

Little River Regional Park & Natural Area

MASTER PLAN

A Durham/Orange County Partnership



October 2021

Acknowledgements

This plan is the result of a collaborative effort between staff from Durham and Orange counties, and input from various advisory committees and the general public. The following contributed to the development of this Master Plan.



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Appendices

(To view appendices go to <https://www.orangecountync.gov/2830/Little-River-Regional-Park>)

- A. Management Plan for Little River Regional Park
- B. 2001 Little River Park Advisory Committee Recommendations on Allowed Uses in the Little River Regional Park and Natural Area
- C. Site Plan for Initial Construction (by Haden Stanziale)
- D. Clean Water Management Trust Fund Easement Deed
- E. Summary of Survey and Park Usage
- F. List of Programs Offered at Little River Park
- G. Plant and Wildlife List
- H. Detailed Description of Park Improvements

References

- A. Planning Documents:
 - 1. Little River Corridor Open Space Plan
 - 2. Orange County Comprehensive Plan 2030
 - 3. Durham County Comprehensive Plan
- B. Physical Studies
 - 1. 1999 Durham County Inventory of Natural Areas and Rare Species
 - 2. NC Natural Heritage Program Site Survey (2019-20)

Background

The Little River Regional Park and Natural Area is a 391-acre park jointly owned by Durham and Orange counties located along the county line. This master plan establishes a 20-year vision for the park and provides guidelines for its land management and any future developments for continued public use.

The process took into consideration Durham County's 2001 Little River Corridor Open Space Plan, the Orange County 2030 Parks and Recreation Master Plan, and other related documents; as well as the park's setting, natural resources and the region's recreational and educational needs. The plan will also serve as a tool for public presentations and applications for outside funding. Although comprehensive, the master plan – like the park – remains dynamic and will evolve over time. This plan will guide future park improvements, yet be flexible enough to change based on increased knowledge, experience, and changing public needs.

The Little River Regional Park and Natural Area (hereinafter, "Little River Park") opened to the public on December 5, 2004. It is the first joint partnership park between Durham and Orange counties. The park is funded by both counties and managed by the Orange County Department of Environment, Agriculture, Parks and Recreation. The park offers recreational opportunities with over seven miles of natural surface hiking trails, seven miles of dedicated single-track mountain biking trails, a playground, a 1/3-mile paved, accessible path with individual picnic sites, two large group picnic shelters, public restroom facilities, a large play meadow, pollinator garden, and a park office that includes educational displays and materials. The developed area of the park covers less than 15 acres of the total 391-acre property, and the remaining natural area includes some of the hiking trails, frontage along a 1.5-mile segment of the North Fork Little River, and is comprised of several distinct forest types. Biological Inventories of plant and bird species are extensive and include several regionally rare species. Inventories of the flora and fauna observed within the park are maintained by park staff.

The park is accessed from Guess Road (S.R. 1003) in northeastern Orange County, with the park entrance located approximately one mile north of the Durham–Orange county line. The park area is in both Durham and Orange counties with roughly 256 of the 391 acres in Durham County and 135 acres in Orange County. The majority of developed facilities are in Orange County.

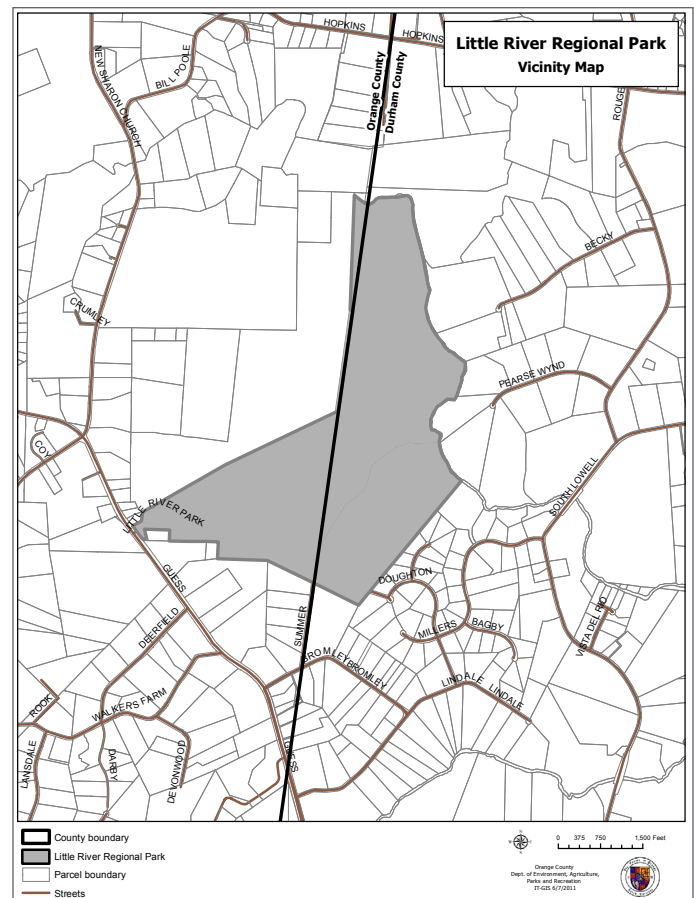


Figure 1
Context Map

Park History and Development

The property was not originally identified for use as a park. Beginning in 1998, Orange County, as part of a multi-government organization under the name of the Landfill Owners' Group, was charged with locating a site for a new construction and demolition (C&D) landfill for Orange County. The Landfill Owners' Group identified a 178-acre parcel located on Guess Road in Orange County (adjacent to the future Little River Park) as a potential site. A grass-roots volunteer group called People Opposed to the Pollution of the Little River (POPLR) mobilized against the proposed landfill location. This prompted the Orange County Board of Commissioners to revisit the siting of the C&D landfill, and in October 1999 the board voted unanimously to reject the plan for a landfill at this location.

Around that same time, George Newton, a neighboring landowner and philanthropist, donated an adjacent 391-acre tract to the Triangle Community Foundation, with the eventual proceeds of its subsequent sale to be used by the Foundation for philanthropic purposes. Durham County had been long interested in protecting land along the Little River, which supplies high-quality water to the Little River drinking water reservoir, and is known to have high wildlife habitat and high State Natural Heritage value. The Little River corridor was specifically identified by Durham County as a priority area for open space acquisition. With this in mind, the Triangle Land Conservancy (TLC) and the Eno River Association (ERA) decided to join forces to help protect this area and to create a potential 570-acre, two-county, regional park.

The original 178-acre potential landfill site was purchased by a group of local landowners (the Little River Land Company). In partnership with TLC and the ERA, Durham and Orange counties pursued negotiations with the Triangle Community Foundation to purchase the 391 acres that would comprise the new park. In the winter of 1999-2000 the two counties applied for and were awarded land acquisition funds from the NC Clean Water Management Trust Fund (\$370,000). TLC and ERA raised \$170,000 in private funds through a joint fund-raising campaign for land acquisition. An additional grant from the N.C. Parks and Recreation Trust Fund (\$250,000) assisted with the cost of land acquisition. In July 2001 each county purchased the land within its jurisdiction for a total of \$1,015,000 (\$2,600/acre). Soon afterwards, two more grants were awarded to assist



with park development: \$262,000 from the federal Land and Water Conservation Fund and \$50,000 from the NC Recreation and Trails Program.

In the fall of 2000, the counties formed an advisory committee to evaluate the property, assess appropriate uses for the park, and recommend what facilities were desired and appropriate for public use. The Committee incorporated its recommendations based on input from citizens and potential user groups in a final report that was presented to both county boards of commissioners. The Committee recommended allowing the following uses in the park: hiking/nature trails, picnic area/shelter, hard surface trail/picnic loop, playground, open play meadows, and fishing. The Committee also recommended allowing camping, horseback riding and mountain biking provided certain conditions were met (Appendix B).

The Durham–Orange Park Partnership

As described in the history, Little River Park is a jointly owned and managed park.

Each county owns the portion of the park within its jurisdiction, with Durham County owning 256 acres, and Orange County owning 135 acres. The counties contributed equally to the initial site development, and each county contributes equally to the park operating costs. Park operations are managed by Orange County. This park relationship is governed by an Interlocal Agreement adopted by both counties and renewed on a regular basis. The Interlocal Agreement mandates that the park is managed pursuant to a jointly adopted Master Plan (this document), Management Plan and Operating Guidelines. Annual priorities are determined based on the Master Plan and the Management Plan.

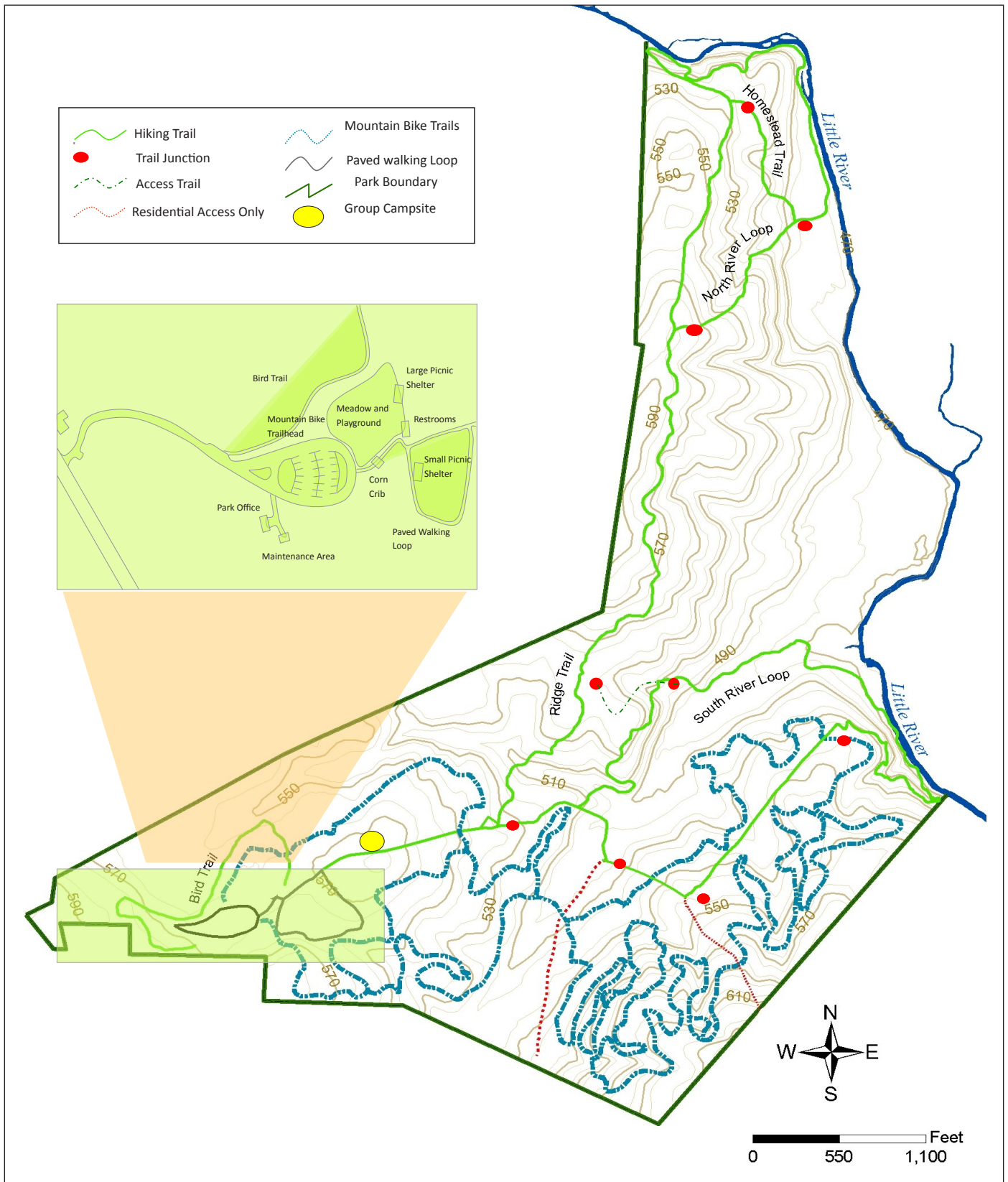


Figure 2
Current Park Map

Site Analysis/Current Conditions

This section will summarize the natural and cultural features that provide the basis for the park's uses and development potential. Restrictions on the park use, including easements and stream buffers, will also be described. The existing level of development and programming will be summarized as the framework for recommended park improvements.

During the park's first 15 years of operation, there were numerous improvements and facilities constructed, including 7 miles of hiking trails, 7 miles of biking trails, an accessible looped trail, two picnic pavilions, playground, parking lot, restrooms and park office.

Between 2001 and 2011 Durham and Orange counties also conducted several studies focusing on the park's archaeological and cultural resources, geology, and plant communities. The findings of those studies supplement other State and local natural resource inventories and reports.

The following reports helped guide the development of this section:

- "Cultural Resource Survey of the Little River Regional Park and Natural Area in Orange and Durham Counties, North Carolina." Linda France Stine and Deborah Joy, Legacy Research Associates, Inc. (2001).
- "Archaeological Testing Investigation at 310R547 Little River Regional Park and Natural Area Durham and Orange Counties, North Carolina." Deborah Joy and Amy Carruth, Legacy Research Associates, Inc. (2003).
- "Additional Cultural Resources Work for the Little River Regional Park in Orange and Durham Counties, North Carolina." Legacy Research Associates, Inc. (2009).
- "The (Brief) Geologic Story of the Little River with Reference to the Rocks of the Little River Park Area Kit." Phil Bradley, North Carolina Geological Survey (NCGS). (2011).
- "1999 Durham County Inventory of Important Natural Areas, Plants, and Wildlife." Stephen P. Hall and Robert D. Sutter. (1999).

- "An Inventory of Natural Areas and Wildlife Habitats for Orange County, North Carolina." Dawson Sather and Stephen P. Hall and (1988); Bruce Sorrie and Rich Shaw (2004).
- "Plant Communities and Management Plan for the Little River Regional Park." Brenda Wichmann, Wade Wall, and Andrew Walker. (2010).

Geology (Bradley, 2011)

Little River Park is located in the Carolina geologic terrane (Figure 3). The Carolina terrane underlies northern Orange and Durham counties, and consists of approximately 630- to 615-million-year-old metamorphosed crystalline rocks of volcanic and intrusive origin. Rocks of the present-day Carolina terrane were originally part of a volcanic island arc that formed over 630 million years ago off the coast of the ancient continent called Gondwana. These rocks were originally formed hundreds of miles from ancient North America (then called Laurentia) and through the process of plate tectonics accreted to what is now North America. The volcanic processes that produced these Carolina terrane rocks millions of years ago can be observed today on the modern-day volcanic island arcs of Japan, the Aleutian Islands and the island of Java.

The Carolina terrane rock formations present within Little River Park include the rock types shown in Figure 3. The southern portion of the park is underlain by mixed epiclastic-pyroclastic rocks that are interlayered with lavas of dacitic origin (Zhe/pl), while the rocks present in the northern portion of the park are lavas and tuffs (Zhdlt (u)). The rocks found in the northernmost portion of the park are andesitic to basaltic lavas and tuffs (Zhablt).

There are several locations within the Little River Park, easily accessible from the parking area and hiking trails, with rock outcrops that are good examples of the three consolidated rock types found in the park. Several of the locations listed below Figure 3 also demonstrate various geologic principles of interest.

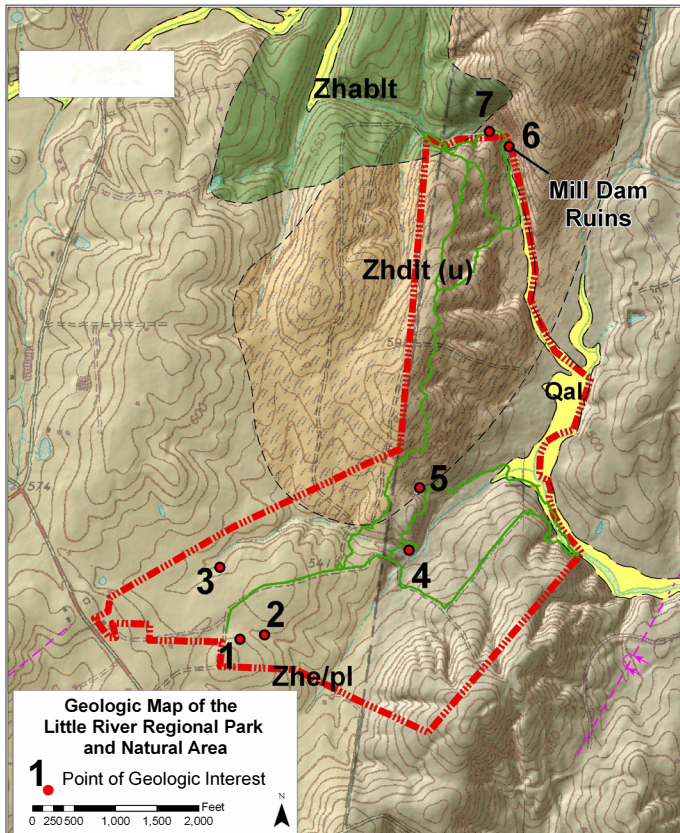


Figure 3
Map of Points of Geological Interest in Little River Park

Topography

Orange and Durham counties are located in north-central North Carolina. This area is within the eastern Piedmont topographic region, which extends from southern portions of New York into northern Alabama. The Piedmont is one of three geographic divisions in North Carolina and comprises almost half the land in the state. The state's Piedmont region begins along the southeastern slope of the Blue Ridge Mountains and continues eastward to the edge of the Coastal Plain. The Piedmont region generally consists of gently rolling hills. Elevations within Little River Park range from 470 feet above mean sea level along the North Fork Little River to 600 feet above mean sea level near the western property line of the park (Legacy, 2009).



