

# Beech Bluff County Park Master Plan

OCTOBER 2019



PREPARED BY:



Surface







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# Beech Bluff County Park Master Plan Executive Summary

## Mission

*Beech Bluff County Park aims to provide a universally inclusive recreational amenity to the residents of Wake County and all visitors with the following core principles:*

### PROTECT, RESTORE AND ENHANCE

*the ecological diversity of the site from forest to floodplain and the beneficial functions of the underlying natural living systems.*

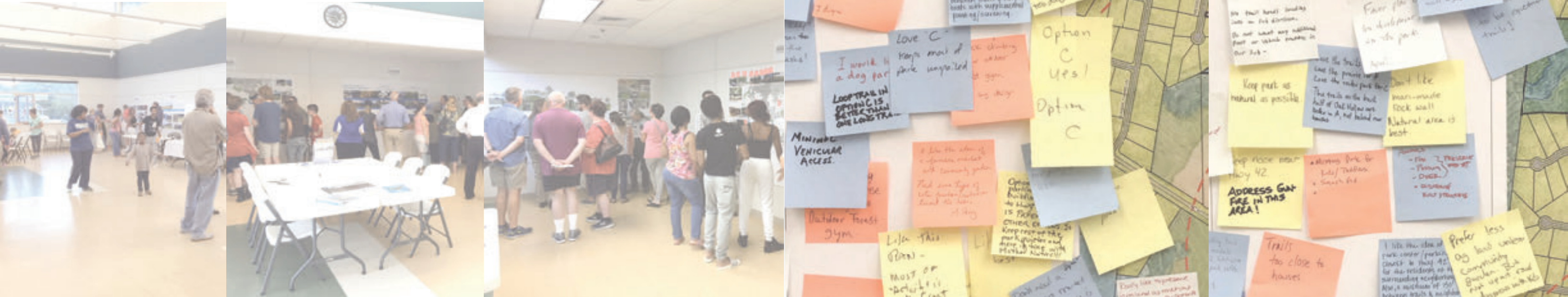
### HISTORICAL AND CULTURAL EXPLORATION

*that will strengthen the connection of people to the local community.*

### PROMOTE HUMAN HEALTH AND WELLNESS

*through outdoor recreation and building connections of people to the natural environment.*







ANALYSIS

An integrative team that sought input from a wide range of disciplines was assembled to analyze the Beech Bluff County Park project site at both a regional and site scale. The goals of the site analysis were to ensure that the resulting recommendations for the Park would take advantage of all opportunities of the site and maximize the benefits to both the community and the environment. As part of the site analysis, the Project Core Team explored the following characteristics influencing the site:

<u>Regional Scale</u>		<u>Site Scale</u>	
•	Surrounding Amenities	•	Utilities
•	Transportation	•	History and Culture
•	Future Growth and Land Use	•	Hydrology
•	Watershed	•	Vegetation
•	Landscape Ecology	•	Topography
		•	Wildlife Habitat
		•	Natural Resources
		•	Physical Character and Constraints

PROGRAMMING

Based on results of the site analysis, input from Community Meeting #1, Citizens Resource Team Meeting #1 and goals from the Mission Statement, the Project Core Team began to develop and test a list of desired programmatic elements that would define the identity of the Park. Each element in the program list would center around an overall theme of providing environmental education, historical and cultural exploration and resource based recreation. In following with the goals of the Wake County Parks System, the program within Beech Bluff County Park would have to reveal a “cultural identity and a natural legacy.” Of equal importance to the proposed improvements within the Park were areas of the Park to remain undeveloped. These natural areas would be designated to help strengthen the ecological resilience and wildlife diversity of the site. The major programmatic elements have been identified in each design alternatives and Preferred Design Alternate.

DESIGN ALTERNATIVES

Using the development limits recommended in a Land Use Suitability Map and the amenities contained within the Program List both created by the Project Core Team, three design alternatives were developed. Each design was analyzed from a wide range of perspectives, including environmental protection, productivity, accessibility, safety and character to generate a list of advantages and disadvantages for each.

The central focus for each design alternative was the location of the Park Center and the extents of vehicular access in contrast to pedestrian only access. Blue Jay Point County Park was studied as an example typical of many Wake County Parks where the Park Center is located between one quarter and one half mile into the Park. The drive into the Park becomes a journey and most primary amenities and parking areas are centered deep within the Park, sheltered from surrounding adjacent land uses.

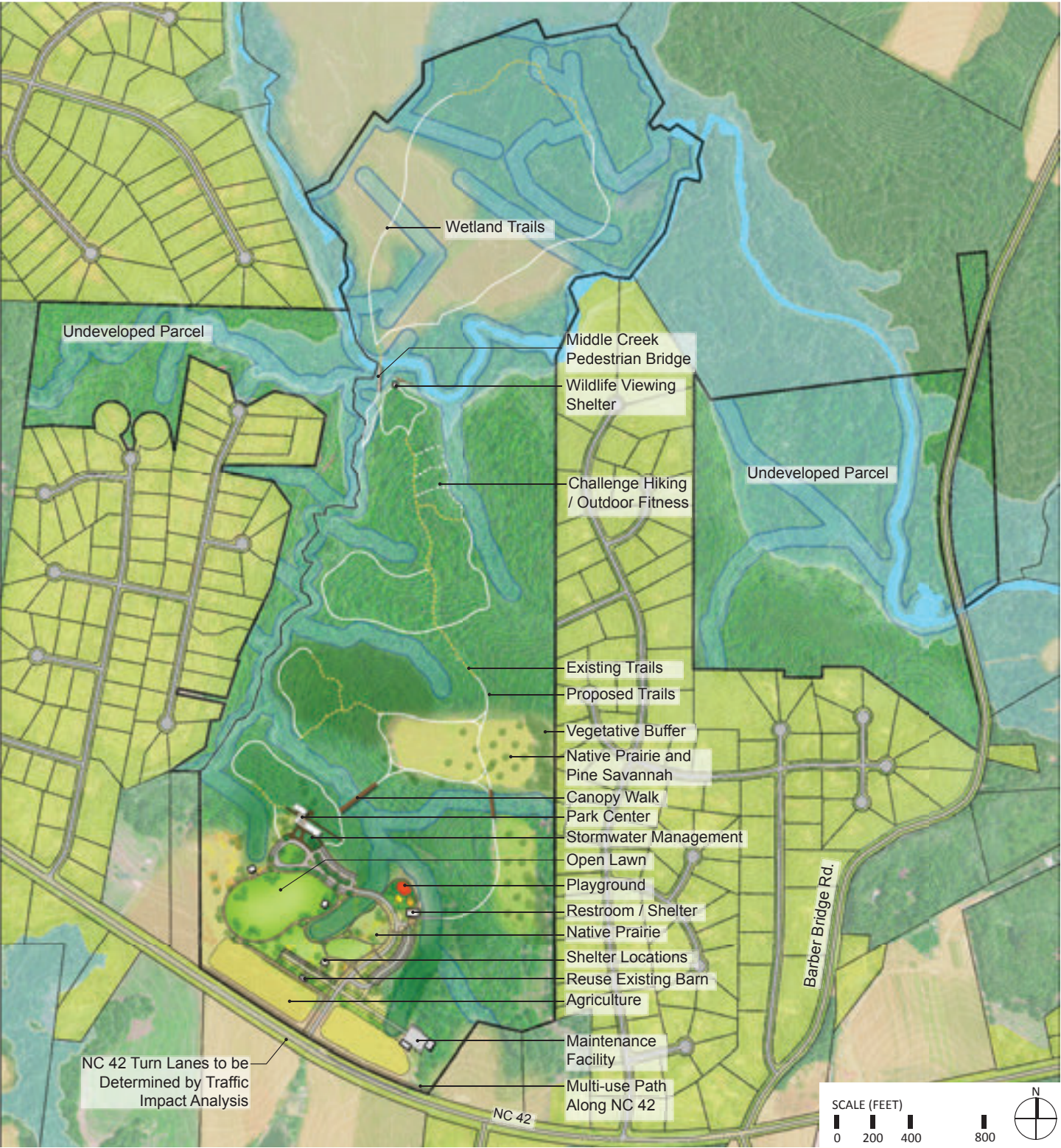
The design alternatives challenged this concept for the Beech Bluff County Park site with the thought that limiting vehicular access and utilities would best preserve the ecological diversity, minimize impacts to water quality, and reduce overall construction costs. Whether or not the Park Center would be visible or hidden from NC 42 was also a question explored with each design alternative.

IMPLEMENTATION AND COST

A rough order of magnitude cost estimate was completed based on the scope shown in the Preferred Design Alternate and using construction cost data from projects of similar size, scale and location. Due to the challenges with providing access to the portion of the Park north of Middle Creek as well as environmental constraints including existing floodways, wetlands and stream buffers, the Project Core Team recommended including the proposed bridge across Middle Creek and trails in this area as part of future development. The estimated overall construction cost for the initial development of Beech Bluff County Park included in the Master Plan is between \$17,000,000 and \$20,000,000.

PREFERRED DESIGN ALTERNATE

The three design alternatives were narrowed down to one Preferred Design Alternate that was created based on the feedback compiled from the Community Meeting and discussion amongst the Project Core Team. The Project Core Team chose a site layout that concentrated the Park Center and high activity areas over the existing farm fields adjacent to NC 42 in order to protect as much of the existing forested areas as possible. At the same time, the Park Center was placed along the edge of the forest to provide separation from NC 42 and allow for expansive views into the wooded areas. The walking distance from the Park Center to the Wildlife Viewing Platform is around 2/3 of a mile, a distance the Project Core Team felt would provide significantly quieter trails within the forests conducive to wildlife viewing, while still allowing for methods to accommodate universal access for all Park visitors.







# Foreword

Within the past decade, Wake County has been challenged with meeting the demand for park and recreational facilities from the growing population at a rate of nearly 69 people per day. For fiscal year 2018 alone, these facilities produced a combined visitation of nearly 1.3 million patrons, prompting Wake County to acquire additional land to expand the Park System. In November 2017, Wake County initiated a process for producing a Master Plan for Beech Bluff County Park; anticipated to be the 9th County Park and the 11th park facility in the Wake County Park System.

Included as part of the Master Plan process was a selection of a permanent name for the Park. While the Park was previously referred to as “Southeast County Park”, upon completion of the Master Plan the Wake County Board of Commissioners formally adopted the “Beech Bluff County Park” name. All references to “Southeast County Park” shown on earlier published documents included with the final Master Plan Report shall be one in the same as “Beech Bluff County Park”.

The land acquired for Beech Bluff County Park is located in the southeast corner of Wake County adjacent to the towns of Garner and Fuquay-Varina. Several parcels combine to form the main park area of 240 acres while two parcels of 62 acres to the east are currently isolated. A portion of the land adjacent to Highway 42 is currently agricultural land, however, the majority of the park contains undeveloped forests, wetlands, stream channels, floodplains and rock outcrops, all of which support a diverse ecosystem and help protect critical natural resources.

Surface 678, P.A. was selected as the landscape architectural firm and lead design consultant to prepare a comprehensive Master Plan for the future development of Beech Bluff County Park. Throughout a 14 month process, a strong emphasis was placed on gathering input from a broad range of perspectives including those identified in the “Project Core Team”, potential research partners, stakeholders, non-profit organizations, local businesses, municipalities and surrounding residents. The end vision for the Beech Bluff County Park Master Plan was to offer a unique experience that supports the recreational needs of the growing adjacent communities while strengthening the natural, cultural and historical resources of the land.



# Wake County Parks, Recreation & Open Space

Wake County Parks, Recreation & Open Space (PROS) currently operates 10 park facilities, including 8 existing County Parks and 2 Nature Preserves, with Lake Myra and Beech Bluff County Park proposed for future expansion. The guiding mission for PROS is “To provide outdoor recreation and educational opportunities while promoting environmental and cultural stewardship through a managed system of parks and open spaces.” Each of the 10 PROS facilities offer recreational opportunities in combination with ecological and historical preservation to represent a unique cultural identity and a natural legacy. PROS has identified the following Core Service Areas that guide future expansion, including Beech Bluff County Park:

- 1. Open Space
- 2. Recreation and Leisure
- 3. Environmental and Cultural Education

## Wake County Parks Facilities



Beech Bluff County Park (future)



Lake Myra County Park (future)



Lake Crabtree County Park



American Tobacco Trail



Historic Yates Mill County Park



Blue Jay Point County Park

# Core Service Areas

## OPEN SPACE

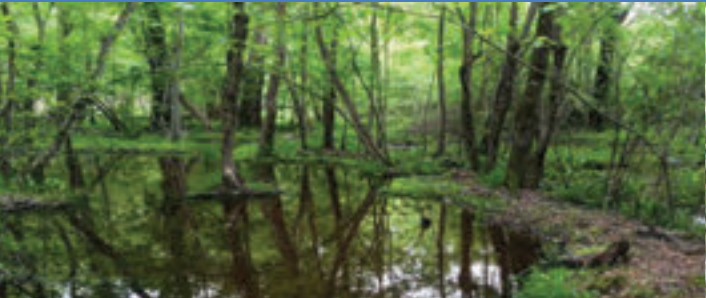
Lands that preserve natural resources and wildlife and help provide clean air and drinking water. Open Spaces help conserve Wake County’s natural resources and provide a place for citizens to enjoy passive recreation such as hiking.

## RECREATION AND LEISURE

Facilities and amenities that allow citizens to enjoy more active recreation such as trails, volleyball courts, boat rentals, picnic shelter, fishing, etc.

## ENVIRONMENTAL AND CULTURAL EDUCATION

Site-based cultural and environmental education programs that introduce citizens to the history and natural environments in Wake County.



Turnipseed Nature Preserve



Robertson Millpond Preserve



Crowder County Park



Harris Lake County Park



Green Hills County Park



Historic Oak View County Park



Desire for a Park

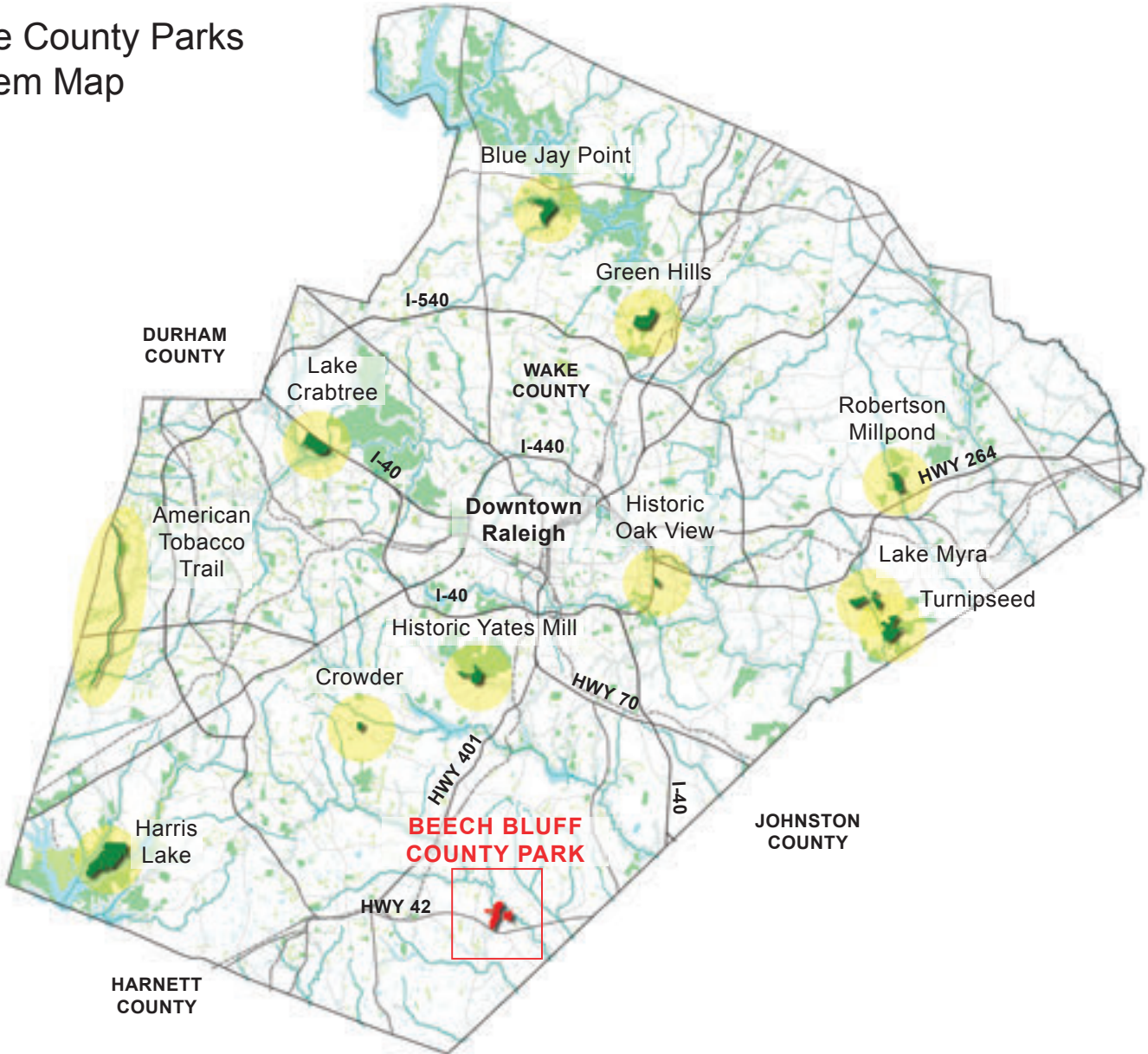
The 2008 Wake County Comprehensive Parks and Recreation Master Plan identified an unmet and predicted need for County Park facilities and services in southeastern Wake County. This need was based on the absence of a County Park in the southeast region of Wake County in combination with the growing population outside of Garner and Fuquay-Varina. Commercial and residential growth in this region may be further driven by the construction of the proposed Highway 540 expansion scheduled to begin as early as 2020.

The land acquired for Beech Bluff County Park presents unique opportunities to preserve the habitat diversity within the Park and along Middle Creek while providing public access for all patrons. The 2016 Beech Bluff County Park Natural Resource Inventory concluded the Park property is

an ecologically significant collection of good to high quality terrestrial natural communities, most notably the Mesic Mixed Hardwood Forest, the aquatic habitat of Middle Creek it contains, and the rare and regionally uncommon plant species. As development surrounding the Beech Bluff County Park property land intensifies, the Park’s role in helping to preserve the aquatic habitat along Middle Creek may become of utmost importance.

Lastly, the location of Beech Bluff County Park between multiple expanding municipalities, including the Towns of Garner, Fuquay-Varina and Johnston County may allow for the formation of new partnerships with these municipalities to serve the needs of surrounding residents, schools and organizations.

Wake County Parks System Map



Mission Statement

Early in the Master Plan Process, a Mission Statement to serve as the guiding principles and goals for Southeast Park was discussed between members of the Project Core Team. The Mission Statement will continue to evolve during and after the Master Plan Process as public input and additional research and analysis continue to be performed on the Park. The following Mission Statement represents the current guiding principles upon completion of the Master Plan:

**BEECH BLUFF COUNTY PARK**

*aims to provide a universally inclusive recreational amenity to the residents of Wake County and all visitors with the following core principles:*

**PROTECT, RESTORE AND ENHANCE**

*the ecological diversity of the site from forest to floodplain and the beneficial functions of the underlying natural living systems.*

**HISTORICAL AND CULTURAL EXPLORATION**

*that will strengthen the connection of people to the local community.*

**PROMOTE HUMAN HEALTH AND WELLNESS**

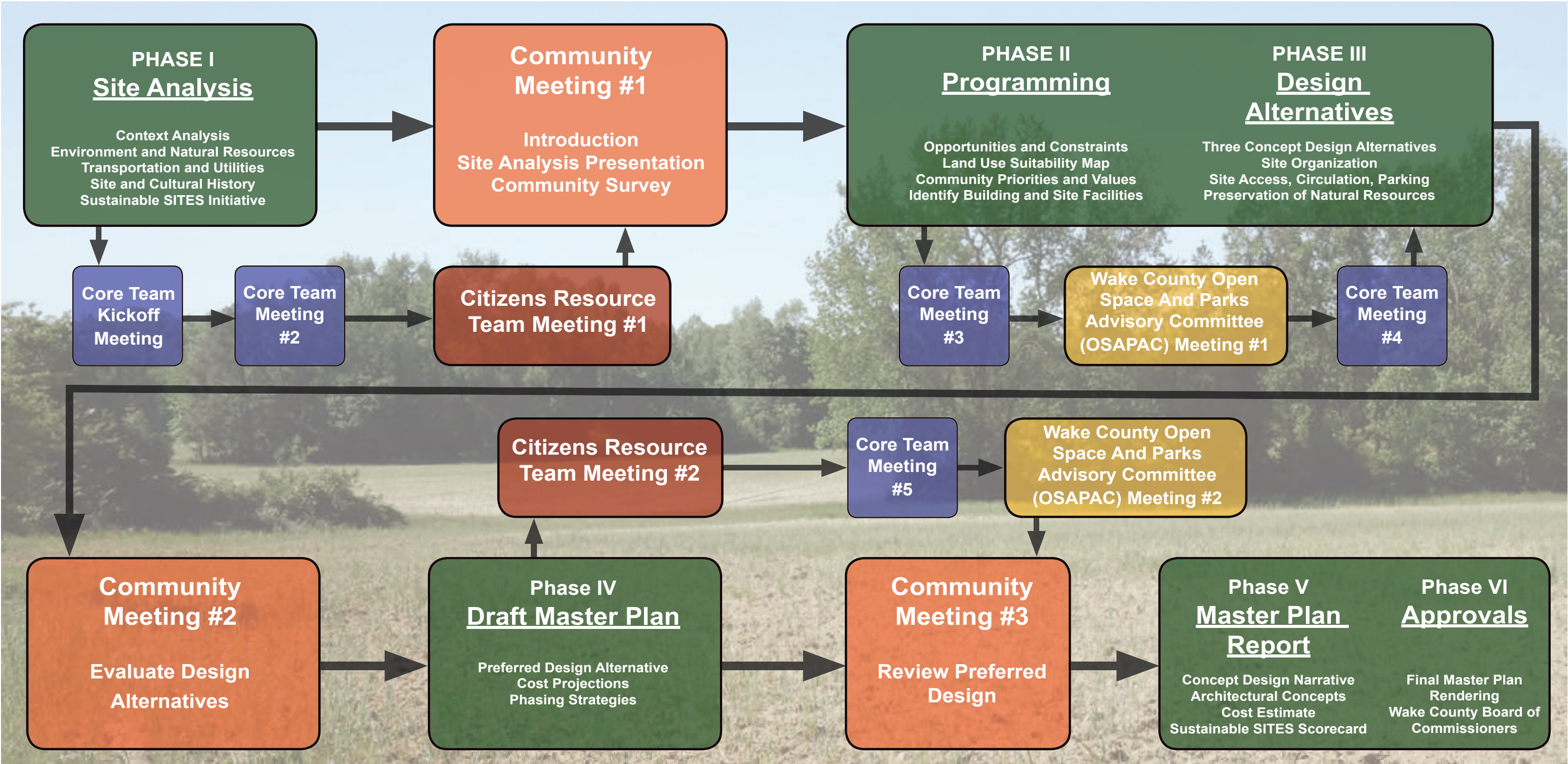
*through outdoor recreation and building connections of people to the natural environment.*



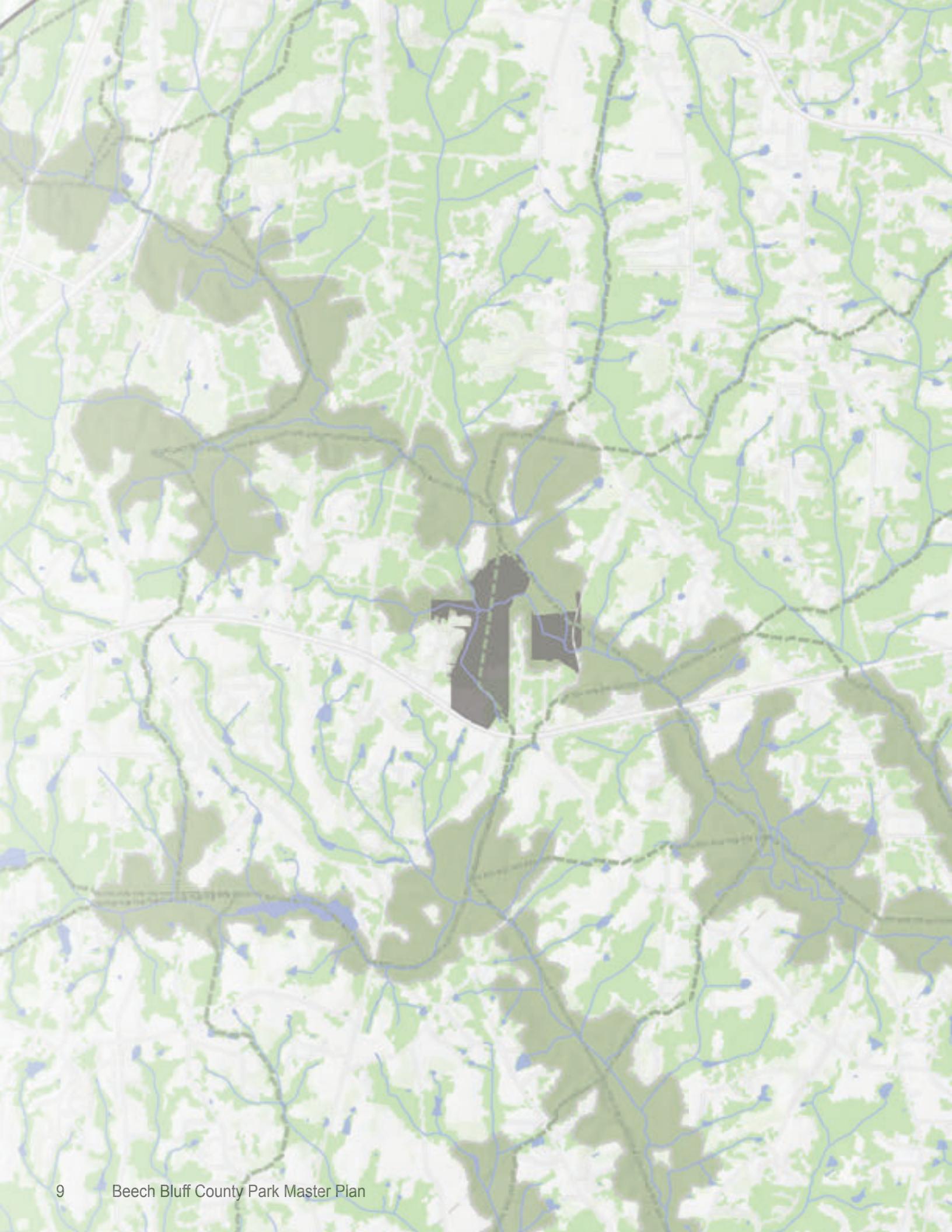
Master Plan Process

Prior to the start of the Beech Bluff County Park Master Plan phase, the Project Core Team developed an integrative process that would explore the site opportunities and constraints in detail, identify stakeholders and end users, engage input from the public and draw excitement from the local communities. This integrative process was centered around three separate community meetings that allowed for

public comments and feedback to be incorporated into all aspects of the Master Plan analysis and recommendations. In addition, two Citizens Resource Team meetings which consisted of a smaller group representing the surrounding residential subdivisions as well as representatives from the Towns of Garner and Fuquay-Varina were held to generate feedback specific to the adjacent neighborhoods.







# Analysis

An integrative team that sought input from a wide range of disciplines was assembled to analyze the Beech Bluff County Park project site at both regional and site scales. The goals of the site analysis were to ensure that the resulting recommendations for the Park would take advantage of all opportunities of the site and maximize the benefits to both the community and the environment. As part of the site analysis, the Project Core Team explored the following characteristics influencing the site:

**Regional Scale**

- Surrounding Amenities
- Transportation
- Future Growth and Land Use
- Watershed
- Landscape Ecology

**Site Scale**

- Utilities
- History and Culture
- Hydrology
- Vegetation
- Topography
- Wildlife Habitat
- Natural Resources
- Physical Character and Constraints



Context Analysis

At a regional scale, surrounding public amenities including parks, schools and libraries were mapped with the following objectives:

- 1. Determining how Beech Bluff County Park can complement instead of compete with surrounding public amenities and possibly fill unmet needs of the community within a zero to ten mile radius.
- 2. Identifying surrounding public spaces frequently visited by community members that could inspire the design and maximize the use of Beech Bluff County Park.
- 3. Considering how Beech Bluff County Park can be incorporated into the future park and recreation master plans of surrounding communities including the Towns of Garner, Fuquay-Varina, Holly Springs and Johnston County.

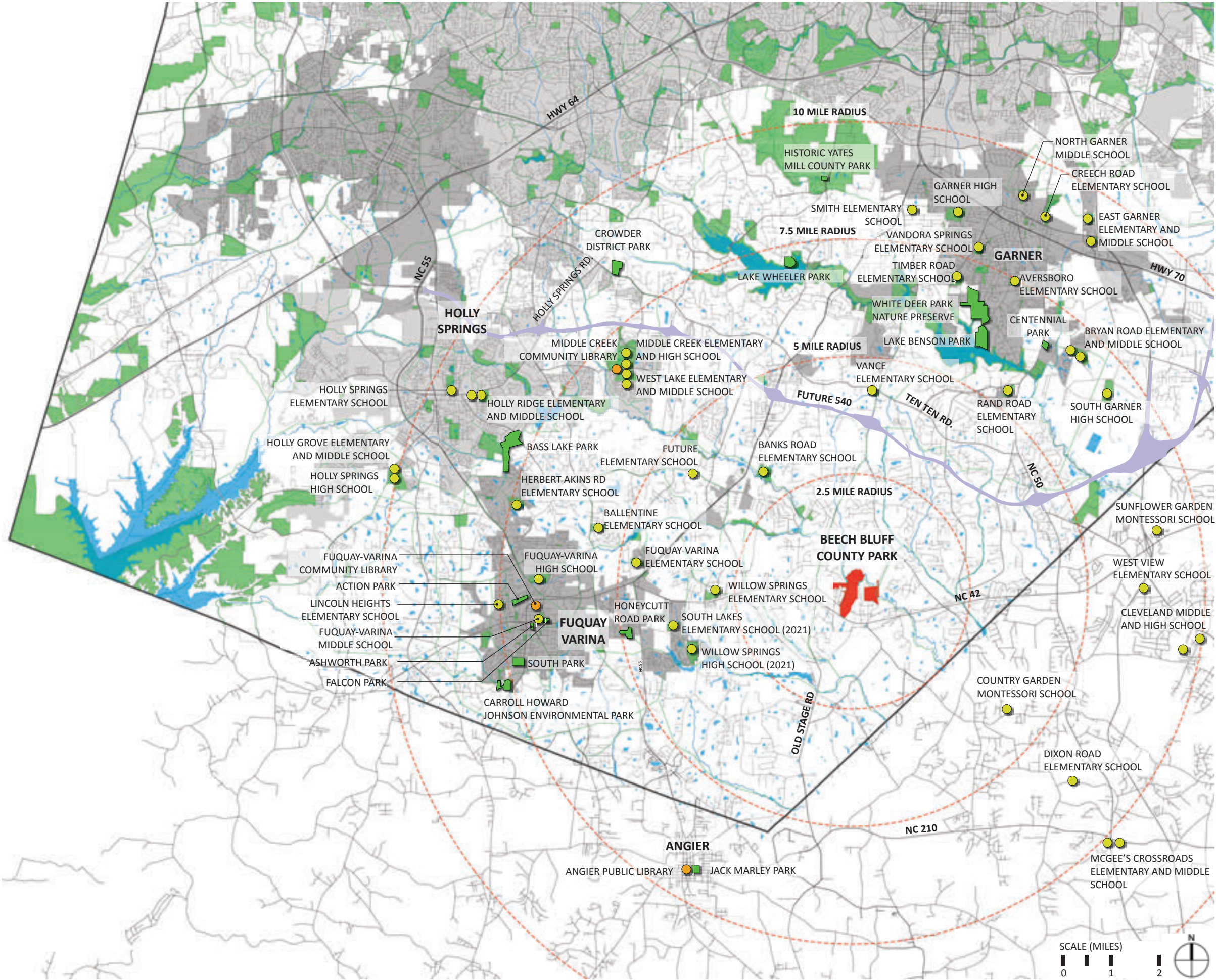
Map of Surrounding Public Spaces

LEGEND

SCHOOL

LIBRARY

PARK / OPEN SPACE





Regulatory Analysis: Transportation

Several aspects of transportation to and around the site have a potential to impact the development of Beech Bluff County Park. Currently, the Park has no nearby pedestrian, bicycle or public transportation access. The majority of Park visitors, including those in the subdivisions immediately adjacent to the Park will be traveling by car and therefore increasing the parking demand. A future greenway is proposed along Middle Creek that could connect Beech Bluff County Park to Holly Springs and road improvements along NC 42 that include a multi-use path could provide pedestrian and bicycle access from Fuquay-Varina. The Highway 540 expansion, with construction expected to start as early as 2020, is within five miles of the Park and may generate a significant amount of residential and commercial development to trigger the need for these infrastructure improvements. Throughout the design and future development of Beech Bluff County Park, alternative transportation routes into the Park that follow Wake County's Park and Greenway Master Plan and future NCDOT transportation projects will need to be considered.

Currently, NC 42 is a two lane undivided highway with a mixture of signalized and unsignalized intersections and a 100 ft. right of way. With significant residential growth anticipated, the NC 42 corridor will become increasingly important for local and regional traffic. While no public transit projects are proposed to be built near Beech Bluff County Park, in order to accommodate future travel demand, the 2003 Wake County Transportation Plan has recommended the following improvements along NC 42 overtime:

- Widen to four lanes with a landscaped median and wide outside lanes from Wake / Johnston County Line to NC 55
- Coordinate roadways widening with Johnston County to ensure continuity of the future cross section to I-40.
- As development occurs along the corridor, require the installation of sidewalks.

Based on the 2045 Metropolitan Transportation Plan Adopted Roadway Projects approved by Capital Area Metropolitan Planning Organization in December 2017, the section of NC 42 from Old Stage Road to John Adams Road is projected to be built in 2045. The section below represents the typical roadway improvements.

TRANSPORTATION LEGEND

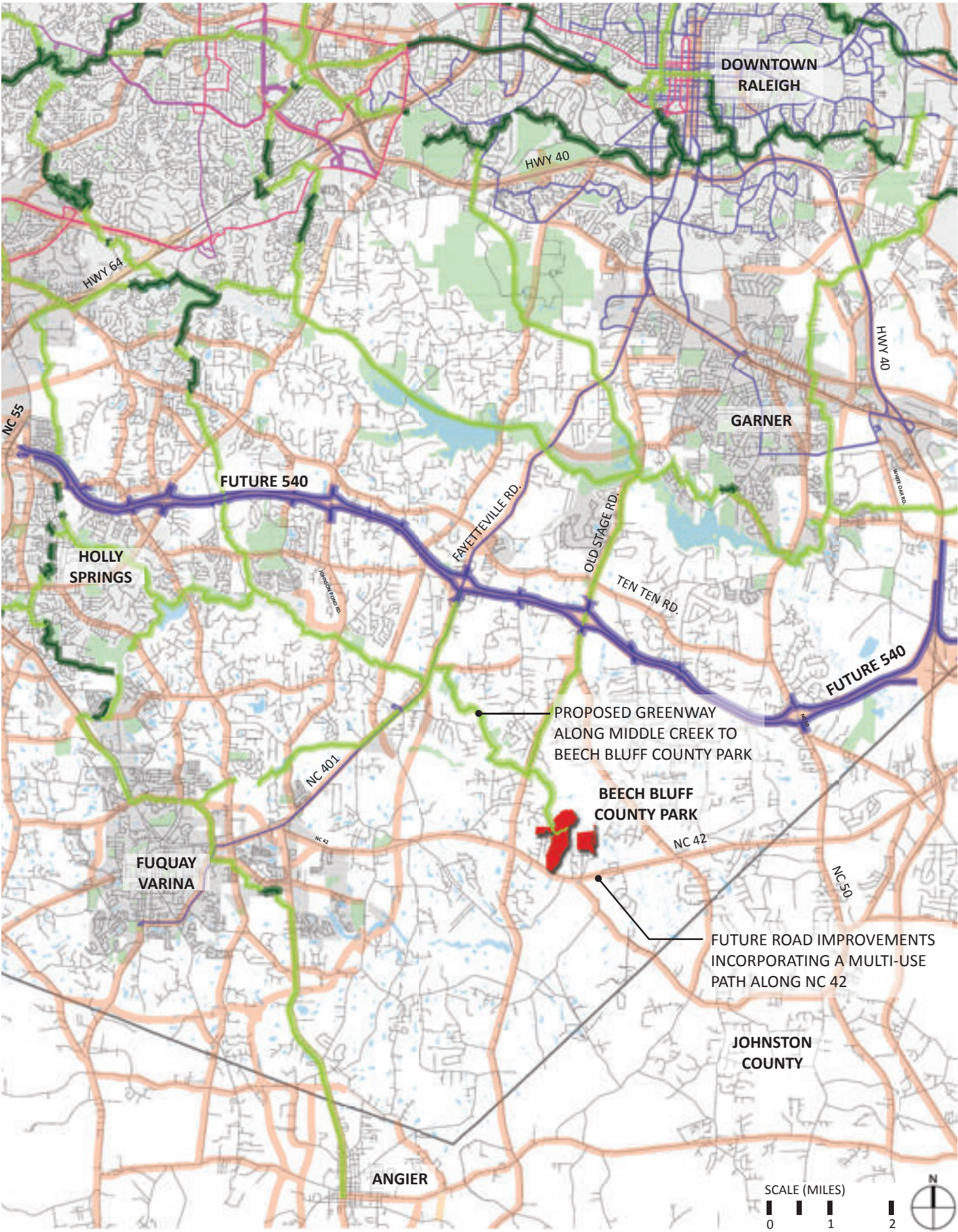
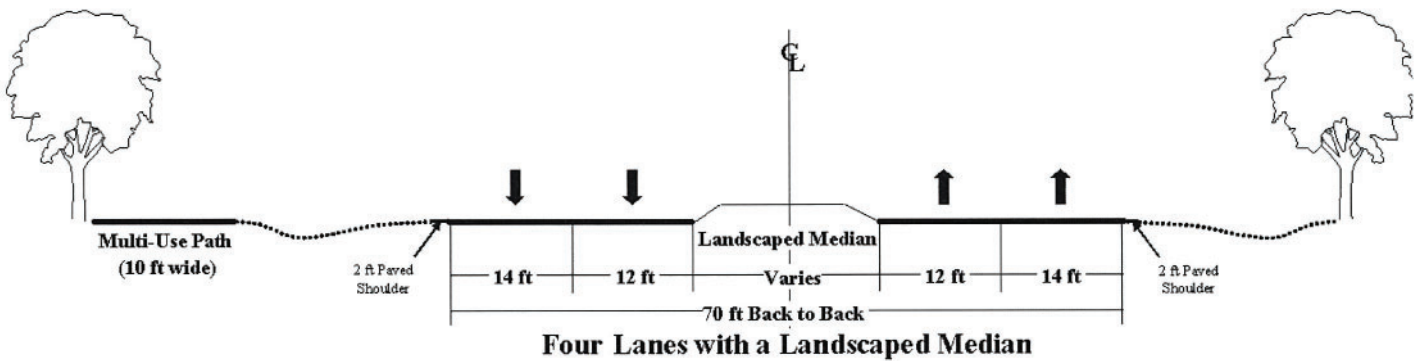


Source:

NC Capital Area Metropolitan Planning Organization 2045 Metropolitan Transportation Plan

2017 Wake County Greenway System Plan

2003 Wake County Transportation Plan





# Regulatory Analysis: Future Land Use

The Land Use Map to the right indicates the Town of Garner and Fuquay-Varina's corporate limits, extra-territorial jurisdiction (ETJ) boundaries and future land use or urban service areas. Beech Bluff County Park currently lies within Wake County Planning jurisdictional requirements. However, future growth plans adopted by the Towns of Garner and Fuquay-Varina show Beech Bluff County Park included in the Town of Garner's future land use area / urban service area while the land south of NC 42 lies within Fuquay-Varina's future land use area / urban service area.

After discussions amongst the Project Core Team, Wake County would prefer Beech Bluff County Park to remain within Wake County's jurisdiction in lieu of becoming annexed into either Town limits. Future conversations will need to be arranged between Wake County and each Town to determine how utility and emergency service to the area may be affected as well as special conditions that may result from the location on the boundary of each Town's future growth area.

## LEGEND

PARKS AND OPEN SPACE

**TOWN OF GARNER**

TOWN LIMITS

EXTRA-TERRITORIAL JURISDICTION (ETJ)

FUTURE LAND USE / URBAN SERVICE AREA

**TOWN OF FUQUAY-VARINA**

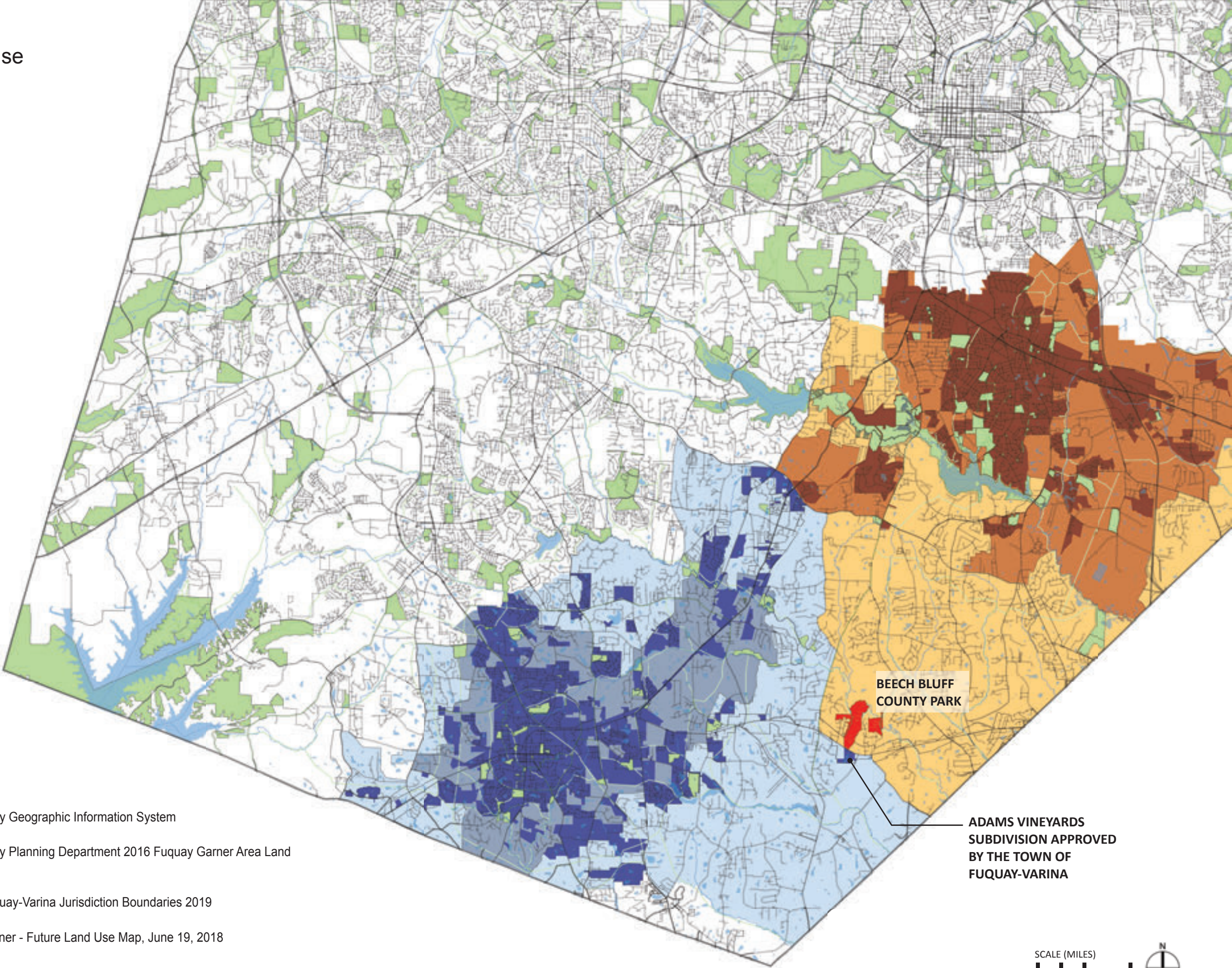
TOWN LIMITS

EXTRA-TERRITORIAL JURISDICTION (ETJ)

FUTURE LAND USE / URBAN SERVICE AREA

### Sources:

- Wake County Geographic Information System
- Wake County Planning Department 2016 Fuquay Garner Area Land Use Plan
- Town of Fuquay-Varina Jurisdiction Boundaries 2019
- Town of Garner - Future Land Use Map, June 19, 2018
- Garner Town Limits Map, March 1, 2019





Regulatory Analysis: Zoning and Utilities

Current zoning for beech Bluff County Park is Residential-30 (R-30) with a Highway District (HD) Overlay. R-30 zoning is intended to accommodate low-density residential development, as either single-family detached or attached dwellings on separate lots. The HD Overlay is a low-density residential district but allows a wide range of nonresidential uses with a Special Use Permit. A Special Use Permit will be required for the development of Beech Bluff County Park for proposed buildings to be utilized for assembly of the public.

WATER:

The Town of Fuquay-Varina owns a 16 inch water main on NC 42 that terminates at Rock Service Road. Utilizing this water line for service to the Park typically requires annexation into the Town’s jurisdiction. For this reason, the Beech Bluff County Park Master Plan has presumed well water will be used to service the Park. However, subsequent phases of design will require conversations between Wake County and the Towns of Garner and Fuquay-Varina to determine if Beech Bluff County Park could utilize the existing water line and remain in Wake County’s jurisdiction. Additionally, the existing water line is owned by Fuquay-Varina, whereas the Park property north of NC-42 lies within the Town of Garner’s future growth plans.

SEWER:

No public sewer from any adjacent town or private sewer service is located in the area of Beech Bluff County Park. Adjacent residential subdivisions are all served by either gravity or pump septic systems and the improvements to Beech Bluff County Park may utilize a central or individual septic systems. Upon completion of the Master Plan, a soils suitability analysis will be required to determine the optimal location for septic systems based on existing soil conditions.

ELECTRIC:







Overhead powerlines that contain three phase distribution run along NC 42. The current power poles are set within the R.O.W. and would not need to be relocated. However, access to the Park and surrounding improvements will need to avoid impacts to the overhead utilities to avoid relocation underground that may significantly impact construction costs.

STORMWATER:

Beech Bluff County Park lies within the Middle Creek watershed and Neuse River Basin. Wake County has the following stormwater requirements governing new development:

- Maximum impervious coverage for nonresidential development in R-30 zoning is 30%
- Blue line streams within the property will require minimum of 50’ buffers on each side.
- Nutrient Export Limit for Nitrogen is 3.6 lbs/ac/yr.
- New development shall not result in a net increase in peak flow leaving site from the pre development conditions for the 1 yr, 24 hr storm.
- The Wake County Stormwater Design Tool will be used to determine nutrient loading calculations.
- Wake County stormwater review will be required when the Stormwater Management Land Disturbance Threshold of 12,000 sf is triggered.

LEGEND

	HIGHWAY OVERLAY DISTRICT
	PUMP SEPTIC SYSTEM
	GRAVITY SEPTIC SYSTEM
	WELL LOCATION
	OVERHEAD POWERLINES
	WATER LINE

Sources:

- Fuquay-Varina Geographic Information System
- Wake County Planning Department Zoning Districts
- Wake County Geographic Information System





Historical Context

On July 13, 2018 the Project Core Team met with John Quincy Adams and Joyce Adams whose family had owned portions of beech Bluff County Park, beginning with a land grant from King George of England beginning in the 1740's. The Adams Family has assisted the Project Core Team in helping to uncover the history of the site through storytelling, photos and maps. The image to the right shows a copy of the Adams Family's map of Wake County drawn around the 1850s.

Historical images, agricultural practices and cultural traditions will contribute to the design, programming and artwork within Beech Bluff County Park to elevate and preserve the site's historical significance.



Middle Creek

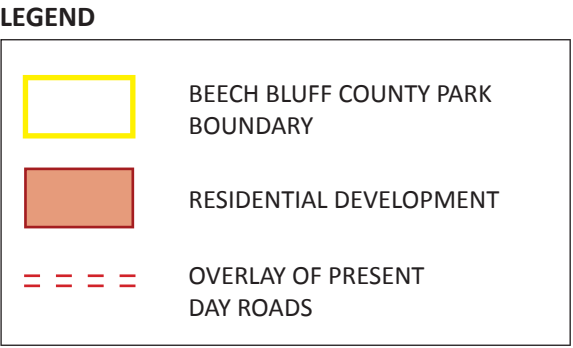
Approximate location of project site



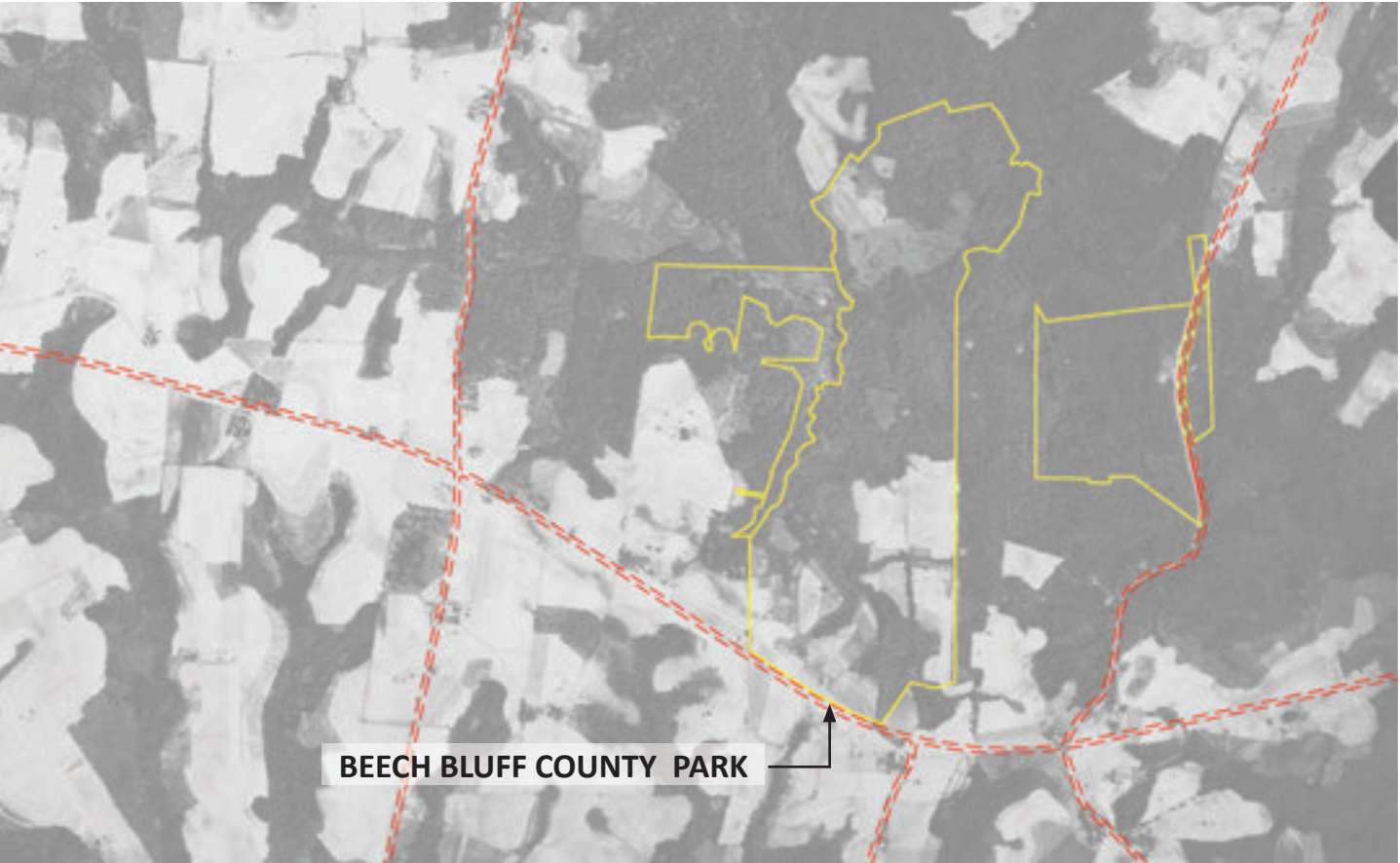
Historical Context

An analysis of historical aerial photos shows the change in development surrounding the Park property overtime. In 1938, NC 42 was not yet constructed in its current location and all the property surrounding the Park was primarily agriculture. However, beginning in the early 1990s through today, the surrounding area has transitioned to residential subdivisions. As of 2018, three separate residential subdivisions surround the park with a fourth scheduled to be constructed opposite the Park south of NC 42.

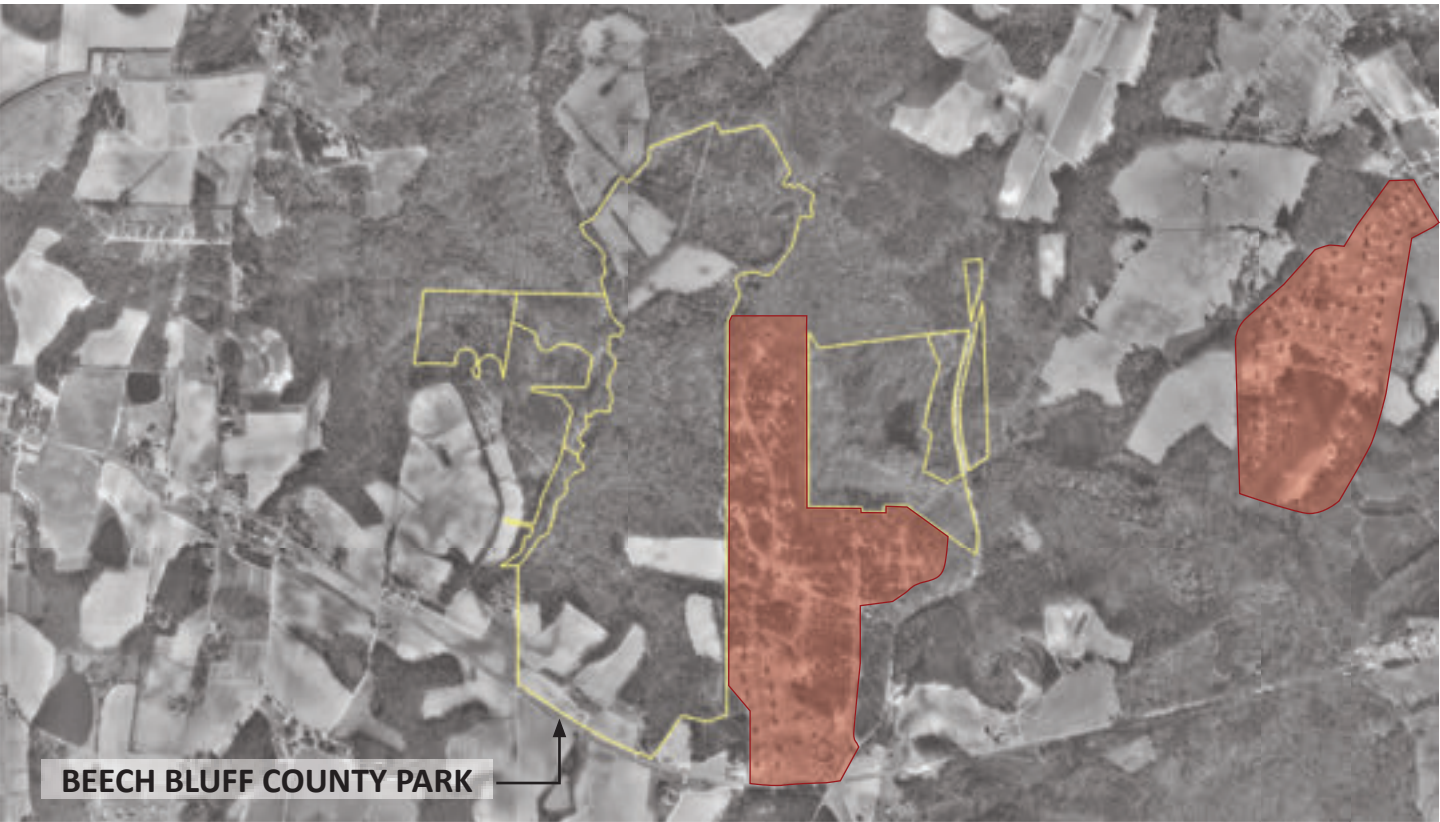
With the continual increase in residential development surrounding the Park, the Project Core Team has placed an importance on preservation of the agricultural character of the site, specifically on the southern portion along NC 42 that is still actively farmed. In addition to farmland, construction of the Highway 540 extension may further reduce the amount of open space and preserved natural areas. Preserving the existing forested areas and open space within the Park will be important in providing a recreational asset to the growing community as well as providing protection to the Middle Creek watershed and aquatic habitat.



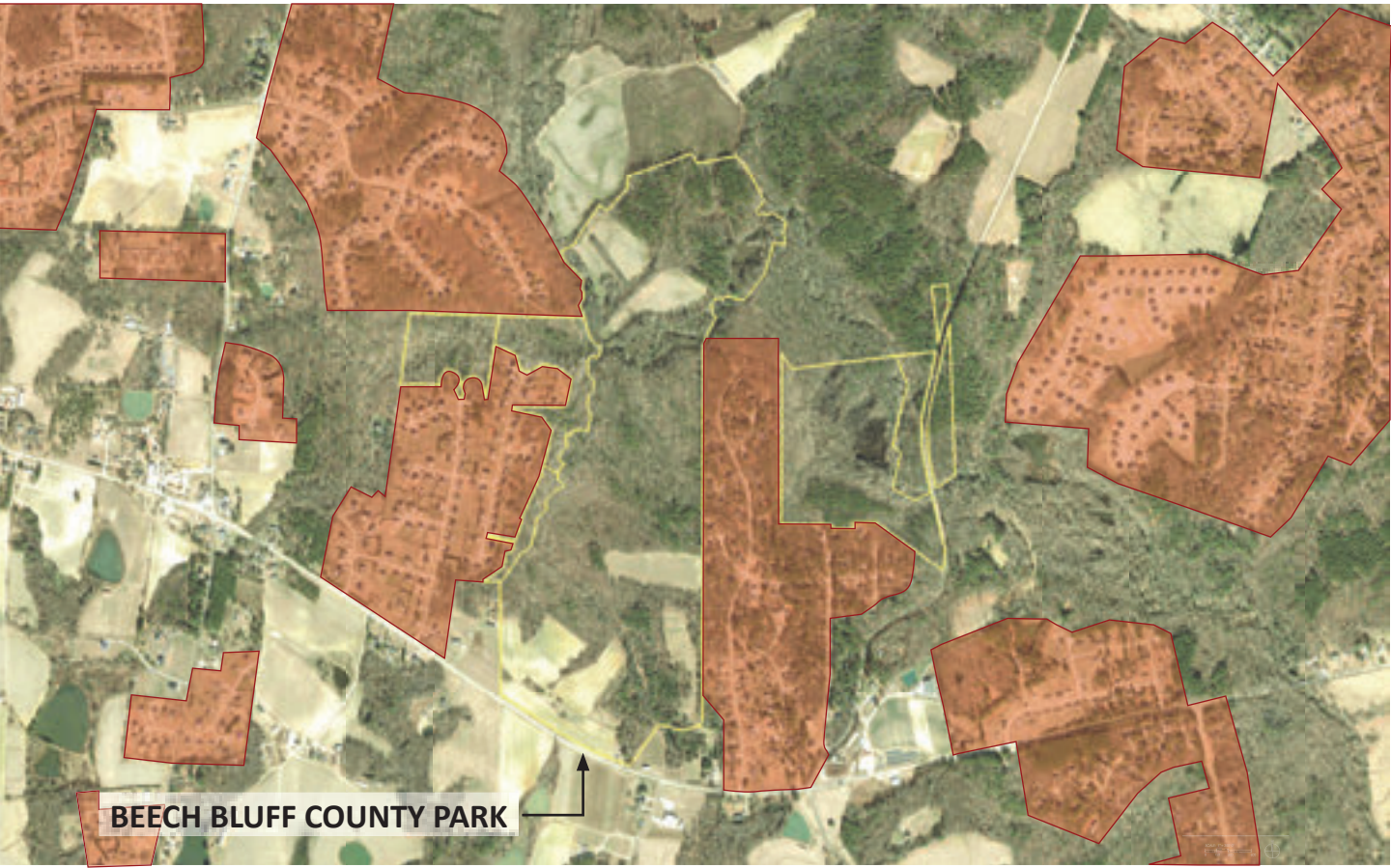
Sources:  
  
USDA Historical Aerial Photos, UNC Chapel Hill library



1938



1994



2018





Historical Context

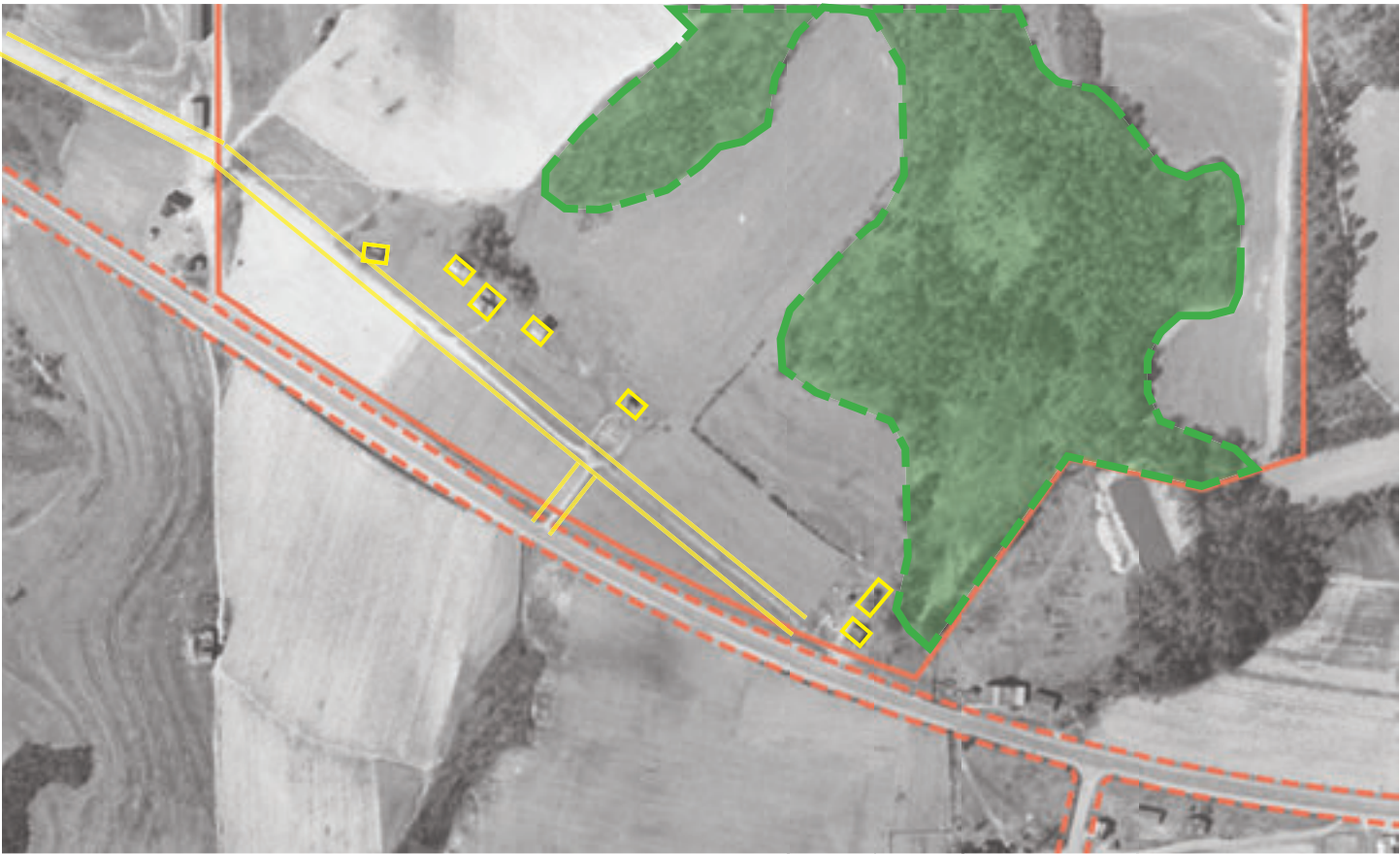
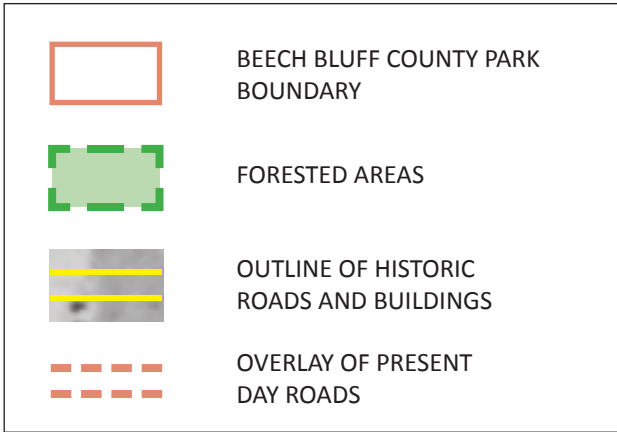
Historical aerial photographs showing the agricultural land within the southern portion of the Park property were compared to reveal previous patterns in land use. Between 1959 and 1971, NC 42 was constructed in its present day location. However, the original NC 42 path still remained an active farm access road with various structures built along the route that have changed throughout time. Today,

remnants of the old NC 42 farm road are evident with an irrigation well and a mid-20th century storage barn that still remain. With the Master Plan of Beech Bluff County Park, the Project Core Team has looked for ways to incorporate the past agricultural history, practices and traditions into the program of the proposed Park.

