lakeshore Village is a great place to reside. The walls and site elements however, have not received much care and the stormwater collection system in parking areas fails to the point that the residents are dealing with dangerous conditions when walking from carports to their units after wet freezing events.

The staff and the home owners have put forth considerable effort to fix these problems, however it is a large endeavor and to that effect, this study should be a guide to pursue additional grant funding for future repairs. We know with effort and perseverance the sites stormwater can be remediated to fix saturated walkways and restore the landscape to its original character while helping to keep the waters of our community clean for the next generation.

Opportunities:

Lakeshore Village properties show many opportunities to retrofit the existing site so it can manage stormwater and provide opportunities to increase the value of the property from both the owner's and community's standpoint. These opportunities include:

- Continue to daylight downspouts
- Reduce the amount of impervious area
- Change drainage patterns
- Change restrictive topography
- Add drain inlets to prevent flooding
- Regrade ponding or depressed areas
- ?
- Increase the storm drainage holding capacity
- Filter storm runoff to improve water quality.

Legend:

Roof Drainage
Surface Drainage

Currently narrow spaces between the existing structures, and steep slope conditions, have created erosion prone areas and wet conditions making plantings and walkways difficult to maintain.

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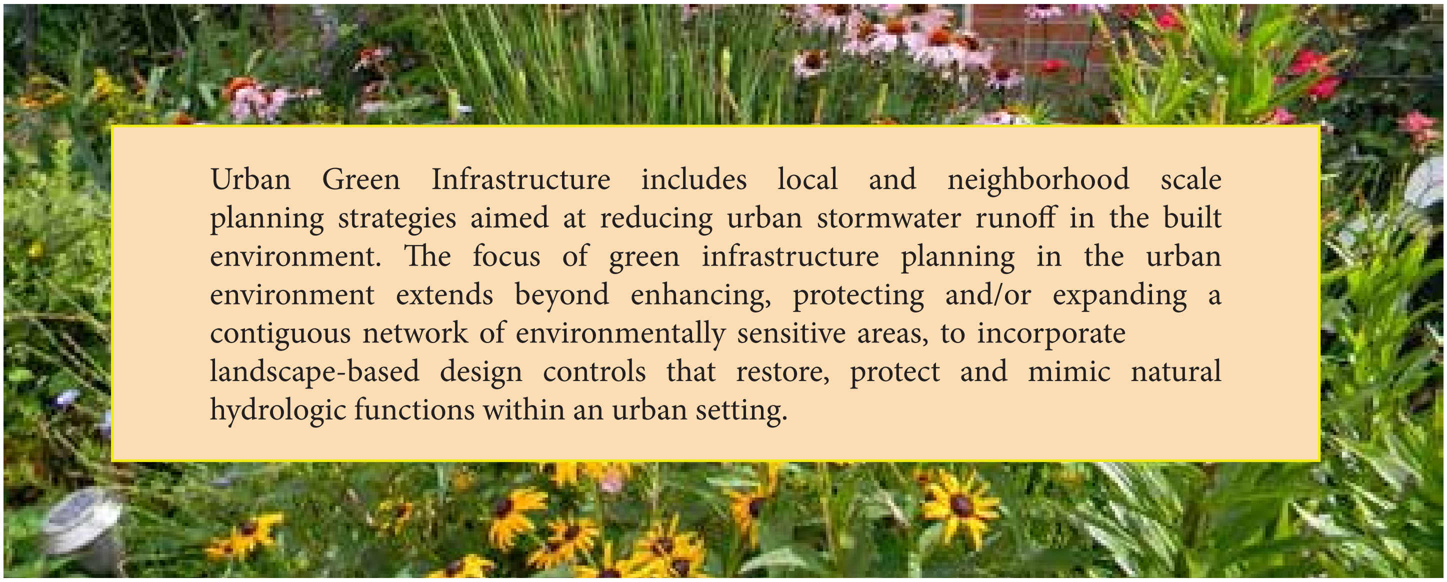
What is Green Infrastructure:

When rain water falls on roofs, parking lots, driveways and sidewalks, water runs off these surfaces and cannot soak into the ground. As in most urban areas, rain water from Lakeshore Village is collected in a series of storm drains and discharged into Lake Fontaine and then into West Hickman Creek. This stormwater runoff carries trash (floatables), bacteria, petroleum byproducts and other pollutants from the urban landscape. Combined with increased water run- off, stormwater degrades the receiving waters, causing erosion and flooding, and damages habitats, property and infrastructure.



