



# System Integration Plan

Erinsbrook Drive Property

Raleigh, North Carolina





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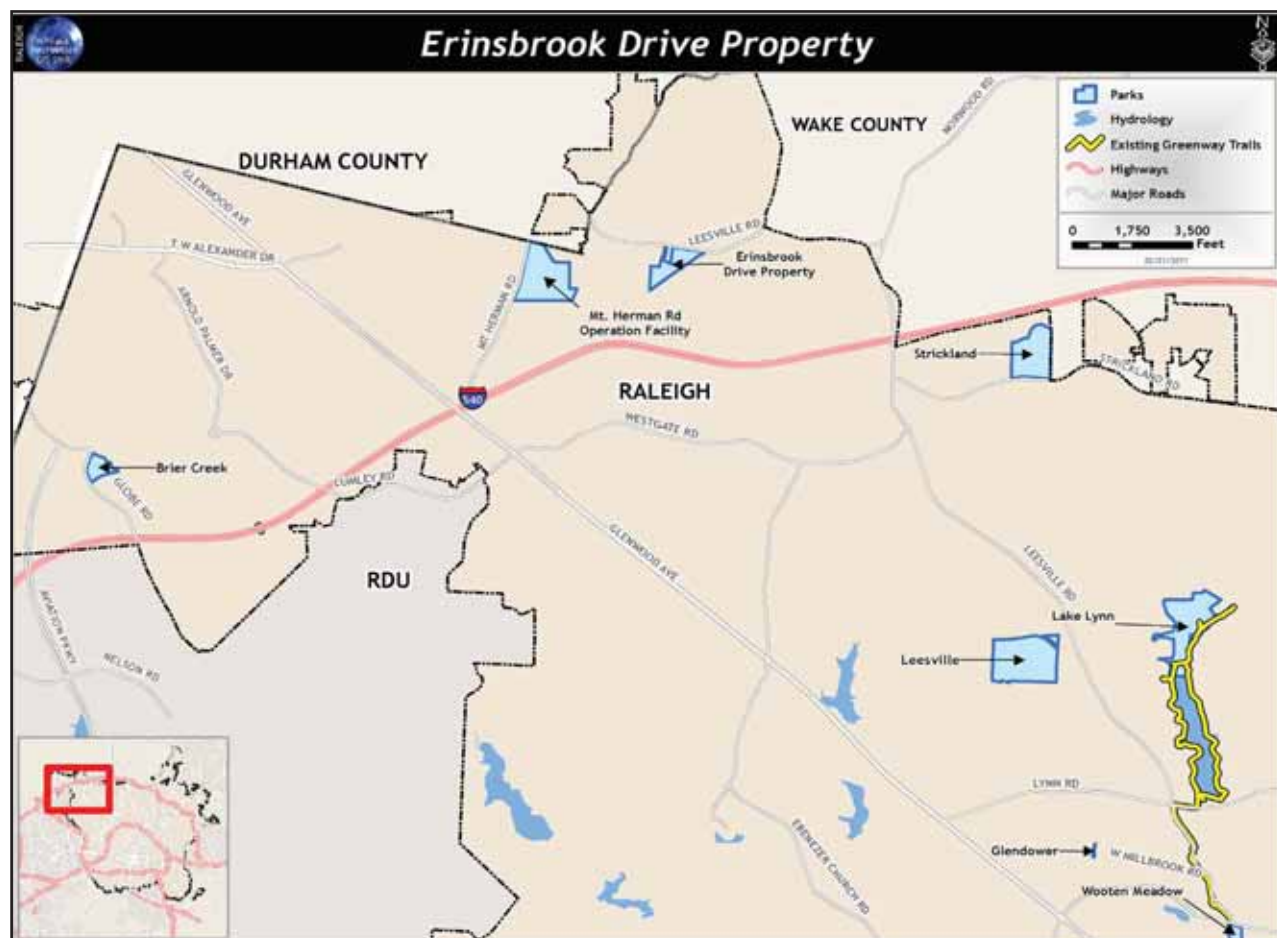
# System Integration Plan Erinsbrook Drive Property Executive Summary



The City of Raleigh Parks and Recreation Department has developed a System Integration Plan for an 18.29 acre undeveloped property on Erinsbrook Drive and Leesville Road in northwest Raleigh. The intent of the System Integration Plan (SIP) is to document existing site conditions and develop a set of guidelines for interim management of the property until a Master Plan is developed. The SIP includes background research on the property and involves site visits by a variety of contributors with expertise in different areas. The site specific System Integration Plan is developed with input from the Parks, Recreation and Greenway Advisory Board (PRGAB). A draft SIP is presented to the public through notification of adjacent and nearby property owners, Citizen Advisory Councils, registered neighborhood groups, and registered park support groups. The public is encouraged to provide comments throughout the public process including a formal presentation of the SIP to the PRGAB. The SIP is submitted to City Council for final action.

A detailed natural resources inventory is included in the SIP. There are no known occurrences of protected or rare plant or animal species on the Erinsbrook Drive property. The site is primarily a late successional beech forest, with young beech regenerating under mature beech. American beech trees are currently under severe threat from *beech bark disease* and should be conserved whenever possible. This disease has reached western North Carolina. Nursery stock and firewood from infected areas should not be moved.

A perennial stream and good quality riparian area are located in the central portion of the property. In the forest, areas of ponded water in the spring provide important amphibian habitat. Downed wood in both the forest and stream channel provides valuable wildlife habitat. A utility easement along Leesville Road provides valuable plant and habitat diversity. Easement maintenance should utilize mowing, rather than herbicide.





The Erinsbrook Drive property was purchased in 2003 and is adjacent to a high density residential neighborhood. Impacts to the park property from the adjacent neighborhood include erosion, soil compaction, and non point source pollution. Yard waste dumping in the park is degrading the natural resources. Residential landscaping is also impacting the site. Though prohibited on park property, ATV use is occurring. There are several informal trails on the property. Maintaining adequate property boundary signage should reduce encroachment. The property is located within an *Airport Overlay District*.

The City of Raleigh Comprehensive Plan calls for the extension of subdivision road *Englehardt Drive* through the future park property (see map on page three of Executive Summary). Englehardt Drive would connect to Leesville Road via an existing sixty foot driveway easement, ultimately bisecting the park. Construction of this street would be expected with park development. The City of Raleigh has purchased two lots for a proposed fire station along Leesville Road at the northwest corner of the park. There may be opportunity for coordination between departments for construction of Englehardt Drive.

Interim management recommendations proposed for the Erinsbrook Drive property are organized into three categories: Safety, Environment, and Property Issues. A historical and cultural review of the property is underway. Highlighted recommendations include installing adequate signage, implementing Best Management Practices for erosion, stewardship outreach to the neighboring community, and control of invasive plants originating from adjacent property owners. Yard waste dumping is harmful to natural areas, and should be addressed with the neighborhood.

An Action Plan (below) has been developed to prioritize interim management. The SIP is a useful tool to facilitate land stewardship and is a baseline document to promote ongoing site inventory, evaluation, and management.

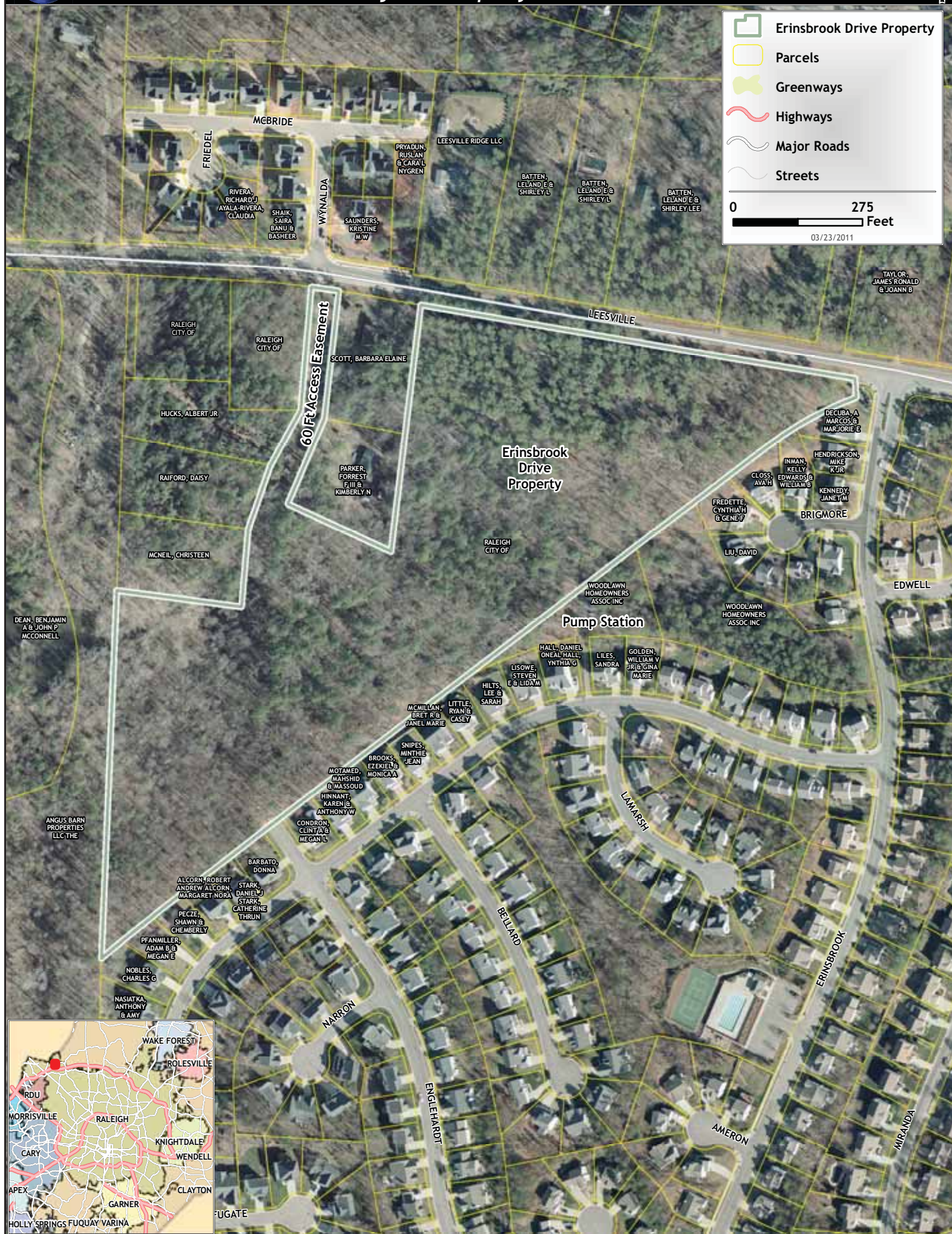
## Erinsbrook Drive Property Action Plan

Action	Responsible Division	Time Frame	Priority	Budget Item
Install <b>No Trespassing</b> signs	P&R Parks	short term	High	yes
Install sign with P&R contact info	P&R Parks	short term	High	yes
Historical site review	P&R Design/Development	short term	High	possibly
Encroachment issues	P&R Parks	short term	High	no
Erosion BMPs	Stormwater P&R Parks	ongoing	Medium	possibly
Stewardship meeting	P&R Design/Development	ongoing	Medium	no
Invasives management	P&R Parks Volunteers	ongoing	Medium	possibly
Annual site inspection	P&R Parks P&R Design/Development	ongoing	Medium	no
Continue inventory	P&R Design/Development P&R Parks	ongoing	Low	no





***Erinsbrook Drive Property***  
***Adjacent Property Owners***









## **System Integration Plan**

### **Erinsbrook Drive Property**

#### ***Table of Contents***

Introduction	1
Comprehensive Plan Classification	2
Site Description	7
Existing Facilities and Site Conditions	9
Soils	13
Water Resources	16
Flora Resources	20
Tree Conservation Ordinance	22
Fauna Resources	23
Interim Management Recommendations	25
Safety	25
Environment	26
Property Issues	26
Action Plan	27

#### **Appendices**

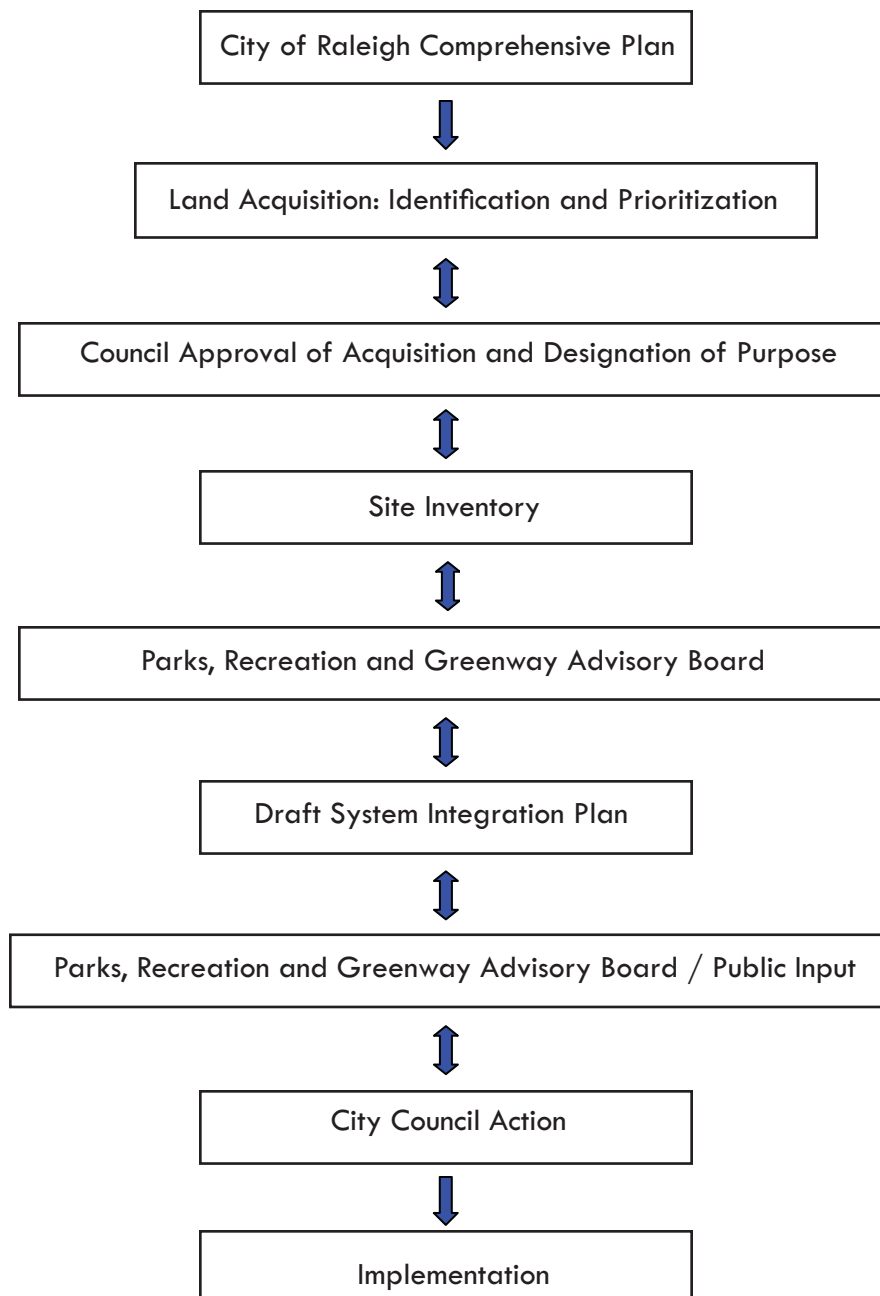
- A** City of Raleigh Council Resolution (2003)-735
- B** Contributors
- C** Phase 1 Environmental Assessment Executive Summary
- D** Stream Quality Assessment
- E** Flora Resources
- F** Fauna Resources