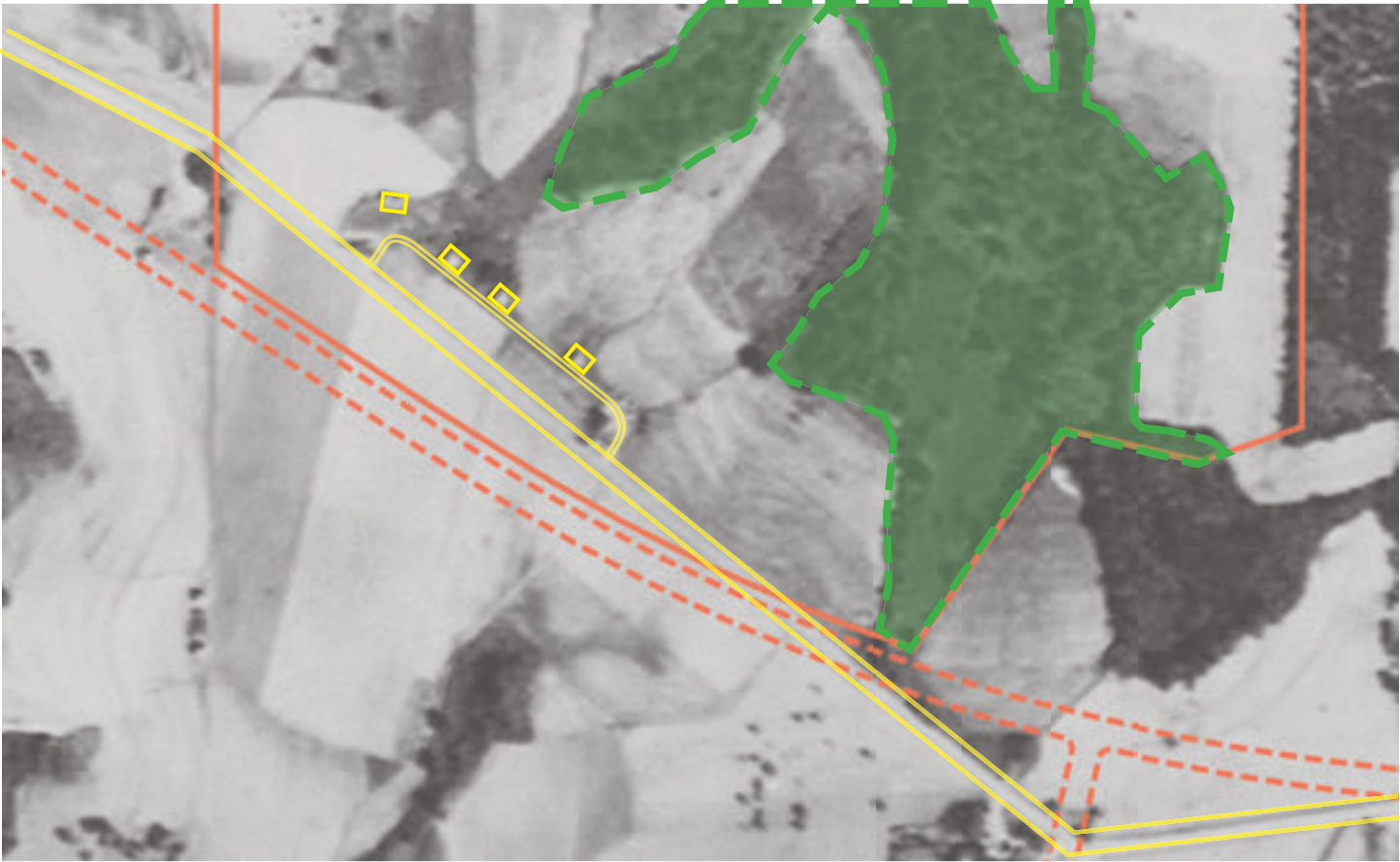
EXISTING MID-20TH CENTURY STORAGE BARN



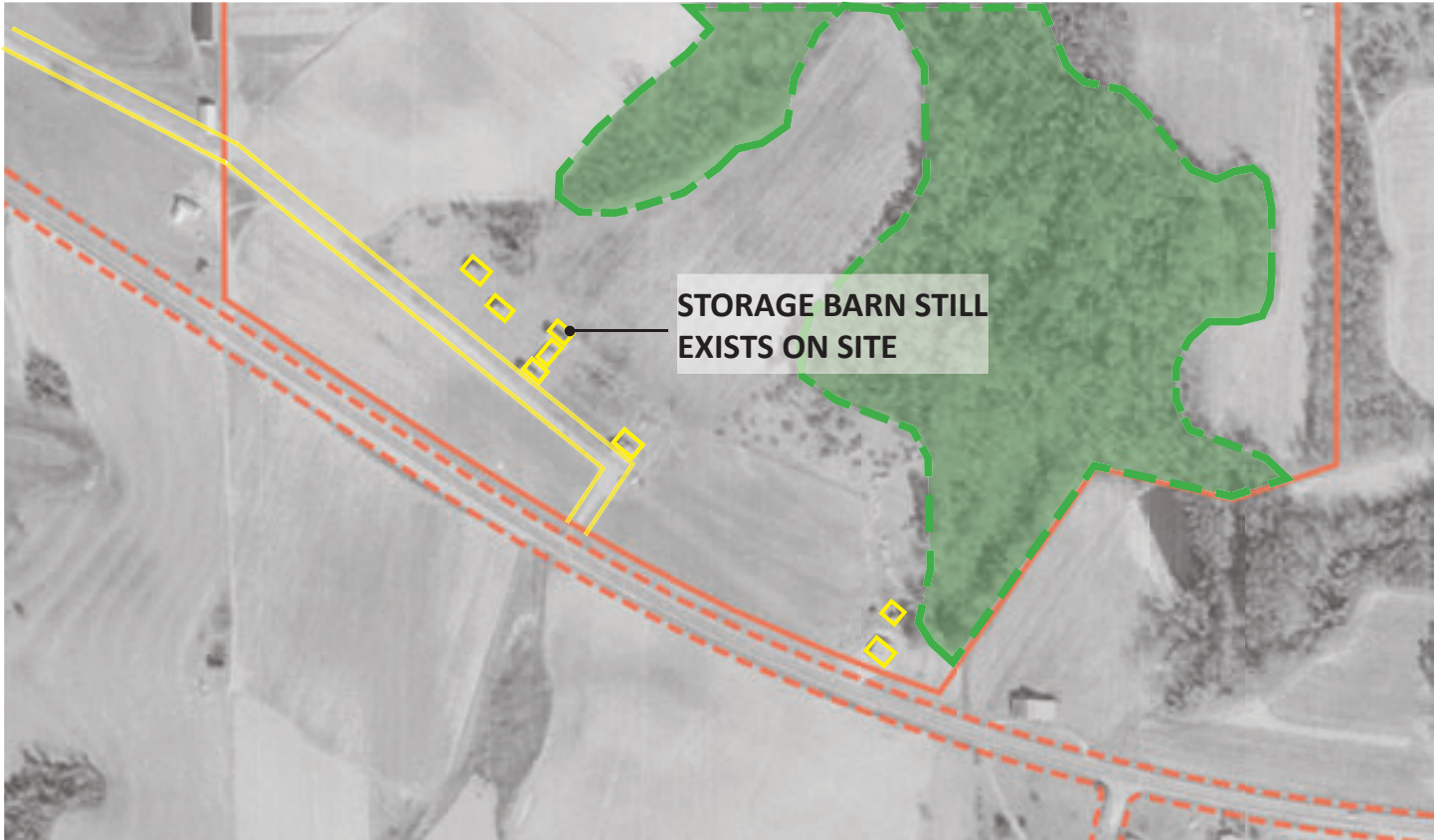
LEGEND



1959 AERIAL



1938 AERIAL



1971 AERIAL

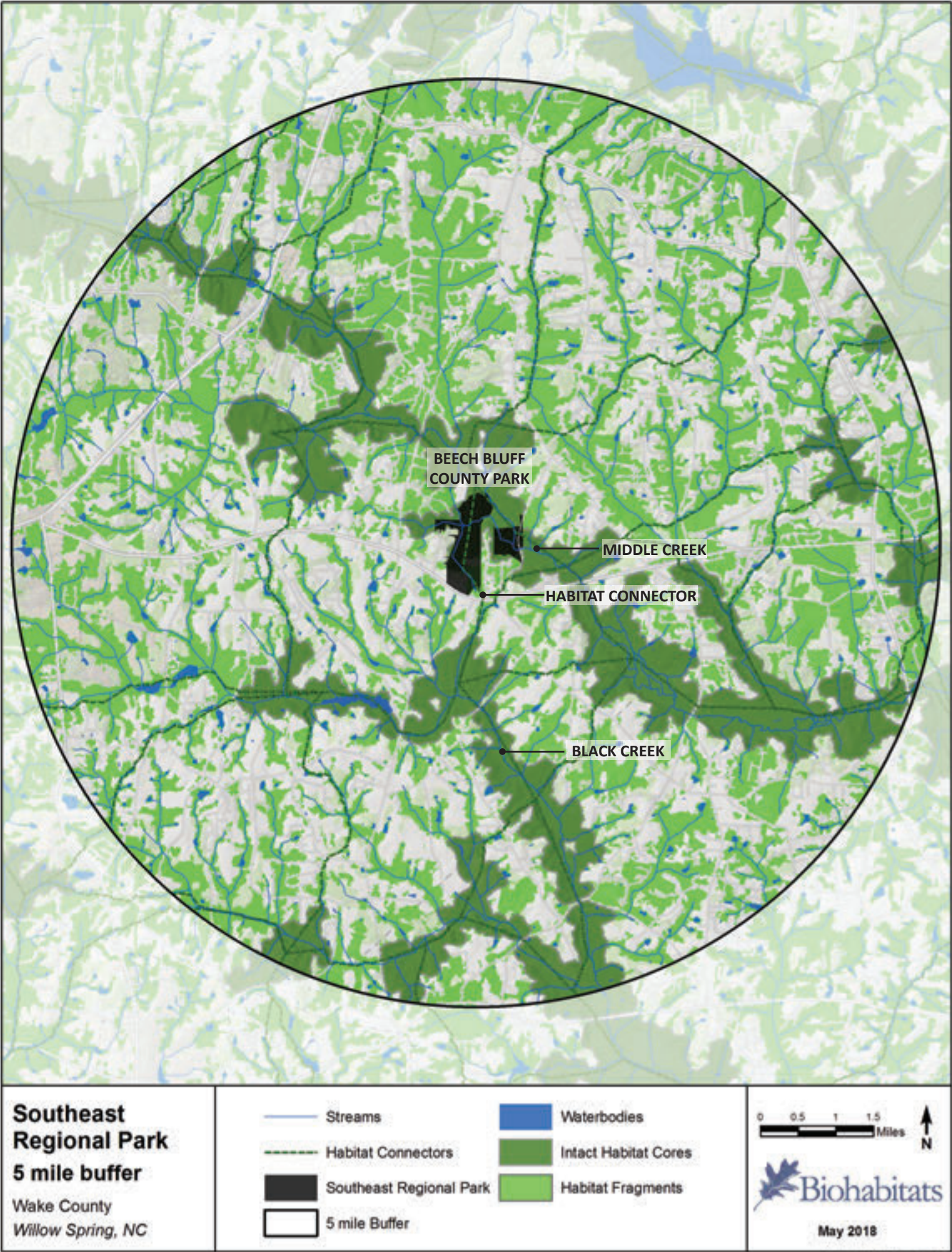
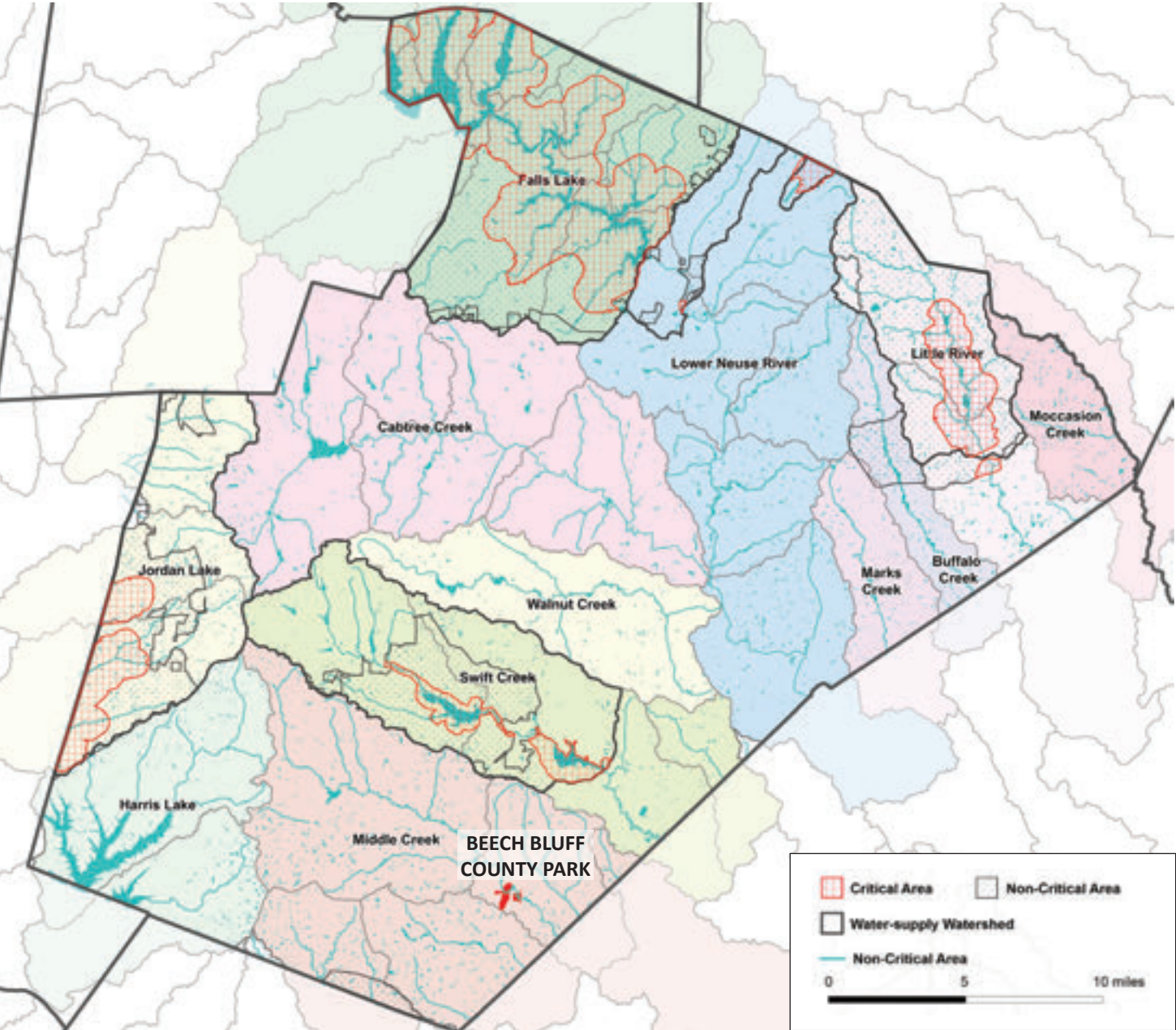




Environmental Analysis: Middle Creek Watershed

Beech Bluff County Park lies within the Middle Creek Watershed that is part of the Neuse River Basin. The 2016 Beech Bluff County Park Natural Resource Report lists the portion of Middle Creek that flows through the property to contain habitat for a number of rare aquatic species including the Neuse River Waterdog, indigenous to the Neuse River Basin. The Report also notes a population of the State and Federally Endangered Dwarf Wedgemussel downstream of the property in Middle Creek. Many of these species are dependent on clean water and the development of Beech Bluff County Park should take measures to protect this important aquatic habitat within Middle Creek.

The diagram to the right presents an ESRI GIS based landscape ecology analysis that illustrates the habitat patches and corridors within the site as well as the connections and relationships these areas have with patches and corridors beyond the Park boundaries. Both Middle Creek and Black Creek to the south contain intact habitat corridors with a path of least resistance connecting the two running through Beech Bluff County Park. Supporting the presence of this habitat connector, the 2016 Beech Bluff County Park Natural Resource Report as well as observations by adjacent property owners have documented a significant amount of plant and animal biodiversity within the Park, including beavers, salamanders, bobcat and owls.





Environmental Analysis: Hydrology and Vegetation

The Beech Bluff County Park property contains a wide range of habitat zones defined by the existing topography, vegetation and hydrology. Middle Creek divides the main Park parcel into north and south portions where the southern 2/3 of the site consists of steep slopes, upland forests, and intermittent and perennial stream channels. In contrast, the northern 1/3 of the Park consists of relatively flat low lying areas and wetlands almost entirely within the 100 year floodplain.

VEGETATION

The existing forest cover within Beech Bluff County Park exists at various stages of succession, including pioneer loblolly pine forests and mature climax hardwood forests interspersed throughout the site. As one walks the site from NC 42 to Middle Creek, past logging practices are evident and the diversity in forest cover and understory can be experienced in different levels of regeneration. Several significant specimen canopy trees were mapped during various visits to the site by the Project Core Team to document trees that should be considered for protection or incorporated into the Park design.

The landscape ecology analysis performed in and around the site documents an increasing amount of habitat fragmentation as surrounding properties become developed. This analysis also indicates a habitat connector within Beech Bluff County Park that represents the closest path of travel between intact habitat cores. Management strategies to maintain the integrity and ecological resilience of this habitat connector and mitigate fragmentation have been presented in the 2016 Beech Bluff County Park Natural Resource Inventory.

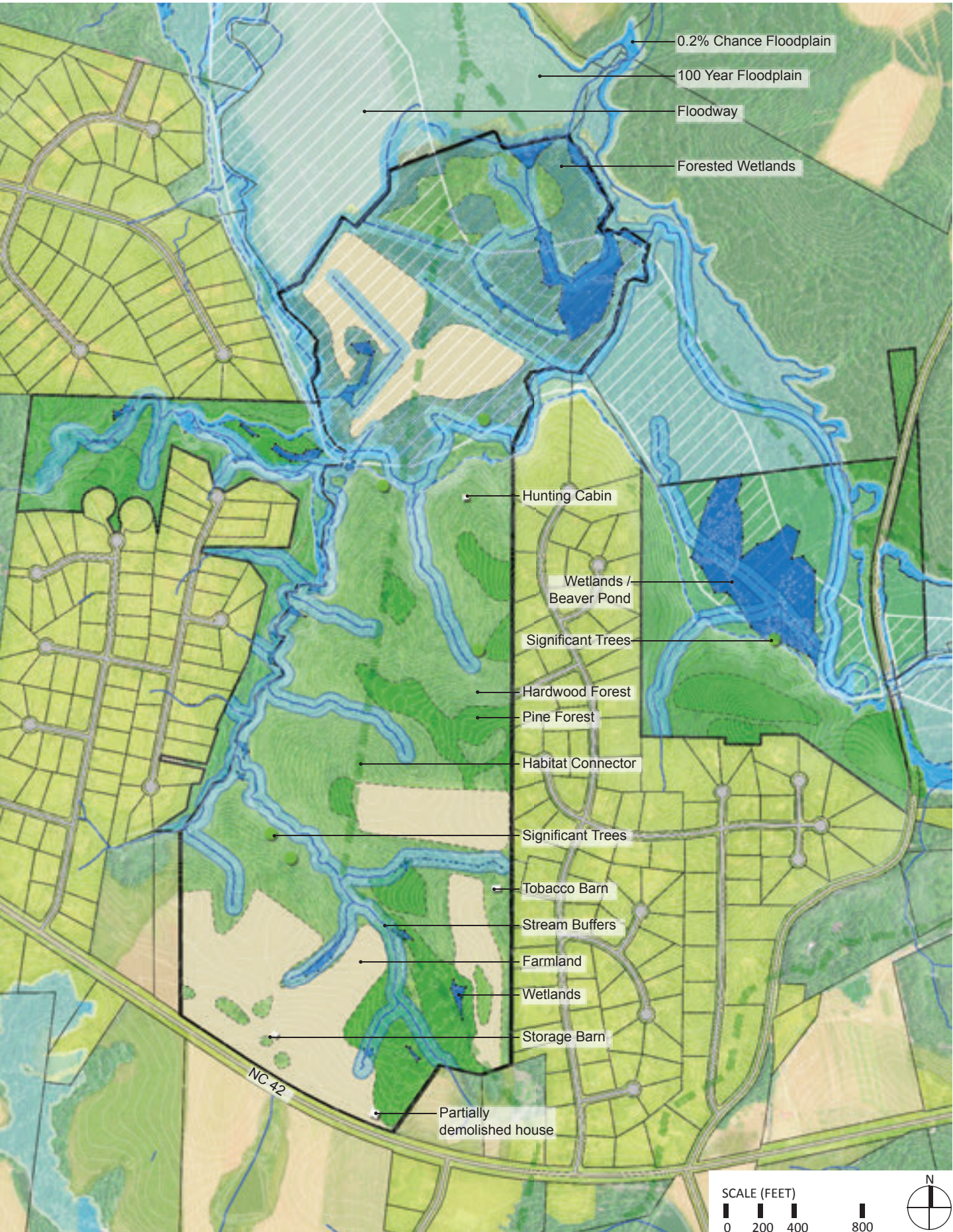
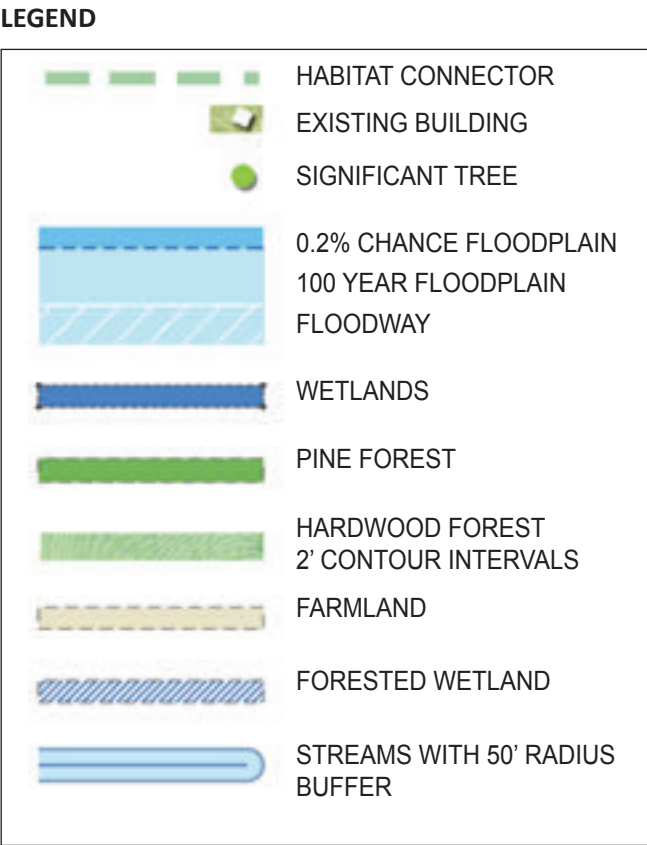
HYDROLOGY

A number of aquatic habitats have been documented on the site including intermittent and perennial streams, isolated and riparian wetlands and low lying lands with intermittent flooding. Many of the riparian wetlands have been created as a result of beaver impoundments built along Middle Creek. A site reconnaissance was performed using GIS locating software to document the general locations of jurisdictional wetlands and intermittent streams so necessary measures of protection for these aquatic ecosystems may be considered at the earliest stages of development. However, a more detailed wetland and

stream delineation to be surveyed in the field will need to be completed during the early phases of the Park design.

Many of the existing stream channels show signs of stream bank erosion, most likely as a result of past land clearing activities within the site and surrounding upland properties. Preserving the existing pioneer and mature forest communities within Beech Bluff County Park will assist with mitigating the adverse impacts to these stream channels.

The 2016 Beech Bluff County Park Natural Resource Inventory has also documented several invasive plant communities within many of the site’s aquatic ecosystems, particularly along Middle Creek and the wetlands north of Middle Creek. These invasive species along with litter and debris may be continuously introduced into the site from upstream development during periodic flood events along Middle Creek. Developing long term management strategies that address erosion and invasive species removal will be critical in restoring the native habitat and ecological diversity within Beech Bluff County Park.



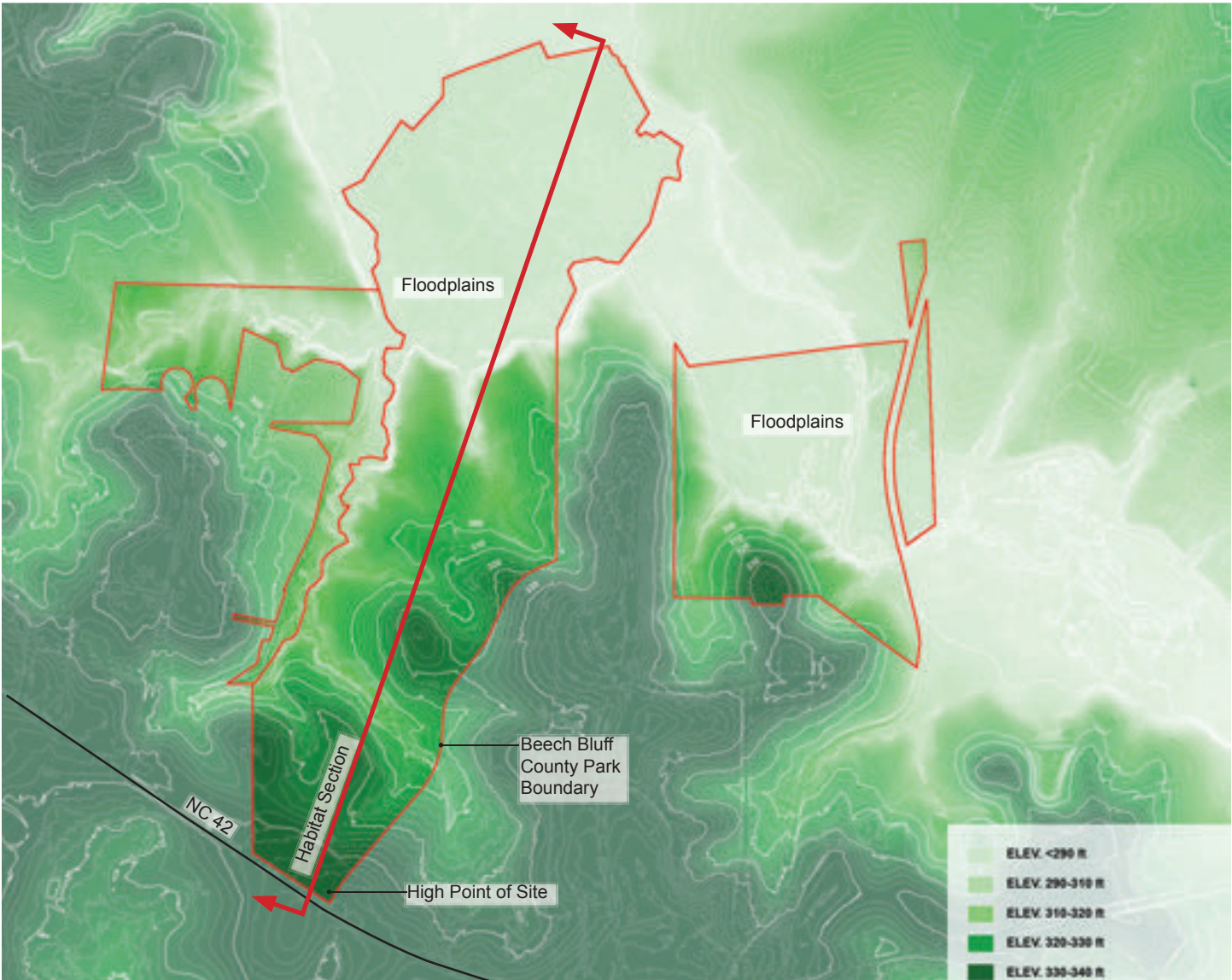


Environmental Analysis: Topography

One of the unique, defining characteristics of Beech Bluff County Park is the topography of the site. The undulating landscape with steep stream channels and high bluffs of the southern portion of the site create a variety of microclimates that contrast with the low lying floodplains to the north.

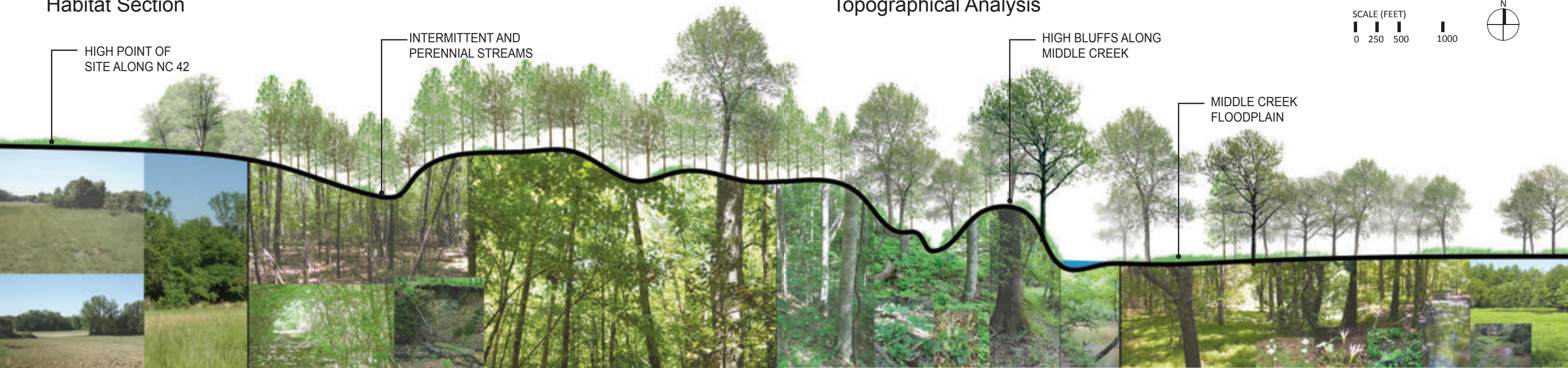
The steep terrain in many areas has helped to preserve the native habitat by making past agricultural activities and logging impractical. Similarly, future development of the Park may be limited to more level areas along NC 42 that are better suited for large scale construction and satisfying accessibility requirements.

However, the topography across the site presents an opportunity as one journeys from south to north to experience the ecological diversity of the site along with the various habitat zones, geological formations, changing stream morphology and stages of plant succession all contained within the Park.



Topographical Analysis

Habitat Section





Environmental Analysis: Soils

Beech Bluff County Park contains a variety of underlying soils and geological formations that have been defined by the location of the property near the boundary of the piedmont and coastal plains as well as the aquatic and upland ecosystems within the site.

A number of these soils are designated prime farmland by the U.S. Natural Resources Conservation Service (NRCS), which is land that has the best combination of physical and chemical characteristics to economically produce sustained high yields of crops when properly treated and managed. The Sustainable SITES Initiative, a Green Business Certification rating system that distinguishes sustainable landscapes, places an importance on the preservation of prime farmland. With a growing population, a strong demand is placed on crop production and the availability of local fresh produce is in decline. The NRCS has documented a significant loss of farmland soils to industrial and urban development throughout the United States and once removed the agricultural productivity of these soils typically cannot be restored.

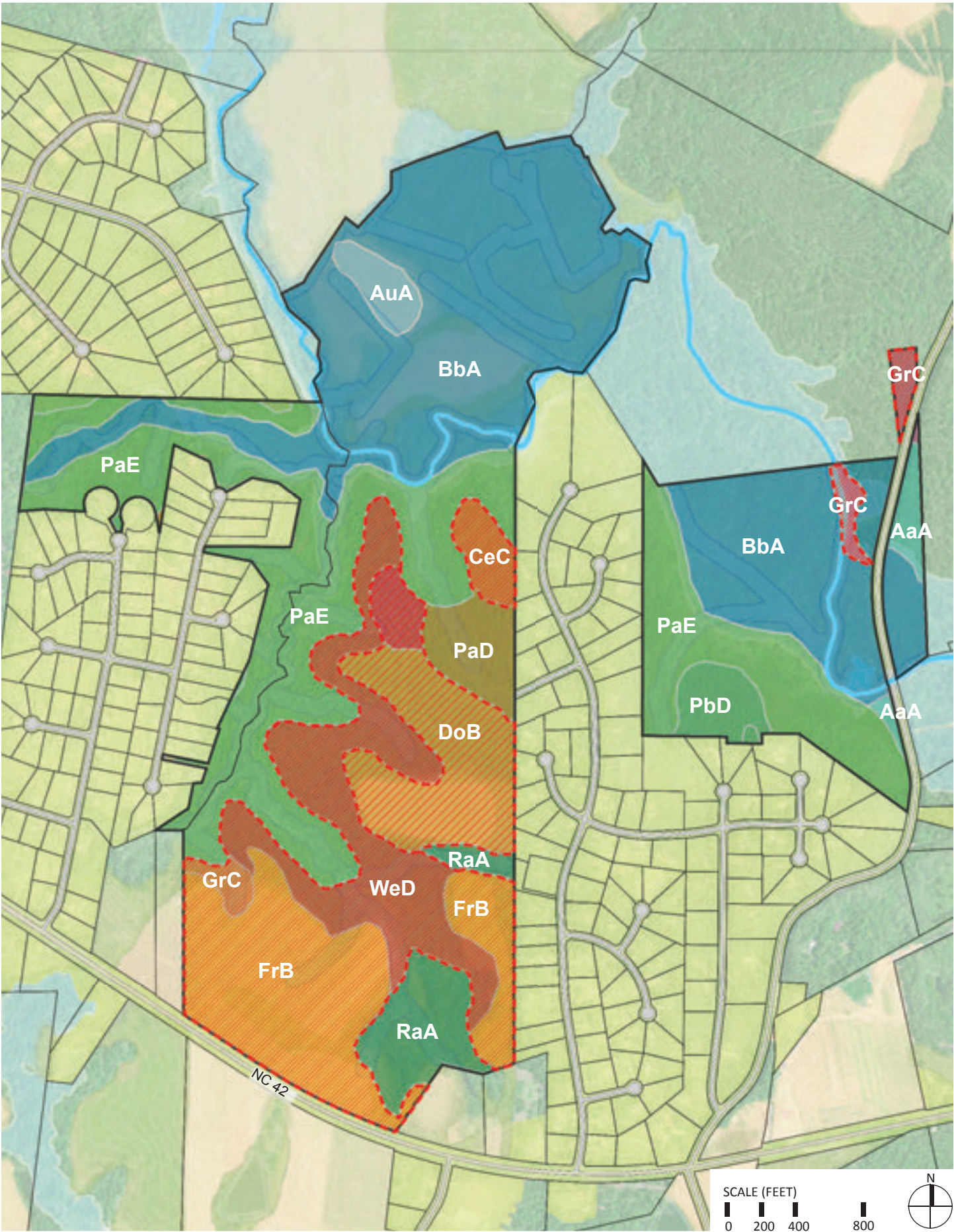
The land surrounding Beech Bluff County Park, which was all once used for agricultural or remained undeveloped, is becoming increasingly lost to development of residential subdivisions. Both population growth and development over time may drive up the value of the land making agriculture no longer economically viable in the area. For this reason, the Project Core Team has expressed in interest in preserving the farmland and crop production with the development of the Park.

- Sources:
- United States Department of Agriculture natural Resources Conservation Service Web Soil Survey
  - Sustainable SITES Initiative v2 Reference Guide

Map Unit Symbol	Map Unit Name
AaA	Altavista fine sandy loam, 0 to 4 percent slopes, rarely flooded
AuA	Augusta fine sandy loam, 0 to 2 percent slopes, rarely flooded
BbA	Bibb sandy loam, 0 to 2 percent slopes, frequently flooded
CeB	Cecil sandy loam, 2 to 6 percent slopes
CeC	Cecil sandy loam, 6 to 10 percent slopes
CfC	Cecil-Urban land complex, 2 to 10 percent slopes
DoB	Dothan loamy sand, 2 to 6 percent slopes
DuB	Dothan-Urban land complex, 0 to 6 percent slopes
FrB	Fuquay loamy sand, 0 to 6 percent slopes
FuB	Fuquay-Urban land complex, 0 to 6 percent slopes
GrC	Gritney sandy loam, 6 to 10 percent slopes
PaC	Pacolet sandy loam, 6 to 10 percent slopes
PaD	Pacolet sandy loam, 10 to 15 percent slopes
PaE	Pacolet sandy loam, 15 to 25 percent slopes
PbD	Pacolet-Urban land complex, 10 to 15 percent slopes
RaA	Rains sandy loam, 0 to 2 percent slopes
WeB	Wedowee sandy loam, 2 to 6 percent slopes
WeD	Wedowee sandy loam, 10 to 15 percent slopes

PRIME FARMLAND

PRIME FARMLAND OF STATEWIDE IMPORTANCE





# THE Sustainable SITES Initiative®

The Project Core Team is intent on pursuing Sustainable SITES Certification from the Green Business Certification Inc. (GBCI) for Beech Bluff County Park. Similar to the GBCI LEED rating system, SITES offers a comprehensive sustainability rating system, however, an emphasis is placed on sustainable landscapes, that may or may not contain any buildings.

The Sustainable SITES Initiative was developed through collaboration between the American Society of Landscape Architects, the United States Botanic Garden and the Lady Bird Johnson Wildflower Center at the University of Texas at Austin.

The goals of the Project Core Team for Beech Bluff County Park, including habitat restoration, preservation of aquatic ecosystems, environmental and historical education and outdoor recreation are well aligned with the objectives of the Sustainable SITES Initiative, making Southeast Park a strong candidate for certification. Currently two projects in North Carolina have been SITES Certified; Horseshoe Farm Nature Preserve and the Charlotte Brody Discovery Garden. Southeast Park aims to become the third in a growing trend to provide sustainable and ecologically resilient communities.

The scorecard summary on the following page lists prerequisites and potential credits that may be achieved by Beech Bluff County Park for a Gold Level certification.



American Society of  
Landscape Architects



UNITED STATES  
BOTANIC GARDEN



Lady Bird Johnson  
Wildflowercenter  
The University of Texas at Austin

“a program based on the understanding that **land is a crucial component of the built environment** and can be planned, designed, developed and maintained to protect and enhance the benefits we derive from healthy functioning landscapes.”

“In contrast to buildings, built landscapes and green infrastructure have the capacity to protect and regenerate natural systems to **create ecologically resilient communities** better able to withstand and recover from episodic floods, droughts, wildfires, and other catastrophic events.”



SITES v2 Scorecard Summary

YES	?	NO		
0	0	13	1: SITE CONTEXT	Possible Points: 13
Y			CONTEXT P1.1	Limit development on farmland
Y			CONTEXT P1.2	Protect floodplain functions
Y			CONTEXT P1.3	Conserve aquatic ecosystems
Y			CONTEXT P1.4	Conserve habitats for threatened and endangered species
		6	CONTEXT C1.5	Redevelop degraded sites
		4	CONTEXT C1.6	Locate projects within existing developed areas
		3	CONTEXT C1.7	Connect to multi-modal transit networks

3	0	0	2: PRE-DESIGN ASSESSMENT + PLANNING	Possible Points: 3
Y			PRE-DESIGN P2.1	Use an integrative design process
Y			PRE-DESIGN P2.2	Conduct a pre-design site assessment
Y			PRE-DESIGN P2.3	Designate and communicate VSPZs
3			PRE-DESIGN C2.4	Engage users and stakeholders

19	2	2	3: SITE DESIGN - WATER	Possible Points: 23
Y			WATER P3.1	Manage precipitation on site
Y			WATER P3.2	Reduce water use for landscape irrigation
6			WATER C3.3	Manage precipitation beyond baseline
4	2		WATER C3.4	Reduce outdoor water use
5			WATER C3.5	Design functional stormwater features as amenities
4		2	WATER C3.6	Restore aquatic ecosystems

24	6	10	4: SITE DESIGN - SOIL + VEGETATION	Possible Points: 40
Y			SOIL+VEG P4.1	Create and communicate a soil management plan
Y			SOIL+VEG P4.2	Control and manage invasive plants
Y			SOIL+VEG P4.3	Use appropriate plants
5		1	SOIL+VEG C4.4	Conserve healthy soils and appropriate vegetation
	4		SOIL+VEG C4.5	Conserve special status vegetation
6			SOIL+VEG C4.6	Conserve and use native plants
6			SOIL+VEG C4.7	Conserve and restore native plant communities
1		5	SOIL+VEG C4.8	Optimize biomass
4			SOIL+VEG C4.9	Reduce urban heat island effects
2	2		SOIL+VEG C4.10	Use vegetation to minimize building energy use
		4	SOIL+VEG C4.11	Reduce the risk of catastrophic wildfire

13	20	8	5: SITE DESIGN - MATERIALS SELECTION	Possible Points: 41
Y			MATERIALS P5.1	Eliminate the use of wood from threatened tree species
	4		MATERIALS C5.2	Maintain on-site structures and paving
	3	1	MATERIALS C5.3	Design for adaptability and disassembly
	3	1	MATERIALS C5.4	Use salvaged materials and plants
3	1		MATERIALS C5.5	Use recycled content materials
4	1		MATERIALS C5.6	Use regional materials
1	2	2	MATERIALS C5.7	Support responsible extraction of raw materials
3	2		MATERIALS C5.8	Support transparency and safer chemistry
1	2	2	MATERIALS C5.9	Support sustainability in materials manufacturing
1	2	2	MATERIALS C5.10	Support sustainability in plant production

YES	?	NO		
16	7	7	6: SITE DESIGN - HUMAN HEALTH + WELL-BEING	Possible Points: 30
		3	HHWB C6.1	Protect and maintain cultural and historic places
2			HHWB C6.2	Provide optimum site accessibility, safety, and wayfinding
2			HHWB C6.3	Promote equitable site use
2			HHWB C6.4	Support mental restoration
2			HHWB C6.5	Support physical activity
2			HHWB C6.6	Support social connection
	4		HHWB C6.7	Provide on-site food production
4			HHWB C6.8	Reduce light pollution
		4	HHWB C6.9	Encourage fuel efficient and multi-modal transportation
2			HHWB C6.10	Minimize exposure to environmental tobacco smoke
	3		HHWB C6.11	Support local economy

6	4	7	7: CONSTRUCTION	Possible Points: 17
Y			CONSTRUCTION P7.1	Communicate and verify sustainable construction practices
Y			CONSTRUCTION P7.2	Control and retain construction pollutants
Y			CONSTRUCTION P7.3	Restore soils disturbed during construction
		5	CONSTRUCTION C7.4	Restore soils disturbed by previous development
4			CONSTRUCTION C7.5	Divert construction and demolition materials from disposal
	4		CONSTRUCTION C7.6	Divert reusable vegetation, rocks, and soil from disposal
2		2	CONSTRUCTION C7.7	Protect air quality during construction

9	8	5	8. OPERATIONS + MAINTENANCE	Possible Points: 22
Y			O+M P8.1	Plan for sustainable site maintenance
Y			O+M P8.2	Provide for storage and collection of recyclables
	3	2	O+M C8.3	Recycle organic matter
4	1		O+M C8.4	Minimize pesticide and fertilizer use
	4		O+M C8.5	Reduce outdoor energy consumption
3		1	O+M C8.6	Use renewable sources for landscape electricity needs
2		2	O+M C8.7	Protect air quality during landscape maintenance

7	4	0	9. EDUCATION + PERFORMANCE MONITORING	Possible Points: 11
4			EDUCATION C9.1	Promote sustainability awareness and education
3			EDUCATION C9.2	Develop and communicate a case study
	4		EDUCATION C9.3	Plan to monitor and report site performance

3	3	0	10. INNOVATION OR EXEMPLARY PERFORMANCE	Bonus Points: 9
3	3		INNOVATION C10.1	Innovation or exemplary performance

YES	?	NO		
100	54	52	TOTAL ESTIMATED POINTS	Total Possible Points: 200

KEY	SITES Certification levels	Points
YES Project confident points are achievable	CERTIFIED	70
? Project striving to achieve points, not 100% confident	SILVER	85
NO Project is unable to achieve these credit points	GOLD	100
	PLATINUM	135



# Community Meeting #1

Upon completion of the Site Analysis phase of the Master Plan, the first Community Meeting was held at the Fuquay-Varina Community Center on September 25, 2018. The format of the meeting allowed participants to walk throughout 10 different stations, each presenting a different component of the site analysis, an introduction to the Core Values of the Wake County Park System and the Beech Bluff County Park Master Plan process. Each station was designed to engage participants, allowing them to post comments and feedback for the Project Core Team and other participants to observe. Community members were also given the opportunity to provide input on the future park program and development via an online questionnaire.

Anticipated Outcomes for Community Meeting #1:

- Introduce the Project Mission Statement
- Community awareness and education on the master planning process
- Share information discovered about the site, site history and natural resources
- Input on the community context and community desires and needs for the park
- Understanding of community priorities for park elements and programming
- Feedback from the community to inform concept selection, refinement and approach to detailed design
- Identification of organizations and businesses who may use the Park





Community Meeting #1: Stakeholder Input

As part of the community input process, the Project Core Team developed a list of potential stakeholders that could have a specific interest or benefit from Beech Bluff County Park. The various groups of stakeholders included municipal partners, local business, non-profit organizations, research partners, environmental organizations and local senior groups.

The overall goal for identifying these possible end user groups was to determine any events, meetings, educational classes or research programs that could be potentially hosted at Beech Bluff County Park. The Project Core Team then sought to determine how the program and design of the Park may be influenced to help cater to these events. Each stakeholder was sent a questionnaire to provide input on their organization and ways they may use of the Park and all were invited to the three community meetings.

These events, programs and research opportunities can be a valuable way for the Park to connect people to the environment and the larger community, one of the core values of the Project Mission Statement. In addition, the Project Core Team targeted a wide range of organizations that would reflect a diversity of age, race, culture and educational backgrounds so the Park may provide value to all members of the Community.

Municipal Partners



Local Businesses / Non-Profit Organizations



Agricultural and Environmental Research



Senior Groups





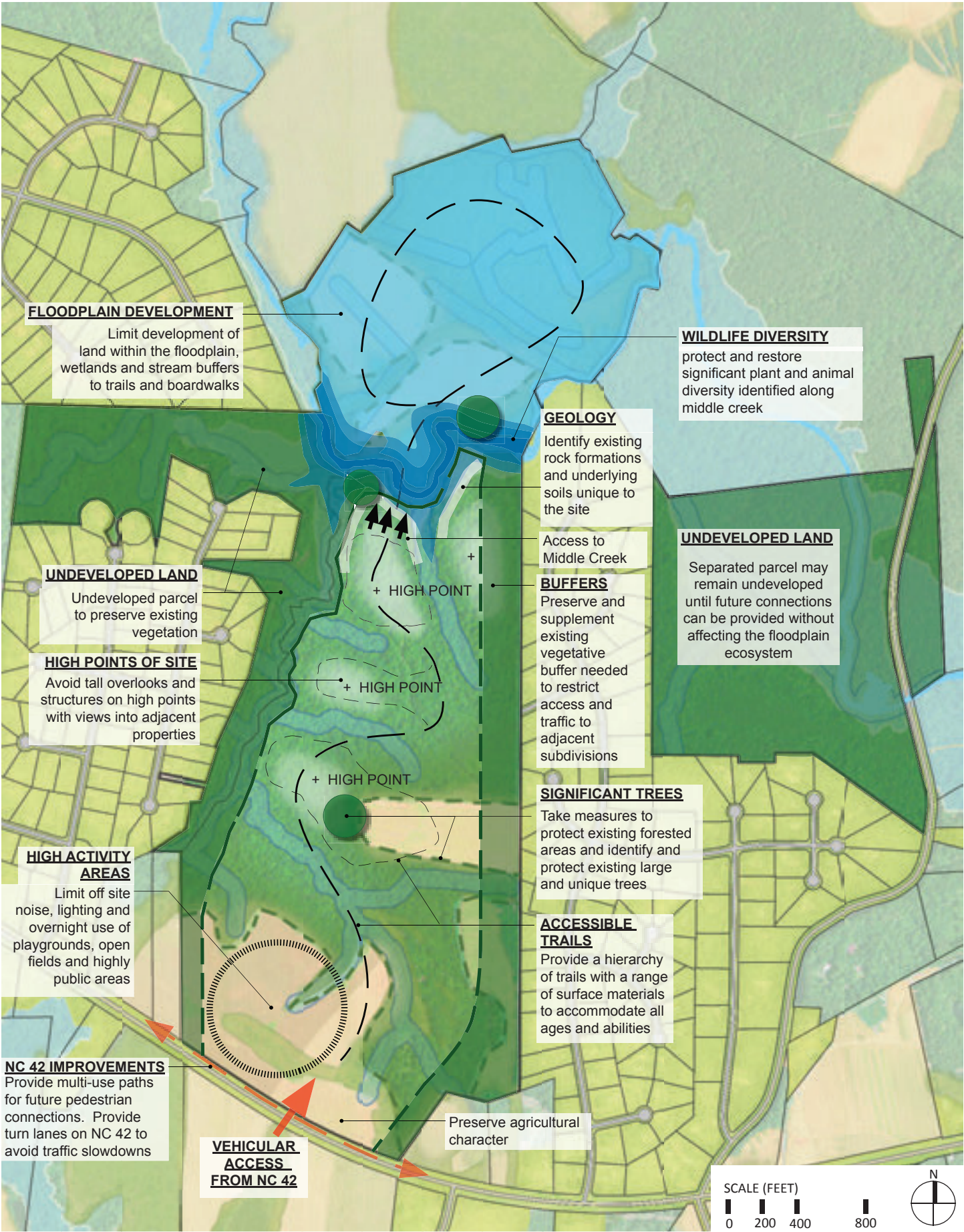
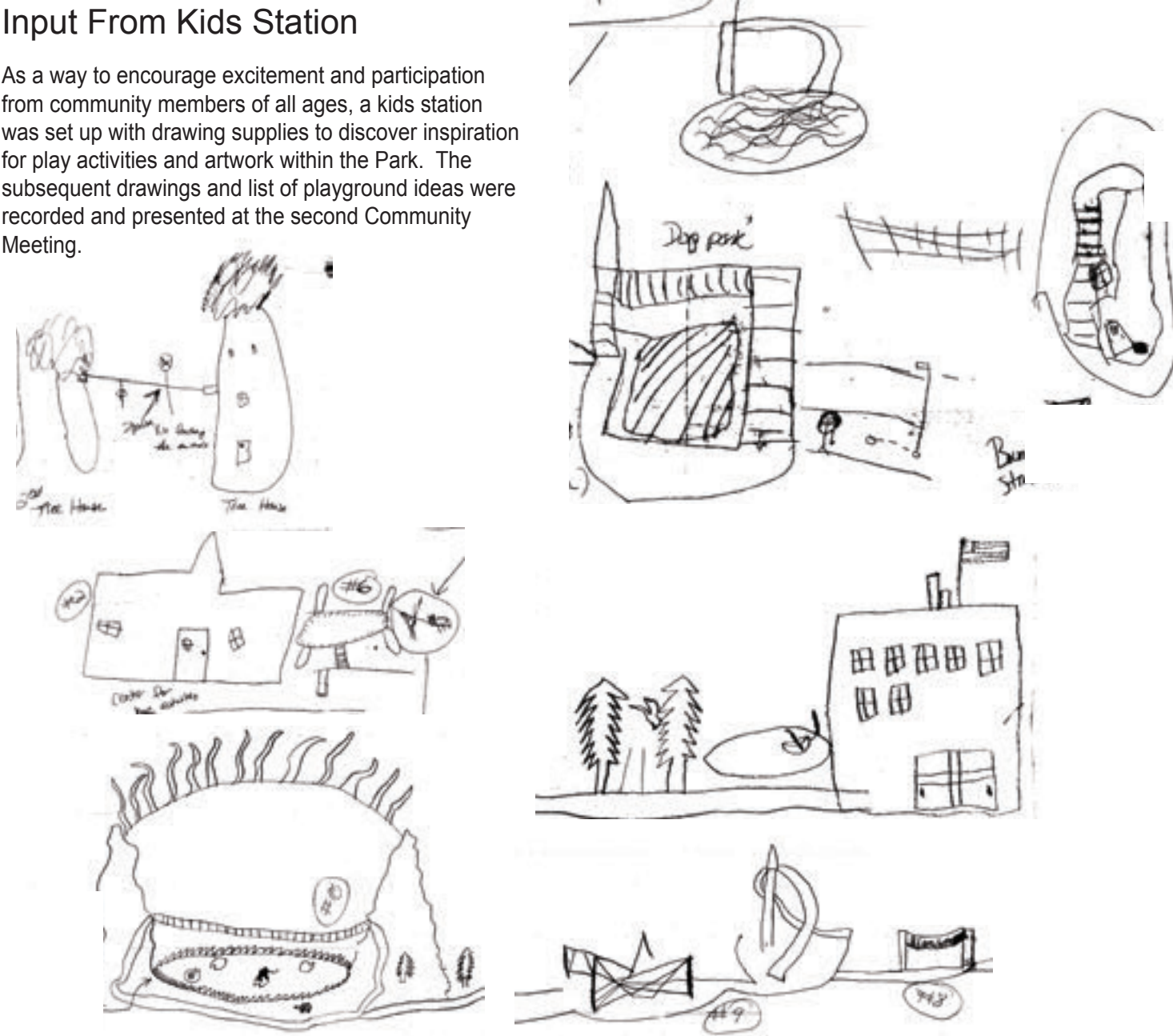
Community Meeting #1: Feedback and Results

After the first Community Meeting, the Project Core Team felt a need to meet with a smaller group of representatives from the immediate surrounding neighborhoods as well as representatives from the Towns of Garner and Fuquay-Varina to understand specific concerns of adjacent land use, access, development and program priorities. This smaller group of participants made up the Citizens Resource Team. The results from both the Beech Bluff County Park survey, and comments received and each station of the Community Meeting and Citizens Resource Team Meeting were compiled into a graphic summary of recurring comments

provided for display at the second Community Meeting. The map to the right indicates these recurring comments which center around protecting the existing environmental resources, limiting access, visual sight lines, and noise to the adjacent residential properties, and providing access to the Park solely from NC 42.

Input From Kids Station

As a way to encourage excitement and participation from community members of all ages, a kids station was set up with drawing supplies to discover inspiration for play activities and artwork within the Park. The subsequent drawings and list of playground ideas were recorded and presented at the second Community Meeting.



Public Meeting #1 Comment Map



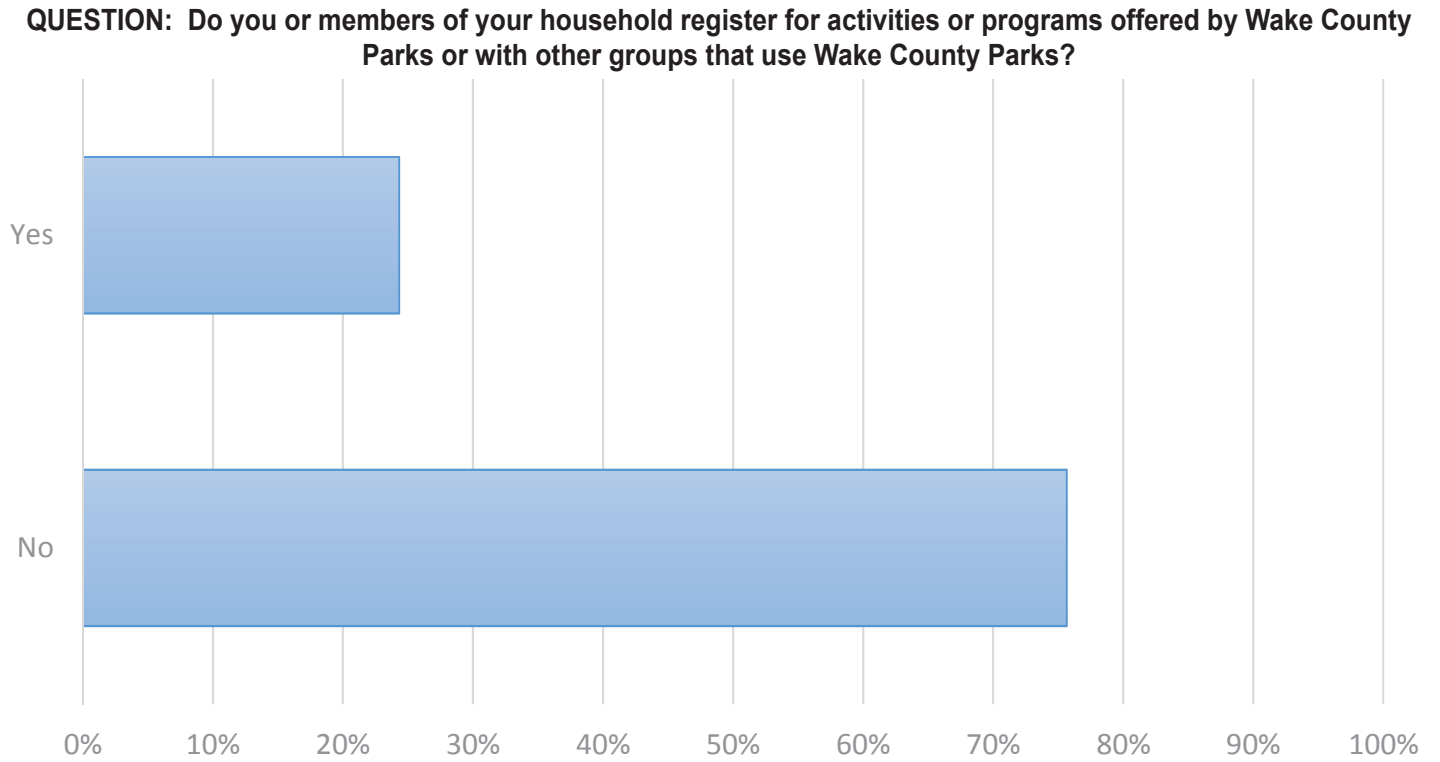
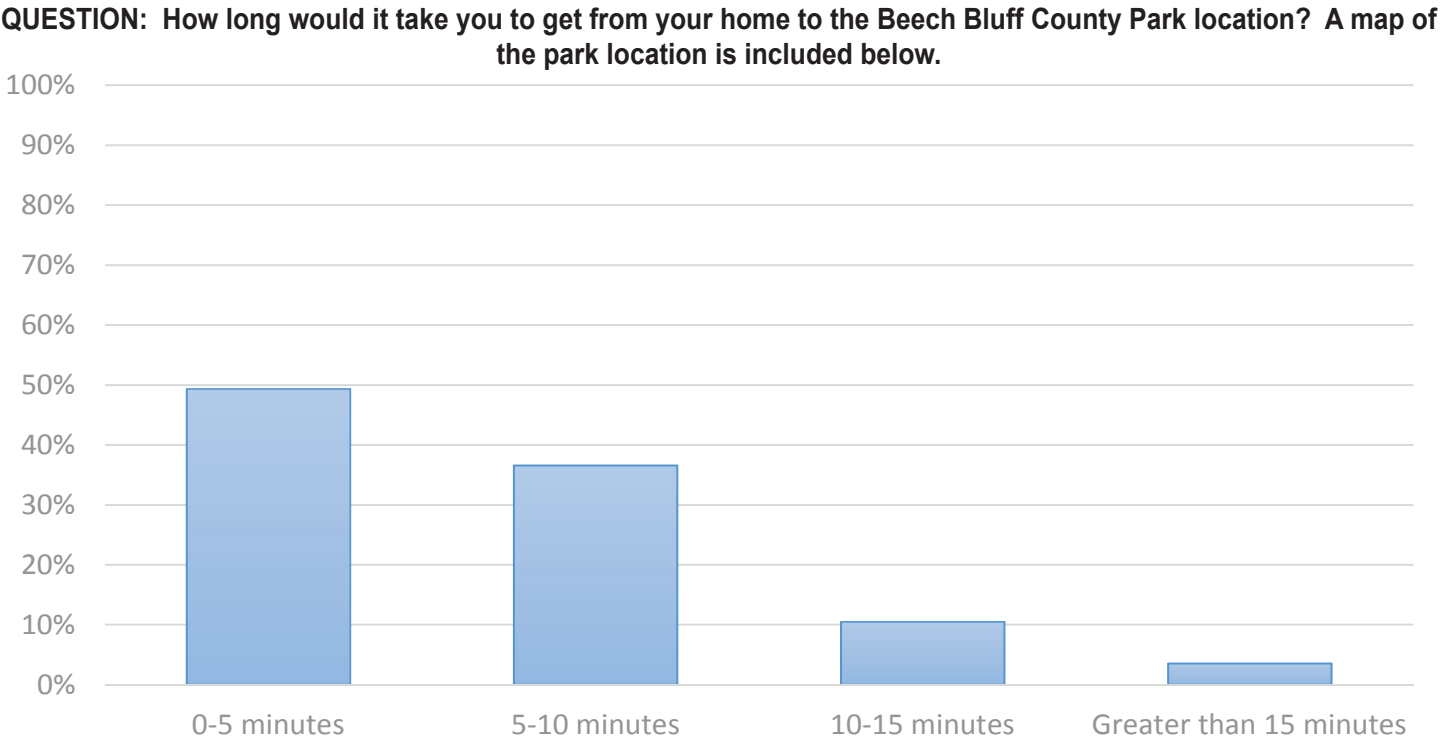
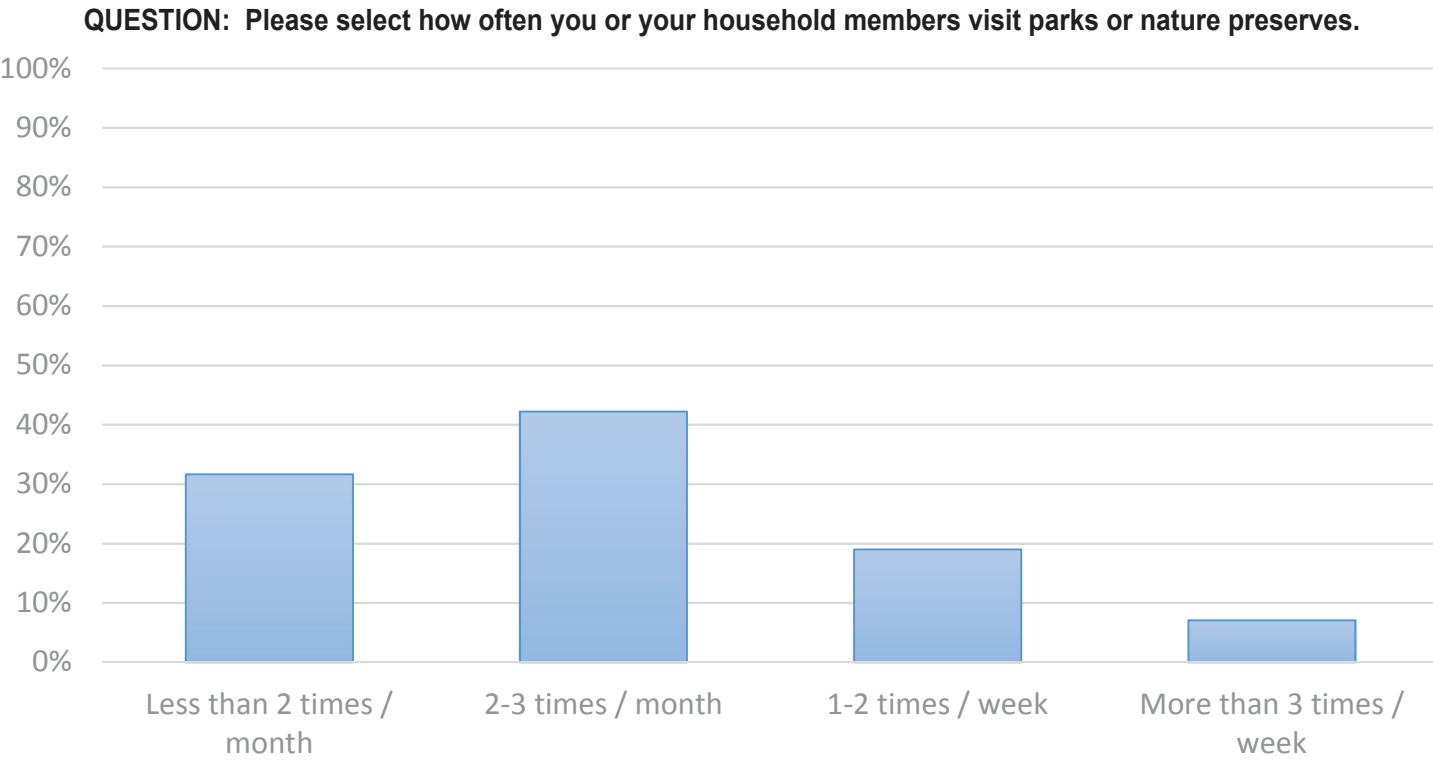
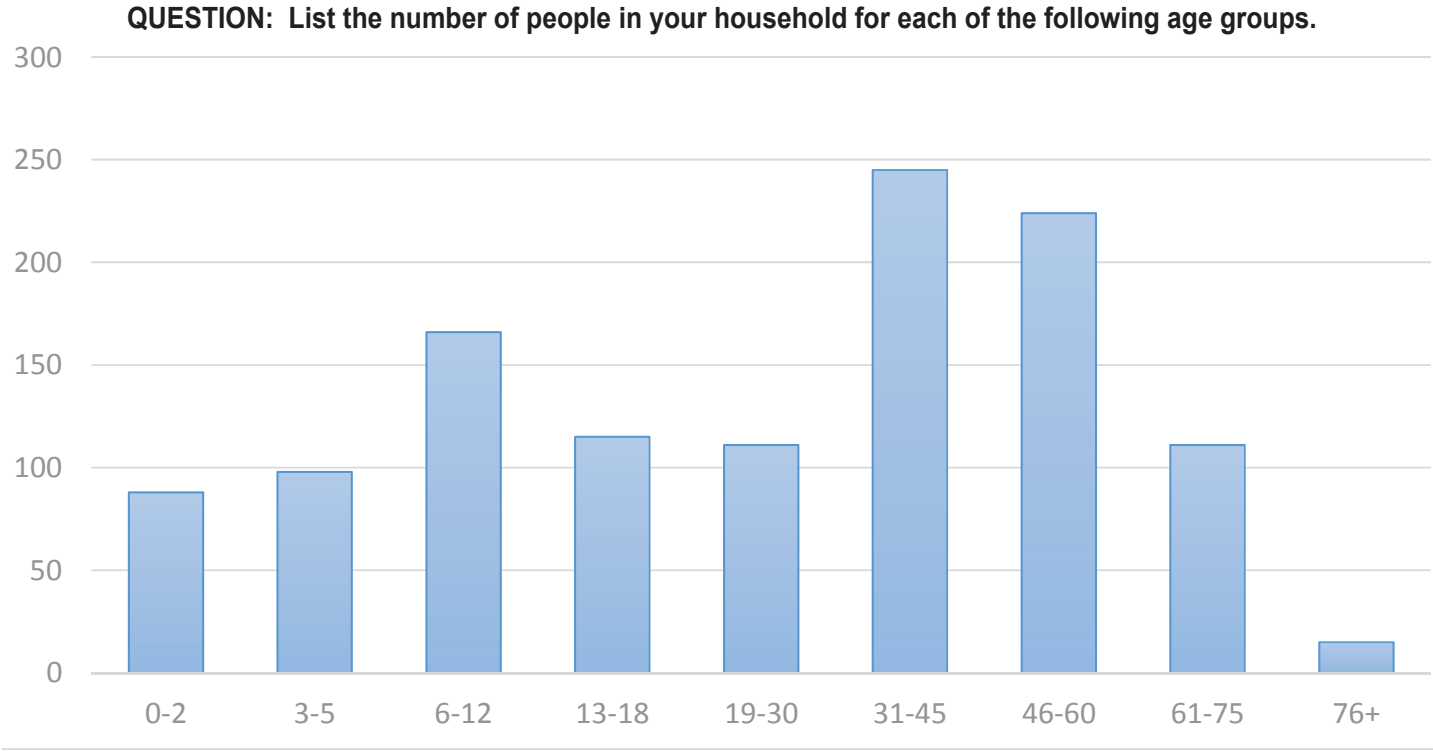
Survey Results

In addition to the Community Meetings, a public input survey was made available both at the Community Meeting and online, accessed through the Wake County Beech Bluff County Park website. The goals of the survey were to gauge participants' priorities, values and how they might use the Park. The survey was design to graphically

display results but also allow participants to write in specific questions, comments or concerns to the Wake County Core Team. Over 500 participants completed the survey from a seven month period between the first and third Community Meetings.

