



BEARGRASS PRESERVE MASTER PLAN



OLMSTED
PARKS
CONSERVANCY

TAYLOR
SIEFKER
WILLIAMS
design group



MASTER PLAN TASK FORCE

Jerry Brown
Oliver Roe
Terrian Barnes
Jen Deleeuw
Stuart Miles
Kyle Noltemeyer
Theresa Smith
Jason Canuel
Kassandra Turpin
Gerry Seavo James

OLMSTED PARKS CONSERVANCY STAFF

Layla George
Major Waltman
Jason Hindenach
Matt Spalding
Liz Winlock
Sarah Wolff
Kathy Ezzell

CONSULTANT TEAM



ACKNOWLEDGEMENTS



MASTER PLAN

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SECTION

1

INTRODUCTION

INTRODUCTION

The Beargrass Preserve Master Plan presents a new park concept from Louisville's Olmsted Parks Conservancy that embraces the application of Olmstedian design principles within the context of a modern park.

This section introduces the master plan, the process undertaken to create the master plan, and the overall organization of the plan.

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ABOUT THE MASTER PLAN

ABOUT THE PLAN

The Beargrass Preserve Master Plan serves as a guiding document for the design of Louisville's first addition to the Olmsted Parks System. Located in the Alta Vista neighborhood and adjacent to two Olmsted parks, Beargrass Preserve is a nearly 24-acre site that will leverage the Olmsted Parks System's recreational amenities, celebrate the landscape and ecology, and house a new civic heart for the Olmsted Parks Conservancy (OPC) that will include a library for the Olmsted legacy and offices for OPC.

THE PLANNING PROCESS

The master planning process for Beargrass Preserve is separated into three broad phases: Learn, Dream, and Grow:

1. The Learn phase focused on performing an inventory and analysis of the site's historical, physical, functional, and contextual conditions in order to establish a strong foundation for the design process.
2. The Dream phase centered on developing initial site concepts by aligning stakeholder input and insights from the Learn process with Olmstedian design principles.
3. The Grow phase utilized concepts from Dream to create and refine a final master plan concept.

The following page features a conceptual timeline that illustrates both the iterative and exploratory nature of the planning and design process. As with any planning or design process, new ideas from stakeholders, site considerations, and many other factors require the process to be flexible and responsive as new concepts and scenarios are explored. As a result of this planning process, OPC will be better positioned "to restore, enhance and forever protect Louisville's Olmsted-designed parks and parkways" through Beargrass Preserve.



Beargrass Preserve and Surrounding Landmarks

THE MASTER PLANNING PROCESS

LEARN

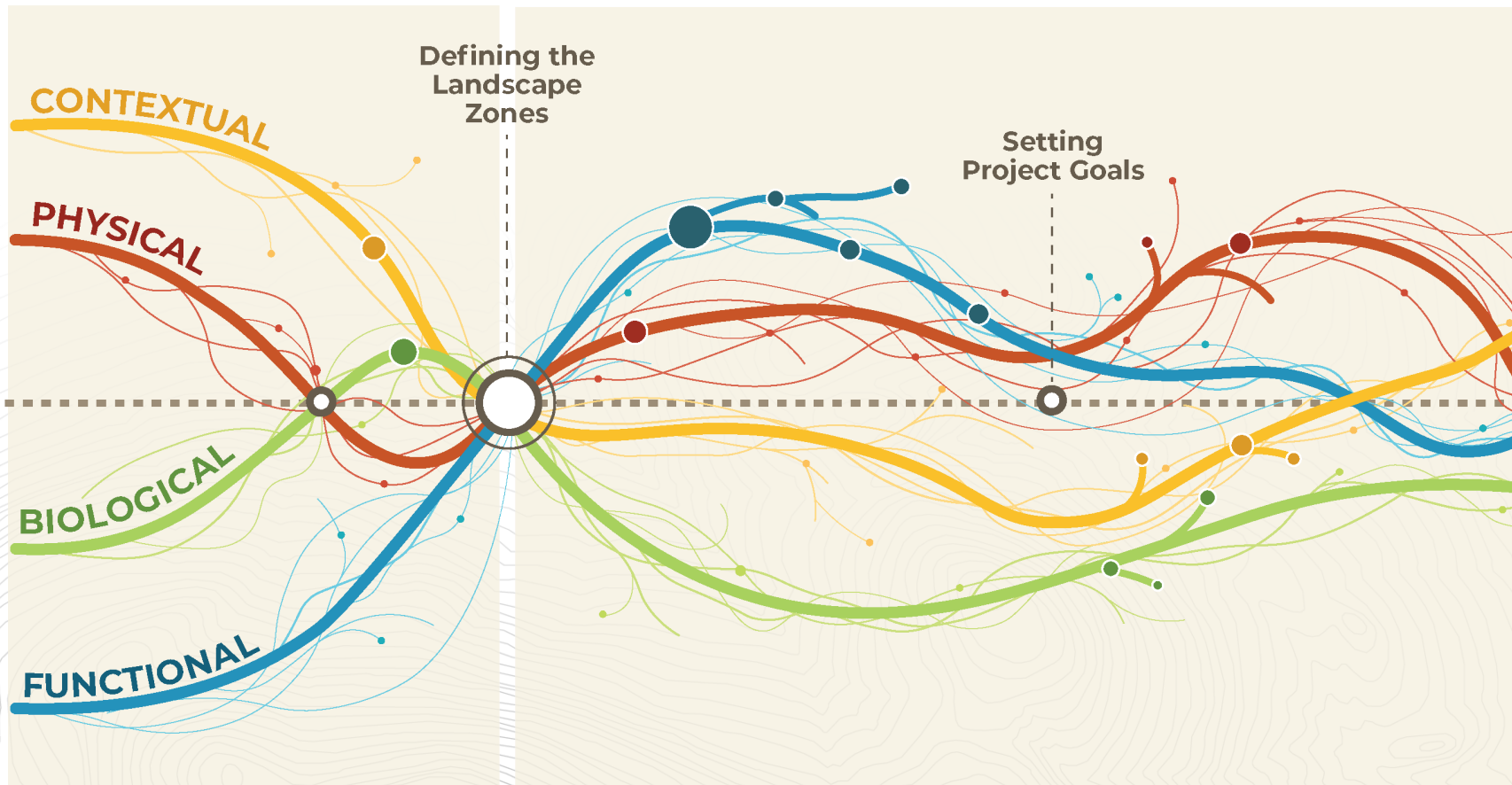
INVENTORY & ANALYSIS ●●●

The Learn phase included an inventory and analysis of the site's historical, physical, functional, and contextual conditions.

DREAM

CONCEPT DEVELOPMENT ●●●

The Dream phase explored different scenarios for the design of Beargrass Preserve by synthesizing Olmstedian Design principles, the knowledge gained from the "Learn" process, and ideas shared through stakeholder engagement.



GROW

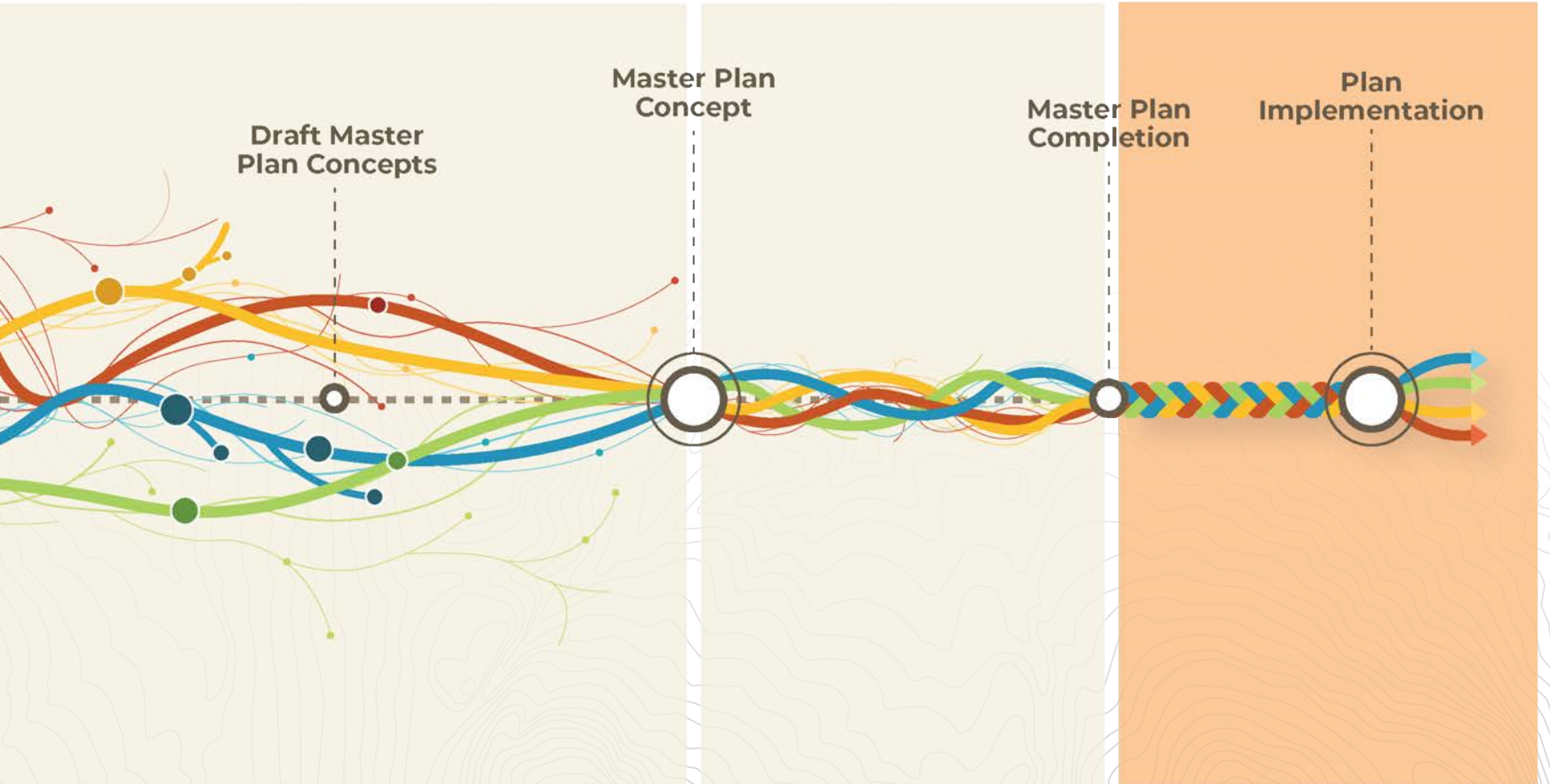
FINAL PLAN DEVELOPMENT

The Grow phase focused on refining the final master plan concept and preparing the plan for implementation.

IMPLEMENT

THE PLAN IN ACTION

Following the master plan, the Implement phase will bring Beargrass Preserve to life.

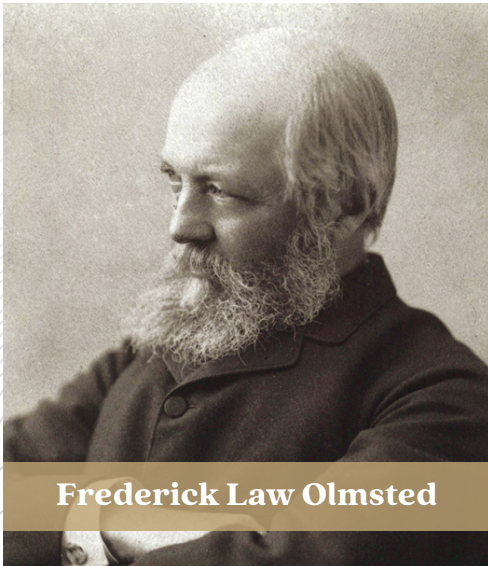


THE OLMSTED LEGACY

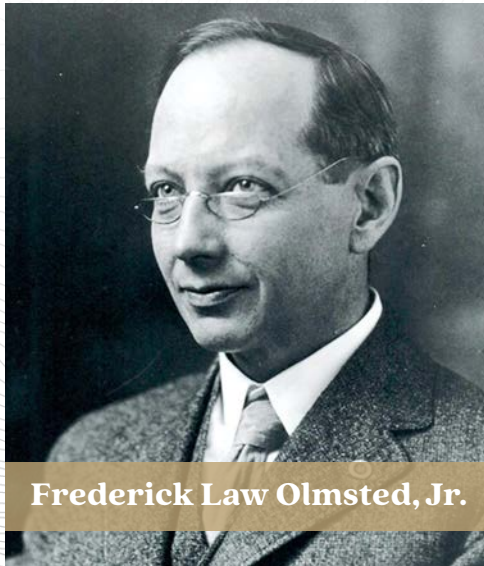
THE OLMSTEDS IN LOUISVILLE

Louisville is home to the world's largest Olmsted park system. By the time Frederick Law Olmsted was commissioned to design the city's parks in 1891, he had already enjoyed a famously successful career, and his professional activity was winding down. With his retirement in 1895, the Olmsted firm was led by a new generation of designers, his sons John Charles Olmsted and Frederick Law Olmsted Jr. The Olmsted firm built upon a revolutionary idea that cities should be organized by systems of interconnected parks, so one could move between parks without ever leaving a park setting.

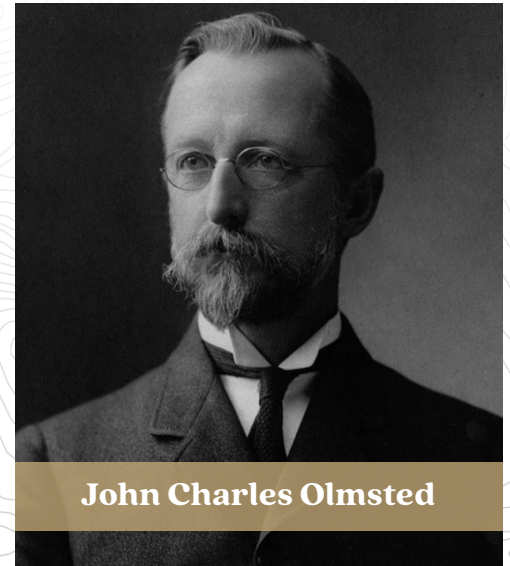
Louisville's 17 Olmsted Parks and nearly 15 miles of Parkways are the backbone of Louisville's park system. The park system consists of three large flagship parks (Cherokee Park, Shawnee Park, and Iroquois Park) that are interconnected by parkways that link to smaller, neighborhood-serving parks. The three large parks act as magnets for communities and neighborhoods.



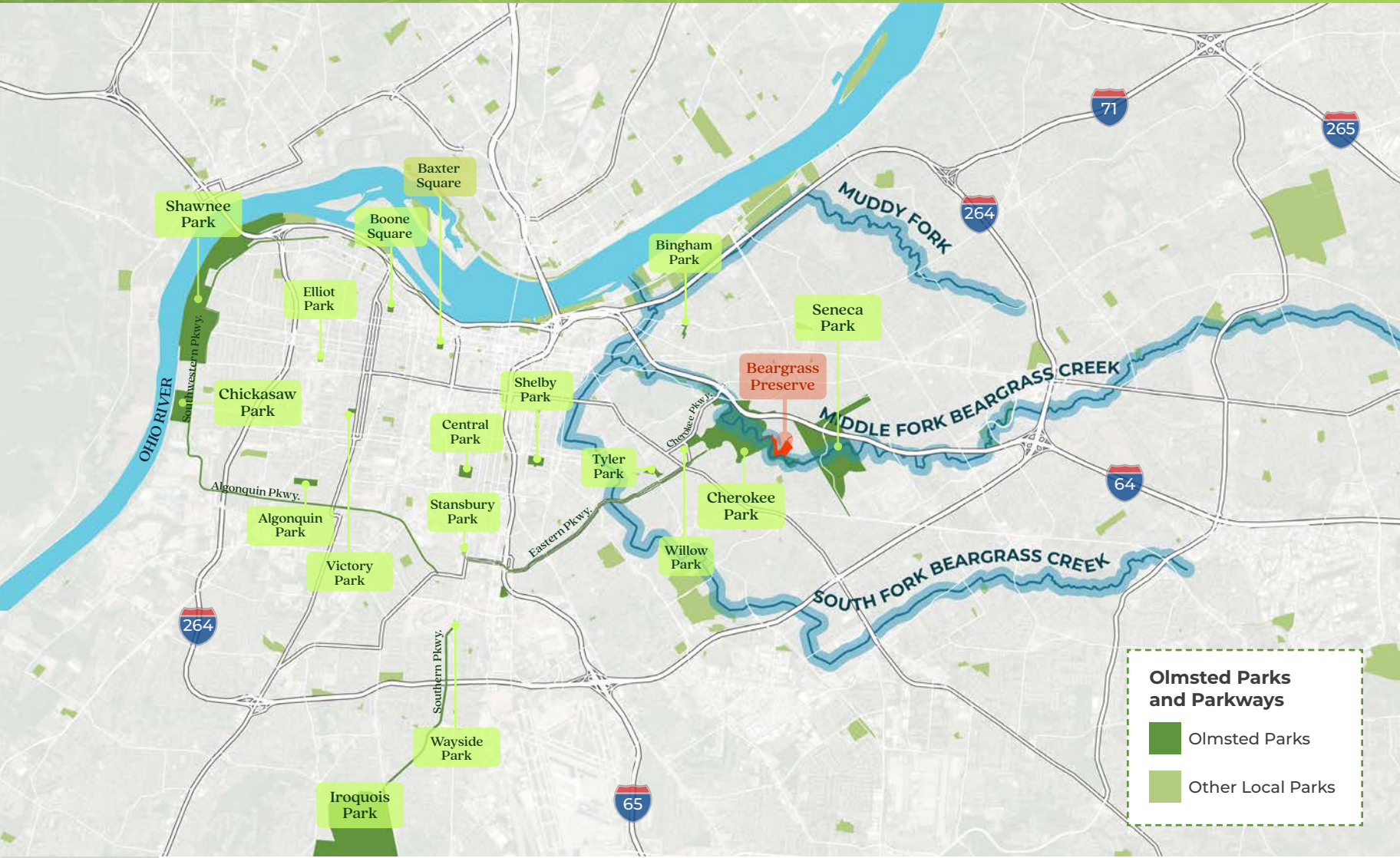
Frederick Law Olmsted



Frederick Law Olmsted, Jr.



John Charles Olmsted



Olmsted Parks and Parkway

- Olmsted Parks
- Other Local Parks

Beargrass Preserve and Louisville's Olmsted Parks

THE SEVEN 'S' OF OLMSTEDIAN DESIGN

OVERVIEW

Throughout his career, Frederick Law Olmsted and his firm developed and refined what a designed landscape could be and how it can serve the public to enhance the quality of life. Noted historian Charles Beveridge later summarized Olmsted's design philosophy into the Seven S's: scenery, suitability, style, subordination, separation, sanitation, and service. These Seven S's help guide the design process to create a plan that is rooted in Olmstedian design while also recognizing a modern context.

The following examples of the Seven 'S' are all from Central Park, NYC.



East Meadow



77th Street Bridge



Fort Landscape

1. STYLE

Embrace the natural green.

"Designing in 'Pastoral' style of open space, small bodies of water and scattered groves or in the 'Picturesque' style with profuse planting on steep and broken terrain."

2. SCENERY

Stay true to the given space.

"Designing for the 'passages of scenery' even in the small spaces and in the areas intended for active use. Creation of designs that give enhanced sense of space."

3. SUITABILITY

Respect the natural setting.

"Creation of designs that are in keeping with the natural scenery and topography of the site: respect for, and full utilization of, the 'genius of the place.'"

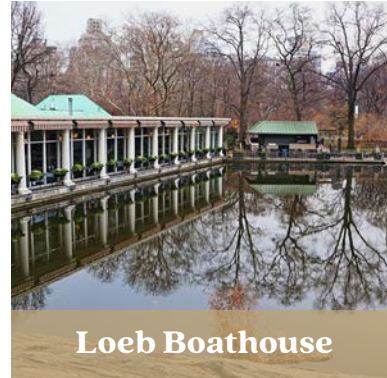
AT CENTRAL PARK, NYC



Bethesda Terrace



Conservatory Gardens



Loeb Boathouse



The Reservoir

4. SUBORDINATION

Keep overall design simple.

“Subordination of all elements, all features and objects, to the overall design and the effect it is intended to achieve. The ‘Art to Conceal Art’.”

5. SEPARATION

Make sure there is purpose.

“Separation of areas designed in different styles, so that an ‘incongruous mixture of styles’ will not dilute the intended effect of each.”

6. SANITATION

Achieve function over flash.

“Provision for adequate drainage and engineering considerations, not simply arranging of surface features: promoting both the physical and mental health of users.”

7. SERVICE

Aim to make a better place.

“Planning of designs so that they will serve a ‘purpose of direct utility or service;’ that is, will meet fundamental social and psychological needs.”

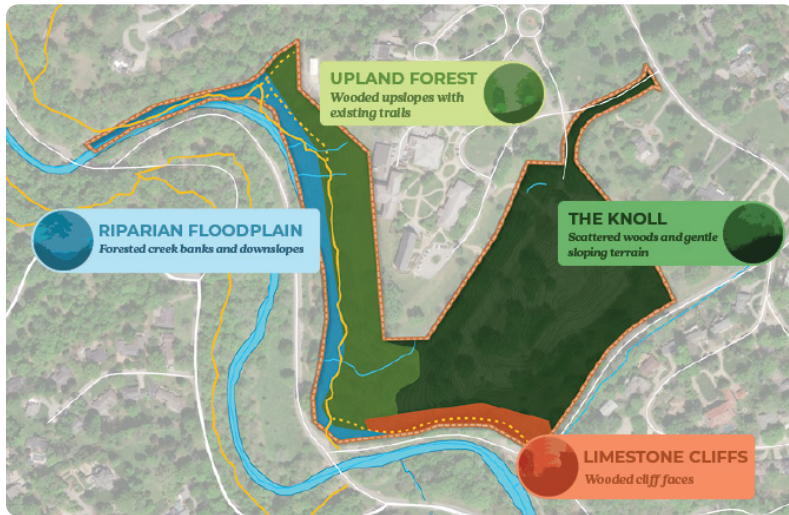
PLAN ORGANIZATION

THE MASTER PLAN CHAPTERS

The following pages of the Beargrass Preserve Master Plan are organized into four chapters that align with the planning process.

SECTION 2 LEARN PAGE 13

Learn is a detailed inventory and analysis of the existing site that results in the identification of four Landscape Zones that help guide the design process.



SECTION 3 DREAM PAGE 41

Dream is an overview of the design process, which relied heavily upon stakeholder guidance and resulted in the development of four project goals that directed the site design. This process and chapter concludes with the final site plan.



SECTION
4

GROW

PAGE 67

Grow explores the proposed site plan in detail, including the four Landscape Zones, the ecological composition of the site, areas of concentrated development, and the plan's relationship to Olmstedian design principles.



SECTION
5

IMPLEMENT

PAGE 99

Implement includes a detailed phasing plan, along with recommended plant species, building materials, and long-term maintenance strategies.



SECTION

2

LEARN

INTRODUCTION

The “Learn” phase of the master planning process includes three key steps to understanding the existing Beargrass Preserve site, including an inventory of site conditions, an analysis of the site conditions, which are then used to develop a synthesized analysis that results in four landscape zones that are each unique in their current conditions and future potential.