Trail Location and Feature Description

1. **Bike Trail**
Fin-shaped outcrop of metamorphosed dacitic tuff on Bike Trail. Easily accessible location from parking area. (Zhe/pl)
2. **Paved Walking Loop**
Rounded outcrop of metamorphosed plagioclase crystal-rich tuffaceous sandstone. Located adjacent to Loop at intersection with Bike Trail. (Zhe/pl)
3. **Bird Trail**
Large fin-shaped outcrop of metamorphosed conglomerate. Fragments of rock are easily visible on surface of rock. (Zhe/pl)
4. **South River Loop**
Outcrop area of reddish-colored, metamorphosed tuffaceous sandstones, tuffs and dacites. (Zhe/pl)
5. **Access Trail**
Area of boulders, cobbles and small outcrops of reddish-colored metamorphosed sandstones and conglomerates near the geologic contact (location where rock type changes) between the Zhdlit (u) and Zhe/pl units on the Access Trail connecting the Ridge Trail to the South River Loop.
6. **North River Loop**
Outcrops and blocks used in construction of the former mill dam. (Zhdlit (u))
7. **North River Loop**
Fin-shaped outcrop of metamorphosed tuff located between trail marker 77 and 79 on the North River Loop trail. (Zhablt)

Hydrology and Soils

The Piedmont region has a complex pattern of streams and rivers, with the northern portions of Orange and Durham counties lie within the Neuse River Basin. The main rivers in this area are the Little River, Eno River and Flat River. These rivers all flow into Falls Lake, a major source of drinking water for the City of Raleigh, which in turn forms the Neuse River. The North Fork and the South Fork of the Little River meet to form the Little River approximately one mile southeast of Little River Park. The northern and eastern boundaries of Little River Park are formed by the North Fork Little River. Buffalo Creek feeds into the North Fork Little River along the eastern boundary of the park. An unnamed tributary flows northeastward through the middle region of the park before it joins the North Fork Little River.

Routine monitoring of fish and macroinvertebrate populations are conducted immediately downstream of Little River Park in the North Fork Little River by the NC Division of Water Resources (DWR). The most recent sampling events conducted by DWR in the North Fork Little River determined that the fish and benthic communities yielded “Good” ratings. In 2015, DWR staff also determined that this site possessed the “highest quality habitats of any of the sites in the Neuse Piedmont in 2015....no change since 2000 reflecting stable land use in the watershed; a typical high quality Carolina Slate Belt-type stream with riffles, runs, pools...”

The upland soils of Little River Park are generally silty loams in the soil series Nason, Herndon, Tatum, and Georgeville. These four soil series are generally widespread and are closely related to each other; they account for 76% of the site. There are a few isolated areas of the Iredell soil series. Iredell soils have higher pH and are weathered from parent material that tends to be higher in iron and magnesium, relative to the aforementioned soils. In the Piedmont, the Iredell soil series is also associated with a different suite of species that prefer to be on higher pH soils (Wichmann, Wall, and Walker; 2010).



Vegetation

Little River Park consists of four plant communities identified by Wichmann, Wall, and Walker (2010). Most of the park is in varying degrees of succession due either to previous logging or tilling for agriculture. The plant communities are summarized as:

1. Dry-Mesic Oak/Hickory Forest (DMOH):

This vegetation community accounts for 81% of the Little River Park. It occurs over vast areas of the upland slopes and flats. Most of the acreage is in varying degrees of succession, from pine-dominated to oak-dominated forest.

2. Mixed Mesic Hardwood Forest (MMH):

This community occupies the northern parts of the park and along the bluffs on the west side of the North Fork Little River.

3. Piedmont/Low Mountain Alluvial Forest (PAF):

This community type occurs along rivers and other low-lying areas in the Piedmont where the rivers are not large enough to create distinct landforms and vegetation zones. This community occupies 6% of the park, mainly along the North Fork Little River and several small tributaries.

4. Upland Depression Swamp Forest (UPS):

This community type was only found at one location at the park and it only occupied 0.2 acres. This community type is generally of small size in the Piedmont, occurring in poorly drained upland flats or depressions where seasonal pooling of water occurs due to an impermeable layer of clay hardpan or bedrock.

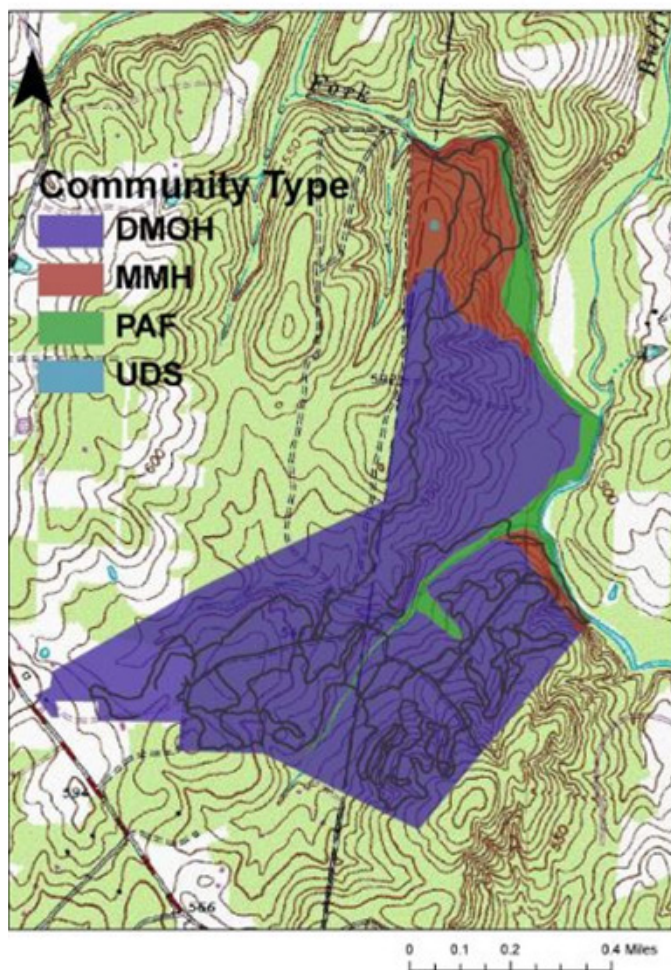
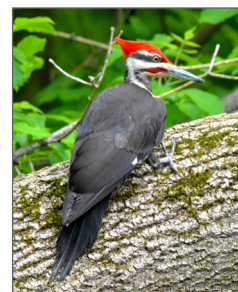


Figure 4
Plant Communities

Wildlife

The Orange and Durham county natural heritage inventories compiled an extensive list of the wildlife observed along the length of the Little River Corridor. These reports list several significant findings regarding important aquatic species, including populations of three freshwater mussels listed by the state as threatened: the triangle floater, the squawfoot, and the notched rainbow. Two other freshwater populations listed as threatened and candidates for federal listing were observed: the yellow lampmussel and the Atlantic pigtoe. The Orange County inventory notes populations of pinewoods shiner (state significant) and Eastern lamp mussel (state threatened) in stretches of the North Fork Little River upstream from the park. The Durham County report also recorded 36 species of fish within the Little River, including eight species that are indicators of high-quality waters.

The authors note that “extensive, good quality woodland tracts such as those in the Little River Uplands are almost gone in the county. This area is large enough for excellent wildlife habitat.” The presence of otter, beaver, and red-bellied water snakes within the Little River Corridor, all of which, according to the report, moved up from the Eno River Valley, indicates that the corridor is still negotiable by at least semi-aquatic species. The report also notes that black vultures, state listed as Special Concern, and striped skunks, a regionally rare species, are also frequently observed along the upper reach of the Little River. Other wide ranging species associated with fairly large tracts of undeveloped habitat that were noted within this area of the Little River Corridor including wild turkey, barred owls, pileated woodpeckers, black vulture, striped skunk, and long-tailed weasels.



Since 2004 park staff has kept lists of all species observed and identified in Little River Park. To date, they have documented 99 bird species (a third are considered migratory), 44 moth and butterfly species, 30 reptiles and amphibians, 13 spiders, 49 insects, 3 mushrooms and 15 mammals (not including bats). A much larger, more-detailed list of the park flora was created by park staff early in the development stage of the park and has been augmented over the years with assistance from knowledgeable members of the public. These lists, however, are not complete. There are numerous sightings and observations that could not be identified (especially insect species). There is no staff-maintained list of freshwater invertebrates although numerous decapods, whirligig beetles (*Gyrinus natator*), damselfly (*Zygoptera* spp.) and other unidentified species have been observed.

The use of the motion cameras has proved to be extremely valuable documenting nocturnal wildlife species such as striped skunk, opossum and raccoon. Species such as beaver, deer and coyote have also been captured during daylight hours along the North Fork Little River. Some species of note captured are river otter and bobcat, the latter on just one occasion. The use of this technology by future studies and programs can aid in the identification of additional species in the park. Further studies and programs will additional species.

Cultural/Archaeological Resources

Three cultural/archaeological resource surveys were conducted on the Little River Park property by Legacy Research Associates, Inc. The first, a cultural resource survey for a selected area of the 391 acres was conducted in 2001 prior to the development of the park. The second, in 2003, was an archaeological test of a potential cultural site (identified in the 2001 survey) that was located within the area for the proposed entrance road for the park. The final survey (2009) was a follow up to the 2001 survey, conducted to determine the significance of several sites identified in 2001.

The 2001 survey was commissioned by Orange County with the purpose of identifying areas of cultural significance that should be preserved prior to the creation of a site plan for the park. Twelve new sites were identified during the survey, two previously recorded sites were revisited, and two isolated finds of cultural material were recorded. Of these, there were three large prehistoric scatters that are relatively rare in this region and recommended for further study. The other small prehistoric sites and multi-component scatters were not judged worthy of nomination to the National Register of Historic Places (NRHP). In addition to the further work at the three sites mentioned, this report recommended that two of the prehistoric sites were judged to be deserving of protection through avoidance.

The 2003 archaeological testing done in the area of the proposed entrance road was based on findings of the 2001 survey. The 2003 test was of only one identified site of potential significance and was conducted to ensure the construction of the entrance road was appropriately placed in the site plan. The survey found this site contained an unknown prehistoric lithic component and a late 19th-to-20th century historic artifact scatter comprised of glass and ceramics, very likely associated with the abandoned Laws farmstead nearby. The survey concluded that the portion of historic component that fell within the proposed road development area was extensively disturbed, not unique, had limited information potential, and did not meet the criteria for eligibility for the NRHP.

The 2009 cultural resources survey was commissioned by Durham County to follow up on four sites identified in the 2001 survey. These included two house sites, a mill site, a seasonal spring with minor fieldstone enhancements, and an historic river crossing. The purpose



of the work was to assess the historic significance of the sites, to determine the relationship between them, and to provide recommendations for site protection and interpretation. Individually, according to the report, these sites do not meet the criteria for NRHP eligibility. Together, however, they could be eligible for the NRHP as an Archaeological District as examples of agricultural, domestic, industry (milling), and transportation activities in the late 19th/early 20th centuries. The report recommends several possible methods of public interpretation of these four sites. These include providing a historic context of the area, adding historic information to the park's website, posting interpretative signs at the sites, creating a historic archaeological tour of the sites, or creating a brochure for park patrons describing these sites, their significance, and how the area surrounding these prior settlements has been relatively unchanged since they were in use.

Additional historic elements in the park that have not been assessed include a former public roadbed dating back to the early 1900s that parallels the hiking trail in the southern portion of the property. The public road shows up on the earliest NC Department of Transportation map for Durham County dated 1920. There are also remains of an additional former home site adjacent to the road, which is presently unassessed. Further assessment may provide interesting and valuable information for park interpretation.

Surrounding Land Uses and Site Restrictions

Surrounding Land Uses

Little River Park has 391 acres, with the western portion at the Guess Road entrance very narrow, and bound on both the north and south sides by residential properties. The caretaker residence is located at this western-most portion of the property. Behind the park office there are two private residences with associated outbuildings. These homes, along with others, pose a constraint on the park usage for this area, both in terms of avoiding impacts to those residences and ensuring the best recreational experience for park users, and the sense of “being away from it all.” On the southeastern border within Durham County the park abuts a residential subdivision with several homes. This portion of the park is fully wooded and contains a section of mountain bike trail.

CWMTF Conservation Easements

Funding to acquire the park was provided in part by the North Carolina Clean Water Management Trust Fund (CWMTF). The grant required that a permanent conservation easement be recorded that restricts development within the most water quality sensitive portions of the site along the North Fork Little River and its tributaries within the park. The conservation easement area consists of 300-foot-wide riparian buffers along the river frontage and the perennial streams totaling 131 acres of the 391-acre park (Figure 5). The conservation easement is attached as Appendix E; the land management requirements of the grant are summarized below.

Activities that are expressly forbidden within the easement area that are relevant for the park development and management include:

1. Timber harvesting, grazing, and horticultural use
2. Disturbance of natural features, plants and animals
3. Construction of buildings
4. Strict limitation on impervious surfaces
5. Signage not used as boundary marking, easement identifying and/or information
6. Activities that threaten the water quality
7. Dumping of trash and other materials



Other Limitations

Durham and Orange counties were awarded a \$250,000 North Carolina Parks and Recreation Trust Fund (PARTF) grant to assist with land acquisition costs and a \$262,000 federal Land and Water Conservation Fund (LWCF) grant to assist with the initial park construction. As a condition of these grants, the park must remain permanently in open space and available for outdoor recreation.

Several smaller streams within the park (outside of the conservation easement area) are restricted by Durham County and Orange County requirements for stream buffer protections.

Site Constraints for: **Little River Regional Park** **& Natural Area** A Durham / Orange County Partnership

Legend

- Park Boundary
- County Line
- Conservation Easement
- Stream Buffer Limit
- River
- Stream
- 5' Contour
- Paved Trail
- Bike Trail
- Hiking Trail

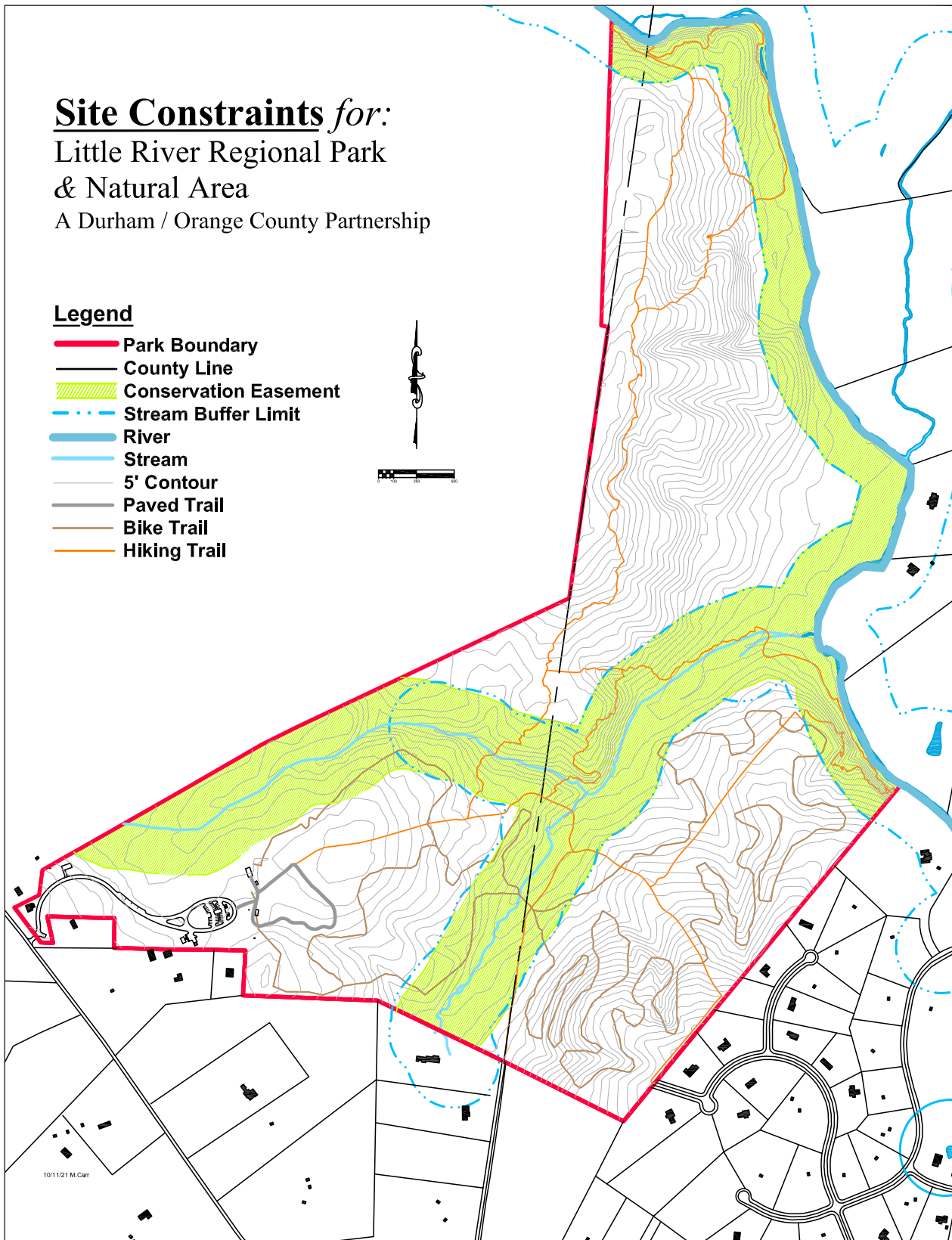


Figure 5
 Site Constraints

Existing Facilities and Programming

Initial park development was guided by a report of recommended uses (Appendix B) prepared by the Advisory Committee set up to advise the two boards of County Commissioners on the park. Funding for initial park development was assisted by a \$262,000 LWCF grant and a \$50,000 State Trails grant, with the remaining capital costs split equally by the two counties.

Initial Site Development Funding	
LWCF Grant	\$262,000
Orange County	\$340,138
Durham County	\$340,138
State Trails Grant	\$50,000
Total	\$992,276

In 2003, the two counties approved a site plan for construction within a 15-acre area at the entrance of the park (Park Developed Area) (APPENDIX C). The park's trails were developed by two sets of volunteers. A volunteer group of mountain biking enthusiasts, DOMBO (Durham Orange Mountain Biking Organization - now Triangle Off-Road Cyclists, or TORC) constructed seven miles of mountain bike trails over 30 weekends and using over 1,500 volunteer hours. Similarly, the hiking trails were completed with the help of over 200 volunteers and 1,400 hours, and included the efforts of an AmeriCorps service crew under the direction of Orange County.

Major park construction was completed in October 2004, and a grand opening celebration was held in December of 2004.

Existing Facilities

The initial recreational components of Little River Park completed in 2004 consisted of:

- Hiking trails (7 miles)
- Single-track mountain bike trails (7 miles)
- Accessible, looped walking trail (1/4 mile)
- 5 picnic sites with grills (located on accessible loop trail)
- Two picnic pavilions (large and small)
- Playground for children (ages 5 – 12)
- Large open play field
- Restrooms
- Park Office

Later improvements included:

- Bird watching trail (¼ mile)
- Organized group camping area (4 camp pads; up to 30 campers)
- Pollinator garden
- Skills park for bicyclists (underway)

Other amenities include an historical pack house (trail head shelter), tobacco drying barn, and corncrib. Administrative and support facilities include a small office building, equipment storage building (repurposed tobacco barn), and caretaker residence. Some of these facilities are showing their age after more than 15 years of usage. The Laws family farmhouse sits at the entrance to the park and may someday be preserved separately by Orange County.