The results indicate that potential Park users come from a wide range of age groups with different needs, majority of the participants live within close proximity to the Park, and most visit surrounding Parks several times per month, mostly on weekends. While majority of participants noted they did not belong to an organization that may use the Park,

participants listed approximately 70 different organizations consisting of schools, churches, environmental and outdoor clubs that may potentially use Beech Bluff County Park. For that reason, the Core Team placed an importance on reaching out to various organizations for input, in addition to individuals and families.





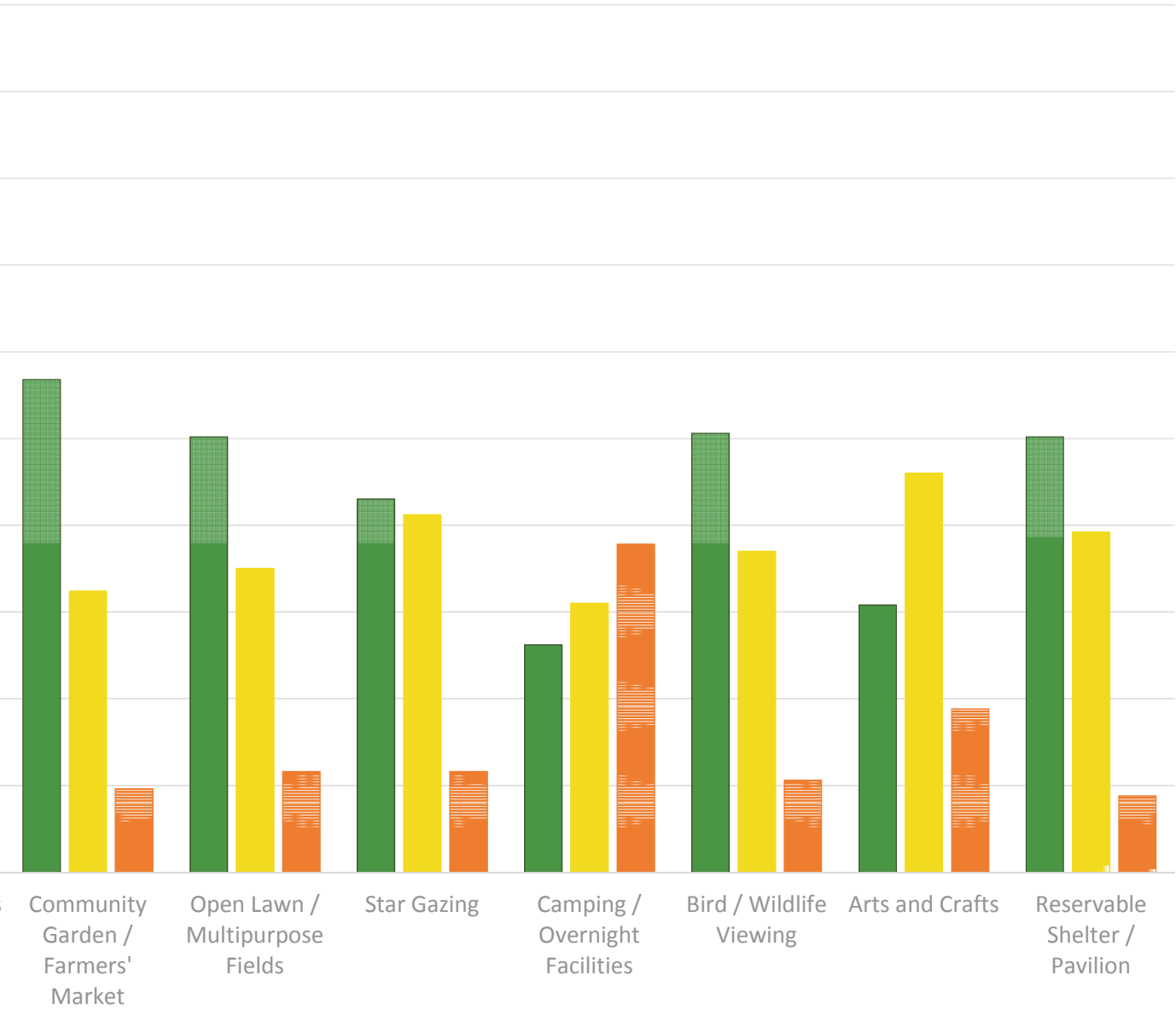
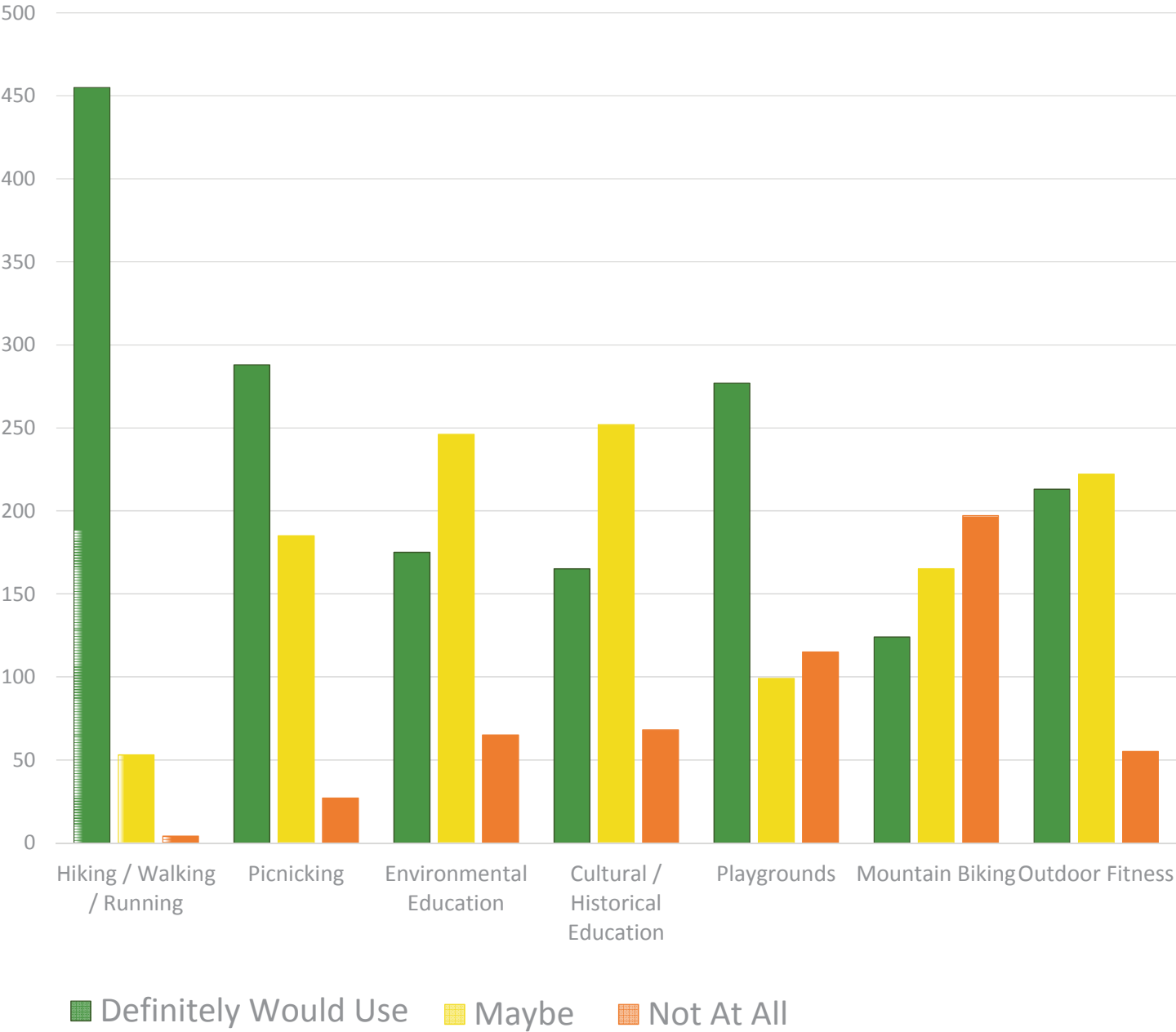
Survey Results

Participants were asked to select from a list of Park amenities what they would definitely use, might use and definitely not use at all. The results indicate a large majority of respondents prefer trails dedicated for hiking, walking and running. Other favorite amenities include picnicking, playgrounds and community gardens. In contrast, many participants indicated the definitely would not use mountain biking trails and camping or overnight facilities. Participants

were also asked to list additional amenities they would like to see at Beech Bluff County Park that have been included in the Appendix of this report. These survey results combined with the Community Meeting comments, Citizens Resource Team comments, stakeholder input and the Project Mission Statement would influence the selected program for Beech Bluff County Park.

Preferred Park Amenities

**QUESTION: Which elements (programs) would you and your household members be likely to use when visiting Beech Bluff County Park?**



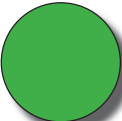






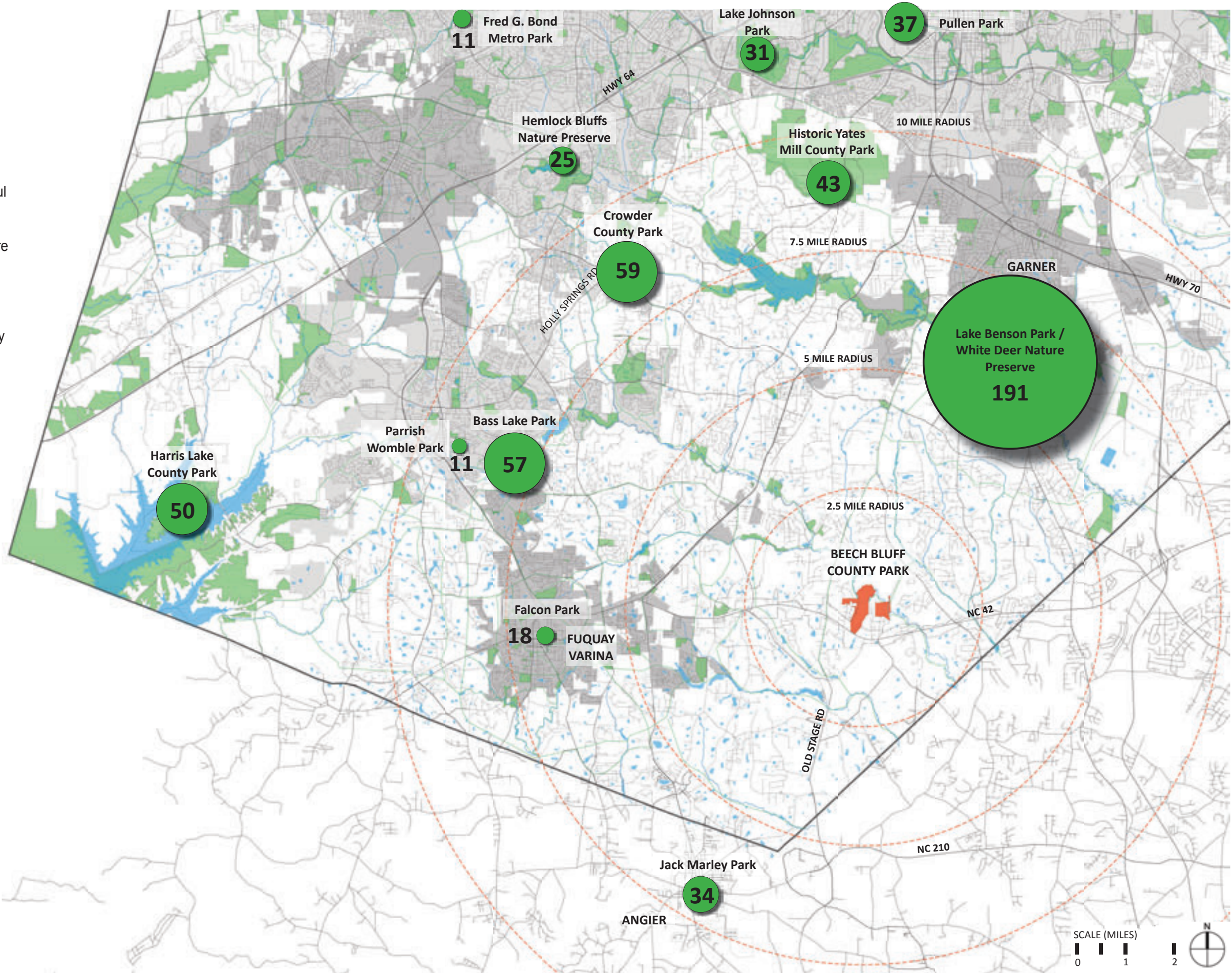
Survey Results

QUESTION: List any parks or nature preserves that you, your family or organization visit regularly.

The list of parks generated by survey participants was analyzed for common parks visited and mapped to show proximity to Beech Bluff County Park. This list was helpful to determine both the types of parks participants visit and to understand the amenities they include. In determining the Program for Beech Bluff County Park, the Project Core Team sought to provide unmet needs for the surrounding community and avoid competition with adjacent parks. The map of surrounding Park usage indicates that 191 participants visit Lake Benson Park, far more than any other park. At the same time, participants did not visit any parks within a five mile radius of the Beech Bluff County Park location.

Parks Visited by Survey Participants Not Shown on Map

-  Raven Rock State Park  
59
-  Jordan Lake  
37
-  Umstead State Park  
36
-  Lake Crabtree County Park  
16
-  Neuse River Greenway  
11

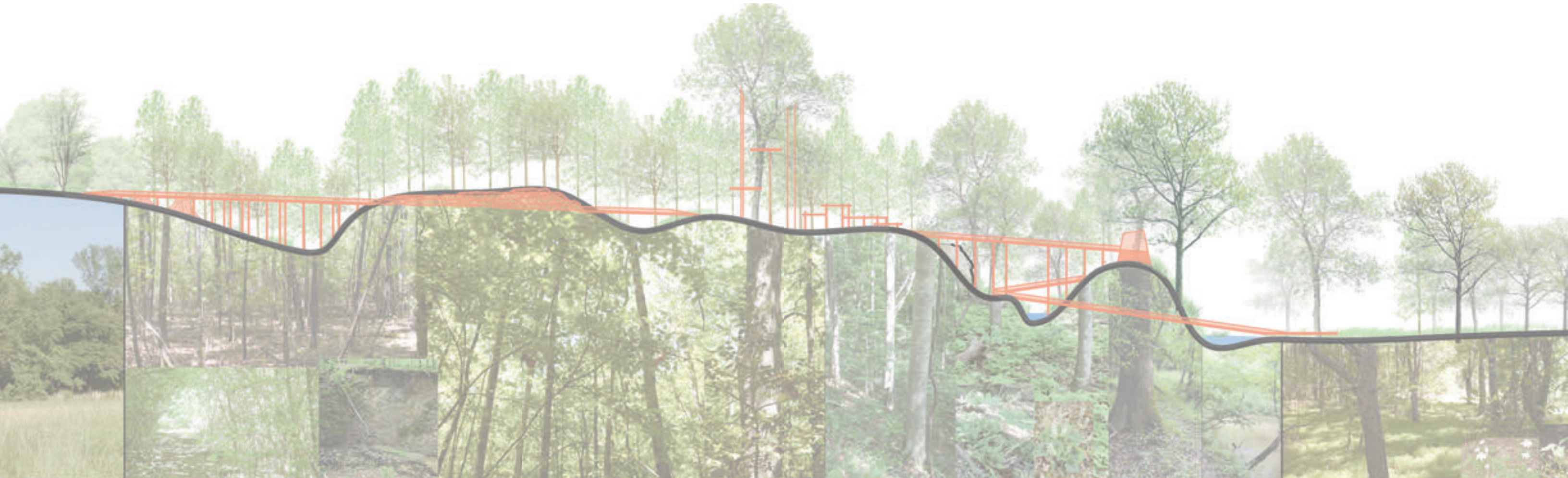


Visitation of Surrounding Parks



# Phase II: Programming

Based on results of the Site Analysis, input from Community Meeting #1, Citizens Resource Team Meeting #1 and goals from the Mission Statement, the Project Core Team began to develop and test a list of desired programmatic elements that would define the identity of the Park. Each element in the program list would center around an overall theme of providing environmental and cultural education and resource based recreation. In following with the goals of the Wake County Parks System, the program within Beech Bluff County Park would have to reveal a “cultural identity and a natural legacy.” Of equal importance to the proposed improvements within the Park were areas of the Park to remain undeveloped. These natural areas would be designated to help strengthen the ecological resilience and wildlife diversity of the site.





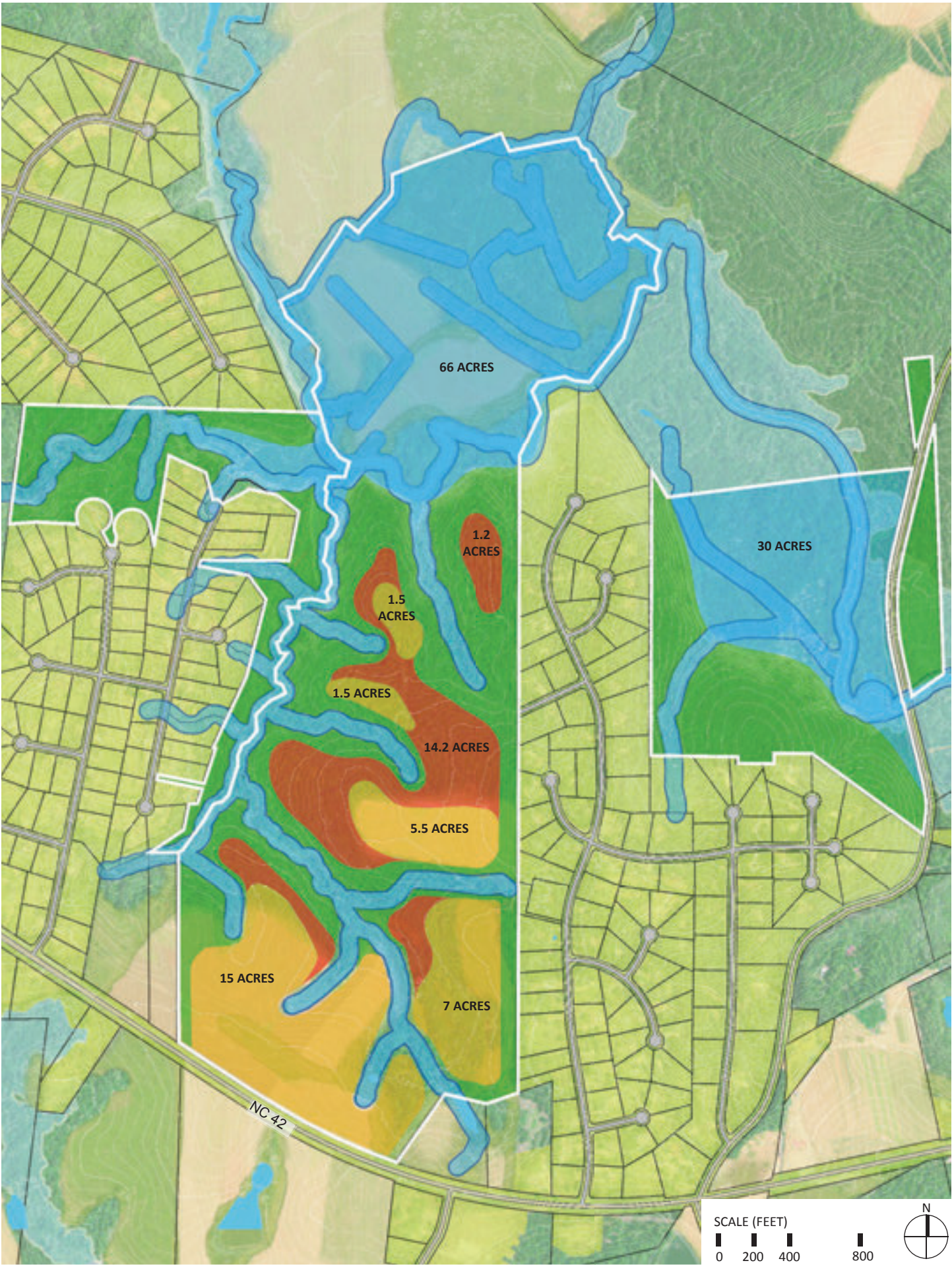
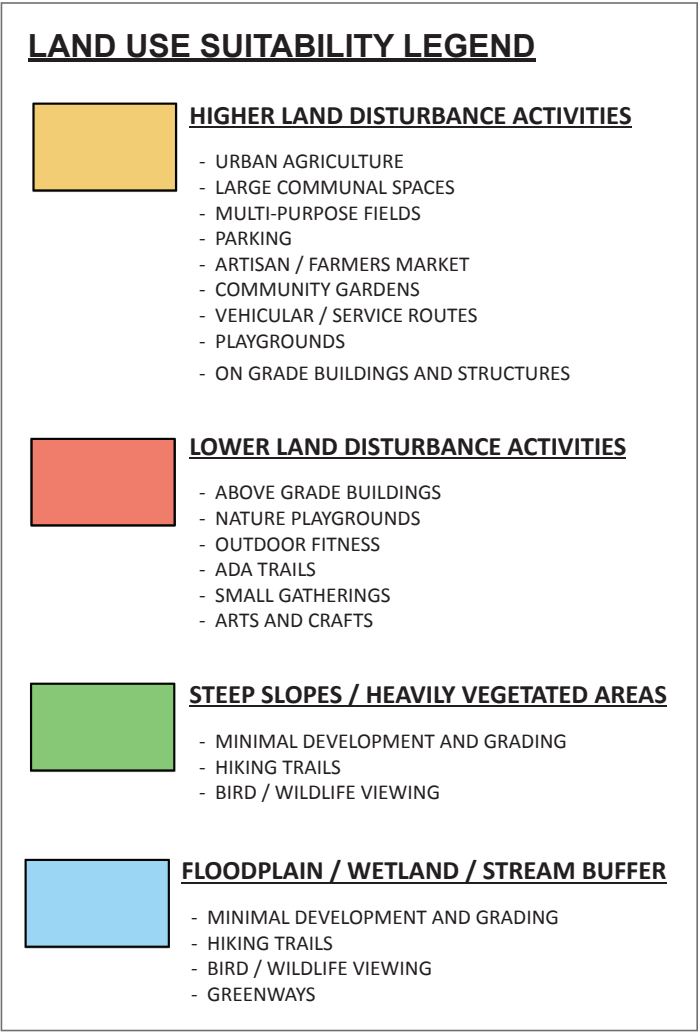
Land Use Suitability Map

Upon completion of the initial Site Analysis and after receiving comments from the first Community Meeting, the findings were compiled into a composite map depicting general areas most suitable and readily available for development.

Factors limiting development throughout the site observed by the Project Core Team include steep terrain, stream buffers and environmental protection, existing forest preservation, habitat preservation, floodplains and wetlands, connectivity, ADA accessibility access to parking and providing sufficient buffers from adjacent residential properties.

Each area of the site was characterized into a range of land use suitability from higher disturbance activities such as parking lots, building locations utility service and vehicular access to minimal land disturbance activities including hiking trails and wildlife viewing.

The resulting Land Use Suitability Map revealed that much of the development of the site is best suited to occur in the flatter terrain adjacent to NC 42 that has already been cleared for farmland. Members of the Community expressed a desire to protect a large amount of the existing forested areas in the central portion of the site that may be best suited for hiking trails and outdoor recreation involving minimal land disturbance. The portion of the site north of Middle Creek and the isolated smaller parcels are least suited for development due to difficult access and presence of valuable aquatic ecosystems and land within the 100 year floodplain.

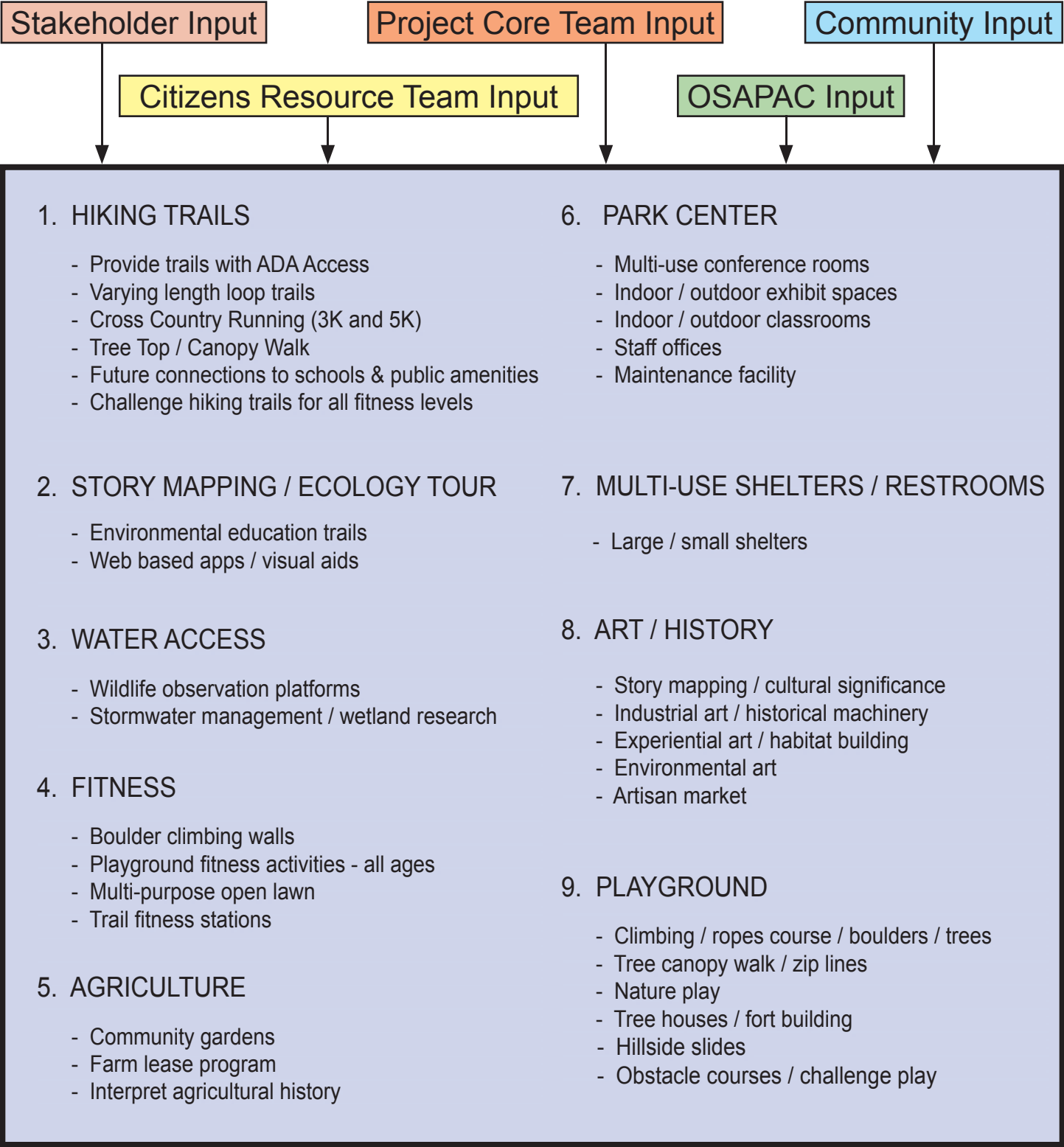




Program Analysis

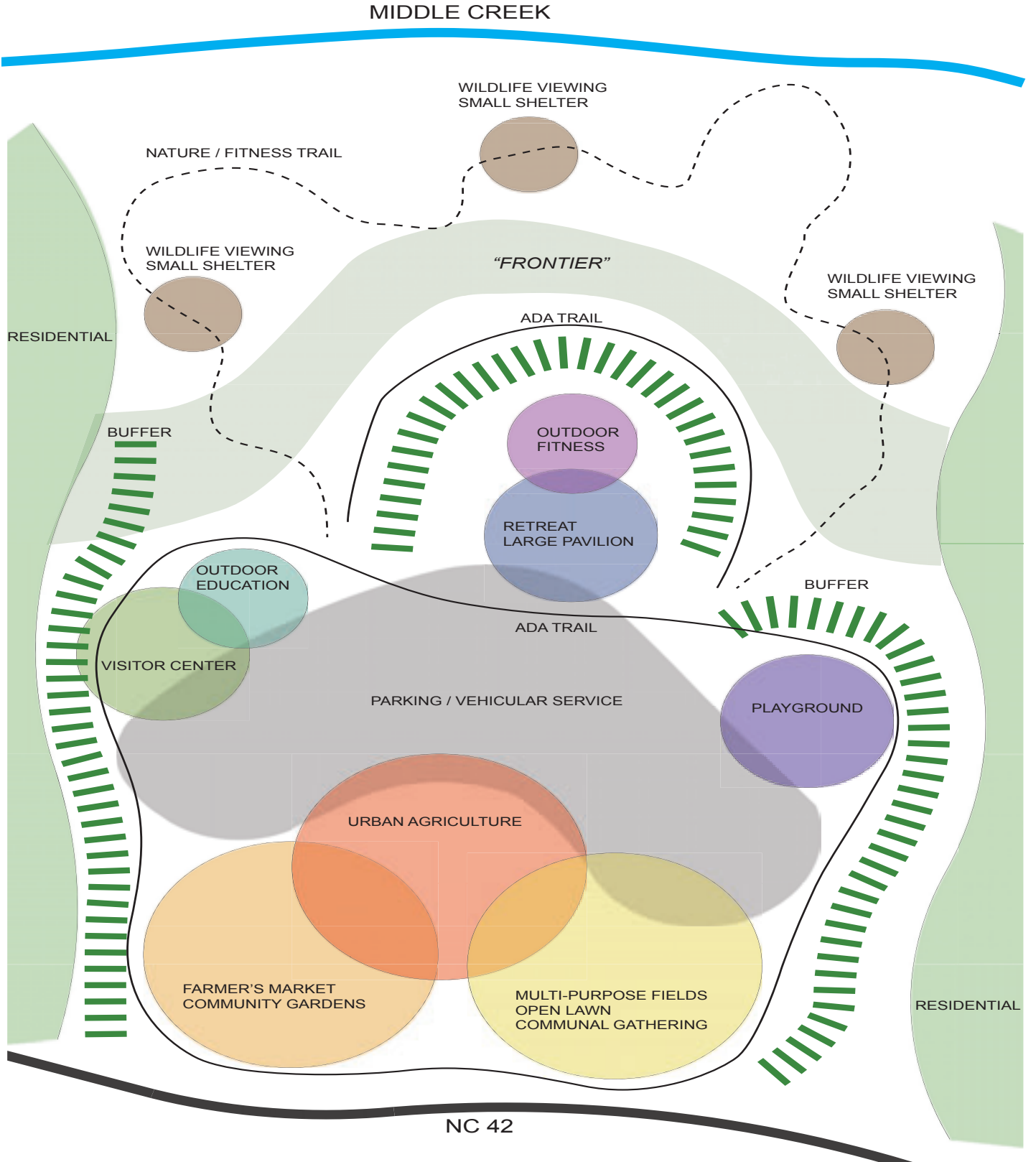
The following list of programmatic elements was developed from compiling the recommendations and input of the five following groups: Stakeholders, Project Core Team, Community, Citizens Resource Team and Wake County OSAPAC. A number of other programmatic elements have been suggested during the Community Meetings, however, the Project Core Team felt many of these offerings would

be best suited at other existing or future parks given the constraints and environmental sensitivity of the site. The full list of discussed program has been documented in the Core Team meeting minutes and has been made available to surrounding municipalities for consideration in developing future parks to fulfill these unmet needs.



Prior to developing design alternatives, a Venn diagram was created showing the park program elements, adjacencies and compatibility with surrounding elements based on the five sources of input. The resulting diagram below would begin to inform the general site layout and relationship amongst proposed amenities.

Noise levels, parking requirements, ADA access, street frontage and land disturbance requirements were among the many factors studied by the Project Core Team that determined which program elements were grouped together and separated.

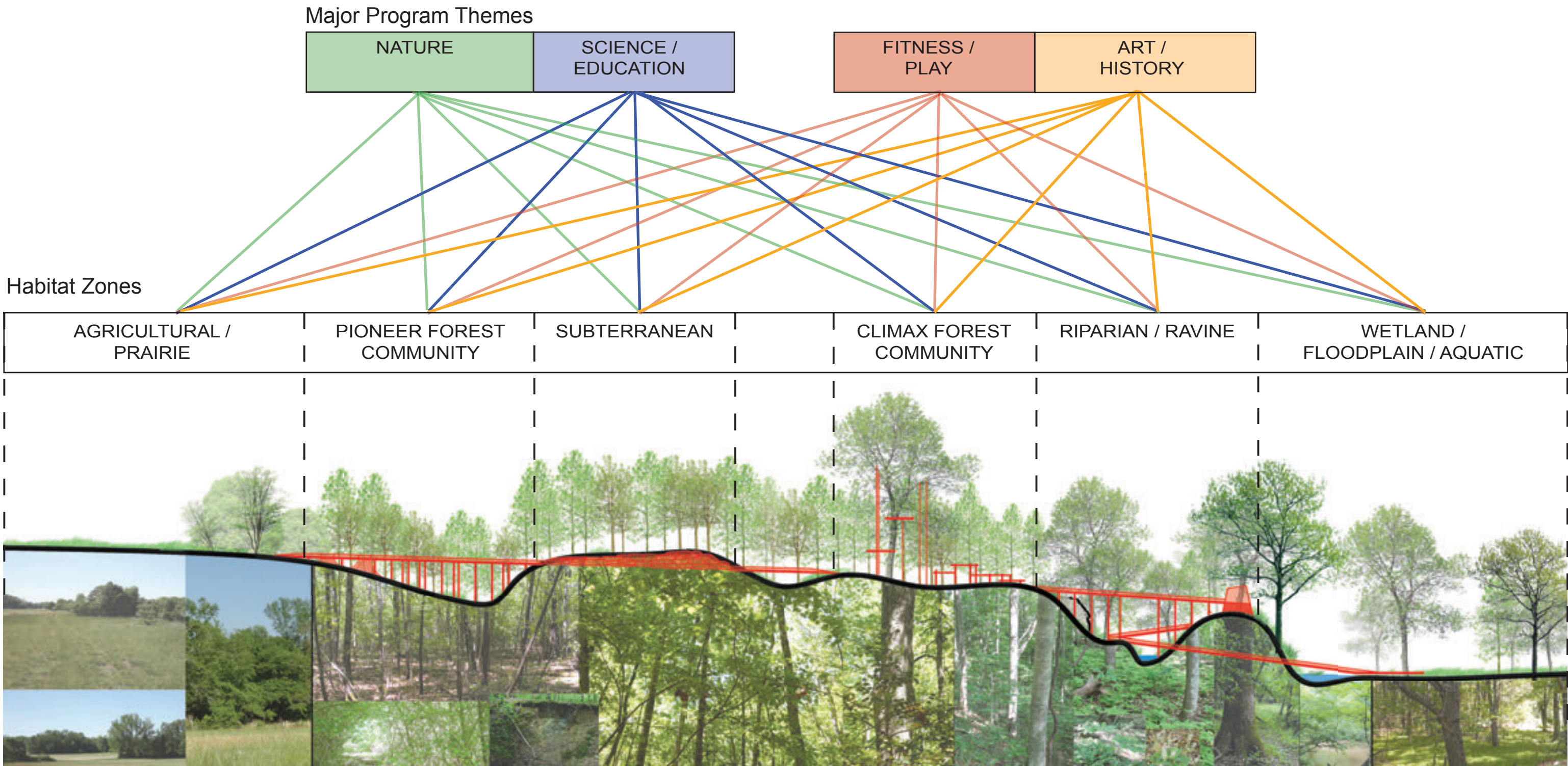




Program Themes

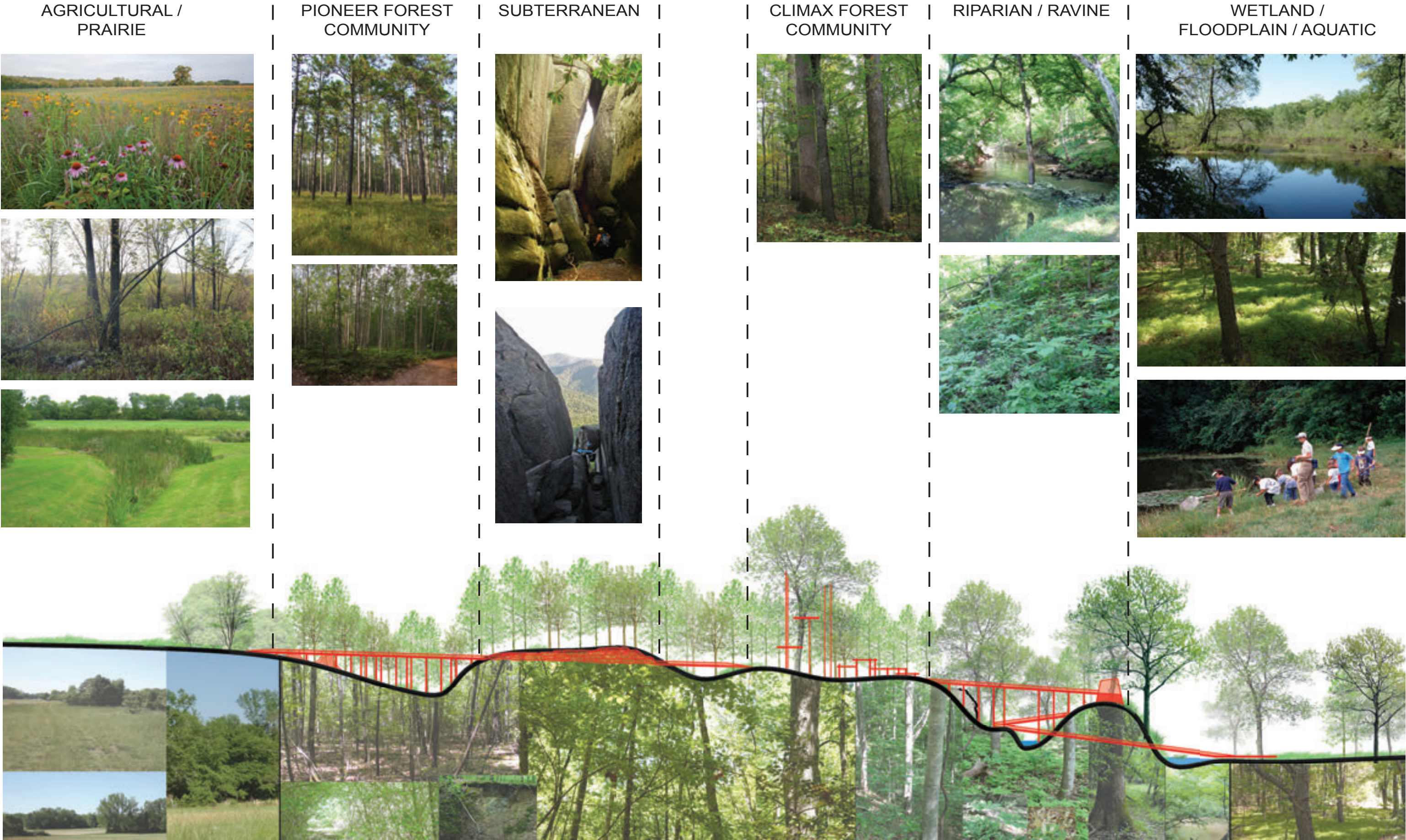
One of the challenges faced by the Project Core Team was to design and present the amenities within the Park in a way that would “represent a cultural identity and a natural legacy” unique to Beech Bluff County Park. During the site analysis, the topography of the site and transition from forest to floodplain became a defining aspect of the existing site. A number of distinct microclimates and habitat zones exist within these variations in elevation that contribute to the diversity of the Park. The Project Core Team sought

to present the major program themes of nature, science & education, fitness & play and art & history and how they could be incorporated into the Park in unique ways that reflect the character of each distinct habitat zone. Each major program theme would be immersed within the landscape instead of placed overtop allowing visitors to journey across the site at all elevations above and below the ground plane.












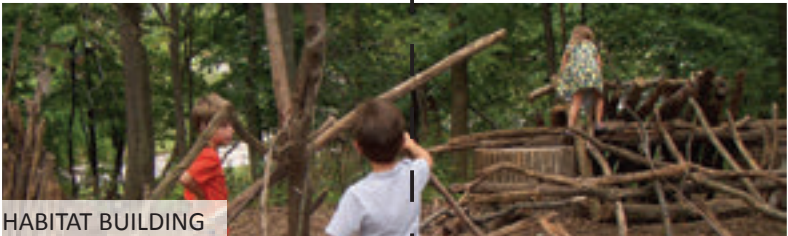




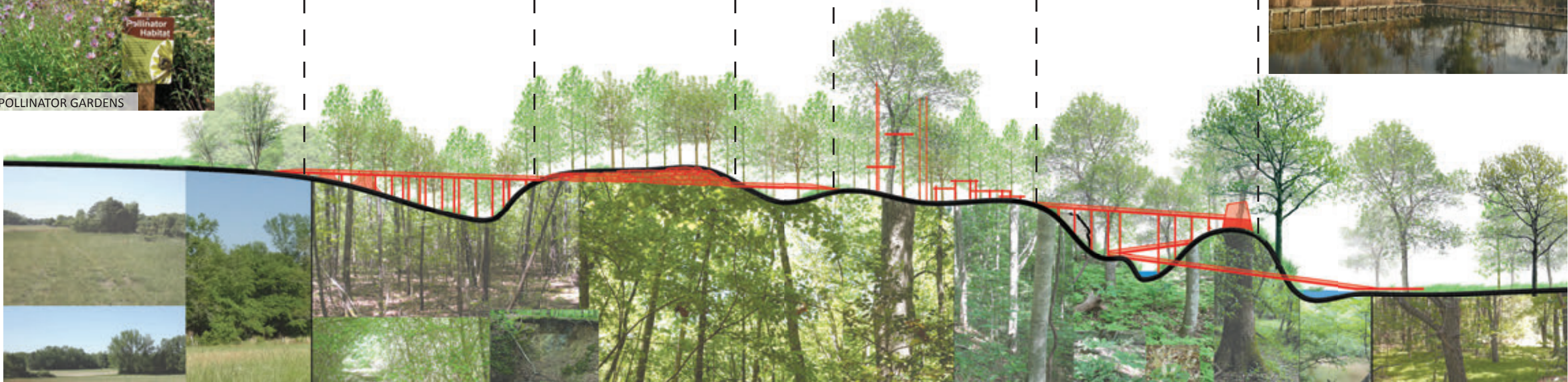
Program Themes: Nature









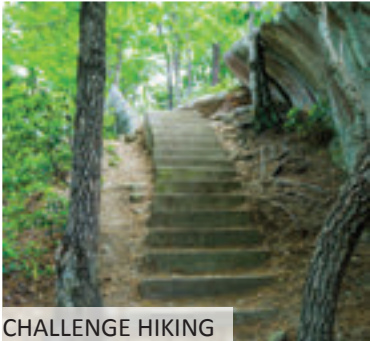


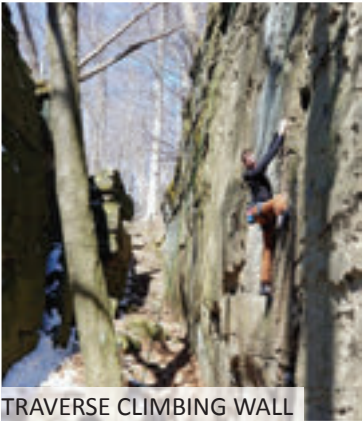











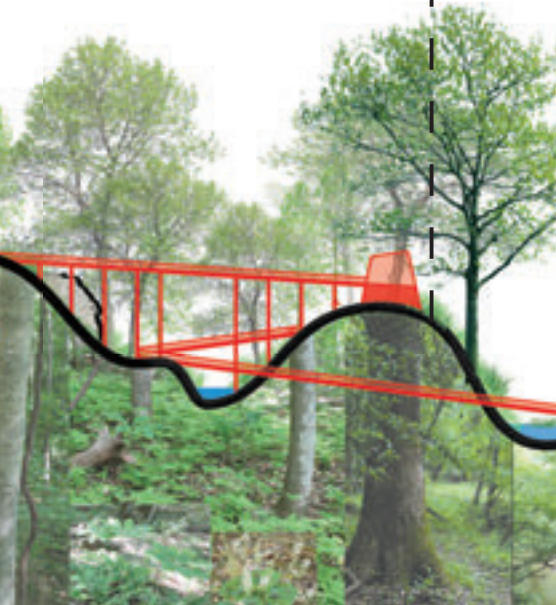
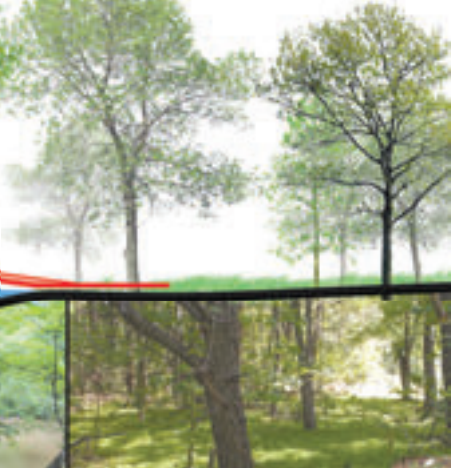
Program Themes: Science / Education

AGRICULTURAL / PRAIRIE	PIONEER FOREST COMMUNITY	SUBTERRANEAN	CLIMAX FOREST COMMUNITY	RIPARIAN / RAVINE	WETLAND / FLOODPLAIN / AQUATIC
 <p>RENEWABLE ENERGY</p>	 <p>OUTDOOR CLASSROOMS</p>		 <p>CARBON SEQUESTRATION RESEARCH</p>		 <p>WETLAND HABITAT AND WATER QUALITY RESEARCH</p>
 <p>CLIMATE MAPPING</p>	 <p>STREAM MORPHOLOGY</p>		 <p>GREENHOUSE EFFECTS</p>		 <p></p>
 <p>AGROFORESTRY</p>	 <p>HABITAT BUILDING</p>				 <p></p>
 <p>POLLINATOR GARDENS</p>					














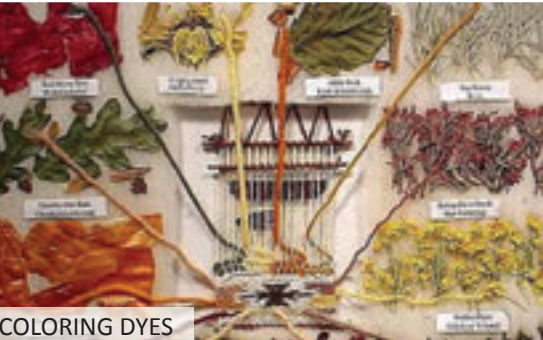




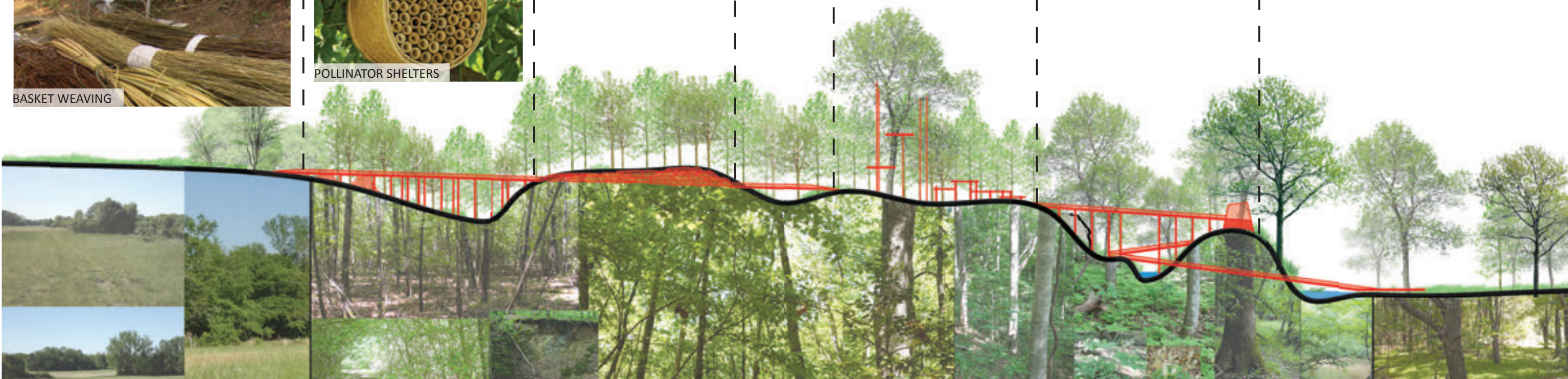
Program Themes: Fitness / Play

AGRICULTURAL / PRAIRIE	PIONEER FOREST COMMUNITY	SUBTERRANEAN	CLIMAX FOREST COMMUNITY	RIPARIAN / RAVINE	WETLAND / FLOODPLAIN / AQUATIC
 OBSTACLE COURSES	 TRAIL RUNNING		 TREE CLIMBING	 CHALLENGE HIKING	
 OBSTACLE COURSES	 NET CLIMBING	 TRAVERSE CLIMBING WALL	 FOREST GYM		
 OBSTACLE COURSES	 TRAMPOLINE PARK				
 OBSTACLE COURSES					
 					



Program Themes: Art / History

AGRICULTURAL / PRAIRIE	PIONEER FOREST COMMUNITY	SUBTERRANEAN	CLIMAX FOREST COMMUNITY	RIPARIAN / RAVINE	WETLAND / FLOODPLAIN / AQUATIC
	 <p>TRAIL MARKERS</p>				  <p>AVIARY SHELTERS</p>
 <p>INDUSTRIAL / MACHINERY ART</p>	 <p>ENVIRONMENTAL ART</p>	 <p>HABITAT EXPRESSIONS</p>			
 <p>COLORING DYES</p>	 <p>POLLINATOR SHELTERS</p>				
 <p>BASKET WEAVING</p>					





# Phase III: Design Alternatives



Using the development limits recommended in the Land Use Suitability Map and the amenities contained within the Program List, three design alternatives were created. Each design was analyzed from a wide range of perspectives including cost, environmental protection, productivity, accessibility, safety and character to generate a list of advantages and disadvantages for all three alternatives

The central focus for each design alternative was the location of the Park Center and the extents of vehicular access in contrast to pedestrian only access. Blue Jay Point County Park was studied as an example typical of many Wake County Parks where the Park Center is located between one quarter and one half mile into the Park. The drive into the Park becomes a journey and most primary amenities and parking areas are centered deep within the Park, sheltered from surrounding adjacent land uses.

The design alternatives challenged this concept for the Beech Bluff County Park site with the thought that limiting vehicular access and utilities would best preserve the ecological diversity, minimize impacts to water quality, and reduce overall construction costs. Whether or not the Park Center would be visible or hidden from NC 42 was also a question explored with each design alternative.

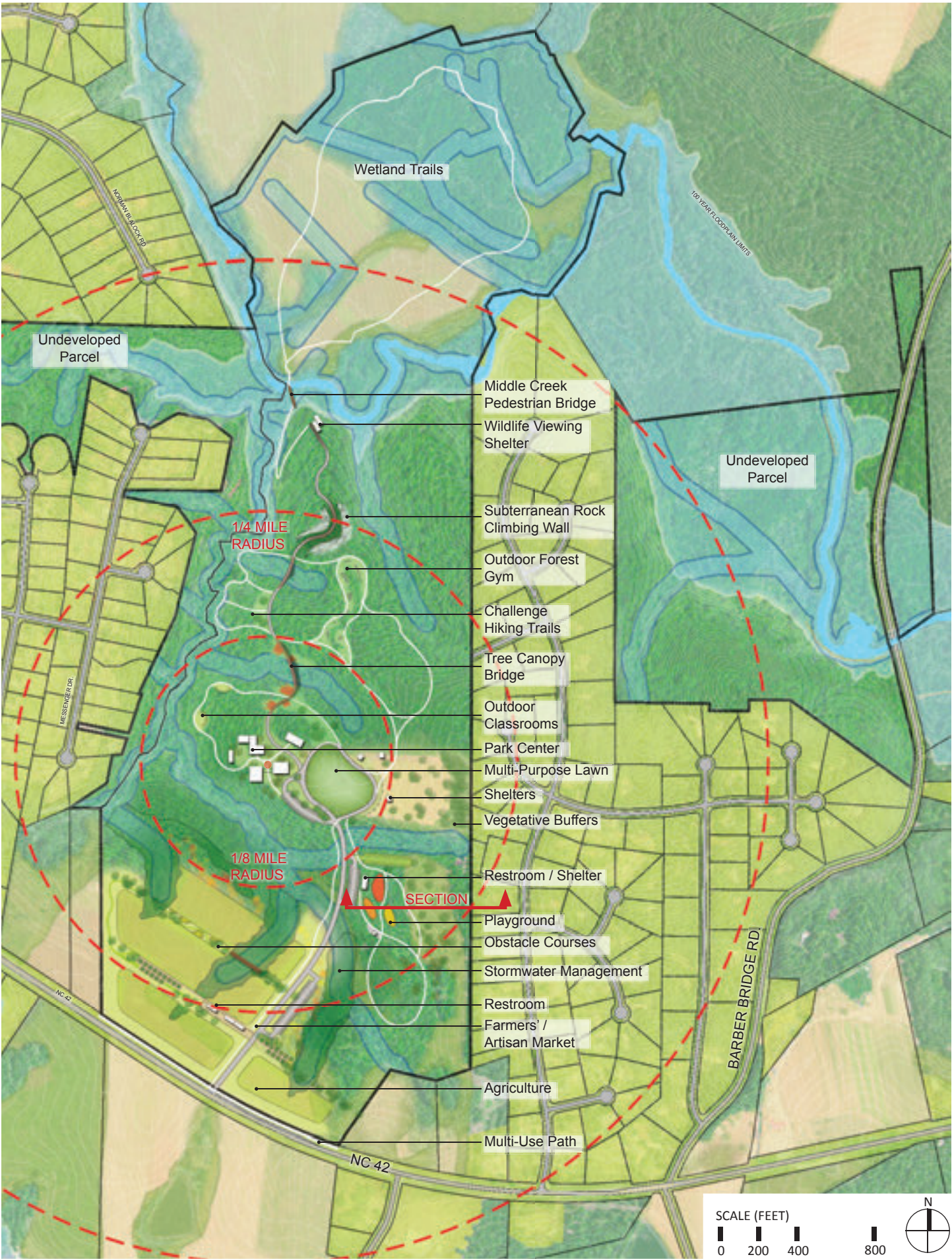
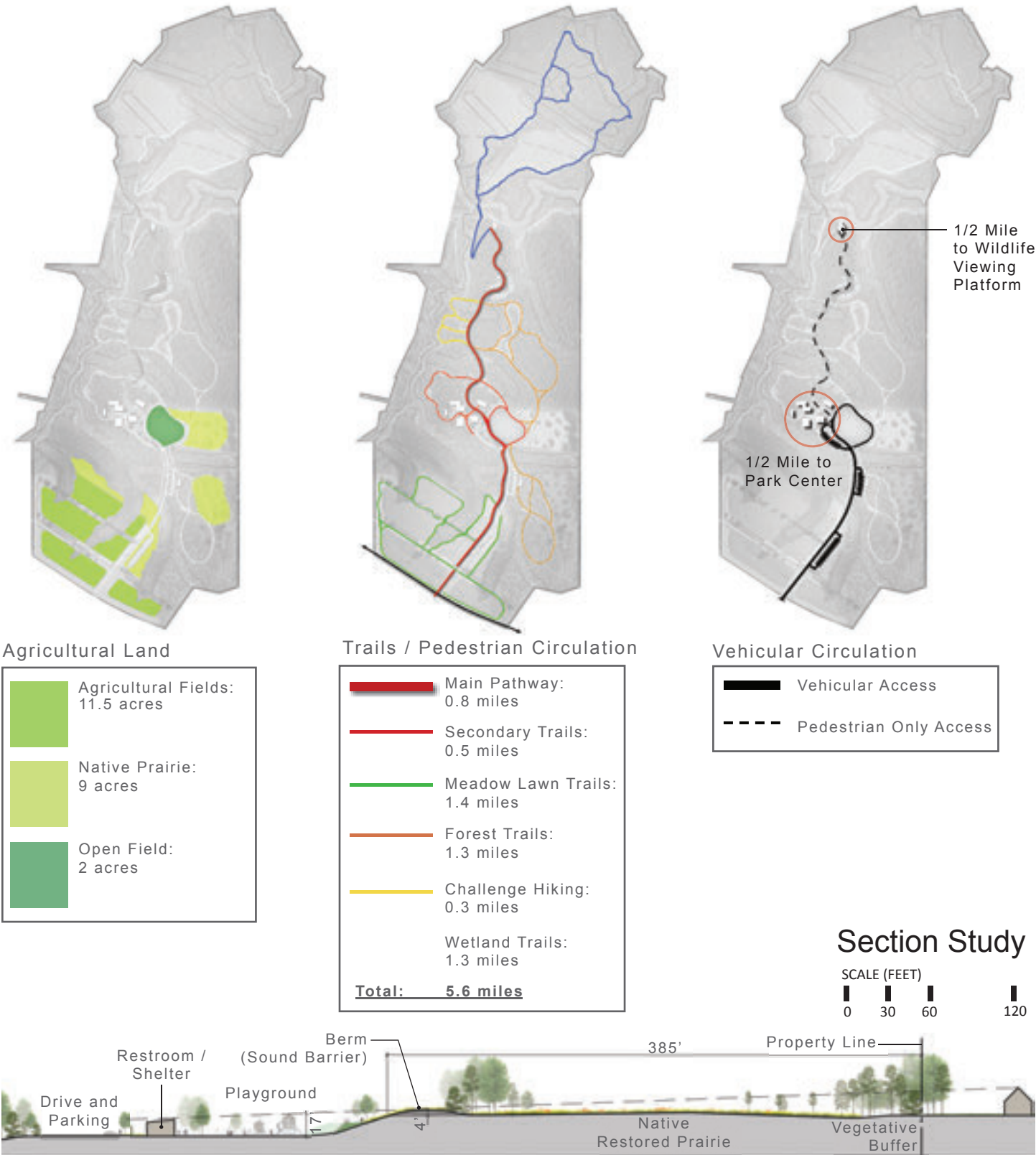
During Phase III, each design alternative was analyzed for the amount and types of open space, hierarchy of trails and extents of vehicular access. Sectional studies were also provided to indicate visual buffers and sound barriers of high activity areas from adjacent residences. The three design alternatives were discussed in detail amongst the Project Core Team and presented to Wake County OSAPAC, the Citizens Resource Team and the second Community Meeting for review and comments that would influence the selection of a Preferred Design Alternate.



Three Design Alternatives: Option A

Option A locates the Park Center 1/2 mile into the site allowing the greatest extents of vehicular access among all three design alternatives. This option would allow for easier access to all amenities and a larger amount of existing farmland and open space could be preserved. However,

the main vehicular driveway would require the crossing of two regulated stream buffers and generate activity, noise and land disturbance in areas that may increase damage to sensitive habitat zones.