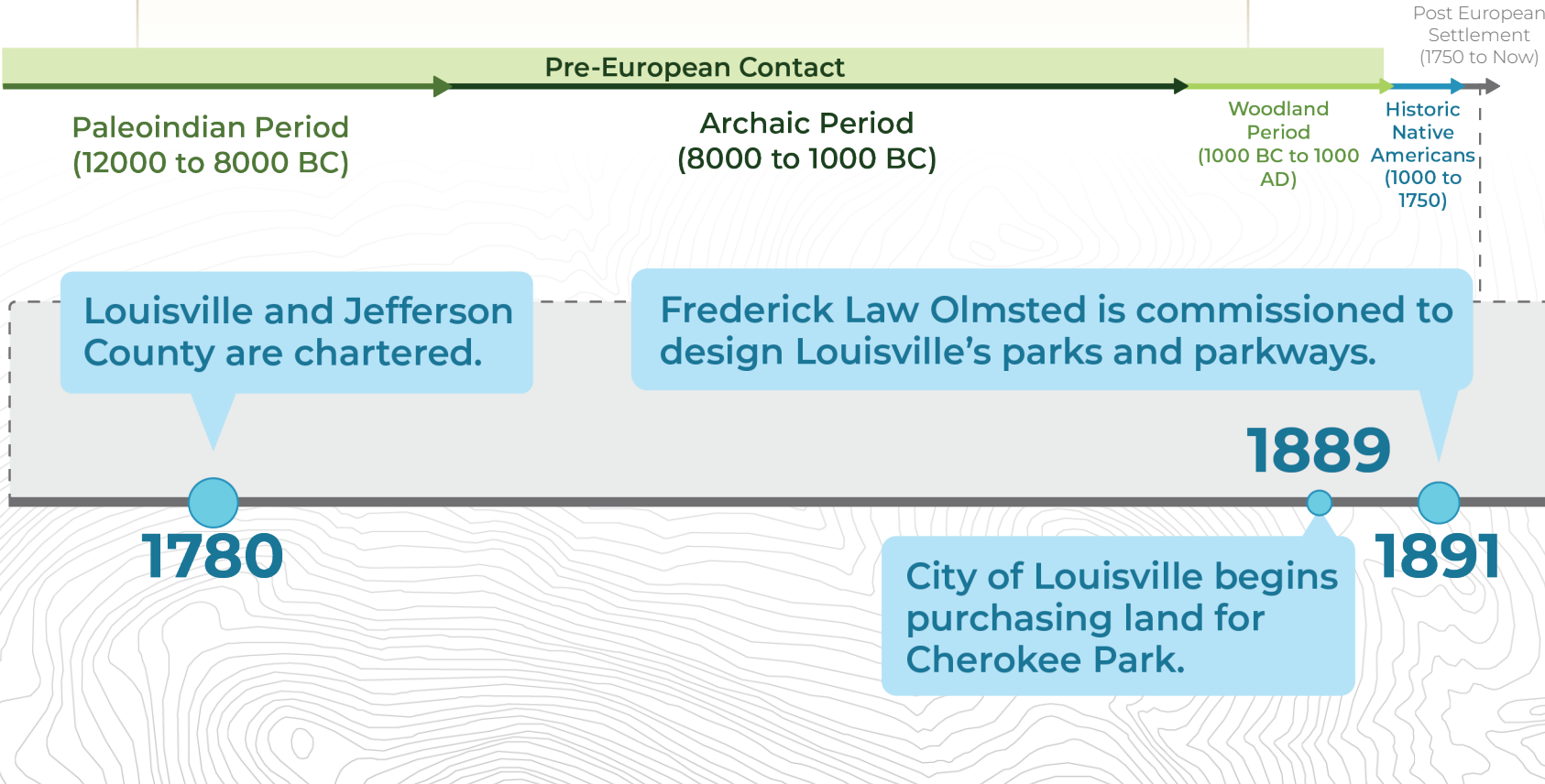
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 - Contextual Conditions | 21
 - Physical Conditions | 25
 - Ecological Conditions | 29
 - Functional Conditions | 35
- Landscape Zones | 39

BEARGRASS PRESERVE IN THE LOUISVILLE CONTEXT

PRE-EUROPEAN CONTACT

Prior to the arrival of European settlers (circa 1750), the area now known as Louisville was home to different indigenous groups for over 14,000 years. While no physical remnants of the land's original inhabitants have been recorded at Beargrass Preserve, the prehistoric legacy of the region offers insights into how this land might have been managed by indigenous groups.



SITE AND REGIONAL HISTORY

Beargrass Preserve is surrounded by Olmstedian design and historic properties that were largely developed throughout the 20th century. The Olmsted Brothers firm was responsible for designing the landscapes for Cherokee Park, Garden Court, and the Alta Vista neighborhood through several different projects throughout the late 19th and early 20th centuries. The site itself was first developed in the early 1900s with a home for the Norton family. By the 1950s, this estate was demolished as the Louisville Seminary began construction on student dormitories.



1900s

The Norton family purchases the property and Norton Hall is constructed.

Louisville Presbyterian Theological Seminary purchases the property for its campus and demolishes Norton Hall.

1950s

1988

Garden Court Historic District is established.

Olmsted Parks Conservancy purchases the land for Beargrass Preserve.

2021

BEARGRASS PRESERVE IN THE LOUISVILLE CONTEXT

OLMSTED PARK SYSTEM

Included in the Louisville Metro's Park System are 17 Olmsted parks. Beargrass Preserve is located directly adjacent to Cherokee Park. Big Rock is a well known feature of this park near the preserve and it shares trail connections to Seneca Park, creating an opportunity to further expand the reach of Olmstedian design and quality natural areas in the city.



THE BIG PICTURE

Beargrass Preserve is located within an existing network of parks, natural areas, and waterways that support both local ecosystems and outdoor recreation. By leveraging the site's position within this larger network, the preserve can support regional efforts to improve water quality or develop more robust trail systems.

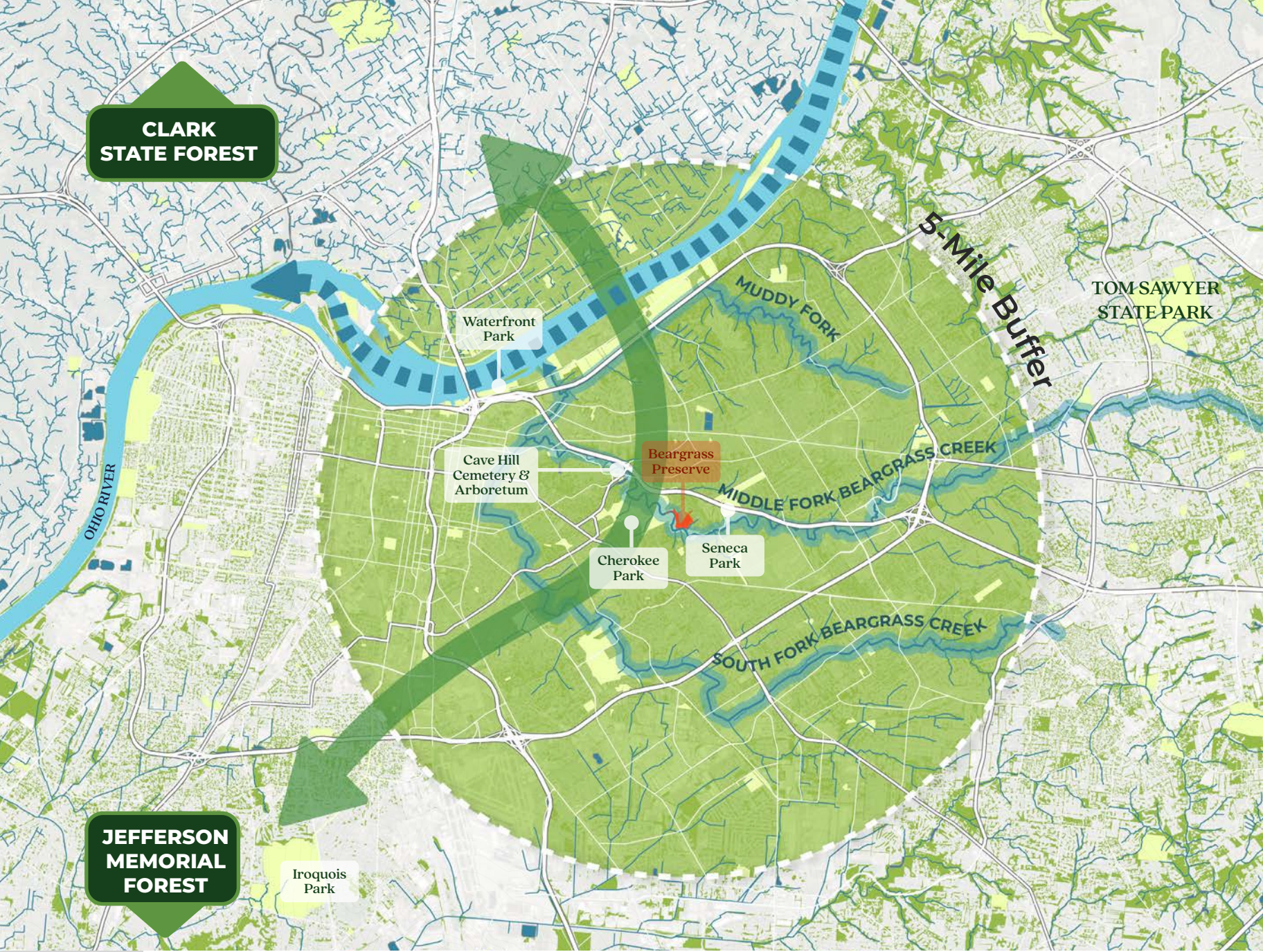


REGIONAL NATURAL AREAS

Outside of the Louisville Metro, Beargrass Preserve is part of a regional system of parks and natural areas, including Clark State Forest in Indiana and Jefferson Memorial Forest.

BEARGRASS CREEK WATERSHED

The Middle Fork of Beargrass Creek runs along the southwest perimeter of Beargrass Preserve, connecting the site to the larger watersheds of both Beargrass Creek and the Ohio River. For this reason, the health of Beargrass Preserve's waterways can help shape the overall vitality of the downstream habitat.



Ecological Context

THE 'LEARN' PROCESS

THE 'LEARN' PROCESS

The Learn phase consists of three steps in order to understand the current and historic context of Beargrass Preserve.

1. Inventory

As shown on the right, the inventory phase focused on collecting site information through site visits, site mapping, and additional research.

2. Analysis

The Analysis phase synthesized the inventory data to understand how different site features work together to shape Beargrass Preserve's physical, ecological, functional, and cultural composition.

3. Landscape Zones

Overlaying these layers of analysis resulted in the delineation of four different Landscape Zones, which are distinct in both their biophysical forms and future potential.

1

INVENTORY

COLLECT RELEVANT DATA

PAST
DEVELOPMENT
RESEARCH

SPATIAL
DATA ANALYSIS

RAPID SITE
ASSESSMENT

TREE INVENTORY



2

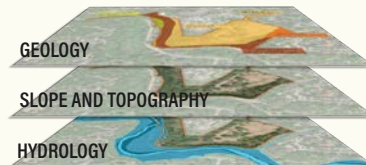
ANALYSIS

SYNTHESIZE INVENTORY DATA TO UNDERSTAND THE WHOLE SITE.

CONTEXTUAL CONDITIONS



PHYSICAL CONDITIONS



ECOLOGICAL CONDITIONS



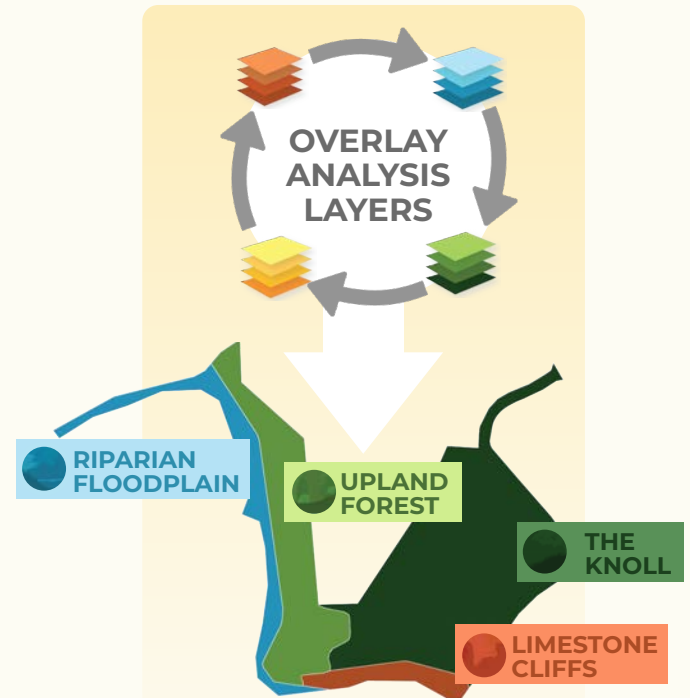
FUNCTIONAL CONDITIONS

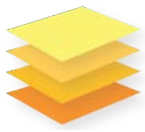


3

LANDSCAPE ZONES

USE ANALYSIS TO IDENTIFY FOUR DISTINCT LANDSCAPE TYPES.





SITE ANALYSIS

CONTEXTUAL CONDITIONS

Past Site Development

The site was first developed in the early 1900s as a residence for the Norton Family and was then redeveloped in the 1950s by the Louisville Seminary for student dormitories. Additionally, a former road that provided access to the Seminary's campus runs through the far western boundary of the site. From driveways, to clay pipes and property markers, all the way to leveled earth and debris piles, the physical impact and remains of both of these uses can still be seen at the site today. By identifying these features, the plan can address areas for remediation, select historic features that should be highlighted in the design, and preserve the ecological integrity of the site by focusing future construction in areas that are already primed for redevelopment.



Historic Norton Hall and Alta Vista Neighborhood Plan



A property marker located near the site's limestone cliff face.

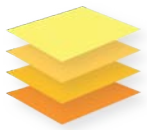
Seminary Drive runs along Beargrass Creek and is part of the existing trail network.



Remains of a clay pipe used to direct stormwater.



Past Site Development

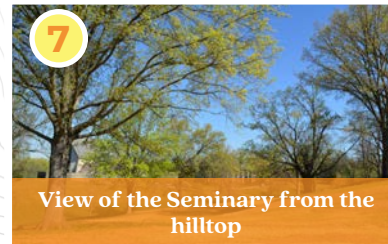
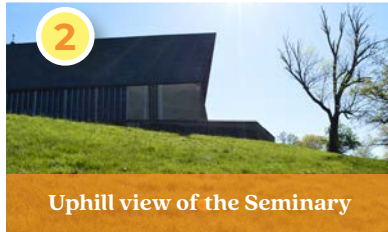


SITE ANALYSIS

CONTEXTUAL CONDITIONS

Features and Viewsheds

Beargrass Preserve's sloping landscape creates views of on-site scenery and adjacent properties. By identifying these views, the master plan can capitalize on them through the locations of future structures, observation points, and different vegetative plantings. While some views are of the site's landscape and prominent features, others are "borrowed views" that capture views of architecture and landscapes from surrounding areas. The map on page 24 includes the locations of these viewsheds with corresponding photographs that provide an eye-level perspective of the views. Areas of higher elevation offer the greatest opportunities to capture views of the overall landscape. There are low-lying points that can highlight moments along Beargrass Creek and the limestone cliffs that line the property's southern extent.





Viewsheds



SITE ANALYSIS

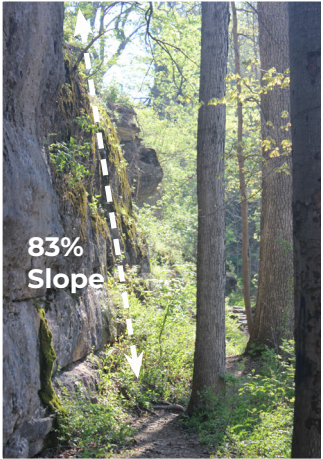
PHYSICAL CONDITIONS

Soils, Slopes, and Elevation

Beargrass Preserve is composed of Louisville Limestone and Waldron Shale geological formations with a sloped landscape. The highest points in the site's elevation are located within the open grassy area, or knoll, as shown in the graphic below. The lowest elevations can be found in the floodplain along Beargrass Creek. In total, there is a 106ft difference between the highest and lowest points of elevation. Dramatic slopes characterize the limestone cliffs and throughout forested areas, with some points along the cliffs nearly reaching an 80% slope. The disturbed urban soils are most suitable for the development of structured park programming, such as parking, buildings and structures, and high-use areas, while steeper wooded slopes should be preserved and only accommodate passive park uses, such as trails and plantings.



Benched areas along the hillside resulting from past development.

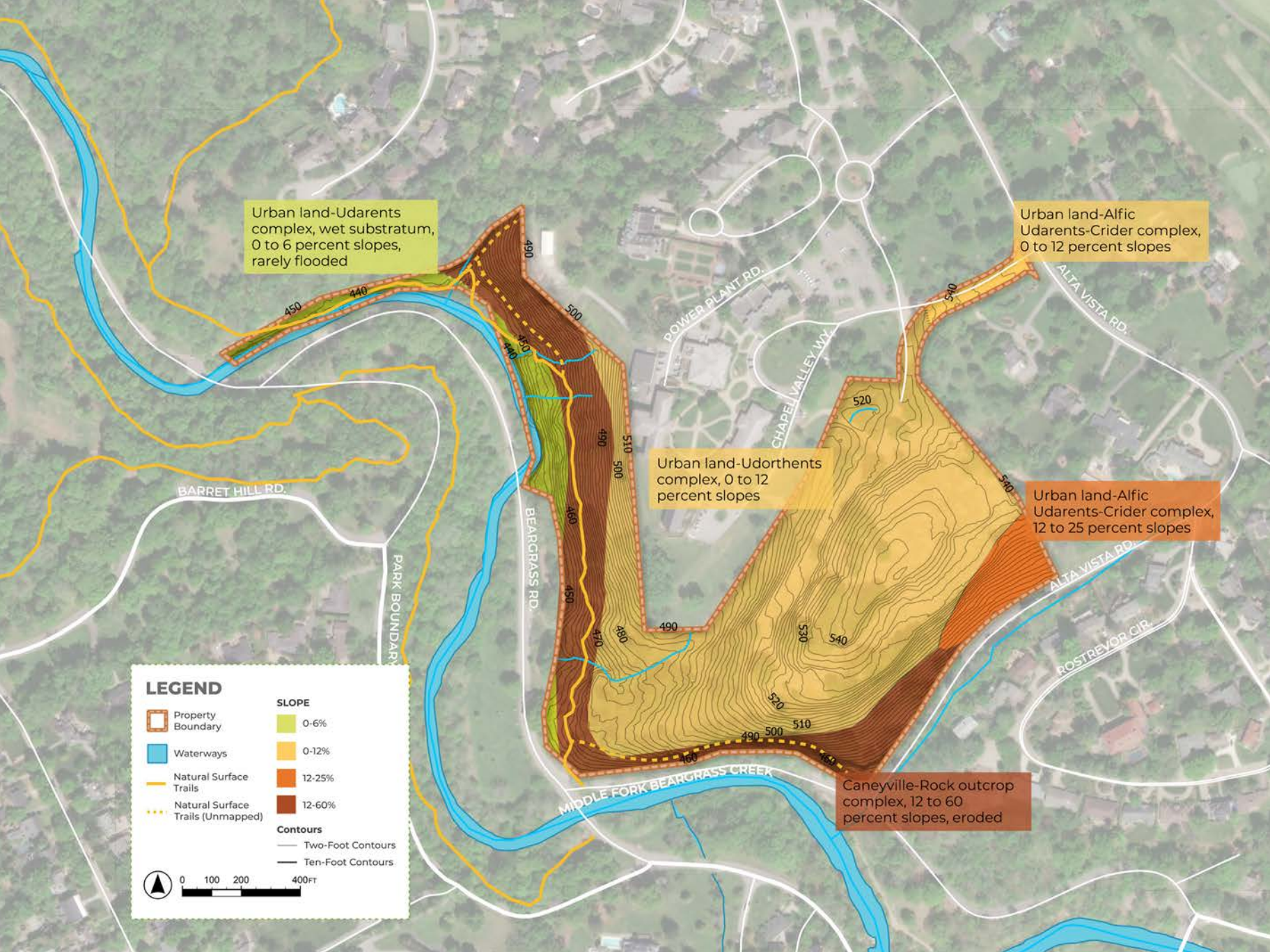


Sloped open areas between woodlands and the Seminary campus.

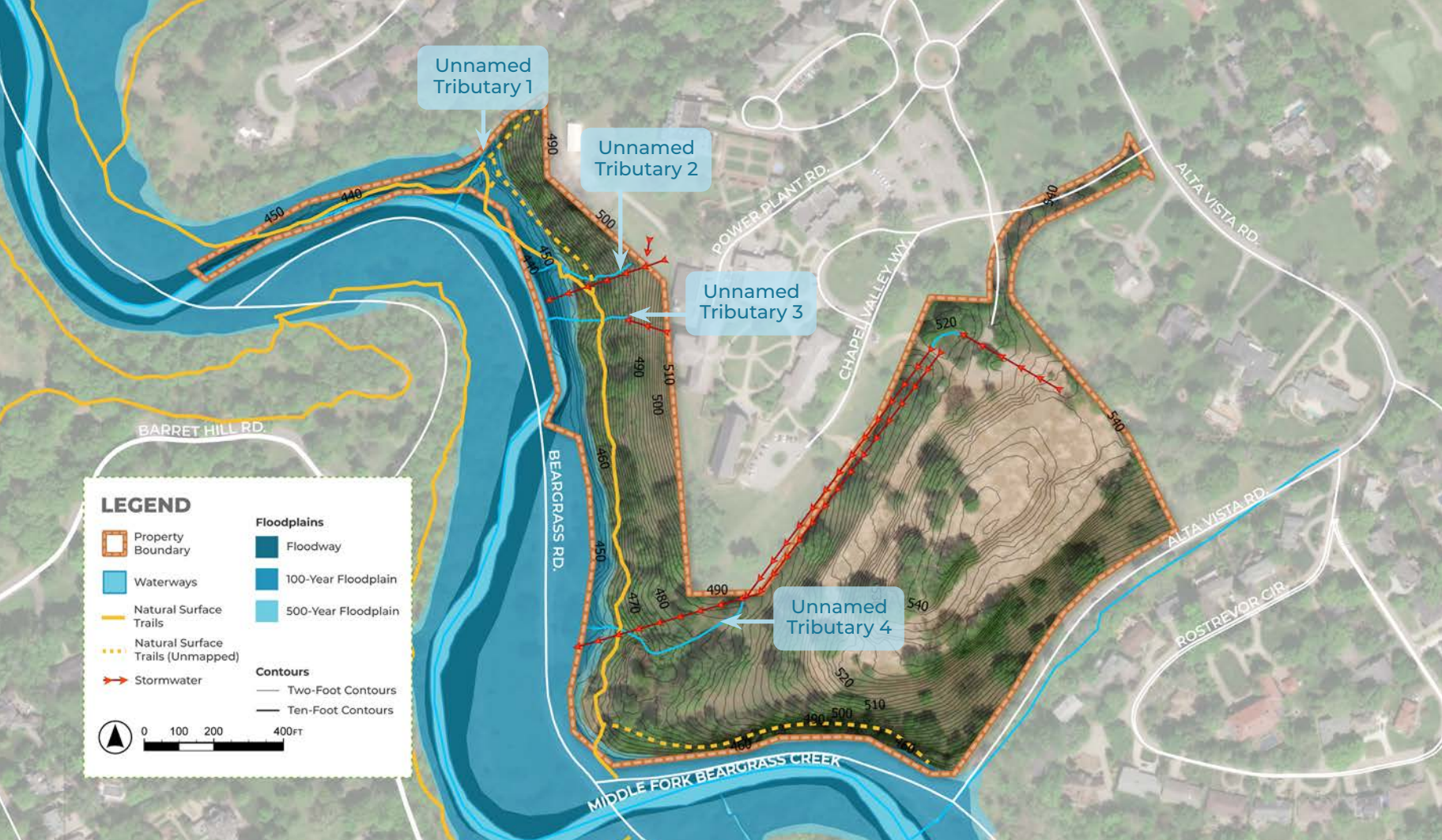


Trails along sloped wooded areas.

Cliff faces along the southern property boundary.



Soils, Slopes, and Elevation



Hydrology

The flows of Beargrass Creek meander northward through the low-lying stream valley, nestled in the hilly terrain of this area. While only a short segment of the main channel is located within Beargrass Preserve, the site is home to a variety of ephemeral or intermittent tributaries that have either been placed into pipes that carry flow into the Combined Sewer System or carry surface stormwater flows toward Beargrass Creek. One significant tributary has been buried in a pipe along the property's boundary with the Seminary. During significant storms, Beargrass Creek can flood areas located within the floodplain along the western edge of the property. Understanding these flows of water across the site and into the Creek is foundational for addressing issues of water quality on the site and within the larger watershed downstream of Beargrass Preserve.

DESIGNING WITH WATER

The site is uniquely situated along the Middle Fork of Beargrass Creek. Through site investigation, the project team identified several unnamed tributaries that flow across the property following the contours of the landscape before emptying into the creek. As development has increased higher, velocity flows have led to erosion and degradation along these tributaries. This project will utilize restorative design strategies and integrated stormwater management approaches to improve water quality, reconnecting the natural hydrology across the site.

