Raleigh

Pre-Development Assessment Plan
Leonard Tract Property

12028 Falls of Neuse Rd.
PIN: 1729559875
December 2021

PARKS, RECREATION
AND CULTURAL
RESOURCES

Executive Summary

The intent of the Pre-Development Assessment Plan (PDAP) is to document existing conditions, inventory natural resources, and provide an interim management plan prior to master planning and park development. The PDAP will provide recommendations for development potential based on opportunities and constraints of the site as shown in the suitability analysis.

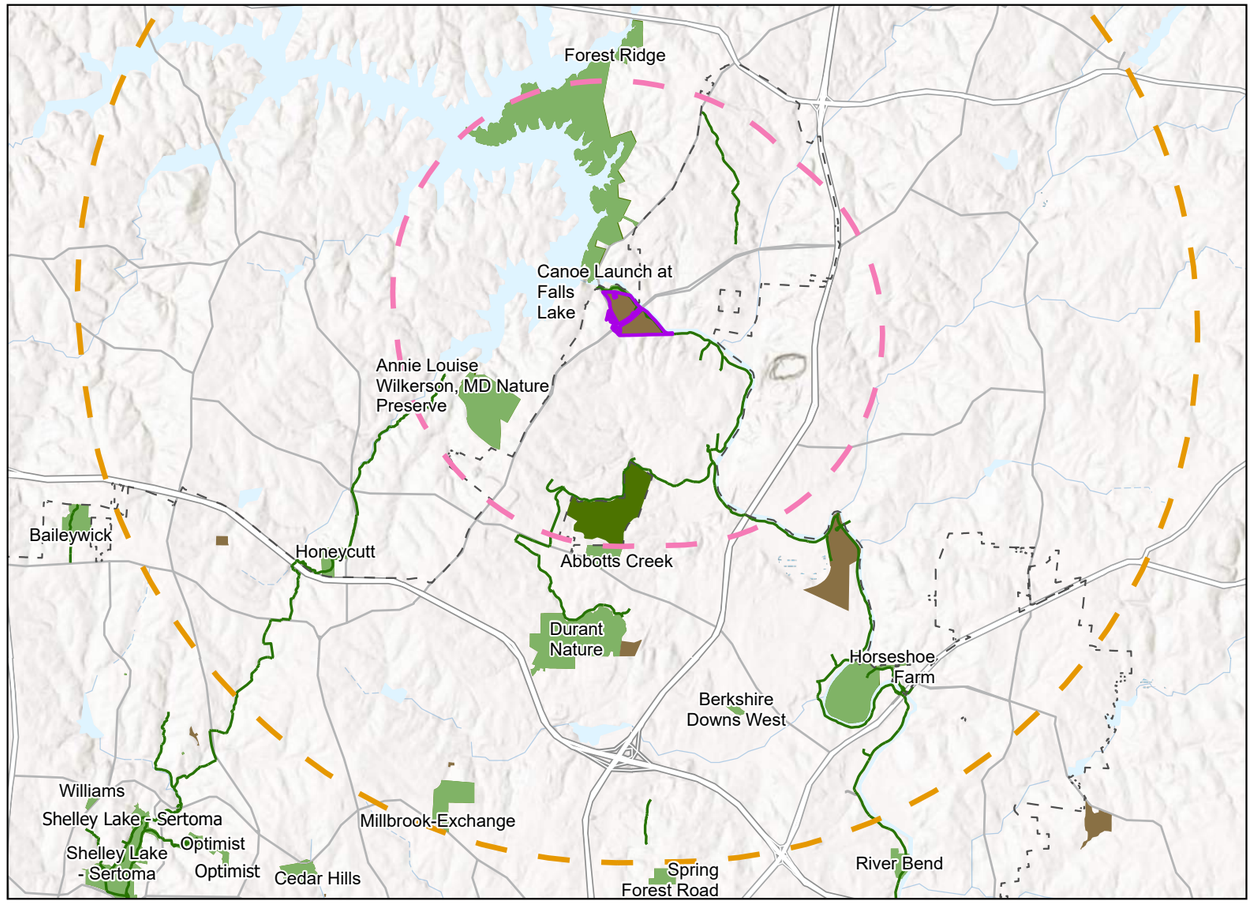
The Leonard Tract Property is located at 12028 Falls of Neuse Rd. Northeast of the I-540 Loop, and east of US-1. The property is immediately adjacent to the Neuse River. The property is 83.6 acres, and is divided into 4 non-contiguous parcels.