> Urban Green Infrastructure includes local and neighborhood scale planning strategies aimed at reducing urban stormwater runoff in the built environment. The focus of green infrastructure planning in the urban environment extends beyond enhancing, protecting and/or expanding a contiguous network of environmentally sensitive areas, to incorporate landscape-based design controls that restore, protect and mimic natural hydrologic functions within an urban setting.

Green Infrastructure mimics the natural hydraulic cycle by employing vegetation soils and other natural processes to manage rainwater. There are generally two scales of Green Infrastructure. The first scale is the city or county level, in which Green Infrastructure is a patchwork of natural areas that provide habitat flood protection, clean water, and clean air, such as parks and large buffer zones along streams and rivers. At the second scale neighborhood, districts or site level, Green Infrastructure refers to stormwater management systems that replicate nature by allowing rain water to soak into the ground or evapotranspire through plants.

This study is based upon the latter of these two systems, to demonstrate the feasibility of implementing Green Infrastructure practices to benefit not only the overall health and water quality of West Hickman Creek watershed but to demonstrate the financial benefits for property owners along Lakeshore Drive. By employing the use of Green Infrastructure principles to reduce the impact of stormwater runoff as well as implementing Low Impact Development (LID) principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed.

Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions. LID has been characterized as a sustainable stormwater practice by the Water Environment Research Foundation and others.

Why Green Infrastructure:

Simply stated, Green Infrastructure is a cost-effective and sustainable approach to managing Lexington's stormwater infrastructure needs while providing many tangible, social, environmental and economic benefits. Numerous studies have been published, some of which are contained within this report, highlighting the benefits of implementing Green Infrastructure practices in commercial and retail districts.

Green Infrastructure Benefits:

Improving stormwater management on existing multifamily properties can be an uphill battle, as it can be considered a costly investment. The most critical component of evaluating these strategies is their ability to add value. Added value for multifamily properties can come in a number of ways.

- **Lessening the Water Quality Management Fee**
  The most direct benefit of these strategies is a reduction of impervious surfaces, which will lessen a property owner's Water Quality Management Fee that is based on the total square footage of impervious surfaces for multifamily properties.

- **More Beautiful Landscapes that can be Sustainably Maintained**
  The way multifamily properties differentiate themselves is the look and feel of the property. There are many landscape solutions that are beneficial to stormwater quality and local ecological systems while remaining beautiful. If designed well, these native landscapes can require less long-term maintenance, less water and minimal chemical treatment.

- **Added Resident Amenities**
  Perhaps most importantly, these features can be designed to lessen impervious surfaces and improve drainage problems and water quality, while adding amenities that make a property stand out to prospective residents, and allowing the property owner to create more rental value on their respective property.

- **The Sustainability Market**
  While the sustainability and "green living" markets vary from region to region, there is absolutely a growing public interest, and even a market demand, for consumers who want to live a more sustainable lifestyle. Using these stormwater features in marketing is one more way to add value and elevate the status of a multifamily property when residents are choosing where to sign their lease.

Recommendations:

The study has found many opportunities to reduce water quantity run off and improve water quality within Lakeshore Village. Based upon the findings, we have chosen Area 2 and Area 5 to investigate further for the case study. The two scenarios were chosen based upon the following criteria:

- Area 2 is the second highest priority since it has more issues than most other areas
- Area 5 is one of the largest areas for holding capacity
- Area 2 and 5 work together to daylight the system
- Other areas could connect to these areas to daylight the storm drainage system once expanded
- The close proximity to the city storm inlet allows the basin to drain / overflow to city system
- These areas have a variety of BMP's for cost analysis
- These two areas allow construction to begin at the outfall and works upstream into problem areas

The two case studies both require a moderate to high level of retrofitting the site with Green Infrastructure practices. The overall goal is the reduction of ponding, flooding, and impervious surfaces while maintaining or improving efficiency, pedestrian circulation, and the aesthetic qualities of the property.

Types of Green Infrastructure:

Green Infrastructure (GI) describes a wide array of practices that use or mimic natural processes to manage urban stormwater runoff. As stated before, Green Infrastructure and other natural treatment trains, manage rainwater runoff while improving the urban environment. Green Infrastructure controls stormwater runoff by using it as a resource rather than a waste by-product. The following examples represent the general classifications of Green Infrastructure practices.

Rain Gardens:

Rain gardens, also known as bio retention or bio infiltration cells, are shallow vegetative basins that collect and absorb rainwater runoff from rooftops, sidewalks, and parking lots. Rain gardens use native plant material due to the deep root system to mimic the natural hydrology through infiltration and evapotranspiration. Rain gardens are versatile and can take a variety of shapes and sizes.