POTENTIAL WATER MANAGEMENT STRATEGIES

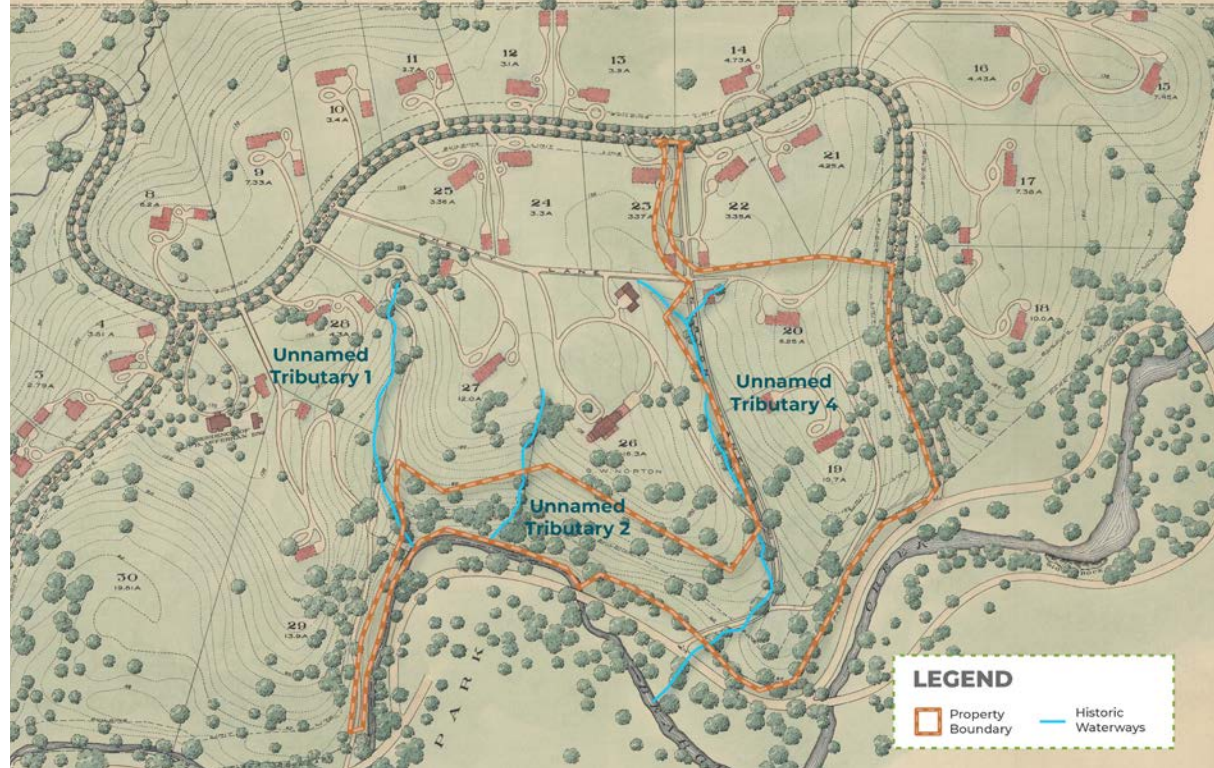


STORMWATER DESIGN

LANDSCAPE CONVERSION



STREAM RESTORATION



Waterways: Historic Perspectives

As the Beargrass Preserve site was developed throughout the 20th century. The map of the original Alta Vista neighborhood plan shows the locations of three of the original tributaries. One of the site's original tributaries to Beargrass Creek was buried in a pipe (UT4).

The 1994 Master Plan for renewal and management of Cherokee Park included the following three recommendations for managing the Beargrass Creek Floodplain (as shown on the opposite page):

1. "Stabilize channel and banks and enrich habitat including pool riffles within channel, vegetated creek banks and cut-back banks to accommodate terraced, floodplain wet meadow areas."
2. "Conduct landscape management to re-establish native woodlands and meadows."
3. "Monitor water quality and work with MSD on floodway management and floodplain habitat enrichment."



SITE ANALYSIS

ECOLOGICAL CONDITIONS

Native Plant Species

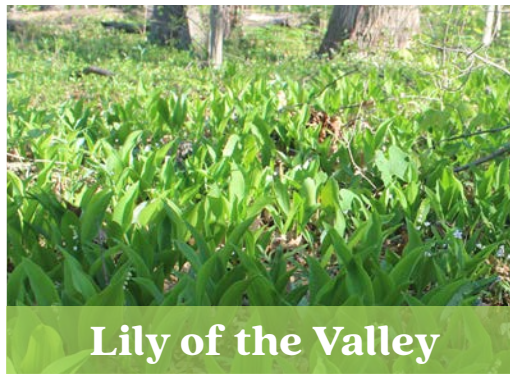
A 1990 masterplan for Louisville's Olmsted Parks and Parkways identified the ecological compositions of areas within and adjacent to Cherokee Park. In this report, Beargrass Preserve's forested areas are identified as midslope mesophytic forests, which are home to a variety of native species including hackberry, sugar maple, Chinquapin oak, blue and white ash, American beech, red and American elms, and blackberry.

The 2023 rapid site assessment identified notable native plant species at Beargrass Preserve that are listed on the next page. In addition to these native plant species, understory vegetation is dominated by nonnative invasive species, which are also listed on the next page.



NOTABLE NATIVE SPECIES

- Beargrass or Eastern Wild Hyacinth (*Camassia schilloides*)
- Giant cane (*Arundinaria gigantea*)
- Yampa grass (*Perideridia spp.*)
- Redbud (*Cercis canadensis*)
- Ohio buckeye (*Aesculus glabra*)
- Smooth hydrangea (*Hydrangea arborescens*)
- Pawpaw (*Asimina triloba*)
- Chinkapin oak (*Quercus muehlenbergi*)
- Ironwood (*Carpinus caroliniana*)
- Bladdernut (*Staphylea trifolia*)
- Trillium (*Melanthiaceae spp.*)
- Bluebells (*Hyacinthoides spp.*)
- Mayapple (*Podophyllum peltatum*)
- Stonecrop (*Sedum ternatum*)
- Ferns (*Dryopteris* or *Adiantum spp.*)
- Crested Coral Root Orchid (*Hexalectris spicata*)



NONNATIVE INVASIVE SPECIES

that dominate the herbaceous and shrub layer

- English Ivy (*Hedera helix*)
- Garlic mustard (*Alliaria petiolata*)
- Bush honeysuckle (*Lonicera tartarica*, *Lonicera morrowii*)
- Periwinkle (*Vinca minor*)
- Japanese honeysuckle (*Lonicera japonica*)
- Wintercreeper (*Euonymus fortunei*)
- Japanese bittersweet (*Celastrus orbiculatus*)
- Lesser celandine/fig buttercups (*Ficaria verna*)





SITE ANALYSIS

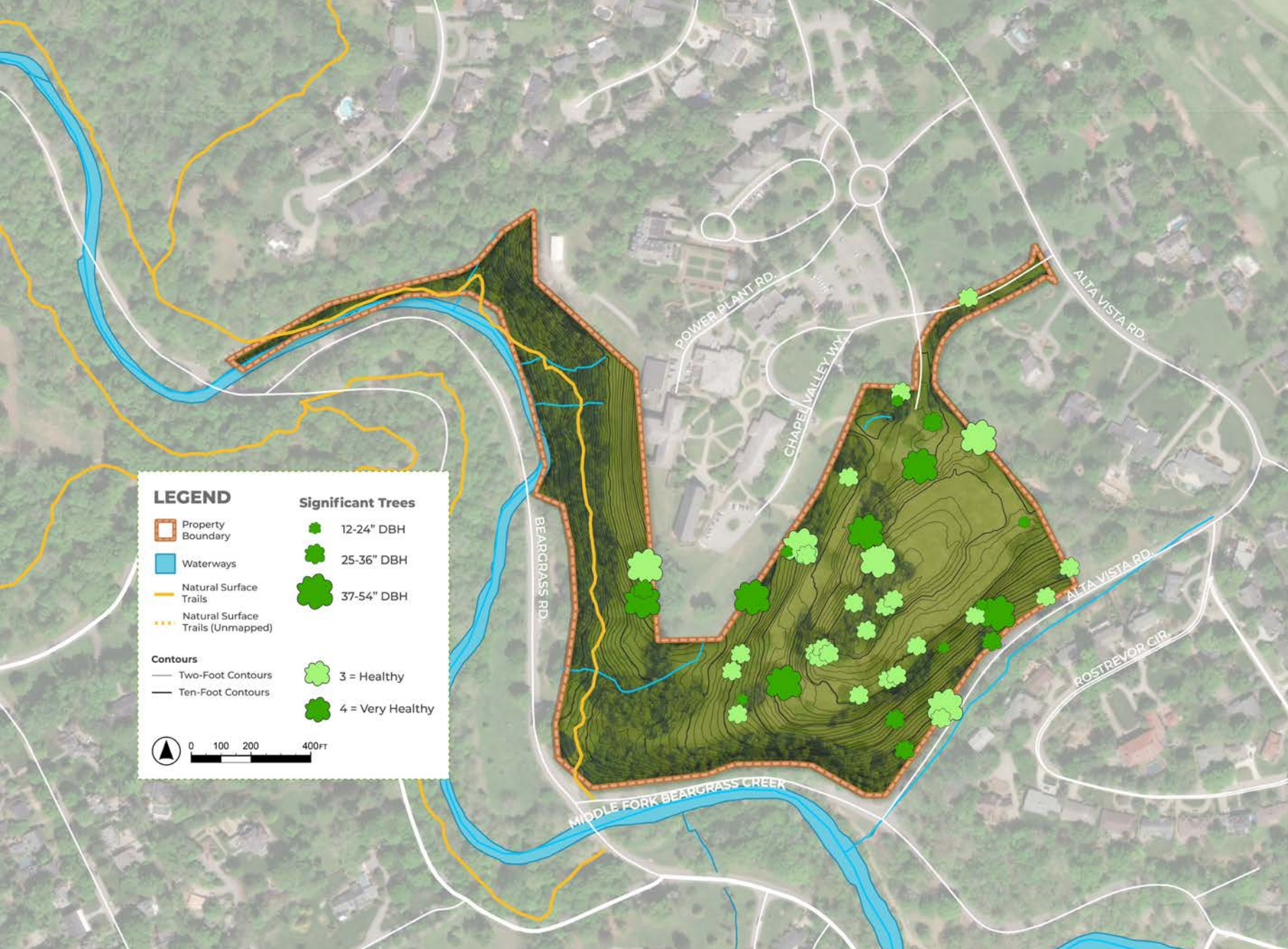
ECOLOGICAL CONDITIONS

Significant Trees

Olmsted Parks Conservancy staff performed a survey of on-site trees to assess their size and health. As a result, the survey identified 46 trees of significance, which are defined as trees with a diameter at breast height (DBH) of greater than 24" and a condition score of 3 to 4, or trees with a DBH greater than or equal to 12" and a condition score of 4. This tree survey was primarily performed in areas most suitable for future development in order to identify trees that should be preserved as the master plan is developed.



Diameter at Breast Height (DBH) refers to the height at which the diameter of a tree is measured. This measurement is taken at roughly chest height or five feet above the ground.



LEGEND

- Property Boundary
- Waterways
- Natural Surface Trails
- Natural Surface Trails (Unmapped)

Contours

- Two-Foot Contours
- Ten-Foot Contours

Significant Trees

- 12-24" DBH
- 25-36" DBH
- 37-54" DBH

Health Status

- 3 = Healthy
- 4 = Very Healthy

0 100 200 400FT

Significant Trees



SITE ANALYSIS

ECOLOGICAL CONDITIONS

Habitat Typologies

The rapid site assessment resulted in the identification of four different “habitat typologies” that reflect the ecological composition of those areas, along with typical hydrological and soil influences that shape those habitats. As shown on page 34, the boundaries of these habitats greatly influence the development of Beargrass Preserve’s four landscape zones. Included below is a brief summary of each habitat typology.

Riparian Forest

- In the 100-year floodplain and 100-foot riparian buffer along Beargrass Creek.
- Oak species dominate the upper canopy. A mix of native and nonnative invasive species located on the herbaceous/shrub layer.
- Patches of giant cane and Beargrass.
- Gully formation where stormwater from the Louisville Seminary enters the site.
- Forest regeneration is mostly buckeye and red maple, with a lack of oak regeneration.

Upland Slope

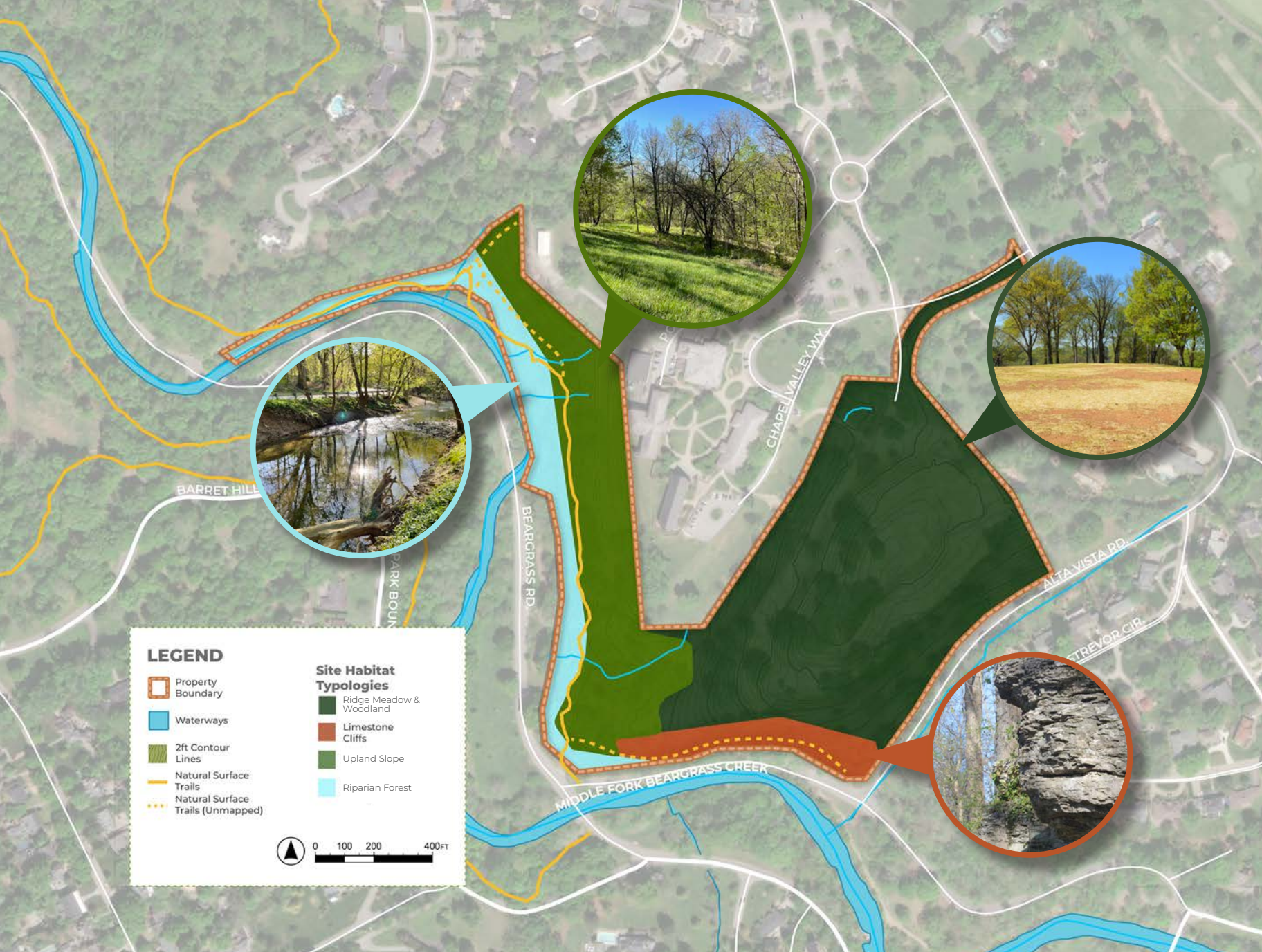
- A long hillslope above Riparian Forest and Beargrass Creek corridor.
- Gully formation where stormwater from the Louisville Seminary enters the site.
- Upper slopes consist of mown lawn.
- Vegetation compositions are similar to the Riparian Forest but are dominated by invasive species along the forest edge.

Limestone Cliffs

- Upper slopes consist of mown lawn.
- Vegetation composition similar to the Riparian Forest but with more native species.
- Some storm debris and asphalt
- Forest regeneration is mostly buckeye and red maple, with a lack of oak regeneration.

Ridge Meadow & Woodland

- Poor soil quality where infrastructure was demolished.
- Dominated by patches of oak species in upper canopy and mown grass in the lower canopy.
- Patches of visible bedrock along Alta Vista Road.
- Buried utilities present.
- Limited forest regeneration.
- Grassland/meadow dominates as management has shifted from mowing.



Habitat Typologies



SITE ANALYSIS

FUNCTIONAL CONDITIONS

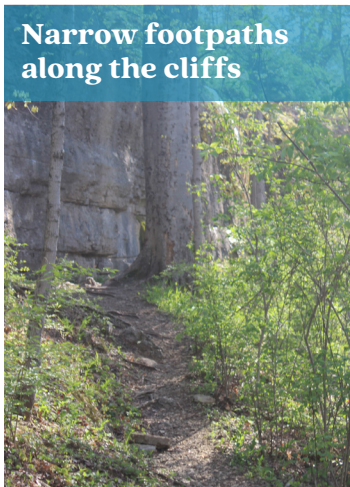
Site Access

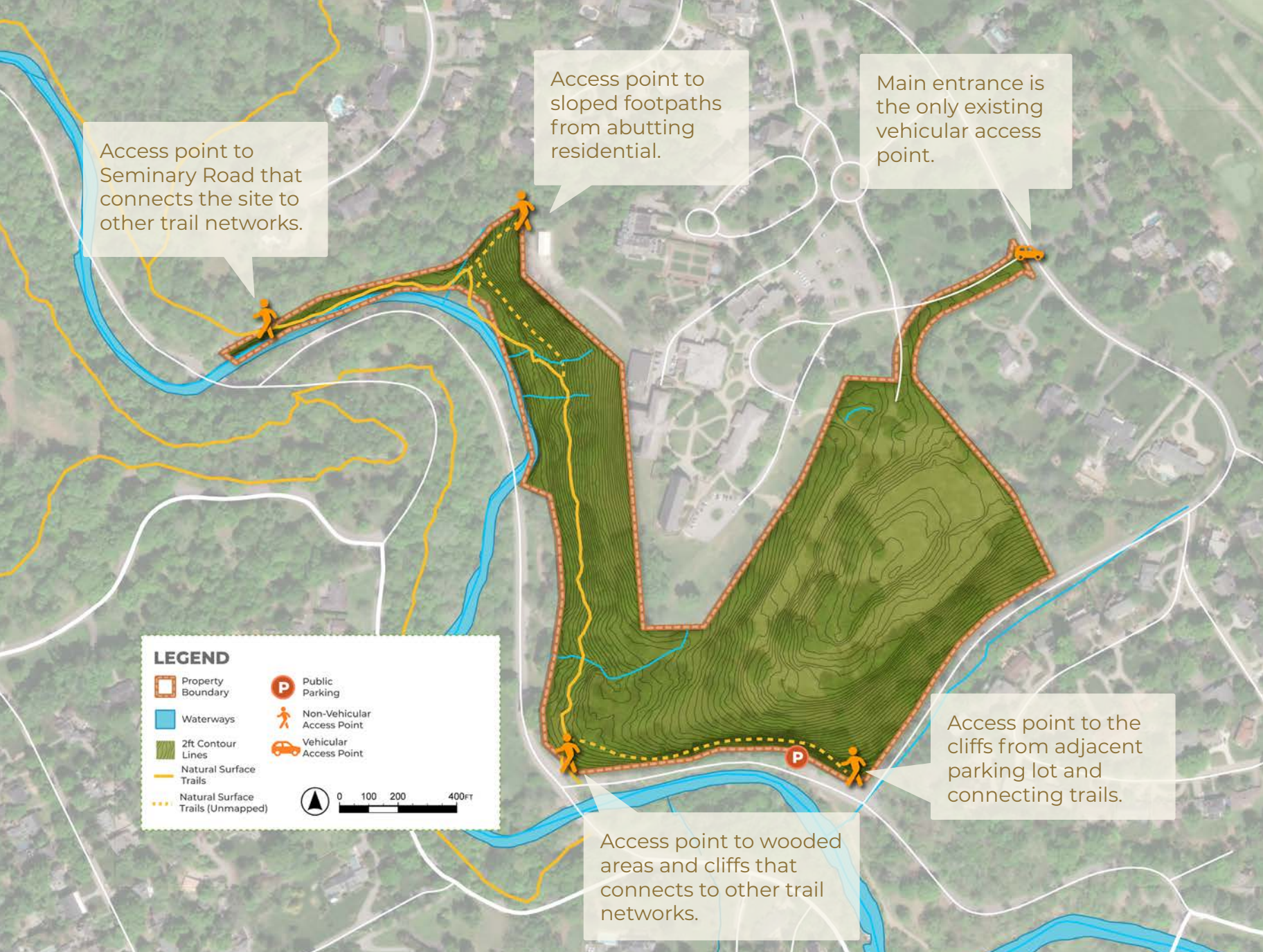
Beargrass Preserve is currently accessible to pedestrians, cyclists, and drivers. The only formal entrance to the site is through the main entrance on Alta Vista Road that is designed for automobile access but can also be used for other modes. Additionally, there are four “informal” entry points that have been carved out by visitors as they traverse the site. These access points are primarily suitable for pedestrians and cyclists who are visiting Beargrass Preserve from adjacent trails, but a small parking lot and bus stop near Big Rock at Cherokee Park provide additional site access.

Site Connectivity

While the main entrance on Alta Vista Road provides car access, this point currently serves as a driveway and does not provide any on-site circulation for automobile traffic. All current trails within Beargrass Preserve are informal and unpaved, except for the former Seminary Road located along Beargrass Creek in the northwest corner of the site.

Existing Trail Conditions





Access point to Seminary Road that connects the site to other trail networks.

Access point to sloped footpaths from abutting residential.

Main entrance is the only existing vehicular access point.

LEGEND

Property Boundary	Public Parking
Waterways	Non-Vehicular Access Point
2ft Contour Lines	Vehicular Access Point
Natural Surface Trails	
Natural Surface Trails (Unmapped)	

0 100 200 400FT

Access point to the cliffs from adjacent parking lot and connecting trails.

Access point to wooded areas and cliffs that connects to other trail networks.

Existing Site Access and Connectivity



SITE ANALYSIS

FUNCTIONAL CONDITIONS

Utilities

Due to past development, the site has gas, water, and sewer infrastructure in areas where past buildings and facilities were located. Outside of previously developed areas, gas mains and sewers are concentrated in the northwest corner of the site and along the 100-year floodplain. Most notably, a sanitary sewer runs underneath Unnamed Tributary 1, feeding into Beargrass Creek with a highly-visible manhole located midstream. Additionally, a combined sewer line runs along Beargrass Creek and outside of the site's western property boundary.

A large stone culvert channels stormwater at UT1.
















South of the stone culvert, a manhole is located in UT1 that flows to Beargrass Creek.



1
Mid-stream
sewer manhole

2
Headwall

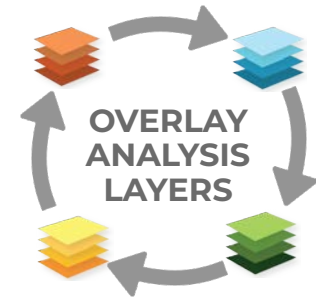
LEGEND

- | | |
|---|--|
|  Property Boundary | Utilities |
|  Waterways |  Gas Mains |
|  2ft Contour Lines |  Water Mains |
|  Natural Surface Trails |  Underground Electric |
|  Natural Surface Trails (Unmapped) |  Sanitary Sewer |
| |  Combined Sewer |
| |  Manhole |
| |  Stormwater |
| |  0 100 200 400FT |

LANDSCAPE ZONES

The Four Landscape Zones

Based on the findings of the site inventory and analysis, four landscape zones were identified in order to create a design that responds to the landscape. While these landscape zones generally reflect the boundaries and characteristics of the habitat typologies on page 35, the landscape zones expand upon this concept by including a list of suitable uses for each zone that are based upon not just the biological conditions of the site, but also the functional, physical, and contextual conditions.