Comments and Records  
Work Progression and Updates



### Introduction: What is a System Integration Plan?

A System Integration Plan (SIP) is a sub-section of the overall City Park Master Planning process described in *City of Raleigh Council Resolution (2003) – 735 (Appendix A)*. The City of Raleigh Parks and Recreation Department undertakes a public master plan process to help determine the specific elements that are desired in a particular park. The purpose of the site specific System Integration Plan is to develop a set of guidelines for interim management of parkland prior to initiation of a Master Plan. The SIP will document existing site conditions and constraints, establish the park's classification consistent with the Comprehensive Plan, and if applicable, any proposed special intent for the park. The SIP is not intended to restrict the Master Plan Process. A System Integration Plan Conceptual Flow Model (below) demonstrates the interaction between the City of Raleigh Park Plan, park property acquisition, City of Raleigh Parks staff, the public, City Council, and the Parks, Recreation and Greenway Advisory Board (PRGAB) in the SIP process.



The SIP process promotes civic engagement through public notification and opportunities for public comment. The SIP process involves notification to adjacent and nearby property owners, Citizen Advisory Councils (CACs), registered neighborhood groups, and registered park support groups. The City of Raleigh maintains an SIP web page to provide updates and links to existing SIP documents. The public has the opportunity to provide comments to the site specific SIP through email or other written communication, and will also be encouraged to provide comments at a formal presentation of the SIP to the Parks, Recreation and Greenway Advisory Board. A meeting notification sign is posted at the park site 14 days prior to the formal PRGAB presentation. A “Comments and Records” section for this SIP follows the Appendices.

The SIP process involves collaboration with multiple City of Raleigh staff, as well as review by external agencies, Parks and Recreation Greenway Advisory Board and City Council. City of Raleigh Departments involved in developing a System Integration Plan include Parks and Recreation, Transportation, Public Utilities, and City Planning. City of Raleigh Parks and Recreation Divisions involved in developing an SIP include Design/Development, Facilities and Operations, Urban Forestry, and Parks Maintenance. Review and collaboration with external organizations includes agencies such as the USDA Natural Resource Conservation Service, the North Carolina Wildlife Resources Commission, and the United States Fish and Wildlife Service. A list of contributing staff and agencies is included in Appendix B.

### **Comprehensive Plan Classification**

Parks, Recreation, and Open Space is an important element of the City of Raleigh 2030 Comprehensive Plan. “This Element addresses park planning and acquisition, greenway and trail planning and connectivity, open space conservation, capital improvement planning, and the preservation of special landscapes” (Raleigh’s 2030 Comprehensive Plan, City of Raleigh Department of City Planning). At the time of this report, the City of Raleigh has 5,737 acres of park land and 3,714 acres of greenway property. As the City continues to expand there is a demand for additional parks to meet the needs of the community.

Six key Vision Themes have been identified in the Comprehensive Plan as overall goals for the City of Raleigh: Economic Prosperity and Equity, Expanding Housing Choices, Managing Our Growth, Coordinating Land Use and Transportation, Greenprint Raleigh – Sustainable Development, and Growing Successful Neighborhoods and Communities. Each of these Vision Themes is applicable to the Parks, Recreation, and Open Space element.



#### *Economic Prosperity and Equity*

High quality parks, recreation facilities, and open spaces will provide added value and amenities to the community, which in turn will attract jobs, workers, and greater economic prosperity to the area. Evenly distributed park and recreation facilities, accessible to residents throughout the City, promotes the goal of equity.





#### *Expanding Housing Choices*

Parks, recreation and open space opportunities must be developed in tandem with new housing. Providing leisure facilities in proximity to housing reduces the need to rely on fossil fuel vehicles. The issue is particularly important for affordable housing, as many lower-income residents have reduced access to private vehicles, limiting their ability to travel to distant parks, and making pedestrian, bike, and transit access all the more critical.



#### *Managing Our Growth*

The need for new parks and recreational facilities in the coming decades will require that substantial acreage be acquired by the City for park development. Land can be acquired in advance of development, at lower cost and in appropriate locations, to develop the parks and recreational opportunities that the future residents will require.



#### *Coordinating Land Use and Transportation*

Parks are a significant land use and a source of travel demand. Therefore their location and design should be coordinated with the City's transportation infrastructure (including greenway trails) to maximize access by multiple modes and to mitigate impacts on congestion.



#### *Greenprint Raleigh – Sustainable Development*

Sustainable design and green building is increasingly becoming a part of parks and recreation facilities design. Networks of interconnected parks, greenways, and open spaces (green infrastructure) can direct urban form and guide conservation efforts. Green infrastructure ensures that preserved open spaces and greenways provide greater environmental benefits by maximizing ecosystem conservation.



#### *Growing Successful Neighborhoods and Communities*

The parks and open spaces within Raleigh serve the daily leisure needs of the community. The spaces and programs promote the social, cultural, mental, and physical well-being of the community. In a broader sense, they promote a more livable community, a higher quality of life and lend a sense of place and belonging to the community and its residents.

The City of Raleigh Comprehensive Plan established a park classification system to provide a diverse, well-balanced, well-maintained range of recreational opportunities. The five park classifications are: Neighborhood Parks, Community Parks, Metro Parks, Special Parks, and Nature Parks and Preserves.

The site first known as NPS 28 (Neighborhood Park Search) and now called the Erinsbrook Drive property was purchased to satisfy a documented need for neighborhood parks in the Northwest Planning District. Neighborhood Parks are expected to serve the basic daily recreational needs of the surrounding neighborhoods. They most often include playgrounds, court surfaces such as basketball, tennis or volleyball, and open space or multi-use turf areas. Depending on the size, topography and other site characteristics, neighborhood parks may serve other needs as determined by the master planning process, proximity to other parks and greenway lands, and overall Parks and Recreation Department program needs. Smaller sites may be limited to very few elements; larger sites may present opportunities for elements such as walking tracks, athletic fields or neighborhood center buildings. In some cases deed restrictions or environmental requirements may dictate the options available.

In general, the number of acres of existing neighborhood parkland compared to the expected population of an area is used to try to meet a Level of Service (LOS) of 2.6 acres of parkland per 1,000 population. Other considerations, such as the size and character of existing parks in the area, barriers to access (such as major thoroughfares), availability of opportunities for future acquisition, and other elements of the City of Raleigh Comprehensive Plan are also taken into account when acquiring parkland. A map on the following page shows Future Land Use projected for the year 2030 in the vicinity of the Erinsbrook Drive property.

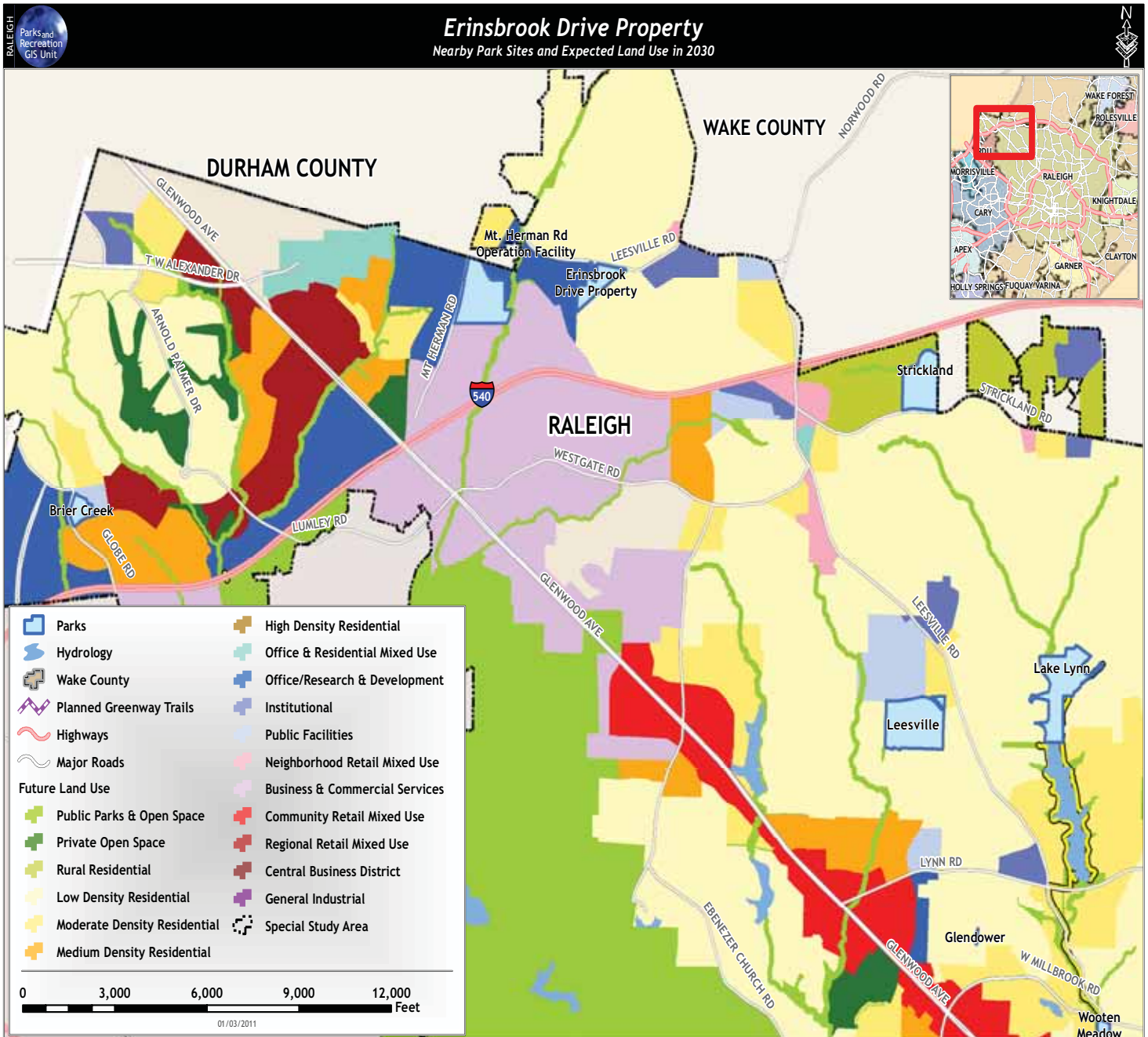
City of Raleigh parks in the vicinity are also included on the map. Strickland Road Neighborhood Park is a 37 acre park located in northwest Raleigh. The Strickland Road Master Plan was adopted in 2009, and includes walking trails, a neighborhood center, open space field, playground, basketball half courts, and picnic areas. Park elements to be included in Phase 1 construction (estimated completion July 2011) are playground equipment for both 2-5 year olds and 5-12 year olds, swings, site furnishings, landscaping, and parking.

Leesville Road Community Park and Library is a 55 acre joint effort between the City of Raleigh and Wake County. The library, a playground, restrooms, and a heritage garden opened in 2009. The Master Plan for the park includes a neighborhood center, picnic facilities, and walking trails.

Lake Lynn Community Park is a 52 acre park located less than 5 miles southeast of the Erinsbrook Drive property. Lake Lynn Community Center and Park provide many opportunities for leisure and recreation to people of all ages. The staffed community center includes a gymnasium, dance and art studios, and rental facilities. The park includes lighted tennis courts, ball fields, athletic fields, a playground, bocce courts (under construction), and picnic shelters. A paved greenway trail traverses the eastern side of the park and loops around Lake Lynn.

Baileywick is a 50 acre Community Park located less than 5.5 miles east of Erinsbrook. Baileywick provides picnic shelters, lighted ball fields, a playground, and a paved greenway trail.