The Leonard Tract Property is located along the north-eastern boundary of the Raleigh Extraterritorial Jurisdiction. There are several Community Associations and Homeowner Associations in the vicinity including a few that are immediately adjacent to the property. There are elementary schools in the area: Wakefield Elementary School, Wakefield Middle School, Forest Pines Elementary School, and North Forest Pines Elementary School. There are multiple fire stations nearby and a public library. The Kerr Family YMCA is located nearby off Wakefield Pines Dr.

There are many park properties near the Leonard Tract Property and the majority of them are Nature Preserves. The closest park to Leonard Tract is the Canoe Launch at Falls Lake

The Neuse River Greenway traverses the Leonard Tract Property and connects it to the nearby park properties of the Canoe Launch at Falls Lake, Abbott's Creek, Thornton Rd. Property, and Horseshoe Farms. There is a nearby proposed trail along the Richland Creek Corridor. There is also the existing Wakefield Greenway Trail that is not connected to the Neuse River Greenway Trail.

Parks Context Map



Site Suitability

Based on the analysis of the site suitability overlay, the following map delineates approximate areas of the site that are recommended to have very limited, limited, or regular development.

Very Limited Development

- These areas are suitable for low impact uses such as natural surface trails, canoe/kayak launches, invasive removal, and river bank stabilization

Limited Development

- Development in these areas may be restricted by the presence of steep slopes or frequent inundation within the 100-year floodplain.

Regular Development

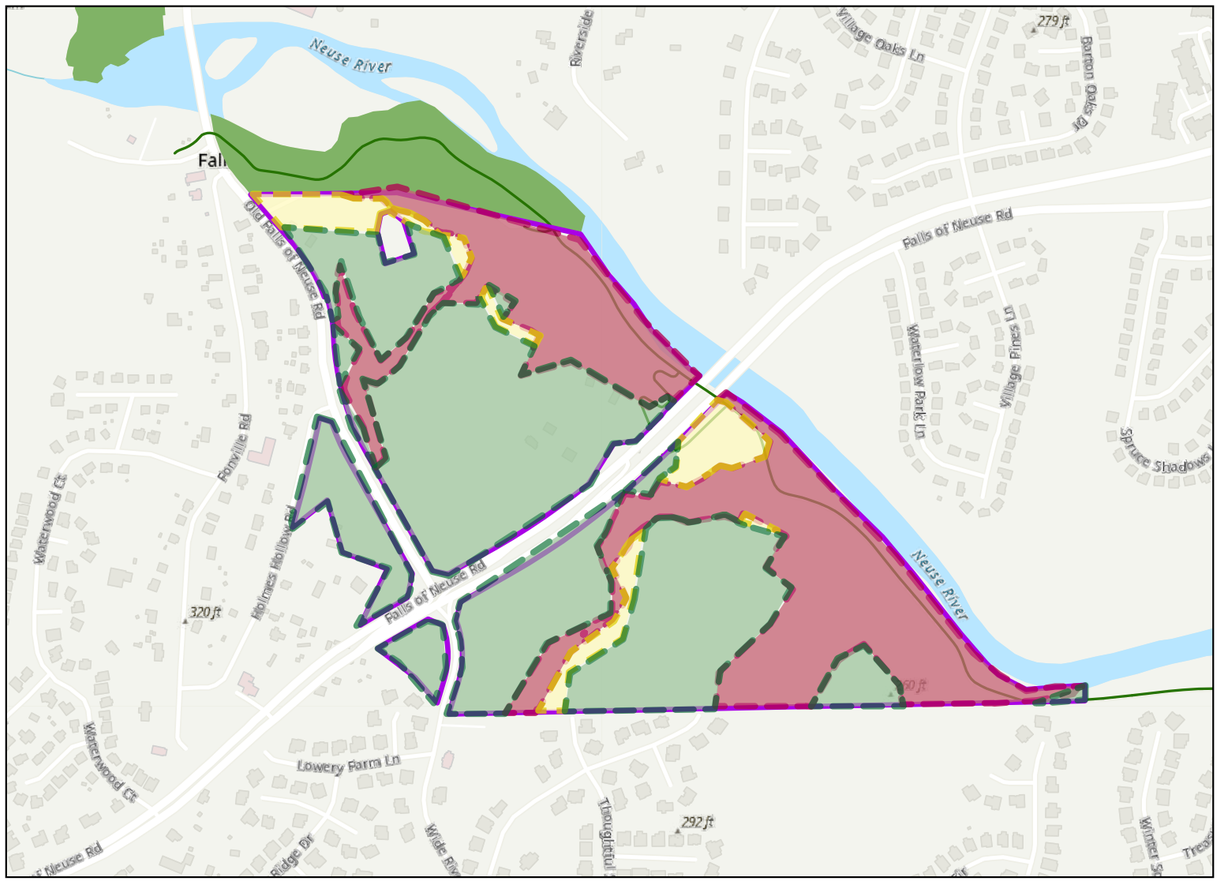
- These areas have no significant or special limitations on development and are open to most design choices that will facilitate a versatile park property.