Downspout Disconnection:

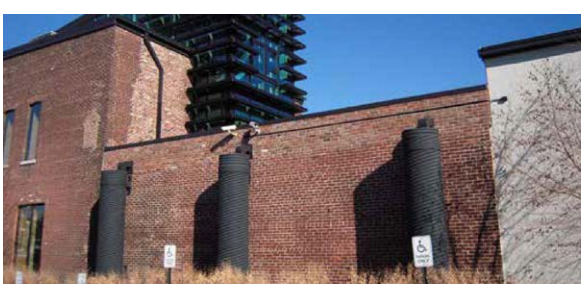
Downspout disconnection refers to the rerouting of roof drain pipes to drain rainwater into rain barrels, cisterns, or permeable areas instead of the storm water sewer system. Downspout disconnection can store rain water and or allow stormwater to infiltrate into the ground. The disconnection of downspouts is one of the most cost-effective means implementing green infrastructure.

Existing downspout disconnected to drain to permeable concrete

New downspout designed to drain onto permeable concrete

Rainwater Harvesting:

Rainwater harvesting systems collect and store rainwater for non-potable use. When designed appropriately, rainwater harvesting slows and reduces runoff while providing a natural and free resource. Rainwater harvesting systems can be integrated into the architectural language of the building as seen in this photograph. below.



Vertical cisterns collect rainwater for re-use in irrigation

Underground cisterns collect rainwater for reuse or infiltration

Planter Boxes:

Planter boxes are urban examples of rain gardens typically with vertical walls and open or closed bottoms that filter or infiltrate rainwater from sidewalks, parking lots and streets. Planter boxes can be an integral part of a streetscape design and can reflect the architecture style of an urban area. This form of a rain garden is ideal for space constrained sites in cities and other compacted areas.


Bioswales:

Bioswales are vegetated, mulched or stone channels that provide detention and treatment as they convey stormwater from hardscape to downstream. Vegetated swales slow runoff allowing filtration and infiltration. Acting as a linear planter box, bioswales are ideal for parking lots and streets.


Permeable Pavements:

Permeable pavements are paved surfaces that allow rainwater to infiltrate, treat and/or store stormwater for harvesting or extended time release. Permeable pavements are typically constructed from pervious concrete, porous asphalt, permeable interlocking pavers and other permeable materials.

Porous Concrete:

Porous concrete is similar to conventional concrete pavement in appearance and structural support for light duty pavement. Typically pervious concrete contains between 15% and 25% void space to achieve the permeability of the concrete while maintaining structural integrity. For heavy duty pavement requirements, the replacement of porous concrete with conventional concrete provides the additional strength to support increased traffic loads. Finished porous concrete has the appearance of "rice crispy treats" due to the reduced amount of sand and cement in the design mix. Porous concrete provides both designers and installers greater flexibility in the placement of the paved surface due to the inherent workability. Porous concrete typically requires less labor to place than conventional concrete due to the reduction in finish work time. Porous concrete can have color added to the mix, or applied on the surface for aesthetic or functional applications.

Permeable Interlocking Pavers:

Permeable interlocking pavers are another pavement system suitable for everyday parking and driving activities. Unlike pervious concrete or porous asphalt pavement systems, permeable pavers are manufactured impermeable units with offset knobs creating joints to allow rainwater to flow around the paver units into the porous gravel subbase. Installation of permeable pavers is similar to the installation of conventional paver units. Likewise, the life-cycle of permeable paver units equals that of conventional units, typically 40-60 years. An additional benefit of permeable paver units is that they allow for removal and resetting of the units if maintenance or utility work is required. Permeable interlocking paver units offer a wide range of style, design and color options for designers, developers and business owners to choose.

Vegetative (green) Roof or Walls:

A vegetative roof is a thin layer of vegetation grown on rooftops. Vegetated roofs provide shade and UV protection for the roofing membrane while capturing and filtering rainwater. Rainwater is then released by evapotranspiration or delayed runoff. Green roofs can be categorized as extensive (2”- 6” of growing media supporting 10-25 pounds per square foot of vegetation) or intensive (6” or more of growing media supporting 80-150 pounds per square foot of vegetation).

Intensive roof or traditional rooftop gardens require greater depth of soil to grow large plants, small trees or conventional lawns. They are typically labor intensive requiring irrigation, fertilization and other maintenance. By contrast, extensive green roofs are designed to be self sustaining with minimum maintenance once established. Vegetative walls follow the same practices as green roofs and can be part of a building or freestanding.