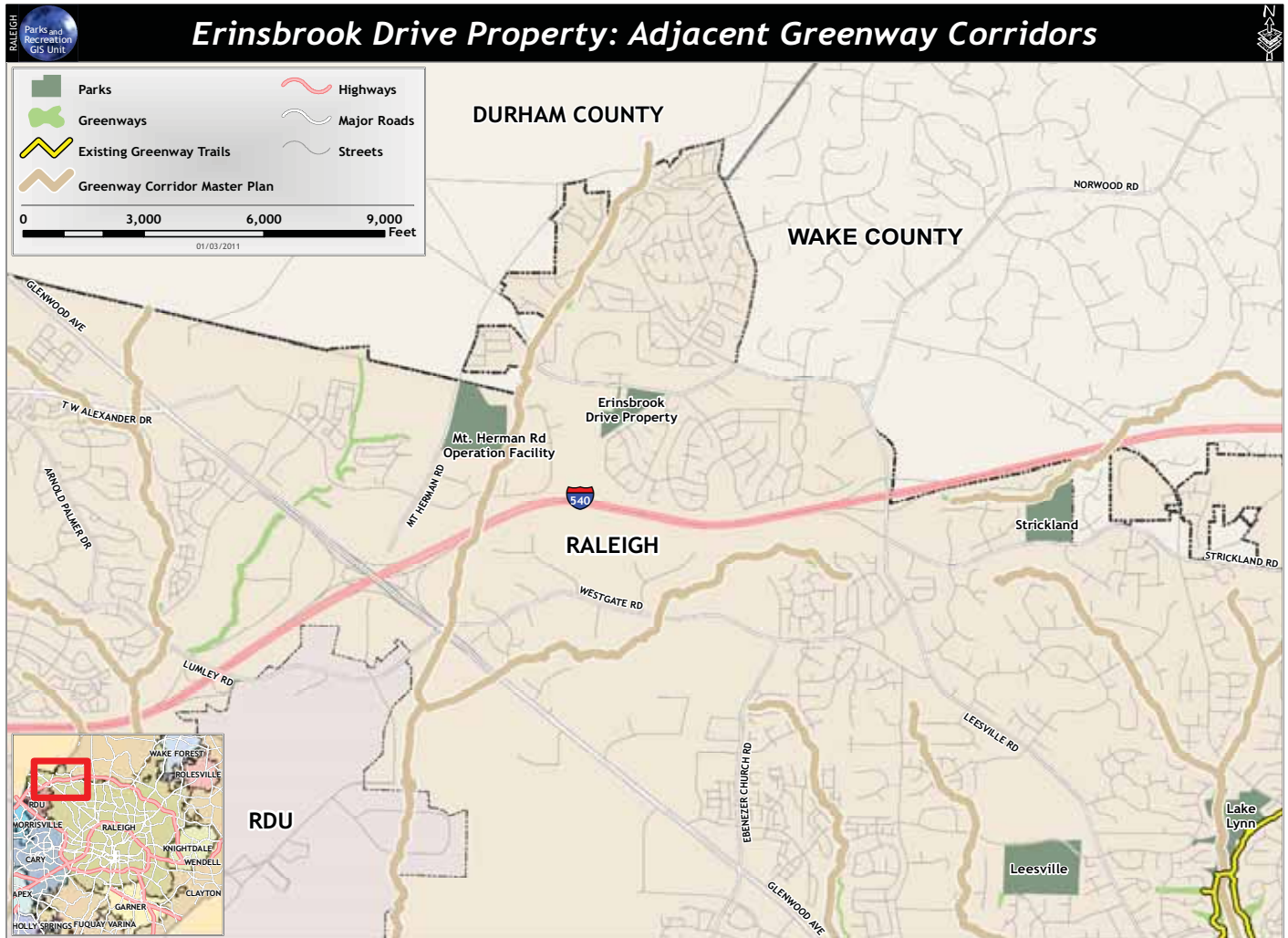
Mt. Herman Rd. Operation Facility, just west of Erinsbrook, is planned as a maintenance facility for several City departments.





## SIP: Erinsbrook Drive Property

Natural resource-oriented recreation opportunities occur in proximity to the Erinsbrook Drive property at Lake Lynn and Baileywick Community Parks. Both parks provide recreation trails within a substantial natural area. Development of new park land typically includes conservation land in the form of buffers, stream and river corridors, and officially designated Tree Conservation Areas. The City of Raleigh Greenway system is a network of recreational trails and public open spaces that provide opportunities for a range of activities including biking, running, hiking, fishing, picnicking, bird watching, and nature study. Currently, the greenway trail closest to the Erinsbrook Drive property is located at Lake Lynn (see map below).



As of the date of this SIP report, no additional park land acquisition has been completed in the general vicinity of the Erinsbrook Drive property. Neighborhood Parks are intended to provide recreation opportunities for residents within (but not limited to) a 1/2 mile radius. At the time of this report, there is no *special intent* proposed for the site. The Erinsbrook Drive property will serve as the Neighborhood Park resource for residents of the Erinsbrook Drive area.

## Site Description

The Erinsbrook Drive property is an 18.29 acre undeveloped parcel located at **11921 Leesville Road** near the intersection of Erinsbrook Drive and Leesville Road in northwest Raleigh. The vicinity of the Erinsbrook Drive property has been developed in recent years with high density residential neighborhoods composed of small lots. Adjacent land north of Erinsbrook Drive is a combination of high density and large lot residential. The future park site is bordered to the west by a golf course.

Leesville Road (SR 1839) is classified as a major thoroughfare and ultimately will be a five lane highway (or four lane with a median) on ninety feet of public right-of-way. The City will be required to dedicate right-of-way (ROW) and slope easement and contribute funds for future road improvements when park development begins. Leesville Road is state maintained, so NCDOT approval will be required. Turn lanes may be required to access the park property from Leesville Road.

The Erinsbrook Drive property is zoned as a *Thoroughfare District* (TD). A Thoroughfare District is a mixed use district (high density residential, office, retail, and industrial) located along thoroughfares. This District requires a 50-foot vegetative buffer adjacent to any thoroughfare.

The property is also located within an *Airport Overlay District*, defined by the City of Raleigh Planning Department: *Specific areas around the Raleigh-Durham International Airport in relation to airport arrival and departure paths and associated noise contours. The district addresses potential physical conflicts with aircraft as well as aesthetic issues for arriving aircraft passengers. Uses are prohibited that may be hazardous in the event of aircraft crashes (such as above ground storage of combustibles), or are unsightly (such as the storage of wrecked vehicles). Dwelling units, unless part of a hotel, are prohibited as well as residential related uses such as day care facilities, schools, churches and hospitals.* The Erinsbrook Drive property is located in the vicinity of several Raleigh Durham Airport flight paths, and low flying aircraft are frequently observed.

Additionally, the future park site is located within a *Special Highway Overlay District 2* (SHOD 2), defined by the City of Raleigh Planning Department: *Used to establish a landscaped yard area adjacent to arterials or thoroughfares and to specify minimum landscape standards. A SHOD 2 district is located along limited access arterial roadways and require a 25-foot landscaped yard which is used as a visual screen and noise/pollution filter.*

The Citizen Advisory Council (CAC) District is Northwest/Umstead ([www.raleighnc.gov/citizensadvisorycouncil](http://www.raleighnc.gov/citizensadvisorycouncil)). The Woodlawn Community east of the property has an active Homeowners Association ([woodlawn.hoa.org](http://woodlawn.hoa.org); [hoa@woodlawnhoa.org](mailto:hoa@woodlawnhoa.org)).







### Existing Facilities and Site Conditions

An existing sixty foot unpaved access easement (photo below) located in the western arm of the Erinsbrook Drive property allows access to privately owned lots that inset the park property.



Englehardt Drive dead-ends southeast of the future park site (see photo below) and is identified in the City's Comprehensive Plan as a collector street: a three lane section with five foot sidewalks on sixty feet ROW. The Comprehensive Plan calls for the extension of Englehardt Drive through the Erinsbrook Drive property to connect with Leesville Road via the current access easement. This would bisect the park property and create a subdivision. Construction of this street would be expected with development of the park. The City of Raleigh has purchased two lots for a proposed fire station along Leesville Road at the northwest corner of the park. There may be opportunity for coordination between departments for construction of Englehardt Drive.





Utility easements for Carolina Power and Light Company (now a subsidiary of Progress Energy) and American Telephone and Telegraph Company (AT&T) are recorded for the Erinsbrook Drive property. However at this time, Progress Energy does not have record of easement along this portion of Leesville Road. The Leesville Road easement (photo above) is mis-used for ATV recreation and dumping. Dumping in the right-of-way includes household items and yard waste. Approximately seven deer carcasses were dumped in the easement, in various stages of decomposition. NCDOT maintains the Leesville Road ROW, cleaning up trash and removing vegetation that obstructs traffic views.

The easement is maintained to prevent forest succession, thus keeping the area in a grassland type of habitat. This condition contributes vegetation diversity to the property and is beneficial to wildlife. Vegetation management should utilize mowing rather than herbicide when possible. There are several patches of invasives established in the easement. These invasives appear to be a result of yard waste dumped in the easement, as they are not typical invasives spread by birds and other wildlife.



There is a twenty foot sewer easement along a portion of the eastern property boundary on the Woodlawn Homeowners Association open space. A pump station (photo above) is located near the eastern property boundary with an access road off Erinsbrook Drive.



The City purchased a majority of the Erinsbrook Drive property in 2003. In 2010 the City purchased a contiguous 1.5 acre parcel to increase the size of the future park. A *Phase 1 Environmental Site Assessment* was completed in 2010 for the 1.5 acre parcel during the site acquisition process; the Executive Summary of the *Phase 1* report is included in Appendix C. The *Phase 1* report concludes *no significant evidence of environmental contamination, environmental impairment, or Recognized Environmental Conditions (REC) in association with the property.* The 1.5 acre parcel was recombined with the Erinsbrook Road property in 2010, creating a future park property of approximately 18.29 acres. Some of the information in the 2010 *Phase 1* report is applicable to the larger site purchased in 2003.

Property boundary signage along the perimeter of the parcel should be maintained in order to deter encroachment on the park by adjacent landowners. Though undeveloped, this property is used by the adjacent community. Informal trails are located on the property. The trails are in good condition except at stream crossings, where soil compaction and erosion are visible. ATV use is likely the major contributor to this deterioration.

ATV use is prominent on the site. The use of ATVs violates the City of Raleigh Parks and Recreation rules and constitutes a safety hazard. ATV use also negatively impacts the natural resources of the site, causing erosion, soil compaction, and water quality degradation.

Yard waste dumping on the park property is substantial. Yard waste (such as leaves, wood chips, branches, garden clippings, pine needles) is harmful to natural areas for several reasons. Piles of yard waste are a fire hazard. The native plants and tree seedlings in the area are smothered by the yard waste. Mature trees are damaged when debris is piled up around the trunk. Yard waste piles introduce invasive plants, weed seeds, plant diseases and insects into the forest. Yard waste also attracts rodents and pests. An ecosystem can only process the amount of plant material within the system. Piles of additional yard debris overload the system. The piles can take years to decompose, and dumping by one person encourages dumping by others. Yard waste dumping violates City of Raleigh Parks and Recreation rules. Adjacent property owners should be directed to dispose of their yard waste through the City of Raleigh's free yard waste program, collected curbside on the same day as recycling and garbage.

Several areas of the park are impacted by residential landscape plantings that are escaping into the forest. Homeowners living adjacent to the park should be encouraged to contain or replace creeping or running plants (such as English ivy, periwinkle, lamium).

Stewardship outreach with the neighboring community may decrease these problems.

## **Inventory of Natural Resources: Soils, Water Resources, Flora and Fauna**

The majority of the property is currently forested. There are no known North Carolina Natural Heritage Program Element Occurrences on or within a one mile radius of the Erinsbrook Drive property. Site investigations for the purpose of developing the SIP were conducted during March and June 2009, and February and October 2010.

### **Soils of the Erinsbrook Drive Property**

The following soil data was created by the USGS and the North Carolina Center for Geographic Information and Analysis. The Erinsbrook Drive property is underlain by the Appling-Louisburg-Wedowee soil association. This soil association is described in the *Wake County Soil Survey* as gently sloping to steep, deep and moderately deep, well-drained and somewhat excessively drained soils with a subsoil of very friable coarse sandy loam to firm clay; derived mostly from granite, gneiss, and schist. This soil association is described as being droughty in many places. The *Wake County Soil Survey* describes the major soils of this association to have moderate to severe limitations to use as absorption fields for septic tanks, no special limitations if they are used to support foundation footings for large buildings, and a main limitation of bedrock near the surface for road construction. The Louisburg soils of Wake County are strongly acid and are low in natural fertility and content of organic matter (Cawthorn 1970). There are nine soil mapping units within the property.

#### **AgB Appling gravelly sandy loam, 2 to 6 percent slopes**

This soil is on broad smooth interstream divides in the uplands. It has a surface layer of light grayish-brown to dark-gray gravelly sandy loam that is 6 to 20 inches thick. The subsoil is yellowish-brown to yellowish-red firm clay loam to clay that is mottled with red in most places and is 24 to 40 inches thick. From 15 to 30 percent of the surface layer is gravel. In many places cobbles or on and in the surface layer. Infiltration is good, and surface runoff is medium. The hazard of erosion is moderate.

#### **GeB2 Georgeville silt loam, 2 to 6 percent slopes, eroded**

This soil is on smooth interstream divides in the uplands. The surface layer is 3 to 6 inches thick silt loam to silty clay loam. In many places it is a mixture of the remaining original surface soil and subsoil material. In some areas, 20 to 50 percent of the surface layer is covered with or contains pebbles and cobblestones. Infiltration is fair, and surface runoff is medium. The hazard of further erosion is moderate.

#### **GeC2 Georgeville silt loam, 6 to 10 percent slopes, eroded**

This soil is on short to long side slopes in the uplands. In many places it is a mixture of the remaining original surface soil and subsoil material. The surface layer is 3 to 6 inches thick silt loam to silty clay loam. In some areas, 20 to 50 percent of the surface layer is covered with or contains pebbles and cobblestones. The subsoil is red firm silty clay loam to clay and is 30 to 45 inches thick. Infiltration is fair, and surface runoff is rapid. The hazard of further erosion is severe.

**GeD2 Georgeville silt loam, 10 to 15 percent slopes, eroded**

This soil is on narrow side slopes bordering upland drainageways. It is dominantly moderately eroded, but it is only slightly eroded in places. The surface layer is 3 to 6 inches thick silt loam to silty clay loam. In some areas, 20 to 50 percent of the surface layer is covered with or contains pebbles and cobblestones. The subsoil is red firm silty clay loam to clay and is 30 to 45 inches thick. Infiltration is fair to good, and surface runoff is very rapid. The hazard of further erosion is very severe.

**PaF Pacolet sandy loam, 15 to 35 percent slopes**

The Pacolet series are well drained, moderately permeable soils on gently sloping to very steep Piedmont uplands. The surface layer is 0 to 3 inches of sandy loam. The soil is strongly acid to moderately acid. Runoff is medium to rapid. Permeability is moderate. The hazard of erosion is severe.

**WoA Wehadkee and Bibb Soils, 0 to 2 percent slopes**

Soils are poorly drained and located on floodplains, in narrow upland draws, and in depressions. Area may have poorly defined stream channels. Surface layer of silt or sandy loam is 3 to 12 inches thick. Subsoil is friable sandy loam to silty clay loam 15 to 30 inches thick. Where these soils are on floodplains along streams, they are wet, subject to very frequent flooding of long duration, and have a water table at the surface for periods of as much as 6 months. The soils in draws are also wet and have a water table at the surface for periods of as much as 6 months, however flooding is of short duration though it is frequent. In many places the stream channels in the upland draws are well defined.

**CgC Cecil gravelly sandy loam, 6 to 10 percent slopes**

This soil is on short to long side slopes in the uplands. Surface layer is 7 to 12 inches thick consisting of sandy loam that is 15 to 30 percent pebbles. The subsoil is red firm clay 30 to 45 inches thick. In many places cobblestones are in the surface layer and on the surface. Infiltration is good and surface runoff is rapid. The hazard of erosion is severe.