Special consideration should be given to the relationship between disconnected parcels at this site. Falls of Neuse Rd bisects the two main portions of the park property, and currently the only safe pedestrian crossing between these two areas is via the Neuse River Greenway Trail underneath the Falls of Neuse Rd bridge.

Future planning of this park site may consider disposition of the remnant parcels west of Old Falls of Neuse Rd, if a suitable use that complements the park cannot be found for these parcels.

Site Suitability Analysis - Development Capacity	
Area Suitable for Very Limited Development	28 Acres
Area Suitable for Limited Development	5 Acres
Area Suitable for Regular Development	51 Acres
Total Park Area	84 Acres

Site Suitability Map



Interim Management Plan

Primary Short-term Goals And Objectives

1. Implementation of coordinated monitoring and mapping efforts aiding in the development of biological inventories, identifying unauthorized uses, and potentially negative impacts to natural resources
2. Evaluation and control of invasive plant species
3. Evaluation of site characteristics and ecological features using Raleigh PRCR Nature Preserves/Protected Natural Areas criteria
4. Reduction of unauthorized vehicular and foot traffic to prevent illegal hunting and the degradation of sensitive ecological resources

Long-term Goals

1. Implementation of additional ecological monitoring and mapping efforts
2. Retention and protection of documented significant plant and animal species
3. Improvement of wildlife habitat and natural plant communities through ecological restoration practices