Existing Programs

Over the years, park staff has developed a slate of programs with a focus on environmental education. These programs are developed and marketed to park patrons based on age. Among these, Tiny Trekkers and Discovery Club are monthly programs for young children. Tiny Trekkers is a series of programs designed for toddlers accompanied by an adult. The children learn about nature through stories, activities, crafts, and games. Discovery Club programs are geared towards elementary school-age children accompanied by an adult. These programs focus on learning about nature and science through hands-on activities and exploration. Additional programs for teens, adults and families are offered throughout the year including astronomy sessions, Citizen Science projects, guided nature hikes and stewardship projects. More information about existing park programs may be found in Section III and VI and Appendix F.

There are also resources within the park for self-guided nature study such as the bird watching trail, pollinator garden, and the paved interpretive loop trail. Informational materials are available at the park office, which allow visitors to learn about the natural resources of the park at their own pace.

The park also holds several special events for the public that build on the natural features of the park such as the Little River Trail Runs, Statewide Star Party, Halloween Hike with C.L.A.W.S., and star gazing with staff from the Morehead Planetarium.

Public Input And Current Usage

Initial Park Advisory Committee and Use Recommendations

Durham and Orange counties acquired the 391-acre property in 1999. In the fall of 2000, both boards of county commissioners established the Little River Park Advisory Committee to assist the staff in the development of use recommendations and proposed facilities for the new park. This early input included research by staff, comments and review by the Committee, and a series of community input meetings. Seven meetings were held during the fall of 2000 and spring of 2001, during which members toured the property, evaluated resources, received input from several users' groups and held two larger community meetings to gather input from potential park users and adjacent property owners.

The resulting report was adopted by the two Boards of County Commissioners for future park development. The allowed uses included hiking trails, picnic area, a hard surface loop trail, open play meadows, playground and fishing. Several conditional uses that were recommended if additional requirements could be met, including horseback riding, mountain biking and group camping. The development of Little River Park has accommodated all of the recommended uses except for horseback riding, due to the conditional use requirements (See Appendix B).

Recent Public Input

Orange County and Durham County staff developed and distributed public input surveys in 2012 and 2019 to solicit user feedback and help guide development of a park master plan. The surveys were available for park patrons to complete (both onsite and online) for those interested in contributing to the master plan process. The results of the surveys can be found in Appendix E.

A total of 193 park users completed the survey in 2012 and another 123 users took the survey in 2019. The surveys collected informational and demographic data, a summary of which follows:



The 2019 demographic data indicates that approximately half (51%) of the number of park visitors were from Durham County, with Orange County providing 33% or one-third, and the remainder (16%) from other counties, with Wake County leading this contingent. Overall, visitors from other counties were significantly higher in 2019 than in 2012. On average, 84% of park users came from Durham and Orange counties, allowing this Master Plan to be developed with substantial input from the park's primary users. While the data skewed more heavily toward male respondents in 2012, in 2019 there was a more even gender representation. There was also a good distribution of age represented in the 2019 survey.

The surveys delved into more detailed questions regarding reasons for visiting the park, and questions designed to determine the preferences for how Little River Park moves forward regarding facility development, programming, and options for funding these improvements. The majority of questions followed a format that asked respondents to rate the questions on a scale of 1 (low) to 5 (high), depending on how important they thought each question was to the future of the park.

Summary Overview of Selected Survey Results, 2012 and 2019

2012: 193 respondents 2019: 124 respondents

County of Residence

2012	TOTAL	2019	TOTAL
Durham	53%	Durham	50.83%
Orange	46%	Orange	33.33%
Other	1%	Other	15.83%

Gender

2012	TOTAL	2019	TOTAL
Male	70.5%	Male	44.17%
Female	29.5%	Female	55.83%

Age (Top 3 Categories)

2012	TOTAL	2019	TOTAL
36-45	34.6%	36-45	36.67%
46-55	23.4%	46-55	26.67%
26-35	22%	26-35	16.67%

Visits to Park

2012	TOTAL	2019	TOTAL
Occasionally	37.0%	Occasionally	38.46%
Weekly	28.3%	Weekly	36.75%
Monthly	25%	Monthly	13.68%

The results of the 2019 survey were fairly similar to the results of the 2012 survey. Respondents stated that their primary reasons for visiting the park were for cycling (mountain biking), hiking, and walking, with 144 persons in 2012, and 69 in 2019, listing one of those three uses as their number one reason for visiting Little River Park. The data suggests support for preservation of the park's natural resources, expansion and improvements of the trail system as well as expansion of the children's playground. There was also support for possible increases in facility and program fees to expand park offerings and facilities, and support for programs and facilities that promote physical fitness.

Expansion or improvement of the existing trail system as funding is available garnered support from 69 respondents. Improving existing facilities and expanding environmental education programs were the next highest vote-getters with 14 each. The 2019 survey reported that 54% of respondents "strongly agree" and 63% "agree" that they support development of new facilities

Top Reason for Visiting

2012	TOTAL	2019	TOTAL
Mountain Biking	99	Mountain Biking	42
Trail Hiking/Running	27	Trail Hiking/Running	32
Walking	18	Walking	10

Top Answers to Ranking New/Renovated Facilities

2012	TOTAL	2019	TOTAL
Develop new multi-use trails	95	Develop new multi-use trails	68
Expand children's playground	22	Expand children's playground	21
Expand paved walking loop	15	Expand paved walking loop	12

Top Program Interests

2012	TOTAL	2019	TOTAL
Program promoting physical fitness	98	Program promoting physical fitness	43
Environmental education	29	Environmental education	29
Special events	27	Special events	27

at the park, including such things as a playground, shelters, trails, and programming facilities.

Other items of note in the survey assessment include: additional paved trails for either children or people with disabilities, additional special events and concerts, and for the trail networks to remain separated by distinct user groups (e.g., hiking trails for walkers only, bike trails for cyclists only). There were also several comments in support of developing horse trails, as well as several comments expressing a desire to not add horse trails.

In terms of potential program opportunities, both the 2012 and 2019 surveys show the same pattern of interest – programs that promote physical fitness first (43% in 2019), followed by environmental education (34%) and special events (29%). The survey also shows a desire for programming for both adults and children in additional programming opportunities.

Park Usage Trends and Staff Observations

Park staff has tracked visitor trends and statistics since the park was opened (December 2004), including the number of visitors, number of facility reservations, number of days open per year, program participants, number of days bike trails were open, rainfall, and daily temperature. The following table summarizes four key statistics, which illustrate the continued rise in park attendance and number of program participants, as well as facility reservations since December 2004. The data is through 2020, which is the last year that full records are available. It should be noted that beginning in 2014 annual park attendance has doubled. The number of program participants has also risen markedly since 2015.



The park staff interact frequently with the park users and have a good sense of what kinds of improvements and new amenities are of particular interest to the users. Park staff report that the need for trail improvements is among the most mentioned items, along with playground improvements, improving the driveway and the nature programs. Other suggested improvements include a shade sail for the playground, an addition to the ADA accessible loop trail, and a place for youth to ride bikes. Staff also notes that members of the public are generally highly complementary of the park and its programs.

Little River Regional Park and Natural Area Park Trends/Usage

Year	Annual Attendance	Days Park Open	# Program Participants	# Facility Reservations
2005	23,788	357	No data	No data
2006	28,678	365	241	76
2007	28,915	362	534	88
2008	31,200	363	286	109
2009	31,711	359	325	76
2010	34,063	360	585	85
2011	36,685	361	420	79
2012	39,045	362	500	79
2013	40,102	363	434	75
2014	47,416	362	495	74
2015	47,960	360	805	82
2016	56,700	359	893	95
2017	57,079	358	941	86
2018	54,042	355	785	69
2019	59,472	362	859	62
2020*	75,120*	362	150*	18*

**Beginning in March 2020, reservations and programs were discontinued for the year due to the COVID-19 pandemic, which affected participation and visitation (in very different ways) during 2020.*

Findings/Summary/Opportunities And Constraints

Great Location

Little River Park provides a valued refreshing getaway to Orange and Durham county residents. Hikers are rewarded with quiet and solitude, and beautiful river front views. One of the park's greatest strengths is its relative isolation and absence of typical urban noises such as roads and highways.

Interpretive Opportunities

An extensive number of studies have been conducted at Little River Park detailing the historical, cultural, geological, and environmental story of the park. These reports offer opportunities for developing new interpretative materials to the public, such as additional interpretative signage, new brochures/maps, and guided hikes. Additionally, there are numerous historical amenities on site (packhouse, old mill site) that help tell the story of the land on which the park now sits.

Site Restrictions

There are very restrictive land use requirements in place that limit future development and park use. These restrictions need to be taken into consideration when considering the proposed facility and program improvements. The park would benefit from maintaining a forested buffer to separate park development from existing residences that border the western edge of the park.

Large Base of Existing Trail Users

The largest user group of the park are trail users (hiking, biking, running). Work should be done to a) determine if any new trails can be added (both for recreation and interpretation) in appropriate areas, b) continue to improve the trail signage system, and c) continue to work with volunteer groups on trail construction and maintenance projects.

Aging Park Infrastructure

Many of the existing park infrastructure – its buildings, parking lot, maintenance shed, playground and other structures – are now at least 15 years old and are showing wear and tear. Some park buildings have been re-purposed from the preceding farm that was on site and will require special consideration in their upkeep. Attention will soon be needed to these important components of the park and its operations.



Horse Trails

There is a desire among some members of the public for horse trails within Little River Park. This is not feasible at the current time due to the land restrictions currently in place as well as not enough land available for the desired length of trails within the park boundaries. The possibility exists for the construction of a horseback trailhead within the park if adjacent landowners were to develop a network of horse trails outside park boundaries. Horseback riding trails could be developed in the future if more land were acquired for the park, thereby allowing more space to build sustainable horseback trails.

Additional Programming Potential

The public has shown support for additional programming options at Little River Park and the park could expand future offerings if the two counties were to mutually decide to invest in additional programming.

Goals And Guiding Principles

As summarized earlier in the document, Durham and Orange counties acquired the park property together for its water quality, habitat and recreational values; had input from a citizen advisory committee regarding appropriate public uses, and had over a decade of experience managing the park and its resources for park patrons to enjoy. Based on that history and background, this Master Plan and park Management Plan are guided by the following goals and guiding principles:

Guiding Principles

To jointly manage the Park under the following guiding principles:

- Protect the natural habitat, water quality and other unique cultural resources of this significant Park and natural area
- Preserve the Park's cultural and ecological heritage while highlighting these resources for the public where feasible
- Ensure the safety of all Park visitors
- Strive for the highest quality visitor experience through regular self-evaluation and within mutually agreed upon goals and budget
- Implement the vision and goals of the Master Plan through collaboration and partnership of the two jurisdictions
- Evaluate financial and management options to creatively achieve Park goals as cost effectively as possible
- Incorporate Orange County's and Durham County's sustainability goals and policies in everyday Park operations and long-term planning.

These principles translate into goals and objectives in the following four categories:



Protecting and Conserving Nature

Goal 1:

Maintain the Park largely in a natural state.

Objective 1:

Minimize development within the Park.

Goal 2:

Manage the Park in a way that respects and protects key natural values on-site.

Objective 1: Develop visitor opportunities in ways that consider natural area sensitivities.

Objective 2: Work with others to manage or maintain key values.

Connecting with Nature

Goal 3:

Create a connection between the public and the Park's natural and cultural values that fosters appreciation and respect.

Objective 1: Provide opportunities for low-impact recreation that are based on, and linked to, experiencing the natural values of the Park.

Objective 2: Provide information on-site that connects visitors to the Park, its history, and its key values.

Objective 3: Promote awareness of ways the public can assist in the protection of nature and the Park.

Providing Recreational Experiences

Goal 4:

Provide engaging recreational opportunities while protecting and conserving natural areas.

Objective 1: Work cooperatively with Park users to encourage respectful use of the trails.

Objective 2: Develop additional signage, both interpretative and informative, detailing the natural features of the Park, and the need to preserve them.

Objective 3: Continue to maintain the existing hiking and biking trails, and other Park amenities to minimize erosion and impact while still providing positive outdoor experiences.

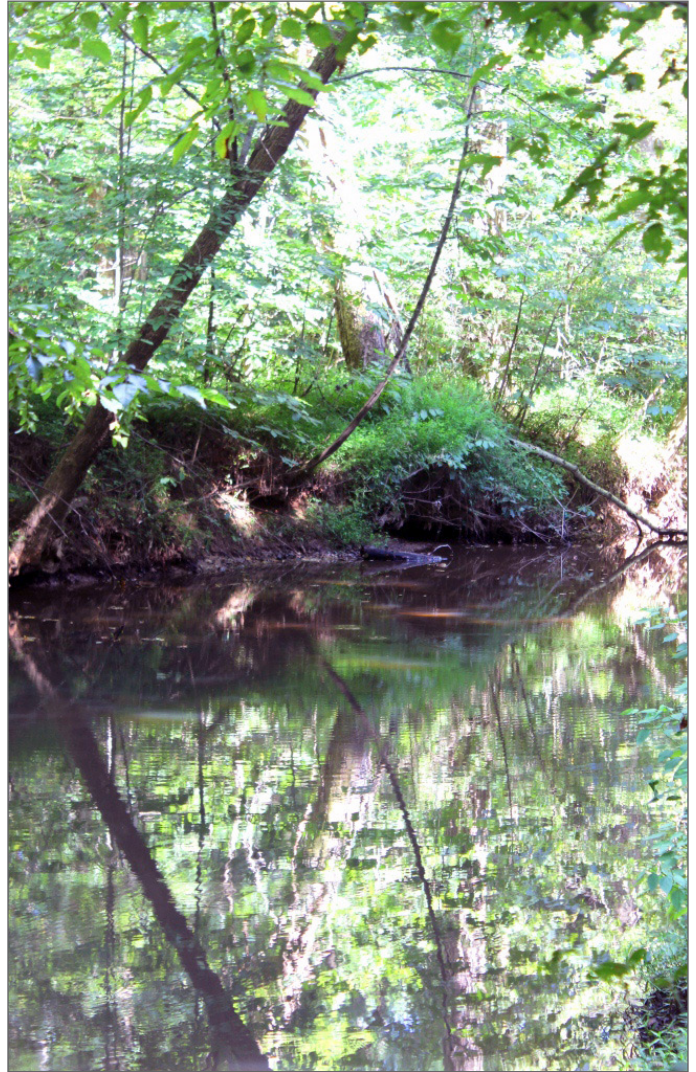
Collaboration and Cost-effective Management

Goal 5:

Foster collaboration and partnership between Durham and Orange County, Park Managers, and stakeholders, and seek ways to manage the park with the most efficient use of public funds to create quality recreational and conservation opportunities.

Objective 1: Work collaboratively to identify and secure additional funding sources to assist with development of park appropriate amenities or programs.

Objective 2: Identify conservation needs within the park and seek funding opportunities or additional expertise to develop appropriate management priorities.



Recommendations And Proposed Action Strategies

Based on Little River Park's site analysis and site constraints, as well as previous decisions during the park's initial planning and development, the park can generally be divided into three management areas:

- **"Park Developed Area"**

The area towards the front of the park that has most developed amenities including parking lot, shelters, playground and park office. This area includes only a small portion of CWMTF easement on the northern edge of the central meadow.

- **"Low-Impact Natural Area"**

Area shown in pale green, this encompasses the bulk of the park acreage, and includes low-impact hiking trails and mountain biking trails. The intent of these areas is to respect the vegetative and cultural features, while making this area available for public recreation that does not impact the resources. This designation includes the majority of the acreage included within the CWMTF restrictions.

- **"Permanent Preservation Area (Wildlife Corridor)"**

Area shown in darker green on the attached map (Figure 6), this area is generally intended to have little active public use in order to preserve a relatively natural part of the park for wildlife habitat. This area includes a long stretch along the North Fork Little River that is included in the CWMTF easement and adjoining areas of natural resource significance.

Based on the findings and analysis of the site constraints, existing conditions, and park user input contained and summarized in the preceding sections, a number of recommendations have been developed for the future of the park. These include:



Proposed Facility Improvements and Actions

Improvements to Existing Nature Trails

Based on both staff observation and survey results, the most-used amenities at Little River Regional Park are the hiking and biking trails. The Park currently offers seven miles of hiking trails and seven miles of single-track mountain bike trails. In addition to being the most-used facilities, surveys have shown that residents and patrons feel that expansion and improvement of the trail networks are a top priority. This is also consistent with Orange County's 2030 Parks and Recreation Master Plan (adopted in 2014).

The addition of new trails or expansion of existing trails would be very challenging under current conditions and protections. This worthy interest must be weighed against the need/desire to maintain portions of the park as a natural area. It is important to note that the land for the park was acquired with the intention to preserve and protect a large wilderness area along the North Fork Little River. However, equally important was the goal to provide a new outdoor recreation opportunity to citizens. Staff has worked hard in the 15 years of park operation to balance these goals and provide a unique outdoor recreation facility.