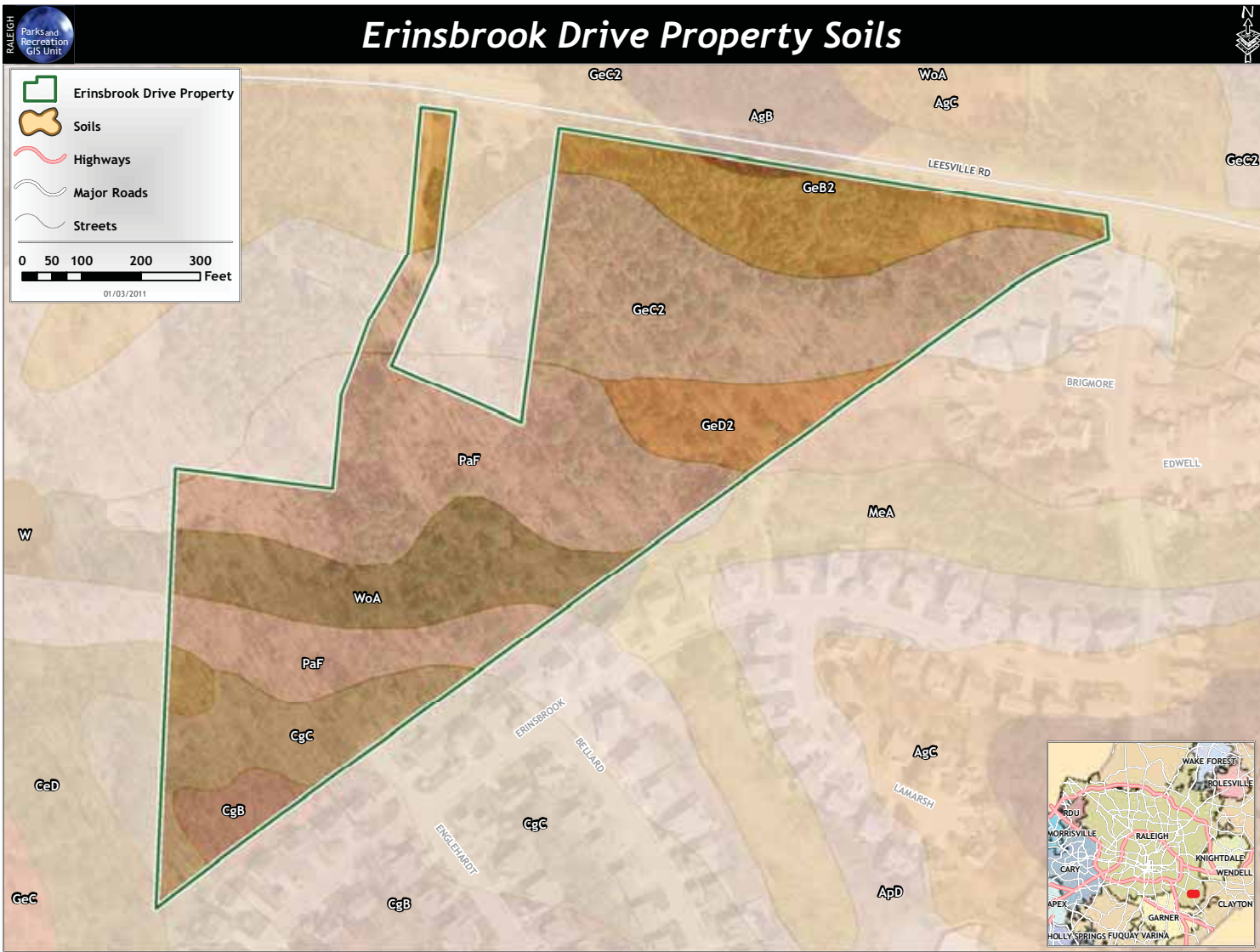
**CgB Cecil gravelly loam, 2 to 6 percent slopes**

This soil is on broad smooth interstream divides in the uplands. Surface layer is 7 to 12 inches thick and consists of gravelly sandy loam that is 15 to 30 percent pebbles. The subsoil is red firm clay 30 to 45 inches thick. In many places cobblestones are in the surface layer and on the surface. Infiltration is good and surface runoff is moderate. The hazard of erosion is moderate.

**CeD Cecil sandy loam, 10 to 15 percent slopes**

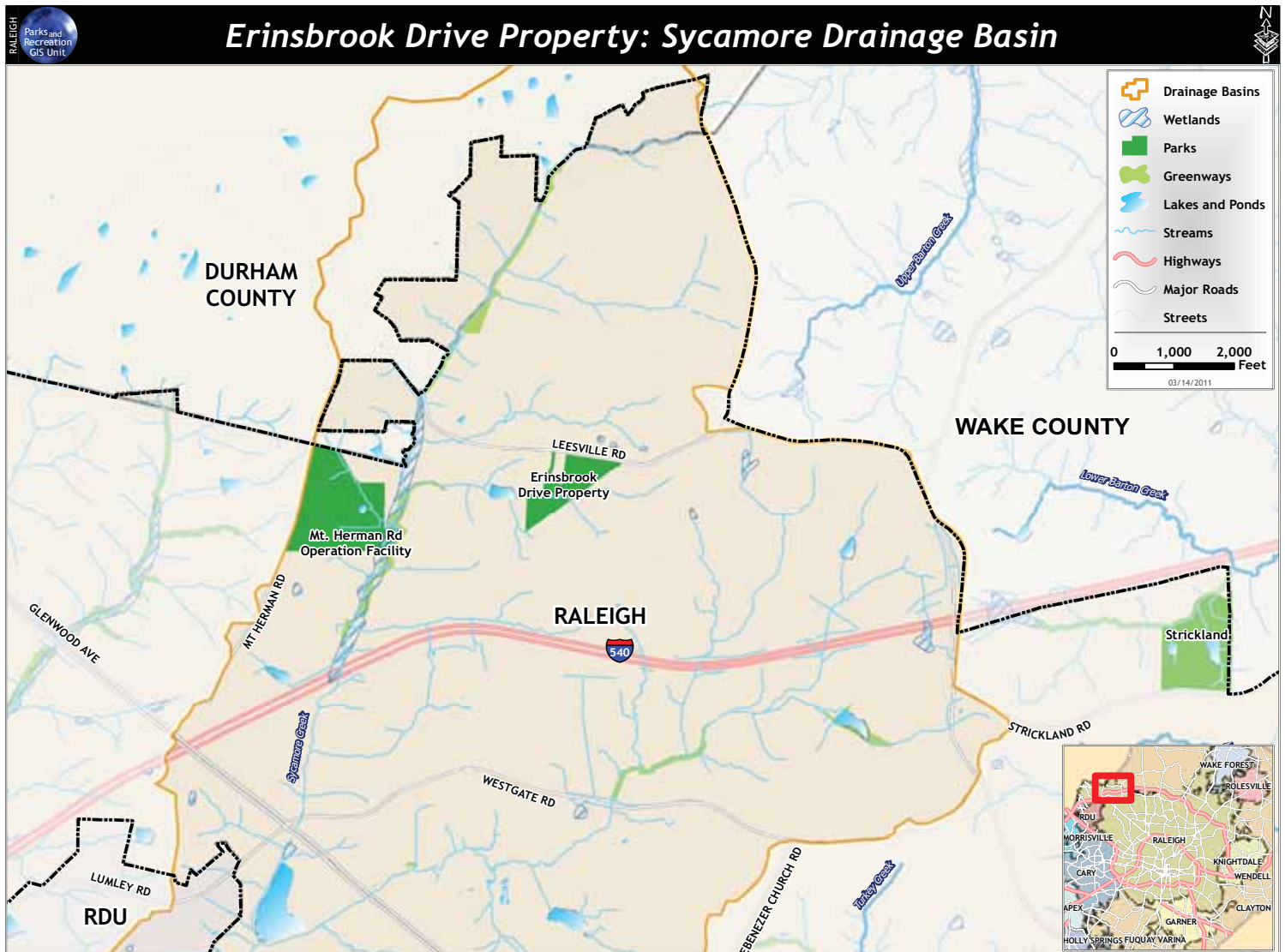
This soil is well drained and slightly to moderately eroded. It is found on narrow side slopes bordering upland drainageways. The surface layer is sandy loam. The subsoil is red, firm clay. Infiltration is fair to good. Surface runoff is very rapid. The hazard of further erosion is very severe.





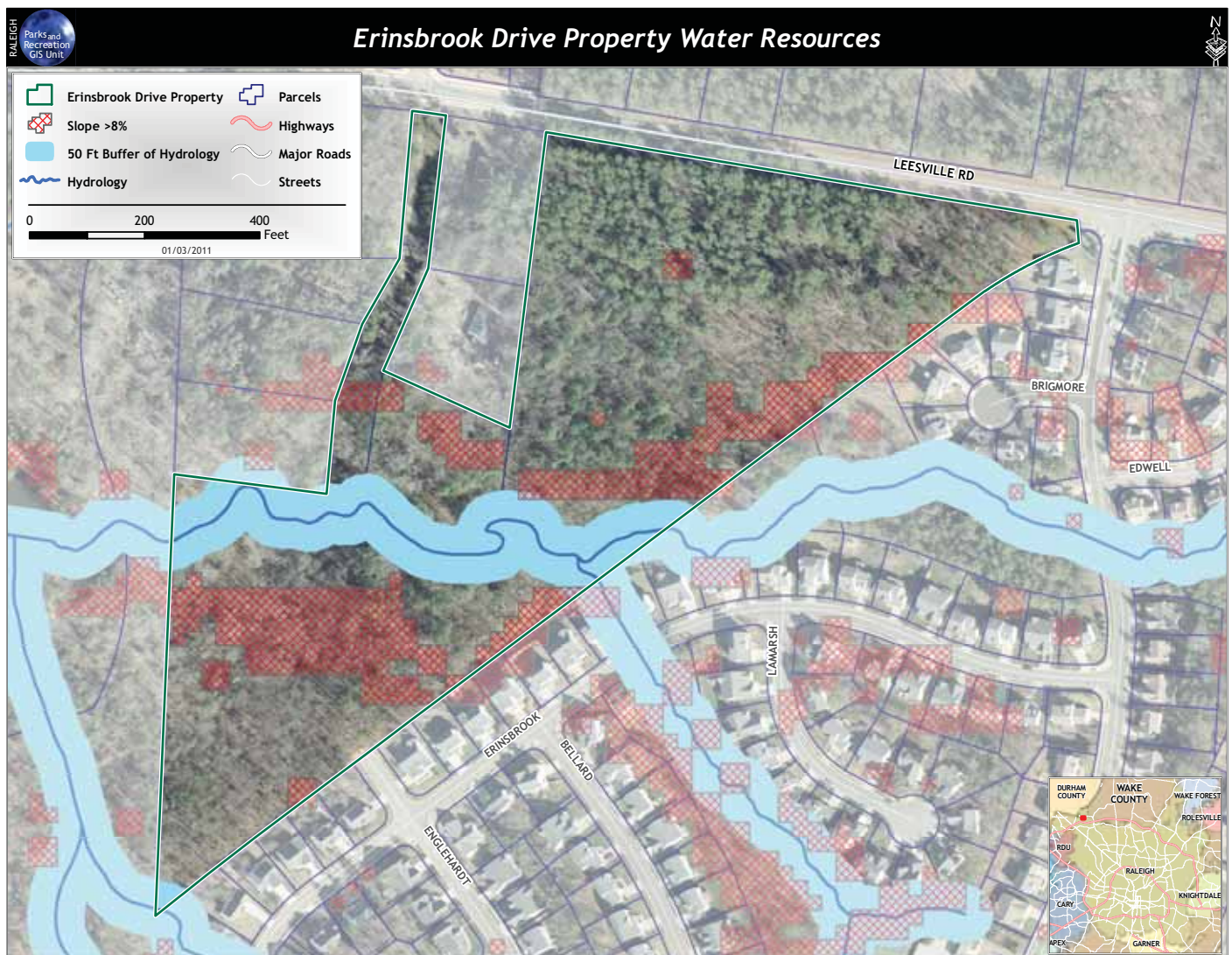
### Water Resources of the Erinsbrook Drive Property

The Erinsbrook Drive property is located in the Sycamore Creek watershed of the Neuse River Basin. The water draining off or going under the area bounded in orange on the map below flows into Sycamore Creek. Sycamore Creek flows south and is impounded twice within Umstead State Park, first forming Big Lake and then Sycamore Lake. Public water needs are met by man-made surface water impoundments that may also offer flood control, recreation, and fish and wildlife habitat. Sycamore Creek is a tributary of Crabtree Creek, which ultimately flows into the Neuse River. The Sycamore Drainage Basin is part of the Upper Neuse Basin, heavily populated and industrialized, with a high concentration of waste dischargers.





A perennial stream enters the Erinsbrook Drive property from the east. The perennial stream is a significant feature of this site. The stream is subject to state and federal jurisdictional regulation under Section 404 of the Clean Water Act and North Carolina's Neuse River Riparian Buffer Rules. The Neuse River Riparian Buffer Rules require a minimum 50-foot wide riparian buffer directly adjacent to surface waters in the Neuse River Basin. Stormwater impacts including erosion, soil compaction, and non point source pollution originate from the adjacent subdivision. Outreach to the neighboring community could include information on stewardship and best management practices for water quality.





The perennial stream is an unnamed tributary. The channel is minimally braided and defined as it enters the property and becomes somewhat braided where it joins a pond located on adjacent property to the west. The channel bed substrate is sand and rock of diverse sizes. The various rock sizes and woody material in the stream provide good habitat. There has been some bank erosion but overall the stream currently has a relatively stable bank with little scouring or channel incision. The streambed has full canopy coverage which plays an important role in stream water quality. Canopy coverage moderates stream temperatures and is an indicator of stable stream banks. Nutrient inputs from the riparian area provide food for stream organisms and create habitat diversity within the stream channel. The stream corridor has a wide riparian area with few invasives. A description of riparian area vegetation is included in the flora resources section of this report. The soils in the riparian area are hydric Wehadkee soils. A brief stream quality assessment was conducted in June 2009 and is included in Appendix D.



Mature beech trees along meandering stream channel, Erinsbrook Drive property



Field surveys were conducted in February and March to determine if any vernal pools or other small wetland areas suitable for amphibian habitat exist on the property. Several low areas filled with ponded water were visible during these field visits, and some of them contained visible amphibian larvae (see photo below). Several different types of amphibian egg masses were observed. Downed wood provides critical habitat for salamanders and other forest wildlife.