Site Images

Creek

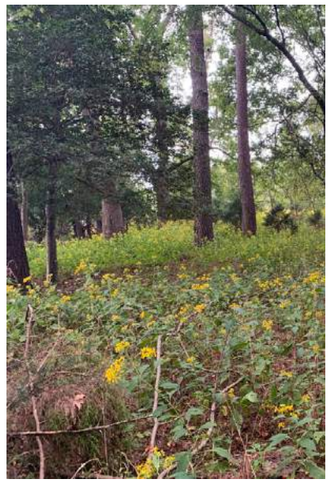
Dumping

Woods

Rolling Topography

Cane Break

Old dilapidated fences



Blooming understory

Field

Invasives

Dumping on site

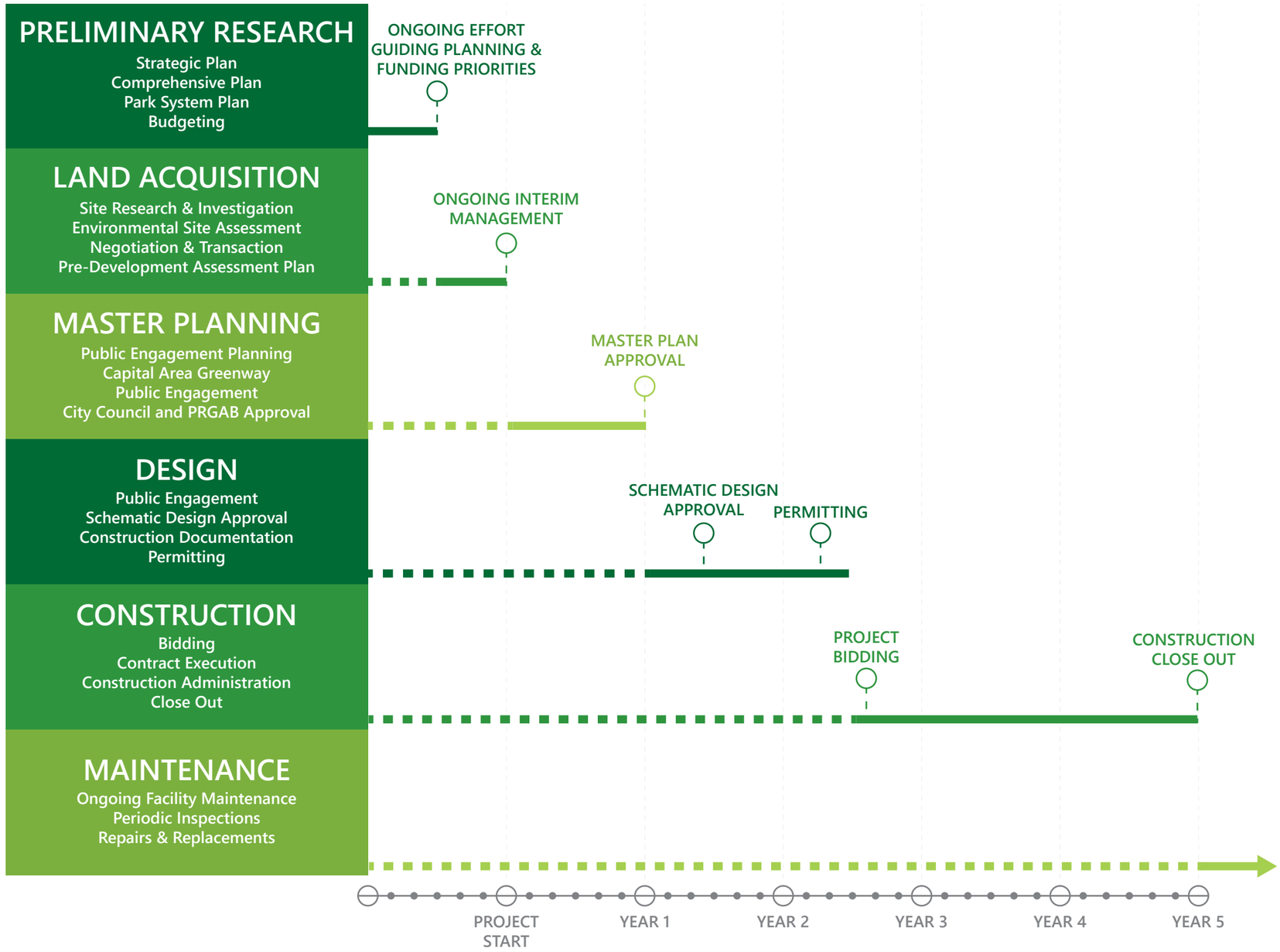
Table of Contents

Planning Process

As shown in the Park Planning & Development Process timeline on this page, a Pre-Development Assessment Plan (PDAP) is conducted on an undeveloped park property after the site has been acquired by the City of Raleigh and before any master planning for the site occurs.

The intent of the Pre-Development Assessment Plan (PDAP) is to document existing conditions, inventory natural & cultural resources, and provide an interim management plan prior to master planning and park development. The PDAP will provide recommendations for development potential based on opportunities and constraints of the site as shown in the suitability analysis.