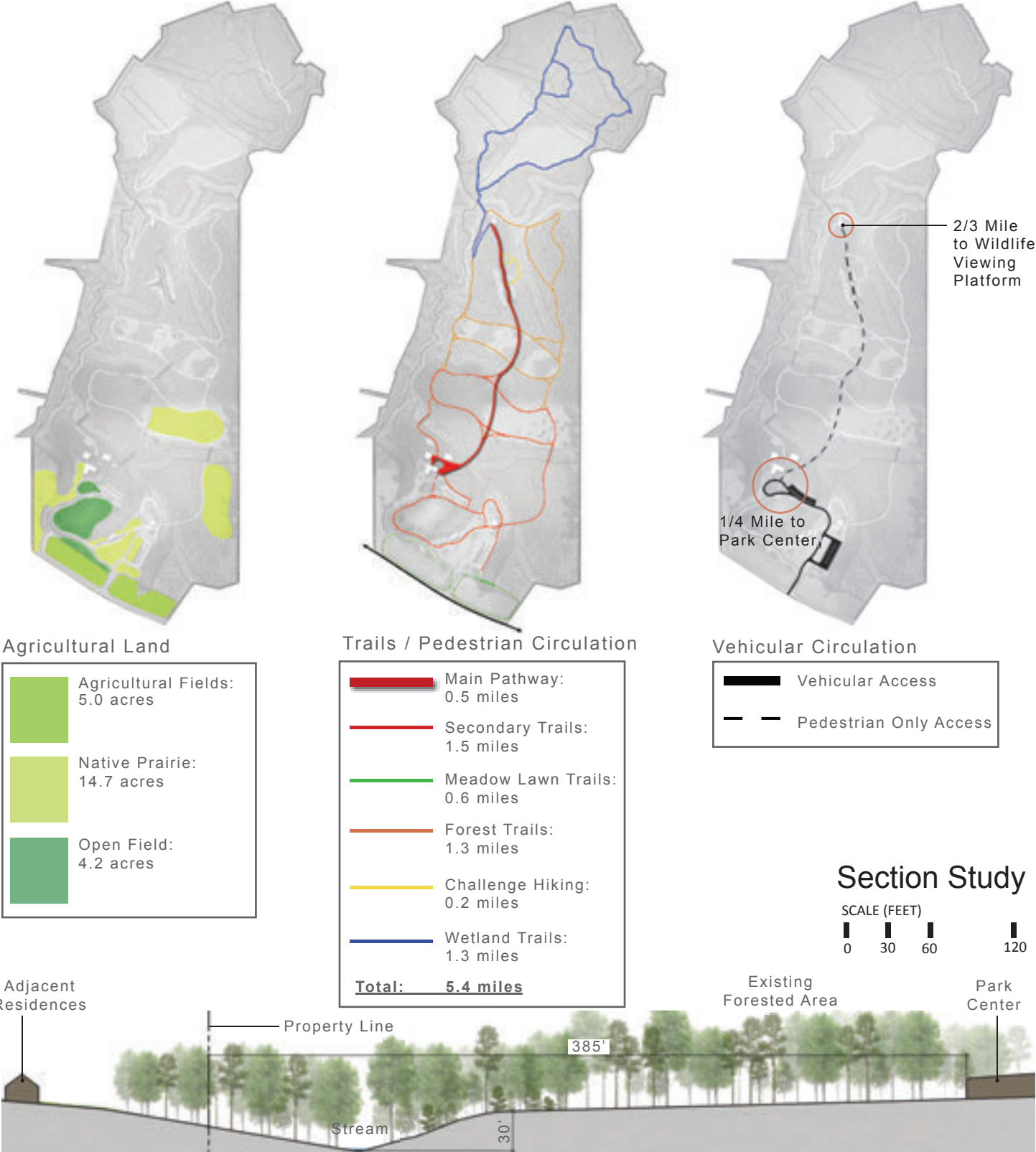




Three Design Alternatives: Option B

Option B locates the Park Center 1/4 mile into the site along the edge of the forest. The Park Center would be hidden from NC 42, however the adjacent activity areas would be exposed to noise levels from traffic traveling along NC 42. The Park Center location away from NC 42 would still require a regulated stream buffer to be crossed by the main

vehicular access road. A smaller amount of open space would be provided, however, a greater amount of forested areas would be preserved. The hiking trail network was increased by locating routes closer to adjacent residences and bridging over streams to offer more loop trails.

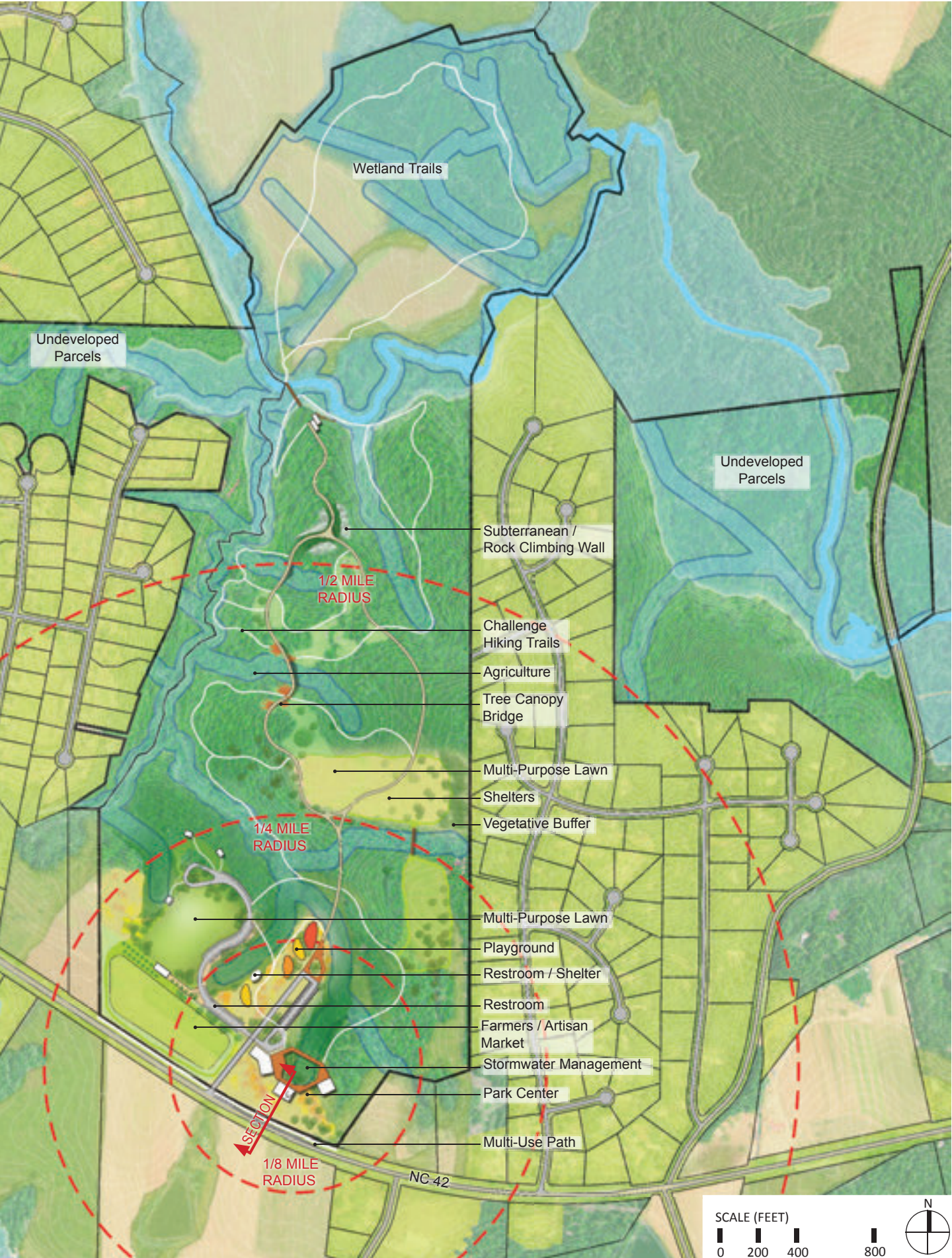
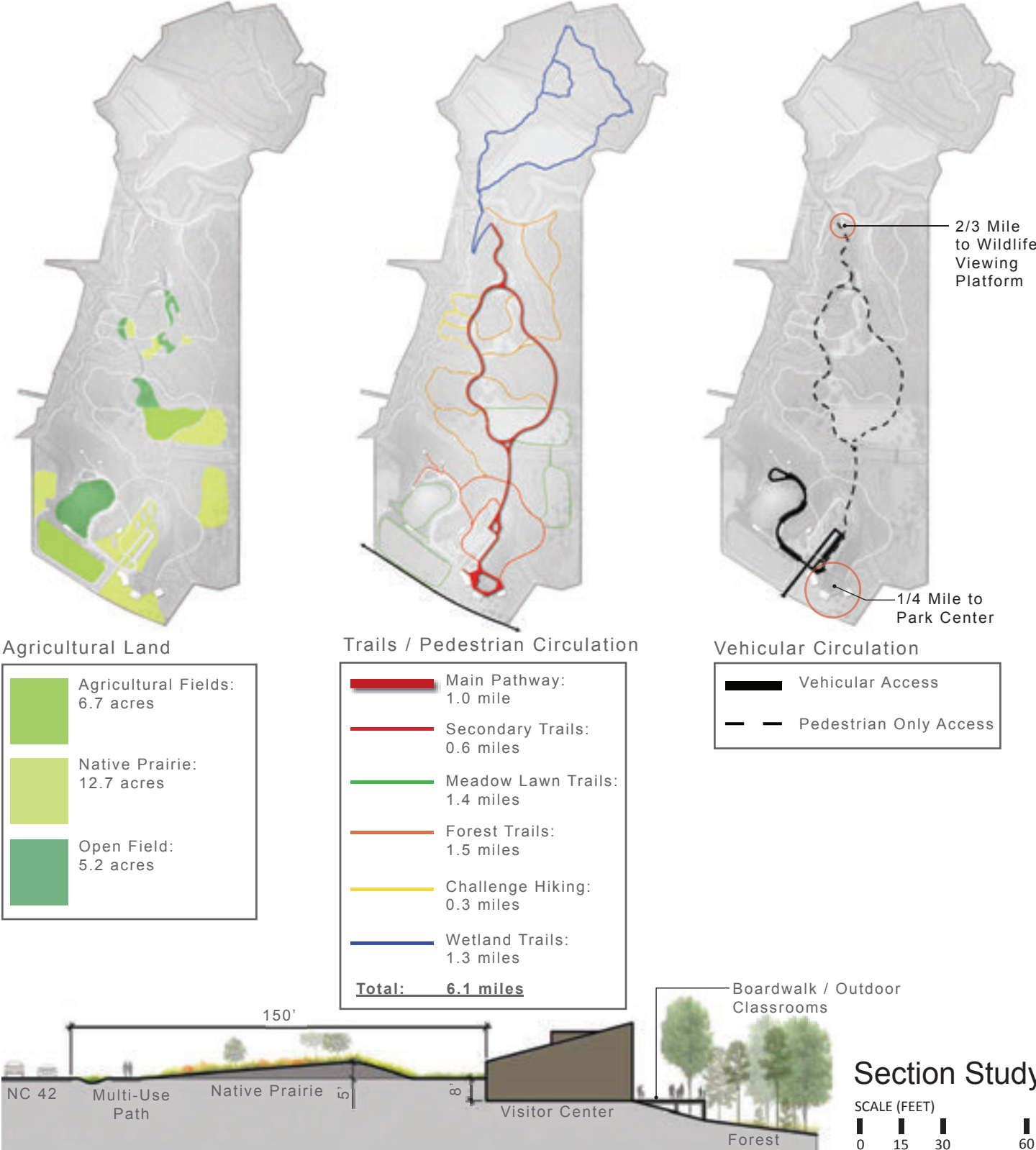




Three Design Alternatives: Option C

Option C locates the Park Center adjacent to NC 42 with a strong visual connection to the road. Vehicular access is limited to the very southern portion of the Park and no regulated stream buffers would be impacted by the main vehicular road. The building location would reduce the amount of preserved farmland but also allow for the longest

overall length of trails. In addition, a loop trail would be provided along the main pathway to the wildlife viewing platform in contrast to an out and back trail. The sectional study shows how road noise could be minimized from the Park Center, however, most of the main activity areas would be located in close proximity to NC 42.





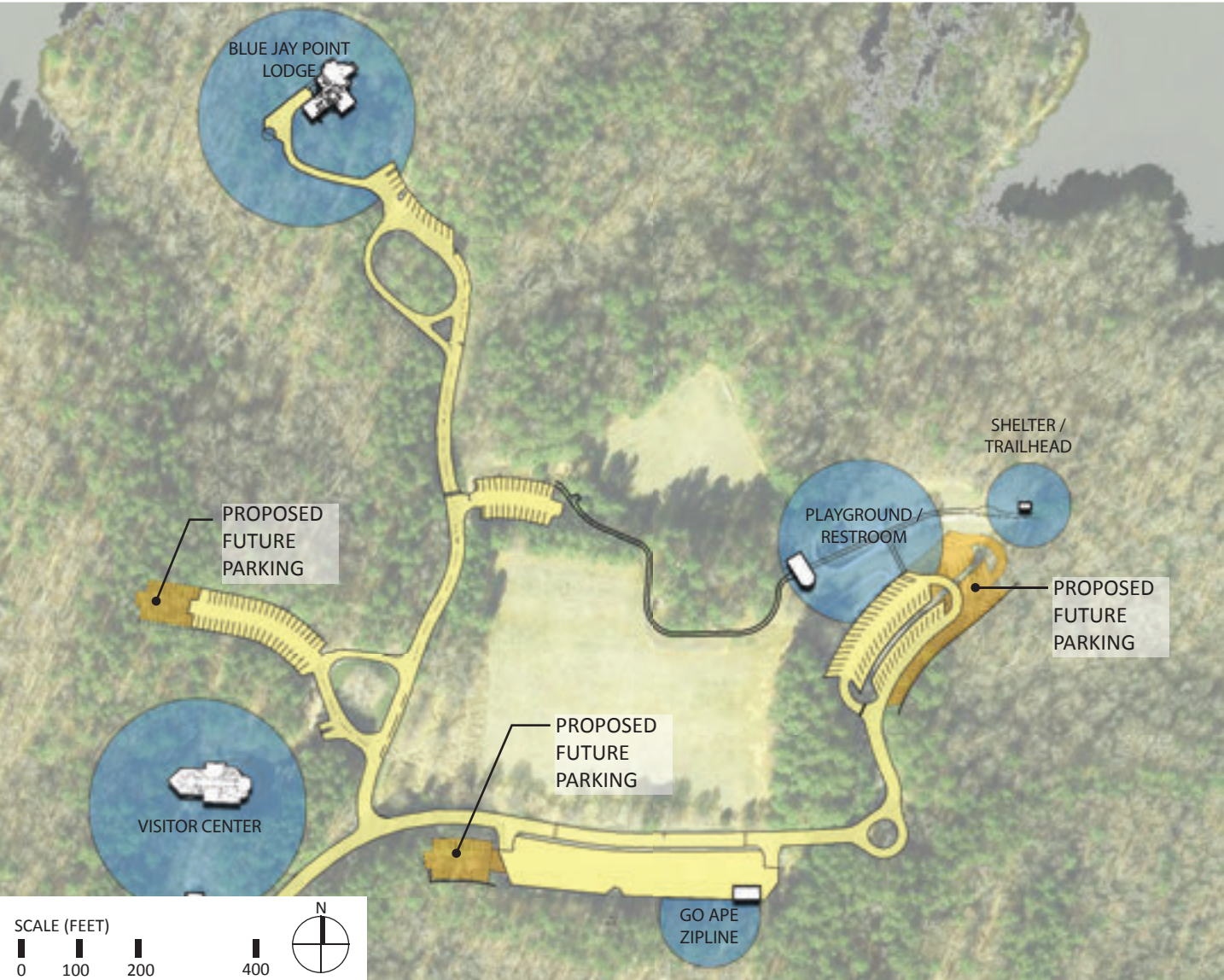
Scale Comparisons

Three of Wake County’s existing parks; Blue Jay Point, Lake Crabtree and Harris Lake were analyzed for the amenities offered and the associated parking quantity for comparison to Beech Bluff County Park and to help determine an approximate quantity of parking spaces that need to be provided in the Master Plan. Each park is

similar to Beech Bluff County Park with regard to overall size, amenities, and length of hiking trails. The associated parking quantities range from 200 to 300 spaces, however, future expansion has been planned for Blue Jay Point that would allow for 340 total spaces throughout the site.

A vehicular parking diagram has been provided for Beech Bluff County Park indicating 164 spaces with 83 overflow spaces for a total of 247 spaces. Further detailed parking studies will need to be provided during the subsequent design phases of the project that will be based on building

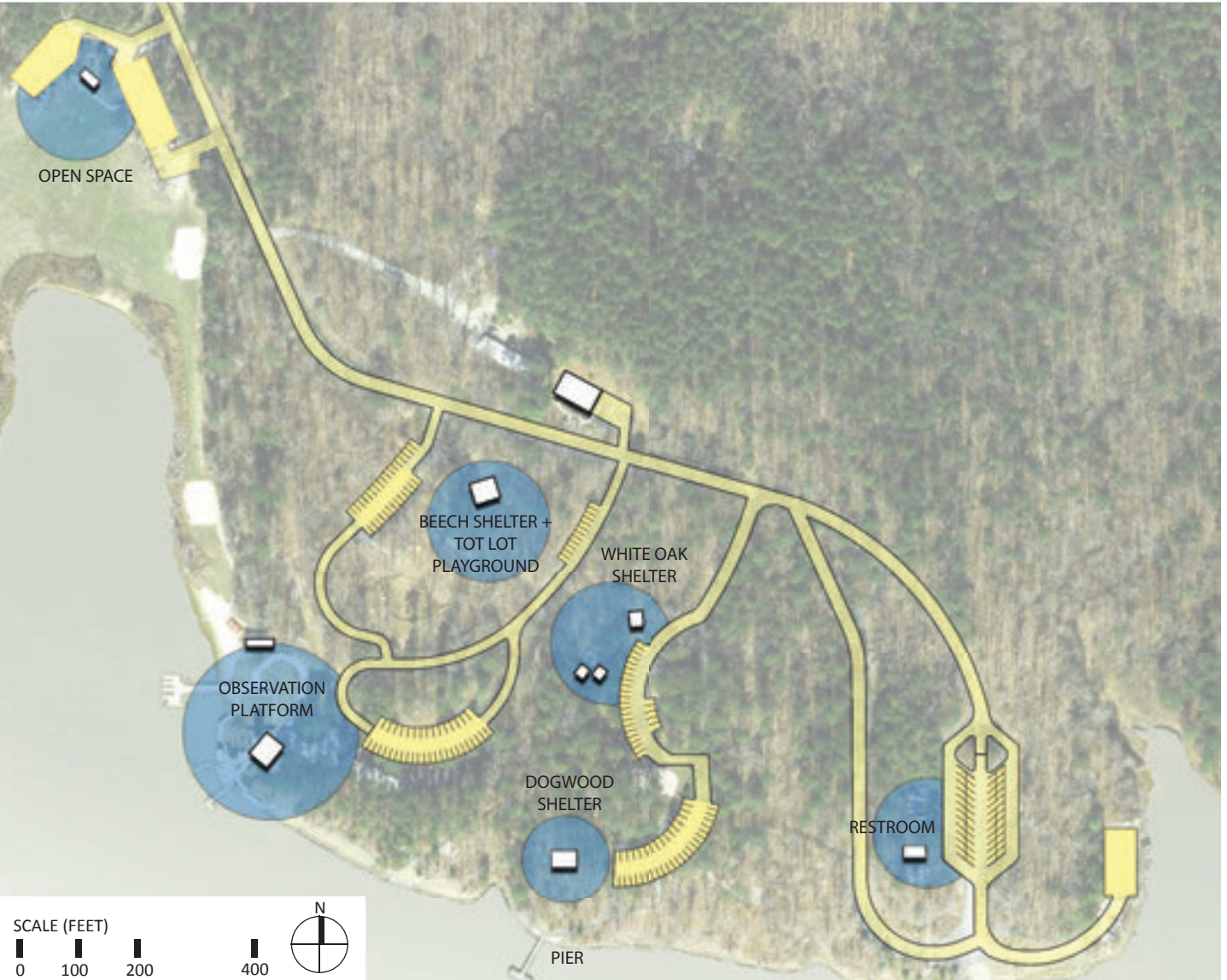
occupant load, specific site program and large events. The parking layout for Beech Bluff County Park may be flexible, allowing for future expansion on an as needed basis to avoid damage to habitat zones and maximizing the amount of open space.



Blue Jay Point County Park

236 acres  
4.8 Miles of Hiking Trails

Playground, Restroom Water Access	→	100 Parking Spaces
Open Field Ropes Course	→	70 Parking Spaces
Visitor Center	→	60 Parking Spaces
Blue Jay Point Lodge	→	24 Parking Spaces
		<hr/>
Total including 86 Proposed Future Parking Spaces:		340 Parking Spaces



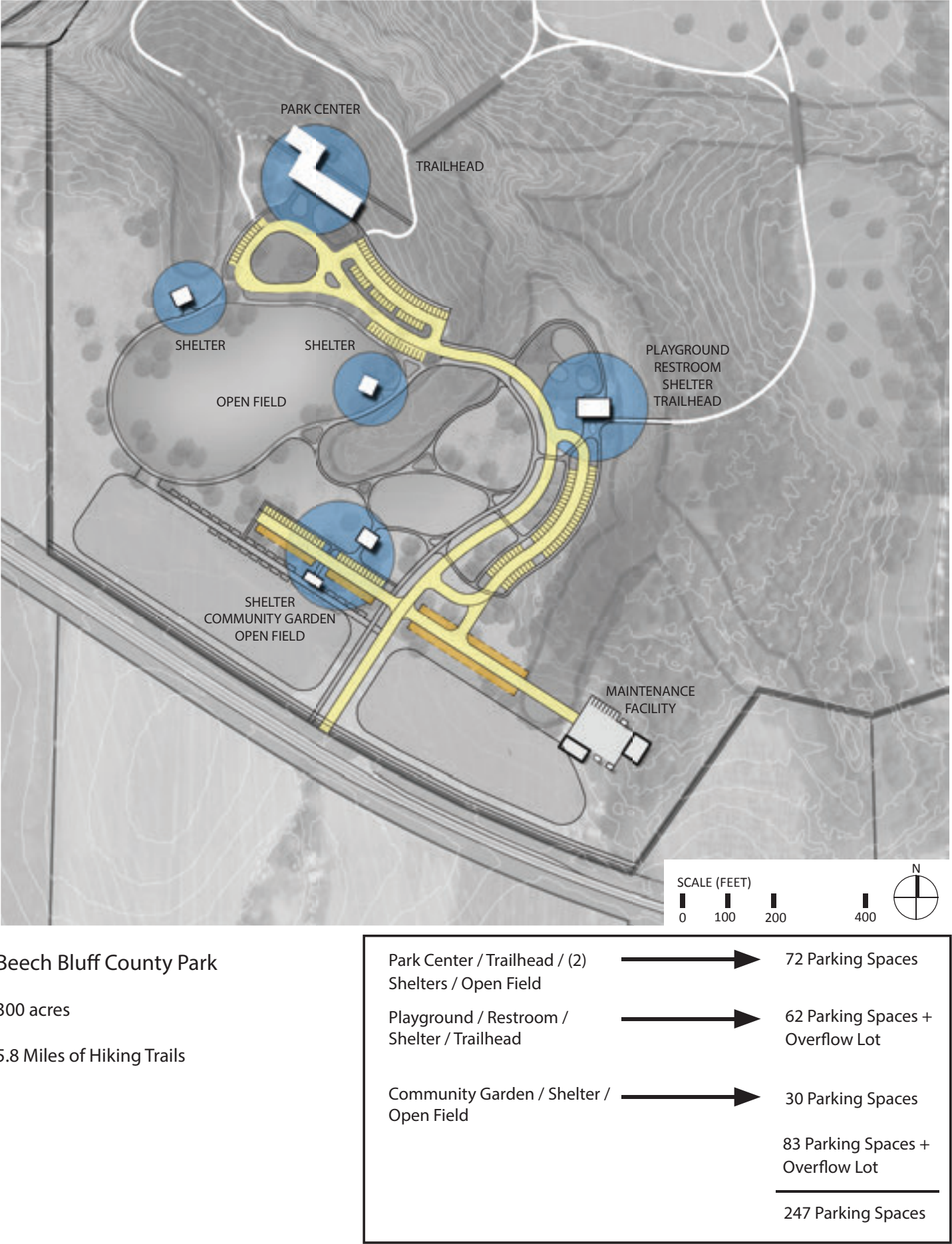
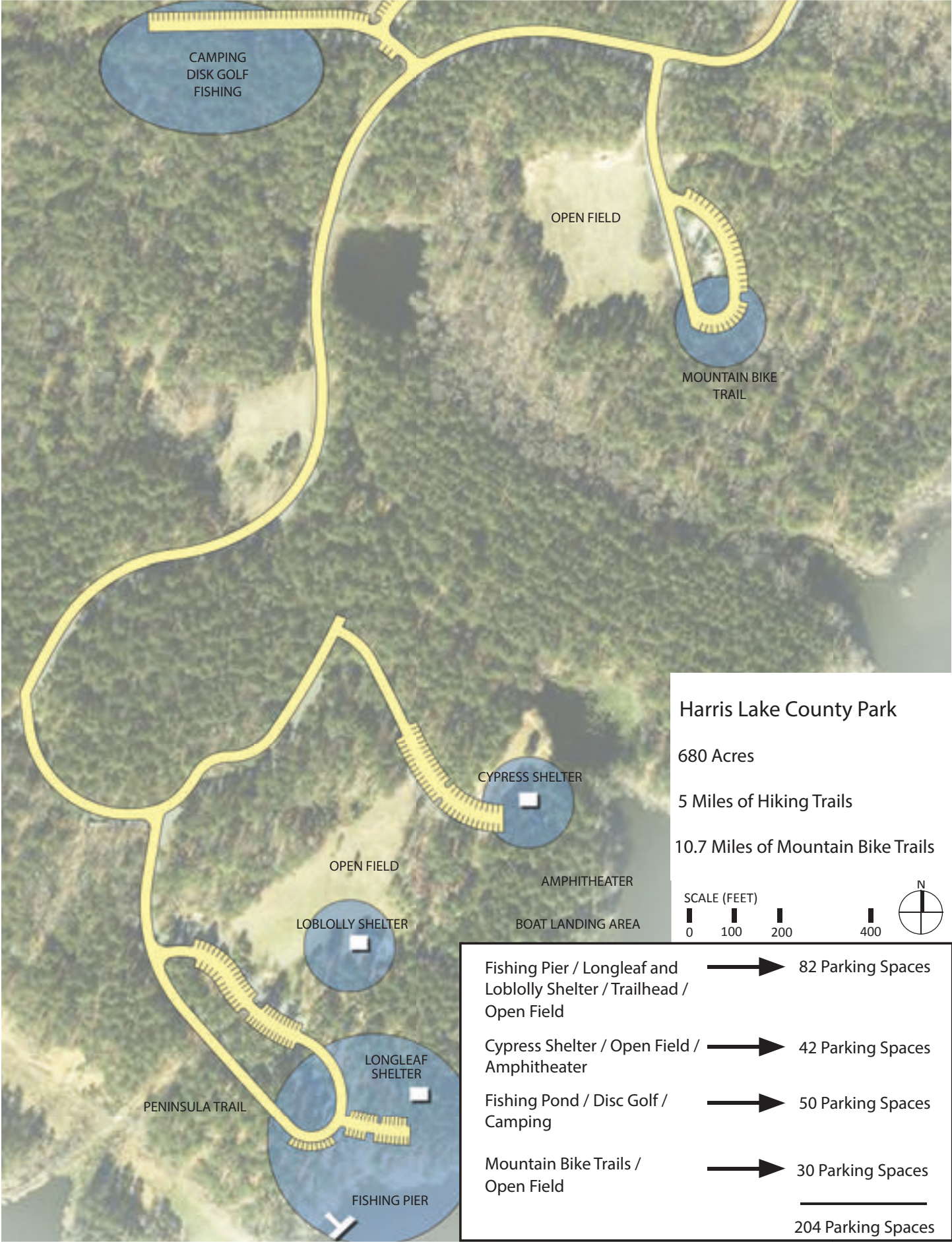
Lake Crabtree County Park

215 acres  
9.4 Miles of Mountain Bike Trails  
9.4 Miles of Hiking Trails

Observation Platform / Park Center	→	72 Parking Spaces
Playground White Oak Shelter (50 People) Dogwood Shelter (50 People) Boat Launch	→	40 Parking Spaces + Overflow Lot
Tot Playground Beech Shelter (100 People)	→	50 Parking Spaces
Open Space / Water Access	→	40 Parking Spaces + Overflow Lot
		<hr/>
		202 Parking Spaces



Scale Comparisons





## Community Meeting #2: Feedback

Community Meeting #2 allowed participants to post comments at each station and indicate a preference for or against each design alternative. The comments were summarized graphically into a series of recurring categories with the most amount of comments being related to adjacency of the park activities to surrounding residences

and trail components. The comments indicating a favorite or least favorite design alternative were also quantified. The most notable result from the Community Meeting #2 was that many participants favored the increased protection of existing forested areas and wildlife habitat in Options B and C.

## TRAILS

## ADJACENCY

NO ACCESS FROM  
SUBDIVISIONS  
BUFFER TRAILS FROM HOUSES  
150 FEET, 400 FEET  
PRIVATE PROPERTY SIGNAGE  
LARGEST BUFFER POSSIBLE  
KEEP NOISE NEAR HWY 42  
SUPPLEMENTAL SCREENING  
AVOID OAK HOLLOW TRAILS

**AGRICULTURE /  
COMMUNITY GARDENS**

AVOID COMPETITION WITH  
LOCAL FARMERS MARKETS  
AND FARM  
ORGANIC GARDENING,  
BEEKEEPING  
CHILDREN ACTIVITIES / AVOID  
PROXIMITY TO ROAD  
POLLINATOR GARDENS  
COMMUNITY GARDENS  
LEARNING + EDUCATION

## MISCELLANEOUS

SOUND ZONES  
SALVAGE FIRE PLACE  
REFURBISH EX. BARN  
DISPLAY OF  
AGRICULTURAL HISTORY  
NATURAL BEAUTY  
ALONG 42

## FITNESS

QUIET FORESTS  
NOISE GENERATING  
ACTIVITIES  
TOWARD HWY 42  
PROXIMITY TO  
PARKING

## SUSTAINABILITY / ECOLOGY

BIODIVERSITY  
OF MIDDLE CREEK  
STRATA SOLAR  
NET ZERO BUILDINGS  
STORMWATER  
REUSE

**OPTION A**

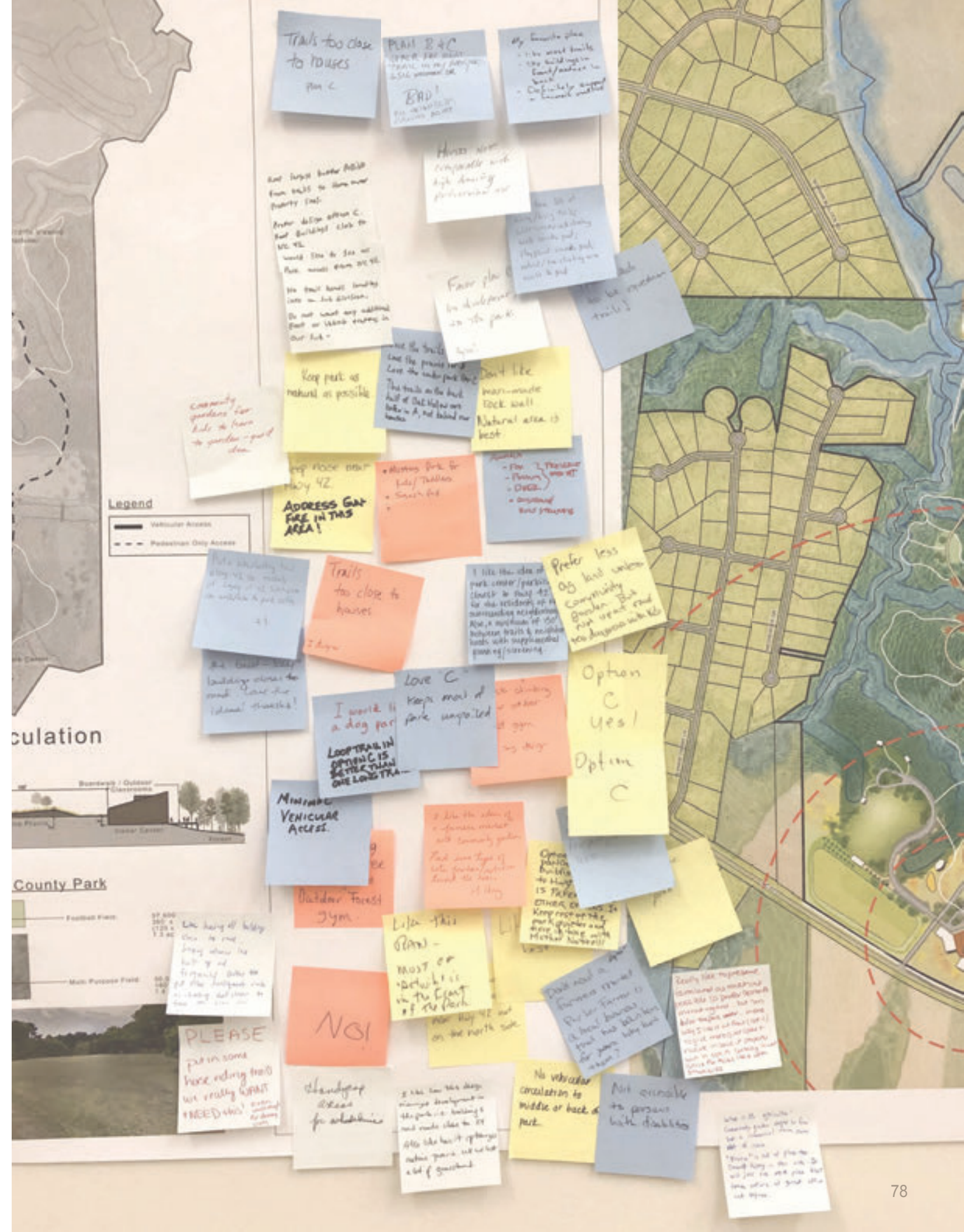
- Increased vehicular access
- Crossing of multiple stream buffers
- 5.6 miles of trails with main out and back trail
- Larger area for open space

**OPTION B**

- Park Center on edge of forest and agriculture; not visible from road
- Crossing of stream buffer
- 5.4 miles of trails with main out and back trail

### OPTION C

- Park Center adjacent to NC 42
- Maximize existing forest preservation
- No impact to stream buffers
- Longest trail system including main loop trail
- Road noise







## Phase IV: Site Master Plan

The three design options were narrowed down to one Preferred Design Alternate that was created based on the feedback compiled from Community Meeting #2 and discussion amongst the Project Core Team. The Project Core Team chose a site layout that most closely resembled Option B as a way to protect a significant amount of existing forested areas protected while still providing adequate separation of the Park Center and main activity areas from the road. While the 2/3 mile walking distance from the Park Center to the Wildlife Viewing Platform is longer than in Option A, the Project Core Team felt this distance would provide significantly quieter trails within the forests that would be more conducive to wildlife viewing. In addition, County staff will have utility vehicles on site that can travel on the trail surface and can assist members of the public with mobility concerns.

During the Site Master Phase, program and performance requirements were reviewed in greater detail for compliance with Wake County Design Standards. Specific attention was given by the Project Core Team to development of the Maintenance Facility, size and program of the Park Center, shelter size location and access, utility service and circulation.

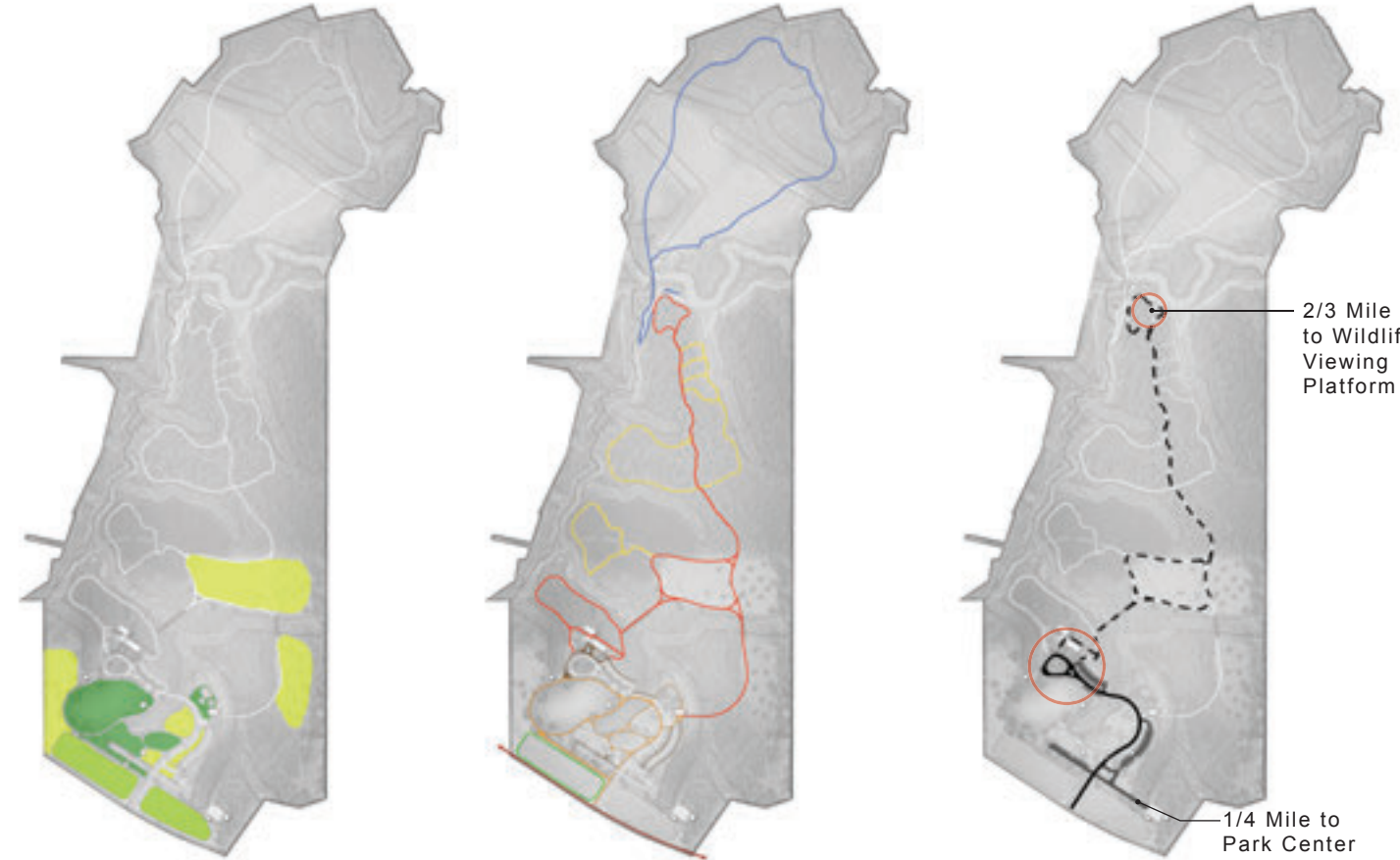
The Project Core Team then conducted a site tour that tested the locations of various amenities in the field, most notably the Park Center and Wildlife Viewing Shelter. The digital site plan was assigned a location tied to world coordinates using ArcGIS Collector that allowed the Project Core Team to pinpoint the proposed amenity locations and trail routes in the field and map all significant trees and vegetation to be preserved.



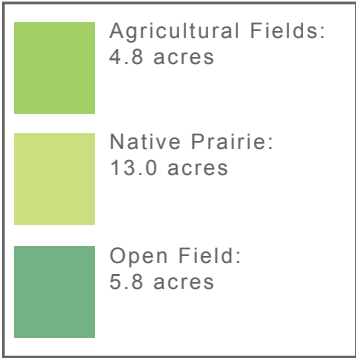
Preferred Design Alternate

The layout of the Preferred Design Alternate centers around the location of the Park Center along the tree line, acting as a threshold between open space and forest. The areas of high activity have been located in the existing fields in front of the Park Center to minimize noise spillover into the forests. Similarly, the playground which may generate higher noise levels, has been separated from the Park Center and placed with equal distance from the east and west property lines. The Maintenance Facility and event

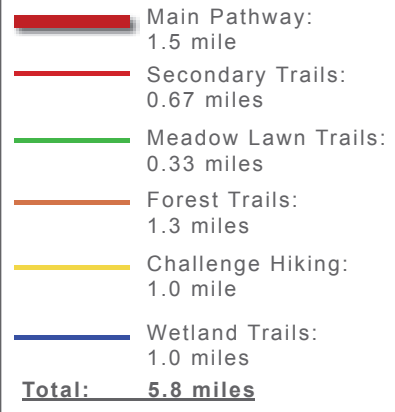
space have been located at opposite ends of the old NC 42 farm access road. The existing barn may be repurposed or restructured to provide a shelter and restroom around the event space and become an architectural feature to the Park entrance similar to the visibility of the neighboring barns along NC 42. Lastly, the trail network provides a variety of options through the forests and around the open space with short and longer loop trails along the journey to the Wildlife Viewing Shelter.



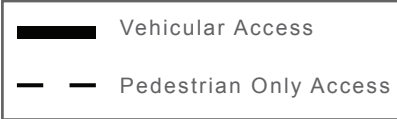
Agricultural Land



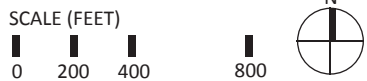
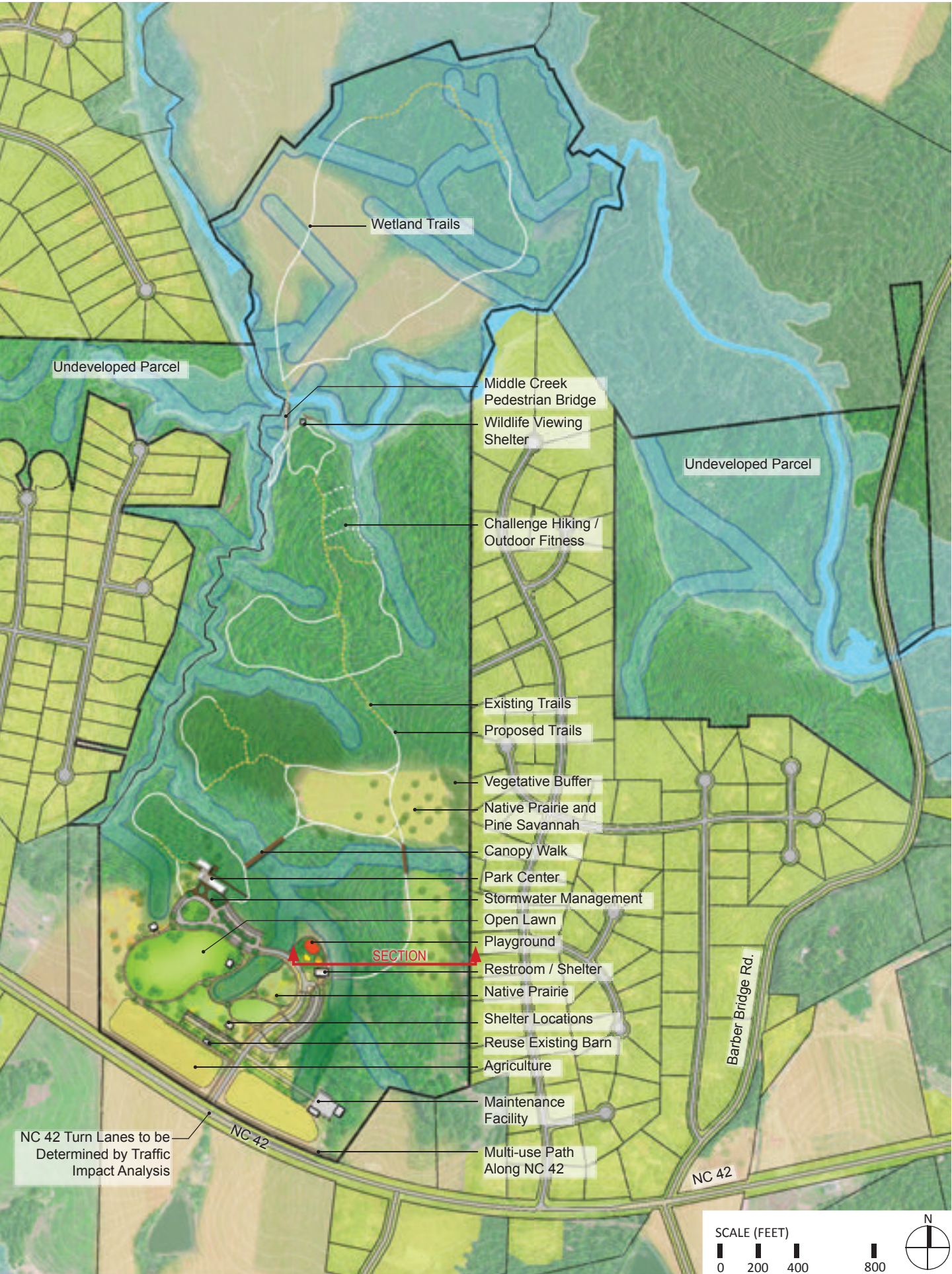
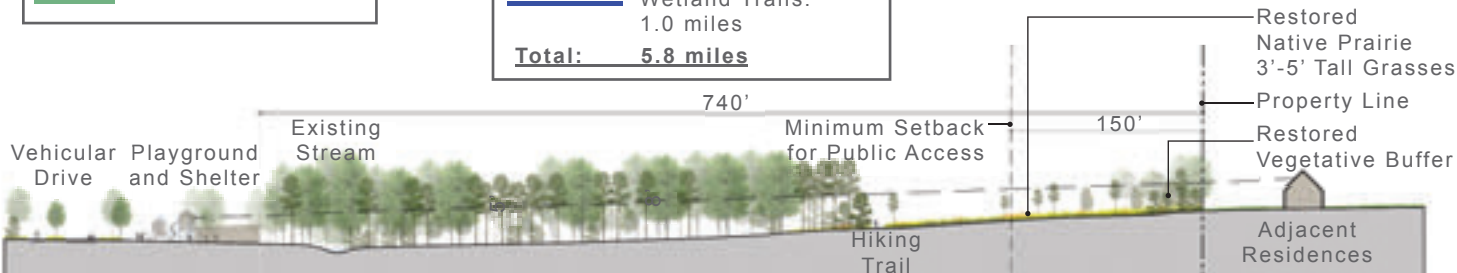
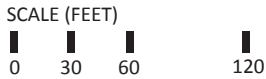
Trails / Pedestrian Circulation



Vehicular Circulation



Section Study





Preferred Design Alternate: Activity Center

The majority of amenities within Beech Bluff County Park have been located over the existing fields between NC 42 and the Park Center to create a central activity space. This area would include the playground, shelters, open lawn, event space, community gardens, agriculture, native prairies and walking paths that are all accessible to parking, restrooms and utilities. An existing stream to be preserved bisects the open fields so that the playground space which may generate a higher level of activity and noise may be separated from the Park Center.

The agricultural fields remain in the front of the Park along NC 42 to preserve the agricultural character of the site. The existing barn and community gardens are located directly behind the agricultural fields so the old NC 42 farm road can be revived as an event corridor to host programs, markets, festivals, art and craft classes and display areas.

Requests for open multi-purpose lawn spaces were recurring comments at the Community Meetings. The resulting Master Plan provides a series of usable fields for non-organized sports such as kite flying or frisbee. While mountain or road bicycle trails have not been included in the program, the open lawn spaces are surrounded by multi-use paths that may be used for tricycles, bicycle training for younger children, roller skating or running. A multi-use path has been located along NC 42 with the intent that pedestrian and bicycle access to the Park can be extended to the adjacent neighborhoods in the future.

Two individual small shelters accommodating 50 people and one large shelter to accommodate 150 people have been placed in separate locations adjacent to the open fields and native prairies and are in close proximity to parking and vehicular access to deliver supplies. In addition, a restroom and shelter have been located adjacent to the playground and trailhead to the forest.

The concentration of amenities into a central activity space in the front of the Park encourages a connection of people to the community and allows the existing forested areas to be explored while preserving the sensitive habitat zones.



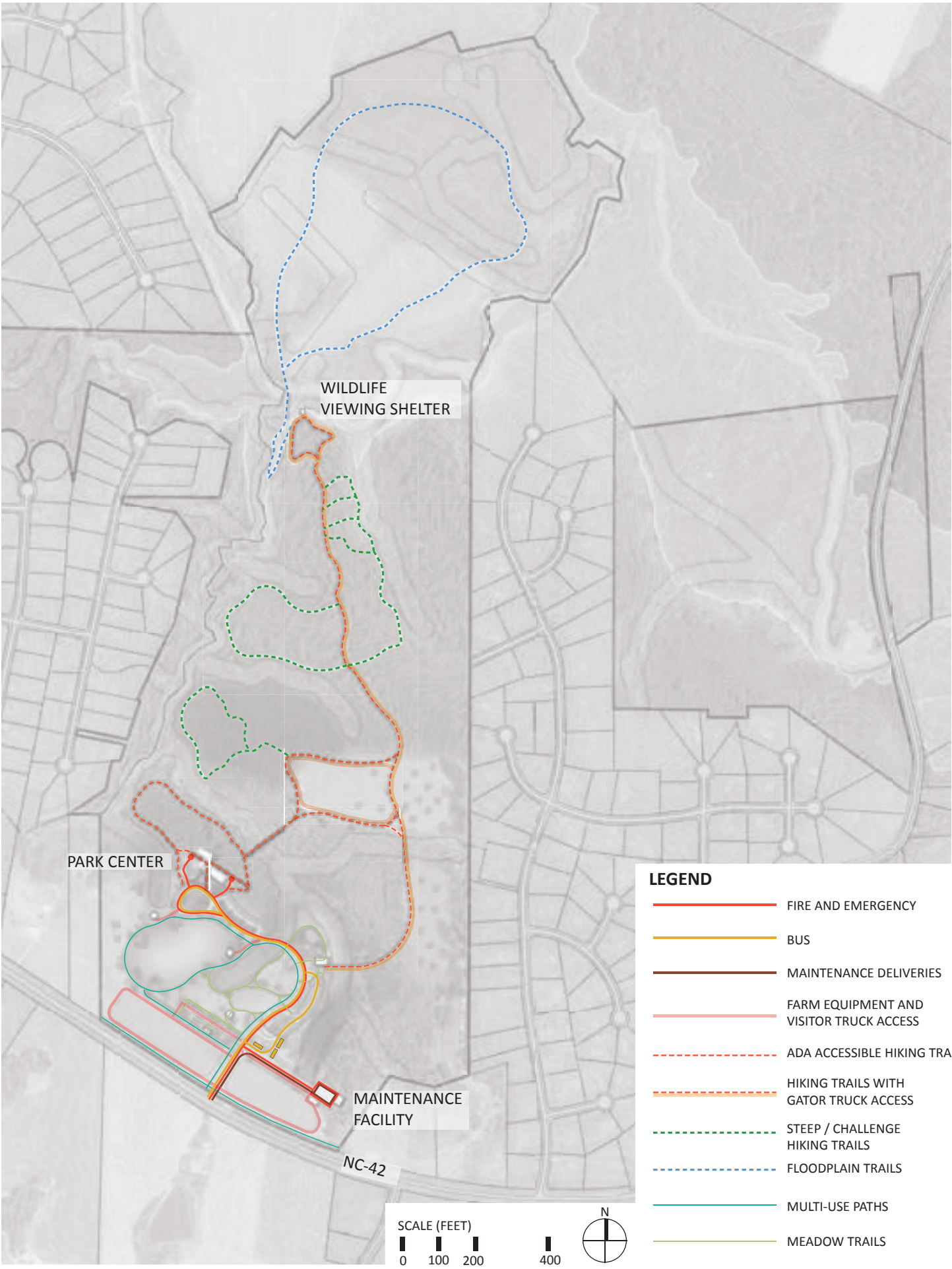
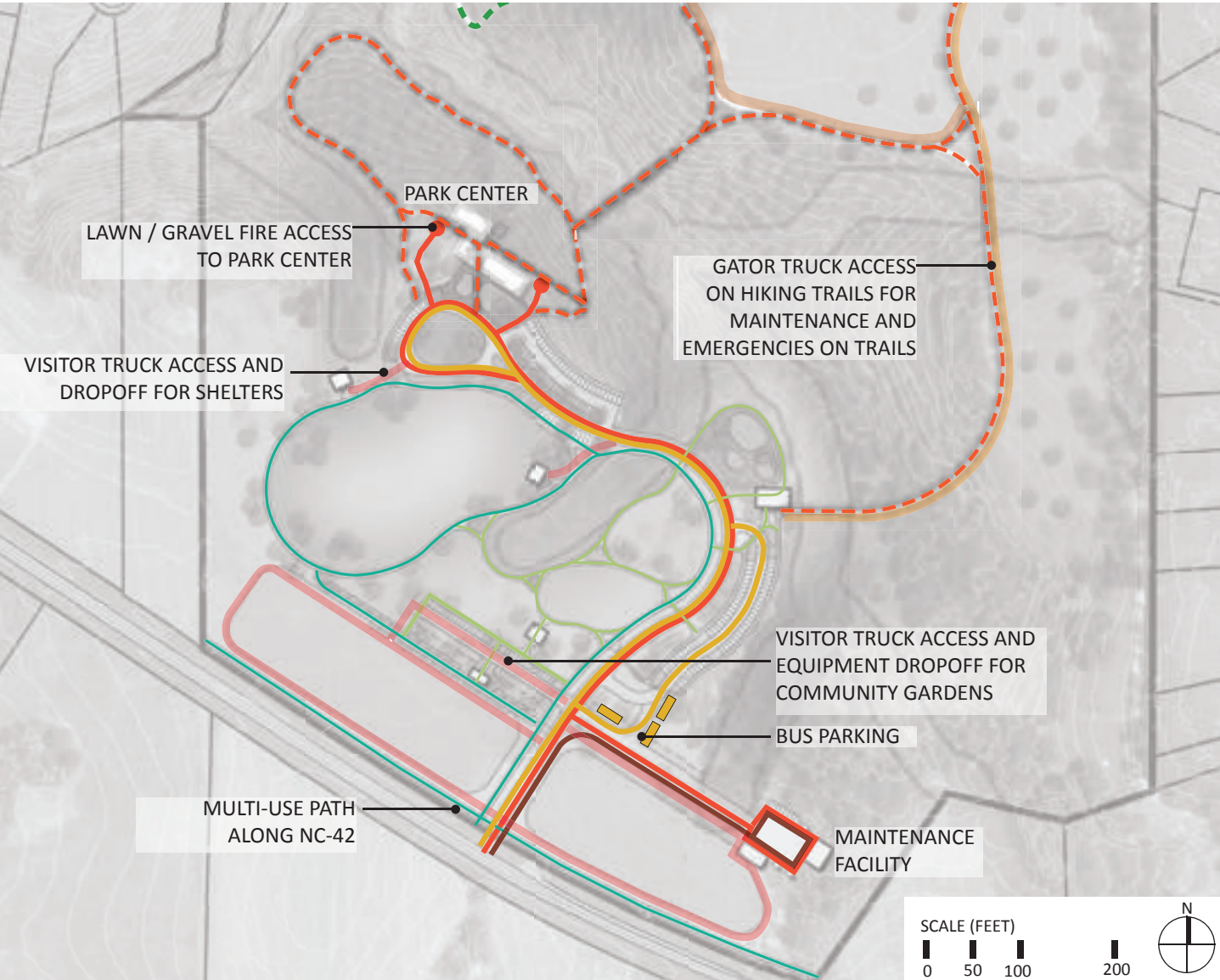


Preferred Design Alternate: Circulation

The Master Plan accommodates a wide range of pedestrian and vehicular circulation, including service, emergency, school buses, farm equipment and ADA access. The following overall strategies guided the circulation layout:

- 1. Separate vehicular from pedestrian traffic where possible, particularly with the multi-use path around the open lawn field.
- 2. Create an efficient parking layout to maximize parking space quantity while minimizing the amount of pavement.
- 3. Provide sufficient parking spaces in close proximity to all shelters, restrooms, playground, community gardens and other high activity areas.
- 4. Create a fun and visually inviting experience for visitors driving into the Park.

A hierarchy of walking and hiking trails have been routed, many ADA accessible but others that may be more challenging fitness trails. A main accessible trail leads from the Park Center and trailhead at the playground to the Wildlife Viewing Shelter. This main trail will allow visitors to experience the multiple habitat zones and microclimates analyzed in the site section on their path to the Wildlife Viewing Shelter. Small gator truck access will be provided along this path for maintenance of the native prairies and forests as well as emergency access for any injuries that may occur on the forest trails.





Preferred Design Alternate: Utilities

The location of the Park Center, vehicular routes and high activity areas all together in the southern portion of the Park may allow for all utility services to be contained within this area. The Project Core Team sought to avoid routing longer service lines through the forested areas that would require the crossing of additional stream buffers and increase construction costs.

A general utility routing diagram was provided that accounts for well water and septic service running to all structures containing restrooms. A separate irrigation water line was provided for use within the agricultural fields utilizing the existing well along the Old NC 42 Farm Road. A centralized septic treatment was provided to service the entire Park, however, a soil suitability analysis will need to be performed to determine an appropriate location for this system and whether or not a decentralized system may be more feasible.

A recurring comment from the Community Meetings was to provide restrooms along the trails. The Project Core Team felt these may not be needed given the length of the main trail less than one mile from the Park Center to the Wildlife Viewing Shelter. However, should this need arise with future expansion, composting toilets may be a solution that avoids the need to connect to well and septic lines running through the forested areas. Maintenance service will still need to be provided to any of these restrooms.

Meetings with the Towns of Garner and Fuquay-Varina will need to be arranged during the subsequent design phases of the Park to determine if connecting to the existing water line along NC 42 may be a preferred option over well water. Connecting to this water line would provide fire protection service to all buildings. Using well water, fire trucks would be required to carry water into the site pumped from the existing hydrant along NC 42.

The amount of proposed impervious surfaces is very small when taken as a percentage of the overall parcel size. As a result, stormwater management may not be required by Wake County. However, the given the sensitivity of the multiple aquatic habitats on site, the Project Core Team felt that voluntary and exemplary stormwater management should be provided. These management devices would be designed to dissipate flow to prevent further erosion of the existing streams as well as treat water quality and quantity. In addition, these devices may be located adjacent to parking lots and at building entryways to become an integral component of the Park design and provide educational and research opportunities.

REQUIRED UTILITY AND ENGINEERING PERMITS

Wake County

- Site Plan Approval
- Stormwater Permit
- Building Permits
- Septic System Permit
- Well Permit

NCDEQ Division of Water Quality and US Army Corps of Engineers

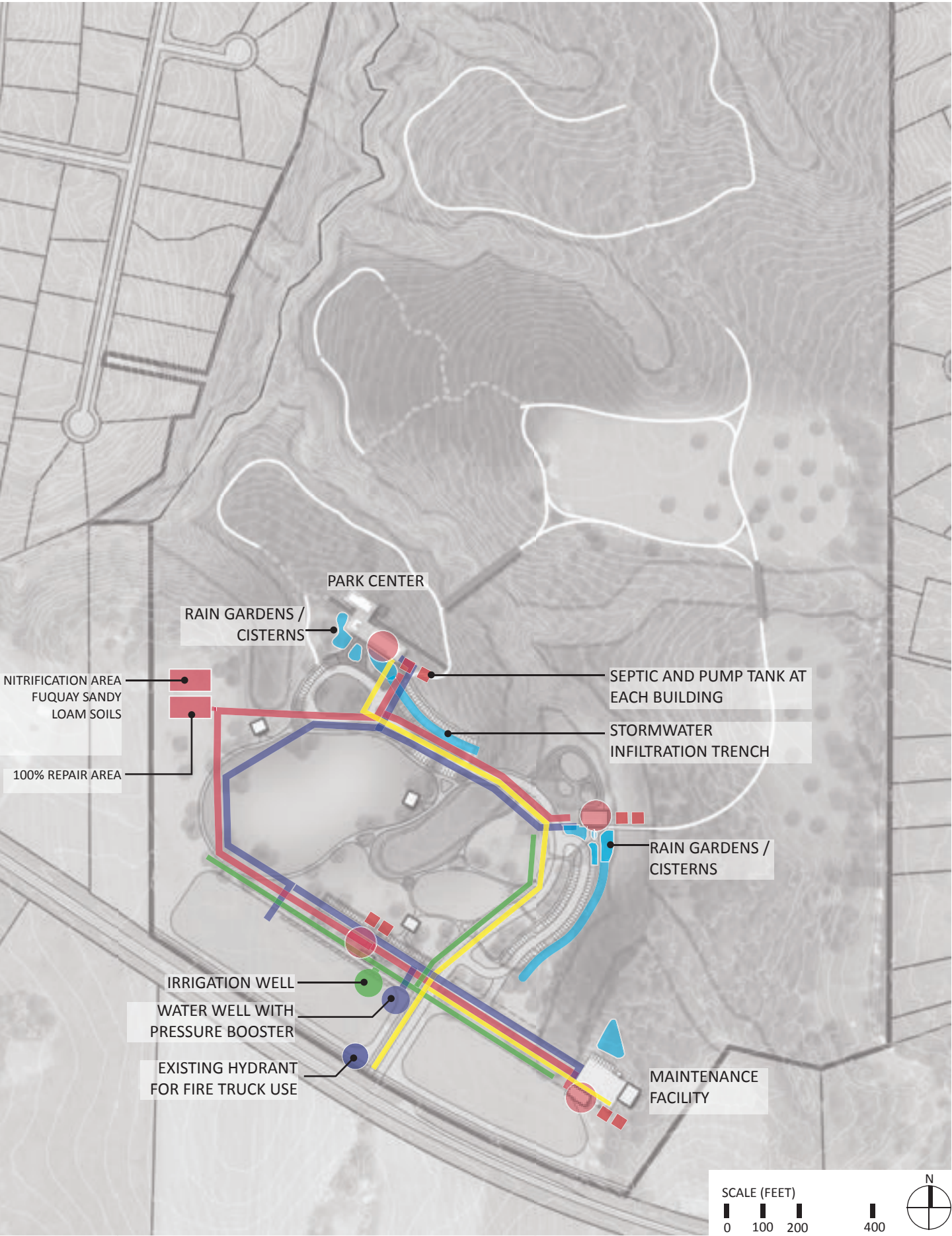
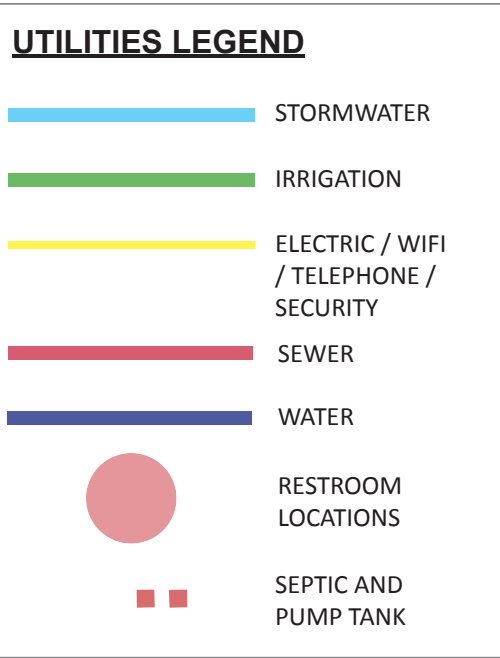
- Sedimentation and Erosion Control Permit
- 401/404 Permit for Wetland and Stream Encroachment

NCDOT

- Encroachment Agreement, Driveway Permit, Traffic Impact Analysis

Town of Fuquay-Varina / NC Public Water Supply

- Water System Permit (depending on source)





Preferred Design Alternate: Park Center

The location of the Park Center is at the transition of grassland to forest, which is one of the several ecotones that exist within Beech Bluff County Park.