RIPARIAN FLOODPLAIN

Forested creek banks and downslopes

SUITABLE USES:

Walking path (soft surface), establishment of native riparian planting, boardwalk, observation areas near Beargrass Creek, Entry Point at Beargrass Road and Park Boundary Road, interpretive node

UPLAND FOREST

Wooded upslopes with existing trails

SUITABLE USES:

Walking path (soft surface), Bike Trails, Entry Point (Alta Vista Road and Beargrass Road), preserve and enhance native plantings, interpretive node

LIMESTONE CLIFFS

Wooded cliff faces

SUITABLE USES:

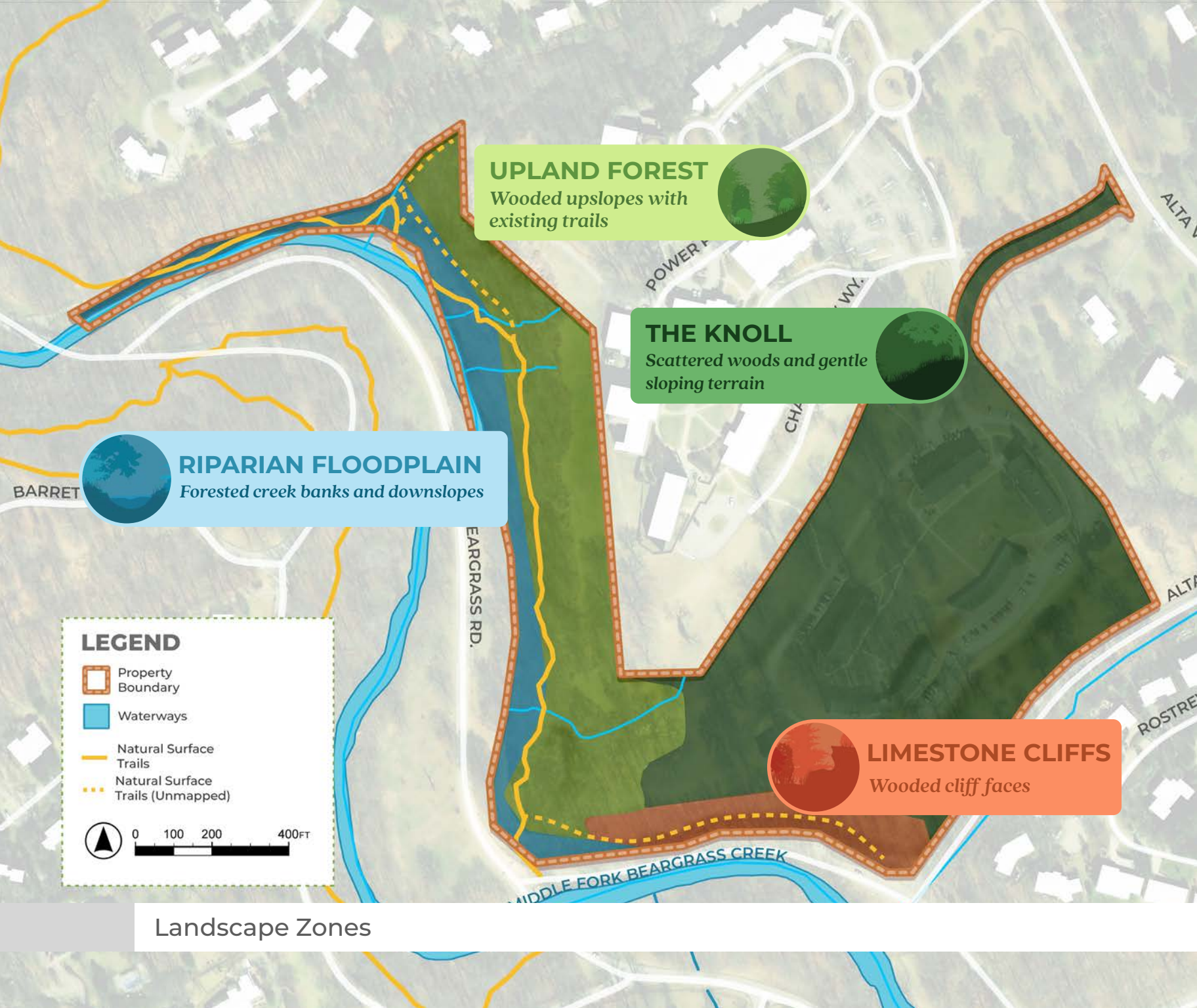
Walking path (soft surface), Entry Point (Alta Vista Road and Beargrass Road), preserve and enhance native plantings, interpretive node

THE KNOLL

Scattered woods and gentle sloping terrain

SUITABLE USES:

Structure (office building, shelters, etc.), parking, hard surface trails, soft surface trails, bike trails, horticultural areas (ornamental plantings), short meadow, informal outdoor gathering space (organized open lawn)



UPLAND FOREST

Wooded upslopes with existing trails



THE KNOLL

Scattered woods and gentle sloping terrain



RIPARIAN FLOODPLAIN

Forested creek banks and downslopes



LIMESTONE CLIFFS

Wooded cliff faces



LEGEND

- Property Boundary
- Waterways
- Natural Surface Trails
- Natural Surface Trails (Unmapped)

0 100 200 400FT

Landscape Zones

SECTION

3

DREAM

INTRODUCTION

The ‘Dream’ section provides insights into the visioning process that are foundational to developing a master plan. Included in this section is a review of the dream process, an overview of community input, project goals, two draft master plan concepts, early architectural models that helped shape the master plan, and the final master plan concept that serves as the starting point for Section 4: Grow.

IN THIS SECTION

- The ‘Dream’ Process | 43
- Stakeholder Engagement | 45
 - Stakeholder Input by Landscape Zone | 45
 - Design Charrette | 49
- Project Goals | 51
- Draft Master Plan Concepts | 57
- Architecture Scenarios | 61
- Public Feedback | 63
- Final Master Plan Concept | 65

THE 'DREAM' PROCESS

MAY 2023

TASK FORCE MEETING 1

Project introduction, define process, and review existing site conditions.



JUNE 2023

PUBLIC WORKSHOP MEETING 1: VISIONING

40 people attended to share their ideas, providing input on the types of amenities and characteristics that should be prioritized in the plan.



JULY 2023

ARCHITECTURAL PRIORITIES MEETING

To define program and positioning for proposed structures.

INTERACTIVE MAP

The master plan process leveraged public input with an online, interactive map hosted on the master plan website. 15 people commented using this platform, leaving a total of 35 comments.



DESIGN CHARRETTE

OPC staff, volunteers, and board members collaborated with the design team to brainstorm design concepts for Beargrass.



DRAFT MASTER PLAN CONCEPTS

JULY 2023

DISCOVERY TRAIL

To gain targeted feedback from people currently using the trails and natural areas, a series of 11 interactive displays were installed at specific locations across the site. Each sign included information about the location and a link to a brief online survey. In total, an estimated 145 people participated in this activity.



TASK FORCE MEETING 2

Refine the two design concepts.

SEPTEMBER 2023

PUBLIC WORKSHOP MEETING 2: MASTER PLAN CONCEPTS

Two draft master plan concepts were presented. Attendees provided input on the site features for each concept.



OCTOBER 2023

JANUARY 2024

FINAL STAKEHOLDER INPUT

Design coordination for neighborhood context with residents and the Louisville Seminary.

FINAL MASTER PLAN CONCEPT

240 People Engaged in the Dream Process

STAKEHOLDER INPUT



RIPARIAN FLOODPLAIN

Forested creek banks and downslopes

WHAT PEOPLE ARE SAYING:

“Rehabilitate and reconstruct the drystone walls and other stone features along the Seminary Road corridor.”

“This large beech tree is particularly beautiful.”

“Having natural boulder or stone benches scattered about along trails would be a wonderful way to promote passive appreciation, bird watching and drawing.”

“Foot paths. No bikes by creek- move bikes to higher elevation. Boardwalk could be used in areas of frequent standing water or flooding.”



MAPPING STAKEHOLDER COMMENTS | RIPARIAN FLOODPLAIN

1 BIG IDEA #1

Relocate the trail entrance near Bernheim Bridge to create a more formal entry and reduce conflicts with traffic.

2 BIG IDEA #2

Encourage bicycle use in uphill areas to decrease erosion near Beargrass Creek.

3 BIG IDEA #3

Locate observation areas near the creek and consider constructing a boardwalk where paths flood easily.

STAKEHOLDER INPUT



UPLAND FOREST

Wooded upslopes with existing trails

WHAT PEOPLE ARE SAYING:

“These woodlands need to be protected and managed carefully to preserve the native plant diversity.”

“Please maintain a natural surface on the trail.”

“Please preserve the multi-use trail to provide connectivity of the existing Cherokee trail loop..”

“Replace invasive plant and biology with soft mosses and lavenders.”

“Keep the mountain bike trails in and add more. We love riding bikes at Cherokee Park so close to the city.”



MAPPING STAKEHOLDER COMMENTS | UPLAND FOREST

1 BIG IDEA #1

Maintain the existing forested areas and expand the tree canopy.

2 BIG IDEA #2

Explore options for separate bike and pedestrian trails to accommodate the needs of both modes.

STAKEHOLDER INPUT



LIMESTONE CLIFFS

Wooded cliff faces

WHAT PEOPLE ARE SAYING:

“This is not a very accessible area, so it would be best to keep it as a hiking trail to preserve nature and make other areas of the park paved for accessibility.”

“This trail is important to the mountain bike community. Please do not change it!”

“Right now, that section is dangerous to traverse.”

“This area needs to be preserved as an inspiring display of natural order... a display easily visible from the roadways.”



MAPPING STAKEHOLDER COMMENTS | UPLAND FOREST

1

BIG IDEA #1

Limit development of paved trails in this area to control the impact that trail usage can have on sensitive species.

2

BIG IDEA #2

Consider options for limiting trail usage in this area to guard against overuse and improve safety.

STAKEHOLDER INPUT



THE KNOLL

Scattered woods and gentle sloping terrain

WHAT PEOPLE ARE SAYING:

"Its beautiful rolling topography adds to the park. I like open spaces for people to gather and play."

"Install bike racks near the entrance from Alta Vista. It would be great to have a water fountain and a couple of picnic tables near the entrance as well."

"We need to use native plants in all layers of the forest and limit total mowed space that requires constant maintenance."

"Would love to see a natural meadow with pollinator plants and walkways."

"Keep Nature. The parks already have enough pavement."



MAPPING STAKEHOLDER COMMENTS | UPLAND FOREST

1 BIG IDEA #1
Embrace meadows and savannah-styled plantings to reduce the need for mowing and to support pollinators.

2 BIG IDEA #2
Limit the impact that paved surfaces will have on the landscape.

3 BIG IDEA #3
Dedicate some area in the Knoll for gatherings and open space.

DESIGN CHARRETTE: A COLLABORATIVE VISIONING WORKSHOP

WHAT IS A CHARRETTE?

A charrette is a collaborative process that brings together different stakeholders to identify ideas and solutions for park designs, community plans, or other projects.

The Beargrass Preserve design charrette was held in July 2023 and included a mix of OPC staff, volunteers, and board members who worked together to brainstorm different options for how trail routes, building locations, site amenities, and other features can be incorporated into the Beargrass Preserve Master Plan.



THE PROCESS. The Beargrass Preserve design charrette lasted four hours and consisted of four different activities:

- 1 PROJECT OVERVIEW**
Review project progress and community input.
- 2 BREAKOUT GROUPS**
Stakeholders were separated into two groups to begin brainstorming different design options.
- 3 DESIGN DEVELOPMENT**
The design team drafted two initial concepts based on the groups' ideas.
- 4 REVIEW AND REVISE**
Both groups reviewed the draft site plans and identified the big ideas and issues that should be included in the master plan.





Charrette Input Summary

PROJECT GOALS

DEVELOPING THE GOALS

Four key elements inform the project goals:



SITE SUITABILITY

The insights gained from the 'Learn' Section informed the 'Dream' process through a layered analysis of the existing conditions.



STAKEHOLDER INPUT

Input from park users, neighboring communities, and OPC leadership guided the 'Dream' process. Details on Stakeholder Input can be found in Stakeholder Engagement



OLMSTEDIAN DESIGN

Beargrass Preserve is an extension of Louisville's Olmsted Park System. Leading principles of Olmstedian Design informed the design process. More information on Olmstedian design principles can be found in Section One.



OPC FUTURE NEEDS

Operations and maintenance of Beargrass Preserve play a pivotal role in shaping the physical site design. More detail on these needs is included in the discussion on Project Goal 3 on page 55.

PROJECT GOALS

The ideas, values, concerns, and opportunities shared by people who have participated in the development of the Beargrass Preserve Master Plan have helped shape the four project goals included below. These goals communicate the “big picture” of what this master plan is aiming to achieve. The following pages provide more insight into each of these project goals.

1

Design for ecological uplift through reforestation, protecting native species, and restoring natural waterways across the site.

2

Create strong connections across the site and to surrounding parks, trails, and neighborhoods. that are comfortable for a variety of users.

3

Develop a civic heart for Louisville and the Olmsted legacy by creating an Olmsted Library and new offices for Olmsted Parks Conservancy.

4

Celebrate the site and community by preserving existing greenspace for the public to enjoy.

PROJECT GOAL 1

Design for ecological uplift through reforestation, protecting native species, and restoring natural waterways across the site.

A series of strategies for supporting ecological restoration were identified after the rapid site assessment from the “Learn” phase. These strategies are intended to advance the overall ecological health of Beargrass Preserve by expanding biodiversity, increasing resilience, creating opportunities for native ecological education and engagement, and improving water quality.

Ecological Uplift Strategies

1. Develop an invasive species survey and assessment, and management plan by species type and location.



2. Restore waterways and waterway quality by working with neighboring property owners and governmental agencies, such as MSD and USACE.



3. Perform a soil health analysis where demolition has occurred and develop a management plan for areas where future construction/restoration will occur.



4. Develop a forest health analysis and long-term adaptive management plan.



5. Prioritize a native plant palette with an emphasis on providing a diverse array of species with a robust vertical structure of groundcover, woody shrubs, understory, midstory, and canopy trees. Protect sensitive endemic species through thoughtful maintenance practices.



6. Design trails and circulation designed to minimize fragmentation of natural areas with potential for regeneration and creation of interior habitat for more sensitive species.

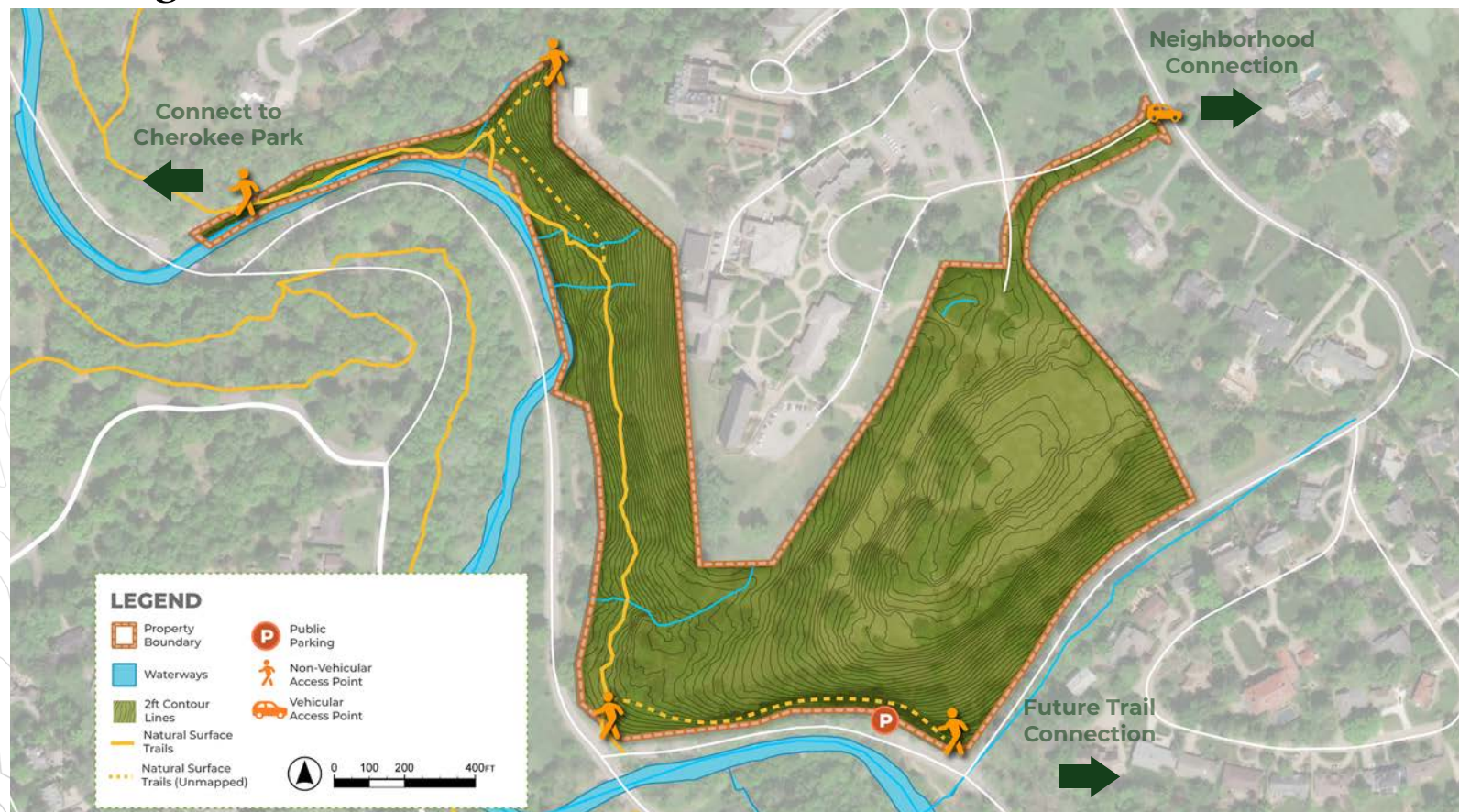


PROJECT GOAL 2

Create strong connections across the site and to surrounding parks, trails, and neighborhoods. that are comfortable for a variety of users.

Stakeholder input helped to clarify the need for high-quality trails throughout Beargrass Preserve that are sensitive to needs of different users, respond to the variety of landscape types throughout the site, and provide connections to nearby trail systems.

Existing Trail Network



PROJECT GOAL 3

Develop a civic heart for Louisville and the Olmsted legacy by creating an Olmsted Library and new offices for Olmsted Parks Conservancy.

The acquisition of Beargrass Preserve provides OPC opportunity to develop a home base for its operations that is situated near some of the major parks and parkways that are managed by the organization. While this site may not be able to accommodate space for all of OPC's facilities, Beargrass Preserve will become home to an expanded office space, a library and archive of Olmsted documents, meeting space, and event space.

EXPANDED OFFICES AND ARCHIVES



STORAGE

RESEARCH

MEETINGS

Library and Archives

- Storage and display space for OPC's archive of Olmsted documents.
- Space for board meetings.



GROWING OFFICE SPACE

OPC Offices

Expanded office space to support future growth with a mix of private and open work spaces.

EVENT AND GATHERING SPACE



Indoor/Outdoor Event Space

- Covered, outdoor gathering space to accommodate smaller-scale OPC events.
- Potential patio space to connect the event space with adjacent structures.
- Highlight views of Beargrass Preserve's landscape.
- Explore potential to have an indoor meeting space that opens up to a covered outdoor space.

PROJECT GOAL 4

Celebrate the site and community by preserving existing greenspace for the public to enjoy.

Goal Four communicates the overarching vision for Beargrass Preserve that was generated from stakeholder input. While Beargrass Preserve will serve as a headquarters for OPC and will include the installation of new amenities and infrastructure, all of these new elements should seek to reinforce the natural integrity of the site and surrounding area.

To expand upon this goal, the following pages detail the community engagement process and some of the leading ideas and values shared by stakeholders, including **ten 'big ideas' for Beargrass Preserve that have helped guide the design process:**

RIPARIAN FLOODPLAIN

BIG IDEA #1

Relocate the trail entrance near Bernheim Bridge to create a more formal entry and reduce conflicts with traffic.

BIG IDEA #2

Encourage bicycle use in uphill areas to decrease erosion near Beargrass Creek.

BIG IDEA #3

Locate observation areas near the creek and consider constructing a boardwalk where paths flood easily.

UPLAND FOREST

BIG IDEA #1

Maintain the existing forested areas and expand the tree canopy.

BIG IDEA #2

Explore options for separate bike and pedestrian trails to accommodate the needs of both modes.

LIMESTONE CLIFFS

BIG IDEA #1

Limit development of paved trails in this area to control the impact that trail usage can have on sensitive species.

BIG IDEA #2

Consider options for limiting trail usage in this area to guard against overuse and improve safety.

THE KNOLL

BIG IDEA #1

Embrace meadows and savannah-styled plantings to reduce the need for mowing and to support pollinators.

BIG IDEA #2

Limit the impact that paved surfaces will have on the landscape.

BIG IDEA #3

Dedicate some area in the Knoll for gatherings and open space.

EARLY MASTER PLAN CONCEPT

CONCEPT A

ABOUT THIS CONCEPT



OPC office, event space, and library are located in separate structures at the south end of the Knoll.

Two small picnic shelters are distributed across the Knoll to provide gathering areas with access to a large open lawn.

Additional paved trail in the Upland Forest allows for a separation of uses between walkers/runners and mountain bikers.

The Olmsted Barn is pushed away from the entrance view and towards Alta Vista Road.

Emphasis on paved trails to improve accessibility and connectivity throughout the site.

Two boardwalk crossings highlight the restored tributary (UT4).

More formal plantings at the main entrance.

CONCEPT SKETCH: UPLAND FOREST



STAKEHOLDER COMMENTS

At the second public workshop, people shared their feedback on the two draft concepts. Below are some of the comments about Concept A.

"I like the water flow and the small bridges. Reminds me of the wooden footbridges at Cherokee (Park)."

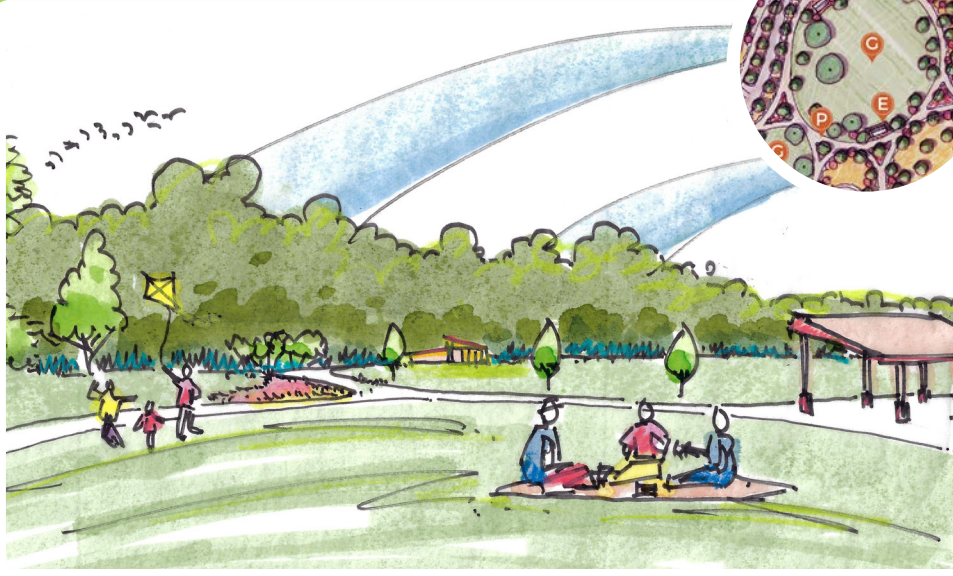
"I like the open lawn and space to move and play."

"I like the old Seminary Road continuing as a paved path for mixed use."

"(At Location M), move the parking... beyond the main root zone of the beech tree near Beargrass Road!"

"I like the open lawn as a center piece. It makes the space feel a lot more formal, like a place of learning on top of being a place for leisure."

CONCEPT SKETCH: THE KNOLL



EARLY MASTER PLAN CONCEPT

CONCEPT B

ABOUT THIS CONCEPT



OPC offices and library share a split-level building tucked into the Knoll. The event pavilion is adjacent and all buildings share outdoor gathering space.

Olmsted Barn tucked into site and less visible from Alta Vista Road. A walkway connects the barn, parking, and office/library buildings.

One large picnic shelter located to capture views of the woods and terraced seat walls for additional gathering.

Pollinator meadows on the Knoll with smaller open lawn area.

A large boardwalk feature provides interpretive opportunity and viewing access to Middle Fork Beargrass Creek.

Utilize soft surface trails to reduce site impacts.

A viewing deck "M" provides an educational opportunity for the restored waterway.

Expanded tree canopy in upland forest.

CONCEPT SKETCH: UPLAND FOREST



STAKEHOLDER COMMENTS

At the second public workshop, people shared their feedback on the two draft concepts. Below are some of the comments about Concept B.

"I love the added access and interpretive opportunities along Beargrass Creek."

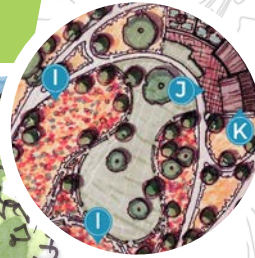
"I like the separation of paved and natural trails, minimize user conflicts."

"This design feels full and lush at its heart as opposed to open and grassy, which I like."

"(I) like the multilevel building and concentrated operations area with library and public use areas."

"The parking all at one end could be problematic for people with mobility issues."