Park Planning & Development Process

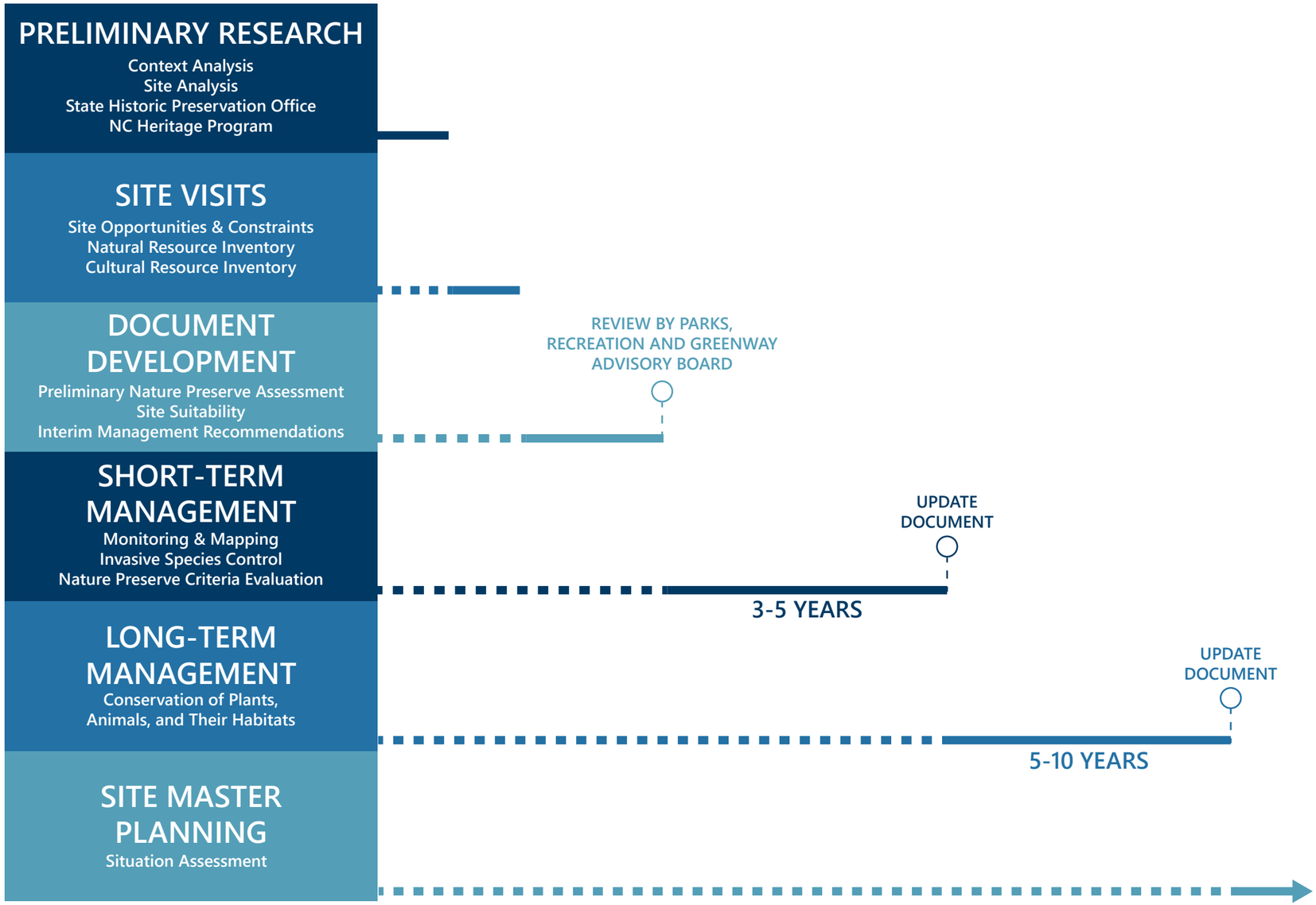


The Pre-Development Assessment Plan (PDAP) includes context and site analysis, as well as data acquired by the State Historic Preservation Office and the NC Heritage Program. Multiple site visits occur where City staff document site opportunities & constraints, and conduct natural & cultural resource inventory. While staff develop the PDAP document, they conduct a preliminary Nature Preserve assessment, as well as developing site suitability diagrams, and interim management recommendations.

Once the PDAP document is reviewed by the Parks, Recreation and Greenway Advisory Board (PRGAB), short-term management of the site begins. This includes but is not limited to monitoring & mapping, invasive species control, and a full Nature Preserve criteria evaluation. On average, short-term management takes 3-5 years after the PDAP document is reviewed by PRGAB. New information gathered during the short-term management, as well as the results of the Nature Preserve criteria evaluation are then updated in the PDAP document.

After short-term management is complete, the site moves into long-term management. This includes but is not limited to conservation of the site's plants, animals and their habitats. On average, long-term management takes place 5-10 years after the PDAP document is reviewed by PRGAB. New information gathered during the long-term management is then updated in the PDAP document. At this point the site usually moves onto site master planning, although some sites may remain in long-term management past the 5-10 year mark. When the site moves onto the master planning phase, information from the PDAP will be included in the Situation Assessment, that is the first step of the master planning process.