Park Management Areas for: **Little River Regional Park** **& Natural Area** A Durham County / Orange County Partnership

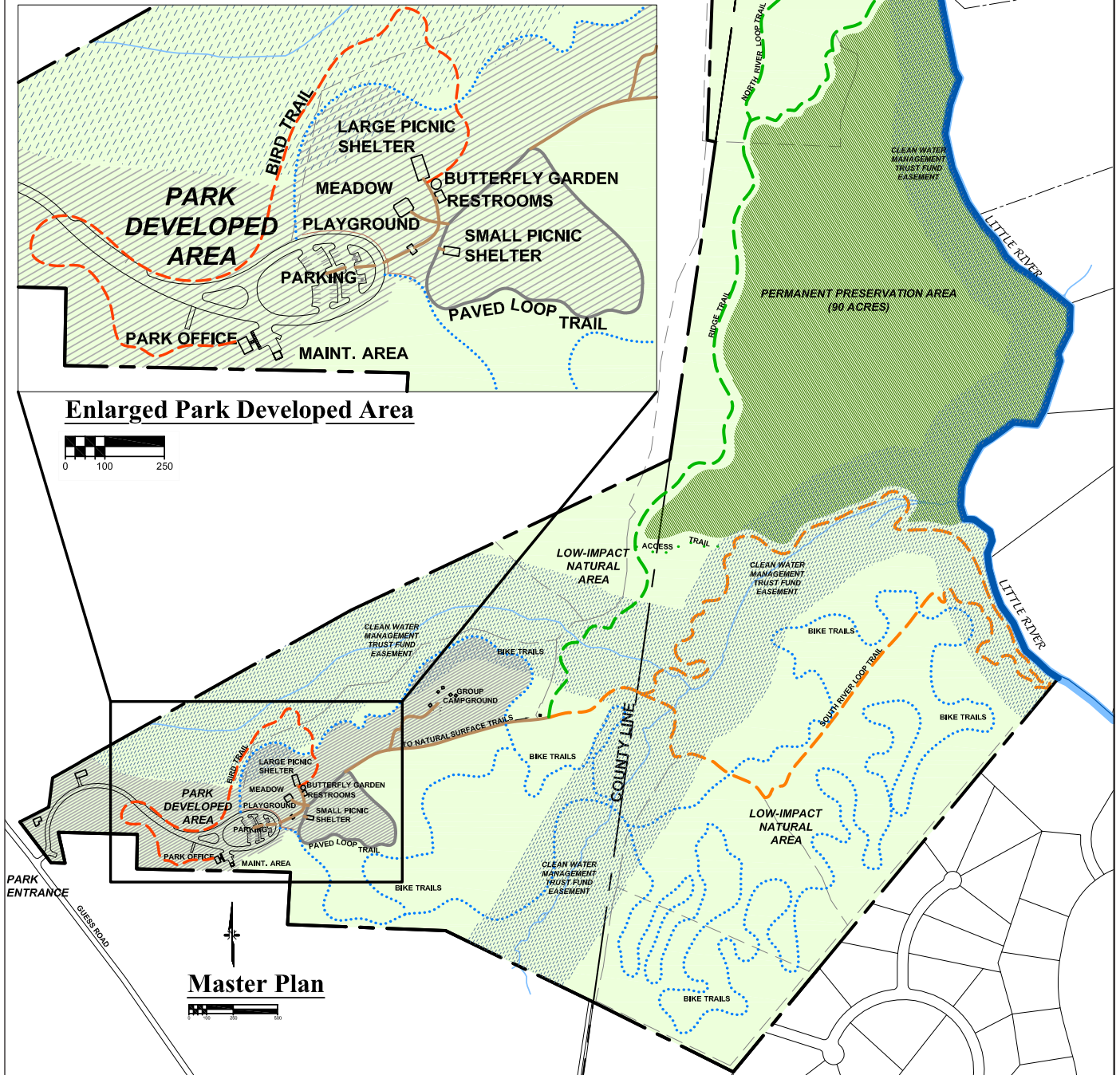


Figure 6
Park Management Areas

There are opportunities to improve the existing trails and enhance park patron experience, by researching the potential for such things as:

Interpretive Trail Improvements, using existing trails and recent technology

The park contains a vast array of natural beauty, areas of historical interest, geological features, and diverse plants and wildlife. Over the past 15 years, staff has been documenting these features, and developing tools and exhibits to teach the public about the park's unique appeal. The success of programs such as star gazing, the live-stream camera in the bluebird box, and Tiny Trekkers point to a strong interest from the public to learn and enjoy the many features the park has to offer. The greatest number of park users are hikers. Additional interpretive features could highlight the site's natural and cultural resources in a cost-effective manner. This could include development of an interactive, interpretive hiking trail using existing trails and recent technology that may appeal to some park users as a way to better learn and appreciate these aspects of the site, and would seem a natural fit for the park. Opportunities exist with recent/ current technology to provide interactive trail experiences, which were not available when the park first opened.

Trailhead Displays at the Pack House

The pack house was moved from the front of the site to its present location along the main trail to serve as a trail head destination for displays and information about the trails. While the building has been moved and stabilized, this area could still have improved displays about natural features on the trails, information about what might be seen on different trails, seasonal displays, etc. to enrich the experience of trail users.

Overlooks/Wildlife Viewing Areas

Another way to enhance the existing trails is through construction of additional overlooks or nature viewing platforms. There are numerous vistas and locations within the park that provide prime wildlife viewing, and the creation of a larger viewing area/ overlook would create a destination point for hikers. Several sites throughout the park are well suited for such development, but an assessment of each site should be conducted to determine an area best suited for such use, and what limitations may be in place due to conservation measures.



Improvements to Trail Signage

Several comments were received in the 2012 and 2019 park user surveys from visitors who found the trail signage confusing. In an effort to provide the safest and most enjoyable park experience for all users, efforts should be made to review and improve the existing trail signage to eliminate possible points of confusion.

Expansion and improvement to the trail system may be possible with the help of volunteers. The park has a long, positive relationship with local running club (Trailheads) and regional cycling club (Triangle Off-Road Cyclists), and these relationships have led to the creation of the mountain bike trails, numerous improvements to the trails over the years, and large donations from the running club's annual event. These relationships have a solid foundation and should be encouraged and augmented and attempts to develop additional working relationships with other area groups whose interests align with the natural resources of the park should be pursued in order to increase the pool of volunteers.

Expansion of the Paved Loop Trail

One of the most popular facilities at Little River Park is the accessible, paved walking loop trail. It provides a consistent walking surface and survey respondents noted a desire to see an expansion of the paved trail. Sites where the loop could be expanded, or areas for a new loop such as around the perimeter of the large open play field could also be explored. In addition, the asphalt surface of the existing path has been undermined by roots and will need to be regraded and paved to maintain its accessibility.

Increase Areas of Pollinator Habitats

The protection and expansion of pollinator habitat is a national and even global issue. Pollinator species sustain the environment and are critical to food supplies. Orange County has set a goal of increasing pollinator habitat within its parks and open spaces, as well as encouraging habitat along roadsides and on private lands. Little River Park, with its natural resources and open spaces, lends itself to being a place where pollinator habitats may be expanded and introduced. The current pollinator garden is a good start and a popular educational component, but more is possible at the park. Additional areas of pollinator-friendly habitats could be researched for future development.

Addition of a “Natural Playground”

Over the past decade, research indicates that children benefit greatly from playing and learning in nature. Natural play areas often engage the mind and allow children to use their imaginations more, and cooperate more in play. These types of play areas reduce symptoms of attention deficit and depression, and many experts note that access to nature for a child is akin to the need for good nutrition and adequate sleep.

In a large natural setting, a natural play area at the park would be very much in keeping with the surrounding environs, and allow children to connect, play, and learn in nature. This idea also allows the incorporation of the existing landscape and vegetation to bring nature to children’s daily outdoor play and learning environments.

The steps needed to develop such a play area at North Fork Little River could be researched and incorporated into upcoming improvements. In many cases, natural play areas are not expensive to construct. It is recommended that the existing conventional playground be retained (and when scheduled, replaced).

Renovations of Park Infrastructure

Having reached the 15-year mark, some of the park infrastructure (including buildings) are beginning to age or no longer efficiently serve their purposes. One such building is the equipment shed, which is not large enough to accommodate needed storage and work space and is beginning to show signs of wear and tear. From park staff perspective, indoor storage and renovations to the maintenance building are important. Analysis of renovation versus replacement of the equipment shed and other similar buildings should be undertaken.



Needed renovations include, but are not limited to:

- Driveway resurfacing (currently needed)
- Buildings (equipment shed, etc.)
- Playground replacement (within the next 5 years)
- Resurfacing the paved looped trail

Priorities for Future Capital Improvements

As noted in the preceding sections, a number of replacement or new capital improvements to Little River Park will be needed in the next 10 years or more. Some of these improvements will need to be assessed and funded through the Capital Investment Plans of the two counties, while other (smaller) items may be addressed through Annual Objectives and park management.

It is recommended that the two counties assess these needs as part of their respective Capital Improvement Program, or through their Annual Objectives (and annual park budget), and schedule prioritized needs accordingly.

While it is not possible to provide a complete list of all priorities for future capital improvements at the park, it may be helpful to start with a starter list of priorities divided into two categories: 1) Renovations of Existing Facilities, and 2) New Improvements. The following initial list should be re-evaluated on a regular basis as funding and other processes allow, and other needs may also be added as they are identified.

Renovations of Existing Facilities – Priorities

- Pave/repair park entry road
- Repave existing ADA paved walking loop trail
- Replace existing 15-year-old playground
- Build or renovate existing maintenance building

New Improvements – Priorities

- Trail improvements (interpretive trail, Pack House, overlooks)
- Create new and improve existing pollinator habitat
- Develop natural play area
- New/expanded ADA accessible paved trail

The items addressed in this master plan will likely need to be implemented at a gradual pace as funding and staffing allows. There is a wide range of improvements and renovations that will take place at Little River Park over the next 20 years, and by developing a multi-prong and phased process to handle both the improvements desired by the public and the routine maintenance and renovations needed, park staff can better plan and budget to meet these needs.

The implementation of this master plan should also include a close look at outside funding opportunities, including grants and donations. The leveraging of county funds, when approved, with grants from entities such as the NC Parks and Recreation Trust Fund, NC Recreational Trails Program and other sources is one possibility.

The support of both counties' governing bodies in funding park operations has allowed Little River Park to thrive and offer a unique recreation opportunity for residents. Future renovations, expansions, and increases in operating costs will be, as always, contingent on the budget and capital funding capabilities of the two counties.

Relationships with local clubs, like the Trailheads and TORC, who use the park and have provided substantial donations that benefit all users should continue to be fostered. Donations by the local running club have allowed the park staff to purchase a wide range of equipment benefiting the park.



Issues For Further Study

While there are several measures and improvements recommended in this Master Plan for action, a number of other topics have been identified that may be worthy of future pursuit, but need additional research and assessment:

Additional Land Protection

When the park was initially proposed, it included as a possible additional purchase the 178-acre property that borders the park on the north and to create an overall 569-acre park. This adjacent property was originally proposed for an Orange County C&D landfill (before the park was initially under consideration), and it was subsequently purchased and has remained in private ownership. Development of this property into multiple home sites would reduce the park user experience, and reduce the size of the significantly large area of undeveloped habitat. This property would be a desirable addition to the park if it became available.

Potential Horse Trails

When the Little River Park Advisory Committee was gathering public input for future uses in the park, there was significant support for horse trails (the property had been used by local equestrians before the property was purchased by Durham and Orange counties). Horse trails were a recommended “conditional use” of the park, but to date those additional conditions have not been met. The public surveys in 2012 and 2019 continued to show interest in horse trails, though there were also several comments requesting that any horse trails be separated from hiking or biking trails. Additional land is needed in order to have sufficient trail length, and the trails would likely need to connect with other privately owned horse trails to create sufficient length. The design and management of the horse trails would require the active support and maintenance of local equestrian groups. Any further study on the potential for horse trails would need to be led in collaboration with local volunteer groups.



Additional Cultural Studies

There are historical and cultural resources within the park, namely the historical road bed and old home site on the southern portion of the property, that have not been properly assessed for their significance. As funding permits, it would be desirable to conduct further assessments to better understand the history of this portion of the site and for possible interpretation.

Park Office – Assessment of Function and Future Needs

Park staff has noted the limited size of the current park office and the inability to bring park visitors or program participants inside to get out of the weather or to see exhibits such as the herpatorium and other indoor features. The current office has limited storage space, and it may be that its functions and uses have expanded over the years to the point where an expansion or larger new facility is warranted. An initial assessment could be done to examine in what ways the park office has become something more than an office, and the functions and needs that it now serves, or could serve in the future with additional space. From that evaluation, decisions could be made as to what changes or improvements are needed.



Disposition of the Laws Farmhouse

The Laws farmhouse is located in Orange County along Guess Road near the entrance to the park and is removed from all of the other park amenities, facilities and parking. The house was built ca. 1929 and contains a portion that may be 19th-century in origin and have historical significance. During the initial park planning and development, the house was determined to have no uses or function for the park. The potential for relocating the house was pursued, but because of the nature of the construction this was not practical. During the initial park development, the house was planned and budgeted for deconstruction. Later, Orange County requested that the funds slated for deconstruction be used instead to stabilize the house to mitigate its further deterioration while Orange County decided what to do with the house. The two boards formally agreed that Orange County would pursue any further actions with respect to the house independent of additional funding from Durham County, an option provided for in the Interlocal Agreement.

At this point in time, Orange County cultural resources staff and the Historic Preservation Commission remain interested in exploring the possible 19th-century portion of the house, and whether that portion (or the entire) structure is worthy of renovation/ restoration. As per the Interlocal Agreement, if the house is retained and further work on it is pursued, this will be done by Orange County alone.

Scope of Program Offerings

A significant decision for the future of the park is the scope of program offerings. Current programs offered at the park, as noted in the preceding sections, are popular and well-received, and serve an important role in helping connect the public to nature.

With the passage of time and regular public input, it is possible to evaluate the strength of existing programs at the park and assess the possibility for new or revised programs for the future. Both counties will continue to evaluate the potential for new programs and tweaks to current programs to match the community's interests.

There two types of programs currently offered at the park, and that will likely be part of the mix of programming going forward – a) staff-led programs and b) contracted programs.

Staff-led programs are offerings that are developed and implemented by park staff. These programs utilize existing resources in the park and are budgeted and implemented using internal plans and procedures.

Contracted programs are those which are scheduled and offered by contract from outside organizations. The wildlife group CLAWS, Inc. would be an example of a contracted program. Staff uses park patron and public interests in programs to identify offerings in areas where staff may not have expertise or materials, but that non-profit and other related organizations may have along with a structured program. In many cases, contracted programs require funding to pay the organizations for their program offering.

While Orange County's Department of Environment, Agriculture, Parks & Recreation has nature programs as a key part of its mission and function, the Durham County Open Space program does not include programming as a part of its current function and mission for budgetary or staff time. Any new proposed program initiatives should be presented during the annual budget preparation, and both counties should discuss the impacts and feasibility during the budget meetings. Any decisions on programming will be mutually agreed upon at that time. This said, however, it is also possible that Orange County may have an interest in expanding its nature program offerings consistent with its mission and goals, without Durham County in a position



to support such an expansion. To address this type of situation, the Interlocal Agreement includes language to allow one county to undertake a program or event on its own, with communication and concurrence of the other partner.

As this discussion proceeds in coming years, both counties will engage in a dialogue about the future scope of program offerings and program expansion through the Annual Objectives process, and proceed with a mutually-agreed upon plan.

If both counties agree that increased program opportunities are desirable, more data may be needed to determine the most appropriate programs to offer. Data from the survey suggests support for increased program offerings at Little River Park. The 2012 survey, though showing support for increased programs, and



especially programs that promote physical fitness, did not ask respondents to identify specific program choices. The range of potential programs is broad, so a more detailed survey of park users may be helpful in determining where to focus efforts for program development. In addition to soliciting demand for additional programs, financial costs and revenues and facility/staff resources will need to be considered.

While not exhaustive, the following ideas were identified from the surveys as possible new programs: additional environmental education classes; environmental education summer camps; and orienteering/backcountry skills classes. Also mentioned were running clubs/classes; cycling clubs/classes; outdoor fitness classes and "Track Out" camps (for year-round schools).

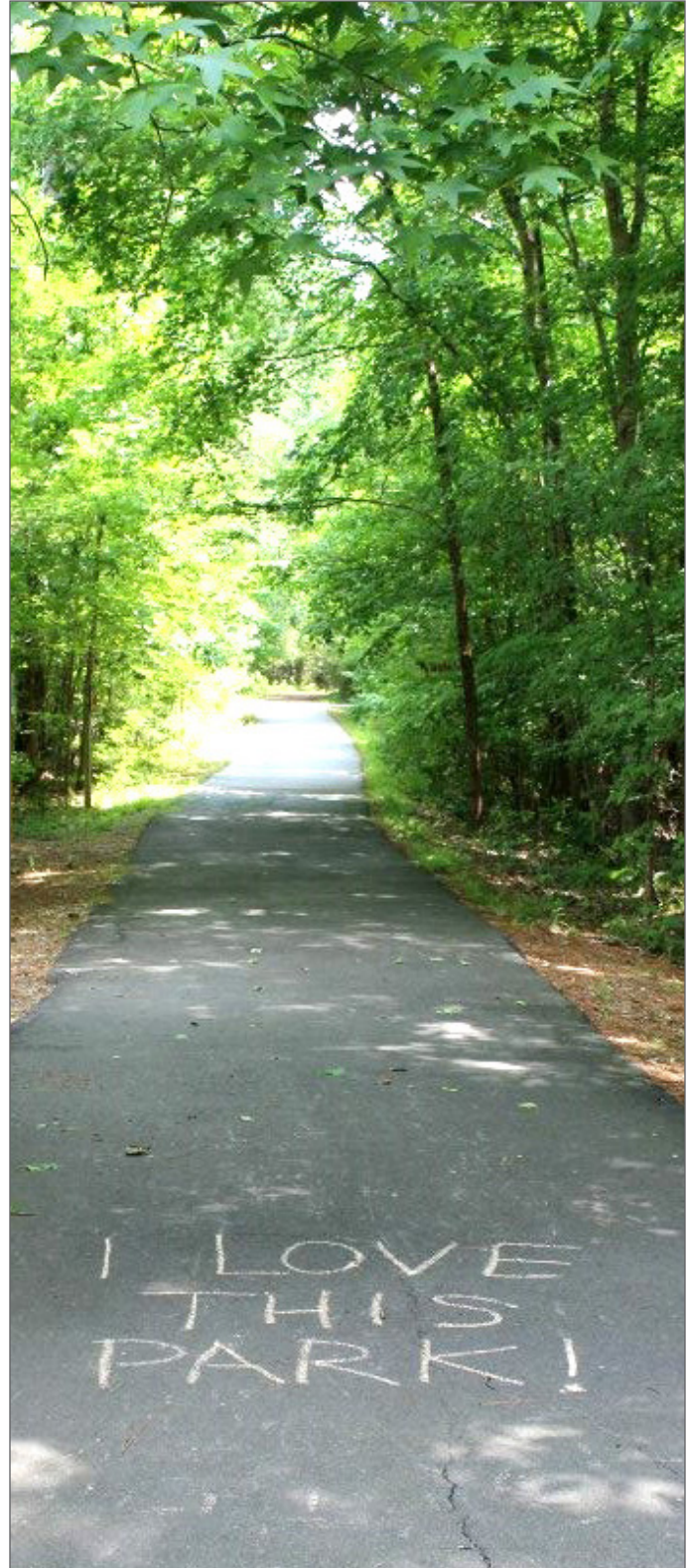
Conclusion

Collaborations and partnerships have been a part of Little River Park since its very beginning. The community, the two counties, land conservation agencies and local trail groups have all contributed to the protection of this large tract of land along the North Fork Little River. As one of sources of water for Durham, it would make sense to protect this stretch of river. It supports species of fish which are indicators of high water quality. Other species of wildlife that are listed as threatened, of special concern or regionally rare including freshwater mussels, black vultures and striped skunk have been documented within the park. The land mass which formed under this area tells the story of 650 million years of volcanic activity, tectonic upheaval and erosion. At least 12 areas of cultural importance have been documented within the park that can trace its land use records back to the 1790s. After nearly 15 years of operation, Little River Park continues to grow into a unique place for nature recreation.