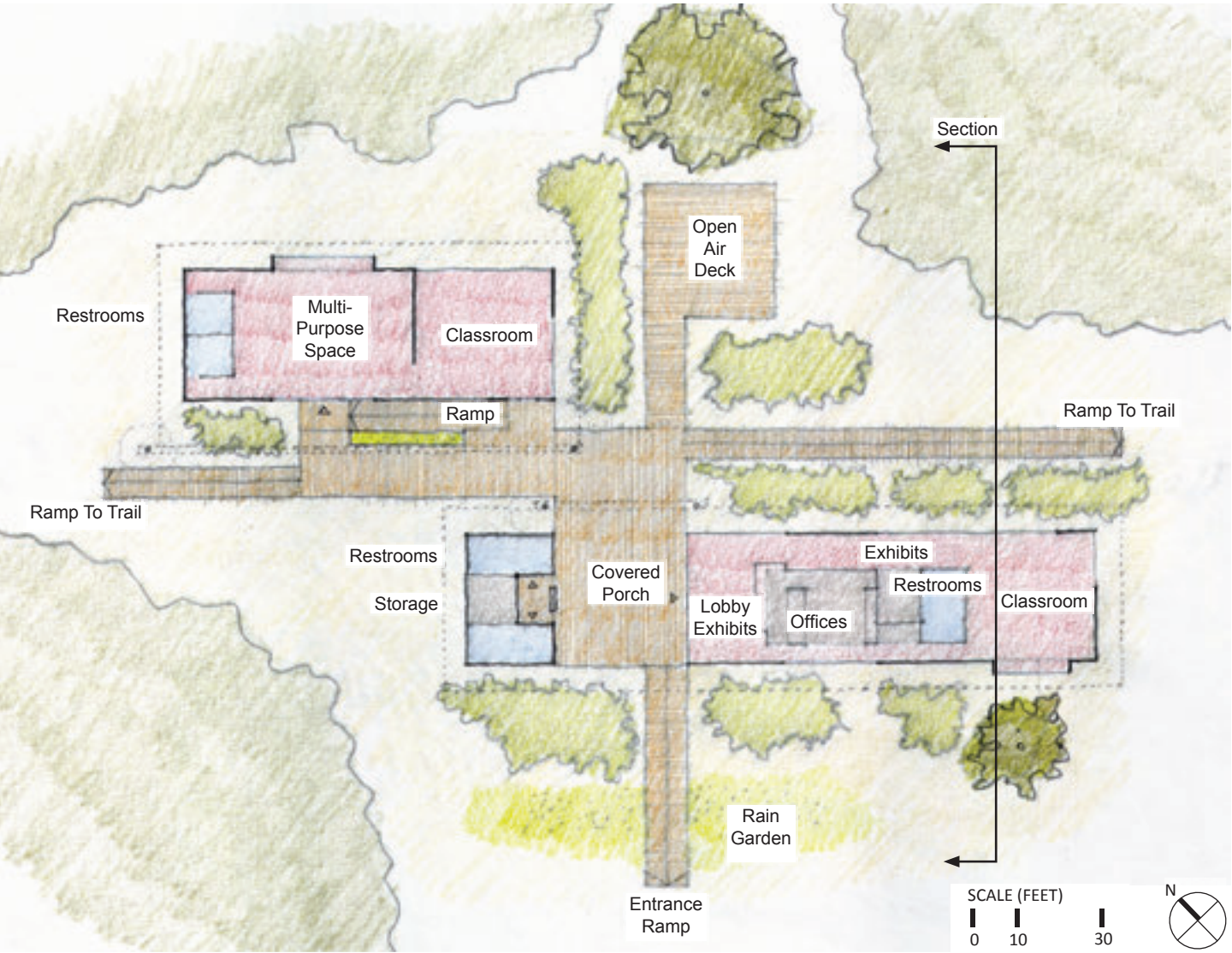
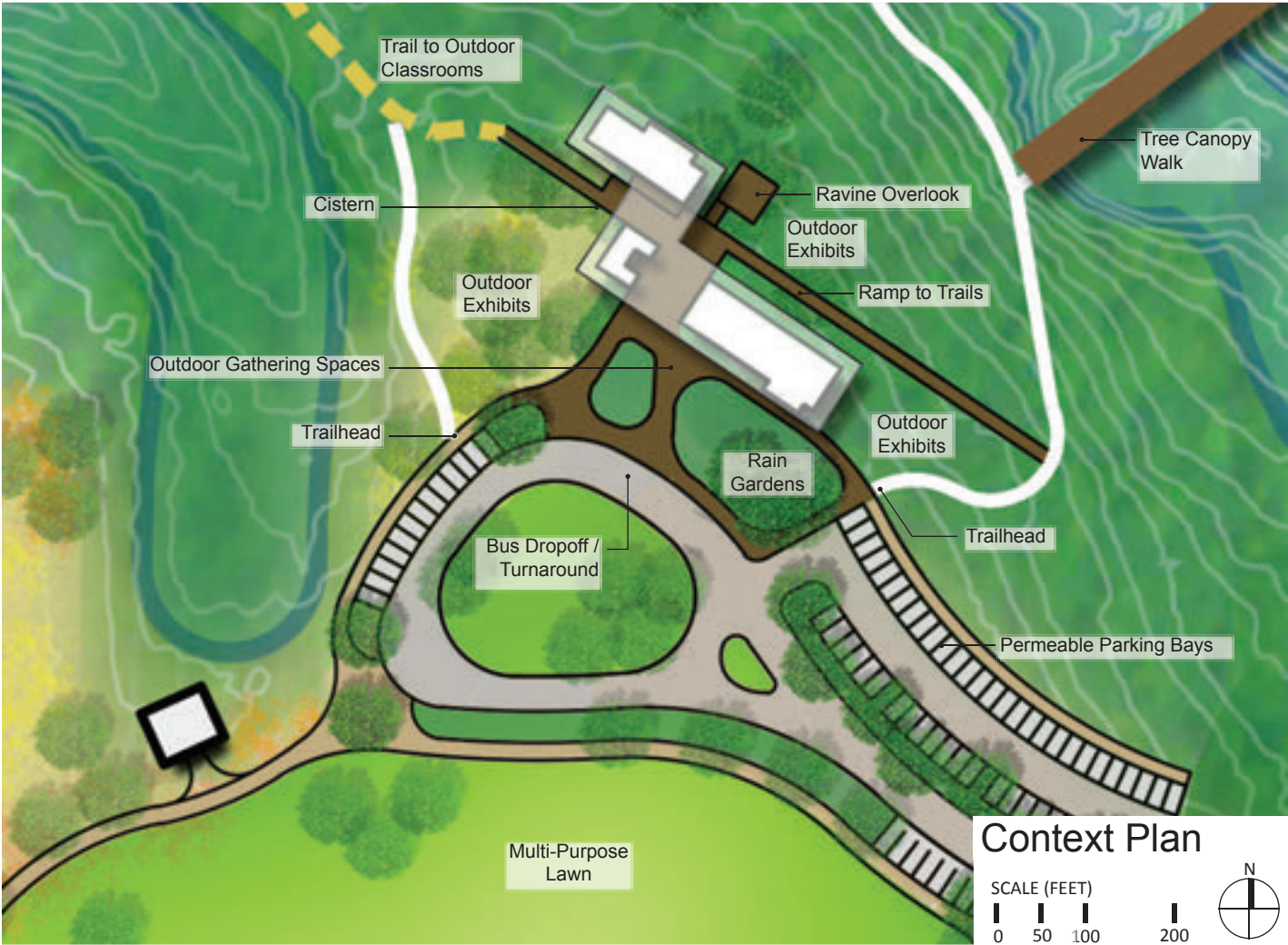
**Ecotone** - “a region of transition between two biological communities or biomes. Where two communities meet and integrate.”

By integrating the Park Center at the fringe of two overlapping ecological communities, the buildings become not just a destination, but a starting point for further untamed exploration. The Project Core Team chose to separate the Park Center into multiple buildings clustered together that would frame outdoor exhibits, courtyards and overlooks to provide both an indoor and outdoor learning environment.

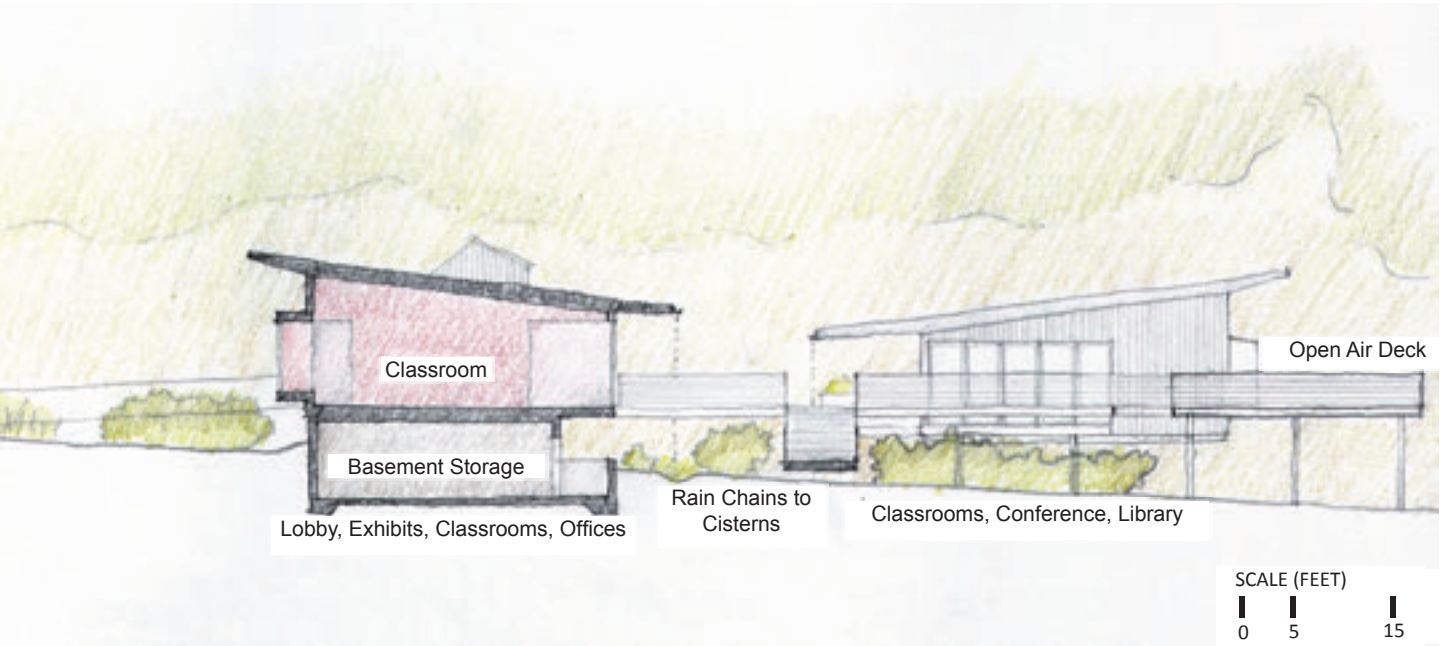
Based on meetings amongst the Project Core Team members and a tour of the Blue Jay Point County Park Visitor Center with park managers, the program of the Park Center was designed to include the following major components:

- Staff offices
- Classrooms
- Conference rooms
- Storage
- Lobby and exhibit spaces
- Special programmable space (possible library)
- Indoor and outdoor restrooms
- Outdoor gathering areas

Elevating the buildings for the Park Center as shown in the lower right section will minimize land disturbance, preserve the surrounding ecology, and maximize views. The elevation also allows for utilizing basement storage underneath the main social spaces that could reduce the overall footprint without compromising required storage space. Ramps to the building entrances, exhibits and nearby trails eliminates the need for stairs and allows for the main pedestrian thoroughfare to be universally accessible and accommodate all Park visitors.



Park Center Plan



Park Center Section



Preferred Design Alternate: Park Center Materials and Precedents



Site As Experienced from the Forest



Site As Experienced from the Field



Continuous Landscape Under Building



Deck View



View Through Structures



Entry Bridge



Standing Seam Metal Roofing



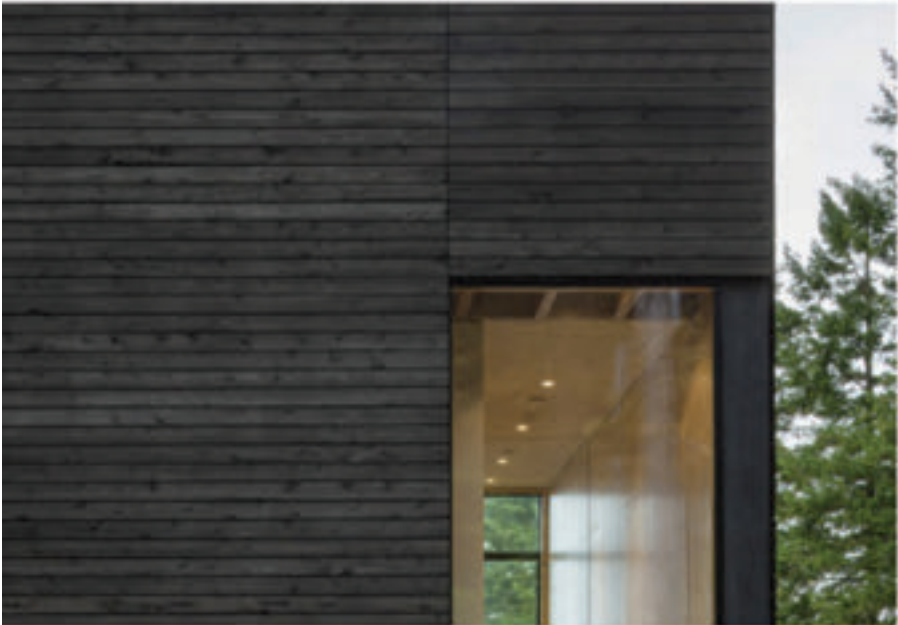
Synthetic Composite Decking



Corrugated Metal Siding



Metal Panel Siding



Stained Wood Siding



Painted Fiber Cement Board Siding



# Preferred Design Alternate: Community Event Space

As a way to revive the character of the old NC 42 farm road, an event space in connection with the existing barn has been planned along the approximate location of the former road. Community garden plots line a pedestrian promenade that connects visitors to the agricultural land, open space, native prairies and multi-use pathways throughout the Park.

A lawn area lined with existing and new shade trees provide space for setting up tents and temporary exhibits for hosting market events that may include arts and craft display, native plant sales, outdoor classes, fund raisers or other events to help connect people to the larger community. The existing mid-nineteenth century storage barn may be repurposed to help support these events and provide an iconic architectural identifier to Park visitors.

Surrounding the Community Event Space are native prairies, shrubs and trees that can be harvested in unique ways that may support art projects, native American traditions or other events that can enliven the Event Space and provide a source of food and shelter for wildlife.

The Event Space is supported by separate vehicular access with permanent and overflow parking to limit the amount of pavement while supporting large weekend events or seasonal festivals. In addition, large truck and equipment access will be provided along the old farm road to service the Community Gardens and agricultural fields.





# Preferred Design Alternate: Maintenance Facility

In order to better understand the requirements and needs of the Maintenance Facility, members of the Design Team toured the Blue Jay Point County Park maintenance facility with park management staff. After further discussion with the Project Core Team, the following program has been included:

- Maintenance staff offices
- Restroom
- Material storage yard
- Indoor and outdoor bays for equipment storage and workshops
- Room for future expansion of equipment bays
- Small semi truck turnaround
- Hazardous material storage sheds
- Staff parking

The location of the maintenance facility provides separation from the public activity areas so that park visitors are not in close proximity to hazardous materials and noise generative maintenance equipment. At the same time, the facility is in nearby and partially visible from NC 42 to take on the character of the past and existing agricultural barns located along NC 42 and become an integral component to the Park design. The maintenance facility is also located at the terminus of the old NC 42 farm road to allow for potential shared use with maintenance and equipment storage associated with the agricultural fields. The Maintenance Facility's connection to the agricultural use of the Park may allow for increased interaction amongst maintenance staff, park staff and visitors as well as potential integration with educational activities and programs.



Existing Barn Along NC 42

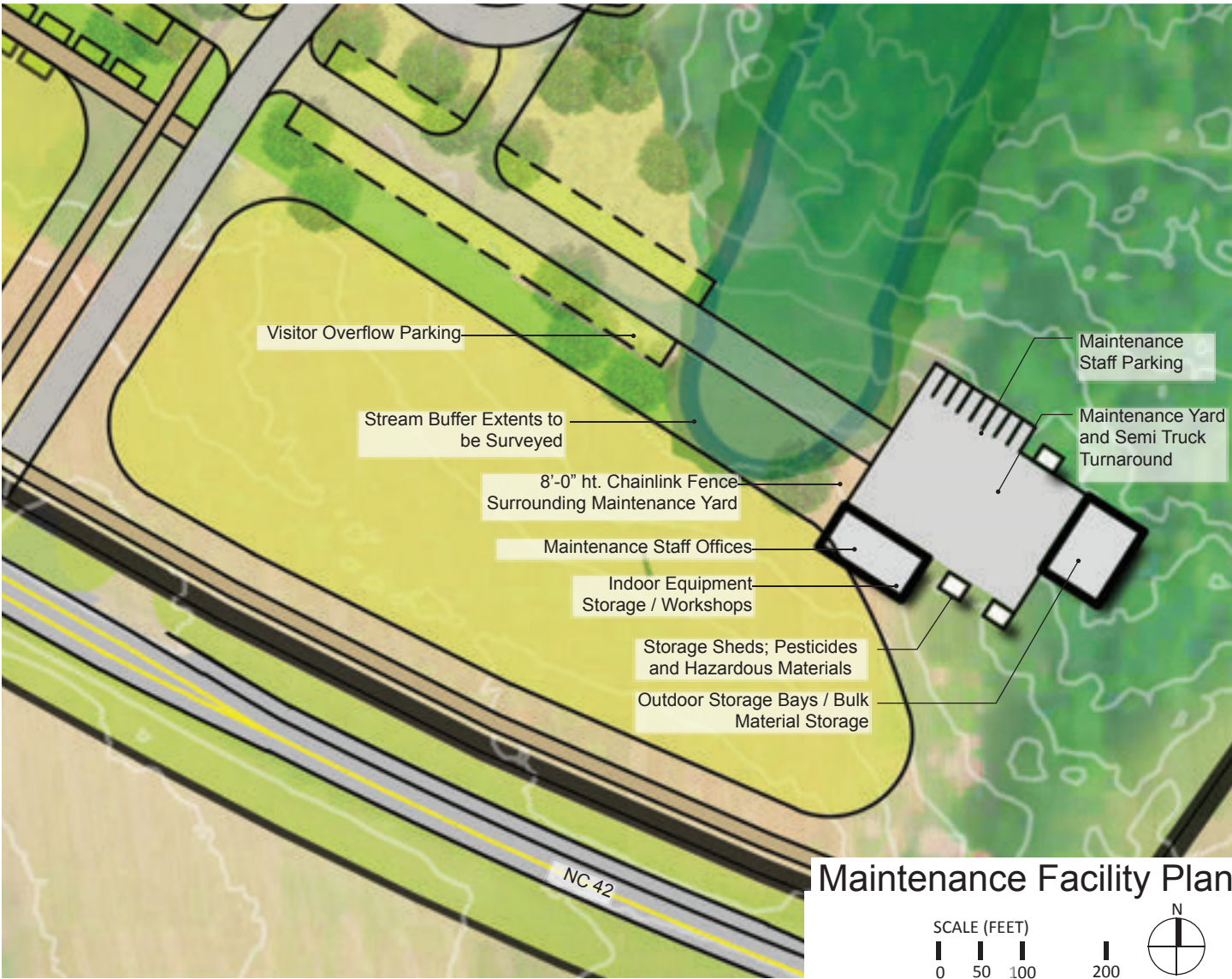
## Blue Jay Point Maintenance Facility



Enclosed Equipment Storage



Maintenance Facility Parking, Offices and Yard



Covered Outdoor Equipment Bays



Hazardous Materials



Preferred Design Alternate: Perspective

Proposed overhead view of Beech Bluff County Park from  
NC 42 looking towards the Park Center





Preferred Design Alternate: Open Space

The proposed open space at Beech Bluff County Park consists of agricultural fields, multi-purpose lawn and native prairies. These various types of open space will be interchangeable, allowing one to replace the other over time based on changes in use of the Park. Allowing agricultural fields to return to native prairies for periods of time can replenish the soils with nutrients and organic matter that are often depleted with monocultures of crops. In addition, supplementing the agricultural fields with native prairies will help support pollinator species which are relied upon for crop reproduction.




While the existing agricultural fields are currently farmed with monocultures of commodity crops, potential farm lease programs established by Wake County will encourage a diversity of crops that can be of value to the local community without processing. Types of crops that can be farmed may also include tree orchards or cutting flowers that may offer picturesque moments for Park visitors during each season of the year. Muscadine grapes have been cultivated by the Adams Family in the surrounding farms to support the Adams Vineyards winery. Transplanting the neighboring grape vines onto the Beech Bluff County Park site as well as studying the successful practices of the nearby farmers is a priority for the Project Core Team to include in the eventual agricultural program.

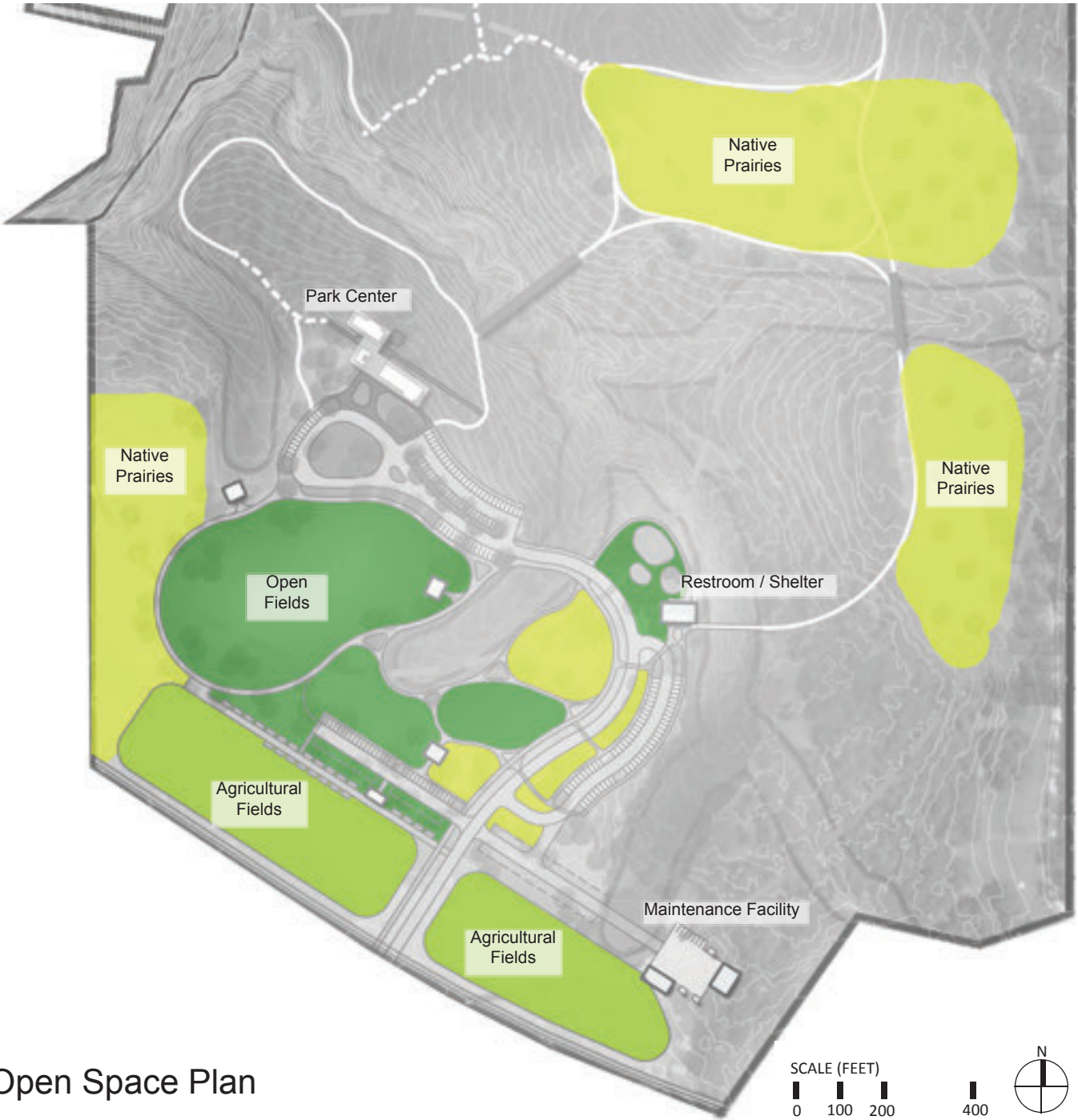
One recurring comment from the Community Meetings the Project Core Team aimed to address was the use of pesticides and fertilizers for managing the farmland in close proximity to high activity areas. For that reason, the agricultural program at Beech Bluff County Park will encourage organic farming practices that will eliminate the application of harmful chemicals.

The native prairies at Beech Bluff County Park will showcase an “agricultural ecosystem” with a diversity of native plants that can be harvested for artistic and other unique uses while also providing food and shelter to support local wildlife. The 2016 Beech Bluff County Park Natural Resource Inventory includes recommendations for a variety of management strategies that include low-intensity controlled burns for upland areas of the site to mimic natural ecological processes and develop pine savannas.

Both the agricultural fields and native prairies offer the potential for research partnerships with organizations such as the NC State Cooperative Extension, Center for Environmental Farming Systems (CEFS) and the Triangle Land Conservancy.

Legend

	Agricultural Fields: 4.8 acres
	Native Prairie: 13.0 acres
	Open Field: 5.8 acres



Open Space Plan





Site Tour

A way to test the Master Plan layout on the Park site, the Project Team conducted a tour of the site to understand the location of the proposed amenities and the surrounding vegetation, topography and views. ArcGIS Collector was used to place a digital version of the Master Plan in world coordinates and track the location of each proposed amenity in the site with a GPS signal. The map to the right indicates

the route walked by the Project Core Team along existing and proposed trail routes as well as significant trees and plant communities observed along the walk. Additional site tours will be beneficial throughout the subsequent design phases of the project to record the plant communities surrounding the trails in all seasons and detail all trail locations.





Future Growth

Beech Bluff County Park consists of about 300 acres of total land that has been acquired by Wake County overtime beginning in 2003. As part of the Beech Bluff County Park Master Plan, the Project Core Team established a series of priorities for potentially expanding the park in future phases. Expansion of the Park may involve either acquiring additional land or granting easements across existing parcels.

The most immediate priority that was requested by many participants in the Community Meetings is to connect the main parcel with the smaller isolated parcel to the east. The eastern parcel contains a significant diversity of mesic and aquatic habitat including beaver dams that have been documented in the 2016 Beech Bluff County Park Natural Resource Inventory. Without a connection between these two parcels, access to the eastern parcel cannot be provided without constructing a separate entrance and parking lot off of Barber Bridge Rd. that may cause significant damage to the habitat.

A second priority for expansion includes providing pedestrian access to the Park along NC 42 that connects to

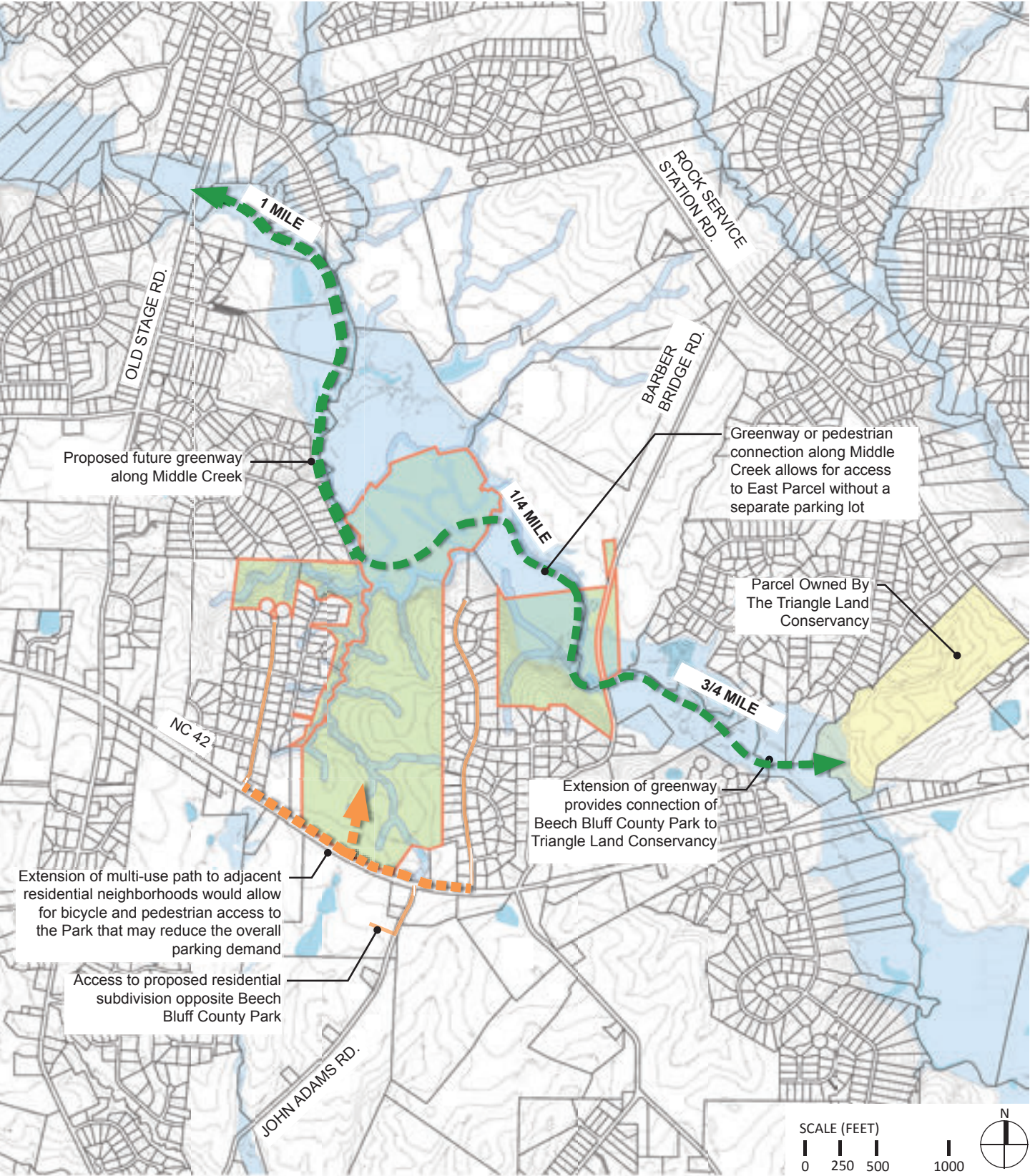
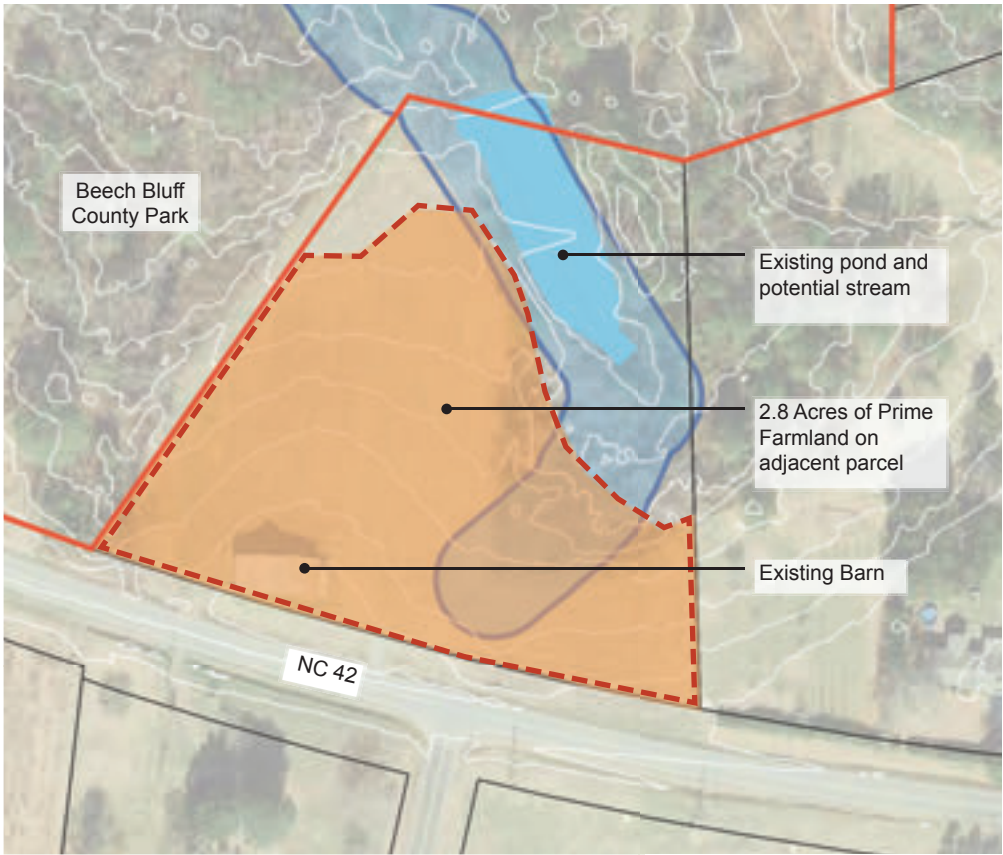
the surrounding residential subdivisions. These connections may be helpful to reduce the vehicular parking demand if safe alternative means of transportation can be provided to the Park.

The Wake County Greenway Master Plan includes a future greenway along Middle Creek to span from Beech Bluff County Park to the Town of Holly Springs. Careful consideration for this connection will need to be taken to avoid disturbing the sensitive habitat in and around Middle Creek. Protection of the Middle Creek habitat may dictate the width, material and disturbance limits of any path along the Creek. However, pathways along Middle Creek or the surrounding area may allow for opportunities to connect the nearby Triangle Land Conservancy property to Beech Bluff County Park as well as providing separate equine trails that was a recurring request in the Community meetings.

Additional considerations for future expansions include providing construction access easements for installation of trails and acquiring conservation easements in areas of floodplains, wetlands or stream buffers where other development may not be feasible.

Prime Farmland Soils on Adjacent Parcel

The Sustainable SITES Initiative encourages the preservation of existing prime farmland. For greenfield sites such as Beech Bluff County Park where construction within prime farmland soils may be unavoidable, the purchasing of agricultural conservation easements may be required to satisfy prerequisites. The adjacent parcel to the east of the site contains farmland soils shown in the NRCS Web Soil Survey that may satisfy this prerequisite. Detailed analysis of the requirements for SITES Certification, including meeting all prerequisites will be conducted during the subsequent design phases of the project.



Stream buffers and floodplains limit infrastructure development. Land within these zones may be more suited for trails, passive recreation and environmental protection



Cost Analysis

A rough order of magnitude cost estimate was completed based on the scope shown in the Preferred Design Alternate and using construction cost data from projects of similar size, scale and location. Due to the challenges with providing access to the portion of the Park north of Middle Creek as well as environmental constraints including existing floodways, wetlands and stream buffers, the Project Core Team recommended including the proposed bridge across Middle Creek and trails in this area as part of future development. The estimated overall construction cost for the initial development of Beech Bluff County Park included in the Master Plan is between \$17,000,000 and \$20,000,000.

Project :

Beech Bluff County Park

Location :

3355 NC Hwy 42, Wake County, NC

Owner :

Wake County Parks Recreation and Open Space

Date :

08/06/19

Area :


300

Acres

Estimator :

Sabb

Park Construction  
Component List



ESTIMATE SUMMARY BREAKDOWN		Phase I Development		Amount	Percentage
	Clearing & Grading			\$ 917,635	7.21%
	Site Utilities			\$ 1,921,668	15.11%
	Pavements & Fencing			\$ 929,923	7.31%
	Landscaping and Site Amenities			\$ 1,405,707	11.05%
	Specialized Program Elements			\$ 2,212,026	17.39%
	Architectural Elements			\$ 4,725,000	37.14%
	Phase II Program Elements	Separate Construction Phase Below		\$ -	0.00%
	General Requirements			\$ 608,605	4.78%
				\$ -	
SUBTOTAL				\$ 12,720,565	82.87%
	GC's General Conditions	43	wks	\$ 279,500	2.20%
SUBTOTAL				\$ 13,000,065	85.07%
Bonds & Insurance		3.00	%	Industry Standards	\$ 390,002 3.07%
	Performance & Payment Bonds			Included Above	
	Insurance - Builders Risk / Difference in Conditions			Included Above	
	Insurance - General Liability, Etc			Included Above	
SUBTOTAL				\$ 13,390,067	88.13%
	Site Work Permit & Plan Review Fees	1	LS	Wake County Rates	\$ 2,486 0.02%
	General Building Permit	1	LS	Wake County Rates	\$ 19,500 0.15%
SUBTOTAL				\$ 13,412,053	88.31%
	GC's Contingency	0.00	%	Assumes No Liquidated Damages	\$ - 0.00%
	GC's Overhead & Profit	10.00	%	Industry Standards	\$ 1,341,205 10.54%
			LS		
SUBTOTAL				\$ 14,753,258	98.85%
	Overtime / Shift Work / Acceleration	1	LS	Allowance for Scheduled Shutdowns	\$ - 0.00%
	Design Contingency	5.00	%	Master Plan Estimate Sudy	\$ 737,663 5.80%
TOTAL ESTIMATE FOR BUILDING CONSTRUCTION (In Q2-2019 Dollars )				\$ 15,490,921	104.65%
	Escalation to Projected Bid & Award Date	5.50	%	(At 5.5% Annually)	\$ 1,704,001 11.00%
	Construction to Begin Q1 2021				
SUBTOTAL				\$ 17,194,922	115.65%

ESTIMATE SUMMARY BREAKDOWN		Future Development		Amount	Percentage
Phase II Program Elements				\$ 2,629,320	17.13%
SUBTOTAL				\$ 2,629,320	17.13%
GC's General Conditions		9	wks	\$ 58,500	2.22%
SUBTOTAL				\$ 2,687,820	19.35%
Bonds & Insurance		3.00	%	Industry Standards	\$ 80,635 3.07%
	Performance & Payment Bonds			Included Above	
	Insurance - Builders Risk / Difference in Conditions			Included Above	
	Insurance - General Liability, Etc			Included Above	
SUBTOTAL				\$ 2,768,455	22.42%
Site Work Permit & Plan Review Fees		1	LS	Wake County Rates	\$ 514 0.02%
General Building Permit		1	LS	Wake County Rates	\$ 4,032 0.15%
SUBTOTAL				\$ 2,773,000	22.59%
GC's Contingency		0.00	%	Assumes No Liquidated Damages	\$ - 0.00%
GC's Overhead & Profit		10.00	%	Industry Standards	\$ 277,300 10.55%
			LS		
SUBTOTAL				\$ 3,050,300	33.14%
Overtime / Shift Work / Acceleration		1	LS	Allowance for Scheduled Shutdowns	\$ - 0.00%
Design Contingency		5.00	%	Master Plan Estimate Sudy	\$ 152,515 5.80%
TOTAL ESTIMATE FOR BUILDING CONSTRUCTION (In Q2-2019 Dollars )				\$ 3,202,815	38.94%
Escalation to Projected Bid & Award Date		5.50	%	(At 5.5% Annually)	\$ 352,310 11.00%
	Construction to Begin Q1 2021				
SUBTOTAL				\$ 3,555,125	49.94%
GRAND TOTAL ROM ESTIMATE				\$ 20,750,047	



Item Description	U/M		Subcontract Unit Price	Cost	Notes	Total Cost	Section Total
<b>Clearing &amp; Grading</b>							<b>\$917,635</b>
				-		-	
<b>Due Diligence</b>				-	\$ 15,650	-	
Construction Materials Testing				-	By Others	-	
Site Lay-Out & Construction Staking	10	days	1,150.00	11,500		11,500	
Utility Location Service	2	trips	775.00	1,550		1,550	
As-Built Survey	20	mnhr	130.00	2,600		2,600	
				-		-	
<b>Selective Demolition</b>				-	\$ 67,500	-	
Above Ground Demo:				-		-	
Selectively Remove Trees & Stumps	1	acre	7,500.00	7,500		7,500	
Remove Ground Cover & Bedding Mat'l	1	item	15,000.00	15,000		15,000	
Remove Structures (1-Story)	3	each	13,333.33	40,000		40,000	
				-		-	
Existing Building Brick and Stone	1	item	5,000.00	5,000		5,000	
				-		-	
<b>Erosion Control</b>				-	\$ 168,985	-	
Silt Fence	8,000	lnft	3.50	28,000		28,000	
Tree Protection Fence	2,000	lnft	3.50	7,000		7,000	
Silt f August 2019 Notes	50	each	180.00	9,000		9,000	
Temporary Coir Fiber Wattles	600	lnft	7.00	4,200		4,200	
Construction Entrances	250	sqyd	12.50	3,125		3,125	
Inlet Protection - Block & Rock	2	each	180.00	360		360	
Outlet Protection - Check Dam	50	each	255.00	12,750		12,750	
Diversion Dike / Ditch	5,000	lnft	15.00	75,000		75,000	
Temporary Sediment Trap	1	each	1,750.00	1,750		1,750	
Temporary Concrete Wash-Out	1	each	1,250.00	1,250		1,250	
Temporary Grassing - General	1	allow	2,500.00	2,500		2,500	
Erosion Control Matting	2,420	sqyd	2.50	6,050		6,050	
Temporary Skimmer Basin	3	each	6,000.00	18,000		18,000	
				-		-	
<b>Initial Earthwork</b>				-	\$ 526,000	-	
Clear & Grub / Root Rake (No Burning)	25	acre	4,500.00	112,500		112,500	
Strip Topsoil & Stockpile on site	3,000	cuyd	3.50	10,500		10,500	
Balanced Cut & Fill on Site (Scrapers)	22,000	cuyd	10.00	220,000		220,000	
Import - Borrow Material from Off Site	1	allow	50,000.00	50,000		50,000	
Rough Grade Site prior to Vertical Construction	70,000	sqyd	1.90	133,000		133,000	
				-		-	
<b>Final Grading</b>				-	\$ 129,500	-	
Finegrade Site for Pavements & Landscaping	70,000	sqyd	1.85	129,500		129,500	
				-		-	
<b>Temporary Measures</b>				-	\$ 10,000	-	
Temporary Pedestrian Walks & Barricades	1	allow	7,500.00	7,500		7,500	
Traffic & Pedestrian Directional Signage	1	allow	2,500.00	2,500		2,500	
Temporary Material Lay-Down		sqyd		-		-	
				-		-	
<b>Clearing &amp; Grading</b>				\$ 917,635		\$ 917,635	\$ 917,635

Item Description	U/M		Subcontract Unit Price	Cost	Notes	Total Cost	Section Total
<b>Site Utilities</b>							<b>\$1,921,668</b>
				-		-	
<b>Storm Drainage</b>				-	\$ 144,543	-	
Storm Drain Piping:				-		-	
Reinforced Concrete Pipe				-		-	
24" Diameter	500	lnft	50.00	25,000		25,000	
Flared End Section & Rip Rap	7	each	1,250.00	8,868		8,868	
Storm Drain Structures:				-		-	
Manholes	15	each	6,000.00	90,000		90,000	
Curb Inlets	2	each	7,750.00	15,500		15,500	
				-		-	
Perforated Landscape Drainage:				-		-	
6" Perforated Underdrain	500	lnft	10.35	5,175		5,175	
				-		-	
<b>Stormwater Management</b>				-	\$ 287,500	-	
Bioretention/ Rain Garden	1,500	sqyd	75.00	112,500		112,500	
Bioswales	5,000	lnft	15.00	75,000		75,000	
Plants - Grass Plugs/Shrubs	1	allow	100,000.00	100,000		100,000	
				-		-	
<b>Stream Crossing (Road)</b>	1	allow	15,000.00	15,000	\$ 15,000	15,000	
				-		-	
<b>Stream Crossing (Trails)</b>				-	\$ -	-	
Boardwalks - @ Trails Crossing Stream	2	each	200,000.00	400,000		400,000	
				-		-	
<b>Domestic Non-Potable Water</b>				-	\$ 188,500	-	
Water Well (Depth)	1	each	150,000.00	150,000		150,000	
4" & Smaller PVC	1,100	lnft	35.00	38,500		38,500	
				-		-	
<b>Domestic Potable Water</b>				-	\$ 296,050	-	
Water Well (Depth)	1	each	150,000.00	150,000	> 500'	150,000	
Hydropneumatics Tank	1	each	1,550.00	1,550		1,550	
4" & Smaller PVC	3,200	lnft	35.00	112,000		112,000	
Drinking Fountains	10	each	1,250.00	12,500		12,500	
Cistern & Pump	1	allow	20,000.00	20,000		20,000	
				-		-	
<b>Sanitary Sewer</b>				-	\$ 236,800	-	
8" & Smaller PVC Piping	3,500	lnft	55.00	192,500		192,500	
Septic Tank & Drainage Field (Gallons)	16,000	gals	2.15	34,400		34,400	
Pump Tank	6,000	gals	1.65	9,900		9,900	
				-		-	
<b>Electrical Service</b>						-	
Electrical Primary						-	
Concrete Ductbank	1	item			By Utility	-	
Primary Conductors	1	item			By Utility	-	
Transformers	1	each		-	By Utility	-	
Concrete Pads for Transformers	1	each	775.00	775		775	
Electrical Secondary				-		-	
Primary Conductors & Conduit	50	lnft	50.00	2,500		2,500	
Security System	1	allow	100,000.00	100,000		100,000	
				-		-	
<b>Low Voltage Infrastructure</b>				-	\$ 50,000	-	
Phone & Data Cabling	1	allow	50,000.00	50,000		50,000	
Conduit Raceways				-		-	
4" PVC				-		-	
1" Innerducts				-		-	
Handholds in Specific Locations				-		-	
Junctions				-		-	
Terminus				-		-	
				-		-	
<b>Site Lighting</b>				-	\$ 200,000	-	
Campus Standard Roadway Pole Fixture	26	each	5,000.00	130,000	30' Solar LED	130,000	
Campus Standard Bollard Fixture	35	each	2,000.00	70,000		70,000	
				-		-	
<b>Total Site Utilities</b>				\$ 1,921,668		\$ 1,921,668	\$ 1,921,668



Item Description	U/M		Unit Price	Subcontract Cost	Notes	Total Cost	Section Total
Pavements & Fencing							\$929,923
Pavements & Curbs				-		-	
Gravel Pavement (Maintenance Facility, Community Garden & Parking)	5,000	sqyd	12.75	63,750		63,750	
Light Duty Asphalt (Pedestrian Pathways)	7,780	sqyd	30.00	233,393		233,393	
Heavy Duty Asphalt (Driveways and Parking Drive Aisles)	8,000	sqyd	35.00	280,000		280,000	
Standing Curb (Sidewalk Adjacent to Drive at Steam Crossing)	500	lnft	21.50	10,750		10,750	
Concrete Wheel Stops	140	each	55.00	7,700		7,700	
Concrete Walkways	20,000	sqft	5.05	101,000		101,000	
Pervious Concrete Parking Bays	30,000	sqft	3.75	112,500		112,500	
Concrete Dumpster Pads - 30'X20'	600	sqft	12.50	7,500		7,500	
				-		-	
Pavement Markings				-		-	
Paint Striping	200	spaces	55.00	11,000		11,000	
Handicap Insignia	10	spaces	35.50	355		355	
Painted Letters & Arrows				-		-	
Stop Bars	5	each	35.00	175		175	
Cross Walks	6	each	100.00	600		600	
Directional Arrows	5	each	25.00	125		125	
Handicap Signs	10	each	275.00	2,750		2,750	
Traffic Signs	10	each	195.00	1,950		1,950	
				-		-	
Fencing & Gates				-		-	
Roadway Entry Gates - 12" Double Swing Gate	1	each	7,000.00	7,000		7,000	
Manually Operated & Galvanized Steel				-		-	
Padlock				-		-	
Directional Arrows	5	each		-		-	
Fixed Bollards, Painted, 24" Height, 8" Diameter	10	each	550.00	5,500		5,500	
Removable Bollards, Standard Greenway Hinged Barrier	5	each	775.00	3,875		3,875	
Highway Guardrail, Standard Timber Guardrail	250	lnft	75.00	18,750		18,750	
Chainlink Fencing, 8' High w/ 24' Wide Sliding Gate	450	lnft	35.00	15,750		15,750	
Wooden Fencing, 4' Board Split Rail Wood Fence	1,400	lnft	32.50	45,500		45,500	
				-		-	
Total Pavements & Fencing				\$ 929,923		\$ 929,923	\$ 929,923

Item Description	U/M		Unit Price	Subcontract Cost	Notes	Total Cost	Section Total
Landscaping and Site Amenities							\$1,405,707
				-		-	
Site Signage				-		-	
Monument Signs at Entries	1	each	5,000.00	5,000		5,000	
Lighting, Spotlight				-		-	
Way Finding Site Signage	1	each	1,500.00	1,500		1,500	
Traffic Signage	1	allow	2,000.00	2,000		2,000	
Educational Signage	1	allow	5,000.00	5,000		5,000	
Security and Property Boundary Signage	1	allow	1,500.00	1,500		1,500	
				-		-	
Landscaping				-		-	
Landscaping: Plants, Shrubs, Groundcovers & Trees:				-		-	
Ground Cover	20,000	sqyd	7.75	155,000		155,000	
Shrubs - 3 Gal	2,200	each	55.00	121,000		121,000	
Trees - 2" Caliper	100	each	600.00	60,000		60,000	
Trees - 4" Caliper	40	each	1,200.00	48,000		48,000	
Hardwood Mulch	65,000	sqft	1.50	97,500		97,500	
Grassing - Sod - Near Playground, Shelters and Gardens	40,000	sqft	0.70	28,000		28,000	
Grassing - Seeding (Bermuda)	252,000	sqft	0.10	25,200		25,200	
12-Month Warranty	1	item	20,000.00	20,000		20,000	
				-		-	
Landscaping: Native Prairie Establishment				-		-	
Grass Seeded Native Prairies	233,000	sqft		-		-	
Herbicide Treatment	3	times	1,000.00	3,000		3,000	
1" Compost	720	cuyd	30.00	21,604		21,604	
Topsoil	25,890	sqyd	4.50	116,505		116,505	
Rototill into Existing Topsoil	233,000	sqft	1.00	233,000		233,000	
Seeding	25,890	sqyd	10.00	258,899		258,899	
				-		-	
Landscaping: Buffer Planting				-		-	
Loblolly Pine Trees - 6' High Containers	300	each	180.00	54,000		54,000	
Caliper Canopy Trees - 2"	50	each	600.00	30,000		30,000	
"No Trespassing" Signage	10	each	50.00	500		500	
				-		-	
Landscape Irrigation:				-		-	
Gators at Trees	140	each	100.00	14,000		14,000	
Temporary Irrigation - 12 Month Contract from Well Water	1	item			w/ Landscaping Above	-	
Temporary Irrigation				-		-	
Well System Irrigation System				-	w/ Miscellaneous	-	
				-		-	
Restoration of Disturbed Areas				-		-	
Required Staging Areas & Contractor Parking	1	allow	10,000.00	10,000		10,000	
Remove Gravel				-		-	
Import Topsoil & Spread				-		-	
Amend Topsoil				-		-	
				-		-	
Fixed Site Furnishings				-		-	
Picnic Tables	70	each	750.00	52,500		52,500	
Courtyard Tables & Chairs	1	allow	2,500.00	2,500		2,500	
BencAugust 2019 Notes	20	each	950.00	19,000		19,000	
Trash/Recycling Receptacles	15	each	500.00	7,500		7,500	
Bike Racks	15	each	400.00	6,000	Recycled	6,000	
Flag Poles	1	allow	2,000.00	2,000		2,000	
Pet Waste Disposal Station	10	each	500.00	5,000		5,000	
				-		-	
Total Landscaping and Site Amenities				\$ 1,405,707		\$ 1,405,707	\$ 1,405,707



Item Description	U/M		Unit Price	Subcontract Cost	Notes	Total Cost	Section Total
<b>Specialized Program Elements</b>							<b>\$2,212,026</b>
				-		-	
<b><u>Solar Energy</u></b>				-	\$ 100,000		
Solar Energy System	1	allow	100,000.00	100,000		100,000	
10kW System w/ 660 Sqft Array				-		-	
				-		-	
<b><u>Playground</u></b>				-	\$ 520,000		
Playground Saftey Surfacing	1	allow	150,000.00	150,000		150,000	
Equipment	1	allow	250,000.00	250,000		250,000	
Furnishings	1	allow	20,000.00	20,000		20,000	
Delivery and Installation	1	allow	50,000.00	50,000		50,000	
Natural Play Elements	1	allow	50,000.00	50,000		50,000	
				-		-	
<b><u>Hiking Trails</u></b>				-	\$ 129,526		
ADA Asphalt Trails - 8' Wide	6,723	lnft	2.75	18,488		18,488	
Fine Grading of Cross Slope				-		-	
Small Swale w/ PVC Drain Piping	34	each	1,000.00	34,000		34,000	
Mulch Trails	3,750	lnft	7.25	27,188		27,188	
Small Swale w/ PVC Drain Piping	19	each	1,000.00	18,750		18,750	
Wayfinding Sign at Junctions	14	each		2,100		2,100	
Educational Signage Along Trails	10	each	500.00	5,000		5,000	
Challenge Hiking Trails	800	lnft	30.00	24,000		24,000	
				-		-	
<b><u>Community Garden</u></b>				-	\$ 112,500		
Garden Plots - Timber Raised - 10'x20' Each Plot	25	each	4,500.00	112,500		112,500	
6x6 Timber Framed - 18" High, Rot Resistant				-		-	
1' Depth Stone Below Timber Frames				-		-	
Corrugated Metal Frames				-	Alternate	-	
				-		-	
<b><u>Tree Canopy</u></b>				-	\$ 1,000,000		
Boardwalk - 16' Height	300	lnft	2,000.00	600,000		600,000	
Natural Play/Ropes/Climbing Nests	1	allow	400,000.00	400,000		400,000	
				-		-	
<b><u>NC 42 Roadway Improvements</u></b>				-	\$ 200,000		
Turn Lane Construction	1	allow	200,000.00	200,000		200,000	
Left Turn Lane				-		-	
Right Turn Decal Lane				-		-	
				-		-	
<b><u>Outdoor Classroom</u></b>				-	\$ 30,000		
Classroom Learning Area	1	allow	30,000.00	30,000		30,000	
				-		-	
<b><u>Public Art</u></b>				-	\$ 120,000		
Approximately of 1% of Total Construction	1	item	120,000.00	120,000		120,000	
				-		-	
<b>Total Specialized Program Elements</b>				<b>\$ 2,212,026</b>		<b>\$ 2,212,026</b>	<b>\$ 2,212,026</b>

Item Description	U/M		Unit Price	Subcontract Cost	Notes	Total Cost	Section Total
<b>Architectural Elements</b>							<b>\$4,725,000</b>
				-		-	
<b><u>Park Center</u></b>				-	\$ 2,640,000		
Heated Areas	6,870	sqft	250.00	1,717,500		1,717,500	
Deck and Porch Areas	6,150	sqft	150.00	922,500		922,500	
				-		-	
<b><u>Maintenance Facility</u></b>				-	\$ 535,000		<b>August 2019 No</b>
Enclosed Building	2,500	sqft	214.00	535,000		535,000	
				-		-	
<b><u>Wildlife Viewing Shelter</u></b>				-	\$ 50,000		
Shelter	300	sqft	166.67	50,000		50,000	
				-		-	
<b><u>Larger Picnic Shelter (150 People)</u></b>				-	\$ 500,000		
Shelter	4,000	sqft	125.00	500,000		500,000	
				-		-	
<b><u>Larger Picnic Shelter (50 People)</u></b>				-	\$ 250,000		
Shelters	1,000	sqft	250.00	250,000	2 Shelters	250,000	
				-		-	
<b><u>Playground Shelter and Restroom</u></b>				-	\$ 375,000		
	1,250	sqft	300.00	375,000		375,000	
				-		-	
<b><u>Community Garden Shelter</u></b>				-	\$ 375,000		
( Reuse of Existing Tobacco Barn)	1	allow	375,000.00	375,000		375,000	
				-		-	
<b>Total Architectural Elements</b>				<b>\$ 4,725,000</b>		<b>\$ 4,725,000</b>	<b>\$ 4,725,000</b>

Item Description	U/M		Unit Price	Subcontract Cost	Notes	Total Cost	Section Total
<b>Phase II Program Elements</b>							<b>\$2,629,320</b>
				-		-	
<b><u>Bridge Across Middle Creek</u></b>				-	\$ 485,000		
Bridge	485	lnft	1,000.00	485,000	Qty Per Site Plan	485,000	
Handrails				-		-	
Bridge Supports				-		-	
Bridge Walk Platform				-		-	
Bridge Walk Walls				\$ -		-	
				-		-	
<b><u>Floodplain Trails</u></b>				-	\$ 1,489,320		
Trails		allow		-		-	
Boardwalk - Through Wetlands - 8' Wide	18,912	sqft	55.00	1,040,160		1,040,160	
Guardrails	4,728	lnft	95.00	449,160		449,160	
				-		-	
<b><u>Climbing Wall / Subterranean Zone</u></b>				-	\$ 500,000		
Activity/Sports Wall	1	allow	500,000.00	500,000		500,000	
				-		-	
<b><u>Invasion Species Removal/ Management/ Re-seeding</u></b>				-	\$ 25,000		
Existing Prairies	1	allow	25,000.00	25,000		25,000	
				-		-	
<b><u>Privacy Fencing Adjacent to Neighborhoods</u></b>				-	\$ 30,000		
Privacy Fencing Systems	1	allow	30,000.00	30,000		30,000	
				-		-	
<b><u>Composting Toilets</u></b>				-	\$ 100,000		
Toilets - Along Trails	1	allow	100,000.00	100,000		100,000	
				-		-	
<b>Total Phase II Program Elements</b>				<b>\$ 2,629,320</b>		<b>\$ 2,629,320</b>	<b>\$ 2,629,320</b>

Item Description	U/M		Unit Price	Subcontract Cost	Notes	Total Cost	Section Total
<b>General Requirements</b>							<b>\$608,605</b>
				-		-	
<b><u>Items Not Yet Detailed</u></b>					\$ 100,000		
<b>(include lump sum amount for the item below per client)</b>							
<b>mostly construction trailer, security, porta pits, parking, temp power, etc. ... Per client</b>							
Unforeseen Conditions	1	allow	100,000.00	100,000		100,000	
<i>This line item includes potential costs associated with temporary electrical services, power consumption, data and telephone services, water and sewer distribution, climate control, sanitary facilities, safety requirements, site logistics (construction trailer, security, porta pits, parking) and ongoing cleanup, etc.</i>							
<b><u>Stated Allowances per Specifications</u></b>	1	allow	10,000.00	10,000	\$ 10,000	10,000	
Removal & Replacement of Unsuitable Soils				-	Included Above	-	
Trench Excavation & Backfill				-	Included Above	-	
Removal & Replacement with #67 Stone				-	Included Above	-	
Excavate & Dispose of Mass Rock & Replace				-	Included Above	-	
Excavate & Dispose of Trench Rock & Replace				-	Included Above	-	
Undercutting / Dewatering / Wellpointing				-	Included Above	-	
Pipe Bedding				-	Included Above	-	
						-	
<b><u>Sustainable SITES Certifictaion</u></b>				-		-	
Registration	1	item	3,000.00	3,000		3,000	
Pre-Certification	1	item	3,500.00	3,500		3,500	
Certification	1	item	9,000.00	9,000		9,000	
Administrative	1	item	5,000.00	5,000		5,000	
<b><u>Sanitary Facilities</u></b>				-	\$ 8,931		
Portable Toilets & Sanitation Stations	10	mons	800.00	7,939		7,939	
Canteen / Breakroom Trailer		N/R		-		-	
Drinking Water, Ice and Cups	10	mons	100.00	992		992	
<b><u>Safety Requirements</u></b>				-	\$ 469,173		
First Aid And Safety Supplies	10	mons	100.00	992		992	
Safety Audits	2	each	250.00	500		500	
Drug Testing	1	item	500.00	500		500	
Fire Extinguishers / Emergency Alarms	849,420	sqft	0.10	84,942		84,942	
Project Barricades ( OSHA )	849,420	sqft	0.20	169,884		169,884	
Temporary Protection	849,420	sqft	0.25	212,355		212,355	
						-	
<b>Total General Requirements</b>				<b>\$ 608,605</b>		<b>\$ 608,605</b>	<b>\$ 608,605</b>



## **APPENDIX A:**

### **Core Team Meeting Minutes**

As noted in the Foreward section of the Master Plan Report, included as part of the Master Plan process was a selection of a permanent name for the Park. While the Park was previously referred to as “Southeast County Park”, upon completion of the Master Plan the Wake County Board of Commissioners formally adopted the “Beech Bluff County Park” name. All references to “Southeast County Park” shown on appendix documents included with the final Master Plan Report shall be one in the same as “Beech Bluff County Park”.



Wake County Parks Recreation & Open Space  
Southeast County Park Master Plan

Core Team Kickoff Meeting Minutes  
March 27, 2018

ATTENDEES

Jeffrey Christensen	Surface 678
Lester Lowe	The Wooten Company
Erin Sterling Lewis	in situ studio
Kevin Nunnery	Biohabitats
Eric Staehle	Wake County FD&C
Tom Covington	Wake County FD&C
Mark Forestieri	Wake County FD&C
Chris Snow	Wake County PR&OS
Deborah Fowler	Wake County PR&OS
Rick Stogner	Wake County GSA
Matthew Hart	Wake County GSA
Frank Cope	Wake County CS

1. **PROJECT MISSION STATEMENT / PURPOSE / GOALS** – Considerations for defining
- a. There is a need for a large acre park in the southeast portion of Wake County where none currently exist in the vicinity
  - b. 300+ acres of land have been acquired from a variety of property owners
  - c. There is a desire to acquire more parcels to connect the current parcels Wake County owns
  - d. Wake County Parks are natural resource focused, supporting the outdoor environment and protecting natural resources while providing opportunities for environmental and cultural education, recreation, leisure, and open space.
  - e. Evaluate affordable housing opportunities and feasibility.

2. **EXISTING CONDITIONS AND BACKGROUND INFORMATION**
- a. Wake County to send Autocad versions of current property surveys – if available
  - b. Relevant Planning and Zoning documents
    - i. Fuquay-Garner Area Land Use Plan
    - ii. Parcels are zoned R-30 by Wake County
  - c. GIS Data – planning and design of the Park will be done based on GIS data and existing information for this phase
  - d. Natural Heritage Program’s August 16, 2016 report
    - i. Tract #5 contains exemplary wetlands with unique species
    - ii. Stream bed may have shifted since last report
    - iii. WCP would like a landscape ecology study to be done on the site

3. **SURROUNDING CONTEXT STUDIES** – to be considered in determining the design of the Park
- a. Adjacencies: Surrounding schools / parks / open space / neighborhoods
  - b. Parcel Acquisition Studies
    - i. WCP to reach out to adjacent property owners to determine if Design Team can include these properties in the natural resource assessment.
    - ii. Design Team will provide options for including these parcels in the overall Park with the benefit of connecting all areas of land within the park together.
  - c. Community Outreach: Public input process to be developed by Design Team and Wake County Parks using the following methods:
    - i. WCP to reach out to Fuquay and Garner communities to develop plan for required public input
    - ii. Electronic Surveys
    - iii. Public Meetings
    - iv. Adjacent property owner interviews (to provide cultural and historical input)
    - v. Project website

4. **FUTURE CONDITIONS**– to be considered in determining the design of the Park
- a. Planned traffic improvements
    - i. Future HWY 540 route
  - b. Future Greenway connections
    - i. Future greenway proposed along Middle Creek
    - ii. Wake County 2017 Greenway System Plan
  - c. Future economic development (schools, housing, public space, etc)
    - i. Wake County to provide any available information or proposed plans to Design Team.

5. **POTENTIAL PROGRAM**
- a. Affordable Housing
    - i. Increase in population of Wake County has greatly increased the need for affordable housing. Design Team and WCP to evaluate options for providing affordable housing on the Southeast County Park land as part of the Master Plan
  - b. Urban agriculture
    - i. Wake County currently leases land for agriculture
    - ii. Area of the park adjacent to NC 42 is actively farmed
  - c. 3<sup>rd</sup> Party Partnership possibilities
    - i. YMCA, Boys and Girls Club, Universities (NCSU, Duke Forest)
    - ii. Communities of Garner and Fuquay may provide input
  - d. Architectural Components
    - i. Facilities for retreats; day use, not necessarily for income
    - ii. Environmental education center and classrooms
      - 1. expand beyond the building
      - 2. Library component



- 3. Playground; may be both inside and outside
- 4. Greenway connection to building
- iii. Restroom / composting toilets depending on utilities and use
- iv. Park staff need to be accommodated on site
- v. Picnic shelters – Blue Jay Point as precedent
- vi. Observation and wildlife viewing platforms – Walnut Creek Park
- vii. Design Team to consider fiber optic, communications, security requirements, lighting and ADA access
- viii. Facilities in Lake Myra Park may serve as precedents
- ix. Consider areas to be designated for preservation and/or not accessible to the public
- x. Parking and storage need to be important considerations

6. **PREVIOUS PARK MASTER PLAN PRECEDENTS / LESSONS LEARNED**

- a. Lake Myra 2008 Master Plan
- b. Yates Mill and Harris Lake were the most recent new park additions

7. **NATURAL RESOURCE ASSESSMENT** – to be conducted by Design Team and will consider the following:

- a. Existing inventory documents
  - i. 08/26/2016 Natural Heritage Program’s Tract Report
  - ii. Wake County Natural Resource Inventory Database
- b. Hydrology, wetlands, streams (intermittent and permanent), buffers, setbacks
  - i. General boundaries and locations of wetlands will be provided by Design Team and used for planning purposes. A more detailed wetland delineation will need to be provided in subsequent design phases.
  - ii. Tract #5 contains exemplary wetlands with unique species
  - iii. Stream bed may have shifted since last delineation
- c. Invasive species
  - i. Numerous invasive species exist, including privets
- d. Wildlife
  - i. Design Team will identify and provide a non-comprehensive list of wildlife that’s likely to be inhabiting the site, based on vegetative communities and topography for potential use in the Wake County Natural Resource Inventory Database
- e. Steep slopes
- f. Soils
- g. Grants
  - i. Long Leaf pine restoration grants
  - ii. Wake County may be willing to use controlled burning as a maintenance strategy and may partner with the Forest Service
- h. Design Team shall notify Wake County if large trucks or testing equipment needs to access the site in consideration of the surrounding residences (not anticipated at this time).