Pre-Development Assessment & Management Process



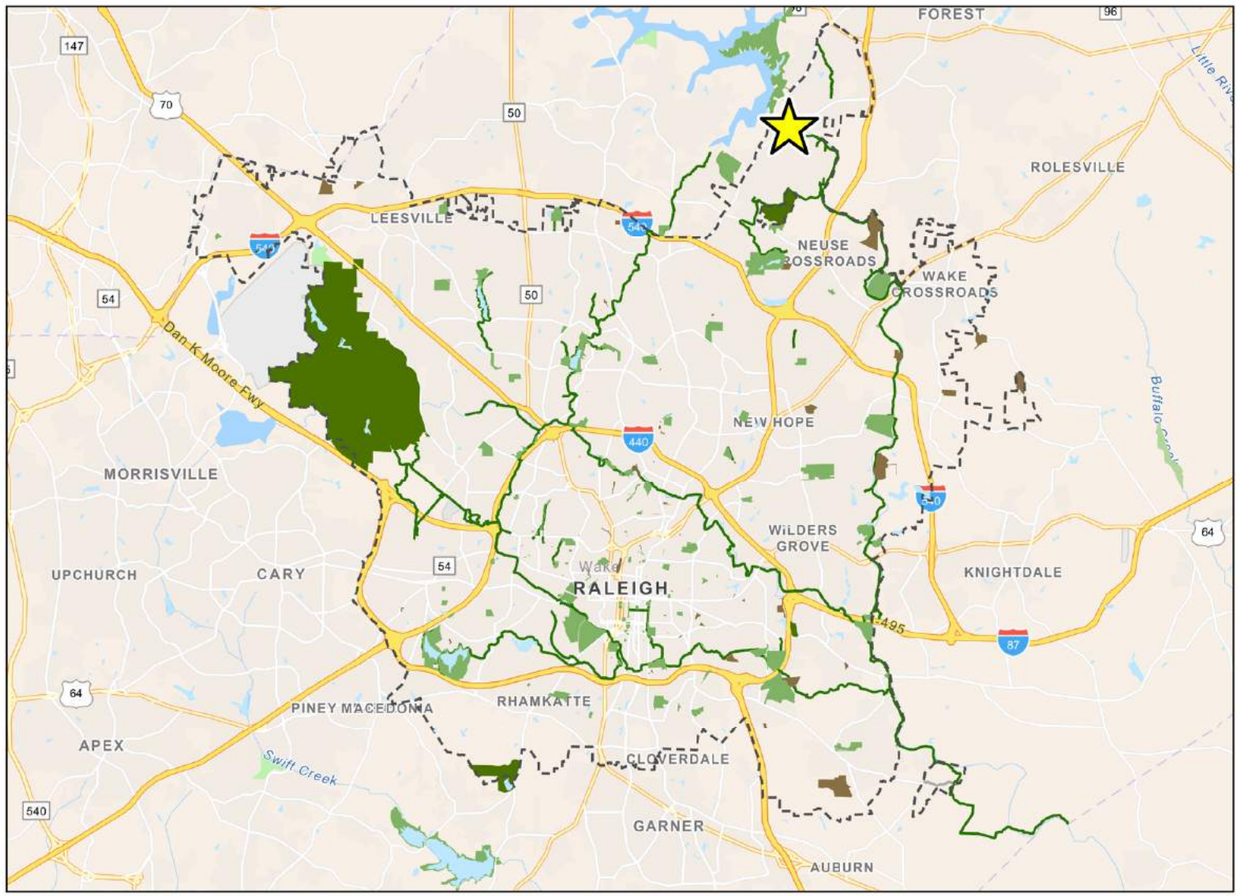
Introduction

The intent of the Pre-Development Assessment Plan (PDAP) is to document existing conditions, inventory natural resources, and provide an interim management plan prior to master planning and park development. The PDAP will provide recommendations for development potential based on opportunities and constraints of the site as shown in the suitability analysis.

The Leonard Tract Property is located at 12028 Falls of Neuse Rd. Northeast of the I-540 Loop, and east of US-1. The property is immediately adjacent to the Neuse River. The property is 83.6 acres, and is divided into 4 non-contiguous parcels.

This park site is positioned to serve a large area of northeast Raleigh, and due to its location on the Neuse River near Falls Dam and the northernmost trailhead of the Neuse River Greenway Trail, it has the potential to become a regional destination within the City of Raleigh park system.