Public input indicates the public's desire to preserve the park's natural resources as well a need for growth. Improvement or expansion of the trail network and the addition of programs or facilities that promote physical fitness also ranked as top priorities. There is also strong support for fee increases to support the expansion of park programs. Park statistics reflect the support of the community: annual attendance and program participation has more than doubled in the park's first ten years.

Accomplishing the goals of the master plan will require the support of both counties governing bodies. For the park to grow and thrive and continue to offer a unique natural and recreational opportunity for the region will require a combination of increased budget, funding for CIP projects, and outside revenue through grants and donations.

The future Little River Park lies in finding the balance between the desire for growth and expansion of recreational opportunities weighed against the intentions with which this partnership began: to preserve and protect a large wilderness area along an important source of clean water. The projects and objectives outlined in this master plan can serve to strengthen the partnerships already in place and to also to explore new partnerships.





Little River Regional Park and Natural Area Management Plan



Draft
November 1, 2021



ORANGE COUNTY



Department of Environment,
Agriculture, Parks & Recreation

Little River Regional Park and Natural Area Management Plan

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I. Introduction

The Little River Regional Park and Natural Area (or “the Park”) opened to the public on December 5, 2004. It is a two-county partnership between Durham and Orange counties and is funded by both and managed by the Orange County Department of Environment, Agriculture, Parks and Recreation according to an Interlocal Agreement between the two counties. The Park is located at 301 Little River Park Way, along the east side of Guess Road, 1.1 mile north of the Orange County line and 11 miles north of the I-85 interchange at Guess Road. The Park straddles the Durham/Orange county line, with roughly 256 of the 391 acres in Durham County and 135 acres in Orange County.

The Park offers recreational opportunities with over seven miles of hiking trails, over eight miles of single-track mountain biking trails, a 1/3-mile paved accessible path with multiple picnic sites, two large-group picnic shelters, playground, large play meadow, pollinator garden, and Park Office with educational materials. The Park’s developed area covers less than 15 acres, while the remaining 376 acres boasts 1.5 mile of river frontage on the pristine North Fork Little River, as well as several forest types categorized as four distinct plant communities in Figure 1. Inventories of plant and animal species are relatively complete and include several regionally rare species (Master Plan Appendix G).



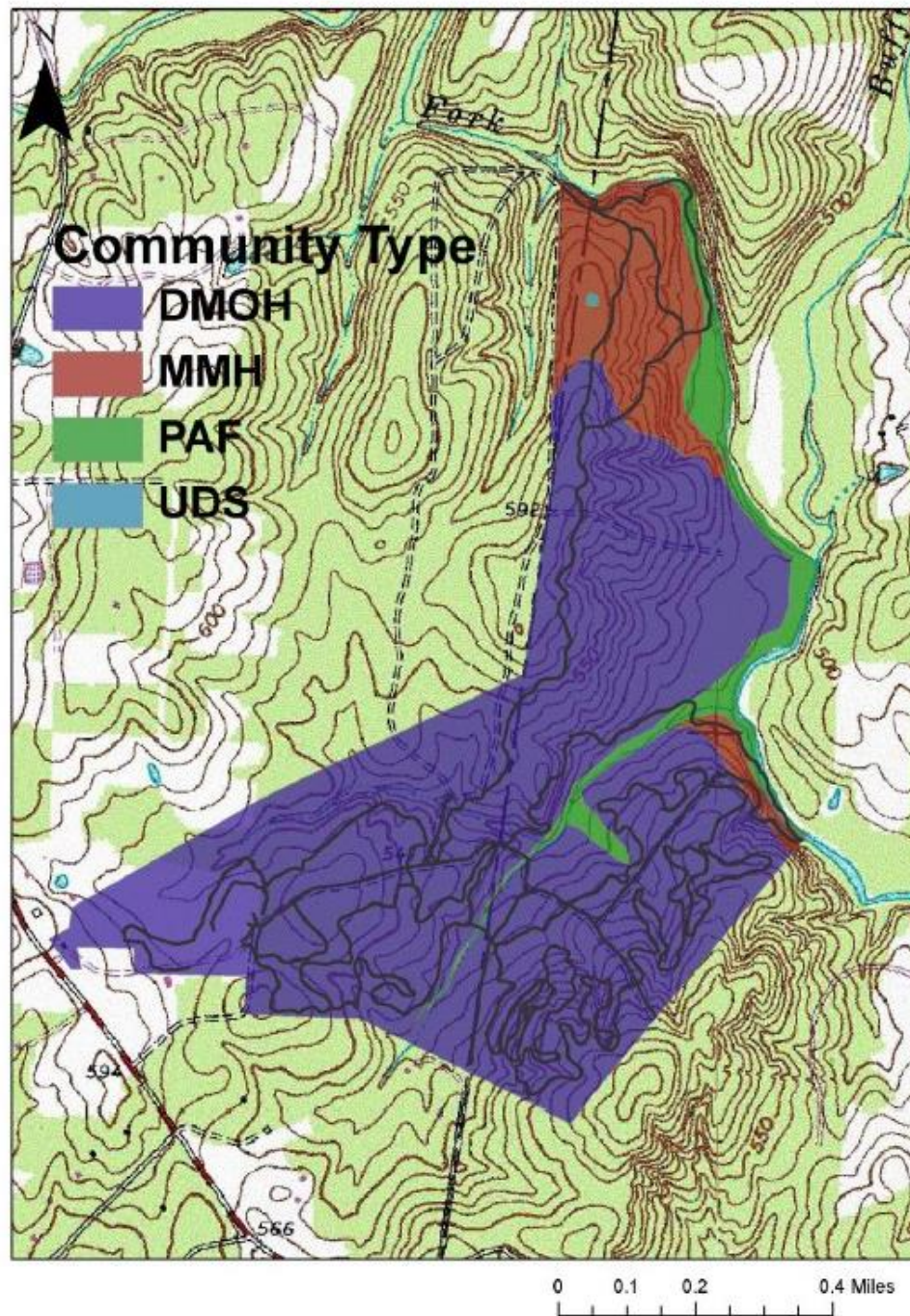


FIGURE 1. Plant Communities Identified at Little River Regional Park. Four communities were identified based the NC Natural Heritage Program classification¹: Dry-Mesic Oak-Hickory Forest (DMOH), Mesic Mixed Hardwood (MMH), Piedmont Alluvial Forest (PAF), and one Upland Depression Swamp Forest (UDS).

¹ Guide to the Natural Communities of North Carolina, 4th Approximation (2012). Michael P. Schafale, North Carolina Natural Heritage Program, Department of Environment and Natural Resources

II. Strategic Direction

The Park is governed through an Interlocal Agreement between Orange and Durham counties. The Interlocal Agreement calls for a Master Plan, Management Plan, and Operating Guidelines to be adopted by both county boards of commissioners. This Management Plan document provides specificity on the management strategies and priorities needed to manage and operate the Park according to the vision presented in the Master Plan.

A. Vision

“Little River Regional Park and Natural Area is recognized as a valuable natural resource and community park. The park maintains the natural character along a portion of the North Fork Little River, providing a natural viewscape for those hiking through the woods. Further, it provides Orange and Durham residents and visitors opportunities to connect with nature and helps protect the Piedmont ecosystem. Together with nearby natural areas within the Little River Corridor, the regional park is part of a wider natural area network that facilitates a healthy community.”

B. Goals and Objectives

The following are Guiding Principles for the joint management of the Park:

- Protect the natural habitat, water quality and other unique cultural resources of this significant park and natural area
- Preserve the Park’s cultural and ecological heritage while highlighting these resources for the public where feasible
- Ensure the safety of all Park visitors
- Strive for the highest quality visitor experience through regular self-evaluation and within mutually agreed upon goals and budgets
- Implement the vision and goals of the Master Plan through collaboration and partnership of the two jurisdictions
- Evaluate financial and management options to achieve Park goals as creatively and cost effectively as possible
- Incorporate Orange County’s and Durham County’s sustainability goals and policies in everyday Park operations and long-term planning.

These Guiding Principles translate into the following goals and objectives:

1. Protecting and Conserving Nature

GOAL 1: Maintain the Park in a largely natural state.

Objective 1: Minimize development within the Park.

GOAL 2: Manage the Park in a way that respects and protects key natural values on-site.

Objective 1: Develop visitor opportunities in ways that consider natural area sensitivities.

Objective 2: Work with others to manage or maintain key values.

2. Connecting with Nature

GOAL 3: Create a connection between the public and the Park’s natural and cultural values that fosters appreciation and respect. [Engage the public in the appreciation and respect for the Park’s natural and cultural values.]

Objective 1: Provide opportunities for low-impact recreation that are based on, and linked to, experiencing the natural values of the Park.

Objective 2: Provide information on-site that connects visitors to the Park, its history, and its key values.

Objective 3: Promote awareness of ways the public can assist in the protection of nature and the Park.

3. Providing Quality Recreational Experiences

GOAL 4: Provide engaging recreational opportunities while protecting and conserving natural areas.

Objective 1: Work cooperatively with Park users to encourage respectful use of the trails.

Objective 2: Develop additional signage, both interpretative and informative, detailing the natural features of the Park, and the need to preserve them.

Objective 3: Maintain hiking and biking trails, along with other Park amenities, to minimize erosion and adverse impacts while still providing positive outdoor experiences.

4. Collaboration and Cost-effective Management

GOAL 5: Foster collaboration and partnership between Durham County and Orange County, Park Managers, and stakeholders, and seek ways to manage the Park with the most efficient use of public funds to create high quality recreational and conservation opportunities.

Objective 1: Work collaboratively to identify and secure additional funding sources to assist with development of park appropriate amenities or programs.

Objective 2: Identify conservation needs within the Park and seek funding opportunities and additional expertise to develop appropriate management priorities.

III. Description of Park Improvements and Management Areas

A. Facilities and Improvements

The Park includes two public access buildings; two picnic shelters; a paved, accessible loop path with five individual picnic sites; and seven staff-only maintenance structures.

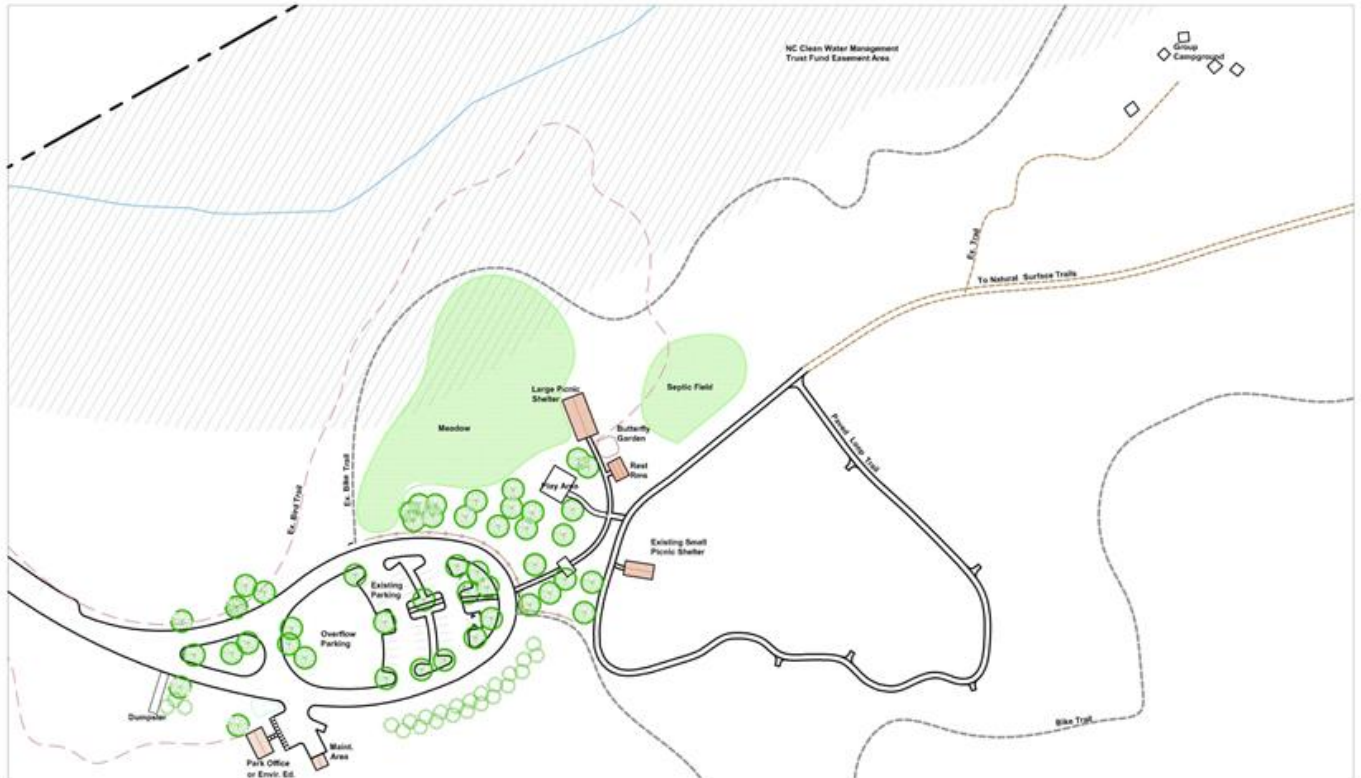


FIGURE 2. Park Developed Area

1. Public Amenities

- a) **Parking Area:** The parking area is at the end of a long meandering entrance road, culminating in a teardrop-shaped circulation pattern with drop off along the outer edge and designated parking for 40 spaces in the interior. Included within this are three accessible parking spaces. Exiting the teardrop is an additional elongated space for parking a bus or a trailer. The driveway and parking area are covered in a chip and seal surface treatment.
- b) **Public Restrooms:** This newly built structure is of similar architectural style as the Park Office, with separate male and female facilities, and a supply room.
- c) **Large Meadow Picnic Shelter:** This open-sided structure holds 12 picnic tables (two are wheelchair accessible) located near the public restrooms and playground, all of which are connected by a paved path.
- d) **Small Forest Picnic Shelter:** This open-sided structure is located just inside the paved loop trail, and holds eight picnic tables (two are wheelchair accessible).

- e) **Playground:** This accessible structure is recommended for 5- to 12-year-olds and contains three slides, two overhead components, a sliding pole, and a safety surface of engineered wood fiber. Safety surfacing needs weekly attention in the busy seasons, and yearly replenishment. Total replacement of the surfacing is recommended every 7-10 years.
- f) **Pack House / Hiker Shelter:** This historical structure was relocated from the front of the Park to the main junction of hiking trails. The pack house serves as a shelter for park users during inclement weather. A kiosk with trail maps and interpretive information is located at the trail head adjacent to the shelter.
- g) **Corn Crib / Visitor Information Center:** This structure was relocated from the Park entrance to the trail-head next to the parking area. The historical Corn Crib serves as an informal visitor information center and/or meeting spot with maps, brochures, donor recognition signs, interpretive information, and logos.



Visitor information structure (former corn crib)

- h) **Group Campground:** A group camping area was added in 2006 as an Eagle Scout project. It is located 100 feet from the end of the paved interpretive loop trail heading towards the Pack House. The site consists of four tent pads, two fire rings, a field hydrant, and three picnic tables.
- i) **Accessible Loop Trail:** This paved, quarter-mile-long trail loops through the woods next to the small picnic shelter and is one of the most heavily used facilities in the Park. The trail is used by young families with strollers, elderly visitors, and young children learning to ride bicycles. The trail is in need of major renovations as tree roots are encroaching into the asphalt surface and damaging the tread.
- j) **Pollinator Garden:** In Spring 2005 the area between the public restrooms and the Large Meadow Shelter was developed into a pollinator garden. The garden consists of mainly native plantings that attract a variety of pollinators at different stages of their life cycle. An arbor and bench was built in the center of the garden as part of an Eagle Scout project and the wooden entrance gates were built and donated by a volunteer.

- k) **Birding Trail:** The half-mile long birding trail begins at the Park Office and ends at the pollinator garden. Birders are led through several habitats that attract a variety of bird species. Several benches along the trail enable birders to sit and observe. Improvements to the trail could be added, such as native plantings attractive to birds and bird hides.
- l) **Hiking Trails:** The Park has two separate trail systems: one for hikers and one for single-track mountain bikers (Figure 5b). The seven miles of hiking trails include over a mile along the North Fork Little River. The trails pass through areas that include 40-year-old pines with an understory of young hardwoods, typical of a Piedmont Loblolly forest in transition to an upland hickory forest. Hardwoods such as sycamore, red maple and river birch are found along the North Fork Little River. Several old logging roads were incorporated into the trail system resulting in stretches of wide, gravel-surfaced trail.
- m) **Mountain Bike Trails:** Mountain biking trails were built in progressive loops of increasing technicality, ranging from beginner to advanced (Figure 5a). The beginner loop is 1.2 miles in length, the intermediate loop is one mile, and the advanced loop is 4 miles. The mountain bike trails were designed and constructed by volunteers from the Durham-Orange Mountain Bike Organization (DOMBO). In 2012, DOMBO reorganized as the Triangle Off-Road Cyclists (TORC). TORC maintains the mountain bike trails in accordance with a memorandum of understanding (MOU) with the Park.
- n) **Mountain Bike Skills Course:** A new skills course is under construction by TORC, which will enable mountain bikers to hone and refine their biking abilities and skill levels. As of January 2021 the skills course was still undergoing a risk assessment and safety evaluation, and that area was not yet open to users.