CONCEPT SKETCH: THE KNOLL



ARCHITECTURE SCENARIOS

ARCHITECTURAL MODELS

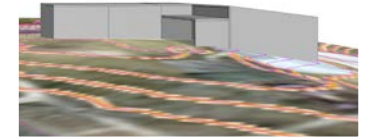
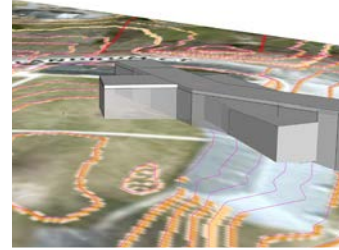
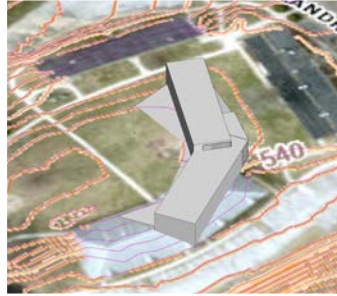
Architectural models were developed to study two site locations: the Knoll's southern hillside and the plateau of the Knoll's northeast corner. These models helped evaluate the positioning of the structure and visual impacts on the site.

From this study, two major site programming observations were made:

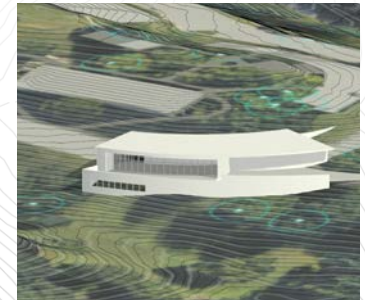
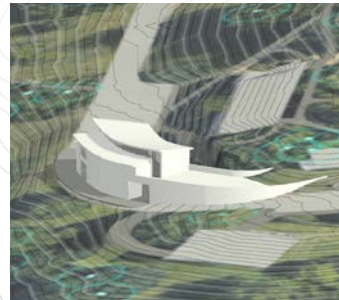
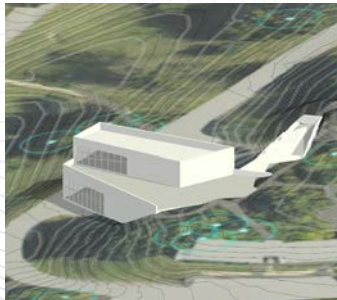
It is difficult for the Knoll's plateau to support both OPC offices and an operational facility without aesthetically impacting neighbors.

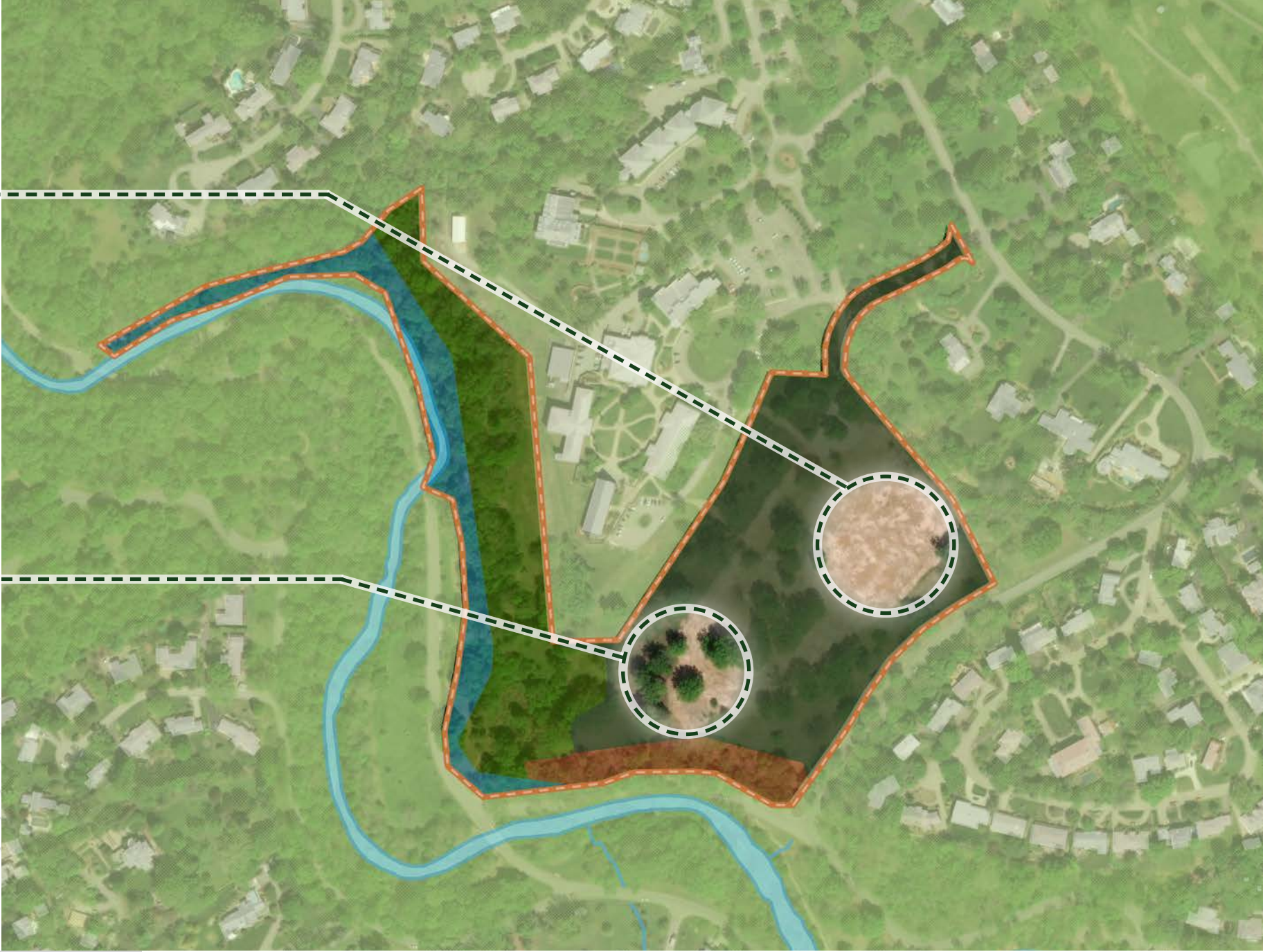
Building on the Knoll's southeast hillside preserves views from neighboring properties and provides substantial views of the site's sloping landscape and forested areas, embedding the experience in the natural forms of the landscape.

Building on the Knoll's Plateau



Building on the Knoll's Hillside





Potential Locations for the OPC Building

COMMUNITY DESIGN PRIORITIES

Following the second public workshop, an additional round of public engagement was held to receive more direct input from the households that surround the site, since they stand to be the most impacted. Comments from these stakeholders emphasized the importance of minimizing development in the northeast corner of the site, taking advantage of the views offered by the sloping landscape, and designing the main entrance to look and feel like a park, rather than an office. All of these recommendations have helped ensure the plan is compatible with the surrounding area.

A stakeholder group of local residents, representatives from the Louisville Presbyterian Theological Seminary, and major donors were engaged to discuss the neighborhood context, the site's relationship to the Seminary campus, and sensitivity to adjacent residents. Overall, the stakeholder group preferred a park-like entry experience and limiting structures to low-visibility areas.

ARRIVAL EXPERIENCE

The main entrance should be designed to be cohesive with the neighborhood and the arrival should feel like a park.



MAXIMIZE PASSIVE PARK USE

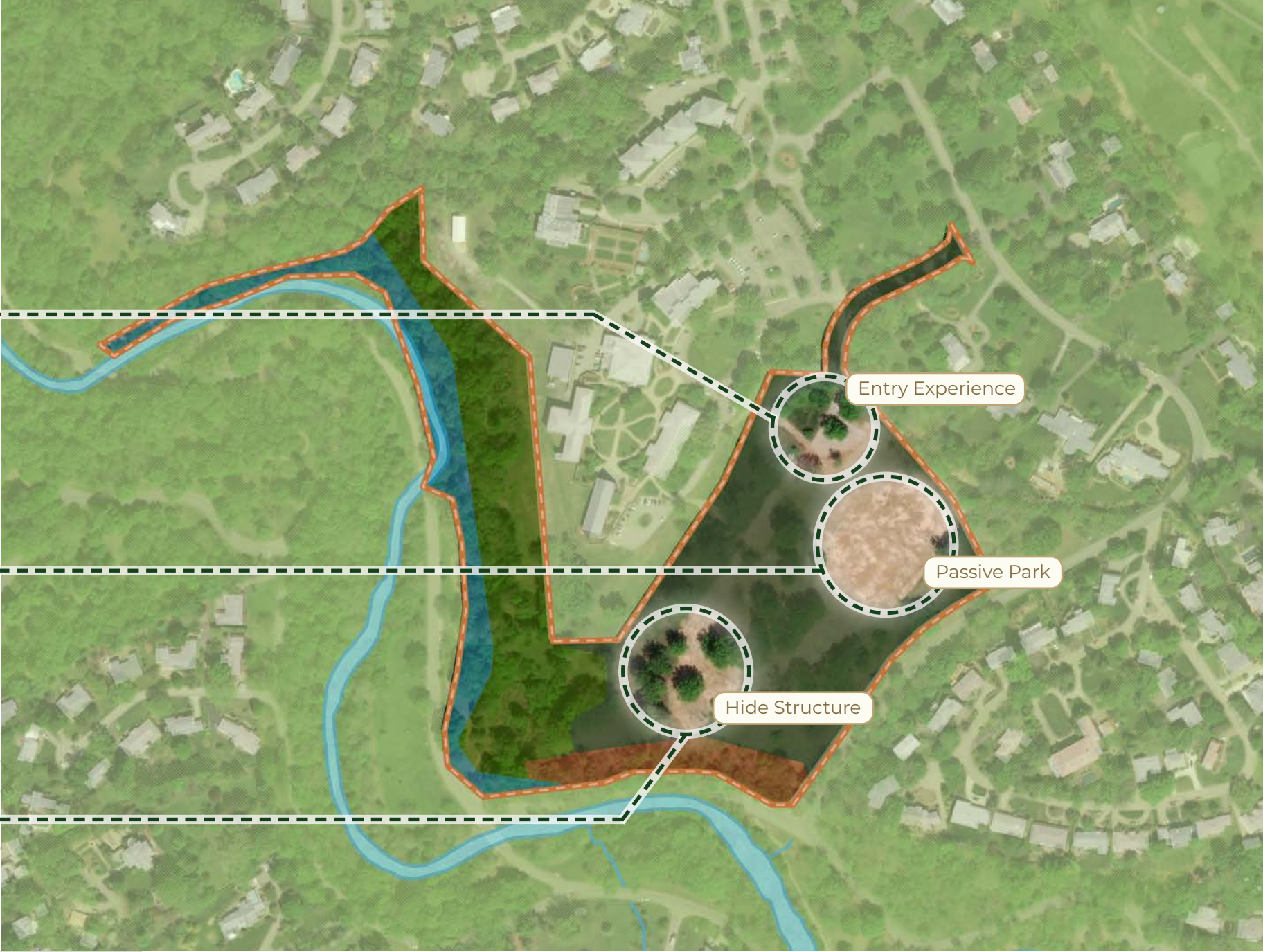
Structures should be limited in this area to maximize passive park use and increase accessibility to these places.



SUBORDINATE ARCHITECTURE

OPC offices should be developed in this area to take advantage of the views and limit impacts on adjacent properties.





Entry Experience

Passive Park

Hide Structure

Community Design Priorities

FINAL CONCEPT

MASTER PLAN



WHAT THIS COULD LOOK LIKE:

PLANTINGS



Pollinator Meadow



Oak Savannah

PARKING



Daily Parking

TRAILS



Boardwalk



Paved Trails



Natural Surface Trails

ARCHITECTURAL ELEMENTS



Hillside Structures



Terraced Retaining Walls



Garden Courtyard

SECTION

4

GROW

INTRODUCTION

This section presents the full master plan concept, including the programmatic, ecological, and architectural design components that are essential to bringing the master plan to life.

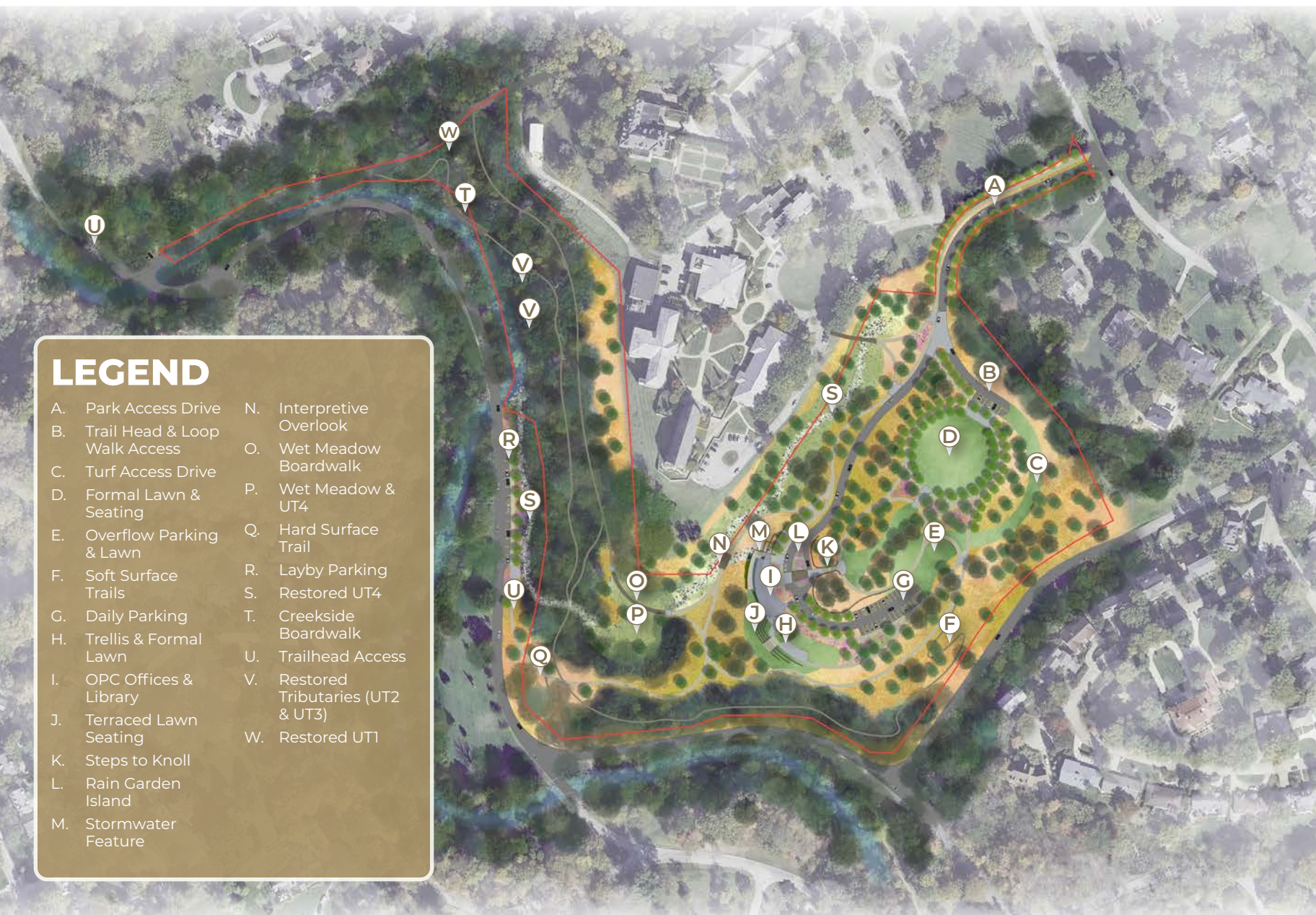
IN THIS SECTION

- Master Plan Concept | 69
 - The Knoll | 71
 - Upland Forest | 73
 - Riparian Floodplain | 77
 - Limestone Cliffs | 78
- Upholding Olmstedian Design | 79
- Exploring Architecture | 81
- Exploring Landscapes | 91

MASTER PLAN CONCEPT

LEGEND

- | | |
|-------------------------------------|---|
| A. Park Access Drive | N. Interpretive
Overlook |
| B. Trail Head & Loop
Walk Access | O. Wet Meadow
Boardwalk |
| C. Turf Access Drive | P. Wet Meadow &
UT4 |
| D. Formal Lawn &
Seating | Q. Hard Surface
Trail |
| E. Overflow Parking
& Lawn | R. Layby Parking |
| F. Soft Surface
Trails | S. Restored UT4 |
| G. Daily Parking | T. Creekside
Boardwalk |
| H. Trellis & Formal
Lawn | U. Trailhead Access |
| I. OPC Offices &
Library | V. Restored
Tributaries (UT2
& UT3) |
| J. Terraced Lawn
Seating | W. Restored UT1 |
| K. Steps to Knoll | |
| L. Rain Garden
Island | |
| M. Stormwater
Feature | |



ENVISIONING THE LANDSCAPE ZONES



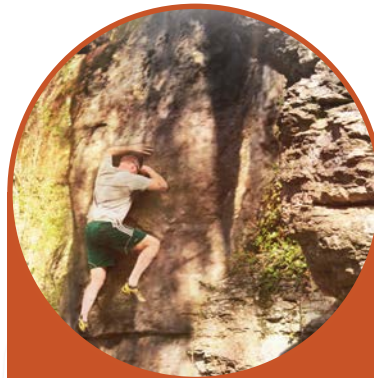
RIPARIAN FLOODPLAIN

With improvements to Seminary Road, new parking areas, trail heads, a boardwalk, and the daylighting and restoration of tributaries to Beargrass Creek (UT1-3), the Riparian Floodplain will serve as both an ecological and recreational gateway to Beargrass Preserve.



UPLAND FOREST

The Upland Forest will feature a restored seasonal wetland and stream complex (UT4), stormwater treatment train for the new facilities, substantial reforestation efforts, and a thoughtfully planned trail system that is compatible with the wooded landscape.



LIMESTONE CLIFFS

The Limestone Cliffs are both environmentally sensitive and difficult to traverse, making this an ideal place for a natural surface trail and minimal development.



THE KNOLL

The Knoll will be home to OPC's headquarters, paved trails, and outdoor gathering spaces. With views of the site's forested hillside, a variety of different landscapes, and easy automobile access, the Knoll is the civic heart of Beargrass Preserve.

“Scattered woods and gentle sloping terrain.”



THE KNOLL



Interpretive Overlook

Formal Lawn

Overflow Parking & Lawn

Trailhead and Loop Walk Access

OPC Offices & Library

Stormwater Feature

“Wooded upslopes with existing trails.”

Separated Soft Surface Trails

Two parallel trails are planned for the Upland Forest to facilitate separation between pedestrians and cyclists.