8. **SUSTAINABLE SITES INITIATIVE**

- a. Design Team will determine the pre-design pre-requisites can be met with Master Plan process (refer to attached SITES v2 Scorecard)
  - i. Section #1: Site Context
  - ii. Section #2: Pre-Design Assessment + Planning

9. **STORMWATER MANAGEMENT AND PERMITTING** – Design Team to study required permit approvals process and reviewing agencies

- a. Wake County Planning has jurisdiction
  - i. Consider the need for special use permits
- b. Wake County stormwater requirements
- c. 401/404 Buffer and Wetland permits and mitigation requirements
- d. Fire: Willow Springs, Fuquay or Garner may have local jurisdiction
- e. Consider local Home Owner’s Associations
- f. NCDOT encroachment permits
  - i. NCDOT Traffic analysis may be required
  - ii. Consider secondary entrances
- g. Water / Sewer / erosion control permits
  - i. Proposed design and development of the Park will determine water and sewer requirements.
  - ii. Design Team to consider water and sewer requirements for affordable housing.

10. **SCHEDULE**

- a. 10-12 month process - Surface 678 to generate preliminary overall project schedule
  - i. Phase 1 Tasks
    - 1. Surface 678 will begin preliminary graphic site analysis and context maps and property surveys to assemble into base maps for on-site field work and natural resource assessment
    - 2. Design Team and Wake County Parks to schedule initial site tour
    - 3. Wake County Parks to determine if and when Design Team can have access to adjacent properties for site analysis
    - 4. Surface 678 and Wake County Parks to determine next Core Team Meeting and general deliverables:
      - a. Review initial site base mapping, site inventory, context studies, future conditions
      - b. Discuss additional information needed
      - c. Discuss initial findings of Field Work Observation
      - d. Discuss proposed Project Mission Statement
      - e. Review Sustainable SITES Prerequisites, requirements and SITES certification feasibility
- b. General Deliverables
  - i. Site Assessment
  - ii. Environmental Analysis



- iii. Transportation Assessment
  - iv. Regulatory Analysis & Land Acquisition Assessment
  - v. SITES Assessment
  - vi. Land Use Suitability Map
  - vii. Community Priorities and Needs
  - viii. Program Recommendations
  - ix. Design Alternatives
  - x. Cost Estimate
  - xi. Final Draft Masterplan and Report
- c. Meetings to be incorporated into the schedule
- i. Core Team meetings
  - ii. Larger Group Meeting – with different municipalities
  - iii. Community / Public Input Meetings
  - iv. Wake County Board of Commissioners Presentation



Wake County Parks Recreation & Open Space

Southeast County Park Master Plan

Core Team Kickoff Meeting #2

Meeting Minutes

August 06, 2018

ATTENDEES

Jeffrey Christensen	Surface 678
Eric Davis	Surface 678
Lester Lowe	The Wooten Company
Ivana Shukla	The Wooten Company
Erin Sterling Lewis	in situ studio
Kevin Nunnery	Biohabitats
Eric Staehle	Wake County FD&C
Chris Snow	Wake County PR&OS
Deborah Fowler	Wake County PR&OS
Emerson Barker	Wake County PR&OS
Alicia Arnold	Wake County
Bryan Coates	Wake County
Alice Avery	Wake County Communications
Nancy Daly	Wake County
Rick Stogner	Wake County

1. PUBLIC MEETING OVERVIEW

- a. Anticipated goals and outcomes
  - i. Present site analysis findings and introduce community members and adjacent residents to Southeast Park, the Master Plan Process, schedule, goals and mission
  - ii. Gauge interest from the public and determine potential stakeholders and third party users of the park that may determine the program of the park
  - iii. Conduct surveys / questionnaires, gather comments and user data to help determine the Park program and bring results to the next community meeting
- b. Meeting format / Considerations From Wendell Public Meeting
  - i. 100 +/- people attended Wendell Meeting; up to 300 may attend SE Park Public Meeting
  - ii. Individual station format is preferable, without overall group presentation; 9 to 10 stations have been proposed for Southeast Park
  - iii. Need (2) people minimum per station, participants may stay at one station for an extended period of time

- iv. Need larger first station with multiple team members; then subsequent stations can be attended by participants in any order

v. 4:00 pm to 7:00 pm is a good time window

vi. Need to provide notification / advertisement (3) weeks in advance

vii. Early September is target Public Meeting date

- c. Community Resource Committee
  - i. Surface 678 has recommended selecting members from Wake County Steering Committee and local HOA members to represent the local community and provide input throughout the Master Plan phase of the project
- d. Task List, Participation and Key Personnel Involved
  - i. Surface 678 to draft initial task list with key personal and responsibilities to track and complete prior to setting up the Community Meeting
- e. Affordable Housing
  - i. Reference Affordable Housing Plan and Public Land Disposition Criteria Draft
  - ii. Wake County to define set of criteria for affordable housing and feasibility based on PIN numbers of the project
  - iii. Transportation and labor market need to be considered
  - iv. Design Team to consider creative options for affordable housing in the park including live / work options
  - v. Park needs to be accessible and equitable for all income levels

2. SITE ANALYSIS PRESENTATION / PUBLIC MEETING STATIONS

- a. Station #1 Welcome / Sign-In/Questionnaire
  - i. Needs to be larger station to handle all visitors as a first stop
  - ii. Consider comment wall and/or comment box
  - iii. Digital questionnaires available via iPad
  - iv. Park Name – To be determined:
    - 1. Consider soliciting suggestions on park names from public
- b. Station #2 Overview of Park and Master Plan
  - i. Mission Statement – To be general Wake County Parks mission statement
    - 1. Southeast Park specific mission statement to be determined from the public input process
  - ii. Surface 678 to provide process board and additional park photos
- c. Station #3 Context Analysis
  - i. Surface 678 to combine all adjacent parks, schools, libraries, greenways and other amenities into (1) large context map 6’ x 12’ +/- provided by Surface 678
  - ii. Photos of adjacent parks and amenities to be included
  - iii. Southeast Wake County quadrant



- iv. Roads to be included to allow participants to map their location and route to the park
- v. Revise to include all facilities, including proposed and future (South Lake Elementary, Willow Springs High School, Fuquay South Regional Library, Crooked Creek Golf Course, others)

**d. Station #4 Environmental and Natural Resource Assessment**

- i. Streams, wetlands, floodplains
- ii. Vegetation and landscape ecology analysis
  - 1. Consider migratory bird corridors
  - 2. Consider future development impact to existing habitat corridors
- iii. Unique site features / photos
- iv. Invasive species management
- v. Include graphic showing the diversity of habitats, vegetation and microclimates
- vi. Provide section of habitat diversity in addition to plan
  - 1. Piedmont to coastal plan transition
  - 2. Mountain laurel and Magnolia
- vii. Provide photos of observed plants and wildlife and list endangered species
  - 1. Environment and Natural Resource Database

**e. Station #5 Transportation, Utility Assessment, Regulatory Analysis**

- i. Water and Sewer connections and requirements
  - 1. Well and septic considerations – no existing well on site
  - 2. Fire requirements
- ii. Future 540 and NCDOT projects
  - 1. Show maps with existing and future bike lanes – NC 42 and NC 70
- iii. Stormwater Management
- iv. Overall existing and future greenway map based on Wake County Greenway System Plan
- v. Public Transportation
  - 1. Accommodate future public transportation stops to park in Master Plan

**f. Station #6 Sustainable SITES Initiative**

- i. Overview of Sustainable SITES Initiative – highlight human health and well being
- ii. Provide examples of achieved credits, past certified projects, lessons learned
- iii. Provide list of Sustainable SITES Initiative benefits
- iv. Stimulate questions from participants that may be used to achieve innovation credits
  - 1. Community garden as example
- v. Display importance of preserving farmland
  - 1. Walnut Hill Nature Preserve as example
  - 2. Pilot Project with Triangle Land Conservancy
  - 3. Next Generation Farming

**g. Station #7 Site and Cultural History**

- i. Historical photos to supplement aerial photographs
- ii. Historical development and growth

- iii. Interview with the Adams / story map
- iv. Collect historical photos / stories from participants
- v. Include archeology

**h. Station #8 Town Planning and Zoning**

- i. Fuquay Varina, Johnson County, local HOA
- ii. Q/A session
- iii. Brian Coates will have dedicated station for Wake County Planning

**i. Station #10 Kids Station**

- i. Consider interactive model making, hand graphics, artwork
- ii. Playground envisioning
- iii. Consider inviting representatives from Wake County Public Schools or YMCA

**3. ACTION ITEMS**

- a. Surface 678 to draft task and responsibility list
- b. Surface 678 to draft supply list
- c. Surface 678 to draft station board / graphic list and revise current graphics
- d. Surface 678 to revise questionnaire and forward to Wake County for review and incorporation into digital and Spanish format
- e. Surface 678 and Wake County to finalize stakeholder participation list and Community Resource Committee
- f. Wake County to provide list of criteria for affordable housing based on parcel numbers and feasibility.



Wake County Parks Recreation & Open Space  
Southeast County Park Master Plan

Core Team Meeting #3  
Meeting Minutes  
November 07, 2018

ATTENDEES

Jeffrey Christensen	Surface 678
Eric Davis	Surface 678
Lester Lowe	The Wooten Company
Erin Sterling Lewis	in situ studio
Mark Forestieri	Wake County FD&C
Eric Staehle	Wake County FD&C
Tom Covington	Wake County FD&C
Chris Snow	Wake County PR&OS
Deborah Fowler	Wake County PR&OS
Emerson Barker	Wake County PR&OS
Bryan Coates	Wake County Planning
Tim Maloney	Wake County Planning
Frank Cope	Wake County Community Services
Nancy Daly	Wake County Environmental Services

1. SCHEDULE

a. Core Team Meeting Goals

- i. Public Meeting #1 recap and results
- ii. Discuss Phase 2 and Phase 3 of the Master Plan
- iii. Steps to arrange Community Meeting #2
- iv. Park program and Land Use Suitability Map

2. PUBLIC MEETING RECAP

a. Summary of Survey Results

- i. Surface 678 will provide graphic display of survey results, comments and feedback at next Community Meeting.

- ii. Current survey results were reviewed and discussed. Refer to “Park Program” section of the meeting minutes.

b. Park Names and Mission Statement

- i. Design Team and Wake County will develop temporary name to display at Community Resource Committee Meeting and receive feedback.
- ii. Park name shouldn’t be family name unless land was donated.
- iii. Design Team will develop draft Mission Statement(s) to review at the Community Resource Committee Meeting.
  - 1. Mission Statement can evolve throughout the Master Plan Process

c. Historical Documents

- i. Surface 678 will review and incorporate research and findings from “A Historical Review of a Southeast Wake County Park Site” by Heather Martin into the historical analysis for the next public meeting.

d. Affordable Housing

- i. Determined not to be suitable at Southeast Park location.
- ii. Wake County to provide statement for justification.

3. PARK PROGRAM

a. Greenway / NC 42 Improvements

- i. Planned greenway along Middle Creek will most likely be designed more than 10 years out.
- ii. NC 42 improvements to increase the width and add bike paths has not been scheduled and will only happen when surrounding development will increase and make improvements in this area a priority.
- iii. Only minimal improvements to NC 42 will occur with development of the Adams property such as adding a turn lane and dedicating R.O.W. for future NC 42 expansion.
- iv. Design Team will plan for both the Greenway and NC 42 improvements for pedestrian / bicycle connections to the Park and how these can connect surrounding schools and public amenities.



- v. Design Team will study options at non-public pedestrian connections of the surrounding subdivisions to the Park.
- vi. Design Team will consider pedestrian crossings to development of property on opposite side of NC 42.
- vii. In order to tap into the water main along NC 42, the Southeast Park development will have to be annexed into Fuquay Varina. Wake County prefers the Park not be part of Fuquay Varina’s jurisdiction.

**b. Story Mapping**

- i. Design Team to consider ecology tour of the different microclimates and habitats throughout the park using digital cell phone / web app.
- ii. Cell phone service throughout the park to be tested.
- iii. Rock Creek Park in Maryland and Robertson Millpond Preserve map tours were discussed as examples.

**c. Adjacencies, Surrounding Neighborhoods**

- i. Design Team to consider the property boundaries of the Park with adjacent neighborhoods and carefully address comments from the Community Meeting that include noise, sight lines, lights pedestrian access and preventing public parking in residential streets.

**d. Circulation Hierarchy / Trails**

**i. ADA access**

- 1. Several comments from the public meeting addressed the need for a clear hierarchy of trails, the importance of providing ADA access and providing trail options for all age groups.

**ii. Mountain Bike Trails**

- 1. Mountain bike trails were discussed and there was concern of conflicts with walkers, runners and protecting the natural ecology.
- 2. Mountain bike trails are considered an unmet need in southern Wake County, however, there are other park locations possible and they are provided at Harris Lake.

**iii. Short Loop Trail**

- 1. A need for a short, 1-2 hr. loop trail adjacent to the visitor / education center was discussed to allow for school field trips with limited time to use.

**iv. Cross Country Running**

- 1. 3K and 5K running trails are desired for local high school and middle school cross country runners.

**v. Tree Top / Canopy Walk**

- 1. Design Team will look at ways to incorporate tree canopy walks by taking advantage of the existing topography and steep stream channels.
- 2. The Durham Life and Science Museum was discussed as a desirable example.

**vi. Future Access**

- 1. Design Team to study acquiring of future parcels to connect separate areas of the park and allow for better connections to the surrounding neighborhoods.

**e. Canoe / Kayak Launch and Water Access**

- i. Middle Creek is not sufficiently navigable to provide canoe / kayak access.
- ii. Design Team to consider ways to experience water that may include wildlife observation platforms.
- iii. Turnipseed Nature Preserve was discussed as a precedent.
- iv. The site may not lend itself to fishing.
- v. Study ponds and access to wetlands may be provided.

**f. Fitness**

- i. The environmental and social components of the park have been discussed, however, there is still a need to incorporate a strong recreational component to the park in unique ways that don’t adversely affect the natural ecology.

**ii. Fitness Stations**

- 1. Design Team to consider providing fitness stations along trails and studying examples that attract sufficient use.
- 2. Design Team to consider popular “ninja warrior” or “crossfit” type fitness components that could be incorporated with the natural landscape in unique ways.



- 3. Consider fitness “Meetup” groups and classes.

**iii. Boulder and Climbing Walls**

- 1. Artificial boulder climbing walls that may be in combination with natural boulders were discussed as a way to accommodate fitness in an outdoor setting.

**iv. Playground Fitness**

- 1. Design Team to consider incorporating fitness components into playground areas that may merge child and adult play.

**v. Pickleball**

- 1. Pickleball was requested in the Community Meeting survey comments and is underserved in Wake County.
- 2. However, providing hard surface courts at Southeast Park may not adhere to the Core Values of Southeast Park and may be better accommodated at other parks.

**vi. Multi-Purpose Open Lawn**

- 1. An open lawn for Frisbee or kite flying may be provided but should not contain organized sports.
- 2. Harris Lake was discussed as an example, an “amoeba” shape may help avoid organized sport use.

**g. Camping / Overnight Facilities**

- i. Concerns with overnight camping were discussed that include night time traffic, noise, lights, and staff resources.
- ii. If camping was provided, primitive tent campsites with low impact would be used in lieu of larger RV camping areas.
- iii. The overnight facility at Blue Jay Point was discussed. Concerns were raised that a dedicated overnight facility at Southeast Park may not attract sufficient users that provide an “environmental education” component and overnight staff resources may be limited.
- iv. An overnight facility at Prairie Ridge Ecostation was planned but not installed.
- v. The topography of the site may be difficult to accommodate large overnight facilities.

- vi. Alternatives to overnight camping and facilities may be outdoor space for backpacking and hiking classes that would occur during the day, or occasional nighttime programs such as stargazing that would not involve camping.

**h. Farming / Community Gardens / Farmer’s Market**

- i. Establishing a farm lease program is a priority and is advocated for by the Sustainable SITES Initiative. Preference is to have a variety of produce crops that can be locally consumed as opposed to monoculture commodity crops.
- ii. Community Gardens and local Farmer’s Market may be incorporated but should not compete with surrounding amenities.
- iii. Community Gardens can involve establishing native plants that are edible or can be consumed in unique ways; teas, dyes, artwork, weaving or that may have been Native American uses.
- iv. History of local area farming can be researched; what was successful for adjacent property owners and why.
- v. The land dedicated for farming may be in the front of the park along NC 42 to preserve the rural character as surround land gets developed.

**i. Visitor / Education Center**

- i. The need to provide conference rooms to accommodate organizations, events and community meetings was discussed and a desire to have this part of the visitor center in lieu of a standalone facility.
- ii. A conference room should accommodate approximately 100 people, contain flexible space with accordion walls, set up with amenities for presentations, lunches and cleaning areas.
- iii. Local, smaller organizations should be accommodated.
- iv. Outdoor classrooms, activity spaces and 1-2 hr. loop trail should be provided immediately adjacent to the Visitor / Education Center for easy access for large groups and student field trips.
  - 1. Hammock gardens, porch swings and other seating areas were discussed as possible amenities.



- v. Thomas Crowder Park Center and NC Botanical Gardens in Chapel Hill were discussed as examples to study.

**j. Stormwater**

- i. Design Team to incorporate stormwater management into the park design and program to provide interactive opportunities for park users.
- ii. Stormwater management devices shall follow Sustainable SITES Initiative guidelines in addition to Wake County stormwater requirements.

**k. Dog Park / Cat Park**

- i. Concerns with providing a dog park were discussed that include potential complaints, maintenance, operational resources, security, and having an adverse effect on water quality.
- ii. Dog walking can be allowed on trails and sidewalks whereas a dedicated dog park may be more useful in an urban setting.
- iii. Park users may prefer to walk dogs on sidewalks as opposed to natural settings to avoid ticks and other insects.
- iv. A dog park has currently been provided at White Deer Park and in Fuquay Varina.
- v. A cat park was discussed and there were concerns that may not be well used.

**l. Other Amenities Considered**

- i. Horse trails – May not be provided with limited space and conflicts with walkers / runners / hikers.
- ii. Shooting Range – May not be provided with conflicts with children and play areas.
  - 1. Archery may be an alternative that could be more compatible with surrounding amenities.

**4. LAND USE SUITABILITY MAPS**

- a. Draft Land Use Suitability Map was presented that took a composite of the site analysis studies to delineate the suitable areas of development for “high land disturbance activities” and “low land disturbance actives” as well as land that would be reserved for vegetation / wetlands / floodplains / stream buffers.

- b. A Land Use Venn Diagram was presented showing park program elements, adjacencies and compatibility with surrounding elements. The following items were discussed:

- i. Agricultural land should be placed with frontage along NC 42 to preserve rural character of the area.
- ii. Agricultural, communal gathering areas, playground, visitor Center and other major elements will all need access to parking and vehicular services.
- iii. Preserved wildlife areas will need to be buffered and protected from areas of heavy use, yet still allow for pedestrian access and viewing areas.
- iv. The playground should be separated from the visitor center, park offices and buffered from the residential areas to limit noise disturbance.
  - 1. Multiple smaller areas of play elements may be included throughout the park that incorporate both child and adult play and fitness.
- v. Visitor Center should contain nearby outdoor classroom space, short 1-2 hr. loop trail, and conference room space.
  - 1. The conference space may be attached to the visitor center in lieu of a separate large pavilion.

**5. COMMUNITY RESOURCE COMMITTEE**

- a. Surface 678 and Wake County to develop Community Resource Committee and determine date for first Community Resource Committee Meeting.
  - i. HOA Representatives + Steering Committee (Garner and Fuquay Representatives)
  - ii. Goal is for Community Resource Committee to represent the adjacent communities and provide valuable input for how Southeast Park may best connect with surrounding neighborhoods and how the Program provided in Southeast Park may compliment other nearby park facilities.
    - 1. The CRC may consider how amenities requested from the Public Meeting survey that may not be feasible at Southeast Park may be provided at other nearby park facilities.
- b. Surface 678 to provide Wake County with brief list of questions to ask potential stakeholders and third party organizations.



**6. PREPARATION FOR COMMUNITY MEETING #2**

- a. Wake County and Surface 678 to set dates for the following Phase 2 and 3 meetings:
  - i. Community Resource Committee Meeting
  - ii. Core Team Meeting #4
  - iii. Community Meeting #2
- b. Surface 678 to prepare draft facilitation guide for Community Meeting and Community Resource Committee Meeting.
- c. Surface 678 to graphically present results and input from Community Meeting #1.



Wake County Parks Recreation & Open Space  
Southeast County Park Master Plan

Core Team Meeting #4  
Meeting Minutes  
January 30, 2019

ATTENDEES

Jeffrey Christensen	Surface 678
Eric Davis	Surface 678
Lester Lowe	The Wooten Company
Ivana Shukla	The Wooten Company
Eric Staehle	Wake County FD&C
Tom Covington	Wake County FD&C
Chris Snow	Wake County PR&OS
Emerson Barker	Wake County PR&OS
Alice Avery	Wake County Communications
Nancy Daly	Wake County Environmental Services

1. MISSION STATEMENT

- a. Draft Mission Statement listing the Park’s core values prepared by Surface 678 was reviewed and discussed.
- b. Core Team agreed the draft Mission Statement was acceptable to present at the next Community Meeting but should be shortened and condensed for the final version to be included in the Master Plan.

2. PARK NAMES

- a. A station will be dedicated to receive input for the park names at the next Community Meeting.
- b. Current suggested names will be posted on the wall beforehand to generate ideas and encourage participants to provide their own suggestions.

3. STAKEHOLDERS

- a. The current list of stakeholders developed by Surface 678 and Wake County was reviewed and discussed.
- b. Stakeholder list includes municipal partners, corporate / health, agricultural, senior groups and adjacent neighborhood representatives.
- c. Wake County has reached out to Corporate / health partners, agricultural partners, senior groups and Wake County Schools to respond to questionnaire and possible programming needs.
- d. Community Resource Team:
  - i. Neighborhood representatives have been invited to participate in Community Resource Team Meetings including ones without a formal Home Owner’s Association.
  - ii. Municipal partners from Garner and Fuquay Varina have been invited to participate in Community Resource Team Meetings to provide input on how Southeast Park may compliment surrounding municipal park and open space master plans.

4. PREPARATION FOR COMMUNITY MEETING #2

- a. Draft storyboard showing graphics for each station was reviewed and discussed.
- b. Site Plan concept alternatives shall be listed alphabetically instead of numerically to allow participants to view stations in any order and help disperse participants to all stations.
- c. Larger graphics taped to wall are preferred over smaller graphics on easels.
- d. Slideshow showing park images and previous Community Meeting photos will be added as a separate station.
- e. Park name station will be added as a separate station.

5. PROGRAM STUDIES

- a. Current Park program considerations were discussed and reviewed.
- b. Major program types to be incorporated into the Park include:

Nature	Fitness	Play	Stormwater Management
Science	Education	Art	History

- c. Surface 678 presented how each of these program types can be incorporated into the Park in unique ways that reflect the character of each of the following habitat zones:
  - i. Agricultural / Prairie



- ii. Pioneer Forest Community
- iii. Subterranean
- iv. Climax Forest Community
- v. Riparian / Ravine
- vi. Wetland / Floodplain / Aquatic

6. **DESIGN ALTERNATIVE REVIEW (OVERALL)**

- a. Road improvements along NC 42 will be included and will be determined based on results of a traffic study.
- b. Nearby subdivision roads off NC 42 have required left hand turn lanes.
- c. Emergency access will be considered for all concepts and will include vehicle types and potential access to trails for hiking and fitness related emergencies.
- d. If any emergency access is desired from residential neighborhoods to allow for easier access to trails, the Community Resource Team will need to be notified.
- e. The maintenance facility will need to be located on each concept with the following considerations:
  - i. Equipment and material storage that may include pesticides and other chemicals.
  - ii. Location needs to be secure with perimeter fence.
- f. Park Center location: The Blue Jay Point Visitor Center is located approximately 2,000 (0.37 miles) feet from the road entrance. The design alternatives show the Visitor Center location in varying distances from the road and may be compared to Blue Jay Point.
- g. Water:
  - i. An old well exists near NC 42 and may be reused and incorporated into an educational component.
  - ii. Multiple wells may be needed for water, agricultural and irrigation sources.
  - iii. If water quality is poor, connection to the water line along NC 42 owned by Fuquay Varina may be required.

- iv. Wake County would prefer to avoid annexation which may be required if connecting to the water line.
- v. The CRC may consider how amenities requested from the Community Meeting survey that may not be feasible at Southeast Park may be provided at other nearby park facilities.

7. **DESIGN ALTERNATIVE A**

- a. Design Alternative A locates the Park Center the farthest into the Park away from NC 42 with the vehicular access drive crossing (2) stream buffers. A larger amount of the existing forested areas would be disturbed, however, a larger amount of agriculture land adjacent to NC 42 would be provided.
- b. Show pathways around agriculture areas.
- c. Consider cost implications of taking infrastructure and utilities farther into the Park.
- d. Consider noise locations; locating Park Center farther into the Park will add noise to areas currently buffered from noise along NC 42.
- e. Consider distance of hikes from the Park Center to Middle Creek.

8. **DESIGN ALTERNATIVE B**

- a. Design Alternative B locates the Park Center closer to NC 42, but still not visible from the road, with the vehicular access drive crossing (1) stream buffer. A smaller amount of the existing forested areas would be disturbed and a smaller amount of agricultural land would be provided.
- b. Consider this option to provide trail access on the bluff to the eastern end of Middle Creek where the existing structure is located that would be closer to the adjacent residences.
  - i. Goal is to generate feedback and responses of proximity of trails to adjacent residences at the Community Meeting.



9. **DESIGN ALTERNATIVE C**

- a. Design Alternative C locates the Park Center closer immediately adjacent to and visible from NC 42 without any stream crossings. The largest amount of the existing forested areas would be preserved and a smaller amount of agricultural land would be provided. In addition, the largest amount of trails could be provided with a loop trail going to Middle Creek in lieu of an out-and-back trail.
- b. Separation of visitor centers from main road is standard in Wake County Park and this Park Center location would set a new precedent.
- c. Harris Lake County Park currently has the closest visitor center to the main road whereas Crowder County Park contains the furthest separation between the two.
- d. The Mumkin Fest was discussed as a precedent for community events and festivals the Park may host.
- e. Provide (1) larger shelter with (3) smaller shelters spread throughout the Park in lieu of similar sized shelters in nearby locations.
- f. Avoid regular sized open lawn space that may suggest a standard soccer field use.
- g. Consider size of land dedicated for agriculture use:
  - i. Minimum vs. standard area of agriculture to support a farm lease program.
  - ii. Consider how Wake County will program and utilize agriculture space to avoid excess agricultural land.

10. **DESIGN ALTERNATIVE GRAPHICS /COMPARISON**

- a. Show linear feet of trails and size of open space and agricultural fields on all concepts.
- b. Remove buffers from adjacent parcels.
- c. Graphically display pro / con list for each concept.
- d. Show 1/8, 1/4, 1/2 mile concentric radii circles for each concept.
- e. Show scale comparisons diagram for each concepts.



Wake County Parks Recreation & Open Space  
Southeast County Park Master Plan

Core Team Meeting #5  
Meeting Minutes  
April 05, 2019

ATTENDEES

Jeffrey Christensen	Surface 678
Eric Davis	Surface 678
Lester Lowe	The Wooten Company
Erin Sterling Lewis	in situ studio
Mark Forestieri	Wake County FD&C
Eric Staehle	Wake County FD&C
Tom Covington	Wake County FD&C
Chris Snow	Wake County PR&OS
Deborah Fowler	Wake County PR&OS
Emerson Barker	Wake County PR&OS
Bryan Coates	Wake County Planning
Tim Maloney	Wake County Planning
Nancy Daly	Wake County Environmental Services
Alice Avery	Wake County Communications

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1. PUBLIC MEETING #2 REVIEW OF COMMENTS

a. Adjacency

- i. Minimum 150’ buffer of all trails and program elements from adjacent residences. Trails in north floodplain portion of the site to be moved outside this buffer. Natural buffer should be restored in areas of high visibility to adjacent residences.
- ii. “Sound zone” adjacent to NC 42: Location of program elements needs to limit noise exiting Park to adjacent residences and also avoid conflicts with noise generated from NC 42.

b. Trails

- i. Bicycles: Single track mountain bike trails will not be provided to avoid conflicts with pedestrians on trails and to protect wildlife habitat. A shorter multi-use greenway

loop may be provided in the front of the Park to accommodate tricycles and first time riders.

- ii. Equine: Equine trails will not be provided due to size constrains of the site and potential conflicts with pedestrians. Wake County may bring equestrian plan to next Public Meeting showing where equestrian trails are planned at adjacent parks. Future equestrian use may be offered at Southeast Park if existing land is required.

c. Accessibility

- i. Multiple requests were made at Community Meetings to provide accessible trails
- ii. Trails may be accessible with proper ADA surfacing and slope even though not immediately accessible by personal vehicles.
- iii. Electric golf cart use or similar small transit options may be considered as a way to keep parking lots outside the existing forested areas while allowing universal access to more areas into the site.

d. Agriculture

- i. Existing agricultural fields currently used for soybean production. Opportunities for a wider diversity of edible crops to be considered in lieu of commodity crops.
- ii. Educational opportunities, agricultural programs and public engagement should be accommodated with use of farmland.
  - 1. Home pollinator kit and solar panels at NC Botanical Gardens discussed as example.
- iii. The use of land and transition overtime from multi-purpose field to agricultural farmland to native prairie / soil replenishment based on future demand to be explored.
- iv. Consider seasonal events or ornamental crops such as sunflowers or orchards for social media and photo opportunities.
- v. Consider organic only requirement limiting pesticide and herbicide use with proximity to areas of high public use.



2. **PRESERVED DESIGN ALTERNATIVE**

a. **Program list:**

- i. Challenge Hiking / Fitness
- ii. Tree top canopy trail
- iii. Community gardens
- iv. Playground
- v. Shelters / Restroom
- vi. Park Center
- vii. Agriculture / Prairie / Open Lawns
- viii. Maintenance facility
- ix. Wildlife Viewing Shelter
- x. Walking trails
- xi. Art (1% of overall budget)
- xii. Outdoor classrooms

b. **Design Strategy:**

- i. Preferred design alternative closely resembles the original Option B as a middle ground of providing vehicular access farther into the park vs. keeping all program close to NC 42 to protect natural areas.

c. **Core Team Comments**

- i. Keep loop around the Open Lawn pedestrian only.
- ii. Map routes for pedestrian, vehicular, emergency, service / maintenance, bus and gator truck and temporary / overflow vehicular access.
- iii. A variety of materials will be considered including permeable pavement systems and gravel drives.
- iv. Parking quantities to be considered and compared with existing Wake County Park facilities.
- v. Provide shelter in close proximity to playground and consider parking quantity requirements when both these and other amenities are used at the same time.
- vi. School bus drop off and parking areas to be provided.
- vii. Provide sufficient parking and vehicular / maintenance access in close proximity to Community Garden.

- viii. Trails through the North Parcel in the floodplain may be a future phase.
- ix. Wildlife viewing shelter may be larger than Turnipseed, accommodating 15-20 people.

3. **PARK CENTER**

a. **Location:**

- i. Approximate location on the edge of the forested area has been marked on site during the Site Tour.
- ii. Building location takes advantage of existing topography, views, and trees and oriented to receive southwest summer breezes.

b. **Materials to be considered:**

- i. Composite, metal siding, fiber cement, metal cladding, dark stain wood, glass for viewing through structures.
- ii. Reclaimed materials: existing barns and brick chimney.
- iii. Reuse existing demolished trees.

c. **Elevation:**

- i. Buildings may be elevated off the ground, with ramps to multiple levels to limit disturbance, protect existing trees, open up views, and provide a basement storage.

d. **Precedents:**

- i. Walnut Creek Wetland Center, Blue Jay Point Visitor Center, Eno River Visitor Center

e. **Floorplan / Program:**

- i. Entry: boardwalk over rain gardens and covered porch to allow for exterior gathering space.
- ii. Front Entry Building: lobby, exhibits, offices, break room, restroom, classroom
- iii. Separate outdoor restrooms and storage
- iv. Secondary Building: Classroom, large conference area, restrooms, library
- v. Open air deck with views into forest

f. **Core Team Comments:**

- i. Idea of large beck and deep porches similar to Crowder District Park preferred.
- ii. Boardwalk entrance over stormwater gardens similar to Yates Mill Park preferred.
- iii. Consider renewable energy strategies: solar panels or small wind mills on roof.
  - 1. Wake County Energy Commission recommendations



- iv. Large open air entrance preferred similar to Blue Jay Point: “Wow” moment as views open up upon entering.

4. **MAINTENANCE FACILITY**

a. **Design Strategy:**

- i. The maintenance facility may take on the character of the existing barns previously located along NC 42 to help preserve the agricultural character and be integrated into the design.

b. **Location:**

- i. The location along NC 42 on the east side of the Park has been considered to follow the historical farm service road offset from NC 42 and allow a portion of the facility to be visible from NC 42 and still be separate from major program elements.

c. **Program:**

- i. The Blue Jay Point maintenance facility was toured as an example of size, buildings and site requirements.
- ii. Program Requirements:
  - 1. Staff offices
  - 2. Indoor / outdoor equipment bays
  - 3. Storage
  - 4. Yard with parking, accommodate semi-truck deliveries
  - 5. Separate material shed storage: pesticides and fire hazard materials.

5. **UTILITIES:**

a. **Water:**

- a. Fuquay Varina owns the existing water line along NC 42 and the land north of NC 42 is in Garner’s 10 year plan.
- b. Wake County to have conversation with Garner and Fuquay Varina to see if Southeast Park can connect to the existing water line without being annexed into either municipality.
- c. If annexation is required, existing well on site may be upgraded to provide a source for water and irrigation.

b. **Sewer:**

- a. Onsite septic systems are anticipated.
- b. Garner’s 10 Year Plan does not include adding sewer along NC 42.
- c. North Carolina requires setbacks of septic systems from water sources, surface waters, stormwater management devices, buildings, property lines, slope embankments, water lines and others.

c. **Stormwater:**

- a. A variety of stormwater management strategies will be considered to achieve SITES credits and improve water quality of the Middle Creek drainage basin
- b. Integrate stormwater management into the Park design with educational opportunities
- c. Consider permeable paver maintenance and existing soil compatibility

d. **Heat / Electric:**

- a. Solar energy to be considered: adequate space may not be available for a solar array to power any whole building. Connection to electric power will still be required.
- b. Wake County has experienced many challenges with geothermal heating.

e. **Communications:**

- a. Phone lines will be provided
- b. Existing and future Wi-Fi connections to be considered.

6. **REMAINING SCHEDULE:**

- |  |   |                     |
|--|---|---------------------|
| a. Preliminary Cost Estimate           | - | Mid April – Mid May |
| b. OSAPAC Presentation                 | - | 04/22/2019          |
| c. Community Meeting #3                | - | 04/30/2019          |
| d. Core Team Meeting #6 (if necessary) | - | TBD                 |
| e. Board of Commissioners Meeting      | - | Summer 2019         |



Wake County Parks Recreation & Open Space  
Southeast County Park Master Plan

Small Group Architectural Programming Meeting #1  
Meeting Minutes  
March 06, 2019

ATTENDEES

Jeffrey Christensen	Surface 678
Erin Sterling Lewis	in situ studio
Matt Griffith	in situ studio
Eric Staehle	Wake County FD&C
Chris Snow	Wake County PR&OS
Emerson Barker	Wake County PR&OS
Frank Cope	Wake County Community Services

BUILDING PROGRAM OVERVIEW:

1. Site Considerations:

a. *Parking, drop-off area, bus / field trip parking.*

b. *Outdoor restrooms to prevent visitors from needing to access inside the building for restroom use.*

c. *Blue Jay Point discussed as a good example of an entrance area that provides a waiting space and covered canopy area adjacent to the building entrance.*

d. *Consider wifi and wildlife viewing cameras to allow views of the Park where people may not be able to access.*
2. Park Center Strategy:

a. *Current strategy is to use multiple buildings clustered together to create a “Park Center” with outdoor courtyard spaces, exhibits, overlooks and others to provide both an indoor and outdoor learning environment.*

b. *Allows for smaller scale buildings with multiple outdoor uses as opposed to one large building.*

c. *Precedents show integrating the building(s) with topography and instead of placing above a flat plane; taking advantage of slopes, views and sustainability opportunities.*

3. Cost:

a. *Explore all opportunities; desire is to create an iconic Park Center that may give Southeast Park a unique identity and/or tell a story about the Park; similar effect as the often photographed building at Yates Mill.*

b. *Certain buildings / program elements / site amenities may be phased to allow for increased budget.*

c. *Unique / special sustainability measures and/or taking advantage of site opportunities may be reasons to consider higher building costs from traditional buildings.*
4. Stakeholders

a. *YMCA, Wake County Schools and other third party organizations may use the Park and space within the Park Center.*

b. *Wake County has reached out to these organizations to determine if building size and layout can accommodate potential third part uses.*
5. Agricultural Land Use

a. *Proposed community garden area received positive feedback from Community Meeting #2*

i. *Rural character / iconic fencing appreciated.*

ii. *Size of Community Garden may need to increase overtime with surrounding density.*

b. *Consider shared use with Triangle Land Conservancy – shared equipment, land and irrigation.*

c. *Multiple edible crops preferred over monoculture of commodity crops.*

d. *Wake County Commissioners may be open to new ideas for active farming and shared use of the land.*

e. *Consider management of farmland*

i. *Include options and maintenance strategies for agriculture, native prairies, and research techniques and management strategies over time that include replenishing the soil and supporting the ecosystem.*

ii. *Fields may be converted from agriculture to prairies and vice versa over time and the demand for each may change over time.*
6. Public Art

a. *1% of budget reserved for public art.*

b. *Multiple locations and various types of art installations throughout the park may be encouraged that takes on the character and site context of each habitat zone.*
7. Wake County Design Standards / Materials

a. *Wake County has provided the Design Standards to serve as a guidance for MEP, architectural and site design, however, deviations may be considered or even encouraged given the uniqueness of the Park Center and to achieve sustainability goals, including SITES.*

b. *Use of glass should take into account safety of birds and other wildlife*

i. *Columbus Scioto Audubon Park discussed as example of design that used types of glass that birds are able to see.*

c. *Wood discussed as a possible material considering appearance overtime and maintenance and may be acceptable to use:*



i. Sustainability considerations may drive the use of wood and other materials.

**PARK CENTER:**

1. Employees:
  - a. (1) Park Manager
  - b. (2) Asst. Park Managers
  - c. (4) Park Technicians
  - d. (2) Part time employees
  
2. Offices:
  - a. (1) each for PM, and APM
  - b. Common space with (5) desks
    - i. To be used by technicians involved with education and operations programs and part time employees
    - ii. Shared breakroom to encourage interaction is desired
    - iii. Design Team may visit Blue Jay Point Visitor Center to view an example layout
  
3. Park Center Spaces / Amenities:
  - a. Consider solar orientation and solar power
  - b. Front desk / reception area (do we need?)
    - i. Yates Mill example was discussed which has somebody managing the front desk all the time.
    - ii. Preference is to allow somebody to step away from the front desk as needed.
    - iii. Blue Jay Point was discussed as an example where visitors can still walk in and see exhibits without needing somebody at the front desk.
  - c. (1) Breakroom for all staff (fridge, MW and sink)
  - d. IS / IT infrastructure throughout the building
  - e. Exhibit Space: gallery, entry lobby, niches, ...?
    - i. Review Thomas Crowder Woodland Center and Walnut Creek Wetland Center
    - ii. Small library is still being considered in addition to “Little Free Box Library”
    - iii. Library may contain book collections from Wake County staff
    - iv. Need to consider if a formal checkout procedure will be required or if an honor system will be acceptable given the risks of theft.
    - v. Photos of the Columbus Scioto Audubon Park visitor center library were discussed.
  - f. Reference / Resource area (brochures, announcements, posters...)
    - i. White boards, cork boards
  - g. Water fountain(s) / bottle filler
  - h. Kitchenette / serving area / catering kitchen (sink, fridge, MW, dishwasher...)
    - i. Utilize compostable service for those who rent / use
    - ii. Provide more robust composting opportunities in the park

- i. Restrooms: M / F / Family
- j. Shower? (or shower in the maintenance facility)
- k. Conference room
  - i. Consider both small conference room and larger retreat area
  - ii. Kitchen may be attached to larger facility space
    1. Prep kitchen only
    2. Electric, not gas; don’t need ovens or stovetops
    3. Prep area will accommodate catered food and lunches
  - iii. Conference room may be combined with break room with folding doors

**CLASSROOM BUILDING** (Separate from the Park Center Considering multi-building site plan)

4. Consider location adjacent to the Park Center; covered access between buildings???
  
5. Classroom Building Spaces / Amenities:
  - a. (2) classrooms; flexible to (1) large classroom with movable wall for 100 people
    - i. Consider 33% - 67% division vs. 50% - 50% division
    - ii. May host events similar to the Park Directors meeting at Blue Jay Point
    - iii. May host “Office retreats”
    - iv. Educational programs will host 20 -30 people only, however, the full space should accommodate 100 people with partitions removed.
    - v. Consider unique ways to define and separate the space including moveable furniture and roll able displays.
    - vi. Provide both adult and children furniture; one classroom may contain adult furniture and one with children furniture.
  - b. Storage for tables and chairs
    - i. Should allow for switching out adult and children furniture
  - c. Restrooms
  - d. IS / IT infrastructure throughout the building

**MAINTENANCE FACILITY:**

6. Consider location as a separate building from the Park Center. But close enough for employees to access offices etc.
  - a. Blue Jay Point location – ¼ mile from Park offices results in no communication between maintenance and operations staff



- b. Crabtree location – immediately adjacent to Park offices
  - i. Needs to house bulk materials storage, tractor equipment and pesticide storage that may not be compatible with nearby Park Center uses.
- c. Crabtree location – immediately adjacent to Park offices
  - i. Needs to house bulk materials storage, tractor equipment and pesticide storage that may not be compatible with nearby Park Center uses.
- d. Consider locating near agricultural programming (community garden, farmer’s market) to accommodate these amenities and programming.
- e. Consider locating in a more visible location to the public rather than being screened from view:
  - i. Highly visible location may require higher quality materials and increased construction costs that may not be possible to significantly value engineer.
  - ii. Consider different construction materials from Park Center; same construction materials may result in higher costs.

7. Maintenance Facility Spaces / Amenities:

- a. Screening from the park office and the public view
- b. Indoor shop
- c. Outdoor covered areas (covered shed...)
- d. Maintenance yard
- e. Shower?
  
- f. Design Team may tour Blue Jay point and others to determine size, parking, outdoor yard, materials
  - i. Blue Jay Point facility contains (2) indoor bays and (3) outdoor bays
- g. Consider modular design to allow for future expansion
  - i. Maintenance facility may accumulate materials over time based on existing Park maintenance facility use, however, the dedicated space for this are may be limited.

**APPENDIX B:**

**Citizens Resource Team Meeting Minutes**

**ADDITIONAL PARK STRUCTURES / AESTHETIC CONSIDERATIONS:**

- 8. Picnic Shelters
- 9. Restroom facilities (water, septic fields, composting toilets for toilets located deeper into the site (maintenance req??)
- 10. Wildlife viewing observation area (covered / open)
- 11. Pedestrian Bridges
- 12. Boardwalk
- 13. Community garden buildings
- 14. Fencing



Wake County Parks Recreation & Open Space  
Southeast County Park Master Plan

Community Resource Team Meeting #1  
Meeting Minutes  
January 03, 2019

ATTENDEES

Jeffrey Christensen      Surface 678  
Eric Davis                   Surface 678  
Eric Staehle                Wake County FD&C  
Chris Snow                Wake County PR&OS  
Emerson Barker          Wake County PR&OS  
+11 citizens and representatives from the Town of Fuquay-Varina

1. SCHEDULE

- a. Cost estimate and phasing strategies will be part of the Master Plan Process
- b. Design phase: January 2020 – January 2021
- c. Construction phase: January 2021 – Spring 2022 (12 to 15 month construction phase)

2. BUFFER?

- a. What is it? Width and existing vegetation in combination with supplemental planting to be considered.
- b. Fencing in combination with signage to be considered to deter park users from accessing private property.
  - i. Existing Wake County Parks don’t contain fencing; however, Southeast Park is unique in that it immediately borders residential subdivisions.
  - ii. Some neighbors have put up fences.
- c. Buffers to be included on all parcels.

3. TRAILS

- a. Goal is to provide a variety of trail types for all users.
- b. Main accessible trails may be similar to traditional greenway trails, 10’-0” width and minimal disturbance to the existing forested areas.
- c. Future greenway along Middle Creek to be considered.
- d. Access to a variety of areas.

4. EASTERN PARCEL

- a. Developed at a future date.
- b. Environmental conditions prevent heavy development of this parcel:
  - i. Steep slopes
  - ii. Floodplains
  - iii. Streams and wetlands
  - iv. Ecological diversity
- c. Future development may consist of trails only.

5. SUBDIVISION ACCESS CONCERNS

- a. Concerned about access; don’t want additional parking / driving in subdivision.
- b. No vehicular access from adjacent subdivisions.
- c. Concerned about criminal activity / don’t want outside pedestrian access to subdivisions.
- d. Limited pedestrian access at specific areas may be considered for use only by subdivisions.

6. FIRE ARMS / SHOOTING CONCERNS

- a. Recreational shooting occurs near Legacy Subdivision.
- b. Wake County has previously addressed land transition from game land to public park.
- c. Wake County ordinance will be enforced.
- d. Concerned about access; don’t want additional parking / driving in subdivision.
- e. Concerned about criminal activity.

7. STRUCTURES / SIGHT LINES

- a. Existing hunting cabin will be removed / demolished.
  - i. Visible from adjacent subdivisions
- b. Wildlife overlooks and Park structures should avoid looking into neighbor’ yard.



8. **PARK HOURS**

- a. 8:00 am – sunset
- b. Gate closed after hours.
- c. Overnight lighting:
  - i. Minimal security lighting, may be timer / motion activated.
  - ii. Solar lights may be used.
- d. Overnight camping will not be allowed.
  - i. After hours / night time programs such as stargazing may be offered.
- e. Wake County staff will be on site during open hours.
- f. Grievance process: after opening, residents may contact Park Manager for concerns.

9. **PARK PROGRAM**

- a. Focus on natural resources, tree preservation is very important.
- b. Open fires: Only open fires that may be planned are grills that are fixed.
- c. Playground:
  - i. Noise associated with large areas of play a concern.
  - ii. Crowder Park discussed as good playground example.
  - iii. Natural play encouraged.
  - iv. Location within the front of the Park desired.
  - v. Satellite play areas may be utilized to disperse use throughout the park to avoid (1) large, concentrated playground.

**Wake County Parks Recreation & Open Space  
Southeast County Park Master Plan**

**Community Resource Team Meeting #2**  
**Meeting Minutes**  
**April 03, 2019**

**ATTENDEES**

Jeffrey Christensen	Surface 678
Eric Davis	Surface 678
Eric Staehle	Wake County FD&C
Chris Snow	Wake County PR&OS
Emerson Barker	Wake County PR&OS
+7 citizens	

**1. OVERVIEW**

- a. Project Core Team presented Park program elements, three design alternatives and feedback and comments from Community meeting #2.

**2. DISCUSSION OF PROGRAM**

- a. Agriculture:
  - i. May consist of a farm lease program, community garden or option for providing fresh produce to those with difficult access.
  - ii. Commodity crops may be discouraged.
  - iii. Wake County is aware of the concern about the use of pesticides and herbicides in the garden and agricultural areas. Measures will be taken to limit their use and address potential negative impacts to pets, animals and visitors.
  - iv. Maintenance and care of the community gardens is important; a variety of standards and guidelines for establishment, appearance and function of community gardens will be discussed.



- b. Open Space:
  - i. Open space may be flexible to allow for shift from multi-purpose field to native prairie and agricultural use over time based on need.
- c. Utilities:
  - i. Well and septic is preferred. Wells will be investigated for use and quality.
  - ii. Geotechnical investigation will be performed for ground water quality and soil suitability.
  - iii. Park site is in Garner future land use area. Fuquay-Varina future land use area is on the south side of NC 42.
- d. Trails:
  - i. Path system to use existing trails where possible to minimize impact and disturbance.
  - ii. Existing trails directed towards adjacent residences were requested to be removed.
  - iii. Trails will be monitored for damage, flooding or downed trees.
    - 1. Wake County Protocol is to leave natural trees that fall in forested areas.
    - 2. Hurricane Fran affected many areas of the Park.
  - iv. Equestrian and mountain biking will be discouraged on trails, however, an accessible loop trail around the multi-purpose field may be provided to accommodate children learning to ride bikes.
    - 1. Raven Rock provides 8-10 miles of equestrian trails.
    - 2. Wake County is developing first equestrian, limited length trail at other Park.
  - v. Wake County encourages visitors to stay on trails, however, meadow and lawn areas may allow for walking off a designated trail.
  - vi. Park Protocol and County Ordinance is that dogs may use the park but must be on a leash. Dog pet stations may be provided.
- e. Shelters:
  - i. Approximately (3) shelters have been located along the multi-purpose fields.
  - ii. Grilling areas have not been designated at this time but may be provided in future design phases.
- f. Adjacency:
  - i. Playground is located approximately 350' away from adjacent residences

- ii. Park Center is located approximately 550' away from adjacent residences.
- iii. 150' minimum buffer will be provided between all other Park program including trails from adjacent residences.

**3. COMMENTS**

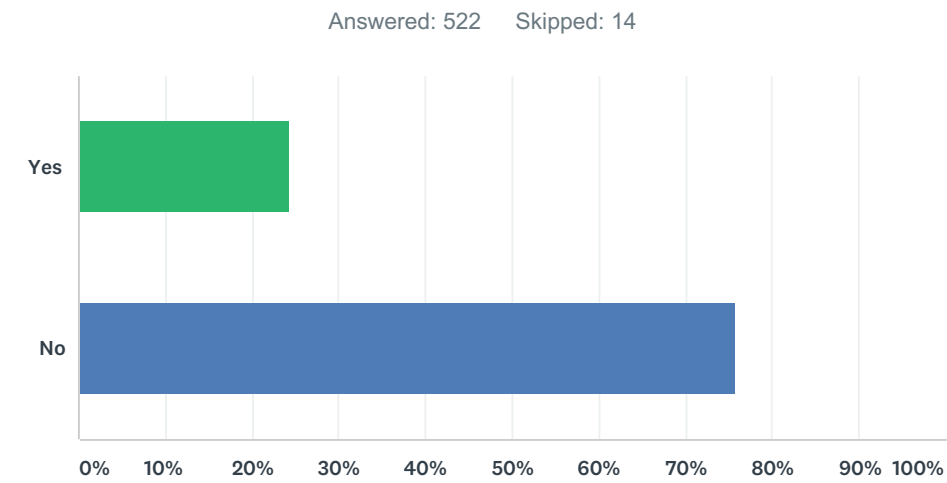
- a. CRT team appreciates knowledge and thought of the design progress for the Park.
- b. CRT Team appreciates Community Meeting comment format – post it notes.
- c. CRT Team prefers the nature park theme, and protection of wildlife habitat.
  - i. Bobcat may have been seen within the Park.



**APPENDIX C:**  
Survey Results



Q5 Do you or members of your household register for activities or programs offered by Wake County Parks or with other groups that use Wake County Parks?



ANSWER CHOICES	RESPONSES
Yes	24.33% 127
No	75.67% 395
TOTAL	522

#	IF YES, PLEASE DESCRIBE THE TYPES OF PROGRAMS OR ACTIVITIES.	DATE
1	Mostly kid events	4/7/2019 10:39 PM
2	NCFC	4/7/2019 3:49 PM
3	Baseball,soccer	4/7/2019 9:59 AM
4	No	4/7/2019 9:15 AM
5	Soccer clubs	4/7/2019 8:44 AM
6	Garner Parks & Rec	4/5/2019 12:16 AM
7	Youth nature programs	4/4/2019 11:42 PM
8	Preschool nature programs	4/4/2019 9:07 PM
9	Just moved here and looking for parks close by.	4/4/2019 7:09 PM
10	Soccer	4/4/2019 3:00 PM
11	I don't use parks but would love to!	4/4/2019 1:54 PM
12	Senior Saint Picnic	4/4/2019 10:27 AM
13	We used to do the nature classes at Crowder Park when the girls were young	4/4/2019 9:40 AM
14	Athletic programs	2/26/2019 1:22 PM
15	craft, sports	2/17/2019 7:29 PM
16	All the programs are too far away	2/17/2019 6:03 PM
17	Walks	2/15/2019 7:04 PM
18	Parks and rec activities such as sports and crafts	2/15/2019 12:20 PM

19	no parks close by until this one	2/15/2019 10:00 AM
20	Hikes/bird watching/cleanup days/	2/13/2019 8:03 PM
21	wildlife viewing, crafts, history	2/13/2019 11:29 AM
22	Nature programs and camps	2/12/2019 8:01 PM
23	my organization has participated in Blue Songbird celebration at Blue Jay Point Park. My family participates in scout programs at parks as well.	2/12/2019 3:04 PM
24	hikes, bird-walks, invasive species removal	2/12/2019 12:48 PM
25	Kids (grand daughter)	2/11/2019 9:27 PM
26	Arts and Crafts, Zumba, Fitness, Education	2/11/2019 7:43 PM
27	Classes and day camps	2/9/2019 11:21 PM
28	We plan to when our daughter is older.	2/8/2019 11:39 PM
29	Nature Programs, Exercise Programs, Boating	2/6/2019 6:32 PM
30	YMCA, local run and cycling clubs	2/6/2019 1:43 PM
31	I don't because they are all too far away.	2/6/2019 1:28 PM
32	Children's activities and Cultural Arts (pottery & crafts)	2/5/2019 4:01 PM
33	Children's activities; also Cultural Arts Center programs	2/5/2019 3:55 PM
34	Nature	2/5/2019 12:30 AM
35	Youth sports	2/4/2019 9:56 PM
36	Hiking tours	2/4/2019 4:14 PM
37	Millpond Reserve Kayaking	2/4/2019 3:21 PM
38	walking	2/4/2019 3:06 PM
39	Astronomy, Animals and reptiles	2/4/2019 1:39 PM
40	Summer Camp, zumba, various	2/3/2019 7:42 PM
41	Hiking nature walk	2/3/2019 6:05 PM
42	Soccer, tball, cheer	2/3/2019 4:17 PM
43	Science programs, holiday activities, family activities	2/3/2019 4:16 PM
44	Nature learning activities	2/3/2019 3:03 PM
45	Mom's groups	2/3/2019 2:12 PM
46	we used to use them for their sports programs for our children	1/31/2019 1:47 PM
47	Several activities at Oak View Park	1/29/2019 9:38 AM
48	Lake Benson Parks Easter Egg Hunt	1/22/2019 7:52 PM
49	Outdoor/nature education	1/18/2019 7:18 PM
50	Children's nature and educational programs, family events	1/18/2019 6:50 PM
51	Various kids programs and nature education programs	1/18/2019 6:43 PM
52	Maybe once a year, if that and for educational purposes.	1/18/2019 10:56 AM
53	Photography and Nature Walks	1/15/2019 5:06 PM
54	Arts, Crafts, Nature	1/14/2019 1:33 PM
55	Lacrosse	1/14/2019 11:34 AM
56	Toddler Time, other outdoor exploration classes/walls at White deer park, Crowder park, and prarie ridge eco station	1/13/2019 8:45 PM
57	Hiking, Kayaking, kids activities for our grandson	1/7/2019 2:21 PM



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58	Cycling	1/4/2019 4:08 PM
59	Town of Cary, Town of Apex etc.	12/28/2018 4:00 AM
60	Sports programs	12/18/2018 9:06 AM
61	Town of Fuquay-Varina youth sports	11/24/2018 1:52 PM
62	Karate	10/24/2018 4:42 PM
63	Walk in the Woods, Moth Night	10/23/2018 10:34 AM
64	We have done a few of the nighttime walks around Harris Lake park	10/16/2018 12:13 PM
65	Holiday-related events and animal events for toddler	10/15/2018 1:13 AM
66	Nature programs	10/12/2018 6:06 PM
67	Pullen park art classes	10/11/2018 5:17 PM
68	TORC	10/11/2018 10:47 AM
69	Girl Scouts	10/11/2018 10:21 AM
70	Sports	10/10/2018 5:18 PM
71	Reserve shelters for large group get tpgethers	10/10/2018 1:53 PM
72	Youth sports, fitness classes	10/10/2018 12:41 PM
73	Line Dancing, arts	10/10/2018 8:01 AM
74	Outdoor movies, easter egg hunt	10/10/2018 5:06 AM
75	Kayaking, children's programs, nature hikes.	10/10/2018 2:30 AM
76	Tennis	10/1/2018 1:11 PM
77	Cary park &rec basketball and apex park &rec baseball	9/29/2018 3:03 PM
78	Flag football	9/28/2018 10:37 PM
79	Tennis for myself and swimming for my kids more next year for my daughter when she's three thinking of the program with mixed sports	9/28/2018 12:22 AM
80	Youth sports	9/27/2018 10:13 PM
81	Youth Baseball and Youth Softball	9/27/2018 4:18 PM
82	Soccer tball	9/27/2018 3:55 PM
83	trails, exercise, bingo,	9/27/2018 2:56 PM
84	Music class at Prairie Ridge Eco Station	9/27/2018 2:55 PM
85	does U4 soccer count?	9/27/2018 2:37 PM
86	kids activities	9/27/2018 2:21 PM
87	Plan to enroll in sports when old wnough	9/27/2018 2:19 PM
88	Fuquay Parks & Rec	9/27/2018 2:13 PM
89	Ecostation activities	9/27/2018 1:35 PM
90	Ecostation activity	9/27/2018 1:33 PM
91	sports, special events	9/27/2018 1:28 PM
92	sports programs, and nature programs for families and preschoolers	9/27/2018 1:26 PM
93	We register with homeschool groups.	9/27/2018 1:13 PM
94	Only because we are active with Scouts and do park activities through scouting	9/27/2018 1:06 PM
95	Crafts	9/27/2018 1:05 PM
96	Too far away	9/27/2018 12:46 PM
97	lectures	9/27/2018 12:41 PM

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98	We use athletic programs in clayton because wake county athletic fields are too far	9/27/2018 12:30 PM
99	The annual Halloween event in Garner.	9/27/2018 12:09 PM
100	Environmental Education	9/27/2018 11:47 AM
101	at crowder we did the elementary programs with Jackie Trickel	9/27/2018 11:41 AM
102	homeschool educational tours, non-expensive classes, free events (ice cream social, pecan picking, carriage rides), playground, grills for picnics	9/27/2018 11:35 AM
103	camps	9/27/2018 9:53 AM
104	kid programs	9/26/2018 9:42 PM
105	sports	9/26/2018 2:51 PM
106	Hemlock Bluffs Bat Night, Pullen Park Train and Santa Run	9/26/2018 2:43 PM
107	Harris Lake County Park activities	9/26/2018 2:37 PM
108	dance classes	9/26/2018 2:36 PM
109	interpretive guided hikes	9/26/2018 2:27 PM
110	special events, occasional programs	9/26/2018 2:23 PM
111	Softball, volleyball, soccer	9/26/2018 2:17 PM
112	We just moved here	9/25/2018 6:24 PM
113	Fishing	9/25/2018 6:15 PM
114	Yoga, nature programs	9/25/2018 5:55 PM
115	Nature, History, seasonal programs	9/25/2018 4:58 PM



Q7 Are there other elements (programs) not listed in the prior question that you and your household members would likely use when visiting a county park?