2. Park Operations and Infrastructure

- a) **Park Office:** The Park Office contains a visitor reception desk; a visitor area with park information, educational materials, and wildlife displays; and staff facilities (office, workroom/kitchen, and restroom). In addition to serving as a staff office and visitor information area, the Park Office is used for programming during inclement weather. There are four parking spaces (one is wheelchair accessible) in front of the building.
- b) **Maintenance Shed (former Tobacco Drying Barn):** Located next to the Park Office, this historical building was substantially renovated in 2004 to repurpose the structure for use as a maintenance shed. Security fencing was added.
- c) **Well Pump House:** The well pump is located on the north side of the Park entrance driveway to the east of the Caretaker Residence. A new well was drilled because of recurring contamination issues in the old well.
- d) **Caretaker Residence:** This private residence was relocated to the Park in 2003 to serve as the caretaker residence. The house is occupied by a caretaker (part-time Park employee) responsible for closing the park on weekends, covering for other staff, and being available after the Park closes for campers or emergencies.
- e) **Wood Storage Tobacco Barn:** Located near the Caretaker Residence, this historical building has not been restored. It is a traditional tobacco drying barn.
- f) **Former Well Pump House:** The old well pump house is located next to the paved interpretive loop trail and was capped after the new well was installed. It is used for storage of fence posts and traffic cones.

- g) **Materials Storage and Waste:** Materials storage needed for Park operations presently include an area for large rock and materials storage, gravel storage, brush piles, and composting bins. A dumpster is located on the south side of the entrance drive, near the Park Office. A brush pile and other waste debris (old lumber, concrete, chairs, grills) are temporarily located adjacent to the main entrance road just east of the Caretaker Residence. Rock for road repairs is temporarily stored within an open area at the South River trail. Maintenance gravel for the parking area is occasionally stored at the entrance to the parking lot. The need for gravel and materials storage will diminish once the driveway is repaved. Care is taken to avoid permanent impacts to the State's conservation easement area.
- h) **Laws Farmhouse.** The former Laws family farmhouse is a historical farmstead structure located near the Park entrance, separated from the Park operations. The Laws farmhouse was built between the 1860s and 1880s, with a turn-of-the-19th-century addition, and was inhabited through the 1960s. The abandoned structure was in a state of neglect and disrepair when the Park property was purchased in 2001. The structure will receive future funding (as deemed appropriate) from Orange County.

At the time of Park development, the farmhouse was investigated for its potential to restore and integrate with the Park, either in its current location or relocated elsewhere within the Park. When it was determined that use of the structure as a park office or information center, cultural/historical museum, or caretaker residence was not feasible due to prohibitive cost or loss of historical significance if relocated, the house was potentially slated to be deconstructed. Orange County has opted to delay this, pending a future decision by that County regarding renovation. The exterior needs repainting and other maintenance to protect the structure. The building is currently used for the storage of lumber and roofing materials for use in the Park.



The former Laws family residence (unoccupied)

Park Management Areas for: Little River Regional Park & Natural Area A Durham County / Orange County Partnership

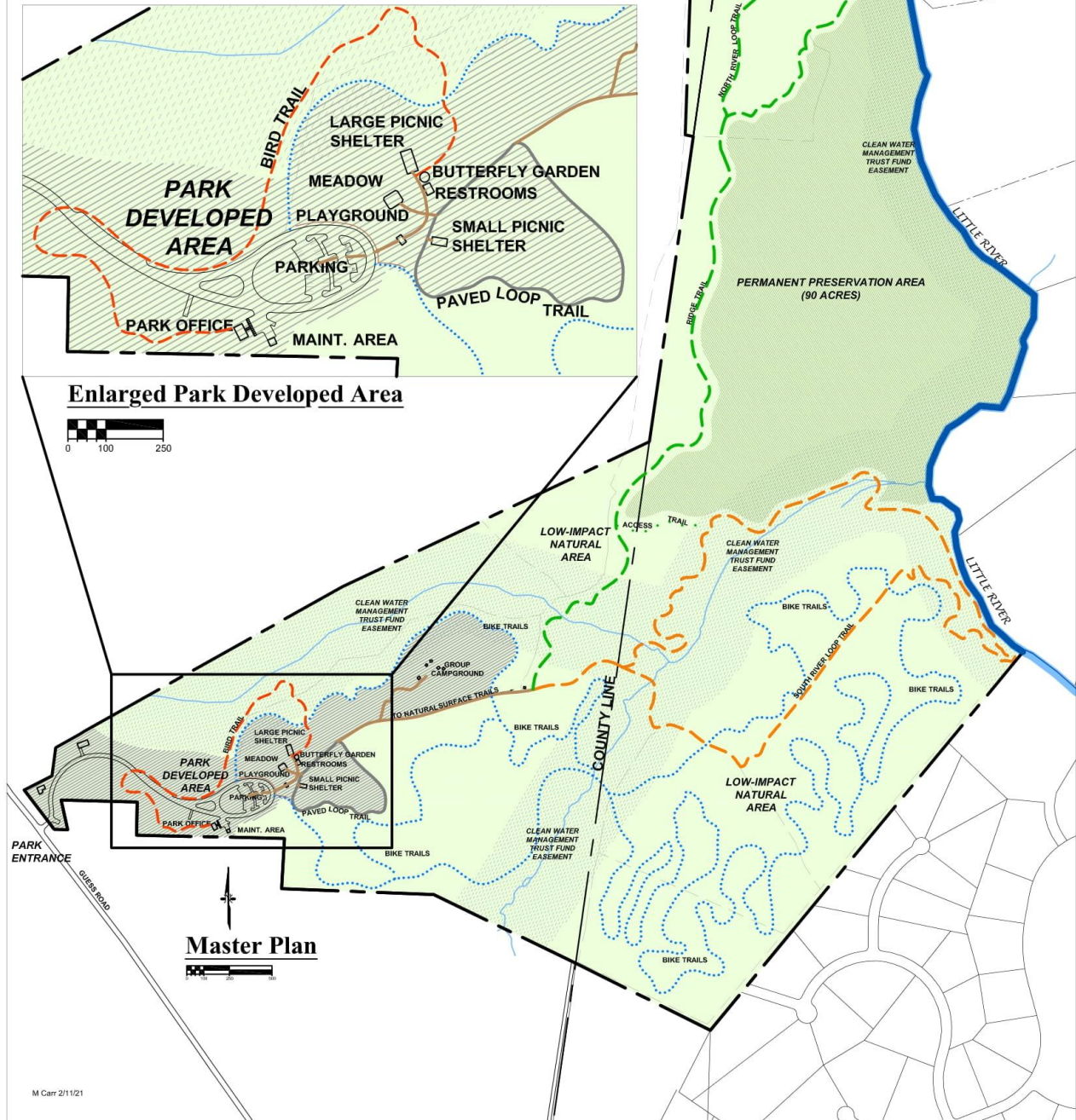


FIGURE 3. Park Management Areas

B. Management Areas

The Park consists of four management areas described below and shown in Figure 3.

1. Park Developed Area

The developed portion of the Park is where the bulk of the Park improvements and facilities are located (see also Figure 2).

The Management Objective for the so-called Park Developed Area is to provide safe facilities for the public to enjoy and to provide safe and adequate facilities for staff.

2. Low-Impact Natural Areas

The bulk of hiking and mountain biking trails are located within the area identified as the Low-Impact Natural Areas. The main stems of the hiking trails were developed from former logging roads, and consist of the Ridge / North River Trail and the South River Loop Trail (Figure 5b). Other trails were constructed for visitors to appreciate interior sections of the Park. All hiking trails are easy to moderate in difficulty and are clearly marked with numbers to aid in locating oneself on the Park brochure map.

The Management Objective for the Low-Impact Natural Area is to monitor and manage natural communities and provide meaningful, educational, natural space for the public through hiking and biking trails.

3. Permanent Preservation Area

A 90-acre portion of the Park located along an intact stretch of the North Fork Little River will remain as a preserved natural area and wildlife habitat, set aside from human visitation (Figure 3). Many key wildlife species, including reptiles, amphibians and ground nesting birds, utilize this core area of the park and avoid human interactions.² A map of significant natural features is provided as Figure 7.

The Management Objective for the Permanent Preservation Area is to monitor and manage natural plant and wildlife communities and to minimize access as much as possible. No development is to occur within this area of high ecological significance.

4. Conservation Easement Area

Funding to acquire the Park was provided in part by the State of North Carolina's Land and Water Fund (formerly the NC Clean Water Management Trust Fund, or CWMTF). The grant required that a permanent conservation easement be recorded that restricts development along the North Fork Little River and an unnamed perennial stream that bisects the Park. The conservation easement encumbers a 300-foot-wide riparian buffer (Figure 4). The conservation easement area encumbers 131.1 acres of the 391-acre Park. A copy of the recorded conservation easement agreement is provided as Appendix D of the Master Plan; the specific requirements for managing the parkland subject to the conservation easement are summarized below:

² North Carolina Natural Heritage Program site survey form (2019-20); available from Park staff.

The CWMTF Conservation Easement* requirements are summarized as follows:

The Property shall be maintained in its natural, scenic, wooded and open condition and restricted from any development or use that would impair or interfere with the conservation purposes of this Conservation Easement set forth above. The following uses are considered compatible:

- Passive recreational uses and access to the easement area requiring only incidental alteration of the land and posing no threat to conservation values, including, walking, fishing, animal and plant observation; educational tours, and scientific study;
- Recreational trails are permitted, including but not limited to horseback riding and biking, subject to limitations spelled out in the easement

The following activities and uses are expressly prohibited or restricted in the easement area:

- Limited Disturbance of Natural Features, Plants and Animals. There shall be no timber harvesting, cutting or removal of trees, or the disturbance of other natural features except as needed for:
 - boundary marking, fencing, signage, construction and maintenance of nature trails and public access allowed hereunder;
 - manual vegetation removal for the control of non-native plants,
 - selective cutting and prescribed burning or clearing of vegetation
 - archeological research that disturbs no more than 5,000 square feet at any one time,
 - vegetation management, including mowing, to maintain the existing open areas as shown when the easement was recorded
- Construction of Buildings and Recreational Use. No new buildings, antenna, utility pole, dock or any other temporary or permanent structure or facility are generally permitted;
- Permitted improvements include fencing and recreational improvements such as trails, boardwalks, benches, tables and any incidental filling required to produce such improvements.
- Impervious surfaces. Concrete, asphalt, gravel, or other improved surfaces used for trail construction, access or related purposes is acceptable so long as it does not exceed one (1) percent of the easement area and is permitted by state and federal regulations.
- Signage. Most signage is prohibited, but trail signage is allowed.
- Mineral Use, Excavation. There shall be no filling, excavation, mining or drilling; no removal of topsoil, sand, gravel, rock, peat, minerals or other materials, and no change in the topography of the land in any manner except as necessary for the purpose of combating erosion or incidental to any conservation management activities otherwise permitted in this Conservation Easement.
- Wetlands and Water Quality. Pollution or alteration of water bodies is prohibited and no activities that would be detrimental to water purity or that would alter natural water levels, drainage, sedimentation and or cause soil degradation or erosion nor diking, alteration, draining, filling or removal of wetlands, except activities to restore natural hydrology or wetlands enhancement as permitted by state and any other appropriate authorities.
- Dumping. Dumping of soil, trash, ashes, garbage, waste, abandoned vehicles, appliances, or machinery, or other materials within the easement is prohibited.

* Program name changed to NC Land and Water Fund in 2021

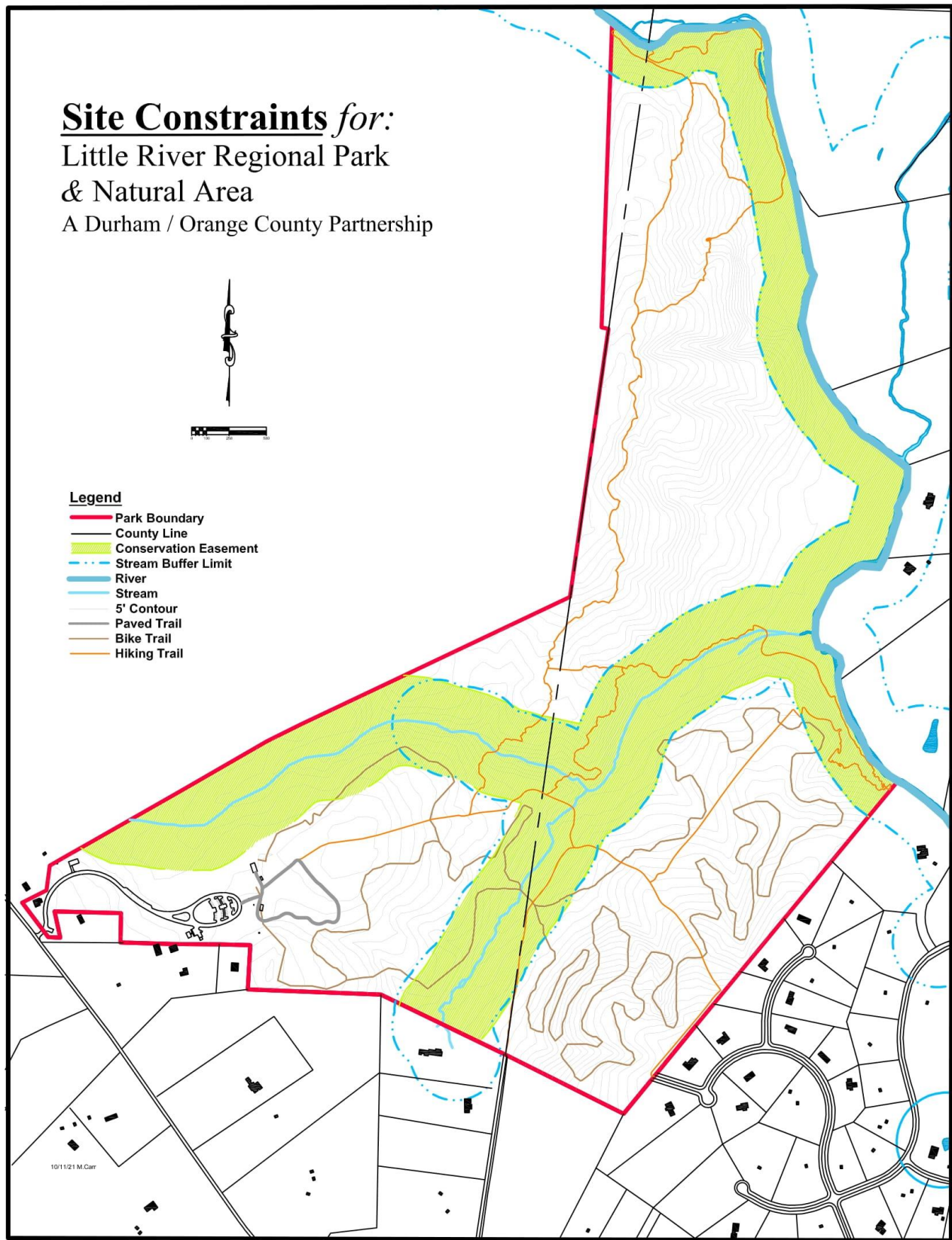


FIGURE 4. Site Constraints Map

IV. Management Plan

The purpose of the Management Plan is to provide direction for how the Park will be managed over time, consistent with the Master Plan. Visitor facilities and services will remain concentrated in the developed portions near the Park entrance, with the bulk of the Park left natural and experienced through the hiking and biking trails.

Hiking and off-road biking trail opportunities provide the primary means for the public to experience the Park. Park facilities will be maintained and replaced as needs and funds allow, but may not expand outside of the currently developed areas.

A. Overall Management Principles

The following management principles guide decision-making for the Little River Park.

1. Natural Area Conservation

- a) Environmental conservation will focus on protection of critical habitat for species at risk in the Park.
- b) Land management will abide by all provisions of the conservation easement held by the NC Land and Water Fund (formerly NC Clean Water Management Trust Fund) (Figure 4 and Master Plan Appendix D).
- c) Durham and Orange counties will consider partnership/stewardship agreements with appropriate groups to support ecological restoration or research in the Park.
- d) Visitor facilities will be maintained regularly. Renovations and replacement facilities will be planned and designed with conservation and operational sustainability in mind.

2. Cultural Heritage Management

- a) The recommendations included in the 2001, 2003, and 2009 reports of cultural resource investigations (by Legacy Research Associates) shall be reviewed and, where feasible, implemented in the next five years.
- b) Park Staff will work with Orange and Durham county experts to gather cultural and ecological information for display on park information kiosk panels.

3. Visitor Opportunities

- a) The public will experience nature in the Park through hiking trails, mountain biking trails, and a bird watching trail.
- b) Trails will be developed with consideration of user safety, natural and cultural protection, and operational sustainability.
- c) The public will be encouraged to follow “Leave No Trace” principles.

4. Park Operations

- a) All aspects of Park operations will follow the guidelines established in the Operational Guidelines adopted by both counties’ respective boards of commissioners.

- b) Park operations and development will be limited to that which is necessary to minimize visitor impacts to the environment and to maintain designated visitor facilities.

In addition to the priority management plan actions previously described, additional management of Park facilities will be performed on a routine basis.

B. Facilities and Improvements Management Objectives

1. Hiking Trails

- a) **Trail Sustainability and Maintenance.** Trail sustainability must be of the highest priority in terms of natural areas management. Trail sustainability means ensuring that the trails are safe and enjoyable for users, while minimizing impacts on the natural environment.

Hiking trails, markers, benches, boardwalks, bridges and signs are to be maintained by Park staff using best practices established by the National Park Service, the U.S. Forest Service, and the Student Conservation Association. Findings from regular inspection should be addressed within a reasonable time (a month or less). Bridges and boardwalks should be monitored during routine trail inspections, leaves and debris removed, and repairs made as needed. Trees that pose safety hazards should be removed by staff or by contracted experts when needed. Washouts and rock armoring should be monitored seasonally; leaves and built-up soil should be removed and small trees grubbed out.

When trail renovations are needed the work should occur in the following priority order:

- i. Re-route the trail to avoid chronic areas of erosion, drainage, sogginess;
 - ii. Renovate or replace existing boardwalk, preferably elevated at least one foot to allow for small wildlife movement underneath;
 - iii. Construct new boardwalks, again preferably elevated at least one foot to allow for small wildlife movement underneath;
 - iv. Armor trails with rock or other hardened treatments as a last resort where less-intrusive options are not viable
- b) **Trail Inspections and Safety.** Trail inspections by Park staff should occur on a weekly, monthly, and seasonal basis, as well as after major storms. Safety hazards should be removed or identified, including:
 - i. Safety hazards within close proximity to trails should be removed.
 - ii. Stumps on trails should be trimmed to the ground or spray painted for visibility to reduce preventable tripping hazards.
 - iii. Holes within or adjacent to trails should be filled.
 - iv. Temporary hazards such as stinging insect nests should be marked to assist public safety (e.g., use of chicken wire cages with an educational note).
 - v. Overhanging trees that pose safety risks should be removed.