Boardwalk

Unnamed Tributary 4

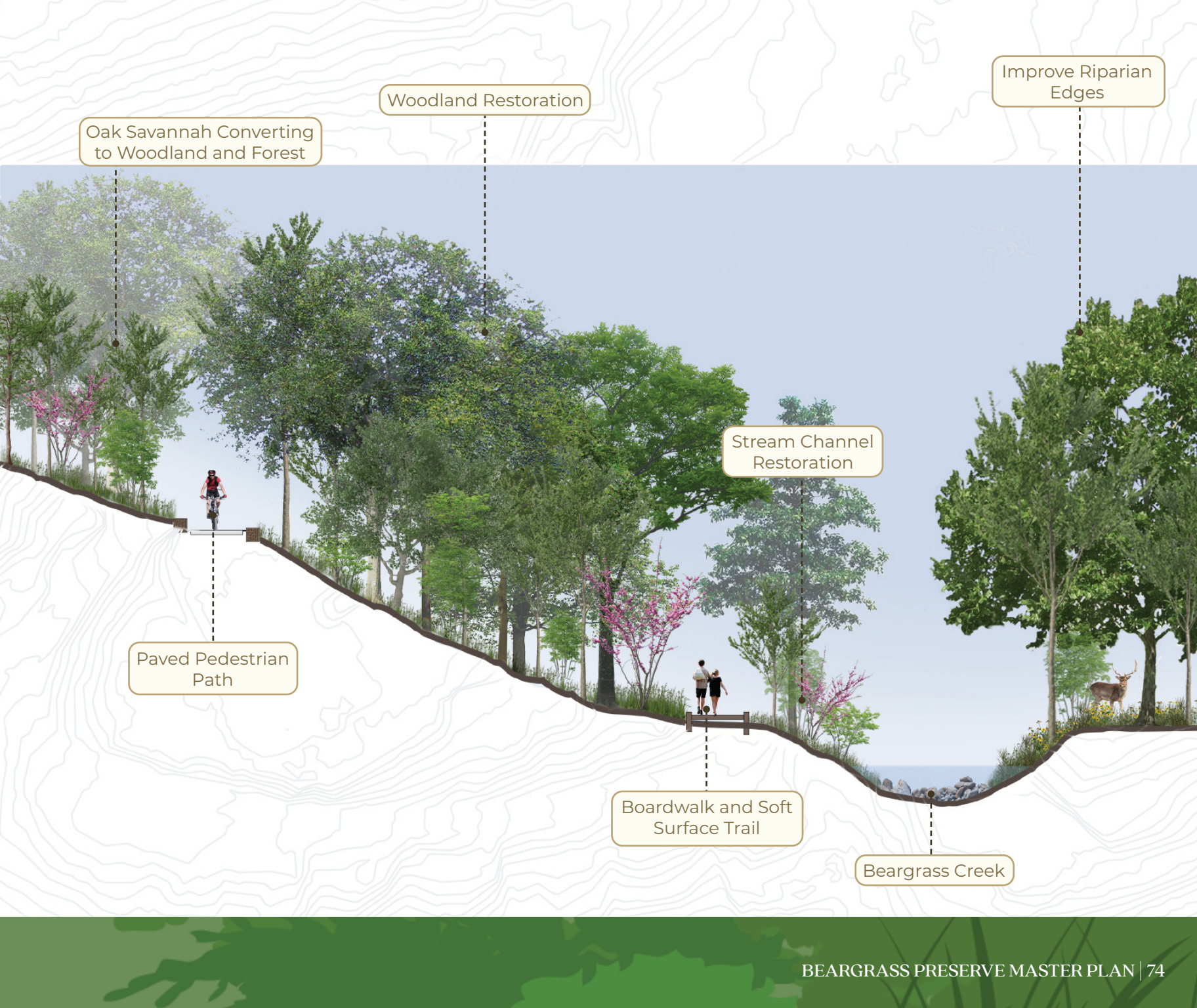
Woodland Restoration

Oak Savannah

Paved Trail

Wetland Meadow

UPLAND FOREST



Oak Savannah Converting to Woodland and Forest

Woodland Restoration

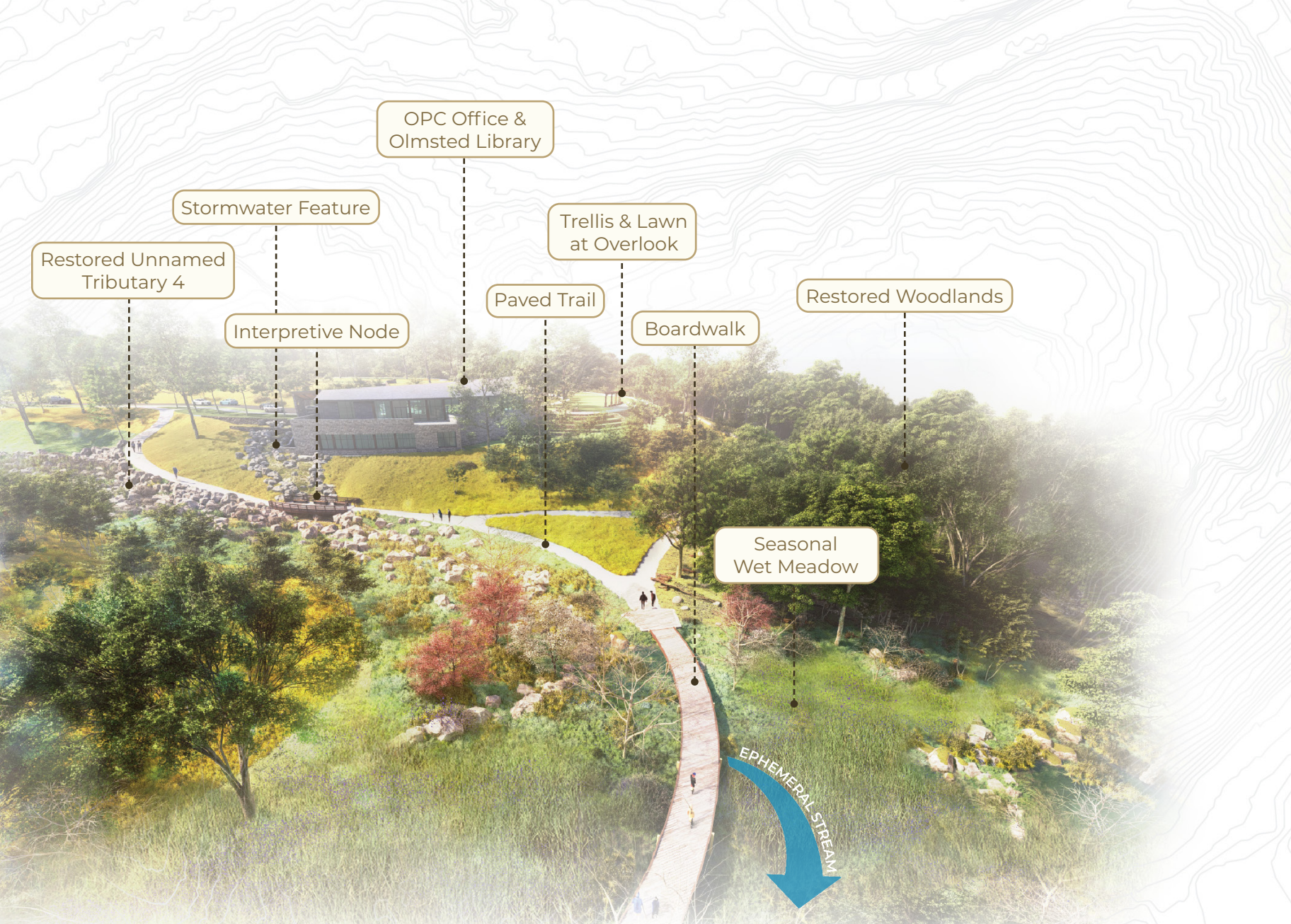
Improve Riparian Edges

Paved Pedestrian Path

Stream Channel Restoration

Boardwalk and Soft Surface Trail

Beargrass Creek



OPC Office & Olmsted Library

Stormwater Feature

Restored Unnamed Tributary 4

Interpretive Node

Trellis & Lawn at Overlook

Paved Trail

Boardwalk

Restored Woodlands

Seasonal Wet Meadow

EPHEMERAL STREAM

UPLAND FOREST



Stormwater Feature

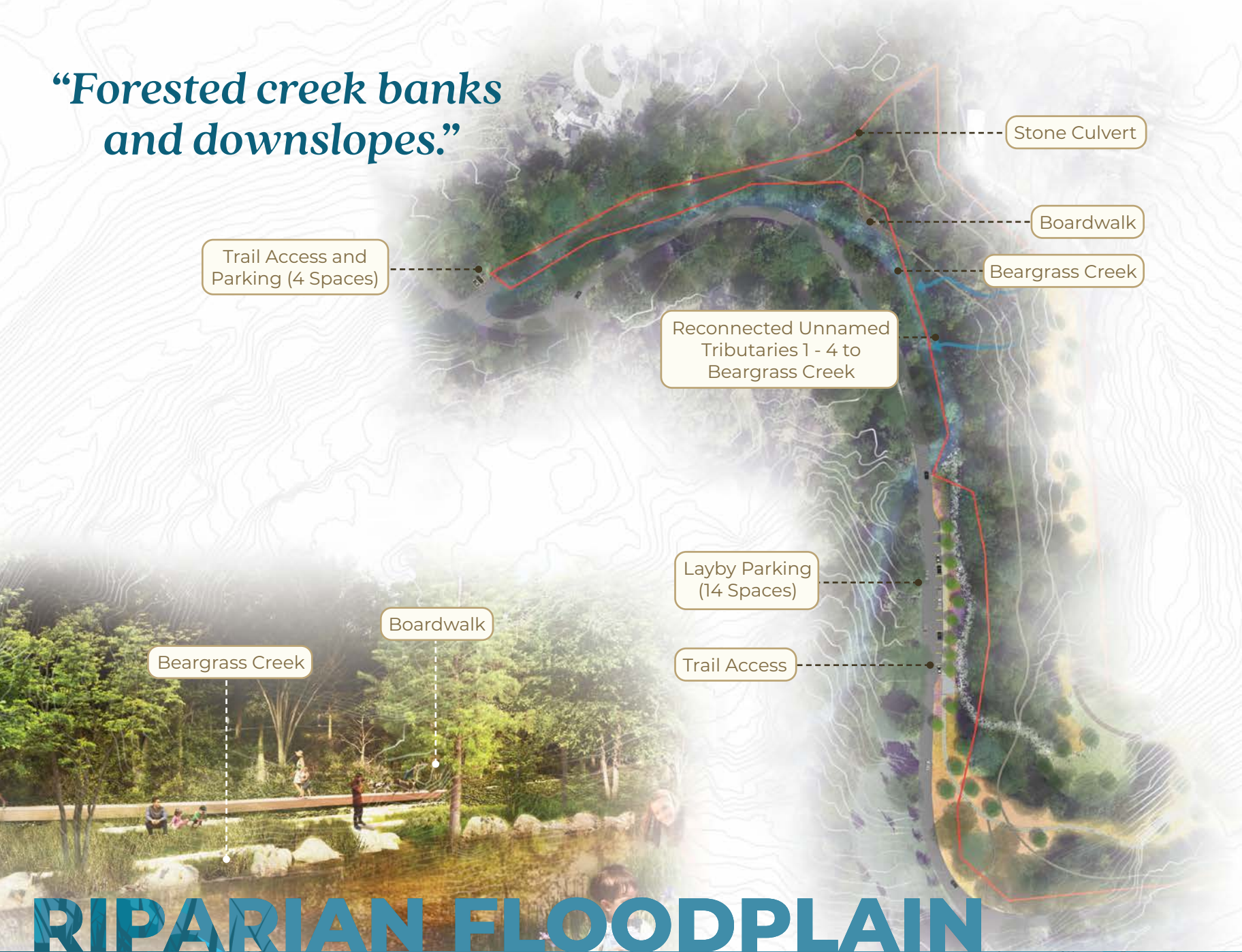
Interpretive Node

OPC Office &
Olmsted Library

Boardwalk

Seasonal
Wet Meadow

“Forested creek banks and downslopes.”



Trail Access and Parking (4 Spaces)

Stone Culvert

Boardwalk

Beargrass Creek

Reconnected Unnamed Tributaries 1 - 4 to Beargrass Creek

Boardwalk

Beargrass Creek

Layby Parking (14 Spaces)

Trail Access

RIPARIAN FLOODPLAIN

*“Wooded
cliff faces.”*

Soft Surface Trail

Limestone Cliff Faces

Beargrass Creek

Soft Surface Trail

LIMESTONE CLIFFS

UPHOLDING OLMSTEDIAN DESIGN

The Seven 'S' of Olmstedian Design at **BEARGRASS PRESERVE**

An overview of the Seven 'S' are on pages 9 and 10.

STYLE
1

STYLE

The picturesque design of the formal entry to the site and building offer a visual contrast with the pastoral design approach that is appropriate for the site's more natural areas.

SCENERY
2

SCENERY

The Beargrass Creek boardwalk helps to enhance the overall sense of place along the creek by opening up new views and providing a design that integrates into the natural landscape.

SUITABILITY
3

SUITABILITY

Reforestation along the woodland edge and minimal trail impacts along the Limestone Cliffs are designed respect and strengthen the natural integrity and environmental sensitivity of the area.

SUBORDINATION
4

SUBORDINATION

The placement of the building and terraced lawn into the Knoll's hillside reduces the visual impact of development and gives prominence to the landscape.

SEPARATION
5

SEPARATION

The separation of uses along trails in the Upland Forest helps to reduce use conflicts.

SANITATION
6

SANITATION

The restored streams and tributaries, along with stormwater features, across Beargrass Preserve serve to drain and clean stormwater from the Knoll and provide ecological uplift.

SERVICE
7

SERVICE

The accessibility and openness of the park invites social connection, while the diversity of the landscapes promotes engagement with nature and "gives the effect of refreshing rest and reinvigoration to the whole system."



Olmstedian Design Influence at Beargrass Preserve

EXPLORING ARCHITECTURE: REFLECTING THE LANDSCAPE

INSPIRATION FROM THE LIMESTONE CLIFFS

The building's positioning on the hillside imitates the positioning of the limestone cliffs on Beargrass Preserve's eastern boundary. The architecture takes additional inspiration from the cliffs with stone exteriors and terraced seating that is nestled into the grassy hillside.



Stone Exteriors

Terraced Seating

Prominent Views
from the Cliff Top

Layered Limestone
Cliff Faces

Terraced
Cliffs

EXPLORING ARCHITECTURE: EXTERIORS

LEGEND

- | | |
|------------------------|--------------------------|
| A. Loop Walk | H. Building Side Entry |
| B. Rain Garden Island | I. Trellis & Patio |
| C. Building Main Entry | J. Terraced Lawn Seating |
| D. OPC Offices | K. Formal Lawn |
| E. Roof Terrace | L. Pollinator Garden |
| F. Stormwater Feature | M. Mixed Savannah |
| G. Olmsted Library | N. Retaining Wall |
| | O. Stairs to Knoll |



Building Side Entry

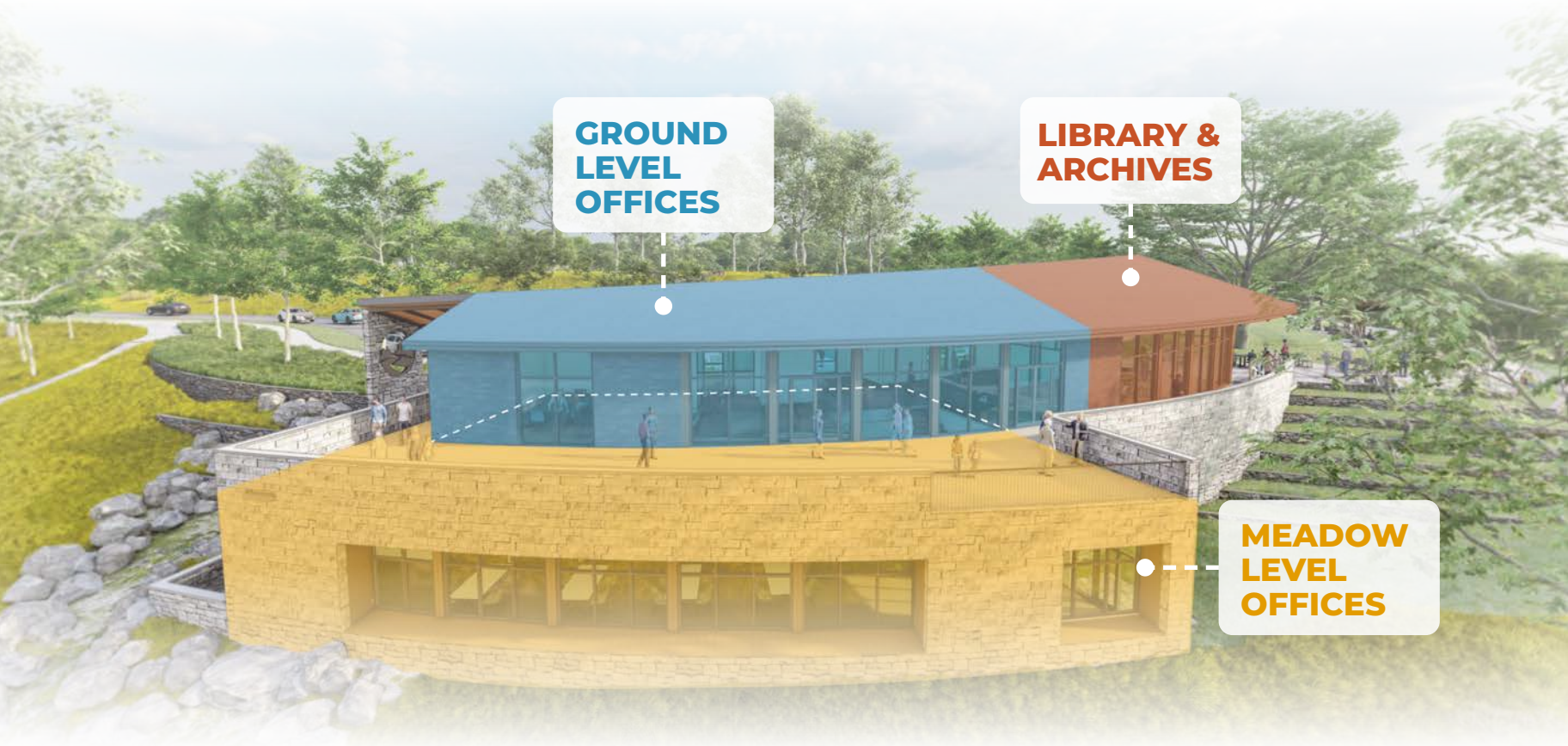
Formal Lawn

Building Front Entry

Boardwalk

Rain Garden Island

EXPLORING ARCHITECTURE: INTERIORS



BUILDING SIZE:

Upper Level: 3,616 SF

Total Interior: 6,888 SF

Meadow Level: 3,272 SF

Rooftop Terrace: 2,373 SF



LIBRARY & ARCHIVES

The Olmsted Library will house the Olmsted Parks Conservancy's collection of Olmsted documents for staff and visitors to view. The library will also be designed to hold board meetings and can be used for additional space during events held at the adjacent lawn and patio.

An architectural rendering of a modern office building interior. The space features a prominent wooden truss ceiling with a light-colored wood finish. Large glass windows and doors are integrated into the design, providing ample natural light and views of the outdoors. In the foreground, a dark grey counter with three white bar stools is visible. The background shows a multi-level office environment with people walking and working, and a green wall in the distance. The overall aesthetic is clean, bright, and functional.

GROUND LEVEL OFFICES

The ground level offices will include private offices for OPC leadership as well as shared coworking spaces that exit out onto the terrace overlooking the Knoll's hillside. This part of the building will also include the main building entry, restrooms, and a kitchen.

MEADOW LEVEL OFFICES

Located on the bottom floor, the meadow level offices will look out onto the native woodland and stream that flows into the seasonal wetland below. This floor will feature private offices and co-working spaces, along with its own exterior doorways, giving staff direct access to the trail system.



EXPLORING ARCHITECTURE: OUTDOOR EVENT SPACE

LEGEND

- | | |
|---------------------------|----------------------|
| A. Garden Trellis & Patio | D. Pollinator Garden |
| B. Terraced Lawn Seating | E. Terrace Patio |
| C. Garden Lawn | F. Stairs to Knoll |
| | G. Knoll Lawn |



Trellis

Overlook

Formal Lawn

Building Side Entry

Trellis

EXPLORING LANDSCAPES: HILLSIDE PROFILE



**STREAM & WETLAND
COMPLEX**



**SAVANNAH &
OFFICE VIEWS**



**DROP-OFF &
VESTIBULE ENTRY**



**GRAND STAIRS &
KNOLL**

EXPLORING LANDSCAPES: SUSTAINABILITY & RESILIENCE

Conceptual Diagram of Unnamed Tributary 4.

MEADOWS

Meadows increase biodiversity and create habitats for pollinators that are vital to environmental health of Beargrass Preserve and surrounding areas.



GEOHERMAL ENERGY

The integration of geothermal power will reduce the need for nonrenewable energy sources.



Stormwater management is integrated into the hillside.



The restored channel provides improved hydrology for overland flows across the site and into Beargrass Creek.



PROTECTING NATIVE SPECIES

Conservation efforts will focus on protecting native species and creating an environment where they can flourish, managing nonnative invasive species and supplementing with native plantings.



UPLAND WOODLANDS

The restored woodlands provide increased native biodiversity, slope stabilization, and water quality management of overland flows.



RIPARIAN WOODLANDS

Reforestation, especially through an expanded understory, will create a richer habitat for native plants and wildlife, and a healthier riparian corridor.



Reconnection to a floodplain slows and stores water during heavy rains.



Water flows into Beargrass Creek.



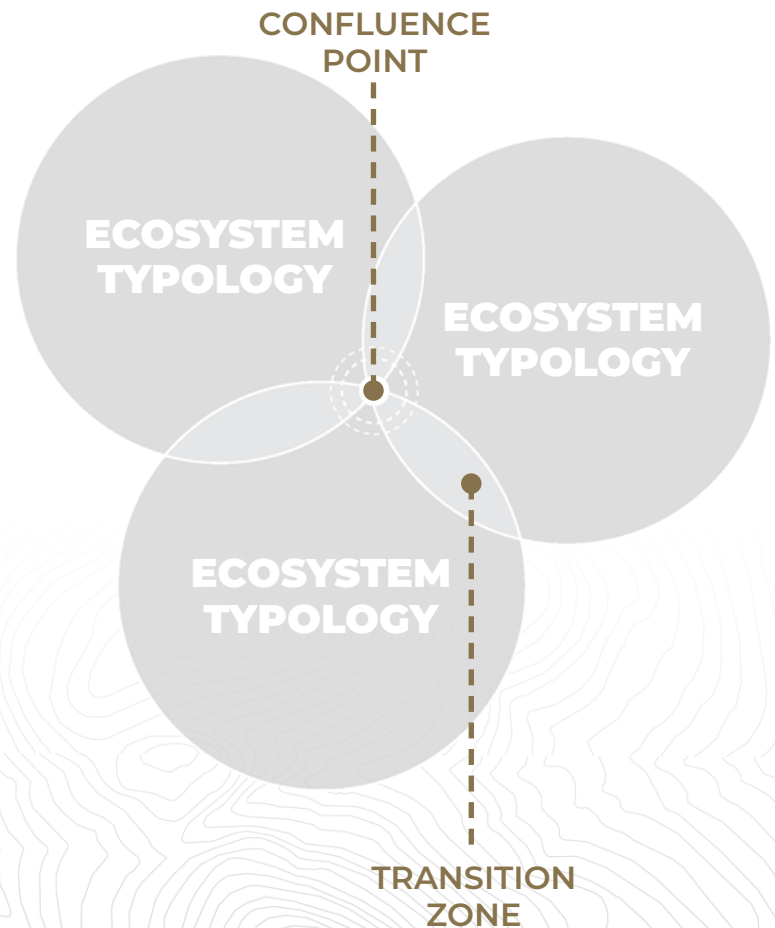
EXPLORING LANDSCAPES: ECOLOGICAL UPLIFT

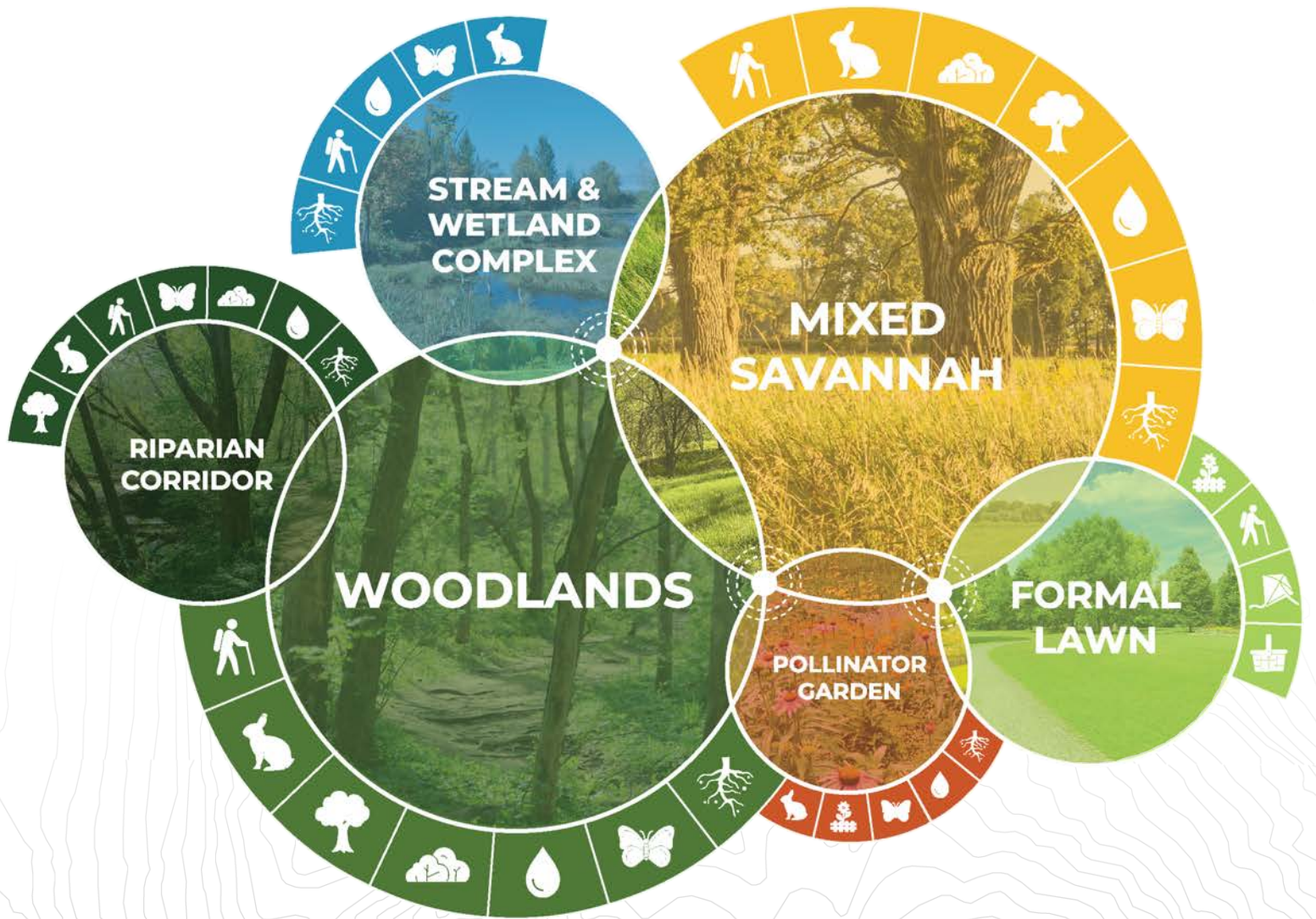
ECOSYSTEM SERVICES

There are six ecosystem typologies, including woodlands, riparian corridor, mixed savannah, a stream and wetland complex formed by Unnamed Tributary 4, pollinator gardens, and the formal lawn. These areas share common ecological functions, hydrology, slopes, plants, and soils.

Together, these six ecosystems provide a range of habitats. There are natural points of transition where the species, topographies, and recreational characters of abutting ecosystems integrate with one another. Confluence points emerge where these ecologies come together and offer high diversity, making for dynamic landscape moments.

Unlike the four landscape zones, these ecosystem typologies do not exclusively describe specific, contiguous areas on the site. Instead, many of the ecosystems can be found in more than one landscape zone. For example, the woodlands ecosystem will be the core ecosystem typology in both the Upland Forest and the Limestone Cliffs. Pockets of pollinator gardens are primarily found in the Upper Knoll where they transition to mixed savannahs and formal lawns. The only ecosystem typology that is found in just one landscape zone is the formal lawn, which will be a core space for gatherings and recreation on the Upper Knoll.





- 

Passive Recreation
- 

Gathering Spaces
- 

Open Lawn
- 

Formal Plantings
- 

Wildlife Habitats
- 

Native Pollinators
- 

Understory Growth
- 

Reforestation
- 

Water Drainage & Filtration
- 

Rich Soils

EXPLORING LANDSCAPES: ECOLOGICAL UPLIFT

INTERCONNECTED LANDSCAPES

Not only does each ecosystem typology possess its own unique character and composition, but they are each shaped by the other ecosystems surrounding them and the wildlife that move between different areas. At Beargrass Preserve, water plays a vital role in connecting different ecosystems, both within the site and to and from adjacent properties.