Context Map

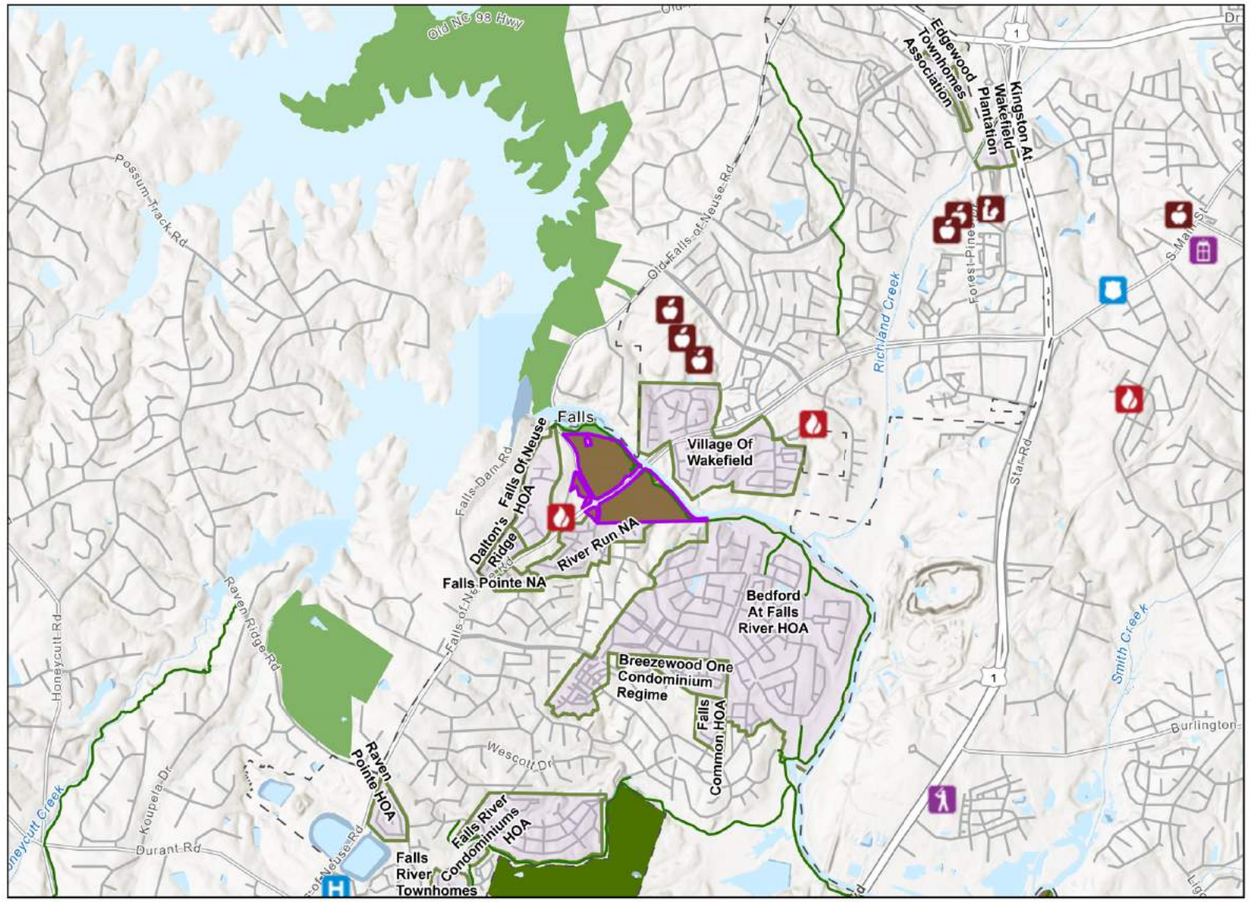


Context Analysis

The Leonard Tract Property is located along the north-eastern boundary of the Raleigh Extraterritorial Jurisdiction. There are several Community Associations and Homeowner Associations in the vicinity including a few that are immediately adjacent to the property. There are elementary schools in the area: Wakefield Elementary School, Wakefield Middle School, Forest Pines Elementary School, and North Forest Pines Elementary School. There are multiple fire stations nearby and a public library. The Kerr Family YMCA is located nearby off Wakefield Pines Dr.

It is recommended that during a community engagement process for the development of the Leonard Tract Property that outreach is conduced through the Community & Homeowner Associations, as well as the nearby schools including Wakefield Elementary School.

Vicinity Map



LEGEND

- Leonard Tract Property
- Raleigh Extraterritorial Jurisdiction
- Raleigh Neighborhoods
- County & State Parks