Ephemeral ponded water with amphibian egg masses and downed wood

The following description of the property's groundwater characteristics is from the 2010 *Phase 1 Environmental Site Assessment*: "The location of the subject property appears to be situated within an area dominated by metavolcanic epiclastic rocks. The rocks at this general location would consist of metamorphosed argillites, mudstone, volcanic sandstone, conglomerate, and volcanic rock. The hydrogeological system in the area of the subject property includes both the surficial sediments and underlying bedrock. Groundwater in sediments is present in pores between individual sediment grains. In bedrock, groundwater is present predominantly in horizontal and subhorizontal unloading fractures, and in near, vertical stress fractures. Groundwater depths are variable and generally approach ground surface near streams. Based on the historical groundwater flow characteristics in this area, groundwater flow typically mirrors surface topography."

### Flora Resources of the Erinsbrook Drive Property

Site investigations of flora resources were conducted by City of Raleigh staff during the months of February, March, June, and October. Flora identification will be ongoing at this site. Additional plants identified during site inspections and work days will be added to the plant inventory. Species naming follows “*Flora of the Carolinas, Virginia, and Georgia, and Surrounding Areas*” by Alan S. Weakley, 2008. A detailed plant list for the Erinsbrook Drive property is included in Appendix E.

The Erinsbrook Drive property is dominated by *Piedmont Dry-Mesic Oak Pine Forest* and *Piedmont Dry-Mesic Oak and Hardwood Forest*. The mesic hardwood forested areas are located in the steeper central and southern portions of the property, and are underlain by well-drained acidic Cecil and Pacolet soils. A dominant tree in this forest is American Beech (*Fagus grandifolia*). A beech forest is a climax forest. Shade tolerant beech seedlings regenerate under the deep shade of mature beech trees, so the forest will remain a beech forest unless a major disturbance is introduced. The herb layer is fairly sparse under the heavy shade, but does include Christmas fern (*Polystichum acrostichoides*), grapeleaf fern (*Botrychium* sp.), Virginia heartleaf (*Hexastylis* sp.), and running cedar (*Lycopodium* sp.). Beech trees should be conserved whenever possible, as they are currently under severe threat. *Beech bark disease* is a very serious disease introduced from Europe that is spreading from the eastern U.S. and has now been established in western North Carolina. This disease causes mortality of beech trees, with large trees (over eight inches diameter) most susceptible. Non-native beech scale insects act as a vector to attack beech bark and introduce *Nectria* fungi that ultimately kill the beech trees. The disease spreads through infected nursery stock and firewood. To prevent many types of forest insects and disease from establishing in new areas, it is important to alert the public to the hazards of moving firewood from one locale to another.

The *Piedmont Dry-Mesic Oak Pine Forest* is located on the northern portion of the site, on primarily Georgeville soils, which are silty loam and contain up to 50 percent pebbles and cobblestones in the surface layer. This forest contains an uneven-aged stand, with an old mature grove of oaks dominating. Loblolly pine (*Pinus taeda*), American beech, tulip poplar (*Liriodendron tulipifera*), red maple (*Acer rubrum*), sourwood (*Oxydendrum arboreum*), American holly (*Ilex opaca*), and hickories (*Carya* spp.) are plentiful in the second layer. Understory herbs do include pipsissewa (*Chimaphila maculata*), rattlesnake orchid (*Goodyera pubescens*), and crane-fly orchid (*Tipularia discolor*).

Natural tree regeneration throughout the property is high. Downed trees and woody material are abundant and provide excellent wildlife habitat. The southern portion of the property near the residential community contains a very young forest without any particularly high quality trees. Overall the forested areas have few invasive plants, and will benefit from early control efforts and prevention of further invasive establishment from yard waste and escaped garden plants.



Riparian vegetation is fairly sparse due to the deep shade and the nature of a floodplain. There are some areas of native switch cane (*Arundinaria*) along the stream bank. Christmas fern and sedges are common. Spicebush (*Lindera benzoin*) and buckeye (*Aesculus* sp.) are present, and spring beauty (*Claytonia virginica*) is plentiful around the stream corridor in the early spring. Overall the property does not have many invasives, but honeysuckle (*Lonicera japonica*) is abundant in the riparian area, and some microstegium has been established.

Vegetation in the utility easement along Leesville Road is partially bordered by thin strips of loblolly pine (see photo page 10). The easement is maintained to prevent woody plants from maturing and interfering with overhead utilities. Seedlings of loblolly pine, red oak, and sweet gum are common in the easement. The easement also supports herbaceous plants that are not typical forest herbs, thus creating plant and habitat diversity on the Erinsbrook Road property. Vegetation in the easement is fairly diverse, and includes bear grass (*Yucca filamentosa*), goat's rue (*Tephrosia virginiana*), flowering spurge (*Euphorbia corollata*), threadleaf coreopsis (*Coreopsis verticillata*), spreading dogbane (*Apocynum androsaemifolium*), and splitbeard bluestem (*Andropogon ternarius*). These types of plant communities are very important for butterflies and other pollinators. Maintenance crews should use mowing to control woody vegetation, and refrain from using herbicide. Yard waste and other dumping is common in the easement and is a threat to the valuable native plants. Yard waste in particular is threatening the quality of the easement. Several garden plants have become established in the easement by escaping from yard waste piles, including zebra grass (*Miscanthus sinensis*) and daylilies. There are also many invasive mimosa seedlings in the western portion of the easement, originating from mature mimosas (*Albizia julibrissin*) on adjacent property.

### Rare and Protected Plant Species

Michaux Sumac (*Rhus michauxii*) is a federally protected plant known to occur in Wake County and listed as "Endangered" by the U.S. Fish and Wildlife Service (USFWS) *Endangered Species Act of 1973*. The Endangered Species Act requires that any action likely to adversely affect a federally protected species is subject to review by USFWS. City of Raleigh staff has conducted a thorough site survey for Michaux Sumac. No specimens of this endangered plant were found on the Erinsbrook Drive property.

The USFWS lists four federal plant species of concern (FSC) in Wake County: Bog Spicebush (*Lindera subcoriacea*), Sweet Pinesap (*Monotropis odorata*), Grassleaf Arrowhead (*Sagittaria weatherbiana*), and Virginia least trillium (*Trillium pusillum* var. *virginianum*). None of these plant species are likely to have suitable conditions available on the Erinsbrook Drive property, and no specimens of these plants were observed on the site during site investigations. The North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats (2008) was reviewed. No element occurrences (EO) or Significant Natural Heritage Areas (SNHA) are found on the property.

### **Tree Conservation Ordinance**

The City of Raleigh Tree Conservation Ordinance (TC-7-04) is designed to protect trees during *pre-development* of a site by defining allowable tree removal activity. Control and removal of non-native invasive tree species to promote the vigor and diversity of native trees is appropriate under “Urban Forestry” practices within the context of the Tree Conservation Ordinance.

During site development tree preservation will be required through the establishment and protection of Tree Conservation Areas (TCAs) (Section 10-2082.14).

At the time of this report, TCA requirements for the Erinsbrook Drive property will be 10% of 18.29 acres, or approximately 1.83 acres. TCAs are not dedicated until the site development phase and will need to be reevaluated at that time. The Neuse River Riparian Buffer Zone 2 along the perennial stream corridor would contribute to the required TCA. As the property is zoned as a Thoroughfare District (TD), a 50-foot vegetative buffer adjacent to the thoroughfare is required.

As mentioned previously, American beech trees are recommended for conservation whenever possible, due to their rapid decline from the spreading beech bark disease. The grove of mature oaks on the northern portion of the property are also valuable high quality trees.

### **Invasives**

Some invasives are becoming established on the Erinsbrook Drive property due to yard waste dumping. For example, garden iris were disposed of in the park; the iris bulbs have now become established and are spreading in the southeast portion of the property. Many invasive plants start as creeping or running ornamental garden flowers that “escape” into surrounding areas (such as periwinkle, English ivy, lamium, morning glory, and honeysuckle).

Invasive plants out compete native plants for resources, affect the chemical makeup of water and soil, alter the food web, decrease biodiversity, and are very costly to control and manage. Ultimately invasives impact the education opportunities and user experience in our parks and greenways.

Invasives in the Leesville Road utility easement include zebra grass, daylilies, periwinkle, and mimosa. Again, most of these are a direct result of yard waste dumping and escaped garden plants. Several mature mimosas located on both the utility easement and adjacent private property are the seed source for the mimosa seedlings. Mimosa seeds remain viable in the soil for many years. The Global Invasive Species Database lists mimosa as one of the hundred world’s worst invasive plants.

Periwinkle is substantial along the access easement into the property.

Control of invasives on the future park property should include efforts to collaborate with adjacent land owners in a consolidated effort towards land stewardship.

### Fauna Resources of the Erinsbrook Drive Property

Habitat types on this site include mesic forest, stream corridor, and riparian area. The easement along Leesville Road provides an open herbaceous area and adds to habitat diversity. As stated previously, the City of Raleigh Comprehensive Plan calls for the extension of Englehardt Drive through the Erinsbrook Drive property to Leesville Road. Dividing the park property with a public street will negatively impact the wildlife value of the area. Currently wildlife have access to the park property and the pond and wetland on the adjacent property. Expanding Englehardt Drive would isolate the wetland and pond from a majority of the adjacent upland. Many species of wildlife, such as salamanders, need access to both wet areas and upland areas for successful breeding. If the street is developed, conserving the isolated southwestern portion of the property would provide some important upland habitat adjacent to the pond area.

Beech is an important wildlife food, but is typically not preferred by deer. There are minor signs of deer browse on the property, particularly on smilax vines. There are signs of beaver activity near the western boundary of the property at the stream. Downed dead wood is plentiful on the property and should be conserved when possible for wildlife habitat. Wildlife inventory will be ongoing at this site; wildlife observations will be noted during annual site inspections and work days. Wildlife sightings and signs observed during site investigations are recorded in Appendix F.

### Rare and Protected Wildlife

Three wildlife species known to occur in Wake County are listed as endangered or threatened through the *Endangered Species Act of 1973*: bald eagle (*Haliaeetus leucocephalus*), red-cockaded woodpecker (*Picoides borealis*), and dwarf wedgemussel (*Alasmodonta heterodon*). The Endangered Species Act requires that any action likely to adversely affect a federally protected species is subject to review by USFWS.

The bald eagle is listed as federally *threatened* and has a *threatened* state status in North Carolina. No bald eagles or bald eagle nests were observed during field investigations of the parcel. The NCNHP has no records of known populations of bald eagle on the parcel. Development of this park site is not expected to adversely affect the bald eagle.

The red-cockaded woodpecker is listed as federally *endangered* and has an *endangered* state status in North Carolina. The red-cockaded woodpecker is found in open, old-growth pine stands greater than sixty years old. No red-cockaded woodpeckers or their cavity trees were observed during field investigations of the parcel. The NCNHP has no records of known populations of this bird within a one mile radius of the parcel. Development of this park site is not likely to adversely affect the red-cockaded woodpecker.

The dwarf wedgemussel is listed as federally and state *endangered*. The dwarf wedgemussel is known to occur in the Neuse River basin, inhabiting large rivers to small streams. In the southern portion of its range it is often found buried under logs or root mats in shallow water (USFWS 1993). It is unknown, but unlikely that dwarf wedgemussel occurs on the Erinsbrook Drive property, due to the wedgemussel's need for exceptional water quality. The NCNHP has no records of known populations of the dwarf wedgemussel on the Erinsbrook Drive property.

The USFWS lists twelve federal species of concern (FSC) in Wake County. A table is included listing the habitat requirements of the twelve species, and whether suitable habitat for them is potentially available on the Erinsbrook Drive property.

	Habitat Requirements	Habitat available on Erinsbrook Drive Property?
Bachman's sparrow <i>Aimophila aestivalis</i>	Prefer longleaf pine woodlands with grassy areas, particularly those that have been burned recently; 'Special Concern' in North Carolina	No
Carolina darter <i>Etheostoma collis lepidinion</i>	Small to moderate sized streams with low current velocity, preferring substrates of mud, sand and sometimes bedrock; tolerant of fine sediments covering the substrate; 'Special Concern' in North Carolina	possible but unlikely
Carolina madtom <i>Noturus furiosus</i>	Occupies relatively larger streams that flow into the Neuse and Tar rivers; commonly seen in mussel shells, under logs and rocks, in piles of leaves and sticks; 'Threatened' in North Carolina	No
Roanoke bass <i>Ambloplites cavifrons</i>	Creeks to medium rivers with rock, gravel, sand and silt substrates	unlikely
Southeastern myotis <i>Myotis austroriparius</i>	Roost in caves or abandoned buildings with standing water and forage over open water; Can also roost in hollow trees	possible but unlikely
Southern hognose snake <i>Heterodon simus</i>	Open xeric areas with well-drained sandy soils, and river floodplains	unlikely
Atlantic pigtoe <i>Fusconaia masoni</i>	Inhabits mostly medium to large streams with moderate gradients, clean fast water, and sand or gravel bed under riffles	unlikely
Diana fritillary <i>Speyeria diana</i>	Breed in deciduous or mixed woods; feed in grasslands and shrub lands	possible but unlikely
Green floater <i>Lasmigona subviridis</i>	Small to medium freshwater streams with slow current gravel and sand substrates, in water depths of one to four feet, in the Neuse River Basin	possible but unlikely
Yellow lance <i>Elliptio lanceolata</i>	Freshwater streams and rivers with clean coarse to medium sized sandy substrates, rocks, and in mud in slack water areas of Neuse River Basin	possible but unlikely

## **Interim Management of the Erinsbrook Drive Property**

Interim management of the Erinsbrook Drive property will be ongoing until future park development and the initiation of a Master Plan for this site. The System Integration Plan is not intended to restrict the Master Plan process. Updates to interim management on the site will be posted on the City of Raleigh web site under “System Integration Plan”.

Erinsbrook Drive property site issues are addressed as needed. Parks staff will continue to conduct site investigations for the purpose of natural resources inventory.

On undeveloped park sites with a completed SIP, the City of Raleigh Land Stewardship Coordinator shall conduct a site review on an annual basis to review existing site conditions, review the status of recommended interim management activities, and determine whether interim management recommendations should be modified.

## **Interim Management Recommendations**

The following interim management recommendations are proposed for the Erinsbrook Drive property. The management tasks should be completed on the site as resources and staff are available. The City of Raleigh Land Stewardship Coordinator should develop an Action Plan (see page 27 of this report) to prioritize the interim management recommendations and identify specific staff to complete the tasks. The Action Plan will become a log sheet where Parks staff can update and modify interim management tasks. The Land Stewardship Coordinator will be responsible for initiating a request to appropriate staff to conduct the specific action recommended for the site. Work progression and updates will be recorded in the final section of this report.