2. Mountain Biking

- a) **Trail Sustainability and Maintenance.** Mountain biking trails are to be maintained and improved, as necessary, by both Park staff and volunteers from TORC following guidelines established by the International Mountain Biking Association (IMBA). Trail closures are determined by Park staff based on precipitation and subsequent ground conditions. A copy of the trail closure protocol is available from the staff at the Park office. A bi-monthly maintenance schedule is to be monitored by staff and carried out by TORC volunteers. Volunteer monitoring of hiking and biking trails should be encouraged, including filling out trail inspection forms.

3. Signage and Trail Markings

Park and trail signage and informational kiosk materials should be inspected and replaced when broken, faded, outdated, or as otherwise necessary. Ideas for additional signage should be brought to the Park management team (Orange and Durham county staff) to coordinate the placement, design and wording.

- a) All signage (permanent and temporary) should be neutral and professional in tone.
- b) Directional signage should be evaluated to ensure it clearly communicates the visitor's location, which trail they are on, and how to return to the parking lot.
- c) Park signage should be cleaned on a regular basis.
- d) New signage is to be approved by Orange and Durham county staff.
- e) Trail markings should utilize an easily understood color-coded system.

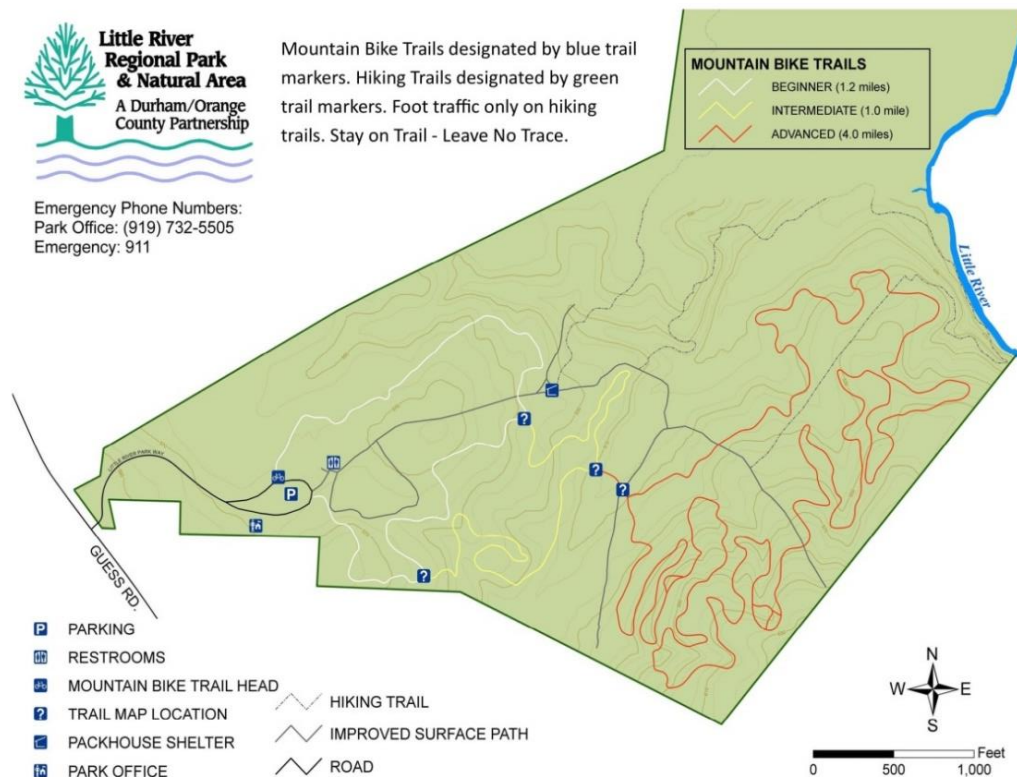


FIGURE 5a. Mountain Bike Trails Map



Emergency Phone Numbers:
Park Office: (919) 732-5505
Emergency: 911

Hiking Trails

- | | | | |
|--|---------------------------|--|---------------------------|
| | Ridge Trail (0.84 mi) | | South River Loop (1.4 mi) |
| | North River Loop (1.2 mi) | | Bird Trail (0.5 mi) |
| | Homestead Trail (0.2 mi) | | Mountain Bike Trail |

- PARKING
- RESTROOMS
- HIKING TRAIL
- HIKING TRAIL MAP
- PARK OFFICE
- PACKHOUSE SHELTER
- GROUP CAMPING
- MOUNTAIN BIKE TRAIL
- BIKE TRAIL MAP



Hiking Trails designated by green trail markers. Foot traffic only on hiking trails.

Mountain Bike Trails designated by blue trail markers. Stay on Trail - Leave No Trace.

FIGURE 5b. Hiking Trails Map

C. Historic and Cultural Resources Management Objectives

1. Historical Resources

Several cultural and archaeological assessments of the Park property have been completed since the land was acquired in 1999. Those studies have identified several areas of historical significance and areas that would benefit from additional study.

County staff maintain maps showing the locations of archaeological significance, marked as “special resource areas.” These maps are consulted prior to making any site improvements or adding new park amenities, including trails, to help ensure that sensitive resources are protected from being damaged or destroyed.

Staff will determine which “special resource areas” are appropriate for public access and interpretation. Signage will be developed to educate and engage the public.

D. Natural Resources Management Objectives

- 1. Natural Community Management** – The distinct forest types found within the Park vary in age and vegetation type and will be managed to encourage a mosaic of species and habitat diversity (Figure 1). As staff time and resources allow, less densely-vegetated areas around the developed portion of the Park will be tended to support uneven-age forest stands and diverse wildlife habitats.

Staff will seek opportunities to support early-successional areas within the Park as they occur naturally while prioritizing native plant and animal communities. Any management considerations and planned activities will be made annually, incorporated in the annual work plan, and budgeted as resources permit.

A number of low-cost management activities will be used to support the health and sustainability of the Park’s natural areas with the primary goal to create a wild and natural habitat. Damaged or dead trees will be mitigated for safety reasons, but otherwise left in situ for habitat services.

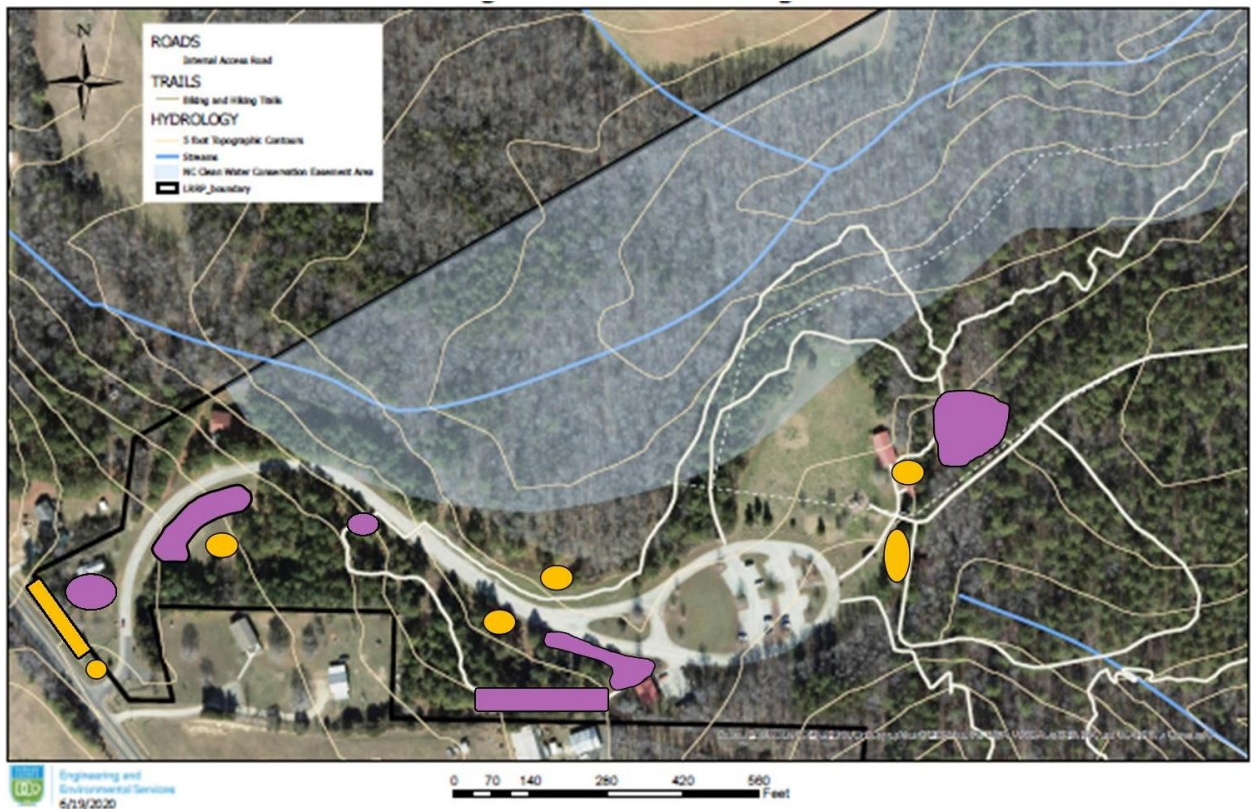
Dead trees provide important nesting sources for many cavity dwelling species, including woodpeckers, bluebirds, and barred owls. To support the varied wildlife in the park, dead trees should not be removed unless they are endangering buildings or threatening trail safety. In addition, fallen tree biomass should be left on site as it provides additional habitat for many types of reptiles and amphibians.

- 2. Pollinator Habitat Management** – The pollinator garden was created in 2005 between the public restrooms and large shelter. The garden contains over 60 species of plants, over 50 of which are native to the region. Plantings around the front entrance sign and the corn crib also provide some small pollinator habitats. In addition, several areas of milkweed growing naturally in the developed area are maintained to allow the plants to spread. These “milkweed waystations” are used in several Citizen Science projects involving Monarch butterfly populations. Other areas in the developed area could be utilized as

potential pollinator habitats including along the entrance driveway and around the two septic fields (Figure 6).

Pollinator habitats should follow a sustainable approach in their location, selection and management.

- a) New and existing habitat areas should use native species whenever possible
- b) Pollinator habitats will be maintained using organic or biological pest control and organic fertilizers or other treatments
- c) New habitats areas will be developed in manageable sizes depending on plant needs and available staffing
- d) Plant species within the pollinator habitat should be selected to provide year-round benefits to pollinators.



Existing Pollinator Areas Potential Pollinator Areas

FIGURE 6. Pollinator Areas (Existing and Potential)

- 3. Invasive Species Management** -- Several varieties of non-native, invasive plants threaten the Park's natural plant communities and should be located, documented, monitored, removed and/or treated when possible. These plants include Japanese honeysuckle (*Lonicera japonica*), Chinese privet (*Ligustrum sinense*), Japanese stiltgrass (*Microstegium vimenium*), Japanese honeysuckle (*Lonicera japonica*) and multiflora rose (*Rosa multiflora*). Over the years, Park staff have treated and managed invasive plants where feasible, focusing primarily on areas along hiking and biking trails. Invasive plants can impact the natural regeneration of native plants, particularly non-woody understory perennials, but they also impact seed germination of woody shrubs and trees. Invasive plants displace native plants, impact ecosystem processes, reduce biodiversity, and disrupt wildlife populations. Aquatic areas are also monitored for problematic aquatic invasive plants like hydrilla. Although native to this region, poison ivy (*Toxicodendron radicans*) and common greenbriar (*Smilax rotundifolia*) are nuisance plants that are identified and managed in publicly accessible areas.

Management Objectives

- a) Prevent introduction and spread of invasive plants by prioritizing native plants for landscaping, minimizing soil disturbance, and cleaning vehicles to minimize seed spread.
- b) Map invasive plant locations and maintain records that include species, location, date and description of any removals and/or treatment.
- c) Prioritize and review areas for management every 2-3 years, focusing on areas within the State's conservation easement area and the low-impact natural areas.
- d) Work with local technical experts/resources on using best management practices for removal and/or treatment (e.g., NC Cooperative Extension, NC Wildlife Resources Commission, and NC Forest Service) recognizing that priorities and treatment strategies change.
- e) Leverage citizen scientists and other volunteers to assist with locating, identifying, removal and/or treatment.
- f) For management try to (1) remove plant physically (digging, weed wrench, etc.), (2) cut and spray/brush remaining stump with herbicide, and then (3) broadcast foliar spray. The use of Roundup (glyphosate) is not permitted.

E. Park Facilities and Operations Management Objectives

1. Park Buildings

- a) Routine inspections of buildings and shelters occur monthly to ensure the safe operation of the Park. Needed repairs or improvements will be addressed through identification and budgeted through annual budgets and capital improvement plans for more substantial upgrades.

2. Park Infrastructure

- a) The Park's well and septic systems are inspected every three years by Orange County Planning and Inspections staff. The well water is inspected quarterly by Orange County Environmental Health Services staff. Septic tanks should be serviced every three to five years.
- b) Areas around the well house, electric hot box, and septic tanks should be kept clear of plants and debris.

3. Playground Monitoring

- a) Routine inspections of the playground equipment and safety surfacing occur monthly. A full annual audit is performed according to the National Playground Safety Institute guidelines for playground safety inspectors. Staff will maintain Certified Playground Safety Inspector credentials and be responsible for documenting results of all inspections. Monthly Inspection reports and annual audits are available for review in the Park Office upon request.
- b) Safety surfacing requires weekly attention during busy seasons, and yearly replenishment. Total replacement of the surfacing is recommended every 7-10 years.

4. Entrance and Parking Areas

- a) The entrance to the property welcomes visitors and is the first impression they have of the Park. Staff will insure the landscaping, park signage, and entrance road are in good repair. Any needed improvements outside of the normal maintenance will be proposed and approved during the annual budget process.
- b) The parking areas will be maintained to provide safe access and egress to and from the Park. All traffic signs will be maintained and replaced as needed. Any landscaping necessary to provide adequate site lines will be performed on a routine schedule. Cross walks will be clearly delineated and repainted as needed.
- c) The top priority for the driveway and parking area is to pave them in their entirety. Staff will determine if any additional parking can be created through paving. Staff will also investigate the possibility of incorporating additional paved walking/biking paths around the perimeter of the parking area.
- d) Staff has identified areas in the open field that may be used as overflow parking during certain large events.

5. Historical Farm Structures Function and Assessment

- a) The pack house was moved to its present location near the Ridge Trail trailhead and serves as a hiker shelter during inclement weather. A small sign describes the historic use of the building when the Laws family farm was in operation. Possible improvements to the area include: utilizing the open area around the building as pollinator habitat, improving daylighting if practical and cost-efficient, freshening signage explaining the previous use as a pack house, trail head interpretative signage describing what can be found on the different trails, as well as difficulty, seasonal plants, etc.
- b) The maintenance shed (a former tobacco curing barn) was renovated in 2004, with an addition built in 2009. It was built from roughhewn oak logs chinked with cement with a cement pad floor. The building does not have running water or HVAC. Possible improvements include building a more modern structure for park operations equipment and chemical storage utilizing the historical building for the storage of lumber, fencing and hand tools. A small interpretive sign is posted on the security fence surrounding the building that describes the building's use during the operation of the Laws farm. Updated signage may be desirable.
- c) The Laws family farmhouse has had no money budgeted for its upkeep nor has any decision been made on its fate. It will need some maintenance soon including repainting the exterior and addressing the roof seam between the original structure and the back addition. The farmhouse sits at the park entrance and may not serve to create a good first impression of the park. The building could be dismantled and the materials repurposed. The space could be used as a location for an outdoor classroom, more pollinator habitat or materials storage for park operations.

6. Property Boundaries

- a) Property lines should be walked once annually to check on encroachments; boundary signs should be posted and freshened as needed
- b) Buffers should be maintained to reduce views into adjoining residential areas where possible (not possible by Park Office)

7. Landscaping, Erosion and Drainage Issues

- a) Park landscaping should be with native species whenever possible
- b) The use of deer resistant and drought tolerant species is preferable
- c) Areas of grass that must be mowed frequently should be reduced, converting to more native grasses and flowers that are drought tolerant and support pollinator habitats to improve sustainability
- d) Any areas of soil erosion, including on fields and in drainage swales, should be addressed with rip-rap, re-seeding, etc. Drainage problems should be addressed through grading, top-dressing, and construction of swales and drainage pipes. Trail erosion should be addressed through the re-routing of problem sections and by following the Park's protocol for trail closings.

8. Materials Storage and Waste Management

- a) Park operation and maintenance requires places to store construction materials, gravel/rock for improvements, weedy debris and limbs, and vegetative composting materials. Although these are an essential component of internal park operations they can be unattractive for park visitors and incompatible with the CWMTF conservation easement restrictions. Locations for these activities should be sited carefully to minimize unsightly views outside of the CWMTF conservation easement stream buffer areas.
- b) The construction of a pole barn or similar storage area for landscaping materials (e.g., gravel, dirt and mulch) would greatly aid in organization and distribution of those materials. A central location would be ideal, such where the Law's house is located or near the current maintenance shed.
- c) A dumpster for most refuse is located on the south side of the entrance drive in close proximity to the Park Office. Wood, metal, electronics and solvents are prohibited and must be taken to the Orange County solid waste convenience center, and a tipping fee paid each time.
- d) A dump site along the north side of the entrance drive should be limited only to organic brush. Other kinds of refuse (e.g., chairs, grills, lumber, concrete) should be hauled off site when enough has been collected to warrant paying the tipping fee at the convenience center or when a river clean-up is organized.

9. Caretaker Residence

- a) The caretaker residence is managed by the Orange County Parks Division. Inspections of the building and grounds occur annually by the Division Superintendent as per the rental agreement.
- b) Maintenance issues are reported to the park manager. Issues are resolved in-house when possible. The park manager arranges for a repair service when needed.

10. Emergency Access

- a) Several routes are designated for emergency access vehicles should a visitor become injured on the trails. A lockbox with the key to the front gate is available to emergency services personnel if entry is needed after hours.
- b) Access routes should be maintained to a clearance of 15 feet overhead and 20 feet on both sides for emergency vehicles.
- c) Downed trees and debris should be removed immediately from emergency access routes.
- d) Emergency access route maps are reviewed and updated annually. Updated maps are available in the Park Office and filed with Orange County Emergency Services.