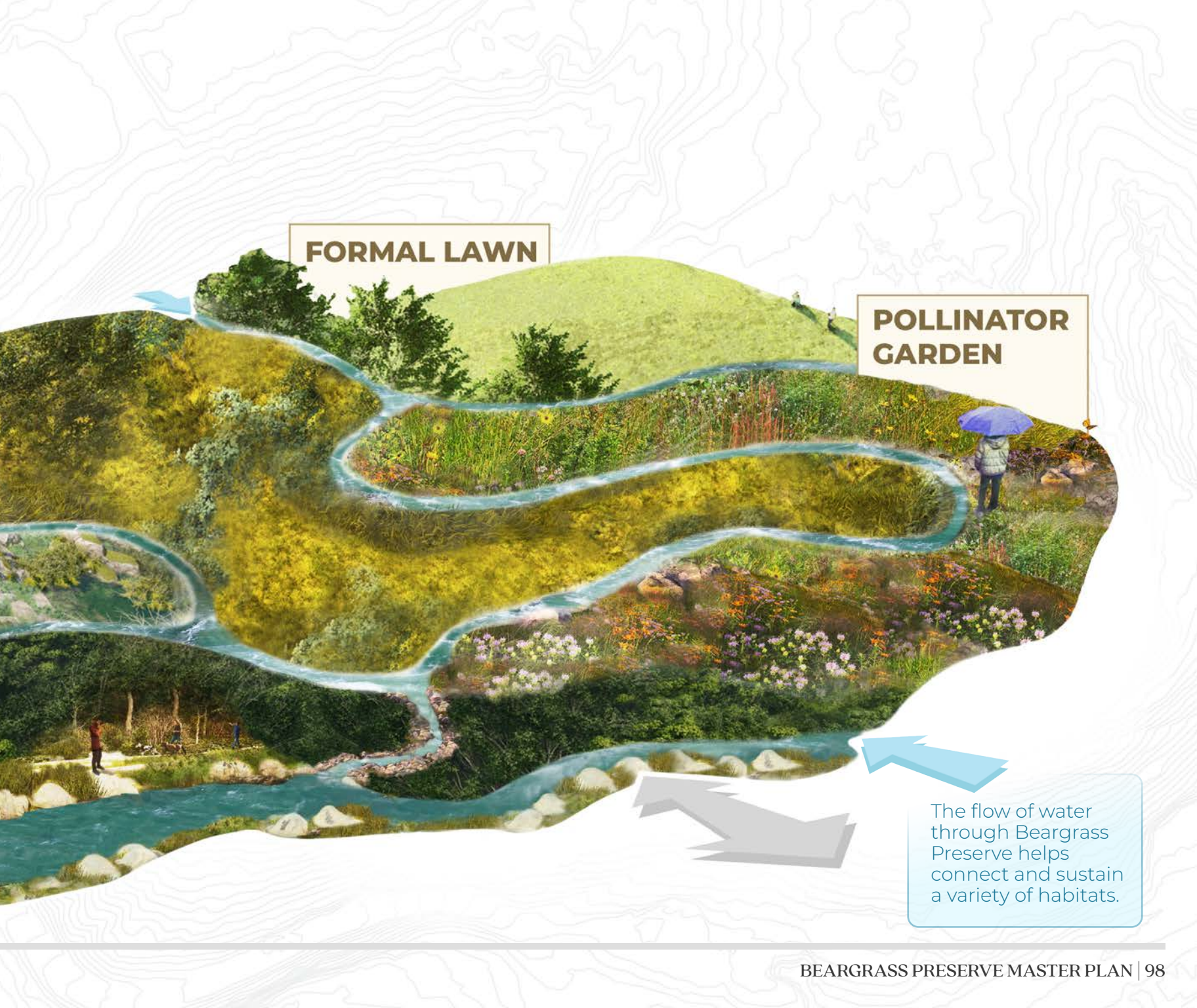
WOODLANDS

**MIXED
SAVANNAH**

**STREAM &
WETLAND
COMPLEX**

**RIPARIAN
CORRIDOR**

Beargrass Preserve exists within a broader landscape mosaic of interconnected ecosystems. The site is shaped by the constant flow of wildlife and plants from adjacent properties and the headwaters of the Beargrass Creek.



FORMAL LAWN

POLLINATOR GARDEN

The flow of water through Beargrass Preserve helps connect and sustain a variety of habitats.

SECTION

5

IMPLEMENT

INTRODUCTION

As the Olmsted Parks Conservancy and stakeholders work to bring Beargrass Preserve into reality, this section offers guidance on how the plan should be implemented. To do this, this section includes a detailed phasing strategy, guidance on planting and maintaining natural areas, and recommendations on materials and strategies for constructing and maintaining structures and infrastructure.

IN THIS SECTION

- Phasing Plan | 101
- Planting Plan | 111
- Natural Areas Maintenance | 119
- Materials | 129
- Hardscape & Utilities Maintenance | 131
- Building Maintenance | 133

PHASING PLAN



PHASE 1: OLMSTED COMMONS

Phase One will include the development of three major areas:

SECTION A. The Upper Knoll, trailhead, open lawn, and walking paths.

SECTION B. The main entrance drive from Alta Vista, the OPC offices and Olmsted Library, the lawn and overlook adjacent to the building, stormwater best management practices, and the parking areas around the Knoll.

SECTION C. Stormwater drainage to channel runoff from the building and paved areas on the Knoll, restoration of tributary streams, the seasonal wetland complex, and stream and connection to Beargrass Creek.

PHASE 2: WOODLAND CONNECTION

Phase Two will include the restoration of the Upland Forest area.

PHASE 3: MIXED SAVANNAH, STREAM & WETLAND COMPLEX

Phase Three will include the Lower Knoll areas that were not addressed in Phase One, including the oak savannah, enhancements to the limestone cliffs, the daylighting of Unnamed Tributary 4, and restoration north of the building.

PHASE 4: SEMINARY ROAD

Phase Four will include repairs to the limestone wall and asphalt drive, along with added trails and trail access points in that area.

PHASE 1: OLMSTED COMMONS

SECTION A



INCLUDED IN THIS PHASE:

- Parking lot and driveway connection from main entrance drive to Olmsted Commons access point
- Overflow parking and circulation
- 10-foot paved walking loop
- Wayfinding and interpretive signage
- Pollinator gardens and waypoints
- Tree plantings as an expansion of the woodlands and canopy
- Tree-lined walkways with multipurpose lawns
- Mixed short grass prairie planting with native tree clusters

ESTIMATED COSTS:

Total:
\$2,000,000

PHASE 1: OLMSTED COMMONS

SECTION B



ESTIMATED COSTS:

Total:
\$11,000,000



INCLUDED IN THIS PHASE:

- Entrance drive from Alta Vista to the building
- Olmsted Library and OPC Offices building
- Patio, trellis and formal lawn adjacent to the building
- Terraced stone seating and overlook
- 26 parking spaces near the building entry
- Rain garden and connection to Olmsted Commons
- Integrated stormwater drainage feature connected to restored stream and wetland complex
- Transition from the Knoll, including the retaining wall and stairway connecting the building entry to the Upper Knoll
- Native landscaping along the main entrance drive
- Sidewalks/paved trails connecting to the building from the trail network
- Entry, wayfinding, and interpretive signage
- Pollinator gardens

PHASE 1: OLMSTED COMMONS

SECTION C



INCLUDED IN THIS PHASE:

- Paved trails connecting to the woodlands, trail access points, and Limestone Cliffs
- Restoration of seasonal stream and wetland complex.
- Wetland complex boardwalk and overlook to the internal landscape confluence
- Beargrass Road layby parking and trail access point
- Entry, wayfinding, and interpretive signage
- Stream daylighting and connection to Beargrass Creek

ESTIMATED COSTS:

Total:
\$2,000,000

PHASE 2: WOODLAND CONNECTION



ESTIMATED COSTS:

Total:
\$1,200,000



INCLUDED IN THIS PHASE:

- Beargrass Creek boardwalk and terraced boulder toe stream reveal
- Natural surface trails separating uses between pedestrians and mountain bikers
- Wayfinding and interpretive signage
- Regenerative riparian and upland woodland restoration and successional plantings
- Restoration of the existing or buried ephemeral tributaries down the hillside

PHASE 3: MIXED SAVANNAH



INCLUDED IN THIS PHASE:

- 10-foot paved walking trail
- Natural surface trails separating uses between pedestrians and mountain bikers
- Wayfinding and interpretive signage
- Mixed short grass prairie planting with native tree clusters
- Regenerative woodland restoration and successional plantings
- Pollinator gardens
- Native tree plantings

ESTIMATED COSTS:

Total:
\$1,100,000

PHASE 3: STREAM & WETLAND COMPLEX



ESTIMATED COSTS:

Total:
\$2,000,000



INCLUDED IN THIS PHASE:

- 10-foot paved walking trail
- Boardwalk to Seminary and overlook of restored Unnamed Tributary 4
- Wayfinding and interpretive signage
- Stream daylighting of the piped conveyance down the hillside will restore natural hydrologic functions to the landscape
- Mixed short grass prairie planting with native tree clusters

PHASE 4: SEMINARY ROAD



INCLUDED IN THIS PHASE:

- Seminary Road trail access point
- Restoration of asphalt roadway
- Seminary Road retaining wall restoration
- Entry, wayfinding, and interpretive signage
- Regenerative woodland restoration and successional plantings

ESTIMATED COSTS:

**Total:
\$600,000**

TOTAL ESTIMATED COSTS

PHASE 1: OLMSTED COMMONS

\$2,000,000 (Section A)

\$11,000,000 (Section B)

\$2,000,000 (Section C)

PHASE 2: WOODLAND CONNECTION

\$1,200,000

PHASE 3: MIXED SAVANNAH, STREAM & WETLAND COMPLEX

\$3,100,000

PHASE 4: SEMINARY ROAD

\$600,000

TOTAL COSTS

\$19,900,000

Note:

The estimated costs include both a 25% operations and maintenance budget and a 25% contingency, both of which are calculated into the above estimates for each phase and the overall total cost.

PLANTING PLAN

The below table identifies specific native species that can be included in each of the ecosystem typologies. For each ecosystem, plant species are organized into five categories, including canopy, understory, woody shrubs, grasses, and forbs. It is important to note that this is not a comprehensive list of plants and there are more species that are suitable for each ecosystem typology.

	WOODLANDS	MIXED SAVANNAH	STREAM & WETLAND COMPLEX
CANOPY	Shagbark Hickory (<i>Carya ovata</i>), Hackberry (<i>Celtis occidentalis</i>), KY Coffee Tree (<i>Gymnocladus dioicus</i>), Black Walnut (<i>Juglans nigra</i>), Black Cherry (<i>Prunus serotina</i>), Shumard Oak (<i>Quercus shumardii</i>), Black Locust (<i>Robinia pseudoacacia</i>), Hop Hornbeam (<i>Ostrya virginiana</i>)	Chinkapin Oak (<i>Quercus muehlenbergii</i>), Bur Oak (<i>Quercus pseudoacacia</i>), Honeylocust (<i>Gleditsia triacanthos</i>), Sugar Maple (<i>Acer saccharum</i>), Bitternut Hickory (<i>Carya cordiformis</i>), Black Walnut (<i>Juglans nigra</i>), and Kentucky Coffee Tree (<i>Gymnocladus dioicus</i>)	Swamp White Oak (<i>Quercus bicolor</i>), Shellbark Hickory (<i>Carya laciniata</i>), Red Maple (<i>Acer rubrum</i>), American Elm (<i>Ulmus americana</i>), Tuliptree (<i>Liriodendron tulipifera</i>), American Sycamore (<i>Platanus occidentalis</i>), Hop Hornbeam (<i>Ostrya virginiana</i>)
UNDERSTORY	Pawpaw (<i>Asimina triloba</i>), Wild Plum (<i>Prunus americana</i>), Eastern Redbud (<i>Cercis canadensis</i>), Flowering Dogwood (<i>Cornus florida</i>), Serviceberry (<i>Amelanchier arborea</i>)	Flowering Dogwood (<i>Cornus florida</i>), Allegheny Serviceberry (<i>Amelanchier laevis</i>), Eastern Redbud (<i>Cercis canadensis</i>), Pussy Willow (<i>Salix discolor</i>)	Ironwood (<i>Carpinus caroliniana</i>), Sweetbay Magnolia (<i>Magnolia virginiana</i>), Blackgum (<i>Nyssa sylvatica</i>)
WOODY SHRUBS	Coralberry (<i>Symphoricarpos orbiculatus</i>), Carolina Buckthorn (<i>Frangula caroliniana</i>), Blackhaw (<i>Viburnum prunifolium</i>)	Redosier Dogwood (<i>Cornus sericea</i>), Smooth Sumac (<i>Rhus glabra</i>),	Silky Dogwood (<i>Cornus amomum</i>), Chokeberry (<i>Aronia arbutifolia</i>), Buttonbush (<i>Cephalanthus occidentalis</i>), American Elderberry (<i>Sambucus canadensis</i>)
GRASSES	Common Wood Sedge (<i>Carex blanda</i>), Wood Gray Sedge (<i>Carex grisea</i>), Deer Tongue Grass (<i>Dichanthelium clandestinum</i>), Virginia Wild Rye (<i>Elymus virginicus</i>), Beak Grass (<i>Diarrhena americana</i>)	Switchgrass (<i>Panicum virgatum</i>), Bottle Brush Grass (<i>Elymus hystrix</i>), Virginia Wild Rye (<i>Elymus virginicus</i>)	Virginia Wild Rye (<i>Elymus virginicus</i>), Deer Tongue Grass (<i>Panicum clandestinum</i>), Nodding Sedge (<i>Carex crinita</i>), Path Rush (<i>Juncus tenuis</i>)
FORBS	Giant Yellow Hyssop (<i>Agastache nepetoides</i>), Downy Wood Mint (<i>Blephilia ciliata</i>), Orange Jewelweed (<i>Impatiens capensis</i>), Solomon's Seal (<i>Polygonatum commutatum</i>), Christmas Fern (<i>Polystichum acrostichoides</i>), Cinnamon Fern (<i>Osmunda cinnamomea</i>)	Smooth Beardtongue (<i>Penstemon digitalis</i>), Blackeyed Susan (<i>Rudbeckia hirta</i>), Spiked Blazing Star (<i>Liatis spicata</i>), Bergamont (<i>Monarda fistulosa</i>), Purple Coneflower (<i>Echinacea purpurea</i>), Swamp Milkweed (<i>Asclepias incarnata</i>), Butterfly Milkweed (<i>Asclepias tuberosa</i>), Smooth White Beardtongue (<i>Penstemon digitalis</i>)	Joe pye weed (<i>Eupatorium purpureum</i>), Sneezeweed (<i>Helenium autumnale</i>), Hairy Sunflower (<i>Helianthus hirsutus</i>), Cardinal Flower (<i>Lobelia cardinalis</i>), Swamp Milkweed (<i>Asclepias incarnata</i>), Narrow leaf Sunflower (<i>Helianthus angustifolius</i>), Scarlet Beebalm (<i>Monarda didyma</i>)



POLLINATOR GARDEN	FORMAL LAWN	RIPARIAN CORRIDOR
<p>Black Locust (<i>Robinia pseudoacacia</i>), Kentucky Coffee Tree (<i>Gymnocladus dioicus</i>), Black Cherry (<i>Prunus serotina</i>), Blackgum (<i>Nyssa sylvatica</i>), Shagbark Hickory (<i>Carya ovata</i>), Hop Hornbeam (<i>Ostrya virginiana</i>)</p>	<p>White Oak (<i>Quercus alba</i>), Chinkapin Oak (<i>Quercus muehlenbergii</i>), Scarlet Oak (<i>Quercus coccinea</i>), Red Maple (<i>Acer rubrum</i>), American Holly (<i>Ilex opaca</i>), Pignut Hickory (<i>Carya glabra</i>), Hop Hornbeam (<i>Ostrya virginiana</i>)</p>	<p>American Sycamore (<i>Plantanus occidentalis</i>), Swamp White Oak (<i>Quercus bicolor</i>), River Birch (<i>Betula nigra</i>), Red Maple (<i>Acer rubrum</i>), Yellow Poplar (<i>Liriodendron tulipifera</i>), Eastern Cottonwood (<i>Populus deltoids</i>), Black Willow (<i>Salix nigra</i>), Hop Hornbeam (<i>Ostrya virginiana</i>)</p>
<p>Flowering Dogwood (<i>Cornus florida</i>), Allegheny Serviceberry (<i>Amelanchier laevis</i>), Eastern Redbud (<i>Cercis canadensis</i>), Pussy Willow (<i>Salix discolor</i>)</p>	<p>Flowering Dogwood (<i>Cornus florida</i>), Blackgum (<i>Nyssa sylvatica</i>), Sourwood (<i>Oxydendrum arboreum</i>), Sassafras (<i>Sassafras albidum</i>), Allegheny Serviceberry (<i>Amelanchier laevis</i>)</p>	<p>Eastern Redbud (<i>Cercis canadensis</i>), Blackgum (<i>Nyssa sylvatica</i>), Ironwood (<i>Carpinus caroliniana</i>), Sweetbay Magnolia (<i>Magnolia virginiana</i>)</p>
<p>Redosier Dogwood (<i>Cornus sericea</i>), Smooth Sumac (<i>Rhus glabra</i>)</p>	<p>Redosier Dogwood (<i>Cornus sericea</i>), Smooth Sumac (<i>Rhus glabra</i>), Bladdernut (<i>Staphylea trifolia</i>)</p>	<p>Spice Bush (<i>Lindera benzoin</i>), Buttonbush (<i>Cephalanthus occidentalis</i>), Silky Dogwood (<i>Cornus amomum</i>), Pussy Willow (<i>Salix discolor</i>)</p>
<p>Switchgrass (<i>Panicum virgatum</i>), Bottle Brush Grass (<i>Elymus hystrix</i>), Virginia Wild Rye (<i>Elymus virginicus</i>)</p>	<p>Little Bluestem (<i>Schizachyrium scoparium</i>), Switchgrass (<i>Panicum virgatum</i>), Side Oats Grama (<i>Bouteloua curtipendula</i>), Tall Dropseed (<i>Sporobolus compositus</i>)</p>	<p>Switchgrass (<i>Panicum virgatum</i>), Eastern Gamma Grass (<i>Tripsacum dactyloides</i>), River Bank Wild Rye (<i>Elymus riparius</i>), River Oats (<i>Uniola latifolia</i>), Deer Tongue Grass (<i>Panicum clandestinum</i>)</p>
<p>Smooth Beardtongue (<i>Penstemon digitalis</i>), Blackeyed Susan (<i>Rudbeckia hirta</i>), Spiked Blazing Star (<i>Liatris spicata</i>), Purple Coneflower (<i>Echinacea purpurea</i>), Swamp Milkweed (<i>Asclepias incarnata</i>) Butterfly Milkweed (<i>Asclepias tuberosa</i>), Bergamont (<i>Monarda fistulosa</i>)</p>	<p>Blackeyed Susan (<i>Rudbeckia hirta</i>), Lance Leaved Coreopsis (<i>Coreopsis lanceolata</i>), False Sunflower (<i>Heliopsis helianthoides</i>), Spiked Blazing Star (<i>Liatris spicata</i>), Greyheaded Coneflower (<i>Ratibida pinnata</i>), Rigid Goldenrod (<i>Solidago rigida</i>) Smooth Aster (<i>Aster laevis</i>)</p>	<p>Purple Coneflower (<i>Echinacea purpurea</i>), Cardinal Flower (<i>Lobelia cardinalis</i>), New England Aster (<i>Aster novae-angliae</i>), Swamp Milkweed (<i>Asclepias incarnata</i>), Grey Goldenrod (<i>Solidago nemoralis</i>), Joe Pye Weed (<i>Eupatorium fistulosum</i>), Greyheaded Coneflower (<i>Ratibida pinnata</i>)</p>

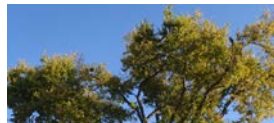
WOODLANDS



CANOPY



Shagbark Hickory
Carya ovata



Hackberry
Celtis occidentalis



Black Walnut
Juglans nigra



Black Cherry
Prunus serotina



Shumard Oak
Quercus shumardii



UNDERSTORY



Pawpaw
Asimina triloba



Wild Plum
Prunus americana



Eastern Redbud
Cercis canadensis



Flowering Dogwood
Cornus florida



Serviceberry
Amelanchier arborea



WOODY SHRUBS



Coralberry
Symphoricarpos orbiculatus



Carolina Buckthorn
Frangula caroliniana



Blackhaw
Viburnum prunifolium



GRASSES



Common Wood Sedge
Carex blanda



Wood Gray Sedge
Carex grisea



Deer Tongue Grass
Dichanthelium clandestinum



Virginia Wild Rye
Elymus virginicus



FORBS



Giant Yellow Hyssop
Agastache nepetoides



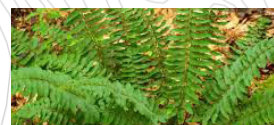
Downy Wood Mint
Blephilia ciliata



Orange Jewelweed
Impatiens capensis



Solomon's Seal
Polygonatum commutatum



Christmas Fern
Polystichum acrostichoides

MIXED SAVANNAH



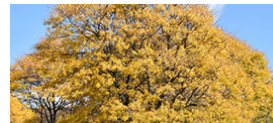
CANOPY



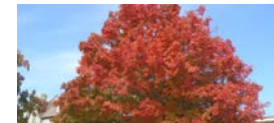
Chinkapin Oak
Quercus muehlenbergii



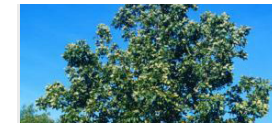
Bur Oak
Quercus pseudoacacia



Honeylocust
Gleditsia triacanthos



Sugar Maple
Acer saccharum



Bitternut Hickory
Carya cordiformis



UNDERSTORY



Flowering Dogwood
Cornus florida



Allegheny Serviceberry
Amelanchier laevis



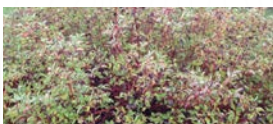
Eastern Redbud
Cercis canadensis



Pussy Willow
Salix discolor



WOODY SHRUBS



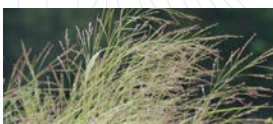
Redosier Dogwood
Cornus sericea



Smooth Sumac
Rhus glabra



GRASSES



Switchgrass
Panicum virgatum



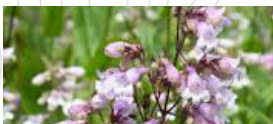
Bottle Brush Grass
Elymus hystrix



Virginia Wild Rye
Elymus virginicus



FORBS



Smooth Beardtongue
Penstemon digitalis



Blackeyed Susan
Rudbeckia hirta



Bergamont
Mondarda fistulosa



Swamp Milkweed
Asclepias incarnata



Butterfly Milkweed
Asclepias tuberosa

STREAM & WETLAND COMPLEX

CANOPY



UNDERSTORY



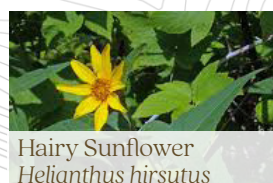
WOODY SHRUBS



GRASSES



FORBS



POLLINATOR GARDEN



CANOPY



Black Locust
Robinia pseudoacacia



Kentucky Coffee Tree
Gymnocladus dioicus



Black Cherry
Prunus serotina



Blackgum
Nyssa sylvatica



Shagbark Hickory
Carya ovata



UNDERSTORY



Flowering Dogwood
Cornus florida



Allegheny Serviceberry
Amelanchier laevis



Eastern Redbud
Cercis canadensis



Pussy Willow
Salix discolor



WOODY SHRUBS



Redosier Dogwood
Cornus sericea



Smooth Sumac
Rhus glabra



GRASSES



Switchgrass
Panicum virgatum



Bottle Brush Grass
Elymus hystrix



Virginia Wild Rye
Elymus virginicus



FORBS



Smooth Beardtongue
Penstemon digitalis



Blackeyed Susan
Rudbeckia hirta



Spiked Blazing Star
Liatris spicata



Purple Coneflower
Echinacea purpurea



Swamp Milkweed
Asclepias incarnata

FORMAL LAWN



CANOPY



White Oak
Quercus alba



Chinkapin Oak
Quercus muehlenbergii



Red Maple
Acer rubrum



American Holly
Ilex opaca



Pignut Hickory
Carya glabra



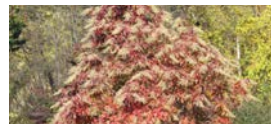
UNDERSTORY



Flowering Dogwood
Cornus florida



Blackgum
Nyssa sylvatica



Sourwood
Oxydendrum arboreum



Sassafras
Sassafras albidum



Allegheny Serviceberry
Amelanchier laevis



WOODY SHRUBS



Redosier Dogwood
Cornus sericea



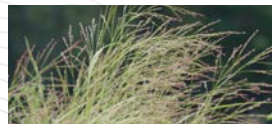
Smooth Sumac
Rhus glabra



GRASSES



Little Bluestem
Schizachyrium scoparium



Switchgrass
Panicum virgatum



Side Oats Grama
Bouteloua curtipendula



Tall Dropseed
Sporobolus compositus



FORBS



Blackeyed Susan
Rudbeckia hirta



Spiked Blazing Star
Liatris spicata



Greyheaded Coneflower
Ratibida pinnata



Rigid Goldenrod
Solidago rigida

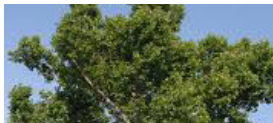


Smooth Aster
Aster laevis

RIPARIAN CORRIDOR



CANOPY



American Sycamore
Platanus occidentalis



Swamp White Oak
Quercus bicolor



Red Maple
Acer rubrum



River Birch
Betula nigra



Black Willow
Salix nigra



UNDERSTORY



Blackgum
Nyssa sylvatica



Ironwood
Carpinus caroliniana



Eastern Redbud
Cercis canadensis



Sweetbay Magnolia
Magnolia virginiana



WOODY SHRUBS



Silky Dogwood
Cornus amomum



Spice Bush
Lindera benzoin



Buttonbush
Cephalanthus occidentalis



Pussy Willow
Salix discolor



GRASSES



Switchgrass
Panicum virgatum



Deer Tongue Grass
Panicum clandestinum



Eastern Gamma Grass
Tripsacum dactyloides



River Bank Wild Rye
Elymus riparius



River Oats
Uniola latifolia



FORBS



Greyheaded Coneflower
Ratibida pinnata



Purple Coneflower
Echinacea purpurea



Swamp Milkweed
Asclepias incarnata



Joe pye-weed
Eupatorium purpureum



Cardinal Flower
Lobelia cardinalis

NATURAL AREAS MAINTENANCE

ECOLOGICAL UPLIFT STRATEGIES

1. Invasive species survey and assessment, and management plan by species type and location.
2. Restore and improve waterways by:
 - a. partnering with Presbyterian Seminary to improve water drainage onto property;
 - b. partnering with MSD and USACE to augment existing plans with site waterways and restoration; and
 - c. restoring waterways within the property.
4. Perform a soil health analysis where demolition has occurred and develop a management plan for areas where future construction/restoration will occur.
5. Develop a forest health analysis and management plan.
6. Plant more native species with an emphasis on providing a diverse palette with robust vertical structure of groundcover, woody understory, midstory, and canopy.
7. Trails and circulation designed to minimize fragmentation of natural areas with potential for regeneration and creation of interior habitat for more sensitive species.