Answered: 318    Skipped: 218

#	RESPONSES	DATE
1	No	4/7/2019 11:23 PM
2	No	4/7/2019 10:42 PM
3	of course it'd be amazing to have a "public saltwater pool"	4/7/2019 3:52 PM
4	Dog park	4/7/2019 1:37 PM
5	Playgrounds	4/7/2019 10:02 AM
6	no	4/7/2019 9:25 AM
7	No	4/7/2019 9:16 AM
8	No.	4/7/2019 9:06 AM
9	Splash pad/pool/ local sports/ lessons for outdoor activities/ camp programs	4/7/2019 8:54 AM
10	None that i could think of	4/6/2019 7:39 AM
11	No	4/5/2019 4:04 PM
12	Fishing Restrooms Sprayground Splash pad	4/5/2019 10:06 AM
13	Splashpad	4/5/2019 6:10 AM
14	We love kids activities and space to play.	4/5/2019 12:18 AM
15	Live animal displays	4/4/2019 9:10 PM
16	Tennis courts, fishing	4/4/2019 8:14 PM
17	Swim feature	4/4/2019 8:06 PM
18	Swimming if available	4/4/2019 5:13 PM
19	No	4/4/2019 3:43 PM
20	Dog park	4/4/2019 3:05 PM
21	No	4/4/2019 3:03 PM
22	Dog friendly and dog park area. Splash pad for children	4/4/2019 2:44 PM
23	No. Pool?	4/4/2019 2:03 PM
24	Baseball field	4/4/2019 1:55 PM
25	No	4/4/2019 1:31 PM
26	No	4/4/2019 1:06 PM
27	Splash Pad	4/4/2019 12:53 PM
28	Yoga	4/4/2019 12:50 PM
29	Lake	4/4/2019 12:09 PM
30	No	4/4/2019 11:51 AM
31	festivals	4/4/2019 11:46 AM
32	kyacking	4/4/2019 10:55 AM
33	Na	4/4/2019 10:33 AM

34	Splash pad!!!	4/4/2019 10:18 AM
35	water activities	4/4/2019 10:13 AM
36	Splash pad	4/4/2019 10:05 AM
37	Lake or pond	4/4/2019 10:01 AM
38	Baseball/Softball fields.	4/4/2019 10:00 AM
39	I'm a photographer, so a local beautiful park is always a plus!	4/4/2019 9:57 AM
40	Park concerts	4/4/2019 9:47 AM
41	No	4/4/2019 9:44 AM
42	Dog park would be an extra bonus!	4/4/2019 9:36 AM
43	Fishing	4/4/2019 9:35 AM
44	A pool	2/26/2019 1:24 PM
45	equine trails	2/18/2019 11:10 AM
46	Bridle trails	2/18/2019 2:26 AM
47	Equine trails	2/17/2019 6:07 PM
48	Horse riding Trails	2/17/2019 3:22 PM
49	Dog park	2/17/2019 2:15 PM
50	bathroom, kayak or canoe, fishing, rocking chair at visitor center, senior activities in visitor center (bingo)	2/16/2019 3:51 PM
51	PAVED walkways. Have limited mobility for family members. Also won't use paths horses have gone down Need dog playground	2/16/2019 1:23 AM
52	Horseback riding trails	2/15/2019 10:54 PM
53	Tree swings, interactive water	2/15/2019 7:10 PM
54	Horseback riding	2/15/2019 12:18 PM
55	We need access to trails that can be used for horseback riding.	2/15/2019 12:13 PM
56	horseback riding trails	2/15/2019 12:03 PM
57	Would love to see a bike trail because we have to go to Clayton or maybe a horse trail	2/15/2019 10:03 AM
58	Dog Walking & Horseback Riding	2/14/2019 11:52 PM
59	Horseback riding	2/14/2019 8:01 PM
60	Horse riding / driving trails.	2/14/2019 1:47 AM
61	Equestrian trails	2/13/2019 8:05 PM
62	Bridal Trails	2/13/2019 3:32 PM
63	Horse trails	2/13/2019 1:47 PM
64	EQUESTRIAN TRAILS	2/13/2019 12:45 PM
65	Equine Trails and Equine Driving Trails	2/13/2019 11:49 AM
66	skate/bmx track; natural rock/boulder climbing areas; fishing; open grass areas for free play	2/13/2019 11:32 AM
67	trail riding with my horse	2/13/2019 8:52 AM
68	dog park and being able to ride my horse on trails there really isn't any place around except along the road or at the stable	2/13/2019 8:23 AM
69	Horseback riding , equine events	2/12/2019 11:03 PM
70	no	2/12/2019 10:14 PM
71	Horse trails	2/12/2019 9:40 PM
72	Horseback riding. This area is in need of horse trails.	2/12/2019 9:21 PM



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73	Horse trails	2/12/2019 8:43 PM
74	Horseback riding trails	2/12/2019 8:03 PM
75	dog park, horseback riding, fishing, skate park	2/12/2019 7:25 PM
76	Horse back riding trails	2/12/2019 7:24 PM
77	Would like there to be horse accessibility, for trail riding	2/12/2019 5:33 PM
78	Bridal trails!!! There are allot of Eqiune folks in NC that would so enjoy horse riding trails. We have to go to Raven Rock or further to Walter Moss or Umstead. Thank you!!	2/12/2019 4:30 PM
79	Horse riding trails	2/12/2019 4:16 PM
80	We definitely need more horse trails. I strongly want to impress the want, need and desire for horse trails.	2/12/2019 3:48 PM
81	Equestrian trails go kart trails	2/12/2019 3:47 PM
82	If the park had access for equine activities, such as trail riding areas, that would be great.	2/12/2019 3:07 PM
83	There is a high need for equestrian trails in the area and would be greatly beneficial to the community.	2/12/2019 2:26 PM
84	Equestrian use.	2/12/2019 1:39 PM
85	Horse trails would be great.	2/12/2019 1:28 PM
86	horseback riding	2/12/2019 1:25 PM
87	Trails for horse riding would be great !	2/12/2019 1:04 PM
88	no	2/12/2019 1:02 PM
89	Equestrian trails!	2/12/2019 11:03 AM
90	None	2/11/2019 7:45 PM
91	Please provide for horseback riding (trailer parking and trails).	2/11/2019 1:06 PM
92	Equestrian Trails	2/11/2019 11:39 AM
93	Dog Park	2/10/2019 12:35 PM
94	Walking trail for taking dog for walk	2/9/2019 11:47 AM
95	A splash pad would have us visit almost on a daily basis during the summer. There are not enough of those in the area.	2/8/2019 11:40 PM
96	Equestrian trails	2/8/2019 9:43 PM
97	no	2/8/2019 3:01 PM
98	Stage for theater productions, concerts, symphony etc	2/8/2019 2:01 PM
99	We would love a place we could take our personal horses for trail riding. Development has taken up all of our riding trails.	2/7/2019 11:48 PM
100	No	2/7/2019 7:42 PM
101	Dog Park, water feature	2/7/2019 3:05 PM
102	Water resources-lake, pond-streams, canoes, paddle boards, fishing	2/7/2019 10:27 AM
103	No	2/7/2019 6:58 AM
104	Ropes course, climbing area, dog park	2/6/2019 11:11 PM
105	No that covered it	2/6/2019 10:42 PM
106	no	2/6/2019 8:50 PM
107	Park should have at least a 4 mile loop that can be used for running, walking and biking	2/6/2019 6:39 PM
108	No	2/6/2019 4:43 PM
109	Dog park/ dog swimming	2/6/2019 4:03 PM

Wake County Southeast Park Master Plan: Questionnaire		
110	Just please make it a nature park	2/6/2019 2:16 PM
111	I would love to see this park extend the wake county green way system so loca residents will have an infrastructure to commute between cities and towns without the need for a car and to also add value for the local athletic individuals who would absolutely use this area to train instead of risking their lives to run on these rural roads.	2/6/2019 1:50 PM
112	We definitely need hiking trails (not just paved walkways) in and through the woods.	2/6/2019 1:32 PM
113	Waterfront access	2/6/2019 12:34 PM
114	no	2/6/2019 12:24 PM
115	Playground/swings	2/5/2019 1:51 PM
116	Water Park and Night time activities like outdoor movie nights or local concerts.	2/5/2019 12:34 AM
117	Some type of water park, sand box for kids, play ground for different age groups, tree forts, music play ground,	2/4/2019 10:53 PM
118	Fishing, kayaking	2/4/2019 9:49 PM
119	Dog park	2/4/2019 5:00 PM
120	Dog park would be great!	2/4/2019 3:56 PM
121	Fishing	2/4/2019 3:25 PM
122	Swimming pool	2/4/2019 3:09 PM
123	fishing	2/4/2019 3:08 PM
124	Splash pad	2/4/2019 2:41 PM
125	paved walking trails	2/4/2019 2:31 PM
126	A body of water, pond, lake	2/4/2019 1:41 PM
127	Potential for a dog park one day	2/4/2019 1:38 PM
128	Bluegrass music; gospel music; patriotic events	2/4/2019 1:17 PM
129	walking paths, fishing,	2/4/2019 12:59 PM
130	No	2/4/2019 12:58 PM
131	Sports facilities	2/4/2019 12:19 PM
132	making sure the area is safe for older people.	2/4/2019 12:08 PM
133	Dog park	2/4/2019 11:22 AM
134	Dog park	2/4/2019 8:48 AM
135	No	2/4/2019 8:07 AM
136	Outdoor Family Movie Nights, Holiday Celebrations	2/3/2019 9:19 PM
137	Fishing	2/3/2019 9:13 PM
138	Dog park	2/3/2019 8:40 PM
139	A dog park would probably be greatly appreciated around here. I have to drive 30 minutes to get to one.	2/3/2019 6:58 PM
140	Dog park	2/3/2019 6:57 PM
141	Equipment/playground spots for children with special needs specifically the autism spectrum.	2/3/2019 6:56 PM
142	Homeschool meetup	2/3/2019 6:13 PM
143	No	2/3/2019 6:06 PM
144	Child friendly areas other than slides and swings.	2/3/2019 6:02 PM
145	Water access for kayak, paddleboard	2/3/2019 5:50 PM
146	Splash pad	2/3/2019 4:35 PM



Wake County Southeast Park Master Plan: Questionnaire		
147	Splash pad	2/3/2019 4:24 PM
148	Splash Pad!	2/3/2019 4:19 PM
149	Dog park	2/3/2019 4:16 PM
150	Basketball courts, baseball/softball fields, tennis courts, soccer fields, spray/water sprinkler area, dog park area, small amphitheater for live music similar to Norris Creek in addition to the campsite amenities.	2/3/2019 4:00 PM
151	Kayak	2/3/2019 3:54 PM
152	dog walking. place to run dog free of leash	2/3/2019 3:36 PM
153	Boating (small boats, such as rowboats and canoes)	2/3/2019 3:23 PM
154	No	2/3/2019 3:06 PM
155	Water splash during summer or swimming pools	2/3/2019 2:35 PM
156	No	2/3/2019 2:33 PM
157	None	2/3/2019 2:33 PM
158	no	2/3/2019 2:16 PM
159	Water play, like the splash pad	2/3/2019 2:13 PM
160	Dog Park and more specifically dog swim. Or, some water element / feature to actively cool the dogs off in the summer time after a walk.	2/3/2019 2:06 PM
161	A splash pad!	2/3/2019 2:02 PM
162	N/A	2/3/2019 2:02 PM
163	No	2/2/2019 9:18 PM
164	disc golf	1/31/2019 1:51 PM
165	none	1/29/2019 3:46 PM
166	This park is more convenient for Johnston Co. I'm sure they will appreciate Wake co tax dollars building them a park. Crazy. This is close to a small number of wake co residents	1/29/2019 9:53 AM
167	Fitness trail, dog park	1/29/2019 9:41 AM
168	Dog Park	1/25/2019 2:26 PM
169	Events, festivals, nature hikes	1/23/2019 12:27 PM
170	Splash park for kids; playgrounds split up into age groups; community events	1/22/2019 7:55 PM
171	Connecting neighborhoods to the park should be a priority since roads don't need any additional traffic.	1/21/2019 8:21 PM
172	Disc Golf	1/18/2019 6:46 PM
173	No, but I love the community garden/farmers market idea!	1/16/2019 9:49 AM
174	I would like to see you all keep your promise and develop the Crooked Creek park.	1/15/2019 5:11 PM
175	-A huge field of a specific type of flower (not sunflowers, those are already taken). -An area for a few food trucks to come on the weekend.	1/15/2019 12:14 AM
176	indoor facilities (for extreme weather days)	1/14/2019 11:32 AM
177	Paved area for a safe place for kids to learn to ride bikes	1/14/2019 10:26 AM
178	N/a	1/13/2019 8:49 PM
179	Nothing	1/13/2019 4:43 PM
180	Dog training, dog walking	1/9/2019 9:10 PM
181	Please make the park accessible to community members with disabilities.	1/8/2019 4:06 PM
182	Paved walking trails accessible for strollers and people with physical limitations and aging. Restrooms along trails.	1/8/2019 12:10 PM

Wake County Southeast Park Master Plan: Questionnaire		
183	no	1/8/2019 10:45 AM
184	splash pad	1/8/2019 10:35 AM
185	Connections to greenways	1/7/2019 2:23 PM
186	Ability to bike (not mountain biking)	1/7/2019 9:48 AM
187	No	1/4/2019 8:00 PM
188	Fishing areas	12/31/2018 6:08 PM
189	Most outdoor activities. Indoors and outdoors basketball and swimming.	12/28/2018 4:05 AM
190	paddle boats, fishing,	12/18/2018 10:45 AM
191	Bike Riding	12/18/2018 9:08 AM
192	Paved Bike trail (not mountain ) with access from connecting neighborhoods. Disc golf, Water Park	12/17/2018 10:34 PM
193	No	12/17/2018 12:56 PM
194	Covered/shaded playgrounds, plash pad, public pool, tennis/pickle ball courts, volleyball courts, basketball courts, frisbee golf, horseshoes/cornhole, rock climbing/ropes course, zip lines.	11/24/2018 2:07 PM
195	Kayaking/canoeing space and maybe even rentals	11/7/2018 9:18 AM
196	Splash pad, amphitheater	10/29/2018 11:35 AM
197	Swimming and boating	10/24/2018 4:44 PM
198	no	10/23/2018 10:24 AM
199	Canoe/Kayak area in Middle Creek?	10/20/2018 11:50 AM
200	Dog Walking	10/18/2018 12:43 PM
201	Fishing if available	10/16/2018 6:04 PM
202	Fishing!!	10/16/2018 12:15 PM
203	Stargazing would be AWESOME!	10/15/2018 2:40 PM
204	No	10/15/2018 1:15 AM
205	Dog park	10/12/2018 5:49 PM
206	A nature escape that's gives you the feeling of not being so close to roads. I'm into photography and enjoy escaping to find photos of nature	10/12/2018 10:59 AM
207	Dog Park	10/12/2018 7:15 AM
208	Dog park	10/12/2018 7:08 AM
209	Dog park	10/11/2018 5:18 PM
210	dog walking	10/11/2018 5:17 PM
211	No	10/11/2018 4:49 PM
212	No	10/11/2018 4:18 PM
213	No	10/11/2018 12:25 PM
214	Geocaching	10/11/2018 10:06 AM
215	No	10/10/2018 6:20 PM
216	Dog park	10/10/2018 5:21 PM
217	Disc Golf facilities	10/10/2018 4:59 PM
218	Bathrooms, dog park	10/10/2018 3:48 PM
219	Dog Park	10/10/2018 3:22 PM
220	No	10/10/2018 1:48 PM
221	Water act	10/10/2018 12:57 PM

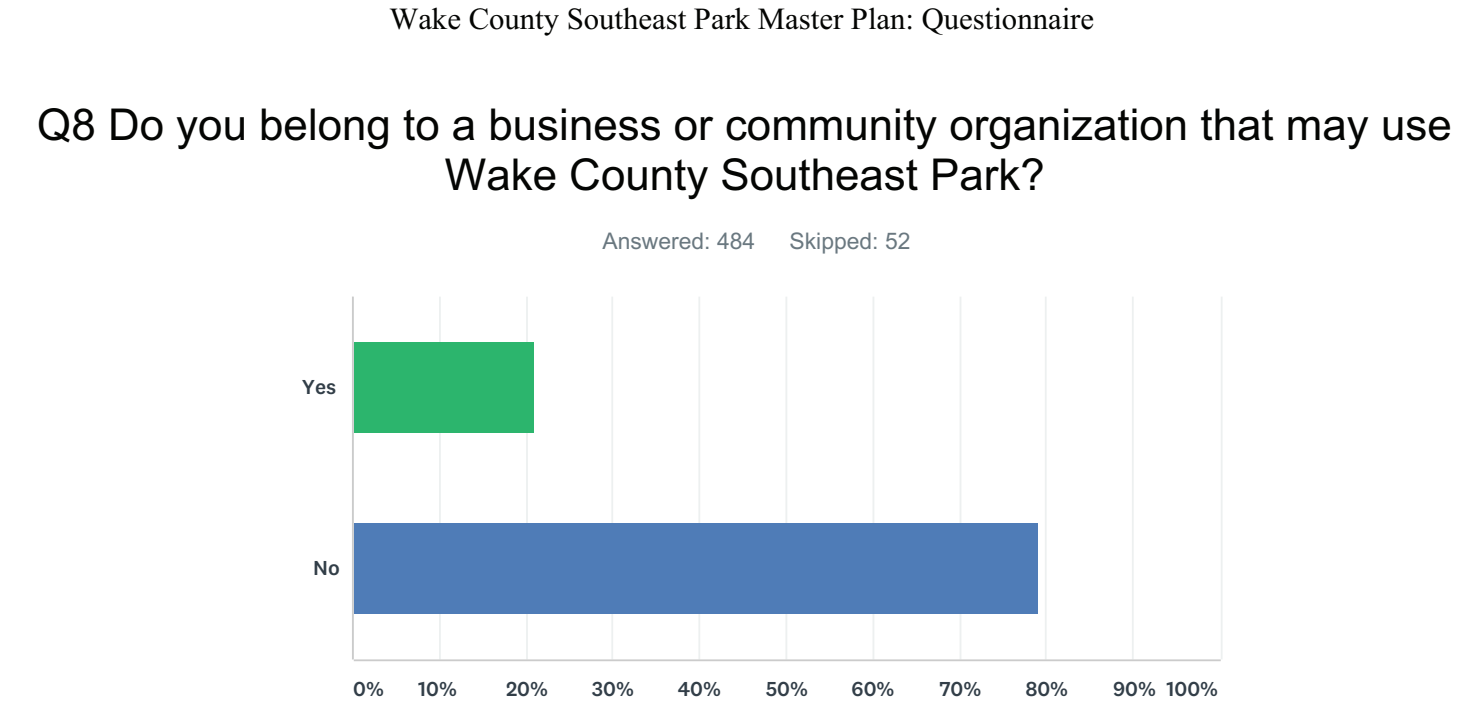


Wake County Southeast Park Master Plan: Questionnaire		
222	NA	10/10/2018 12:50 PM
223	Playgrounds designed to encourage fitness fun. Like obstacle courses, ropes, circuit training.	10/10/2018 12:48 PM
224	No	10/10/2018 11:08 AM
225	No	10/10/2018 10:59 AM
226	no	10/10/2018 10:13 AM
227	Splash pad	10/10/2018 10:00 AM
228	Frisbee golf	10/10/2018 9:42 AM
229	Dog park	10/10/2018 8:56 AM
230	No	10/10/2018 8:56 AM
231	No	10/10/2018 6:06 AM
232	No	10/10/2018 5:07 AM
233	Moonlight hikes would be awesome!	10/10/2018 2:36 AM
234	We camp with a local boy scout group and would love more camping facilities and natural areas with out dog parks.	10/7/2018 1:34 PM
235	Trailhead connecting to regional trails	10/6/2018 2:55 PM
236	No, you listed them all	10/5/2018 4:21 PM
237	Shooting ranges, pistol - rimfire - sporting clays	10/3/2018 10:06 AM
238	Dog park!	10/1/2018 1:12 PM
239	Fishing	9/30/2018 9:57 PM
240	No	9/30/2018 5:00 PM
241	Disc golf. Walking trails. Gardens	9/29/2018 10:03 PM
242	Fishing	9/29/2018 1:36 PM
243	Greenway for running since there is not one close to this area.	9/29/2018 3:33 AM
244	Canoeing or kayaking	9/28/2018 9:23 PM
245	Disc golf course	9/28/2018 9:44 AM
246	Athletic fields(baseball, soccer) and fishing/boating area.	9/28/2018 1:51 AM
247	Tennis, swimming. Tennis tennis tennis ☐	9/28/2018 12:25 AM
248	No	9/27/2018 11:21 PM
249	No	9/27/2018 10:28 PM
250	Dog park, amphitheater, ropes course, baseball fields	9/27/2018 10:19 PM
251	Splash Pad Really big slide Nature trails A carosel or stuff similar to Pullen park	9/27/2018 8:38 PM
252	No	9/27/2018 6:42 PM
253	baseball/softball fields with lights	9/27/2018 5:34 PM
254	A splash pad or spray ground	9/27/2018 4:58 PM
255	No	9/27/2018 4:46 PM
256	NA	9/27/2018 3:56 PM
257	Na	9/27/2018 3:27 PM
258	Nature Center, Rock Wall for kids, tree fort	9/27/2018 2:58 PM
259	Swimming? Splash park? An area for pets?	9/27/2018 2:39 PM
260	pool, splash pad	9/27/2018 2:29 PM
261	baseball field	9/27/2018 2:24 PM

Wake County Southeast Park Master Plan: Questionnaire		
262	Swimming/splash pad Climbing	9/27/2018 2:22 PM
263	N/A	9/27/2018 2:18 PM
264	Dog park	9/27/2018 2:13 PM
265	Nature Center with activities for young children	9/27/2018 1:35 PM
266	Nature center, kid's tree fort	9/27/2018 1:34 PM
267	n/a	9/27/2018 1:27 PM
268	A creek or body of water would be nice, even if manmade. Basketball court, volleyball	9/27/2018 1:14 PM
269	Water park	9/27/2018 1:14 PM
270	No	9/27/2018 1:10 PM
271	Splash pad	9/27/2018 1:07 PM
272	No	9/27/2018 1:07 PM
273	No	9/27/2018 1:02 PM
274	No	9/27/2018 12:54 PM
275	holiday events	9/27/2018 12:52 PM
276	.	9/27/2018 12:39 PM
277	Would LOVE a level walking path.	9/27/2018 12:37 PM
278	Community center with pool and youth athletic programs..indoor/outdoor	9/27/2018 12:36 PM
279	Dog park	9/27/2018 12:23 PM
280	no	9/27/2018 12:22 PM
281	We enjoy natural water features that attract wildlife for observation.	9/27/2018 12:16 PM
282	Let vendors come out and sell food, music in the park, movies in the park, horseback riding	9/27/2018 11:58 AM
283	Equestrian trails	9/27/2018 11:57 AM
284	No	9/27/2018 11:56 AM
285	exercise circuit stations	9/27/2018 11:51 AM
286	Biking activities are often aggressive in relation to hiking and wildlife activities, separate biking or horse trails keep different activities separate	9/27/2018 11:50 AM
287	Water features, canoeing/paddle boats, fishing, rock climbing	9/27/2018 11:48 AM
288	NA	9/27/2018 11:42 AM
289	no	9/27/2018 11:40 AM
290	Sledding, fishing, biking (not mountain biking), boardwalk over wetlands, dog park, art/music festival, stage/ampitheater	9/27/2018 11:38 AM
291	trails, classes, picnicking, playground	9/27/2018 11:36 AM
292	pickleball courts please	9/27/2018 11:34 AM
293	Fishing, Shooting	9/27/2018 11:33 AM
294	Swimming	9/27/2018 10:14 AM
295	Disc Golf	9/27/2018 9:54 AM
296	Fishing, Skatepark, Public Pool, softball/soccer fields	9/26/2018 9:45 PM
297	Dog park	9/26/2018 2:49 PM
298	AM senior citizen group exercises	9/26/2018 2:48 PM
299	Access from our neighborhood to the park	9/26/2018 2:44 PM
300	outdoor and indoor natural community pool	9/26/2018 2:41 PM



Wake County Southeast Park Master Plan: Questionnaire		
301	Fishing	9/26/2018 2:35 PM
302	dog park!	9/26/2018 2:34 PM
303	Dog walking	9/26/2018 2:33 PM
304	limited archery hunts	9/26/2018 2:32 PM
305	splash pad possibly	9/26/2018 2:31 PM
306	none	9/26/2018 2:25 PM
307	No	9/26/2018 2:24 PM
308	Would love a lake to swim in.	9/26/2018 2:21 PM
309	dog park, grills, basketball, sand volleyball, rock climbing wall, obstacle course (kids/adults), water feature for kids to play, pool	9/26/2018 2:19 PM
310	Zip line	9/25/2018 7:06 PM
311	Canoeing	9/25/2018 6:31 PM
312	No but please don't turn this area into a developed area, leave it natural	9/25/2018 6:27 PM
313	Fishing,kayaking	9/25/2018 5:57 PM
314	None	9/25/2018 5:48 PM
315	Nope	9/25/2018 5:40 PM
316	No	9/25/2018 5:18 PM
317	No	9/25/2018 5:08 PM
318	Disc golf	9/25/2018 4:30 PM



ANSWER CHOICES	RESPONSES	
Yes	20.87%	101
No	79.13%	383
TOTAL		484

#	IF SO, LIST THE NAME OF YOUR BUSINESS OR ORGANIZATION.	DATE
1	NCFC, Holistic Moms Network, RAWW Health	4/7/2019 3:52 PM
2	Would use thru religious organization for pavilion use and picnics	4/6/2019 7:39 AM
3	Free Forest School	4/4/2019 9:10 PM
4	Fellowship Baptist Church	4/4/2019 5:13 PM
5	Baseball	4/4/2019 3:03 PM
6	White Memorial Presbyterian Church, Willow Spring	4/4/2019 2:17 PM
7	Junior League	4/4/2019 1:45 PM
8	Pack 10 Cub Scouts	4/4/2019 12:53 PM
9	Senior Saints from Church	4/4/2019 10:29 AM
10	White Memorial Presbyterian church	4/4/2019 10:12 AM
11	Maybe our homeschool co op, Classical Conversations	4/4/2019 9:44 AM
12	Horses for Hope 4-H Club	2/18/2019 2:26 AM
13	Church	2/17/2019 6:07 PM
14	Twin Oaks Feed & Supply & Fellowship Baptist Church	2/17/2019 3:22 PM
15	50+ hiking meetup, Fun and Friends meetup of Johnston Co.	2/16/2019 3:51 PM
16	Cowboys for Christ, Wake county trailriders	2/15/2019 7:10 PM
17	Fellowship Baptist Church & Hand of Hope	2/14/2019 11:52 PM
18	CAROLINA AUSTRALIAN SHEPHERD CLUB	2/13/2019 12:45 PM
19	NC Work Horse and Mule Association	2/13/2019 11:49 AM



Wake County Southeast Park Master Plan: Questionnaire		
20	Fuquay Varina Garden Club	2/13/2019 8:52 AM
21	LifePoint Community Church	2/12/2019 4:16 PM
22	People who ride horses	2/12/2019 3:48 PM
23	NC Purple Martin Society	2/12/2019 3:07 PM
24	I would be interested in starting a riding club if equestrian trails were available.	2/12/2019 2:26 PM
25	Wake Audubon Society	2/12/2019 1:02 PM
26	Senior Empowerment Group	2/11/2019 7:45 PM
27	Saddletree Stables	2/11/2019 1:06 PM
28	Twin Oaks Feed & Supply	2/7/2019 11:48 PM
29	Ipreo	2/7/2019 6:58 AM
30	Select Medical	2/6/2019 10:42 PM
31	Consulting	2/6/2019 6:39 PM
32	Church	2/6/2019 2:16 PM
33	N/A	2/4/2019 3:25 PM
34	Fuquay-Varina UMC	2/4/2019 2:41 PM
35	Wake County Democratic Party	2/4/2019 12:22 PM
36	church	2/4/2019 12:19 PM
37	Mt. Perry lodge	2/3/2019 7:43 PM
38	Wake Moms of Autism/ADHD	2/3/2019 6:56 PM
39	Homeschool groups	2/3/2019 6:13 PM
40	Mops	2/3/2019 2:13 PM
41	Wake County	2/3/2019 2:02 PM
42	preschool, church, youth group	1/31/2019 1:51 PM
43	church	1/29/2019 3:46 PM
44	Our church and civil air patrol squadron	1/18/2019 6:54 PM
45	Get Hiking	1/7/2019 2:23 PM
46	Church	12/18/2018 9:08 AM
47	WCPSS school system- field trips (summer camp and or classes)	11/24/2018 2:07 PM
48	Girl Scouts	10/13/2018 4:09 PM
49	Global Knowledge	10/12/2018 7:15 AM
50	TORC	10/11/2018 10:50 AM
51	Church groups (Hollands UMC)	10/10/2018 5:35 PM
52	WCPSS, Banks Rd Elem	10/10/2018 1:59 PM
53	Girl Scouts of NC Coastal Pines	10/10/2018 12:48 PM
54	Girl scouts	10/10/2018 10:00 AM
55	Girl Scouts	10/10/2018 9:05 AM
56	McCullers Community Church	10/10/2018 8:03 AM
57	Teacher at a local preschool	10/10/2018 7:57 AM
58	Holland's UMC	10/10/2018 7:34 AM
59	Girl Scout troop	10/10/2018 6:06 AM
60	Girl Scouts!!	10/10/2018 2:36 AM
175	Beech Bluff County Park Master Plan	

Wake County Southeast Park Master Plan: Questionnaire		
61	Boy scouts of america	10/7/2018 1:34 PM
62	Boys and Girls Scouting	10/3/2018 10:06 AM
63	St. Mary, Mother of the Church Catholic Parish, Garner	9/28/2018 4:03 PM
64	Hilltop Christian School	9/28/2018 9:44 AM
65	Multiple	9/28/2018 1:51 AM
66	PTA & HOA	9/27/2018 8:38 PM
67	BSA Troop 10	9/27/2018 6:53 PM
68	Wcpss	9/27/2018 6:33 PM
69	Holistic Moms Network	9/27/2018 2:39 PM
70	Wake County Schools, Agape Family Foundation	9/27/2018 1:30 PM
71	Girl Scouts and homechoolers	9/27/2018 1:16 PM
72	Art With Aaron, canvas painting. We would reserve pavilion/shelters for classes. Also Stephanie Rose Photography	9/27/2018 1:14 PM
73	Coldwell Banker HPW	9/27/2018 1:14 PM
74	Boy Scouts/Cub Scouts that meet at Holland UMC	9/27/2018 1:10 PM
75	Neighborhood events	9/27/2018 1:07 PM
76	Paint NC in the Triangle (plein air artists association)	9/27/2018 12:43 PM
77	Hilltop Church senior saints picnics	9/27/2018 12:37 PM
78	Just Jesus Community Church	9/27/2018 11:39 AM
79	Dog club meetings	9/27/2018 10:14 AM
80	Levi Lining Company, LLC	9/26/2018 2:49 PM
81	meet up groups	9/26/2018 2:41 PM
82	JDS Consulting	9/26/2018 2:35 PM
83	Amplify Church	9/26/2018 2:26 PM
84	Amplify Church	9/26/2018 2:25 PM
85	Society for Creative Anachronism	9/26/2018 2:24 PM
86	Great Dane Club	9/26/2018 2:21 PM
87	Triangle Wood Workers Association (TWA)	9/26/2018 2:19 PM
88	Amplify Church (formerly Raleigh First Church of the Nazarene)	9/25/2018 6:31 PM
89	NC state university	9/25/2018 6:27 PM
90	Coldwell Banker Real Estate	9/25/2018 4:37 PM
91	Chamerry of commerce	9/25/2018 4:30 PM



Q9 If you are a member of an organization, how would your organization use this park facility? (volunteer opportunities, organizational outings, special event venue, etc.)

Answered: 191    Skipped: 345

#	RESPONSES	DATE
1	No	4/7/2019 11:23 PM
2	organizational meetings, special events venue, child play dates, etc.	4/7/2019 3:52 PM
3	Birthday parties	4/7/2019 10:02 AM
4	no	4/7/2019 9:25 AM
5	No	4/7/2019 9:16 AM
6	N/A	4/7/2019 9:06 AM
7	Organizational picnics, hiking groups	4/6/2019 7:39 AM
8	N/a	4/5/2019 10:06 AM
9	Preschool free play in nature, play groups for both younger and older kids, attending nature programs	4/4/2019 9:10 PM
10	Organizational outings/special events	4/4/2019 5:13 PM
11	All of the above	4/4/2019 3:03 PM
12	worship in the park - we currently use Benson Lake Park in Garner	4/4/2019 2:17 PM
13	Volunteer opportunities, events	4/4/2019 1:45 PM
14	N/A	4/4/2019 1:31 PM
15	N/a	4/4/2019 1:06 PM
16	Camping, special events, volunteer opportunities, educational opportunities	4/4/2019 12:53 PM
17	Organizational outings	4/4/2019 12:35 PM
18	N/a	4/4/2019 12:09 PM
19	n/a	4/4/2019 11:46 AM
20	Picnics	4/4/2019 10:29 AM
21	Special events	4/4/2019 10:26 AM
22	Special events	4/4/2019 10:12 AM
23	All of the above	4/4/2019 10:00 AM
24	Photography sessions	4/4/2019 9:57 AM
25	Company picnic	4/4/2019 9:47 AM
26	Outings such as wildlife, science or environment classes, group get togethers	4/4/2019 9:44 AM
27	N/a	2/26/2019 1:24 PM
28	Special outings	2/18/2019 2:26 AM
29	Picnics, mother/child play dates.	2/17/2019 6:07 PM
30	Special Events, community outreach, public education, private parties	2/17/2019 3:22 PM
31	hiking	2/16/2019 3:51 PM
32	Won't. Too far	2/16/2019 1:23 AM

33	Volunteer, special event	2/15/2019 7:10 PM
34	group outings, special events	2/15/2019 12:18 PM
35	Volunteer ops; Events;	2/14/2019 11:52 PM
36	SPECIAL EVENT VENUE	2/13/2019 12:45 PM
37	organizational outings, special events venue, trail rides or trail driving events	2/13/2019 11:49 AM
38	outings, team parties, birthday parties	2/13/2019 11:32 AM
39	special events, community education	2/13/2019 8:52 AM
40	organizational outings, special events, picnic	2/13/2019 8:23 AM
41	not applicable	2/12/2019 10:14 PM
42	Horseback riding	2/12/2019 8:03 PM
43	Volunteer opportunities, Outings and special events	2/12/2019 4:16 PM
44	Trail riding	2/12/2019 3:48 PM
45	We would have an informational booth at community events at the park. If the habitat is appropriate, we would also consider erecting martin housing there and training staff to maintain it in the future (along with volunteers).	2/12/2019 3:07 PM
46	I would be interested in leading a youth program for equestrian activities.	2/12/2019 2:26 PM
47	N/A	2/12/2019 1:04 PM
48	Bird walks and environmental education	2/12/2019 1:02 PM
49	N/a	2/12/2019 11:03 AM
50	Walking trail, special event venue, organizational outing	2/11/2019 7:45 PM
51	Horseback riding	2/11/2019 1:06 PM
52	Trail Riding	2/11/2019 11:39 AM
53	Knit in Public Day, Fundraiser Walks, concerts	2/10/2019 12:35 PM
54	My daughter is required to do community service for high school so any opportunities there would be useful.	2/8/2019 3:01 PM
55	sponsor trail rides and volunteer opportunities	2/7/2019 11:48 PM
56	Na	2/7/2019 7:42 PM
57	Volunteer, Corporate outings	2/7/2019 6:58 AM
58	N/a	2/6/2019 11:11 PM
59	N/A	2/6/2019 10:42 PM
60	Special events	2/6/2019 4:43 PM
61	Outings	2/6/2019 2:16 PM
62	I am not so much a member of a community organization, but am a participant in several running, cycling, and triathlon clubs. This would be a great benefit for local residents to have an area to do long runs and meet up instead of having to drive to umstead, the Nuese River trail in Clayton, or the Tobacco trail in Apex/Durham. This are heavily utilized areas and would add tremendous value to the land in this area as well as make it more attractive to the ever increasing population of wake county that is moving south of Raleigh.	2/6/2019 1:50 PM
63	n/a	2/6/2019 1:32 PM
64	N/A	2/5/2019 1:51 PM
65	School outing	2/4/2019 6:46 PM
66	Special events	2/4/2019 5:00 PM
67	Na	2/4/2019 3:56 PM
68	N/A	2/4/2019 3:25 PM



Wake County Southeast Park Master Plan: Questionnaire		
69	N/a	2/4/2019 3:09 PM
70	volunteer	2/4/2019 3:08 PM
71	Our youth or children's groups may take trips here, use it for trainings and retreats	2/4/2019 2:41 PM
72	N/A	2/4/2019 2:31 PM
73	N/A	2/4/2019 1:38 PM
74	N/A	2/4/2019 1:17 PM
75	Special event venue, volunteer opps	2/4/2019 12:22 PM
76	Venue	2/4/2019 12:19 PM
77	I'm not a member of anything	2/4/2019 8:48 AM
78	No	2/4/2019 8:07 AM
79	Year end celebration	2/3/2019 10:40 PM
80	N/A	2/3/2019 9:13 PM
81	Na	2/3/2019 8:40 PM
82	Venue	2/3/2019 7:43 PM
83	Family meet ups for moms to talk and kids on the autism spectrum to play.	2/3/2019 6:56 PM
84	Parties, clean up days	2/3/2019 6:13 PM
85	Na	2/3/2019 6:06 PM
86	N/a	2/3/2019 6:02 PM
87	NA	2/3/2019 4:19 PM
88	Walgreens team building outings	2/3/2019 4:00 PM
89	Possibly all of the above.	2/3/2019 3:06 PM
90	n/a	2/3/2019 2:16 PM
91	Play groups	2/3/2019 2:13 PM
92	Community events, social gatherings	2/3/2019 2:06 PM
93	Yes	2/3/2019 2:02 PM
94	N/a	2/2/2019 9:18 PM
95	special events & outings	1/31/2019 1:51 PM
96	leisure, group planning, exercise, team building	1/29/2019 3:46 PM
97	N/A	1/25/2019 2:26 PM
98	N/A	1/22/2019 7:55 PM
99	Volunteer, outings, picnic shelter rentals	1/18/2019 6:54 PM
100	N/A	1/18/2019 6:46 PM
101	Too far out	1/14/2019 9:21 PM
102	N/A	1/13/2019 8:49 PM
103	maybe	1/8/2019 10:45 AM
104	n/a	1/8/2019 10:35 AM
105	Hiking, shelter use	1/7/2019 2:23 PM
106	NA	1/7/2019 9:48 AM
107	Organizational outings, special event venue	12/18/2018 9:08 AM
108	Organizational outings	12/17/2018 12:56 PM
109	Outings- education/field trips	11/24/2018 2:07 PM

Wake County Southeast Park Master Plan: Questionnaire		
110	Confidence course.	10/24/2018 4:44 PM
111	n/a	10/23/2018 10:24 AM
112	n/a	10/15/2018 2:40 PM
113	Troop outings, overnights if camping is available	10/13/2018 4:09 PM
114	Special events	10/12/2018 5:49 PM
115	N/A	10/12/2018 10:59 AM
116	Outings, parties	10/12/2018 7:15 AM
117	Na	10/12/2018 7:08 AM
118	na	10/11/2018 5:17 PM
119	Special events	10/11/2018 4:49 PM
120	Food	10/11/2018 4:18 PM
121	No	10/11/2018 12:25 PM
122	Special event	10/11/2018 11:32 AM
123	Establish a relationship to voluntarily assist WakeGov on maintaining multiuse trail, trail maintenance work days, mtbiking ride events, races and other social based events.	10/11/2018 10:50 AM
124	None	10/10/2018 6:20 PM
125	Cookouts, special events	10/10/2018 5:35 PM
126	Any educational aspects could be used as well as recreational.	10/10/2018 1:59 PM
127	N/a	10/10/2018 1:48 PM
128	NA	10/10/2018 12:50 PM
129	Volunteer opportunities and troop outings	10/10/2018 12:48 PM
130	No	10/10/2018 11:08 AM
131	No	10/10/2018 10:59 AM
132	Meetings/outings, special events	10/10/2018 10:00 AM
133	Organizational outings, hiking, nature walks, craft activities	10/10/2018 9:05 AM
134	No	10/10/2018 8:56 AM
135	Organizational, special events	10/10/2018 8:03 AM
136	Special event venue for the preschool - and I would love to be a volunteer for educational events for children	10/10/2018 7:57 AM
137	Hiking, history education shelters	10/10/2018 6:06 AM
138	Volunteer opportunities, Girl Scout events, hiking, camping, troop picnics, etc.	10/10/2018 2:36 AM
139	Special event	10/8/2018 3:03 PM
140	Yes	10/7/2018 1:34 PM
141	N/A	10/5/2018 4:21 PM
142	Organizational outings - picnics, camping, hiking	10/3/2018 10:06 AM
143	Special Events. Picnic and bbq areas. Also children’s play equipment.	9/29/2018 3:13 PM
144	NA	9/29/2018 1:36 PM
145	organizational outings, picnics, volunteer opportunities	9/28/2018 4:03 PM
146	Class parties/picnics	9/28/2018 9:44 AM
147	Special events, organizational outings and depending on facilities, athletic events	9/28/2018 1:51 AM
148	N/a	9/28/2018 12:25 AM



Wake County Southeast Park Master Plan: Questionnaire		
149	N/A	9/27/2018 11:21 PM
150	N/a	9/27/2018 10:28 PM
151	N/a	9/27/2018 10:19 PM
152	Outings and volunteer	9/27/2018 6:53 PM
153	Open space for kids to play and run. Revenue from renting space for weddings and parties.	9/27/2018 6:42 PM
154	Educational field trips	9/27/2018 6:33 PM
155	NA	9/27/2018 3:56 PM
156	Organizational outings.	9/27/2018 2:39 PM
157	The Produce Box, take part in fairs (veggie scupltures, etc)	9/27/2018 2:24 PM
158	Outings	9/27/2018 2:22 PM
159	N/A	9/27/2018 2:18 PM
160	I am a direct sales vendor. Would love to have vendor events there	9/27/2018 1:37 PM
161	volunteer opportunities, organizational outings, special event venue	9/27/2018 1:30 PM
162	n/a	9/27/2018 1:27 PM
163	Our Girl Scout Troop would definitely volunteer	9/27/2018 1:16 PM
164	Organized outings and special event venue	9/27/2018 1:14 PM
165	Special events for clients	9/27/2018 1:14 PM
166	We could do cleanups and improvements as service projects and so many organizational activities close to home. Most of our families have 27603 zip codes and all live within 5 to 10 minutes of the park.	9/27/2018 1:10 PM
167	All of the above	9/27/2018 1:07 PM
168	N/A	9/27/2018 1:02 PM
169	N/a	9/27/2018 12:54 PM
170	Plein air painting location	9/27/2018 12:43 PM
171	.	9/27/2018 12:39 PM
172	Cook outs.. family parties..volunteer events.. fireworks.. youth athletics soccer/swim/baseball.. play outside walking hiking.. kids on play equipment..community center with camp programs/classes/fitness	9/27/2018 12:36 PM
173	No	9/27/2018 11:59 AM
174	NA	9/27/2018 11:42 AM
175	NA	9/27/2018 11:40 AM
176	special events	9/27/2018 11:39 AM
177	Pot luck type meetings, possibly even informal dog shows.	9/27/2018 10:14 AM
178	Organizational outings	9/26/2018 2:49 PM
179	volunteer opportunities and special events	9/26/2018 2:41 PM
180	special events	9/26/2018 2:29 PM
181	group meetings, picnicking, childrens events	9/26/2018 2:26 PM
182	picnics, family activities, childrens program	9/26/2018 2:25 PM
183	practice	9/26/2018 2:24 PM
184	meetings	9/26/2018 2:21 PM
185	volunteer, outings, build something for the park	9/26/2018 2:19 PM
186	Special event venue	9/25/2018 6:31 PM

Wake County Southeast Park Master Plan: Questionnaire		
187	Environmental ed	9/25/2018 6:27 PM
188	Boy scouts	9/25/2018 5:40 PM
189	No	9/25/2018 5:18 PM
190	Organization outings	9/25/2018 4:37 PM
191	5Ks, group events	9/25/2018 4:30 PM



Q10 Please provide any other comments or ideas that you have for Wake County Southeast Park.

Answered: 259    Skipped: 277

#	RESPONSES	DATE
1	Beautiful open spaces, outdoor exercise, family fun	4/20/2019 8:35 AM
2	Do not want this	4/7/2019 11:23 PM
3	My family would likely use the park almost daily. More kid friendly biking trails, playground, walking trails and open space would be amazing.	4/7/2019 10:42 PM
4	We would love to have a park nearby our house especially if there is a nice walking path and something that is dog friendly. Our area does not have safe places to walk because of lack of sidewalks. Having a park nearby would also help us to stay healthy!	4/7/2019 3:59 PM
5	please make sure it happens! even if it all can't be done right away - we *need* something for this area!	4/7/2019 3:52 PM
6	Birthday party venues that is resnable priced, dance, gymnastics	4/7/2019 10:02 AM
7	better than another housing development	4/7/2019 9:25 AM
8	No	4/7/2019 9:16 AM
9	Thank you.	4/7/2019 9:06 AM
10	Would love to see some sort of water feature - a pond with a fountain or a wall with a waterfall design. Look to uptown Charlotte, NC for ideas	4/7/2019 9:00 AM
11	School days off camps. Daily or weekly Sport lessons or activities Community event days Movies at night	4/7/2019 8:54 AM
12	It would be nice to have a path or sidewalk from the surrounding neighborhoods to the park so that we do not have to drive 1/4 mile along Hwy 42 to safely reach the park.	4/6/2019 8:24 AM
13	Pond/ lake with benches around it, dog park, garden spots, bike park, running/walking track, volleyball area with sand, open fields for playing preferably for non league events	4/6/2019 7:39 AM
14	Connect the park, with a walking trail, to the Blalocks Glen neighborhood	4/5/2019 4:04 PM
15	None	4/4/2019 9:10 PM
16	Lazy river	4/4/2019 8:06 PM
17	No comments just very excited for this park	4/4/2019 5:13 PM
18	Can't wait	4/4/2019 3:03 PM
19	Splash pad	4/4/2019 2:44 PM
20	Dog park/play area	4/4/2019 1:31 PM
21	Love the star gazing aspect!!	4/4/2019 1:06 PM
22	Yoga. Paved Stroller trails a must.	4/4/2019 12:50 PM
23	Water ☐ park	4/4/2019 10:26 AM
24	This is much needed	4/4/2019 10:01 AM
25	Think big. Make this a destination park.	4/4/2019 10:00 AM
26	We're crossing our fingers for this park! It would be a great addition!	4/4/2019 9:57 AM
27	It is such a shame that Adams vineyard was sold to another developer. The last thing we need out here is more development. The Rural area is disappearing. Surely this are could be saved, as a land mark or something.	4/4/2019 9:49 AM

28	Looking forward to a nearby park	4/4/2019 9:44 AM
29	Build it and we will come! ☐ but 42 is a high speed rd so please have a turn lane :)	4/4/2019 9:36 AM
30	Having a park closer would allow my family to go more often due to closer proximity	4/4/2019 9:35 AM
31	The park should include multiuse trails open to equestrians, bicyclists and pedestrians. These groups successfully share trails at the American Tobacco Trail, Umstead Park and many other parks around the world. As an equestrian, I would be willing to pay a special use fee, either per day or annually, to have a place that close to ride. I am disabled and walk with crutches. Being able to ride my horses in parks allows me to access recreational opportunities that I'd otherwise not be able to participate in. With the reduction of open space in Wake County it is becoming harder and harder to find places to ride.	2/18/2019 2:26 AM
32	Please include meandering horse trails just 2 would be kind enough, one longer and one shorter to give folks the option to do one or the other or both. We can even ride along/cross over the wetlands part too. We really need and want some more access to horse trails but keep in mind that horses and bicycles don't do well together so if they are both allowed please make separate trails. Also having some small trails that are paved would be great for those of us with young children in strollers or wheelchair/motorized handicap people can also enjoy nature as well. Thanks!	2/17/2019 3:22 PM
33	Tree houses, zip line, climbing area	2/17/2019 2:15 PM
34	no mountain biking (compromising the land) or horse trails. playing in haystacks will cause mold & rodents. minimal cutting down of trees. Great idea for com. garden & learning ctr. for kids. Small,safe rock climbing (Jack Smith park has several foot holds missing!)	2/16/2019 3:51 PM
35	Think land needs to find other uses. Too expensive to renovate, will take years, and very inaccessible to those with mobility issues, strollers, and wheelchairs. Extremely disgusted this land was promoted as 300 acres to become a park. At best 45 acres can be used. THAT was a fact never mentioned before	2/16/2019 1:23 AM
36	Equestrian trails, paid trailer parking	2/15/2019 7:10 PM
37	I would love to have trails restricted to horseback riding, but if that's not possible, then trails to be shared (like the trails at Umstead.	2/15/2019 12:18 PM
38	Looking forward to its completion	2/15/2019 12:13 PM
39	This is desperately needed in this country setting area for we people located outside of Fuquay, Angier, Garner and Clayton So excited!!	2/15/2019 10:03 AM
40	Needs lots of wooded bicycle riding & Horseback riding trails. Needs lots of farming & community vegetable gardens & floral & butterfly gardens. This needs to be a rural park not a cityslicker, urban soccer Mom park. Needs lots of bird-watching & Wildlife observation & aquatic observation ops. Needs good & safe playground spaces & equipment. Sidewalks in the park should not b a priority because this should b a nature preserve park. Needs excellent security force present for visitor safety. Keep the woods in tact in the park. Keep the park in its natural state & allow its natural beauty to shine. Do not try to improve on God's creation. Man will only mess it up.	2/14/2019 11:52 PM
41	Allowing dog walking on trails is a huge necessity for us.	2/14/2019 5:52 PM
42	Horse trails	2/14/2019 1:47 AM
43	We have a great need in this part of the county for open space use. Please consider equestrian trails.	2/13/2019 8:05 PM
44	We have horses and would love to see horse trails. We live on Mt Pleasant Rd very close to the park land. Thank you for considering this.	2/13/2019 8:05 PM
45	HORSE TRAILS ARE A PLUS FOR ANY PARK.	2/13/2019 12:45 PM
46	There are not enough equine accessible parks locally and the ones like Raven Rock do not offer trails wide enough for driving equine. Being someone that has back issues it is sometimes necessary to drive my equine instead of riding and having somewhere locally to do that would mean a lot to a lot of equine owners.	2/13/2019 11:49 AM
47	provide bathroom along the trails, esp ones further from Buildings (just a basic version)	2/13/2019 11:32 AM
48	trails for horseback riding	2/13/2019 8:52 AM
49	please keep in mind the residents in willow springs that we are animal owners and please consider the dog park and horseback riding trails	2/13/2019 8:23 AM



Wake County Southeast Park Master Plan: Questionnaire		
50	Areas to horseback ride are quickly becoming harder and harder to fnd with all the growth in the area. Used to be able to ride all day from my barn now maube an hour or two is all that is left. Equestrians ar often over looked when it comes to parks and riding. Thank you	2/12/2019 11:03 PM
51	none	2/12/2019 10:14 PM
52	Horse trails, concert events. Educational events.	2/12/2019 8:43 PM
53	Horseback riding trails	2/12/2019 8:03 PM
54	flock swap, agricultural/Cooperative extension activities, paintball,	2/12/2019 7:25 PM
55	Included open access horse back riding trails	2/12/2019 7:24 PM
56	Definitely being horse accessible, there are so many people in this area that travel hours just to go somewhere to trail ride and it would be very nice to not have to go so far to do so. It would drawn more people to the park.	2/12/2019 5:33 PM
57	Horse riding trails!! Please!! NC is rich with equestrians and we would like more places to ride. Thank you	2/12/2019 4:30 PM
58	Get it done as soon as possible. :)	2/12/2019 4:16 PM
59	Trails for horseback riding please.	2/12/2019 3:48 PM
60	Equestrian	2/12/2019 2:26 PM
61	Would like to see the park keeping much of this undeveloped and for wildlife. Horse and running trails would be great, along with a small playground area for those with small children. Am very much looking forward to having this park to use for my family.	2/12/2019 1:28 PM
62	Equine parking and trails are needed in this area.	2/12/2019 1:04 PM
63	Please consider turning some of the open space into prairie habitat. Many grassland birds are declining due to loss of this habitat to farming and development. Other Wake County parks have little prairie habitat. Please include education about the types of species resident within the park. Also include environmental education about how neighborhoods and farms that border natural resources can help protect those areas. The Wake Audubon Society may be able to help with bird surveys and programming before and after the park is developed.	2/12/2019 1:02 PM
64	Please consider adding equestrian use trails. Open space in NC and specifically wake county is rapidly disappearing and with it, places to ride are disappearing	2/12/2019 11:03 AM
65	There is a great need for additional trail riding opportunities in Wake County.	2/11/2019 11:39 AM
66	A place for live music would also be cool.	2/10/2019 12:35 PM
67	Walking biking trails are our highest priority, along with natural scenery/views	2/9/2019 11:25 PM
68	I'm so happy to have a park in this area of the county, close to my home. I only wish it had been developed years ago when my children were young enough to use it.	2/8/2019 3:01 PM
69	Wake County has lots of horse owners that would love a community park where they can enjoy nature as they ride their horses.	2/7/2019 11:48 PM
70	It would be so beneficial because we don't have a great park near by	2/7/2019 7:42 PM
71	This park would be absolutely marvelous for all children and citizens in our communities. Would offer needed outdoor activities and mechanism to bring people and communities together, a fun place!! Thank you all very much!	2/7/2019 10:27 AM
72	Disc golf	2/6/2019 11:11 PM
73	Classes in the field for kids (ie searching for animals or gardening, etc led by Park Rangers)	2/6/2019 10:42 PM
74	outdoor concerts	2/6/2019 7:41 PM
75	Dog park	2/6/2019 6:39 PM
76	Would love this as the closest park is 20 mins from us without traffic	2/6/2019 4:43 PM
77	Longer trail and greenway systems for biking and running. I would love to see some proactive thinking regarding future greenway infrastructure in this area that could easily be tied into established parks. There is a LARGE population in this area that bikes and runs. Please consider us when developing this park.	2/6/2019 1:50 PM

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78	We definitely need hiking trails through the woods and down near the creek!	2/6/2019 1:32 PM
79	Do not allow bicycles on Waking paths. Rider are often rude to walkers. Let them have their own riding path like Sheron harris park.	2/6/2019 12:34 PM
80	We look forward to having a great park close to our home!	2/6/2019 12:24 PM
81	No other comments but VERY excited at the possibility of a park so close to home!	2/6/2019 11:25 AM
82	Cultural Arts Center like Pullen or Sertoma is much needed in this area!	2/5/2019 4:03 PM
83	A Cultural Arts Center in this area is much needed! Much like Pullen or Sertoma...	2/5/2019 3:59 PM
84	N/A	2/5/2019 1:51 PM
85	We are very excited to have a park in this area. Can't wait!!!!	2/5/2019 12:34 AM
86	Would love to see a disc golf course out this way. There are no decent courses within 15-20 minutes. Also baseball/softball fields would be nice.	2/5/2019 12:01 AM
87	Rentable indoor & outdoor facilities	2/4/2019 9:49 PM
88	Being accessible for all residents and offering a variety of purposes, especially a dog park. A pool might be interesting too if it were financially feasible.	2/4/2019 5:00 PM
89	Mountain biking and Hiking Trails would be very important to our family.	2/4/2019 4:16 PM
90	None	2/4/2019 3:56 PM
91	As someone who lives out in this corner of Wake, a great park is much needed. We really need an area for walking/biking as the streets in this rural area are far too dangerous.	2/4/2019 3:25 PM
92	None	2/4/2019 3:09 PM
93	Please do this!	2/4/2019 2:41 PM
94	Maybe a small area set aside as a dog park. If not and there are walking trails it would be nice if there were dispensers for doggy bags so folks can clean up after their pets.	2/4/2019 2:31 PM
95	It is desperately needed, it's so far to the nearest park for us. Programs for Seniors.	2/4/2019 1:41 PM
96	Would be wonderful to have access to a park near here!	2/4/2019 1:38 PM
97	Southern Wake, Harnett, Johnston and Wilson Counties are still very much involved with the original Bluegrass music. Bluegrass fans would love to be able to attend at least one yearly bluegrass music event - a family event WITHOUT ALCOHOL!	2/4/2019 1:17 PM
98	Hope it comes to pass. We are lacking this kind of common space in our area.	2/4/2019 12:59 PM
99	We desperately need a park in this area!!	2/4/2019 12:35 PM
100	Having a park in this part of Wake County would be very beneficial. At this time, any park environment is a minimum 30 minute drive and greatly impedes our ability to enjoy facilities that our tax dollars fund.	2/4/2019 12:22 PM
101	Items just as important as activities offered:Upkeep of facilities, security and safety, proper lighting, pleasant restrooms, portions of park accessible to all, proper turning lanes both directions at entry/exit. People will not care to visit an unpleasant environment to partake in an activity.	2/4/2019 12:19 PM
102	Thank you for considering putting this park here, sorely needed! This would be a great place for families to spend a day. If you need help building, I can volunteer some time	2/4/2019 12:08 PM
103	Dog areas or fishing would be nice.	2/4/2019 8:48 AM
104	Mulched trails for walking/running like at bass lake.	2/3/2019 9:13 PM
105	More unique items like you see at the Cary Kids Together Park (a special needs section), misting station or shaded areas to cool off	2/3/2019 6:56 PM
106	It would be nice if the play ground had shade areas for the summer. A splash park would be great too.	2/3/2019 6:03 PM
107	Leashless dog park, ramp for water access, yoga gazebo	2/3/2019 5:50 PM
108	I have been wanting a park to go walking at and to just be out at closer to Willo Springs for a long time. This would be great!	2/3/2019 5:43 PM



Wake County Southeast Park Master Plan: Questionnaire		
109	Splash Pad!	2/3/2019 4:19 PM
110	kayak access to the water	2/3/2019 3:36 PM
111	Paved running trails (possibly with mile markers) would be great! There is a big fitness movement currently in the area but not a lot of places with the space to run. Please also consider a fenced in dog park, one for small dogs and another for larger!	2/3/2019 3:09 PM
112	We desperately need places for elementary school kids to play that aren't filled to capacity everyday.	2/3/2019 3:06 PM
113	We need open space reserved for the next generation especially how fast houses are being built. Parks provide a great community space as well.	2/3/2019 2:33 PM
114	A splash pad would be great	2/3/2019 2:23 PM
115	Would love to see a park nearby for my 4 children	2/3/2019 2:16 PM
116	Safety for families is something we enjoy in this part of the county. My hope is that activities would be the same	2/3/2019 2:16 PM
117	Seek inspiration from parks in Charlotte, Orlando, Boston. All have beautiful walking trails, water features, shaded areas for visitors can enjoy nature and the scenery	2/3/2019 2:06 PM
118	Please put in a splash pad!	2/3/2019 2:02 PM
119	Our area is in dire need of a park! Green spaces are vital and essential for families as they provide healthy, recreational outlets other than electronics!	1/31/2019 1:51 PM
120	Please give us the park at Crooked Creek. It is the perfect place to use centrally located for more people to enjoy.	1/29/2019 3:46 PM
121	I can't believe you think this is a good location You had a great central location and for spite plan to sell. I hope you will reconsider.	1/29/2019 9:53 AM
122	A greenway trail should connect the two parts of the park so that all park activities, whatever they are, will be accessible by foot or bike, not just by a car using highway 42.	1/29/2019 9:41 AM
123	Please make it pet friendly with long running/walking trail that would be great for taking my dogs walking/running on. We like to go long distances. A 5+ mile trail/loop would be amazing. There is nothing near the Wake/Johnson line like this	1/25/2019 2:26 PM
124	We are so excited for a park to finally reach this area! We love parks in Cary, but they are so far to get to. This is a much needed park for Wake Southeast!!	1/22/2019 7:55 PM
125	The park seems to be very close to Johnston and Harnett Counties. How will the park be reserved for the taxpayers of Wake County?	1/21/2019 11:12 PM
126	Connect adjacent neighborhoods to the park with trails	1/21/2019 8:21 PM
127	We are excited the park will have a focus on preserving the natural environment and providing educational experiences for all ages.	1/18/2019 7:22 PM
128	This would be a great location for those of us I'm the most southern part of Wake county. Trails, educational programs, and family events would make this a wonderful place for many families.	1/18/2019 6:54 PM
129	Disc Golf course	1/18/2019 6:46 PM
130	Let us have two parks as North Raleigh and the rest of the county have several parks. Park Promise #Parkplease.	1/15/2019 5:11 PM
131	I'm SO excited about this!! Thank you!!!	1/15/2019 12:14 AM
132	Make closer to town	1/14/2019 9:21 PM
133	I'm thrilled this park is finally getting done!	1/14/2019 5:53 PM
134	The location is not accessible to most schools in this area of Wake County. The former Crooked Creek location would have accessible to more people and easier to access off of Hwy. 401.	1/14/2019 3:42 PM
135	a better name!! separate bike and walking trails. convenient bathroom facilities throughout w/water fountains. shaded places to sit comfortably	1/14/2019 11:32 AM
136	Hiking/walking/jogging paths are the most important. Paved trails for kids to have a safe place to ride bikes also important.	1/14/2019 10:34 AM

Wake County Southeast Park Master Plan: Questionnaire		
137	Hiking/walking trails are the most important feature, to provide a place to be physically active.	1/14/2019 10:26 AM
138	We are excited! Would love to see some (?) unique feature to this park to help draw people to our area.	1/13/2019 8:49 PM
139	Park needs to be built farther west in wake county	1/13/2019 4:43 PM
140	A dog park would be wonderful. Or two due to the size of the park.	1/9/2019 9:10 PM
141	You have ignored this area for so long and denied the community of safe recreational areas. This park should be perfect since it seems to be the only space that you willing to provide the community.	1/8/2019 4:06 PM
142	What is the budget and timeline for completing.	1/8/2019 12:10 PM
143	natural children's playground!!! limit the soccer fields! make sure that parking is adequate.	1/8/2019 10:35 AM
144	I think anytime we can engage people with outdoor activities, we are on the right track. I can't wait until the completion of another county park.	1/4/2019 4:12 PM
145	I support this fully and would love to have a nature based park nearby. Hiking trails would be great and I'd walk the dog there regularly.	1/3/2019 9:57 AM
146	We would love to have this park, we have not been able to regularly go to parks because they are not convenient to us. This would be a great benefit to our community.	12/31/2018 3:09 PM
147	This park seems too far removed from my location to visit it often. I would prefer you consider South Wake Park Project which is closer to a higher density population.	12/18/2018 10:45 AM
148	I would be interested in a community swimming pool	12/18/2018 9:08 AM
149	Parks are great. Super excited for one in this area.	12/17/2018 10:34 PM
150	Please dont place walking or running trails within residential views.	12/17/2018 12:56 PM
151	This area is in need of having a beautiful place for the community to utilize. We currently have to travel to Fuquay-Varina, Cary, Garner or further to enjoy public park facilities. In the summer we go to a park almost everyday and would more during other times of the year if they were closer. Community facilities are healthy investments into our health and wellness that we currently lack in this part of the county. Our property borders a section of the property and we welcome the parks development with open arms!!!	11/24/2018 2:07 PM
152	A time table with approximate dates would be helpful.	11/7/2018 9:18 AM
153	Protecting the wildlife in the park area is most important to me. Also keep any trails away from nearby houses.	10/23/2018 10:35 AM
154	n/a	10/23/2018 10:24 AM
155	Sooner the better - much needed in this area of Wake County!	10/20/2018 11:50 AM
156	It would be great to see an educational component around the wetland.	10/18/2018 6:17 AM
157	No entrance or exiting the park through nearby neighborhoods	10/16/2018 6:04 PM
158	I would love to see some Mountain Biking trails. I live 2 minutes from the proposed park, and the closest trails to me are a 25 minute drive. A fishing pond would also be terrific.	10/16/2018 12:15 PM
159	I am just now hearing about this from neighbors, and I can't wait to be able to go there!	10/15/2018 2:40 PM
160	Would love to see this park built!	10/13/2018 4:09 PM
161	This would be a great addition to the community.	10/12/2018 5:49 PM
162	While the park will be for picnics and kids having a safe place to play. I would like nature trails to hike on mainly.	10/12/2018 10:59 AM
163	Dog park	10/12/2018 7:15 AM
164	Desperately needed!! Thanks!	10/12/2018 7:08 AM
165	Awesome. Please build it!	10/11/2018 4:49 PM
166	We just love easy and beautiful walking trails	10/11/2018 12:25 PM
167	Overall, I feel town, city, county and state governments within NC need to steer away from single use trail and support multiuse trail.	10/11/2018 10:50 AM



Wake County Southeast Park Master Plan: Questionnaire		
168	We would love another nearby park for the kids.	10/11/2018 10:06 AM
169	None	10/10/2018 6:20 PM
170	So very excited that this is being considered. Hopeful that things will work out for it to become a reality!	10/10/2018 5:35 PM
171	I will definitely use the park more since it's much closer to home for me. I will visit a lot more than I have been going to other parks.	10/10/2018 5:31 PM
172	I hope this happens	10/10/2018 1:59 PM
173	It would be amazing to have a park nearby, at this point we either have to drive into Garner or Fuquay for the nearest park	10/10/2018 1:48 PM
174	Good idea	10/10/2018 12:57 PM
175	I find it hard to believe that the county is building a park in a park of the county with so little population resulting in a long drive for many of us who might want to use a park to walk in. It seems to me there are other properties that provide more opportunities for more people in other areas of southern Wake County. During commuting times that property is hard to get to and there are no sidewalks at all. Why?	10/10/2018 12:50 PM
176	Splash pad and/or water feature for hot summer cool downs.	10/10/2018 12:48 PM
177	None	10/10/2018 11:08 AM
178	Would love to see this happen	10/10/2018 10:00 AM
179	This sounds like a great opportunity for southeast wake!	10/10/2018 9:05 AM
180	I would love to have another area with camping and hiking close by!	10/10/2018 8:56 AM
181	Very excited about it	10/10/2018 8:03 AM
182	Very excited about the new park- tremendous asset for a growing community!	10/10/2018 7:57 AM
183	Please put in some lengthy hiking trails. I currently have to drive 30+ minutes to get to lengthy hiking trails.	10/10/2018 2:36 AM
184	Legacy park for the name or 42 legacy since near that neighborhood may be nice.	10/7/2018 1:34 PM
185	PLEASE put in a nice, shady dog park. This side of the county needs a dog park.	10/1/2018 1:12 PM
186	Please do not place a public entrance in the Legacy subdivision. We would love a park and walking entrances but do not want the public using our neighborhood has a through fare.	9/30/2018 5:00 PM
187	A place to walk, take our granddaughter to play and other activities! This area needs this. We have to drive to Cary, Apex and Raleigh for outdoor play. We live in Legacy at Forty-Two. Our subdivision is on hwy. 42 close to Old Stage Road. As proposed this new park would be located behind and beside us. If Wake County gets the green light on this park when is it scheduled to open? Donna Tapper Donna.tapper@gmail.com	9/29/2018 3:13 PM
188	Walking Trails	9/28/2018 10:40 PM
189	A dog park would be nice.	9/28/2018 9:23 PM
190	Very excited to hear about this project. Southeast Wake County could definitely use such a facility. Thank you!	9/28/2018 4:03 PM
191	We are excited and happy to help support this project.	9/28/2018 1:51 AM
192	Tennis courts and public pool ☐	9/28/2018 12:25 AM
193	Entrance/exit to be on 42 only.	9/27/2018 10:28 PM
194	Would love a nice natural area with playgrounds, sports fields, open areas for community events (I.e. fireworks displays) and lots of walking paths with mile markers. A dog park would be nice too.	9/27/2018 10:19 PM
195	Keep it simple and natural!	9/27/2018 6:53 PM
196	I live in legacy at 42 and don't want a park entrance in our development we already have a problem with speeding cars and traffic the last thing we want is more traffic pushing through the neighbor hood.	9/27/2018 6:46 PM
197	Please give a park that we don't have to drive a 1/2 an hour to enjoy.	9/27/2018 6:42 PM

Wake County Southeast Park Master Plan: Questionnaire		
198	Love to see a park on this side of Wake County	9/27/2018 4:46 PM
199	I think this would be fabulous!!	9/27/2018 3:56 PM
200	just looking forward to having green space and a place to relax.	9/27/2018 2:58 PM
201	Very excited for this park!	9/27/2018 2:58 PM
202	swimming. splash zone. pet park.	9/27/2018 2:39 PM
203	Name Suggestion: Willow Park	9/27/2018 2:29 PM
204	Can't wait to have a park nearby!	9/27/2018 2:24 PM
205	Rope climbing structures Zip lines Rock climbing.	9/27/2018 2:22 PM
206	Concerned about the safety and security of the Legacy at 42 subdivision directly next to the proposed park. I do not want to see increased vehicular and pedestrian traffic through our subdivision.	9/27/2018 2:18 PM
207	Please add a fenced in area for dogs.	9/27/2018 2:13 PM
208	This is much needed. There are few parks and outdoor spaces open to the public in this area.	9/27/2018 1:48 PM
209	Tree fort, rock wall, splash pad, outdoor music making for kids	9/27/2018 1:35 PM
210	Thanks for your efforts! Looking forward to using the park soon :)	9/27/2018 1:34 PM
211	Greenway connecting the Blalock Forest neighborhood to the park.	9/27/2018 1:31 PM
212	Please make the park accessible for the poor, seniors, and non-drivers. Provide recreational activities and events to address the same. Things that are educational hands on for children (the more the better) and water facilities in the park (of some kind) would be excellent. Also provide job opportunities for our youth at the park.	9/27/2018 1:30 PM
213	I am excited about the possible addition on Southeast Park!! Especially it's close location to my residence!!	9/27/2018 1:27 PM
214	Please don't have an entrance to the park from our neighborhood , legacy at 42	9/27/2018 1:21 PM
215	We have concerns about traffic in our neighborhood at Legacy at 42. We do not want a park entrance for traffic.	9/27/2018 1:10 PM
216	Very excited! 😊	9/27/2018 1:10 PM
217	My family and I reside in the Legacy at 42 subdivision and are all incredibly concerned about a possible entrance through our neighborhood. I do not want the added traffic, which will lead to high volumes, speeding and there are several children all the time. It is a huge concern felt by myself and several.otherneighbors. .	9/27/2018 1:07 PM
218	Name "Park @ 42" - 42 is "Answer to the Ultimate Question of Life, the Universe, and Everything"	9/27/2018 1:03 PM
219	I am excited to have a park near me!	9/27/2018 1:02 PM
220	I live in Legacy. I do not want any entrance or exit to this park inside our neighborhood. Please keep the park and my neighborhood separated. We have enough problems with neighbors speeding up Blannie Farms... we do not need extra traffic. Thank you	9/27/2018 12:56 PM
221	I think it would be awesome. I don't have any parks close to me	9/27/2018 12:54 PM
222	Family Fun Day Sunday is very real in my house and a good park that is much closer to our Willow Spring home would be amazing! Please Please Please!	9/27/2018 12:52 PM
223	.	9/27/2018 12:39 PM
224	please do not have car access to and from the park through Legacy at 42. We do not need extra traffic here. Children ride bikes, scooters and walk on this neighborhood.	9/27/2018 12:37 PM
225	A community center with pool and community multiple purpose area is greatly needed.. for kids to have park to play..sports..bike riding and general outdoor activities.. I live in johnston willow spring and drive to clayton or holly springs so my kids can participate	9/27/2018 12:36 PM
226	Where the entrances are	9/27/2018 12:28 PM



Wake County Southeast Park Master Plan: Questionnaire		
227	Concerned a out acess to the park. Do not want my neighborhood or my street to become an access point for the park. This would be dangerous for children playing outside and waiting at bus stops.	9/27/2018 12:23 PM
228	I live in Legacy 42 and DO NOT want access to the park from my subdivision.	9/27/2018 12:22 PM
229	Residents in the neighborhoods bordering the proposed park are extremely concerned with the possibility of the public accessing the park via the roads in our development. Legacy at 42 subdivision has several dead-end cul-de-sacs that look like they will connect to park lands. We do not want any through traffic for the safety of the children and pets in our neighborhood. Please consider this, as it should not be necessary with so much available road frontage on 42. Thank you	9/27/2018 12:16 PM
230	We are very excited and look forward to the development of this park. As residents living adjacent to the park, we are interested in any plans to address safety issues (including buffers). Thank you!	9/27/2018 12:01 PM
231	Have concerns about foot traffic in subdivisions, strangers entering yards from park areas, people parking in our residential area.	9/27/2018 11:56 AM
232	Southern Wake is growing like crazy. Please make sure we support BOTH park initiatives in southern Wake. This area needs green space preserved, especially as 540 moves through. It will be a shame if all the green space is developed (as is rapidly happening in FV), and space/we have no recreational areas down here. If Amazon, Apple, or any other large employer were to move here (or consider doing so), their employees would be so numerous that they would spread out over the entire county. Those employees would want amenities such as parks, and the potential new businesses know this. We need greenspace and trails! Thanks!	9/27/2018 11:54 AM
233	wildflower patches to attract birds, butterflies, bees, benches, fire pit and seats (for lectures, night time activities)	9/27/2018 11:51 AM
234	well organized presentations with knowledgeable people at all of the stations, well done!!	9/27/2018 11:50 AM
235	Property owners whose houses are adjacent to the park want assurances that visitors to the park will not trespass on their land and will not create a noise problem. Overnight use of the park is a major concern for homeowners adjacent to areas where fires, lights, noise, etc. would be dangerous and/or disturbing.	9/27/2018 11:45 AM
236	access from Barber Bridge Rd	9/27/2018 11:40 AM
237	connect the greenways for biking, jogging, etc.	9/27/2018 11:38 AM
238	painting in the park, crafts with kids, art teacher	9/27/2018 11:36 AM
239	Fishing opportunities, trails for hiking and biking, would like to see a shooting range if possible	9/27/2018 11:33 AM
240	Possible name? Middle Creek Park	9/27/2018 10:14 AM
241	have a survey to Chose a better name! keep it free or very inexpensive	9/26/2018 9:45 PM
242	Can't wait. Am totally excited to have the park near our home!	9/26/2018 2:48 PM
243	Provide an outpost for Wake County Sheriffs, lack of law enforcement in the area	9/26/2018 2:46 PM
244	As one and only attraction in our area: nature and environmental preservation park potentially in collaboration with universities or non-profit nature or environmental organizations. To include a visitor center with info/brochures from local businesses/restaurants, local animals, fish, plans, exhibits, and learning. Hiking and biking trails, educational trails for kids with learning stations, nature themed put-put maybe to involve nature art college student volunteers, boat ramp/fishing doc, natural community pool with sauna and hot tubs. All amenities to reflect environment protection and preservation, recycled materials and the use of alternative energy sources (solar, wind, water). Research potential grant funding. Offer scholarships for senior college students and architecture.	9/26/2018 2:41 PM
245	Hurry up. Call me if you need help.	9/26/2018 2:35 PM
246	Very excited for this park, thank you!	9/26/2018 2:33 PM
247	Par similar to Crowder Park on Ten-Ten would be a great idea. Keeping natural with functionability for activities and organizations if needed.	9/26/2018 2:31 PM
248	Please emphasize protection of the sensitive habitats, steep slopes, wetlands, aquatic systems, and promote competitive low-impact recreation that adequately conserves native species and their habitats.	9/26/2018 2:28 PM

Wake County Southeast Park Master Plan: Questionnaire		
249	Suggest testing site to see if Carolina Children's Museum would be a good fit. This is an emerging Children's Museum focused on connecting kids with nature.	9/26/2018 2:23 PM
250	more than one entrance/exit for cars, bikes, and walking pedestrians	9/26/2018 2:19 PM
251	Connecting greenways sooner	9/26/2018 2:16 PM
252	Concerts	9/25/2018 6:31 PM
253	Leave it natural please please please we don't need another ball field, we need green space that is left for nature	9/25/2018 6:27 PM
254	A nice, long, safe, walking trail would be a wonderful addition to this area. It would also be nice to have a paved trail for bicycles to keep the kids and grown folks from riding on the roads.	9/25/2018 6:18 PM
255	We live in Legacy at 42 on Messenger Dr. The map shows a potential walking entrance next to our home. I have a huge safety concerns of having a public entrance right next to our house. I'm also concerned about potential noise. I hope you will consider adding some forms of fencing and or natural barriers if you do add entrances in the neighborhood. Thank you	9/25/2018 6:03 PM
256	Mountain bike and hiking trails	9/25/2018 5:40 PM
257	I live in a neighborhood bordering the proposed park. I am concerned about strangers gaining access to my neighborhood through the park. I would like to make sure there will be clear borders to the park and neighborhood roads will not be used to access the park	9/25/2018 5:30 PM
258	Please do not make a walking or foot trail entrance at the end of Twillingate Drive. In reality, people will not abide to no parking rules and will park cars at the end of the road. This would affect my family and neighbors severely. We already have had trouble in the past with unknown cars and vehicles parking at the end of the road and people taking off into the woods, leaving their vehicles unattended. Allowing a footpath here will only increase the chances of unattended vehicles being left in front of our homes. Please, do not make trails anywhere within visual site of the homes that back up to the proposed park border. We highly value the peacefulness of our neighborhood. Trails too close to our homes will completely take away from our serene oasis. Just as homes near airports have noise restrictions, permanent walking trails should not be so close to the neighborhood that patrons can be heard. Wake County has one opportunity to do this right. Poor planning and lack of consideration to longtime residents of Oak Hollow subdivision will ruin generations of current and future residents. Being proactive and sensitive with the concerns of directly affected community members and tax payers will ensure cooperation and enthusiasm to this and future Wake county Parks and RECREATIONS projects. Thank you	9/25/2018 5:18 PM
259	Sustainable park in Pinehurst NC called Camelot park is all wood and perfect for an all natural environment	9/25/2018 4:30 PM



**APPENDIX D:**

Natural Heritage Program Report

SITE NAME: Southeast Regional Park Phase I

PARTICIPANTS: Scott Pohlman, Harry LeGrand

DATE: 29 April 2016, 5 May 2016, 16 May 2016, 6 June 2016, 13 June 2016, 14 July 2016. Updated 26 August 2016, with Harry LeGrand, Judy Ratcliffe (NCNHP), Deborah Fowler and Chad Watson (Wake County), and Suzanne (volunteer)

LOCATION: Wake County, located on the north side of NC Hwy 42, east of Old Stage Road and west of Barber Bridge Road (a small portion of the property is east of Barber Bridge Road). Middle Creek bisects the property. Angier USGS Topo Quad. The property is approximately 250 acres.