Interim management recommendations are organized into three categories: *Safety, Environment, Property Issues*:

### **Safety**

- The Erinsbrook Drive property is an undeveloped park site and therefore is not managed on a frequent basis for public safety. The property has not yet been fully evaluated for safety, and could contain unknown conditions such as unstable trees, barbed wire, or other hazards. Public access to the site should be discouraged until a full site hazard evaluation and remediation is completed. Signage stating NO TRESPASSING should be placed at logical and apparent entrances to the site. Related educational information should be developed to aid in communication to neighbors and other groups that might be encountered on or interested in this site.



## **Environment**

- Inventory and assess invasives and determine suitable control methods. The invasive non-native species should be managed when staff and resources are available to do so.
- Continue inventory and mapping of natural resources including flora and fauna. Flora and fauna inventory should continue as staff or volunteers with inventory skills are on site for annual inspections or work days.
- Review areas with erosion and implement Best Management Practices (BMPs) where and when appropriate
- Monitor beech trees for general health and signs of beech bark disease
- Forest management may be needed on the site, for example to address storm damage or serious disease or insect infestations
- Hold a land stewardship meeting with the neighboring community to discuss issues such as invasives, water quality, forest management
- Direct adjacent property owners to dispose of their yard waste through the City of Raleigh's free yard waste program; yard waste is collected curbside on the same day as recycling and garbage

## **Property Issues**

- Signage at the site should include a Parks and Recreation phone number, and possibly web site information, to report non-emergency site issues
- Review cultural and historical features of the property
- Address encroachment issues
- Conduct annual site inspection

## **Completed and Ongoing Interim Management responsibilities**

- Inventory of natural resources initiated
- The name of the site has been changed from NPS 28 to the Erinsbrook Drive property
- Property boundary markers have been installed around the perimeter of the site

# Erinsbrook Drive Property SIP

## Action Plan

#	Action	Responsible Division	Time Frame	Priority	Budget Item	Date of Action	Notes
E1	Install signs: No Trespassing	P&R Parks	short term	High	yes		
E2	Install sign with P&R contact info	P&R Parks	short term	High	yes		
E3	Historical Review	P&R Design/ Development	short term	High	possibly		
E4	Encroachment Issues	P&R Parks	short term	High	no		
E5	Erosion BMPs	Stormwater P&R Parks	ongoing	Medium	possibly		
E6	Stewardship Meeting	P&R Design/ Development	ongoing	Medium	no		
E7	Invasives Management	Volunteers P&R Parks	ongoing	Medium	possibly		
E8	Annual Site Inspection	P&R Parks P&R Design/ Development	ongoing	Medium	no		
E9	Continue inventory	P&R Design/ Development P&R Parks	ongoing	Low	no		

Date created \_\_\_\_\_ Date approved \_\_\_\_\_

Page 1 of 1



## **Appendix A**

City of Raleigh

Council Resolution (2003) - 735







## **Resolution (2003) – 735**

### **A RESOLUTION TO REVISE THE PROCESS FOR APPROVAL OF MASTER PLANS FOR PARK AND RELATED PROJECTS**

**PURPOSE:** To develop a total program for a park which will best meet the needs of the community for which it is intended to serve. To insure that this purpose is met, there needs to be citizen input as well as professional planning and design. The entire process is designed to optimize public participation.

The purpose of a Master Plan for an individual piece of property is to determine the scope and character of its transformation for recreational purposes and for conserving significant environmental features. It has a relationship to the larger comprehensive recreation plan in that it fulfills some portion of the broader recreation objectives.

This resolution was developed to clarify and improve the Master Planning Process. It will serve as a helpful guideline for both the professionals and citizens involved in park planning. It is intended to replace Resolution (1988) – 195 and all other Master Planning guidelines, procedures and policies. Flow charts have been provided as visual aids. Descriptions of the park acquisition and development process have been added after the discussion of the Master Planning Process. A new element has been added to guide planning prior to the development of the Master Plan, and titled the “System Integration Plan (SIP).”

#### **The Park Master Planning Process**

##### *I. Master Plan*

A Master Plan is a conceptual design document that generally describes and guides the future management and development of a park property. Its preparation is intended to be a public process to ensure that the needs of the public are met while preserving the ecological function and environmental quality of the site. Generally, all parks should have an adopted, relatively recent (less than 15 years old) Master Plan when intended for park development.

##### *II. Request to Initiate Master Plan*

Recommendation to consider a Master Plan study (new, revised or amended) may come from a variety of sources, including: City Council, citizen request or petition, City Administration, or the PRGAB (Parks, Recreation and Greenways Advisory Board). The City Council may choose to set thresholds which (See Decision 2, Section 3) automatically trigger a public master plan process but the City Council retains the right to require a master plan for any and all park properties, including greenways and nodes on the greenways.

##### *III. City Council Authorization*

City Council shall approve the initiation of a complete Master Plan, revision or an amendment to a plan, and refer the project to the PRGAB and administration for implementation. Administration shall provide a report to Council and the PRGAB addressing available funding, project schedule, special circumstances, system integration plan, and any other background information.

##### *IV. Select Chair/Vice Chair*

Council shall initiate the formal master plan process with the designation of a Chairperson and Vice Chairperson for the Master Plan Committee, who shall also be members of the PRGAB. PRGAB shall nominate for appointment to the Master Plan Committee, however, final appointment of the Master Plan Committee shall be made by the City Council.

Chairperson/Vice Chairperson responsibilities will be to:

- Call all meetings and select the dates, times, and locations
- Preside over the meetings and invite public comment at all appropriate stages throughout the process
- Formulate meeting procedures that encourage open-discussion, well-informed decision making, and working towards an agreement. The chair will call for a majority vote as needed to finalize decisions.
- Report to the PRGAB on the progress of the Committee, notify the PRGAB of meeting times, and present the final recommendations of the committee to the PRGAB and the City Council

### *I. Staff Assignment*

A core group of Parks and Recreation staff will be identified by administration for participation on the Master Plan Team. (The Master Plan Team consists of staff, design consultants, and the citizen Master Plan Committee). The core group will consist of a minimum of three staff members including the Project Manager, Parks Division Representative, and Recreation Division Representative or appropriate substitute members as the Department may determine. The committee may request other appropriate staff, such as the City Naturalist, Urban Forester, or representatives from other City departments as needed for appropriate reports. Staff will be responsible for preparing agendas for meetings, recording meeting minutes, providing background information, and insuring adequate professional input throughout the process.

### *II. Project Notification*

#### *A. Notification*

- A notification sign (or more if the site fronts on multiple streets) will be posted at the site 30 days before the initial public meeting.
- Meeting and project information/background shall be made available at least two weeks prior to the first meeting to the City Council, PRGAB, owners of adjoining properties, registered neighborhood groups, including CACs, and registered park support groups \* within a 2 mile radius for any park master plan. Other interested groups as suggested by the Public Affairs or Community Services departments, such as the Historic Districts Commission, the Appearance Commission, the Planning Commission, the Human Resources and Human Relations Advisory Commission, and Mayor's Advisory Committee for Person's with Disabilities, shall also be notified. Meeting and project information will be posted at community centers and at other sites suggested by the Public Affairs Department. PRGAB, City Council, Master Plan Team (and Committee) Members (once identified), or administration all may recommend concerned individuals or groups who may have an interest in the park to receive notifications and mailings.
- Project and press releases shall be posted on Parks and Recreation website(s) at least one week prior to any meetings, with appropriate linkages to other websites as suggested by the Public Affairs Department.

\* A procedure for establishing registered park support groups should be developed by staff and submitted to Council for approval.

#### *B. Public Meeting*

A public meeting will be held to inform area residents and interested parties of the beginning of the Master Planning Process and to receive initial input, including local knowledge of natural or historic features and community desires. At this meeting, potential Master Plan Committee members may be identified from among the participants. The public meeting will be in an accessible location as close to the park site as practical.

- Notification of the Initial Public Meeting shall be posted 30 days prior to the meeting date, and mailings sent at least 14 days prior to the meeting date. The meeting date will be posted on the Parks and Recreation Department website 30 days prior to the meeting.
- The Public Meeting notice will be publicized as required by City Council, the open meeting law<sup>1</sup> and will be more extensively publicized where deemed appropriate by the chair, Vice Chair, or staff, utilizing appropriate consultation from the Public Affairs Department.

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<sup>1</sup> North Carolina State statute Chapter 143, Article 33C specifies that each official meeting of a public body shall be open to the public, and any person is entitled to attend such a meeting. Every public body shall keep minutes of all official meetings. If a public body has established a schedule of regular meetings a current copy of that schedule is to be kept on file with the city clerk. Changes to the regular schedule shall be filed with the city clerk at least seven calendar days before the day of the first meeting held pursuant to the revised schedule. For any other meeting the public body shall cause written notice of the meeting stating its purpose to be posted on the principal bulletin board (Public Affairs Department) of the public body and to mail or deliver to each media service which has requested notice (Public Affairs Department handles these notices). The public body shall also cause notice to be mailed or delivered to

any person who has filed a written request with the clerk. This notice shall be posted and mailed or delivered at least 48 hours before the time of the meeting. These statutes are subject to change. The City staff should annually review these requirements with the City Attorney's office.

### *III. Consultant Selection*

The City's Standard Procedure 100-5 and related Management Policy 100-36 will be followed by the Parks and Recreation Department professional staff and the City Manager for drafting a Request for Proposals (RFP) and selection of the project consultant except as directed by this policy. Final selection shall be subject to final approval by the City Council following normal procedures.

For a Master Plan Amendment, which is required when a new specific use is proposed in a park that does not significantly alter the uses established by the adopted Master Plan for the park, skip items VIII through XI and proceed to XII Public Review of Draft Master Plan or Draft Master Plan Amendments.

### *IV. Master Planning Committee Selection*

- The PRGAB, after appropriate consultation with staff, shall recommend the membership and composition of the Master Plan Committee to the City Council for final appointment. The Master Plan Committee should be representative of persons with interests in the park and appropriate uses. The selection should take into account demographics of the area including age, race, gender, educational background and professional/personal experience, and other relevant qualifications related to the characteristics of the park involved.
- A minimum of twelve (12) members and a maximum of fifteen (15) members, including the Chair and Vice Chairperson, will be chosen.
- Potential members may be solicited at the Initial Public Notification Meeting, through flyer mailings, nominations from CACs and City appointed bodies, recommendations from City Council, or by posting on the City's Parks and Recreation webpage.
- Candidates should be informed of the expected time commitment and need to attend substantially all committee meetings. Candidates unable to make the commitment of time and study should not be selected.
- Nominees for the Master Plan Committee shall be forwarded to City Council by the PRGAB for final appointment.

### *V. Education*

The Master Plan Committee shall receive background information useful to the master planning process, including:

- A Review of the expectations for full participation, including attendance at meetings and individual study to understand the process and the project.
- A description of meeting procedures by the Chair.
- The current Council approved Master Planning Policies as well as the City Conflict of Interest policies.
- Comprehensive Park, Greenway and open Space Plan and other relevant portions of the City Comprehensive Plan.
- If there is a System Integration Plan, it will be provided.
- The staff will provide an executive summary (and make the complete copy available for review by committee members) of the site inventory with additional staff comment relevant to special features identified in the inventory, and make preliminary suggestions about objectives for the park to be considered by the Committee. Detailed information should be provided on any special environmental features identified through any available sources such as the Wake County Natural Areas Inventory, the NC Natural Heritage Program Database, or the Wake County Capital Trees Program.
- Staff will arrange an appropriate tour of other facilities with relevant programming and a site visit to the target park facility.
- Formal or informal citizen survey from the park planning area if available, and a summary of the public comments that have been received.
- Information on existing or anticipated funding.
- A description of the Parks and Recreation Department organization and operations as it applies to the project, and a description of the consultant and staff roles.



All Master Plan Committee Meetings will be open to the public. It will be the staff's responsibility to insure that the meeting dates are published in accordance with the State of North Carolina's Open Meetings Law.

#### *I. Master Plan Program Development*

The Master Plan Committee shall develop a program statement for the Master Plan that describes the overall vision for the park, including uses, sensitivity to natural elements, identity, history and other characteristics as appropriate. The Master Plan Program should be consistent with the System Integration Plan and the Parks, Recreation and Greenways Comprehensive Plan Elements. The Program Statement should include reference to the ecological significance and functions of the site and its relationship to the larger citywide and countywide facilities and their functions, particularly with respect to watershed protection and riparian buffers.

#### *II. Draft Master Plan*

Based on the Program Statement, the design professionals will develop alternative site related diagrams representing a range of Master Plan Alternatives. The committee will select the concept that best accomplishes the Program Statement goals.

The draft Master Plan shall include the conceptual plan rendering, the Program Statement, other background information as appropriate, a written description of the intent of the Master Plan concept proposed, including the established elements of other previously adopted Master Plans, as well as recommendations for environmental stewardship of the park site and development of the park project.

The Master Plan Committee shall identify Priorities for phased development of the project, with consideration given to information on existing and anticipated funding. This information shall be approved by the Master Plan Committee and made available for public review and comment as provided in the following section.

#### *III. Public Review of Draft Master Plan or Draft Master Plan Amendments*

The Draft Master Plan or Draft Master Plan Amendments will be made available for public review and comment. The complete "draft" and the System Integration Plan will be displayed on the Parks and Recreation Department website, at the nearest community center to the park location, the administrative offices for the Parks and Recreation Department at Jaycee Park, or other suitable locations suggested by the Public Affairs Department. There will be comment cards available at those locations. This display should be available at least fourteen (14) days prior to the public meeting.

The public meeting will be held by the Master Plan Committee to receive comment on the Draft Master Plan prior to recommendation to the PRGAB. Public notification of this meeting shall be consistent with notification requirements in section V, "Project Notification." The PRGAB should be encouraged to attend this public meeting. Public comments shall be received for a period of at least two weeks after the public meeting. All comments received shall be summarized in a document and provided to the Master Plan Committee and Consultant, the PRGAB, and the City Council.

Concurrently, City administration interdepartmental review of the Draft Master Plan will take place. Comments provided through this review will be summarized in written form and provided to the Master Plan Committee, the Consultant, and the PRGAB, as well as the City Council.

#### *IV. Recommended Master Plan*

The Master Plan Committee shall review comments received and address them in the final proposed Master Plan or Amendment to be forwarded to the PRGAB for consideration. The proposed Master Plan or Amendment shall include the final conceptual plan rendering, program statement, other background information as appropriate, written description of the intent of the Master Plan concept proposed, and recommendations for phased development of the park project, as well as the established elements of other previously adopted master plans.