V. Management Plan Priorities

A. Pave the existing entrance road and parking lot

The 2004 chip and seal surface treatment of the Park driveway has a life expectancy of 8 to 15 years. The roadway has worn away in many places and developed potholes beneath the original aggregate layer. Repeated applications of pea gravel are needed to keep them filled. Paving or other sustainable alternative would improve the overall appearance of the park and enhance a visitor's experience. Grading and design should take into account the use of overflow parking on the areas of grass along the driveway and parking area.

B. Re-pave and expand the existing accessible loop trail

The paved accessible loop trail is in need of major renovations due to tree roots that have been damaging the asphalt steadily for many years. As part of this renovation, plans should be made to expand the paved trail with an additional loop around the perimeter of the driveway or in the forested area adjacent to the current loop trail.

C. Obtain community input for design and replacement of existing play structure

The play structure was installed in 2004 when the Park originally opened; however this type of equipment is nearing the end of its normal life expectancy. Surveys from the Master Plan questionnaire show respondents favor the installation of swings and a sun shade if upgrades or replacement were done. Another option for future play areas is the development of a natural playground.

D. Complete the installation of interpretative park signage

Several areas of the Park could benefit from permanent interpretive signage including the historic buildings, pollinator garden, birding trail and areas of cultural significance like the old wagon road, homestead sites and mill operation.

E. Establish permanent preservation areas within the park that will remain free from trails or other intrusions

The formal establishment of designated "no development" areas within the Park ensures the preservation of important habitat for wildlife and plant communities along the North Fork Little River corridor. Bank erosion is often a consequence of trails located along waterways as humans and pets naturally want to explore these wet areas. Human activity has also been shown to reduce the use of natural areas by wildlife.

F. Construct new maintenance/storage facilities

When the Park was designed and built in 2004, several of the existing tobacco farm buildings were repurposed including the tobacco drying barn, which is used for equipment storage and maintenance. This is a log structure with a metal roof and a concrete pad that replaced the dirt floor. There is no HVAC system or running water in the building. Equipment such as lawn mowers, generators, and power tools as well as chemicals like gasoline, herbicides and paints, are stored in the barn and are subject changes in temperature and humidity. The closest safety wash station is in the Park Office located approximately 20 yards away. To protect the

large investment in equipment and provide a safer work environment, a new maintenance facility should be constructed using sustainable building practices.

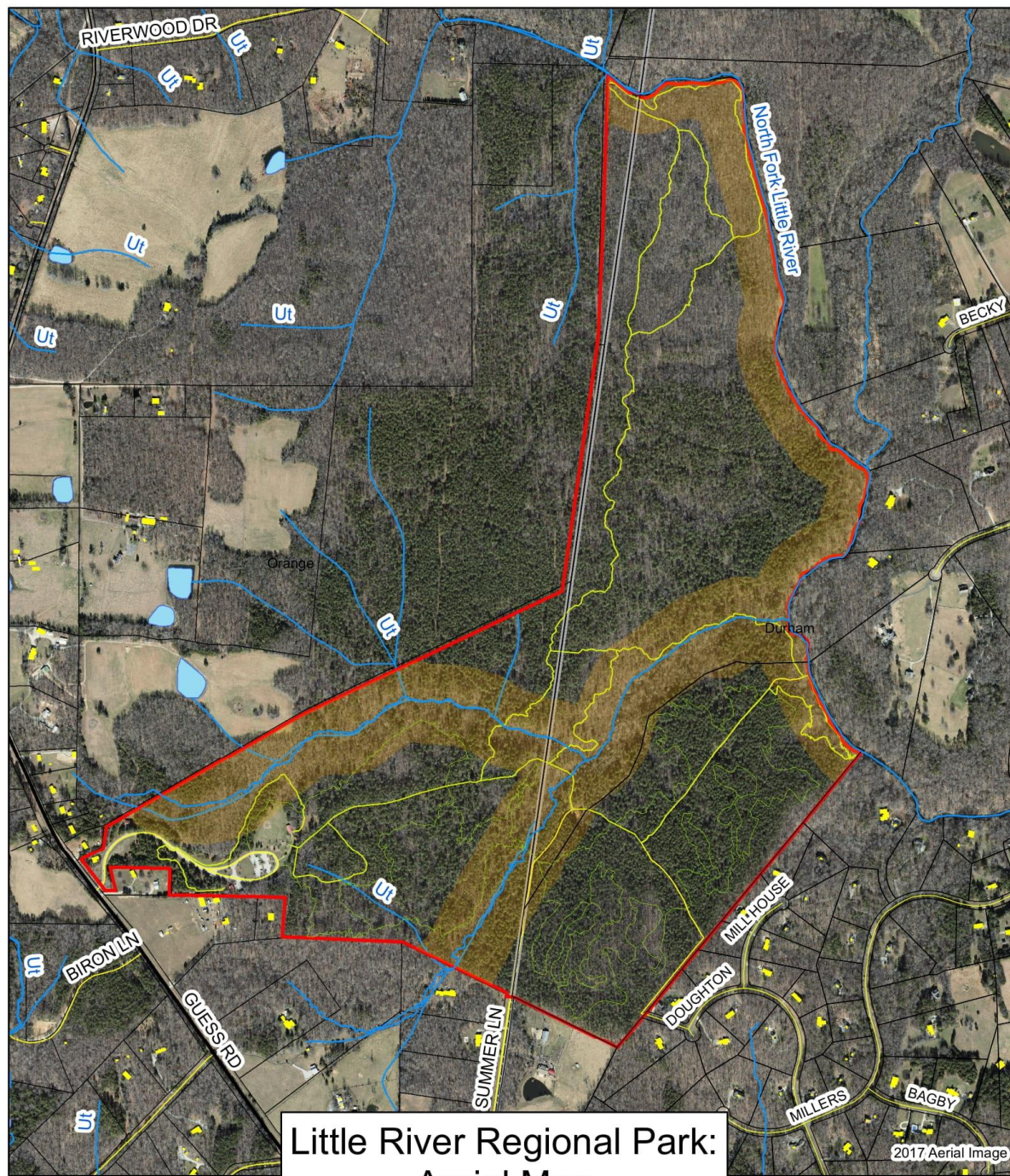
VI. Management Plan Monitoring

Durham County and Orange County staff will monitor jointly the implementation of the management plan through the Annual Report and Annual Objectives.

An amendment or update to the management plan will be considered if unexpected circumstances, significant issues, or critical new information arise that warrant substantive changes to the plan. Durham and Orange county staff will work collaboratively to amend or update the management plan. Any substantive changes to the management plan must be approved by both counties' respective board of commissioners.

Prior to initiating a comprehensive update to this management plan, staff will undertake an evaluation of the current plan that will consider the following:

- Have the vision, goals and objectives been useful in guiding park management and are they still relevant?
- Has the strategic direction adequately addressed all or most of the major issues and management considerations that arose over the lifespan of the management plan?
- To what extent were the management actions implemented and are any outstanding actions still relevant?
- Have the requirements of the conservation easement been adhered to?
- Are changes to the plan's direction needed?



- | | | |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| LRRP Boundary | Lakes And Ponds | — Streams |
| CWMTF Easement | Parcels | — Streets |
| Building Footprints | — Trails | |



1 inch = 956 feet



DEAPR
Date: 4/10/2019

FIGURE 7. Aerial Map (2017)

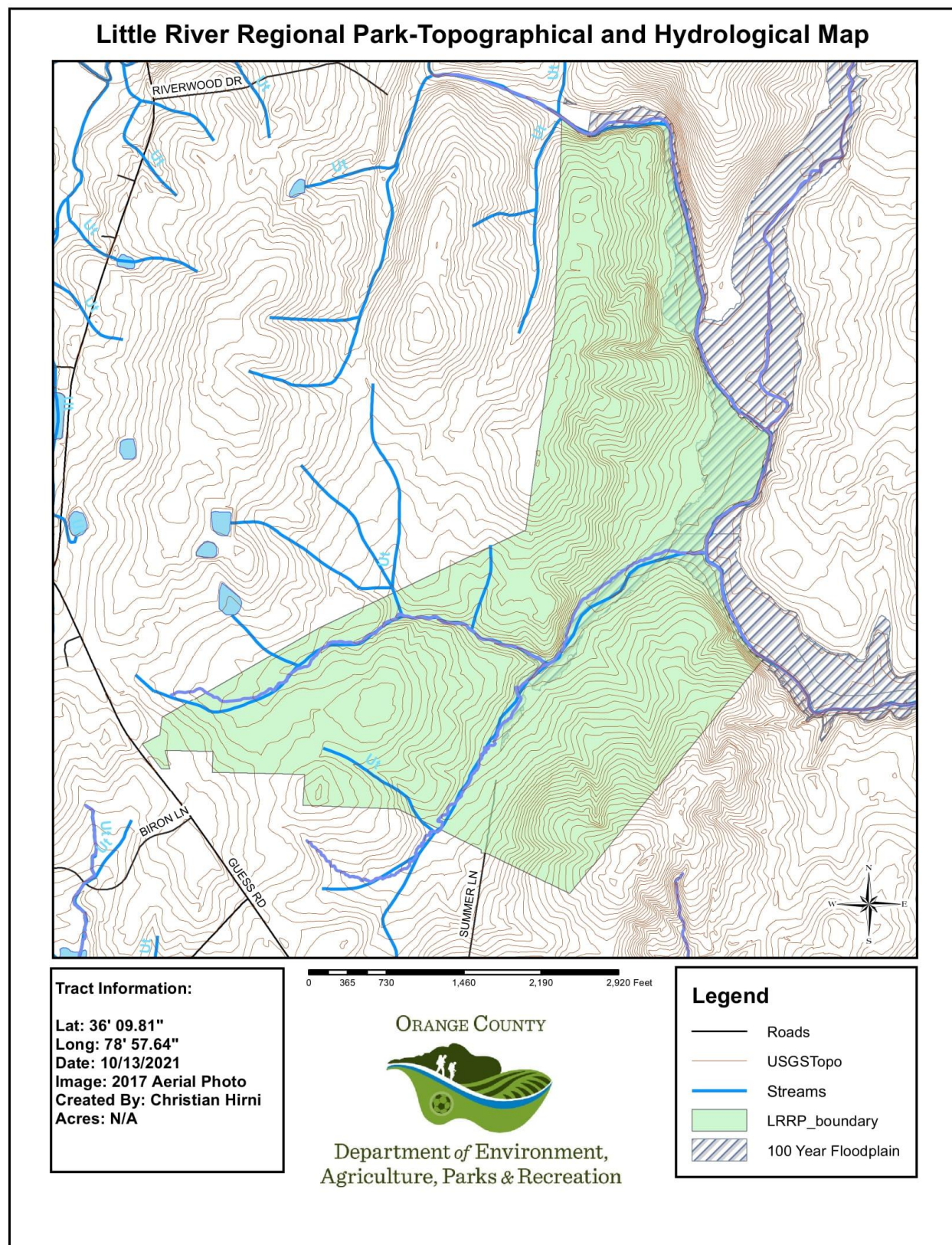
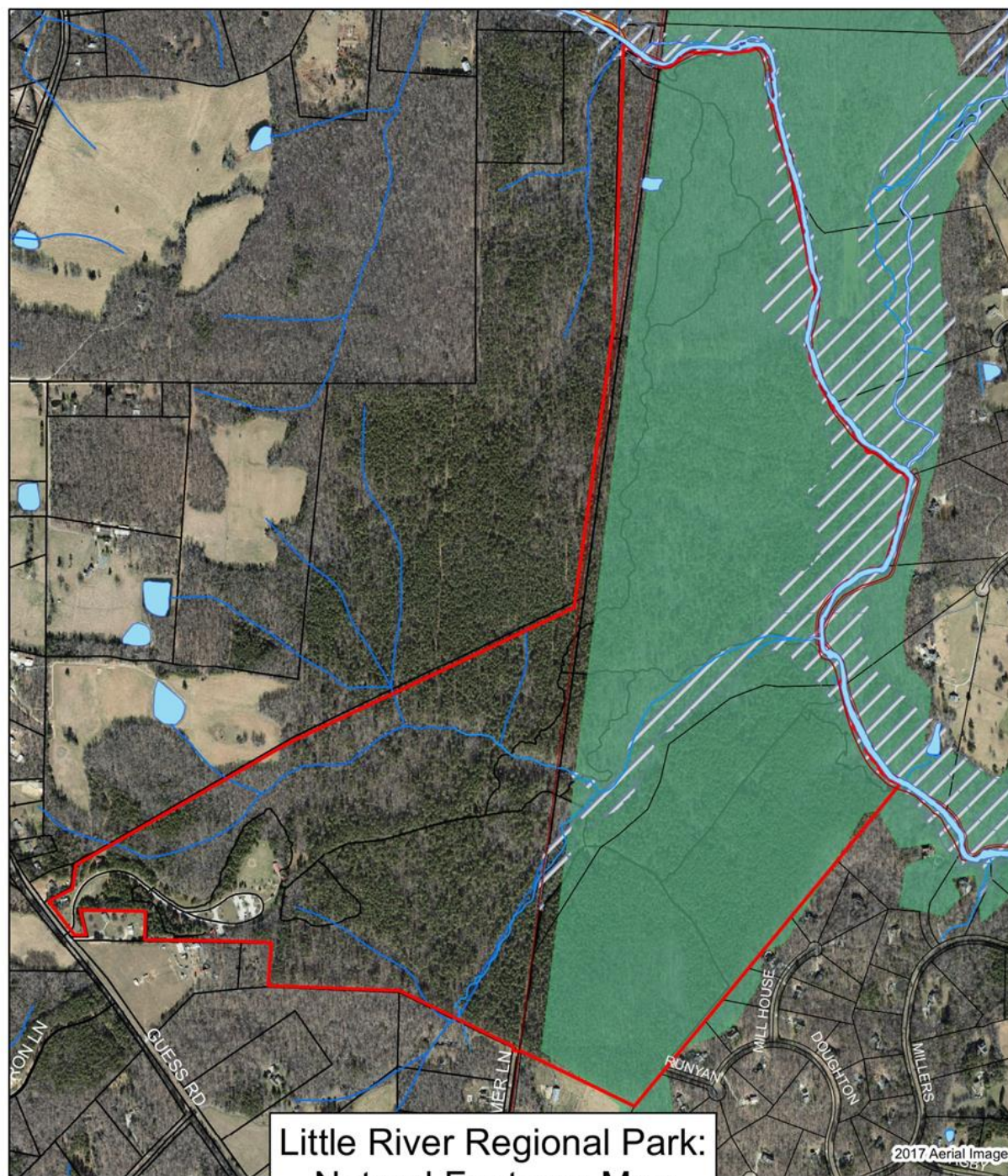


FIGURE 8. Topographic and Hydrological Map



- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Little River Regional Park | 100 Year Floodplain |
| NH Natural Area Ranking: General | Streets |
| NH Element Occurrence: Animal | Streams |

N

1 inch = 874 feet

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Date: 4/10/2019

FIGURE 9. Natural Features Map

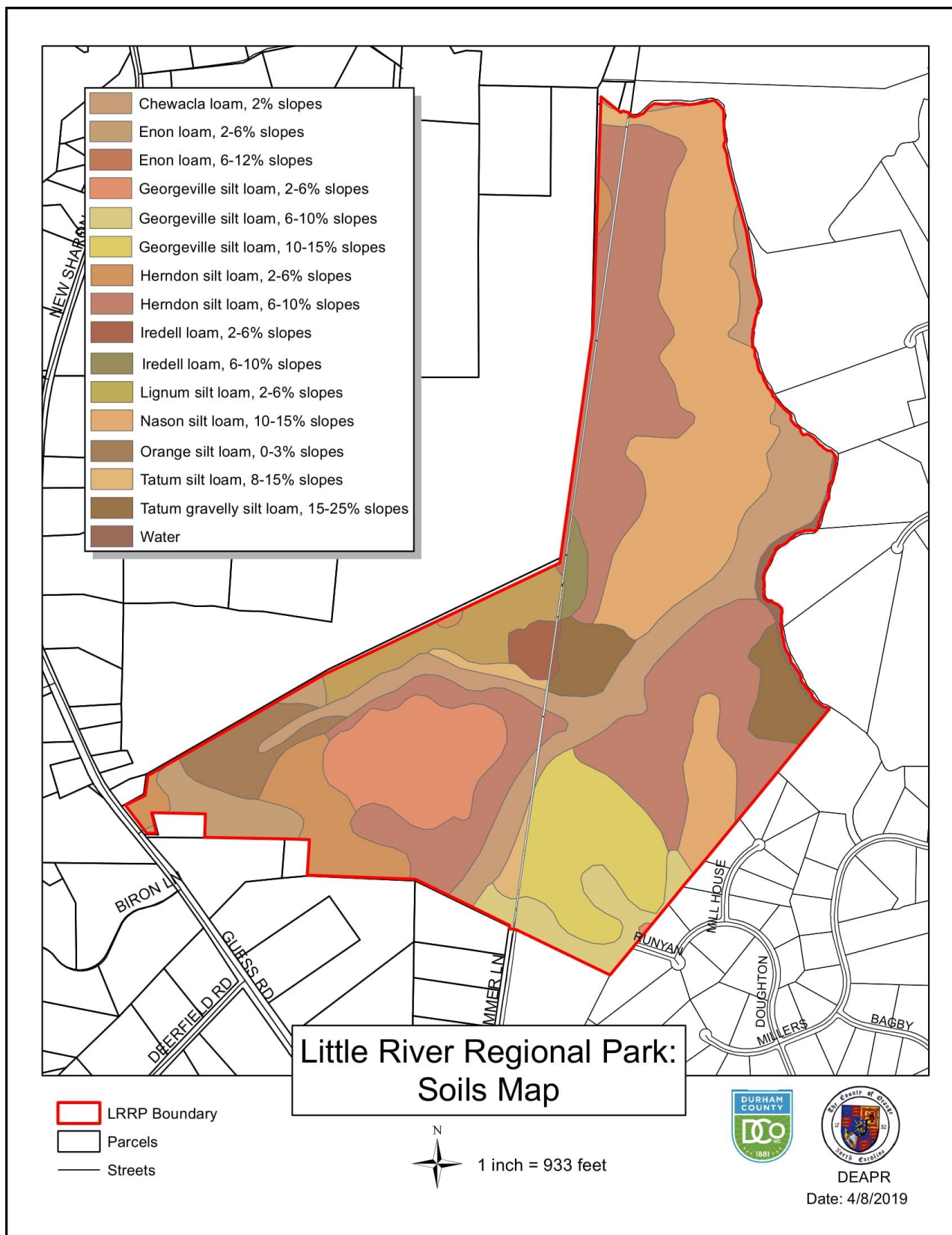


FIGURE 10. Soils Map