GENERAL CONSIDERATIONS FOR OPTIMAL ECOLOGICAL FUNCTION AND BENEFIT ACROSS THE SITE

8. Limit and minimize impacts to streams, wetlands, and their buffers.
9. Prioritize use of a regionally appropriate native plant palette to support biodiversity and resilience in light of climate change; natural areas enhancement.
10. Provide habitat protection for rare, threatened, and/or endangered (RTE) species.
11. Limit use of herbicides and fertilizers.
 - a. Consider integrated pest management (IPM) and integrated vegetation management (IVM)
5. Use adaptive management principles to guide maintenance and management activities.
6. Utilize the guidelines put forth by the Olmsted Parks Conservancy's Team for Healthy Parks's Natural Areas Management Plan:
 - a. Annual vegetation management treatments should include at least six visits to naturalized areas and more intensive maintenance within landscaped manicured areas:
 - i. Mowing of paths/ frontage/ around buildings every two weeks during the growing season
 - ii. Maintenance of trees, shrubs, and landscape beds at least once per month during the growing season

- b. At least two spring visits to assess overly aggressive herbaceous species growth and potentially to treat for *Ficaria verna* or evergreen vines & remove vines climbing into the canopy:
 - i. Prioritize high quality areas with maintenance activities including steep limestone cliffs above Beargrass Creek
 - ii. Focus on areas adjacent to trails and neighborhood edges for monitoring as these are primary vectors/sources for undesirable species
- c. At least two summer visits to assess area health and treat for *Microstegium vimineum*, *Achyranthes japonica*, *Fallopia japonica*, *Sorghum halepense*, *Conium maculatum* as needed:
 - i. Woodland: treat primarily along trails and drainage areas, prioritize seed inhibition by treating twice prior to seed formation
 - ii. Savannah: treat early in the summer to inhibit seed production of herbaceous plants as primary goal
- d. At least one fall visit to assess invasive woody species growth and treat *Ailanthus altissima*:
 - i. Remove woody species from meadows as needed
 - ii. Late fall cut stump or basal bark treatment of bush honeysuckle, privet, etc. while leaves are still present but after desirable native species are dormant.
- e. At least one winter visit to include:
 - i. Cut stump treatment of mature invasive woody species
 - ii. Evergreen vine treatment in wooded areas
 - iii. Brushhogging/woody species removal in meadows

NATURAL AREAS GUIDANCE

(BY LANDSCAPE ZONE AND ECOSYSTEM TYPOLOGY)



UPLAND FOREST

Woodlands

RECOMMENDED STEWARDSHIP

1. Perform baseline ecological survey
2. Daylight and restore piped streams (see section 1)
3. Monitor for presence of sensitive/other RTE species or migratory species
4. Monitor for introduced insect pests and pathogens
5. Non-native invasive vegetation control through invasive species management followed by native plantings
6. Reforestation of lawn area
7. Retain snags for habitat away from human health and safety high risk zones
8. Wildlife management: Implementing sustainable wildlife management practices, such as regulated hunting or protected areas, can ensure that animal populations remain balanced within their ecological roles.
9. Soil Health analysis and management plan in areas nonforested in 2024
10. Protect KY State Champion/Heritage Trees:
<https://eec.ky.gov/Natural-Resources/Forestry/ky-champion-trees/Pages/default.aspx>;
<https://www2.ca.uky.edu/agcomm/pubs/ho/ho95/ho95.pdf>

Wetlands

RECOMMENDED STEWARDSHIP

1. Native species revegetation & supplemental planting with desirable species
2. Native vegetated filter strip is recommended along wetlands as well as streams
<https://transportation.ky.gov/EnvironmentalAnalysis/Environmental%20Resources/6-Stream%20Wetland%20Protection.pdf>
3. Perform baseline ecological survey
4. Monitor for presence of sensitive, rare, threatened or endangered species native or migratory species
5. Monitor for introduction of invasive species, pests and pathogens.

RECOMMENDED ROUTINE MAINTENANCE

1. Debris removal
2. Trash removal
3. Invasive species management and monitoring
4. Unmown vegetated native buffers around the edges of features.



THE KNOLL

Grassland / Savannah Woodland

RECOMMENDED STEWARDSHIP

1. Supplemental woody and herbaceous plantings with regionally appropriate native plant palette
2. Perform baseline ecological survey
3. Monitor for presence of sensitive/other RTE species or migratory species
4. Monitor for introduced invasive vegetation, insect pests and pathogens.
5. Non-native invasive vegetation control through invasive species management followed by native plantings
6. Wildlife habitat management: Adding nesting boxes in strategic locations can ensure that grassland bird populations remain balanced within their ecological roles while also preserving aesthetics.
7. Soil Health analysis and management plan

RECOMMENDED ROUTINE MAINTENANCE

1. Limited controlled burn or mowing once or twice a year (avoiding key ground-nesting bird seasonal needs)
2. Invasive species management and monitoring
3. Native species revegetation
4. Trash collection
5. Needs as identified in soil management plan

Meadow / Prairie

RECOMMENDED STEWARDSHIP

1. Native species revegetation & supplemental planting with desirable species
2. Monitor for presence of sensitive, rare, threatened or endangered species native or migratory species
3. Monitor for introduced invasive vegetation, insect pests and pathogens.
4. Wildlife management: Implementing sustainable wildlife management practices, such as installing perches or nesting boxes or creating protected areas, can ensure that meadow wildlife populations remain balanced within their ecological roles.
5. Soil Health Analysis and Management Plan

RECOMMENDED ROUTINE MAINTENANCE

1. Mowing: Implementing regular, well timed mowing practices can mimic natural fire regimes, which play a crucial role in maintaining the health and diversity of prairies/meadows once or twice a year (avoiding key ground-nesting bird seasonal needs)
2. Monitor and conduct invasive species management as needed.
3. Monitor and supplement native species revegetation as needed.
4. Monitor and conduct soil management plan improvements



RIPARIAN FLOODPLAIN

Streams

RECOMMENDED STEWARDSHIP

1. Stream restoration, slope management, bioengineering, floodplain reconnection etc.
 - a. Collaborate with ACOE on the Three Forks of Beargrass Creek Ecosystem Restoration Feasibility Study recommendation implementation for Beargrass Creek in this area
 - b. Daylighting and restoration of piped streams (UT2, UT2a, and UT3) that are not part of the CSO
 - c. Work with surrounding landowners (Louisville Presbyterian Seminary, etc), Beargrass Creek Alliance, and MSD to implement upslope bmps to reduce flashy flows and water quality
2. Riparian corridor restoration (see Section 4). Ideal corridor buffer for wildlife habitat is 350' from each stream bank
 - a. Louisville Land Development Code guidance: Buffer zone widths vary according to stream size and form district. (louisville-metro-land-development-code-october-2023 (louisvilleky.gov),
 - b. State guidance is as follows: In general, the near-bank area (20-40 ft for streams, 50-100 ft for rivers) should contain an undisturbed mix of native trees, shrubs, and herbaceous vegetation. The upgradient secondary buffer zone can be managed as mowed grass or hay land or planted with no-mow native grasses. <https://transportation.ky.gov/EnvironmentalAnalysis/Environmental%20Resources/6-Stream%20Wetland%20Protection.pdf>
3. Perform baseline ecological condition survey
4. Integrated Stormwater Management Practices (GI) in upland areas to manage and treat water before it reaches the riparian corridor (see Section 7).

RECOMMENDED ROUTINE MAINTENANCE

1. Erosion monitoring:
 - a. Work with Louisville Metropolitan Sewer District (MSD), Beargrass Creek Alliance (KWA) and ACOE to monitor bank scour on property using BEHI/NBS method or other similar (BEHI-Overview.pdf (wv.gov))
 - b. After each large storm event or flooding (99%-AEP or 1-year), conduct visual assessments of all ephemeral flow paths to determine if headcuts (change in slope – 0.5 feet vertical over 5 feet horizontal) or rilling have developed. Develop a plan for stabilization of flow path in conjunction with a specialist in stream restoration
2. Trash and debris cleanup - After each large storm event or flooding (99%-AEP or 1-year) conduct a trash cleanup of the property either with volunteers or staff



RIPARIAN FLOODPLAIN

Riparian Forest

RECOMMENDED STEWARDSHIP

1. Perform baseline ecological survey
2. Monitor for presence of sensitive, rare, threatened or endangered species native or migratory species
3. Monitor for introduced insect pests and pathogens
4. Monitor public access to sensitive areas, allow areas to recover if heavy usage
5. Non-native invasive vegetation control through invasive species management followed by native plantings
6. Retain snags for habitat away from human health and safety high risk zones
7. Wildlife management: Implementing sustainable wildlife management practices, such as regulated hunting or protected areas, can ensure that animal populations remain balanced within their ecological roles.
8. Trails designed to access the area but limit pedestrian use only and provide elevated surface to protect floodplain soils.
9. Protect KY State Champion/Heritage Trees and other large specimens:
<https://eec.ky.gov/Natural-Resources/Forestry/ky-champion-trees/Pages/default.aspx>; <https://www2.ca.uky.edu/agcomm/pubs/ho/ho95/ho95.pdf>

RECOMMENDED ROUTINE MAINTENANCE

1. Invasive species management and monitoring
2. Native species revegetation & supplemental planting with desirable species
3. Deer management - control population
4. Monitor soil compaction & erosion on trails
5. Flood response



LIMESTONE CLIFFS

Woodlands

RECOMMENDED STEWARDSHIP

1. Supplemental woody and herbaceous plantings with regionally appropriate native plant palette
2. Perform baseline ecological survey
3. Monitor for presence of sensitive/other RTE species or migratory species
4. Monitor for introduced invasive vegetation, insect pests and pathogens.
5. Non-native invasive vegetation control through Integrated Vegetation Management (IVM) followed by native plantings

RECOMMENDED ROUTINE MAINTENANCE

1. Invasive species management and monitoring
2. Native species revegetation & supplemental planting with desirable species
3. Deer management - control population
4. Monitor soil compaction & erosion on trails
5. Monitor public access to sensitive areas, allow areas to recover if heavy usage

REGENERATIVE STORMWATER CONVEYANCE, BIOSWALES, AND RAIN GARDENS

RECOMMENDED STEWARDSHIP

1. Native species revegetation & supplemental planting with desirable species
2. Vegetated filter strip is recommended along wetlands as well as streams
<https://transportation.ky.gov/EnvironmentalAnalysis/Environmental%20Resources/6-Stream%20Wetland%20Protection.pdf>
3. Perform baseline ecological survey
4. Monitor for presence of sensitive, rare, threatened or endangered species native or migratory species
5. Monitor for introduction of invasive species, pests and pathogens.

RECOMMENDED ROUTINE MAINTENANCE

1. Debris removal
2. Trash removal
3. Invasive species management and monitoring
4. Manage waterfowl populations to lessen water pollution.
5. Inspection after storm events
6. Vegetated native buffers around the edges of features.
7. Pruning and weeding as needed
8. Inspect inflow points for clogging semi-annually and remove sediment.
9. Repair eroded areas and reseed or sod as necessary semiannually.
10. Mulch void areas semi-annually.
11. Vegetation-semi-annually:
12. Evaluate tree health
13. Remove dead and dying vegetation
14. Test filter media for pH annually and amend as needed to achieve a circumneutral condition (i.e., pH 5.2-8.0)

STRESSORS AND THREATS

(BY LANDSCAPE ZONE AND ECOSYSTEM TYPOLOGY)



UPLAND FOREST

Woodlands

STRESSORS & THREATS

1. Development/Human behavior impacts, such as erosion/gully formation from stormwater and fragmentation of the forest, increased edge condition
2. Invasive vegetation: need to survey site-specific invasive vegetation and develop a treatment plan specific to these species
3. Spread of endemic and introduced insect pests and pathogens
4. Deer browse
5. Lack of desirable tree regeneration
6. Debris and trash – airborne or dumped illegally

Wetlands

STRESSORS & THREATS

1. Unmanaged or untreated stormwater runoff
2. Debris and trash
3. Other hydrologic modifications
4. Karst topography
5. Invasive vegetation



THE KNOLL

Grassland / Savannah Woodland

STRESSORS & THREATS

1. Anthropogenic impacts, such as degraded soil condition - compaction, demolition debris
2. Invasive vegetation: need to survey site-specific invasive vegetation and develop a treatment plan specific to these species

Meadow / Prairie

STRESSORS & THREATS

1. Development /Human behavior impacts. such as light trespass
2. Anthropogenic impacts, such as degraded soil condition - compaction, demolition debris
3. Invasive vegetation: need to survey site-specific invasive vegetation and develop a treatment plan specific to these species



RIPARIAN FLOODPLAIN

Streams

STRESSORS & THREATS

1. Development/human behavior impacts
2. Portions of system are piped and may connect to a combined sewer overflow (CSO)
3. Utility/infrastructure (CSO) exists within stream channel
4. Changes in Hydrologic cycle (large scale flooding and more flashy, frequent storm events due to urbanization or climate change)
5. Highly irregular flow regimes
6. Channel Adjustment (bank erosion, bed scour, degradation, and aggradation)
7. Loss of floodplain connection
8. Loss of instream habitat complexity
9. Untreated stormwater runoff from impervious cover
10. Associated dense concentrated nutrients based on land use
11. Untreated runoff from large expanses of turf
12. Associated chemical use in lawn/landscape maintenance.
13. Potential contamination from CSO discharge
14. Debris and trash – airborne or dumped illegally

Riparian Forest

STRESSORS & THREATS

1. Development/Human behavior impacts
 - a. Fragmentation of the forest, increased edge condition
 - b. Erosion/gully formation from stormwater
 - c. Trail compaction and subsequent erosion during high water
2. Invasive vegetation: need to survey site-specific invasive vegetation and develop a treatment plan specific to these species
3. Spread of endemic and introduced insect pests and pathogens
4. Deer browse
5. Lack of desirable tree regeneration
6. Public access to sensitive areas



LIMESTONE CLIFFS

Woodlands

STRESSORS & THREATS

1. Development/Human behavior impacts
 - a. Disturbance to sensitive and unique native vegetation from trail usage
2. Invasive vegetation: need to survey site-specific invasive vegetation and develop a treatment plan specific to these species
3. Deer browse
4. Lack of native tree regeneration
5. Excessive runoff from large expanses of turf upslope
6. Human off-trail traffic/rock climbing

REGENERATIVE STORMWATER CONVEYANCE, BIOSWALES, AND RAIN GARDENS

STRESSORS & THREATS

1. Unmanaged or untreated stormwater runoff
2. Debris and trash
3. Other hydrologic modifications
4. Other contamination – groundwater seepage from industry, migration, etc.
5. Waterfowl overuse
6. Invasive vegetation

MATERIALS

PAVEMENTS:



CONCRETE

for paved walkways



ASPHALT

for drives and parking



PAVERS

for accentuating destinations and junctures



SOFT SURFACE TRAIL

for packed earth trails through sensitive areas



LAWN

for outdoor gathering spaces where turf is used



BOARDWALK

for wood decks and walkways near water and wetlands

WALLS & ARCHITECTURE:



SITE WALLS

using rock face block



STEPS

using rough cut limestone



FEATURE WALLS

using cut stone laid on ashlar pattern



BUILDING FACES

using stone or stone-like materials



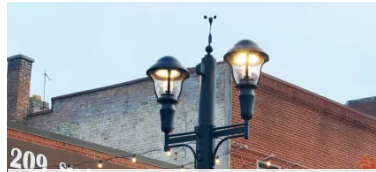
TRELLIS

using steel frame and wood exterior

FURNITURE:



BENCHES



LIGHTING



BIKE RACKS



SIGNAGE



DRINKING FOUNTAIN



WASTE RECEPTACLES

HARDSCAPE & UTILITIES MAINTENANCE

CONCRETE SIDEWALKS

1. Inspect quarterly for cracks, uneven surfaces, erosion, water damage, and damaging vegetation. Inspect expansion joints for signs of deterioration quarterly. Refill joints with a suitable joint sealant if necessary.
2. Clean with a mild detergent and soft bristle brush to remove stains annually or as needed. Periodically remove trash, debris, leaves, and organic matter from the sidewalk surface.
3. Seal the surface every 2-3 years.
4. Repair cracks (less than 0.5") with concrete caulk or polyurea filler as soon as they appear.
5. Avoid chemical de-icers. Use a plastic shovel or a broom to remove snow and ice. Opt for sand or a concrete-safe de-icer if necessary.
6. If the walk settles to an uneven surface that poses trip hazards and is non-ADA-compliant, temporary maintenance such as wedging, grinding or patches may be needed until a slab-jacking or targeted replacement is feasible.
7. If holes begin to appear and are less than 1": Patch with quick-setting concrete until replacement is feasible. Do not use gravel or other fillers.

PAVERS

1. Inspect quarterly for cracks, uneven surfaces, erosion, water damage, and damaging vegetation. Inspect joints annually and top off polymeric sand as needed. Inspect edging/restraints to prevent paver shift.
2. Clean pavers in low-traffic areas with little or no tree cover 2-5 times per year with a course-bristle broom (nylon preferred) and paver cleaner (Do not use a wire

brush). Clean pavers in high-traffic areas with tree cover 6-10 times per year with a course-bristle broom (nylon preferred) and paver cleaner (Do not use a wire brush). Vacuuming can be done in lieu of sweeping. Periodically remove trash, debris, leaves, and organic matter from paver surface. To treat for stains, wipe the surface as soon as possible and apply liquid detergent. Allow it to soak for several minutes. Then wash the pavers with hot water.

3. Seal every 3-5 years or according to manufacturer guidelines.
4. Periodically apply weed prevention between joints.
5. Avoid chemical de-icers.
6. Do not power wash as this can displace joint filler and aggregate.
7. As needed:
 - a. Replace any cracked, chipped, or damaged pavers.
 - b. Address uneven areas or depressions by lifting and re-setting pavers, be sure to ensure proper compaction.

SITE WALLS

1. Mowing: Implementing regular, well timed mowing practices can mimic natural fire regimes, which play a crucial role in maintaining the health and diversity of prairies/meadows once or twice a year (avoiding key ground-nesting bird seasonal needs)
2. Monitor and conduct IVM as needed.
3. Monitor and supplement native species revegetation as needed.
4. Monitor and conduct soil management plan improvements

DRIVES AND PARKING AREAS

1. Inspect quarterly for cracks, potholes, ponding areas, and stains.
2. Clean by sweeping or vacuuming monthly. Periodically remove trash, debris, leaves, and organic matter from drive and parking surface.
3. Repair cracks with asphalt crack sealer annually. Fill potholes with cold patch or hot asphalt mix. Repaint striping as needed.

DRAINAGE STRUCTURES AND INFRASTRUCTURE

1. Inspect all drainage infrastructure semi-annually for visible damage, blockages, slow drainage, ponding, and erosion. Ensure roots from large plant material (trees and woody shrubs) do not interfere with storm infrastructure, remove plant material as needed.
2. Clean basins/structures semi-annually to clear sediment and debris.
 - a. If pipes begin to clog and drain slowly, vacuum the pipes as needed.
 - b. Clear debris around outlet structures as needed.

UTILITIES

1. Inspection Schedule
 - a. Weekly: Check critical systems and perform basic inspections. inspect filters, check fluid levels, and verify system operation.
 - b. Monthly: Conduct detailed inspections, check for leaks or wear, and inspect filters.

- c. Quarterly: Perform thorough maintenance, such as testing equipment, flushing systems, and reviewing system performance.
 - d. Annually: Complete comprehensive inspections, overhaul systems, and perform major maintenance tasks.
2. Clean, Test, Replace, Maintain
 - a. Water Supply Systems:
 - i. Inspect pipes and joints for leaks.
 - ii. Test water pressure and flow rates.
 - iii. Clean filters and check meters for accuracy.
 - a. Sewer and Wastewater Systems:
 - i. Inspect and clean drainage lines and pumps.
 - ii. Check for blockages and ensure proper operation of treatment facilities.
 - a. Electricity Supply:
 - i. Inspect and tighten connections.
 - ii. Test circuit breakers and other protective devices.
 - iii. Check for signs of wear or overheating in electrical components.
 - a. Natural Gas Supply:
 - i. Inspect pipes and connections for leaks.
 - ii. Test gas pressure and flow rates.
 - iii. Ensure safety devices are functioning properly.

BUILDING MAINTENANCE

BUILDING EXTERIOR MAINTENANCE

The design of the office/library building has been approached with the intention that materials would be long-lasting, sustainably sourced, and able to be maintained through reasonable, attentive stewardship by the owner.

The building's primary structure is largely heavy timber and lighter wood members, with a significant amount of exposed wood decking and trim. All wood would need to have re-applications of stain / sealant in order to combat rot, bleaching, and general degradation. It should be assumed that the wood finish should be inspected every year and that the re-applications would be required on a 5 to 10 year cycle, depending how the wood stands up to its specific exposure conditions.

The proposed slate shingle roofing should last decades but will also require inspection on an annual / bi-annual basis to verify that flashings and connections haven't been damaged or degraded. Broken slate tiles will need to be replaced as the damage happens, whether because of wind, tree-falls, or other incidental causes.

Exterior wall finishes include stone, flat zinc panels, and slate – all materials which should also last decades and weather well with a limited amount of annual / bi-annual attention. Like the roofing, they will all require inspection and repair of incidental damage, but they should last for decades. The most vulnerable materials, those which would require more frequent maintenance, would be sealants which tend to dry and crack over time. These would need to be inspected for damage and replaced on about a 5 to 10 year cycle, like the staining / sealing of the wood.

There are large glazed areas in the design. These would be specified to be thermally-broken, insulated assemblies with warranties of 10+ years. Occasionally seals in the insulated glass sashes will fail and a sash will need to be replaced. Sealants will have to be maintained in the same way and in the same intervals as those of exterior wall finishes but, otherwise, there should not be significant maintenance associated with the glazed areas. Windows should be made of bird-proof glass and the National Audobon Society's best practices for bird-friendly design should be utilized where feasible throughout the design.

The large terrace onto which the offices and library open is above more office spaces below. This means that it will consist of pavers supported over membrane roofing by a pedestal system. The paver / pedestal assembly should drain well and, because it provides cover over the whole membrane roof area, it should protect the roofing from damage. Other than cleaning-out of roof drainage systems to avoid trapped water, there shouldn't be regular maintenance required for the membrane roof system. It's common to install a moisture monitoring system in a roof like this that is not easily inspected without dis-assembly – a good idea so that a small problem doesn't become a larger one because of concealment. The membrane roof system would typically have a minimum 20 year warranty.

A limited amount of painted steel is shown for things like guardrails and handrails. These should be painted on the same 5 to 10 year cycle as the wood staining / sealant re-application.

BUILDING INTERIOR MAINTENANCE

Interior maintenance will involve familiar cleaning, patching/painting, and scheduled inspection of mechanical equipment. Interior walls will be painted drywall and stained wood, punctuated by a generous amount of glazed wall. Wood floors are proposed throughout both levels. Regular sweeping and mopping with recommended cleaners will keep this in good condition. No unusual materials have been proposed for use and cleaning protocols will be provided for each interior finish with the Operations and Maintenance Manuals a contractor provides at the end of the project.