#### *V. PRGAB Review of Proposed Master Plan*

The PRGAB shall consider the proposed Master Plan or Amendment with supporting documents and report to City Council. The public will be given the opportunity to comment on the plan to the PRGAB at a meeting advertised as

prescribed in Section XI. Oral or written comments shall be accepted and transmitted with the proposed Master Plan to the City Council.

#### *VI. City Council Review for Adoption*

City Council shall receive the proposed Master plan report with recommendations and comments of the PRGAB for consideration. Final approval of any Master Plan or Master Plan Amendment lies with the City Council after they have completed their review. The City Council may choose to return the plan to the PRGAB for additional revision of key elements.

The Master Plan Committee shall stay in existence until dissolved by the City Council, and the membership will be encouraged to attend the presentation to the City Council.

### **General Description of the Park Development Process**

For a visual representation of the park development process, please refer to the Park Development Process Flow Chart. The “Decisions” outlined below refer to the points at which a decision must be made in the process before continuing on to the next step.

#### *I. Comprehensive Plan*

The Park, Recreation and Open space element of the City of Raleigh Comprehensive Plan is the document that guides development of the city’s park system. The City Comprehensive plan projects local and regional growth patterns and public infrastructure needs including parks, greenways and open space for conservation of natural resources and preservation of our environmental quality. The overall Comprehensive plan and its influence on these specific elements must be considered in the context of park planning in order to ensure that public needs are met in the decision-making processes. Future park needs are compared with an existing inventory of park facilities over a twenty to thirty year horizon. Capital improvement funding, acquisition of park properties, classification of new park lands acquired, and master planning of specific parks should each be guided by the recommendations of the Comprehensive Plan.

#### *II. Capital Improvement Program*

The Capital Improvement Program (CIP) is a multi-year budget for implementing the Comprehensive Plan. The CIP includes capital allocations for park development projects, including land acquisition, facility development and renovation, including both park bond projects and general fund projects. The City administration reviews and updates its recommendations for the CIP annually and forwards them to the PRGAB for review and comment. Then the Administration forwards its final CIP recommendations to City Council for review and adoption.

Decision 1:

Is the land owned by the City?

(If the City already owns the park land, then skip III and IV and proceed to Decision 2 below).

#### *III. Land Acquisition*

The City Administration conducts all land acquisition for the park system with direct supervision by the City Council. Land acquisition includes identification of potential park sites, negotiation of purchase agreements with landowners, and acquisitions. All acquisitions should be consistent with the goals and objectives established by the Comprehensive plan, and must include appropriate environmental investigations and a minimal site assessment prior to recommendation to the City Council.

#### *IV. System Integration Plan*

The objective of the System Integration Plan (SIP) is to develop a set of guidelines for the interim management of parkland prior to the initiation of a Master Plan, to document existing site conditions and constraints, to establish the park’s classification consistent with the Comprehensive plan, and if applicable, any proposed special intent for the park. The SIP is not intended to restrict the Master Plan Process.

Public notification of the SIP process shall be given to the City Council, the PRGAB, the CACs, registered

groups, registered park support groups, and appropriate City appointed bodies.

Greenway parcels and open space parcels will generally not require a site-specific System Integration Plan as the purpose and management of greenways is generally defined by the Greenway Element of the Comprehensive plan and the restrictions included in the acquisition instruments. Special segments with unique ecological features or larger nodes in the greenway system may require an SIP and/or a Master Plan. The Master Plan in these cases may equate to a General Management Plan as used by the NC Division of Parks and Recreation or adopted City Parkland Greenway Management policies.

*A. SIP Elements:*

*1. City Council Directed Purpose*

Review and confirm any proposed purpose stated by the City Council for the development and use of the property. Utilize the baseline inventory to identify any potential conflicts with existing City policies or ordinances as well as applicable state and federal laws. Potential conflicts and proposed resolutions of these conflicts should be reported to the City Council for final approval.

*2. Property Deed Restrictions*

Review the deed or purchase agreement for any restrictions, limitations, or commitments to the intended development of the property.

*3. Comprehensive Plan Correlation*

The current Comprehensive Plan should provide initial direction regarding the classification of, purpose and development intent for the park acquisition. Correlation to the Comprehensive Plan recommendations should be confirmed in the City Council action to acquire the property.

*4. Site Inventory*

An initial evaluation of the property will be conducted to determine the range of features and qualities of the property to provide direction and guidance for the management and future development of the property. This evaluation and management plan will be enhanced by:

- Documentation of existing site conditions and constraints, the extent and character of natural and cultural resources, and any existing facilities.
- Tree, flora, and fauna inventories
- A general review of the site to determine potential stream and watercourse buffers, property buffers, and special features to be addressed in the SIP.
- A review of development regulations for additional requirements that should be addressed in the SIP.
- An inventory of historical data at the local and state levels to determine potentially significant features to be addressed in the SIP.
- An inventory of archeological data at the local and state levels to determine potentially significant features to be addressed in the SIP.

The tree, flora, fauna, ecological, historical and archeological inventories should be performed by staff or consultants specifically qualified to perform such inventories. These findings shall be presented to the PRGAB for review in their entirety along with attached staff comment.

At this stage, the PRGAB should consider referral to an appropriate PRGAB committee to serve as an SIP Advisory Committee to review the findings and assist staff with interim management policies.

Any unique findings will be used initially in management decisions for the property and then later shared with the citizen Master Plan Committee and consultant. Interim management decisions for the site should be resolved to best maintain the environmental quality and ecological function of the site.

*B. Develop and Submit for Approval*

Parks and Recreation Department staff shall develop the SIP, working with the SIP Advisory Committee where the

PRGAB has chosen to assign to the appropriate PRGAB committee. The draft SIP shall be posted on the City's website and other appropriate publication as suggested by the Public Affairs Department. The public shall be given reasonable opportunity to comment through email or other written communication as well as the formal presentation to the PRGAB. A sign (or more if the property fronts on multiple streets) shall be posted at the site fourteen (14) days prior to presentation to PRGAB. Adjoining property owners and CACs previously identified City appointed bodies, registered neighborhood groups, and registered park support groups will be notified of the plan fourteen (14) days before presentation to the PRGAB. The public shall be given an opportunity to comment in person at a regularly scheduled PRGAB meeting. The PRGAB shall submit the recommended SIP to the City Council for adoption after appropriate review. The SIP shall be established and adopted by City Council as soon as is practical after site acquisition.

#### Decision 2:

Is a master plan needed?

1. A new Master Plan is needed in the following situations:
  - Every park site should have a minimal baseline inventory showing property boundaries and riparian buffers and a Master Plan or General Management Plan
  - For acquired but undeveloped park property, a Master Plan derived through a public process is required before any development for public utilization
2. A Revised Master Plan is needed in the following situations:
  - When a Master Plan has been in place more than 15 years, the park has not been fully developed and additional facilities or renovations are planned. This may be minimal review by the PRGAB and staff if the plans are consistent with an existing Master Plan, but must be publicly advertised for comment
  - Proposed park improvements are not consistent with the existing adopted Master Plan
  - The Revised Master Plan Process will be the same as for a new Master Plan
3. The following thresholds will be considered when evaluating whether to initiate a new Master Plan, revised Master Plan or Master Plan Amendment:
  - An improvement with a monetary value greater than \$350,000 or \$500,000 over five years
4. A Master Plan Amendment is needed when a new specific use not included in the adopted Master Plan is to be considered for the park or a specific change for the park is proposed that does not significantly alter other uses of the park.
5. A Master Plan is not needed when:
  - There is facility development or maintenance that is consistent with an existing Master Plan
  - Greenway development. However, special segments with unique ecological features or larger nodes in the greenway system may require an SIP and/or a Master Plan. The Master Plan in these cases may equate to a General Management Plan as used by the NC Division of Parks and Recreation or adopted Park and Greenway Management Policies. A Master Plan Amendment to the Greenway Element may also be appropriate.

#### *I. Design*

Design is the first step in implementing a Master Plan. The design phase provides the detailed, technical development plans for components and/or phases of a park. The design process is directed by the City staff utilizing appropriate consultants and public comment based on the adopted Master Plan and reflecting the development regulations and codes that regulate the design and implementation of construction projects. Schematic design of components or phases of a park will be reviewed with the PRGAB and the public to provide the Parks and Recreation Department staff with feedback on the compatibility of the project with the adopted park Master Plan. The Master Plan Committee (those who are still local and/or reachable by normal means) shall be notified of the Design Phase and invited to



comment to the PRGAB during the public review. Additional direct community feedback on the project design plans will be solicited by the following methods: (1) For at least 14 days there will be a display/posting of plans on City's website and (2) at a nearby community center for at least 14 days in advance of the advertising of the bid process for public review and comment. Comments shall be forwarded to the PRGAB and the City Council prior to awarding of contracts.

*I. Construction*

Construction is the final step in implementing the Master Plan. City Administration directs the construction process. Public bid and contract laws and procedures regulate the process of construction bidding, contract award, execution and implementation of construction projects.

*II. Post Occupancy Evaluation/Continuous Monitoring and Evaluation*

After each major phase of development and construction, the park facilities and customer satisfaction with the facilities will be evaluated by the staff through user surveys. The objective of these evaluations is to identify improvements that the City can make to improve functioning of the park. The staff will prepare a report to the PRGAB and the planning consultant including information from public survey or comment. The PRGAB shall report to the City Council as they deem appropriate.

Adopted and Effective: April 25, 2003

Revised January 6, 2004

## **Appendix B**

Contributors to Erinsbrook Drive Property

System Integration Plan



Contributing Staff and Agencies to the Erinsbrook Drive Property System Integration Plan

*City of Raleigh Parks and Recreation Staff:*

Melissa Salter, Land Stewardship Coordinator

David Shouse, Senior Planner

Dick Bailey, Design/Development Administrator

Emily Ander, Planner 1

Jeff Dawson, GIS Specialist

Andy Hayes, GIS Technician

Brian Jernigan, GIS Technician

Gretchen Sedaris, Gardener District #6

*City of Raleigh staff:*

Paul Kallam, City of Raleigh Transportation Engineer

Cesar Sanchez, City of Raleigh Public Utilities Project Engineer

*Parks Committee, Parks, Recreation and Greenway Advisory Board*

*USDA Natural Resources Conservation Service*

*NC Wildlife Resources Commission*





## **Appendix C**

Phase 1 Environmental Assessment Report

Executive Summary





## 1.0 EXECUTIVE SUMMARY

A Phase I Environmental Site Assessment (ESA) was conducted by *GeoLogix* personnel on a parcel consisting of 1.50 acres of land located in Raleigh, North Carolina. The subject property is located just off of Leesville Road at an address given by the Wake County GIS system as 12017 Leesville Road. Plans call for the land to be used for additional acreage for the City's Leesville Road Neighborhood Park. The property studied in this report may be referred to as the "subject property" or "tract". Information regarding the subject property was gathered through an on-site reconnaissance, a review of aerial photographs, and a review of environmental regulatory agency database information.

There were no structures observed on the subject property during the site reconnaissance. No structural ruins or foundations were observed. Aerial photographs were available from years 1949, 1965, 1971, 1981, 1993, and 2005. The exact location of the subject property in the aerial photos is estimated due to the lack of identifying physical features. It appears that in 1949, the subject property was generally wooded, but a small cleared area may have existed on site. In the 1965, 1971, 1981, and 1993 photos, the subject property appeared wooded. In the 2005 photo, the tract appeared generally similar to its current appearance, that is, wooded. Copies of the photographs reviewed are contained in Appendix C.

No NPL sites, RCRA hazardous waste notifiers, CERCLIS facilities, UST/groundwater/release incidents, State Hazardous Substances Disposal sites/State Hazardous Waste sites, permitted solid waste facilities or other facilities of concern were identified within standard ASTM search distances of the subject property in a review of environmental regulatory agency databases ordered from Environmental Data Resources (EDR). There was one State Hazardous Waste site and one UST incident identified in the database. However, both were located outside of the standard ASTM search radius from the subject property.

There was no physical evidence observed during the site reconnaissance to indicate the existence of an underground fuel storage tank (UST) on the tract. While unlikely, it is unknown for certain if any other old, unregistered UST(s) may have existed on site in association with previous activities on the subject property. No above ground storage tanks were observed during the site reconnaissance.

A few pieces of domestic trash were observed disposed on the property during the site reconnaissance. The waste, generally domestic in nature, was observed disposed mostly in the northern region of the tract. Some small piles near the northwest corner of the tract, covered with vegetation, may be waste that was disposed on site years ago. The waste observed would not be anticipated to have a significant adverse environmental impact on the subject property. There was no conclusive evidence of hazardous or toxic substances, wastes, materials or other environmental contaminants currently being used on or stored on the subject property.



No significant environmental concerns were identified on adjacent properties.

In summary, this Phase I assessment revealed no evidence of significant environmental contamination, environmental impairment, or Recognized Environmental Conditions (REC) in association with the subject property for in-scope items. The potential for significant surface or subsurface environmental contamination to currently exist at the subject property appears to be low based on available information.

This Phase I Environmental Site Assessment represents a thorough attempt to identify potential sources of environmental contamination. However, there is always the possibility that sources of contamination have escaped detection due to the limitations of this study, the inaccuracy of governmental records, the presence of undetected and unreported environmental incidents, or the inaccuracy of information furnished by other parties used to arrive at the conclusions reached in this report.

The findings contained in this report are relevant to the dates of the site work and should not be relied upon to represent site conditions at other times. The Phase I study of the subject property was performed generally within the scope and limitations of the older standard, ASTM Practice E-1527-00, with two exceptions. A formal chain-of-title search was not conducted, and a formal interview was not conducted. *GeoLogix* was able to reach appropriate conclusions regarding the subject property without conducting a formal title search or interview. This Phase I ESA was not conducted to be compliant with the new All Appropriate Inquiry requirements of ASTM E-1527-05.