OWNERSHIP: Wake County Parks, Recreation and Open Space.

PURPOSE OF VISIT: The purpose of the inventory was to conduct site review of open space property and provide information for amenities placement planning for proposed nature preserve.

OBSERVATIONS:  
Map 1 indicates the extent of the property, the area surveyed (as shown by the GPS points), and the locations of photo points. As the map illustrates, the property is comprised of two noncontiguous parcels.

The property consists of a variety of habitats, most notably the aquatic system of Middle Creek, as well as good to excellent examples of Mesic Mixed Hardwood Forest, Floodplain Pool, Piedmont/Mountain Semipermanent Impoundment and Piedmont Swamp Forest natural communities. There are also successional forest and croplands on the uplands, some Piedmont Alluvial Forest along the larger stream channel, and a few Low Elevation Seeps along smaller stream channels and the toes of slopes. Other plants of interest include two ferns -- Log Fern (*Dryopteris celsa*) and Crested Wood-fern (*Dryopteris cristata*)—as well as White Cohosh or Dolls’-eyes (*Actaea pachypoda*), and Showy Orchis (*Galearis spectabilis*).

The soil series that underlie the property are a mix of Piedmont and Coastal Plain soils, explained by the geologic position of the property, and proximity to the Coastal Plain (See Map 2). The “Piedmont” soils include: *Cecil* and *Appling* (both formed in residuum weathered from felsic igneous and metamorphic rocks of the Piedmont uplands); *Roanoke* (poorly drained, having formed in clayey fluvial sediments); and *Wehadkee* (occurring on floodplains, along streams that drain from the mountains and piedmont. Wehadkee soils formed in loamy sediments washed from soils that formed from schist, gneiss, granite, phyllite, and other metamorphic and igneous rocks). The transitional soil, so to speak, would be *Altavista*, composed of loamy fluvial sediments and associated with the Southern piedmont and the Coastal Plain. The Coastal Plain soils are *Norfolk*, *Wagram*, and *Wahee*; the parent



materials for these soils are marine deposits or fluviomarine sediments, and thus their texture is sandier.

Middle Creek Aquatic Habitat

The portion of Middle Creek that flows through the property contains habitat for a number of rare aquatic species, as noted on the table below:

Taxonomic Group	Scientific Name	Common Name	Federal Status	State Status	Global and State Rank
Amphibian	<i>Necturus lewisi</i>	Neuse River Waterdog	Species of Concern	Special Concern	G2 S2
Crustacean	<i>Orconectes carolinensis</i>	Orconectes carolinensis		Special Concern	G3 S3
Freshwater Bivalve	<i>Alasmidonta undulata</i>	Triangle Floater		Threatened	G4 S3
Freshwater Bivalve	<i>Fusconaia masoni</i>	Atlantic Pigtoe	Species of Concern	Endangered	G2 S3
Freshwater Bivalve	<i>Lampsilis radiata</i>	Eastern Lampmussel		Threatened	G5 S3
Freshwater Bivalve	<i>Strophitus undulatus</i>	Creeper		Threatened	G5 S3
Freshwater Fish	<i>Lampetra aepyptera</i>	Least Brook Lamprey		Threatened	G5 S2

Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/content/help>.

These records are from the NC Natural Heritage Program database, queried March 2016, and the species are all considered extant in Middle Creek. Downstream of the property in Middle Creek, biologists have also documented a population of the State and Federally Endangered Dwarf Wedgemussel (*Alasmidonta heterodon*). Many of these aquatic species are dependent on clean water. Helping to protect the water quality of Middle Creek is an important benefit of the open space property. It is worth noting that the USGS topo quad is not entirely correct in showing where Middle Creek is located on the property. The current channel is shown on Map 3.

Mesic Mixed Hardwood Forest

Map 3 shows the extent of some of the habitats on the property. The Mesic Mixed Hardwood Forest natural community is mapped fairly precisely, and while it extends beyond the area shown, the high quality portions recommended to the NC Natural Heritage Program to be tracked in the NHP database are represented by the polygons on the map. The canopy in this forest contains American Beech (*Fagus grandifolia*), Tulip Poplar (*Liriodendron tulipifera*), White Oak (*Quercus alba*), Northern Red Oak (*Quercus rubra*), Red Maple (*Acer rubrum*), Pignut Hickory (*Carya glabra*), Mockernut Hickory (*Carya alba*), Southern Sugar Maple (*Acer floridanum*), and White Ash (*Fraxinus americana*). The midstory and shrub layers contain abundant Umbrella Magnolia (*Magnolia tripetala*), as well as Flowering Dogwood (*Cornus florida*), Mapleleaf Viburnum (*Viburnum acerifolium*), Black Gum (*Nyssa sylvatica*), American Hazelnut (*Corylus americana*), Witch-hazel (*Hamamelis*

*virginiana*), Southern Black Haw (*Viburnum rufidulum*), Ironwood (*Carpinus caroliniana*), and Devil’s-walking-stick (*Aralia spinosa*). Herb species include Christmas Fern (*Polystichum acrostichoides*), Broad Beech Fern (*Phegopteris hexagonoptera*), Mayapple (*Podophyllum peltatum*), Foamflower (*Tiarella cordifolia*), Woodland Tick-trefoil (*Desmodium nudiflorum*), Lion’s-foot (*Prenanthes serpentaria*), Round-lobed Hepatica (*Anemome americana*), Trout Lily (*Erythronium umbilicatum*), Windflower (*Thalictrum thalictroides*), White Avens (*Geum canadense*), American Lopseed (*Phryma leptostachya*), Crossvine (*Bignonia capreolata*), Coral Honeysuckle (*Lonicera sempervirens*), Catbriar (*Smilax bona-nox*), Whiteleaf Greenbriar (*Smilax glauca*), Beechdrops (*Epifagus virginiana*), White Cohosh or Dolls’-eyes (*Actaea pachypoda*), Showy Orchis (*Galearis spectabilis*), Common Jack-in-the-pulpit (*Arisaema triphyllum*), New York Fern (*Parathelypteris noveboracensis*), Southern Sanicle (*Sanicula smallii*), Canada sanicle (*Sanicula canadensis*), Wild Geranium (*Geranium maculatum*), Wild Yam (*Dioscorea villosa*), Solomon’s-seal (*Polygonatum biflorum*), Ruellia sp, Bloodroot (*Sanguinaria canadensis*), Virginia Snakeroot (*Aristolochia serpentaria*), Cranefly Orchid (*Tipularia discolor*), American Lovage (*Ligusticum canadense*), Striped Gentian (*Gentiana villosa*), Witchgrass (*Dicanthelium* sp), False Solomon’s-seal (*Maianthemum (=Smilacina) racemosa*), Arrowleaf Heartleaf (*Hexastylis arifolia*), Common Elephant’s-foot (*Elephantopus tomentosus*), Downy Rattlesnake Plantain (*Goodyera pubescens*), Dollarleaf (*Desmodium rotundifolium*), Common White Heart-leaved Aster (*Eurybia divaricata*), Southern Grapefern (*Sceptridium biterdatum*), Poison Ivy (*Toxicodendron radicans*), and Trumpet Creeper (*Campsis radicans*). See Photo 1 for a typical image of the Mesic Mixed Hardwod Forest. We also observed a small stand of Northern Maidenhair Fern (*Adiantum pedatum*) -- which is not common in our area -- amid the tens of thousands of Broad Beech Fern (Photo 2 shows a patch of the Broad Beech Fern). We found Dolls’-eyes quite numerous on the slopes of the tract, seeing many dozens of scattered plants; this species is primarily montane in North Carolina, and is disjunct to a handful of counties in the far eastern Piedmont. Showy Orchis is infrequent, but not rare, in Wake County (Harry LeGrand, personal communication). Further inventory would be warranted for additional uncommon or rare species, including Ginseng (*Panax quinquefolius*) and Yellow Lady’s-slipper Orchid (*Cypripedium parviflorum*). As noted above, this natural community is mapped conservatively; it extends on some of the slopes beyond its mapped boundaries, but is not as high of quality in these areas (e.g., is less mature or contains a higher proportion of invasive exotic species). Also, toward the tops of some of the slopes, the habitat transitions to other natural communities such as Dry-Mesic Oak-Hickory Forest; several such areas were observed, all of limited extent.

Floodplain Pools

Two Floodplain Pools were noted during the site visits, one of which straddles the property boundary. Both examples of the natural community were in what appear to be the former channel of Middle Creek. USGS topo quad maps still show this to be the channel, but the channel actually is to the north. The larger Floodplain Pool is roughly 150 feet long, and 40 to 50 feet wide, and contains Overcup Oak (*Quercus*



*lyrata*), Red Maple, and Sweetgum (*Liquidambar styraciflua*) in the canopy. Overcup Oak is scarce in the eastern Piedmont and grows mainly in floodplain pools and other areas of standing water. Other species of note in this community include Persimmon (*Diospyros virginiana*), Southern Sugar Maple, American Elm (*Ulmus americana*), Swamp Tupelo (*Nyssa biflora*), Possum-haw (*Ilex decidua*), Black Haw (*Viburnum prunifolium*), Sensitive Fern (*Onoclea sensibilis*), Muscadine Grape (*Vitis rotundifolia*), Common Greenbrier (*Smilax rotundifolia*), Trumpet Creeper, Asa Gray's Sedge (*Carex grayi*), Clearweed (*Pilea pumila*), American Holly (*Ilex opaca*), False Nettle (*Boehmeria cylindrica*), Bugleweed (*Lycopus virginicus*), Privet (*Ligustrum sinense*), Lady Fern (*Athyrium asplenoides*), Netted Chainfern (*Woodwardia areolata*), Ditch Stonecrop (*Penthorum sedoides*), and a significant amount of Japanese Stiltgrass (*Microstegium vimineum*). The smaller Floodplain Pool is located to the southeast, and has Green Ash (*Fraxinus pennsylvanica*), Red Maple, *Carex* sp., and Ironwood. There is a ditch that connects the two Floodplain Pools. The ditch is about four feet across and three feet deep. There is a footpath on the property that appears to be regularly used, and the path extends off the property, connecting the two separate pieces. Both Floodplain Pools are visible from this footpath.

**Piedmont Low-Elevation Headwater Seepage Swamp and Low Elevation Seeps**  
Piedmont Low-Elevation Headwater Seepage Swamp is the natural community assigned by the Carolina Vegetation Survey (CVS) team that conducted a vegetation plot survey on the property July 2011. They also used the National Vegetation Classification system name of *Acer rubrum* var. *trilobum* / *Viburnum nudum* var. *nudum* / *Osmunda cinnamomea* - *Saururus cernuus* - *Impatiens capensis* Forest. The directions for the plot are “About 200 m upstream (Middle Creek from Barber Bridge Road) at base of steep hillside.” The conduit marking the boundaries of the plot were not re-located in the field, but the lat-long coordinates associated with the plot match the location of a seepage area as shown in Map 3. The canopy of the CVS plot was dominated by Tulip Poplar, Green Ash, Sweetgum, Slippery Elm (*Ulmus rubra*), Umbrella Magnolia, and Red Maple. Spicebush (*Lindera benzoin*) was dominant in the shrub layer, which also contained Poison Ivy, Multiflora Rose (*Rosa multiflora*), Roundleaf Greenbrier, Virgin's-bower (*Clematis virginiana*), Ironwood, Chinese Privet, Winterberry (*Ilex verticillata*), Common Elderberry (*Sambucus canadensis*), Southern Wild Raisin (*Viburnum nudum*), Virginia-willow (*Itea virginica*), Switch Cane (*Arundinaria gigantea*), and Southern Swamp Dogwood (*Cornus stricta*). In addition to the Water Smartweed, the herb layer contained Lizard's-tail (*Saururus cernuus*), Common Jack-in-the-pulpit, False Nettle, Mitchell's sedge (*Carex mitchelliana*), Hooked Buttercup (*Ranunculus recurvatus*), Canada Sanicle, Sweet-scented Bedstraw (*Galium triflorum*), Autumn bluegrass (*Poa autumnalis*), Canada Enchanter's-nightshade (*Circaea canadensis*), Broad Beech Fern, Southern Lady Fern (*Athyrium asplenoides*), Christmas Fern, Wreath Goldenrod (*Solidago caesia*), Small Green Wood Orchid (*Platanthera clavellata*), Smooth-sheathed Sedge (*Carex laevivaginata*), Netted Chain Fern, Climbing Dogbane (*Thyrsanthella difformis*), Cinnamon Fern (*Osmundastrum cinnamomeum*), Sensitive Fern, Fowl Mannagrass (*Glyceria striata*), and American Strawberry-bush

(*Euonymus americanus*). Asterisks in the plant list below indicate species from the plot noted by the Carolina Vegetation Survey, but not recorded by May-July 2016 field observations.

The May-July 2016 survey did observe a number of Low Elevation Seeps similar in landscape position (i.e., at the toe of the slope), to the Low Elevation Seepage Swamp referenced above. The locations for these seeps are shown on Map 3. Unfortunately, two of the seeps observed also contained old dump sites. However, the others were of decent quality, if not extensive. The canopies contained Green Ash, American Beech, Sweetgum, Tulip Poplar, and Umbrella Magnolia (in the sub-canopy). The midstory and vine/shrub layer was not dense, but contained Common Elderberry, Trumpet Creeper, Pinxterflower (*Rhododendron periclymenoides*), Poison Ivy, and some Japanese Honeysuckle. The herb layer included Jack-in-the-pulpit, Lizard's-tail, *Carex* spp., Arrow-arum (*Peltandra virginica*), and White Turtlehead (*Chelone glabra*). See Photo 4 for an image from one of the seeps.

**Piedmont/Mountain Semipermanent Impoundment and Piedmont Swamp Forest**

Photo 5 is looking across one of the two extensive wetlands on the property that occur in the low gradient areas close to Middle Creek. Evidence of beaver activity was observed, and likely contributes to the character of the natural community. The center of the higher quality natural community south and west of Middle Creek appears to be permanently flooded, without much vegetation other than what appears to be Waterpepper (*Persicaria hydropiperoides*), with other Smartweeds (*Polygonum/Persicaria* spp.) observed in lesser abundance, and grading outward to include Buttonbush (*Cephalanthus occidentalis*), Swamp Rose (*Rosa palustris*), Virginia-willow (*Itea virginica*), and a number of herbs, including Lizard's-tail, False Nettle, Long-fringed Sedge (*Carex crinita*), Marsh Dewflower (*Murdannia keisak*), Southern Water-plantain (*Alisma subcordatum*), Water-purslane (*Ludwigia* sp), Walter's Marsh St. John's-wort (*Hypericum walteri*), *Carex* spp., Water-hemlock (*Cicuta maculata*), *Juncus* sp., and Virginia Dayflower (*Commelina virginica*). This is the portion of this wetland that is the Piedmont/Mountain Semipermanent Impoundment natural community. Moving out from the area that is permanently flooded toward the edge, trees begin to form a canopy. Among these are Red Maple, Tag Alder (*Alnus serrulata*), Black Willow (*Salix nigra*), River Birch (*Betula nigra*), Overcup Oak, and Persimmon. There is an area that transitions to a good example of the Piedmont Swamp Forest natural community, as shown in Photo 6. This habitat has a closed canopy dominated by Red Maple, with Virginia-willow, Winterberry (*Ilex verticillata*), and Swamp Tupelo (*Nyssa biflora*) in the understory, and numerous clumps of sedges and Lizard's-tail, as well as Short-bristled Horned Beaksedge (*Rhynchospora corniculata*). Further out from the permanently flooded area, and to the west, is where we observed Log Fern (*Dryopteris celsa*) and Crested Wood-fern (*Dryopteris cristata*). We found a single clump of the Crested Wood-fern with 2-3 stems, in a floodplain that has quite a few species of ferns. This is at or near the southern edge of the range of this northern species, and it is not widely known from Wake County (Harry LeGrand, personal communication). The Log Fern (*Dryopteris*



*celsa*) is also uncommon for Wake County. We saw maybe 25 or more clumps of this infrequent fern. Photo 7 shows the area where we observed these two ferns, and other species in this area included River Birch, Spicebush (*Lindera benzoin*), Silky Dogwood (*Cornus amomum*), Netted Chain Fern, Cinnamon Fern (*Osmundastrum cinnamomeum*), Royal Fern (*Osmunda spectabilis*), Spinypod or Milkvine (*Matelea* sp.), and Orange Jewelweed (*Impatiens capensis*).

The description above is for the portion of the property south of Middle Creek and closest to Barber Bridge Road, and that area will be recommended to the NC Natural Heritage Program as an area with exemplary natural communities. The extensive wetland north of Middle Creek is similar in its physical characteristics, but is not as high in quality and seems to be under greater threat from invasive exotic species. Again, there are areas of open water dominated by Smartweed (*Polygonum/Persicaria* spp.) in the deeper areas, then grading out from the center/deep areas to include other species such as Cut Grass (*Leersia* sp.), *Carex* spp, False Nettle, Virginia Dayflower, Trumpet Creeper, Switch Cane, *Juncus* sp., Bulrush (*Scirpus* sp.), False Nettle, Arrow-arum, Eastern Rose-mallow (*Hibiscus moscheutos*), River Oats (*Chasmanthium latifolium*), and *Microstegium*. The composition changes considerably throughout, as can be seen in the differences between Photos 8 and 9. The tree canopy (found mostly on the edge of the natural community) includes River Birch, Black Willow, Red Maple, Water Oak (*Quercus nigra*), Tulip Poplar, Loblolly Pine (*Pinus taeda*), Sweetgum, Swamp Chestnut Oak (*Quercus michauxii*), American Elm, Green Ash, and Willow Oak (*Quercus phellos*). There is “upland” interspersed among the mapped Piedmont/Mountain Semipermanent Impoundment and Piedmont Swamp Forest on the north side of Middle Creek, but as can be seen in Photos 10 and 11, this is an extensive flat, wet area as indicated by standing water and the plants associated. Based on 1981 aerial photos, (see Map 4), this area is recovering or regenerating from past land use where it was largely cleared. The regenerating canopy includes Loblolly Pine, Willow Oak, Sweetgum, Red Maple, Swamp Chestnut Oak, American Elm, and Tulip Poplar. In addition to the Cane in the understory, there is Persimmon, Privet, and notable vines, including abundant Common Greenbrier, as well as Trumpet Creeper, Poison Ivy, Virginia Creeper, Japanese Honeysuckle, and Grape (*Vitis* sp.). Numerous Sedges (*Carex* spp.) are in the herb layer, as well as Jack - in-the-pulpit (*Arisaema triphyllum*), *Microstegium*, Cleavers (*Galium aparine*), Witchgrass (*Dicanthelium* sp.), and Sericea (*Lespedeza cuneata*).

**Piedmont Alluvial Forest**

Photo 12 shows a photo along Middle Creek. The property contains a portion of a good quality natural community that extends onto adjacent property. We observed numerous large Cherrybark Oak (*Quercus pagoda*), some over 30 inches dbh, as well as large American Beech, Swamp Chestnut Oak (*Quercus michauxii*), Willow Oak (*Quercus phellos*), Water Oak (*Quercus nigra*), and Tulip Poplar. Also noted were River Birch, Sweetgum, Southern Sugar Maple, Bitternut Hickory (*Carya cordiformis*), Black Gum, Ironwood, Eastern Red Cedar (*Juniperus virginiana*), American Holly, White Ash, Northern Red Oak, Southern Red Oak, Loblolly Pine, Green Ash, Tree-of-Heaven (*Ailanthus altissima*), Sourwood (*Oxydendrum arboreum*), Umbrella magnolia, Horsesugar (*Symplocos tinctoria*), Southern

Highbush Blueberry (*Vaccinium corymbosum*), American Elm, Privet, and American Hop-hornbeam (*Ostrya virginiana*). The herb/vine layer was sparse in a few places, but otherwise was fairly dense, and contained River Oats (*Chasmanthium latifolium*), Japanese Honeysuckle, *Carex* spp., Poison Ivy, Common Greenbrier, Christmas Fern, *Microstegium*, Parsley Hawthorn (*Crataegus marshallii*), Trumpet Creeper, *Rubus* sp., Virginia Creeper, Orange Jewelweed (*Impatiens capensis*), Yellowroot (*Xanthorhiza simplicissima*), Devil's Beggar-ticks (*Bidens frondosa*), Few-bracted Beggar-ticks (*Bidens discoidea*), Partridgeberry (*Mitchella repens*), Forest Bedstraw (*Galium* sp.), Crossvine, Elderberry, Spotted Wintergreen (*Chimaphila maculata*), Grape (*Vitis* sp.), Aster sp., *Dicanthelium* spp., Rattlesnake Fern (*Botrychium virginianum*), and White Avens (*Geum canadense*). As noted above, the floodplain property that connects these two properties looked to be very high quality forest. If the landowner were contacted, and the property surveyed thoroughly, it is likely that this would be another natural community recommendation to the NC Natural Heritage Program.

Of the natural communities mapped, the Piedmont Alluvial Forest is the habitat that seemed to be more impacted by invasive exotic species, particularly Japanese Stiltgrass (*Microstegium*), Multiflora Rose (*Rosa multiflora*), Chinese Privet, and Japanese Honeysuckle. The Privet in particular seems to worsen as one goes upstream from Barber Bridge Road.

There is one interesting set of natural features within this mapped area, shown in Photo 13; this photo shows what appears to be an abandoned channel meander from Middle Creek, which seems to have changed course in the wide floodplain on more than one occasion. There were several of these clustered in one area -- as seen in the aerial photo that is the background for Map 1 -- and some were holding a fair amount of water.

**Cropland and Unmapped Habitats**

The extent of cropland is shown on Map 3. These areas were actively being farmed, and not pastured. Some of these fields were surprisingly wet, and others were close to stream channels. Not much survey time was spent in those areas, other than to note a few ruderal species associated with disturbed areas, such as Ivyleaf Morning-glory (*Ipomea hederacea*) and Broadleaf Pink Purslane (*Portulaca amilis*).

There is a fairly large amount of forested area on the property not mapped to a particular habitat type. Much of this is hardwood and pine successional forest, with patches of more mature forest interspersed; these patches of mature forest are on the small side to map as natural communities. In much of the forested area not mapped, such as shown in Photo 14, the trees are young, with average dbh approximately four inches, and the canopy is closed. The forest contains Red Maple, White Oak, Loblolly Pine, American Beech, Sweetgum, Southern Red Oak, Hickory spp., Tulip Poplar, Sourwood, Northern Red Oak, and American Holly in the canopy. The relative abundance of hardwoods was notable, as were the occasional larger tree, including some nice individual oaks and hickories. Umbrella Magnolia was



observed in numerous areas outside of the natural communities mapped above. Close to the streams, invasive exotic species became much more abundant.

There are examples of more mature forest patches worth noting, such as the steep slopes on the western portion of the property. For instance, Photo 15 shows a Pignut Hickory (24 inch dbh) set in a forest with American Beech, white and red oaks, and other hickories in the canopy, and Umbrella Magnolia, Flowering Dogwood, and American Holly in the understory. The herb layer included Christmas Fern and Ebony Spleenwort (*Asplenium platyneuron*), Arrowleaf Heartleaf (*Hexastylis arifolia*), Muscadine Grape (*Vitis rotundifolia*), *Desmodium* sp., and even Mayapple (*Podophyllum peltatum*) close to the (incised) stream channel. However, the slopes with mature canopy are narrow bands of habitat, and in many cases, houses can be seen at the top. The development at the top of the slopes appears to be impacting the property in a number of ways -- including increased edge effect and some informal footpaths -- but more notably in the form of erosion. Several signs of erosion were observed, including gullies such as the one in Photo 16.

Erosion, Invasive Exotic Species, and other disturbance

As noted above, erosion presumably resulting from land use at the top of the slope was observed in a number of parts of the property. During the site visits, construction-related sounds could be heard from multiple directions, and the property’s steep slopes would be at further risk from increased impervious surface and stormwater. The natural flow regime has been altered; stream channels are incised in quite a few places, and bank slumping was observed (see Photo 17).

The impact of invasive exotic species has been noted previously, but it is important to emphasize the threat of invasive species to the quality of native habitat. Invasive exotic species are noted in the plant list below, as well as relative abundance on the property. The spread of invasive plant species is likely tied to, or exacerbated by, disturbance of habitat from logging or land clearing, flooding (scouring and deposition), and similar events. A neighbor remarked that one of the reasons he had wanted to know what we were doing is that he had observed unusual activities, including one event where people were dropping off rabbits that they did not want. Rabbits would not likely be a threat to the property’s ecological integrity, but it highlights the potential for invasive animal species.

Informal trails on the property have also been mentioned previously. We also observed old roadbeds, deer stands, target shooting sites (Photo 18), structure remnants such as concrete from an old foundation, and dump piles (Photo 19). Locations for many of these features are shown in Map 3. The old roadbeds are not mapped, but those encountered seem stable, and mostly vegetated. One of the more interesting is shown in Photo 20, which is a path maintained through a dense thicket of Privet. There are also ditches in the wetter portions of the property, particularly the area north of Middle Creek. Similar to the old roadbeds, these appear stable.

PLANTS NOTED:

Canopy	
American Beech (Fagus grandifolia)	
American Elm (Ulmus americana)	
Bitternut Hickory (Carya cordiformis)	
Black Walnut (Juglans nigra)	
Black Willow (Salix nigra)	
Cherrybark Oak (Quercus pagoda)	
Green Ash (Fraxinus pennsylvanica)	
Loblolly Pine (Pinus taeda)	
Mockernut Hickory (Carya alba)	
Northern Red Oak (Quercus rubra)	
Overcup Oak (Quercus lyrata)	
Pignut Hickory (Carya glabra)	
Red Maple (Acer rubrum)	
River Birch (Betula nigra)	
Sourwood (Oxydendrum arboreum)	
Southern Red Oak (Quercus falcata)	
Southern Sugar Maple (Acer floridanum)	
Swamp Chestnut Oak (Quercus michauxii)	
Sweetgum (Liquidambar styraciflua)	
Tulip Poplar (Liriodendron tulipifera)	
Water Oak (Quercus nigra)	
White Ash (Fraxinus americana)	
White Oak (Quercus alba)	
Willow Oak (Querus phellos)	
Understory	
American Hazelnut (Corylus americana)	
American Holly (Ilex opaca)	
Black Gum (Nyssa sylvatica)	
Box Elder (Acer negundo)	
Eastern Hop-hornbeam (Ostrya virginiana)	
Flowering Dogwood (Cornus florida)	
Horsesugar (Symlocos tinctoria)	
Ironwood (Carpinus caroliniana)	
Persimmon (Diospyros virginiana)	
Princess Tree (Paulownia tomentosa)	Exotic
Slippery Elm (Ulmus rubra)	



Redbud (Cercis canadensis)	
Sassafras (Sassafras albidum)	
Serviceberry (Amelanchier arborea)	
Southern Sugar Maple (Acer floridanum)	
Swamp Tupelo (Nyssa biflora)	
Tree-of-Heaven (Ailanthus altissima)	Exotic; only one noted
Umbrella Magnolia (Magnolia tripetala)	Abundant in understory of Mesic Mixed Hardwood Forest
Winged Elm (Ulmus alata)	
Shrub Layer	
American Strawberry-bush (Euonymus americana)	
Arrow-wood (Viburnum dentatum)	
Autumn-olive (Elaeagnus umbellata)	Exotic
Bigleaf Snowbell (Styrax grandifolius)	
Black Haw (Viburnum prunifolium)	
Buttonbush (Cephalanthus occidentalis)	
Chinese Privet (Ligustrum sinense)	Exotic; abundant in patches
Common Wax-myrtle (Morella cerifera)	
Devil's-walking-stick (Aralia spinosa)	
Dwarf Pawpaw (Asimina parviflora)	
Eastern Red Cedar (Juniperus virginiana)	
Elderberry (Sambucus canadensis)	
Groundsel-tree (Baccharis halimifolia)	Roadside
Hillside Blueberry (Vaccinium pallidum)	
Inkberry (Ilex glabra)	Roadside
Mapleleaf Viburnum (Viburnum acerifolium)	
Mountain Laurel (Kalmia latifolia)	
Multiflora Rose (Rosa multiflora)	Exotic
One-flower Hawthorn (Crataegus uniflora)	
Pinxterflower (Rhododendron periclymenoides)	
Possum-haw (Ilex decidua)	
Silky Dogwood (Cornus amomum)	
Southern Black Haw (Viburnum rufidulum)	
Southern Highbush Blueberry (Vaccinium corymbosum)	
Southern Wild Raisin (Viburnum nudum)	
Sparkleberry (Vaccinium arboreum)	
Swamp Rose (Rosa palustris)	
Switch Cane (Arundinaria tecta)	
Tag Alder (Alnus serrulata)	
Winged Sumac (Rhus copallina)	

Winterberry (Ilex verticillata)	
Witch-hazel (Hamamelis virginiana)	
Yellowroot (Xanthorhiza simplicissima)	
Vines	
Carolina Jessamine (Gelsemium sempervirens)	
Catbrier (Smilax bona-nox)	
Common Greenbrier (Smilax rotundifolia)	
Coral Honeysuckle (Lonicera sempervirens)	
Crossvine (Bignonia capreolata)	
English Ivy (Hedera helix)	Exotic, one patch noted
Japanese honeysuckle (Lonicera japonica)	Exotic; widespread
Muscadine (Vitis rotundifolia)	
Poison Ivy (Toxicodendron radicans)	
Spinypod (Matelea gonocarpa)	Roadside
Summer Grape (Vitis aestivalis)	
Trumpet Creeper (Campsis radicans)	
Virginia Creeper (Parthenocissus quinquefolia)	
Whiteleaf Greenbrier (Smilax glauca)	
Herb Layer	
American Lopseed (Phryma leptostachya)	
American Lovage (Ligusticum canadense)	
Arrow-arum (Peltandra virginica)	
Arrowleaf Heartleaf (Hexastylis arifolia)	
Asa Gray's Sedge (Carex grayi)	
Aster spp.	
Autumn bluegrass (Poa autumnalis)*	
Beard-tongue (Penstemon laevigatus)	
Beechdrops (Epifagus virginiana)	
Bloodroot (Sanguinaria canadensis)	
Boneset (Eupatorium perfoliatum)	
Broad Beech Fern (Phegopteris hexagonoptera)	
Broadleaf Pink Purslane (Portulaca amilis)	Exotic
Bugleweed (Lycopus virginicus)	
Bulrush (Scirpus sp.)	
Canada Enchanter's-nightshade (Circaea canadensis)*	
Canada sanicle (Sanicula canadensis)	
Carex spp	
Carolina Wild-petunia (Ruellia caroliniensis)	
Christmas Fern (Polystichum acrostichoides)	
Cinnamon Fern (Osmundastrum cinnamomeum)	



Cinquefoil (Potentilla canadensis)	
Clearweed (Pilea pumila)	
Cleavers (Galium aparine)	
Climbing Dogbane (Thyrsanthella difformis)	
Common Elephant’s-foot (Elephantopus tomentosus)	
Common Jack-in-the-pulpit (Arisaema triphyllum)	
Common White Heart-leaved Aster (Eurybia divaricata)	
Crane-fly Orchid (Tipularia discolor)	
Crested Wood-fern (Dryopteris cristata)	
Cutgrass (Leersia sp)	
Daisy Fleabane (Erigeron annuus)	Roadside
Devil's Beggar-ticks (Bidens frondosa)	
Dewberry (Rubus sp)	
Ditch Stonecrop (Penthorum sedoides)	
Dollarleaf (Desmodium rotundifolium)	
Dotted Smartweed (Persicaria punctata)	
Downy Rattlesnake Plantain (Goodyera pubescens)	
Dwarf Crested Iris (Iris cristata)	
Eastern Beardtongue (Penstemon laevigatus)	Roadside
Eastern Rose-mallow (Hibiscus moscheutos)	
Ebony Spleenwort (Asplenium platyneuron)	
False Nettle (Boehmeria cylindrica)	
False Solomon’s-seal (Maianthemum (=Smilacina) racemosa)	
Few-bracted Beggar-ticks (Bidens discoidea)	
Foamflower (Tiarella cordifolia)	
Forest Bedstraw (Galium circaezans)	
Fowl Mannagrass (Glyceria striata)*	
Giant Chickweed (Stellaria pubera)	
Goat’s-rue (Tephrosia virginiana)	Roadside
Golden Alexander (Thaspium barbinode)	
Green-and-gold (Chrysogonum virginianum)	
Hog Peanut (Amphicarpaea bracteata)	
Hooked Buttercup (Ranunculus recurvatus )	
Ivyleaf Morning-glory (Ipomea hederacea)	
Japanese Stiltgrass (Microstegium vimineum)	Exotic; dense in patches
Joe-Pye-Weed (Eupatorium maculatum)	
Juncus sp.	
Late Eupatorium (Eupatorium serotinum)	Roadside
Leafy Elephant’s-foot (Elephantopus carolinianus)	
Liriope (Liriope sp)	Exotic
Little Heartleaf (Hexastylis minor)	
Lizard’s-tail (Saururus cernuus)	

Log Fern (Dryopteris celsa)	
Long-fringed Sedge (Carex crinita)	
Lyreleaf Sage (Salvia lyrata)	
Marsh Dewflower (Murdannia keisak)	Exotic; locally abundant
Mayapple (Podophyllum peltatum)	
Mitchell's sedge (Carex mitchelliana)	
Morning Glory (Ipomoea sp.)	Exotic
Netted Chainfern (Woodwardia areolata)	
New York Fern (Parathelypteris noveboracensis)	
Northern Maidenhair Fern (Adiantum pedatum)	
Northern Three-lobed Bedstraw (Galium trifidum var. trifidum)	
One-flowered Bedstraw (Galium uniflorum)	
Orange Jewelweed (Impatiens capensis)	
Panic Grass (Panicum sp.)	
Partridgeberry (Mitchella repens)	
Pencil Flower (Stylosanthes biflora)	Roadside
Perfoliate Bellwort (Uvularia perfoliata)	
Plantain Pussetoes (Antennaria plantaginifolia)	
Pokeweed (Phytolacca americana)	
Rattlesnake Fern (Botrychium virginianum)	
Rattlesnake-root (Prenanthes sp.)	
Resurrection Fern (Pleopeltis michauxiana)	
River Oats (Chasmanthium latifolium)	
Roundleaf Thoroughwort (Eupatorium rotundifolium)	
Round-lobed Hepatica (Anemome americana)	
Royal Fern (Osmunda spectabilis)	
Running ground cedar (Diphasiastrum digitatum)	
Self-heal (Prunella vulgaris)	
Sensitive Fern (Onoclea sensibilis)	
Sericea (Lespedeza cuneata)	Exotic
Sessile-leaf Bellwort (Uvularia sessilifolia)	
Short-bristled Horned Beaksedge (Rhynchospora corniculata)	
Showy Orchis (Galearis spectabilis)	
Skullcap (Scutellaria elliptica)	
Skullcap (Scutellaria integrifolia)	
Slender Mountain-mint (Pycnanthemum tenuifolium)	Roadside
Smartweed (Polygonum or Persicaria spp.)	
Smooth Tick-trefoil (Desmodium laevigatum)	Roadside
Smooth-sheathed Sedge (Carex laevivaginata)*	
Solomon’s-seal (Polygonatum biflorum)	



Southern Grapefern (Sceptridium (=Botrychium) biternatum	
Southern Lady Fern (Athyrium asplenoides)	
Southern Sanicle (Sanicula smallii)	
Southern Water-plantain (Alisma subcordatum)	
Spinypod (Matelea sp.)	
Spotted Water-hemlock (Cicuta maculata)	
Spotted Wintergreen (Chimaphila maculata)	
St. Andrew’s-cross (Hypericum hypericoides)	
Striped Gentian (Gentiana villosa)	
Summer Bluet (Houstonia purpurea)	
Sweet-scented Bedstraw (Galium triflorum)	
Tick-trefoil (Desmodium paniculatum var. paniculatum)	Roadside
Velvety Tick-trefoil (Desmodium viridiflorum)	Roadside
Venus’s Looking-glass (Triodanis perfoliata)	
Violet (Viola sp)	
Virginia Dayflower (Commelina virginica)	
Virginia Lespedeza (Lespedeza virginica)	
Virginia Oak-leech (Aureolaria virginica)	
Virginia Snakeroot (Aristolochia serpentaria)	
Walter’s Marsh St. John's-wort (Hypericum walteri)	
Water-hemlock (Cicuta maculata)	
Waterpepper (Persicaria hydropiperoides)	Forms solid stands in openings
Water-purslane (Ludwigia sp)	
White Avens (Geum canadense)	
White Cohosh or Dolls’-eyes (Actaea pachypoda)	
White Milkweed (Asclepias variegata)	Roadside
White Turtlehead (Chelone glabra)	
Wild Geranium (Geranium maculatum)	
Wild Yam (Dioscorea villosa)	
Windflower (Thalictrum thalictroides)	
Witchgrass (Dicanthelium sp)	
Woodland Tick-trefoil (Desmodium nudiflorum)	
Wreath Goldenrod (Solidago caesia)	
Yellow Wild Lettuce (Lactuca canadensis)	Roadside

\*Observed in 2011 Carolina Vegetation Survey

ANIMALS NOTED:

Mammals	
White-tailed Deer	
Eastern Gray Squirrel	
Beaver	

Birds	
Acadian Flycatcher	
American Crow	
American Goldfinch	
American Redstart	
Barred Owl	
Belted Kingfisher	
Blue Jay	
Blue-gray Gnatcatcher	
Brown-headed Cowbird	
Brown-headed Nuthatch	
Carolina Chickadee	
Carolina Wren	
Common Grackle	
Common Yellowthroat	
Downy Woodpecker	
Eastern Wood-Pewee	
Fish Crow	
Great Blue Heron	
Great Crested Flycatcher	
Hairy Woodpecker	
Hooded Warbler	
Indigo Bunting	
Louisiana Waterthrush	
Mourning Dove	
Northern Cardinal	
Northern Parula	
Ovenbird	
Pileated Woodpecker	
Pine Warbler	
Prothonotary Warbler	
Red-bellied Woodpecker	
Red-eyed Vireo	
Red-shouldered Hawk	
Scarlet Tanager	
Summer Tanager	
Tufted Titmouse	
Turkey Vulture	
White-breasted Nuthatch	
White-eyed Vireo	
Wood Duck	
Wood Thrush	
Yellow-billed Cuckoo	



Yellow-throated Warbler	
Reptiles and Amphibians	
Cope's Gray Treefrog	
Eastern Box Turtle	
Eastern Newt (red eft)	
Green Frog	
Green Tree Frog	
Northern Cricket Frog	
Pickerel Frog	
toad (Fowler's)	
Odonates	
Blue-fronted Dancer ( <i>Argia apicalis</i> )	
Blue-tipped Dancer ( <i>Argia tibialis</i> )	
Common Whitetail	
Eastern Pondhawk	
Ebony Jewelwing	
Great Blue Skimmer	
Butterflies and Moths	
American Snout	
Appalachian Brown	
Carolina Satyr	
Clouded Skipper	
Dun Skipper	
Eastern Tiger Swallowtail	
Gemmed Satyr	
Lace-winged Roadside-skipper	
Least Skipper	
Little Glassywing	
Orange-patched Smoky Moth ( <i>Pyromorpha dimidiata</i> )	
Pearl Crescent	
Silver-spotted Skipper	
Sleepy Orange	Field edge
Zabulon Skipper	
Zabulon Skipper	



Photo 1. Mesic Mixed Hardwood Forest on slopes (Photo Point 1, Map 1)



Photo 2. Broad Beech Fern in Mesic Mixed Hardwood Forest





Photo 3. Floodplain Pool with Overcup Oak



Photo 4. Low Elevation Seep



Photo 5. Piedmont/Mountain Semipermanent Impoundment





Photo 6. Piedmont Swamp Forest with Red Maple canopy



Photo 7. Area where *Dryopteris celsa* and *Dryopteris cristata* were observed



Photo 8. Piedmont/Mountain Semipermanent Impoundment not dominated by Smartweed



Photo 9. Piedmont/Mountain Semipermanent Impoundment – Smartweed dominant





Photo 10. Cane and standing water indicating wetter soils



Photo 11. Wetland in forest regenerating from past land use



Photo 12. Middle Creek and Floodplain



Photo 13. One of several abandoned stream channels on the property





Photo 14. Young, dense forest with canopy mostly closed and sparse herb layer



Photo 15. Maturing forest, slopes on western edge of property



Photo 16. Erosion from top of slope; streets and houses out of view





Photo 17. Bank Slumping



Photo 20. Old roadbed maintained as a trail through dense Privet

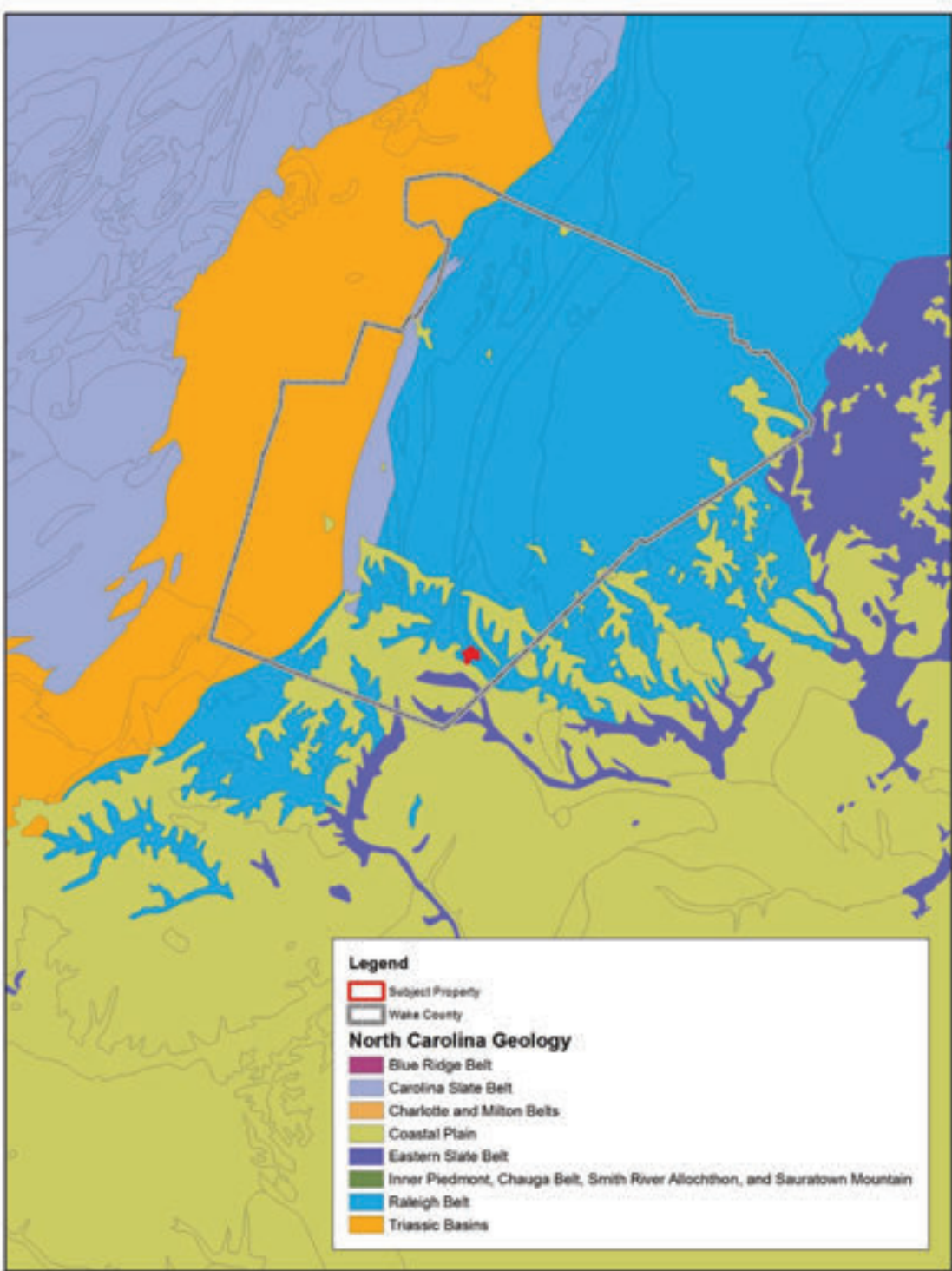


Photo 18. Target shooting area



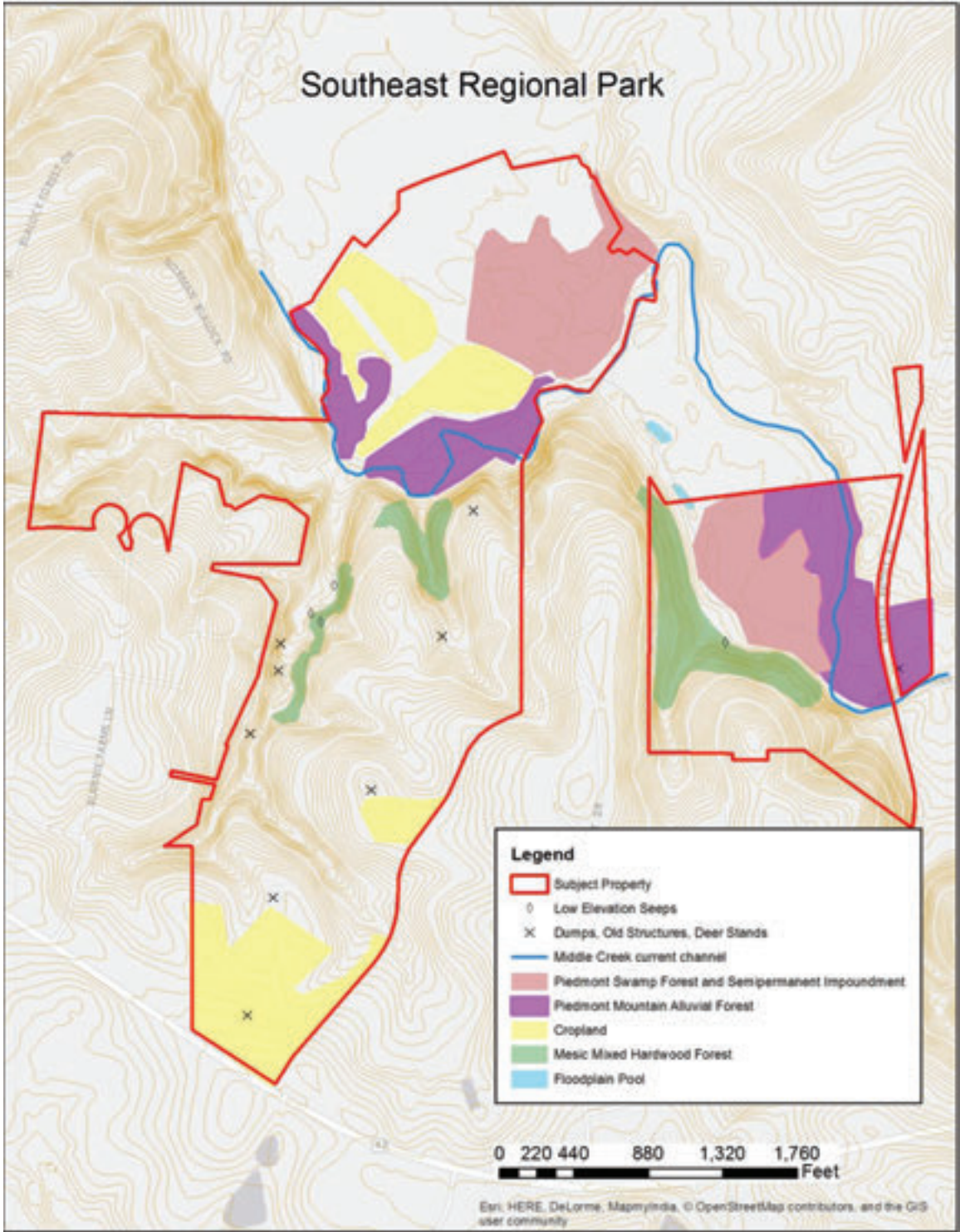


Map 1. Aerial Photo (ca 2015) with Photo Points

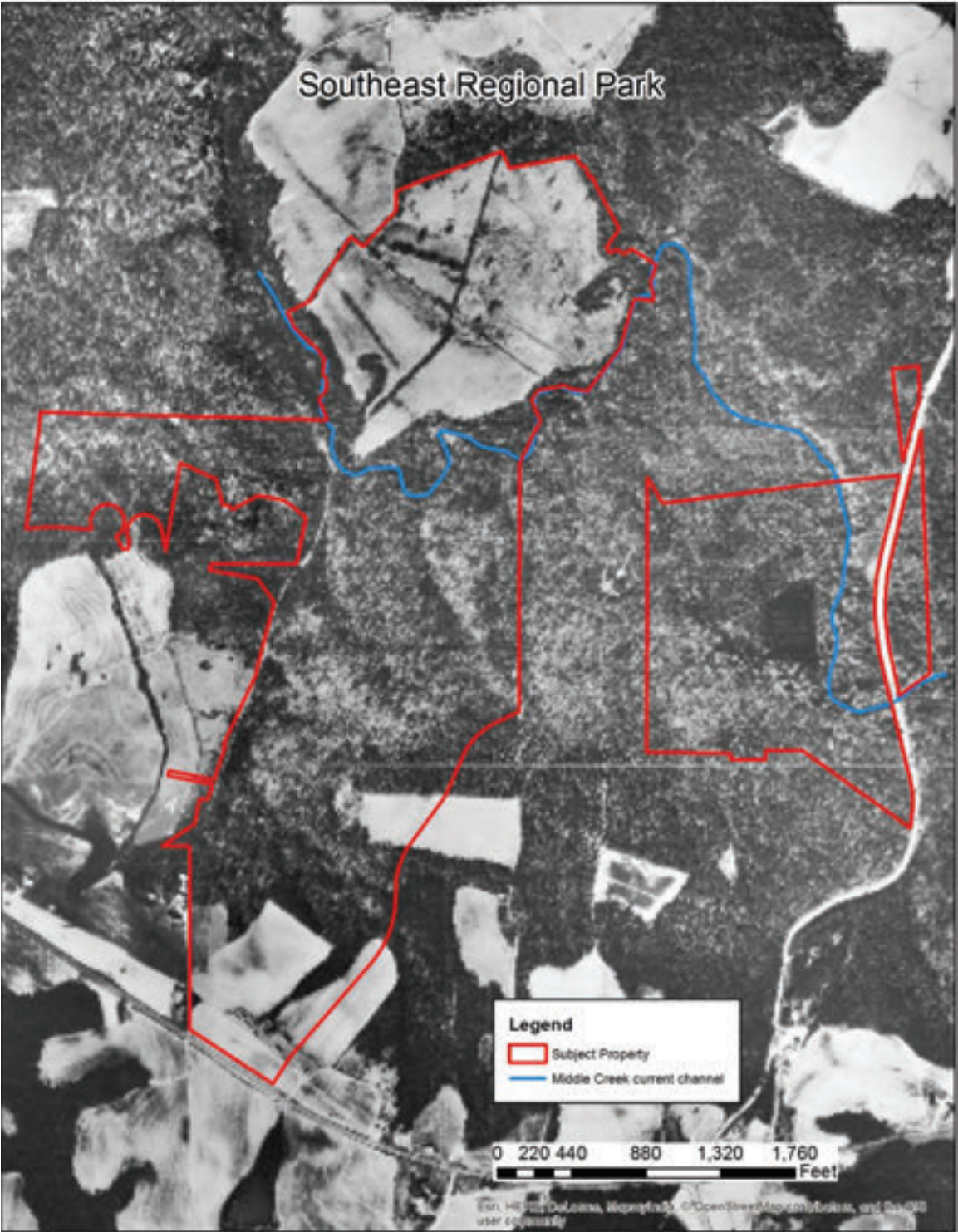


Map 2. North Carolina Geology Map showing property's proximity to Coastal Plain





Map 3. Two-foot contour map with natural communities and cropland mapped



Map 4. Aerial photo (ca 1981); note most of property north of Middle Creek is clear



## CONCLUSIONS:

The Southeast Regional Park property is ecologically significant for the collection of good to high-quality terrestrial natural communities, notably the Mesic Mixed Hardwood Forest, the aquatic habitat of Middle Creek it contains, and rare and regionally uncommon plant species. Further inventory will likely discover additional native biodiversity.

A good portion of Southeast Regional Park property contains successional forest, (about 120 acres, so almost 50%). The forested area, for the most part, appears to be regenerating from the recent logging, and the areas of dense, young forest will become less dense through natural competition and disturbance including wind, ice, pests, and fire. Management to maintain the integrity and ecological resilience of the property is recommended, to mitigate habitat fragmentation. Perhaps one of the more important management recommendations would be to monitor and control invasive exotic species, particularly within the high-quality areas, but also within the successional forest as those portions of the property transition to a more natural habitat, with increased value to native wildlife.

Another management recommendation for some of the more upland areas is low-intensity controlled burns to mimic natural processes and maintain forest composition and structure. Evidence of Longleaf Pine ecosystems was looked for as part of the survey, considering the proximity to the Coastal Plain, but no remnant Longleaf Pines were observed. Fire would advance upland portions of the property to mature hardwood forest conditions, or might release some species associated with Coastal Plain habitats.

There are numerous intermittent and perennial stream channels, and some small wetland features associated with these stream channels, all contributing to Middle Creek and its aquatic system. Many of these channels show signs of impact from upland properties. There are also ditches in some of the flatter portions of the property. The area north of Middle Creek that is largely inaccessible had almost no forest on it in 1981 aerial photos – it looked clear, except for the areas immediately along the stream, and the wettest areas, including old stream channels. The current fields occur in some very wet soils. Wide riparian buffers on all perennial stream channels with natural vegetation will improve ecosystem function and protect water quality. Because of the importance of Middle Creek as aquatic habitat, it is recommended that the floodplain, at least, be forested. The adjacent private property that connects the two Wake County properties and contains the Floodplain Pools is similar in abiotic factors (low-lying and flat), but it was forested in the 1981 aerial photos, and based on investigation from the edges, it is of very high quality, and would perhaps be a good reference for what the area north of Middle Creek could look like. The North Carolina Wildlife Resources Commission provides recommendations for both wetland and riparian habitats, including intermittent

channels, available in the document “Conservation Recommendations for Priority Terrestrial Wildlife Species and Habitats in North Carolina,” available at: <http://www.ncwildlife.org/Portals/0/Conserving/documents/ConservingTerrestrialHabitatsandSpecies.pdf>

Indicators of past land use are spread throughout the property. Depending upon the plans for the property, some of these elements, such as existing roadbeds, may be utilized as trails or firebreaks. Other elements, such as deeply incised channels or gullies (both of which are symptoms rather than direct impacts), or the presence of invasive exotic species, may require a “corrective” response to protect the natural resource and public benefits of the property.

The property exists in a matrix of existing development, rural land, and conservation lands. Due to its unusual shape and noncontiguous boundary, the property also has a significant amount of boundary, with some “hard edges” (abrupt transition from open cropland or suburban yard to forest) and little buffer, and perhaps more potential encroachment, just due to the greater number of neighbors. The number of adjacent landowners is increasing, and it could be beneficial to work with these neighbors to reduce impacts to the extent possible (i.e., stormwater management, and education about landscaping with native species, domestic pets’ impact on native wildlife, etc.). The two adjacent landowners encountered were very interested in the property, and appreciated its natural beauty; they likely represent many of the neighbors. Also, working with willing owners to protect adjacent additional property could help consolidate boundary.

The noncontiguous boundary, as well as steep slopes and extensive wetlands, may present some challenges to trail design. However, with appropriate design to avoid impact to sensitive or important natural resources, most of the property is suitable for footpaths. If additional inventory results in discovery of rare plant or animal species, it would be best to avoid or minimize disturbance to those areas.