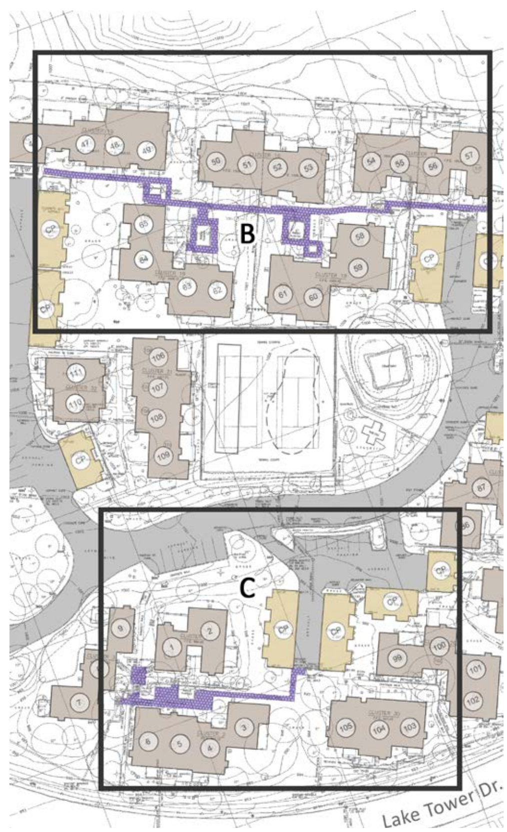
Phase 1 Project Budget:

Lakeshore Village Lexington, KY

LFCUG Water Quality Incentive Grant - Class A

Phase 1: Areas B (3,250 sf) / C (1,550 sf)

ITEM #	ITEM	QTY	UNIT	UNIT COST	TOTAL
1	Grant Adminstration and Construction Drawings	1.00	LS	$22,750	$22,750
2	Construction Staking / Surveying	1.00	LS	$2,000	$2,000
3	Sediment & Erosion Control	1.00	LS	$2,000	$2,000
	Demolition				
4	Concrete Demolition	4,800	SF	$2.25	$10,800
5	Excavation (18" below concrete sidewalk)	270	CY	$15	$4,050
6	Haul-off (concrete & earth)	360	CY	$15	$5,400
7	Railroad Ties Removal	1	LS	$4,000	$4,000
8	Saw Cut Concrete	400	LS	$5	$2,000
	Construction				
9	Fiter Fabric	530	SY	$7.50	$3,975
10	18" Stone Base	270	Ton	$32.50	$8,775
11	6" Perf. Pipe	400	LF	$25	$10,000
12	Cleanouts	4	EA	$650	$2,600
13	Permeable Concrete	3,800	SF	$6.50	$24,700
14	Minor Electrical Crossings	5	EA	$200	$1,000
	Plant Material				
15	*CanopyTrees Replacement*	0	EA	$350	$0
16	*Large Shurb / Small Trees Replacement*	0	EA	$200	$0
17	*Shrubs Replacement*	0	EA	$50	$0
21	Site Restoration (seed/straw)	900	SY	$2.25	$2,025
				Subtotal	**$106,075**
	20% Owners Responsibility	$22,912.20		Contingency (8%)	$8,486
				Total	**$114,561**



Phase 2 Project Budget:

Phase 2: Areas A (1,200 sf) / F (2,500 sf)

ITEM #	ITEM	QTY	UNIT	UNIT COST	TOTAL
1	Grant Adminstration and Construction Drawings	1	LS	$24,750	$24,750
2	Construction Staking / Surveying	1	LS	$2,250	$2,250
3	Sediment & Erosion Control	1	LS	$2,000	$2,000
	Demolition				
4	Concrete Demolition	3,700	SF	$2.25	$8,325
5	Excavation (18" below concrete sidewalk)	100	CY	$15	$1,500
6	Haul-off (concrete & earth)	150	CY	$15	$2,250
7	Railroad Ties Removal	1	LS	$4,000	$4,000
8	Saw Cut Concrete	200	LS	$5	$1,000
	Construction				
9	Fiter Fabric	150	SY	$5	$750
10	18" Stone Base	100	Ton	$32.50	$3,250
11	6" Perf. Pipe	400	LF	$25	$10,000
12	Cleanouts	4	EA	$650	$2,600
13	Permeable Concrete	1,200	SF	$6.50	$7,800
14	Minor Electrical Crossings	6	EA	$200	$1,200
	Plant Material				
15	*CanopyTrees replacement*	12	EA	$350	$4,200
16	*Large Shurb / Small Trees replacement*	16	EA	$200	$3,200
17	*Shrubs replacement*	50	EA	$50	$2,500
18	Site Restoration (seed/straw)	2,000	SY	$2.25	$4,500
				Subtotal	**$86,075**
	20% owners responsibility	$20,658.00		Contingency (20%)	$17,215
				Total	**$103,290**