## **Appendix D**

Stream Quality Assessment

Erinsbrook Drive Property



USACE AID# \_\_\_\_\_ DWQ # \_\_\_\_\_ Site # \_\_\_\_\_ (indicate on attached map)



## STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under assessment:

1. Applicant's name: \_\_\_\_\_
  2. Evaluator's name: Melissa Salter
  3. Date of evaluation: 6/9/09
  4. Time of evaluation: 11 am
  5. Name of stream: unnamed tributary
  6. River basin: Sycamore Watershed - Neuse Basin
  7. Approximate drainage area: \_\_\_\_\_
  8. Stream order: 3
  9. Length of reach evaluated: ~ 800 ft.
  10. County: Wake
  11. Site coordinates (if known): prefer in decimal degrees.
  12. Subdivision name (if any): Adjacent to Woodlawn subdiv
- Latitude (ex. 34.872312): \_\_\_\_\_ Longitude (ex. -77.556611): \_\_\_\_\_
- Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other
13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):  
Erinsbrook Rd property on Leesville Rd. and Erinsbrook Drive
14. Proposed channel work (if any): \_\_\_\_\_
15. Recent weather conditions: Sunny, Warm
16. Site conditions at time of visit: sunny, warm
17. Identify any special waterway classifications known: \_\_\_\_\_ Section 10 \_\_\_\_\_ Tidal Waters \_\_\_\_\_ Essential Fisheries Habitat  
\_\_\_\_\_ Trout Waters \_\_\_\_\_ Outstanding Resource Waters ☒ Nutrient Sensitive Waters ☒ Water Supply Watershed \_\_\_\_\_ (I-IV)
18. Is there a pond or lake located <sup>upstream</sup> of the evaluation point? YES NO If yes, estimate the water surface area: \_\_\_\_\_
19. Does channel appear on USGS <sup>downstream</sup> quad map? YES NO
20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use: 40 % Residential 10 % Commercial \_\_\_\_\_ % Industrial \_\_\_\_\_ % Agricultural  
50 % Forested \_\_\_\_\_ % Cleared / Logged \_\_\_\_\_ % Other ( \_\_\_\_\_ )
22. Bankfull width: 5.5 ft.
23. Bank height (from bed to top of bank): 1 ft.
24. Channel slope down center of stream: \_\_\_\_\_ Flat (0 to 2%) \_\_\_\_\_ Gentle (2 to 4%) ☒ Moderate (4 to 10%) \_\_\_\_\_ Steep (>10%)
25. Channel sinuosity: \_\_\_\_\_ Straight \_\_\_\_\_ Occasional bends ☒ Frequent meander \_\_\_\_\_ Very sinuous ☒ Braided channel

**Instructions for completion of worksheet (located on page 2):** Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): \_\_\_\_\_ Comments: Some bank erosion, but overall stable.  
mixed substrate - sand, pebbles, cobblestones. CWD in stream.  
fish present but unknown # of types; good quality riparian area -  
medium velocity - full canopy coverage -  
pond downstream on adjacent property (golf course)

Evaluator's Signature Melissa Salter Date 6/9/09

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change - version 06/03. To Comment, please call 919-876-8441 x 26.



# STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	<b>Presence of flow / persistent pools in stream</b> (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	2
	2	<b>Evidence of past human alteration</b> (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	5
	3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	4
	4	<b>Evidence of nutrient or chemical discharges</b> (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	1
	5	<b>Groundwater discharge</b> (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
	6	<b>Presence of adjacent floodplain</b> (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	4
	7	<b>Entrenchment / floodplain access</b> (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	1
	8	<b>Presence of adjacent wetlands</b> (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	1,2?
	9	<b>Channel sinuosity</b> (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	4
	10	<b>Sediment input</b> (extensive deposition = 0; little or no sediment = max points)	0-5	0-4	0-4	2
	11	<b>Size &amp; diversity of channel bed substrate</b> (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	4~
STABILITY	12	<b>Evidence of channel incision or widening</b> (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	4
	13	<b>Presence of major bank failures</b> (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4 <sup>oo</sup>
	14	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	4
	15	<b>Impact by agriculture, livestock, or timber production</b> (substantial impact = 0; no evidence = max points)	0-5	0-4	0-5	4
HABITAT	16	<b>Presence of riffle-pool/ripple-pool complexes</b> (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	5
	17	<b>Habitat complexity</b> (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	
	18	<b>Canopy coverage over streambed</b> (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	5
	19	<b>Substrate embeddedness</b> (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	3
BIOLOGY	20	<b>Presence of stream invertebrates</b> (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	
	21	<b>Presence of amphibians</b> (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	
	22	<b>Presence of fish</b> (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	
	23	<b>Evidence of wildlife use</b> (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	
<b>Total Points Possible</b>			100	100	100	
<b>TOTAL SCORE</b> (also enter on first page)						

\* These characteristics are not assessed in coastal streams.

## **Appendix E**

Flora Resources

Erinsbrook Drive Property



## Flora Inventory: Erinsbrook Drive Property



### Trees and Shrubs

<i>Acer rubrum</i>	Red maple
<i>Acer saccharum</i>	Southern sugar maple
<i>Aesculus pavia</i>	Red buckeye
<i>Baccharis halimifolia</i>	Groundseltree
<i>Carya sp.</i>	Hickory
<i>Cornus florida</i>	Flowering dogwood
<i>Fagus grandiflora</i>	American beech
<i>Hypericum hypericoides</i>	St. Andrew's cross
<i>Ilex sp.</i>	Holly
<i>Juniperus virginiana</i>	Red cedar
<i>Liquidambar styraciflua</i>	Sweet gum
<i>Lindera benzoin</i>	Spicebush
<i>Liriodendron tulipifera</i>	Tulip poplar
<i>Morella cerifera</i>	Wax myrtle
<i>Ostrya virginiana</i>	Ironwood
<i>Oxydendrum arboreum</i>	Sourwood
<i>Pinus taeda</i>	Loblolly pine
<i>Quercus spp.</i>	Oaks
<i>Quercus alba</i>	White oak
<i>Quercus phellos</i>	Willow oak
<i>Rhus copallinum</i>	Winged sumac
<i>Rubus sp.</i>	Blackberry
<i>Ulmus alata</i>	Winged elm
<i>Vaccinium sp.</i>	Blueberry
<i>Viburnum dentatum</i>	Southern arrowwood

### Vines

<i>Campsis radicans</i>	Trumpet creeper
<i>Gelsemium sempervirens</i>	Carolina jessamine
<i>Parthenocissus quinquefolia</i>	Virginia creeper
<i>Smilax spp.</i>	Greenbriar
<i>Toxicodendron radicans</i>	Poison ivy
<i>Vitis rotundifolia</i>	Muscadine grape

### Ferns

<i>Athyrium filix-femina</i>	Lady fern
<i>Botrychium sp.</i>	Grape leaf fern
<i>Polystichum acrostichoides</i>	Christmas fern
<i>Woodwardia areolata</i>	Netted chain fern



## Herbacious Plants

<i>Andropogon ternarius</i>	Splitbeard bluestem
<i>Apocynum androsaemifolium</i>	Spreading dogbane
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit
<i>Arundinaria gigantea</i>	Switch cane
<i>Chasmanthium latifolium</i>	River oats
<i>Chimaphila maculata</i>	Pipsissewa
<i>Cladonia sp.</i>	Reindeer moss
<i>Claytonia virginica</i>	Spring beauty
<i>Coreopsis verticillata</i>	Threadleaf coreopsis
<i>Desmodium nudiflorum</i>	Ticktrefoil
<i>Diodia virginiana</i>	Virginia buttonweed
<i>Elephantopus tomentosus</i>	Elephant's foot
<i>Elymus hystrix</i>	Eastern bottlebrush grass
<i>Euphorbia corollata</i>	Flowering spurge
<i>Goodyera pubescens</i>	Rattlesnake orchid
<i>Hexastylis sp.</i>	Heartleaf
<i>Houstonia caerulea</i>	Bluets
<i>Iris cristata</i>	Dwarf crested iris
<i>Lycopodium digitatum</i>	Running cedar
<i>Oxalis sp.</i>	Oxalis
<i>Podophyllum peltatum</i>	May apple
<i>Potentilla canadensis</i>	Cinquefoil
<i>Scutellaria sp.</i>	Skullcap
<i>Smilacina racemosa</i>	False soloman's seal
<i>Solidago spp.</i>	Goldenrods
<i>Tephrosia virginiana</i>	Goat's rue
<i>Tipularia discolor</i>	Crane-fly orchid
<i>Violet sp.</i>	Violet
<i>Yucca filamentosa</i>	Bear grass

## Non-native

<i>Hieracium pretense</i>	Hawkweed
<i>Lilium sp.</i>	Lily
<i>Miscanthus sinensis</i>	Maiden grass

## Invasives

<i>Albizia julibrissen</i>	Mimosa
<i>Lespedeza</i>	Lespedeza
<i>Lonicera japonicum</i>	Japanese honeysuckle
<i>Microstegium vimineum</i>	Japanese stilt grass
<i>Vinca minor</i>	Common periwinkle



## **Appendix F**

Fauna Resources

Erinsbrook Drive Property



## Fauna Inventory: Erinsbrook Drive Property



### Vertebrates - Birds

<i>Cardinalis cardinalis</i>	Northern Cardinal
<i>Chaetura pelagica</i>	Chimney Swift
<i>Corvus brachyrhynchos</i>	American Crow
<i>Cyanocitta cristata</i>	Blue Jay
<i>Dendroica petechia</i>	Yellow Warbler
<i>Dumetella carolinensis</i>	Gray Catbird
<i>Melanerpes carolinus</i>	Red Bellied Woodpecker
<i>Mimus polyglottos</i>	Northern Mockingbird
<i>Parus bicolor</i>	Tufted Titmouse
<i>Passerina cyanea</i>	Indigo Bunting
<i>Picoides villosus</i>	Hairy Woodpecker
<i>Pipilo erythrophthalmus</i>	Eastern Towhee
<i>Poecile carolinensis</i>	Carolina Chickadee
<i>Poliophtila caerulea</i>	Blue Grey Gnatcatcher
<i>Quiscalus quiscula</i>	Common Grackle
<i>Thryothorus ludovicianus</i>	Carolina Wren
<i>Turdus migratorius</i>	American Robin
<i>Wilsonia citrina</i>	Hooded Warbler
<i>Zenaida macroura</i>	Mourning Dove

### Vertebrates - Reptiles and Amphibians

### Vertebrates - Mammals

<i>Castor canadensis</i>	North American beaver
<i>Odocoileus virginianus</i>	White-tailed deer
<i>Procyon lotor</i>	Raccoon



Erinsbrook Drive Property

System Integration Plan

Comments and Records





Erinsbrook SIP  
Public Process Schedule 2011

Feb. 17 - Draft SIP to Parks Committee members

March 3 – Parks Committee meeting

March 10 - Requested publication of *Notification of Draft SIP Presentations* in CAC newsletter

March 21 - Postcard mailing to Erinsbrook Drive neighborhood on draft SIP presentations at upcoming CAC and PRGAB meetings

March 29 - Signs placed in Erinsbrook neighborhood and Erinsbrook Drive Property to notify the public about Erinsbrook draft SIP presentations at upcoming CAC and PRGAB meetings

April 4 - Draft SIP sent to City of Raleigh Marketing and Public Affairs for Review

April 12 – Northwest/Umstead CAC Presentation

April 18 - Draft SIP sent to Distribution List (Distribution list includes NC Natural Heritage Program, NC Division of Forest Resources, Neuse Riverkeeper, People for Parks, NRLI, Triangle Greenways Council, Triangle Land Conservancy, Upper Neuse River Basin Association, Wake Audubon, Wake County Ranger, and Wake Nature Preserve Partnership)

May 5 - Parks Committee meeting

May 19 - Presentation to PRGAB

Northwest/Umstead CAC Meeting  
April 12, 2011  
Meeting Summary

**Draft System Integration Plan - Erinsbrook Drive Property**

Chair of the Northwest/Umstead CAC introduced the topic and City of Raleigh presenters David Shouse and Melissa Salter. David Shouse requested a show of hands for how many people attended the CAC meeting specifically to hear about the Erinsbrook Drive draft SIP. Approximately 12 citizens raised their hands. Melissa Salter presented a map of the Erinsbrook Drive Property, explained the purpose of an SIP, and provided a verbal summary of the draft SIP. Copies of the draft SIP Executive Summary were distributed.

**Questions and Comments on the Erinsbrook Drive Property draft SIP**

- When will the Erinsbrook Drive future park property be developed?
- Where does funding come from to develop the park?

## **Parks Committee Meeting March 3, 2011**

### **Meeting Summary**

Parks Committee members present:

Jimmy Thiem, Elaine Perkinson, Johnny Tillett, Kevin Brice

The group discussed the public process and schedule for Erinsbrook draft SIP. The Committee agreed to have 1-2 meetings on the Erinsbrook Drive Property draft SIP before presentation to the full PRGAB.

1) Include acreage in Executive Summary. Be certain the report is well summarized because that is what the Council will focus on.

2) Discussion of cultural resources and State precedent to prevent disclosure of exact locations of archeological resources. Staff should continue to explore need for an archeological survey of the site.

3) Continue to find out progress of potential Fire Station on adjacent COR property along Leesville Rd. What options available for the access easement?

4) Committee discussed the City Attorney's recommendation to install "No Trespassing" signs on the property for liability and safety reasons.

5) Committee discussed the benefits of the Action Plan in order for interim management to happen on the ground. Change the subheading "Funding Needed?" to **Budget Item**.

6) Should the maps include the FEMA 100 year flood plain? Should a topo map be included in the report?

7) Recommendation to reference data source and date of data on all maps

8) Melissa to provide updated draft and then the committee will make a decision on whether or not the group needs to meet a second time. Jimmy Thiem will contact Doris Burke and Jan Pender to review meeting.

## **Parks Committee Meeting May 5, 2011**

### **Meeting Summary**

1) Regarding when, where, and how to incorporate comments: Comments should flow out of CAC meetings, Parks Committee, PRGAB, and Council recommendations and actions - All comments should be incorporated under **Comments and Records** and should be a running record of comment received to date. Comments should only be incorporated into the body of the document if a specific change is requested.

2) The Report should always have a date on it. The draft reviewed had a date of April 2011. Use exact date or draft number.

3) p. 10 Even though the deed probably says Carolina Power and Light rather than Progress Energy, people know the name Progress Energy, not CP&L. Change this first sentence to read: *Utility easements for Progress Energy (formerly Carolina Power and Light Company, CP&L) and American Telephone and Telegraph Company...* Follow this formatting in future SIP reports.

4) Under Safety on p. 25 why isn't the full site hazard evaluation and remediation item in the Action Plan as a long-term item? This item should be addressed during the formal presentation at PRGAB.

- David Shouse recommended a follow-up with Wayne Schindler to find out what an evaluation would entail.
- Parks Committee asked: What does this inspection include? What is the expectation coming out of it? They recommended identifying hazards outside the realm of the natural experience, focus on human uses.

5) Is Safety the right sub-heading for this section?



Erinsbrook Drive Property

System Integration Plan

Work Progression and Updates