Future Phases:

ITEM #	ITEM	QTY	UNIT	UNIT COST	TOTAL
1	Vegetative Roof over Carport	1	SF	$35	$35
2	Permeable Pavement @ Parking Lot	1	SF	$24.50	$24.50
3	Permeable Pavement @ Sidewalks	1	SF	$22.50	$22.50
4	Bioswales/Rain Gardens	1	SF	$19.50	$19.50
5	Pavement Removal / Restoration	1	SF	$8.50	$8.50
6	Canopy Trees	1	Per	$350	$350
				Subtotal	**$460.00**
	20% owners responsibility	$110.40		Contingency (20%)	$92
				Total	**$552.00**

Special Design and Construction Considerations:

Based upon our preliminary review during this feasibility phase, there are no special design and/or construction conditions anticipated.

Median BMP Pollutant Removal:

Practice	TSS	TP	PP	DP	TN	Metals[1]	Bacteria	Hydrocarbons
Infiltration [2]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
Biofiltration and Tree trench/tree box with underdrain	80	link to table	link to table	link to table	50	35	95	80
Sand filter	85	50	91	0	35	50	80	80
Iron enhanced sand filter	85	77	91	60	35	50	80	80
Dry swale	68	link to table	link to table	link to table	35	0	80	80
Wet swale	68	0	0	0			0	
Constructed wet ponds[4]	84	50	91	0	30	70	60	80
Constructed wetlands	73	38	69	0	30	70	60	80
Permeable pavement	74	45	82	0				
Green roofs	85	0	0	0				

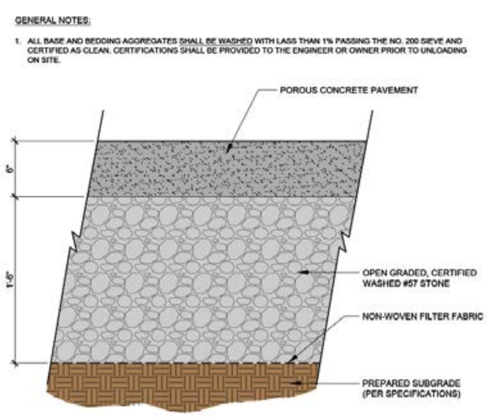
TSS=Total suspended solids, TP=Total phosphorus, PP=Particulate phosphorus, DP=Dissolved phosphorus, TN=Total nitrogen

[1]Data for metals is based on the average of data for zinc and copper

[2]BMPs designed to infiltrate stormwater runoff, such as infiltration basin/trench, bioinfiltration, permeable pavement with no underdrain, tree trenches with no underdrain, and BMPs with raised underdrains.

[3]Pollutant removal is 100 percent for the volume infiltrated, 0 for water bypassing the BMP. For filtered water, see values for other BMPs in the table.

[4]Dry ponds do not receive credit for volume or pollutant removal



A POROUS CONCRETE PAVEMENT

Letter of BMP Certification:

As part of this design process, we believe all proposed BMPs are feasible and able to implemented within the projects site.

Sincerely,

B. Scott Southall

Scott Southall, VP

Summary:

Lakeshore Village is poised to engage in its own renewal and rediscovery. This feasibility study was to assess the viability of implementing Green Infrastructure practices within the community. The findings of the study determined, with few exceptions, the area is a prime location for Green Infrastructure. Located parallel to Lake Fontaine, the lack of current stormwater management systems, the abundance of pavement and parking, an aging infrastructure and advantages of incentive programs are all reasons to support the redevelopment employing green infrastructure practices in the community.

We hope with future investment and construction this report will help property values increase as well as a create a safe and dry walk home for each homeowner.

Acknowledgements:

Lakeshore Village Residents

The Finance Committee
Committee Members: Sue Harn, Tom Josephson, Bridge Bickel

Property Advisory Committee
Committee Members: Larry Snipes, Gretchen Feld, Bridge Bickel

The Beautification Committee
Committee Members: Dayle Vaughan, Tonda Johnson, Christin Sims, Deborah Tolliver, Meredith Pritchett, Kathy Claggett

Lakeshore Village Board of Directors
Officers:
Gretchen Feld, Chair
Larry Snipes, Vice Chair
Karen DiGirolamo, Secretary
Bridge Bickle, Treasurer

Members:
Patricia Hughes
Tom Martin
James Miller
Nana Seitz
Rick Thompson

Property Manager: Ann Michel