Raleigh Parks

- Developed Parks
- Undeveloped Parks
- Greenway Trails

Places of Interest

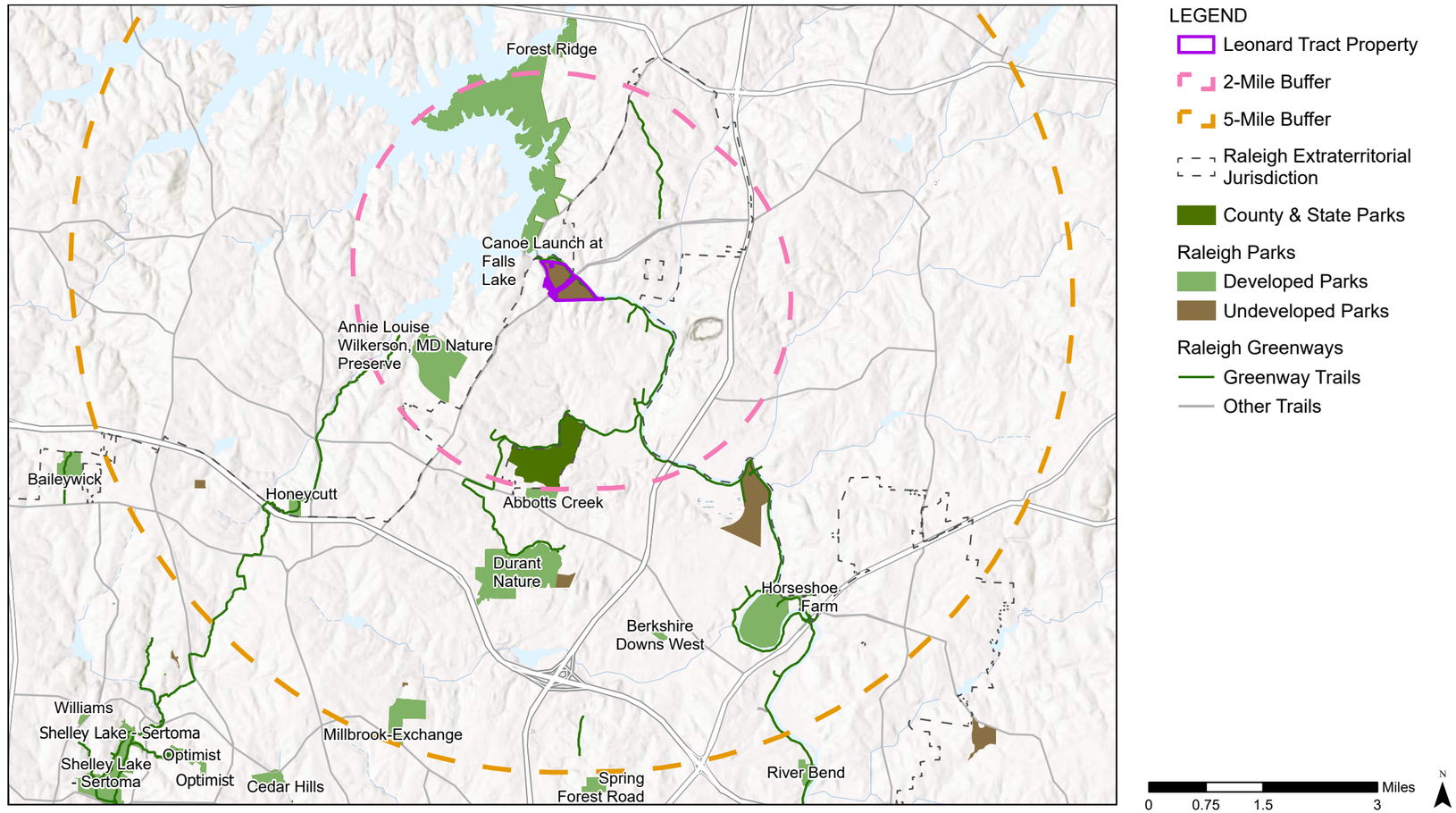
- Fire Departments
- Hospitals
- Libraries
- Police Departments
- Schools
- Shopping Centers
- Sports Facilities

Miles
0 0.35 0.7 1.4
N

There are many park properties near the Leonard Tract Property and the majority of them are Nature Preserves. The closest park to Leonard Tract is the Canoe Launch at Falls Lake

It is recommended that any future planning of the Leonard Tract Property consider how this property could compliment the system of parks already in this area, and the other undeveloped park properties.

Parks Context Map



The following tables provide information on which park experiences are currently provided by other parks in this area of the city and which park experiences are not currently available to residents in this vicinity. This information can be used to guide the future master planning of the Leonard Tract Property. Experiences included in the Leonard Tract Master Plan should be consistent with the vision and goals established for Leonard Tract Park, and should serve the needs of the immediate community while complementing the facilities and amenities provided by other units of the park system in this area.

The first table to the right provides a list of park experiences that are **not** currently provided by any City of Raleigh park locations within a 5-mile radius of the Leonard Tract Property. This list represents some of the potential experiences that are currently "missing" from the park and recreation opportunities provided in this area. The experiences in this list should be considered for inclusion in the master plan since they would provide new, unique opportunities for residents in this vicinity.

The second table to the right provides information on park experiences that are already provided within a 2-mile radius of this property. When planning for development of Leonard Tract Park, it may not be necessary to replicate the community-scale facilities and amenities (such as a community center, environmental education center, or visitor center) already provided within a 2-mile radius of this site.

The third table, on the following page, lists all park experiences currently provided within a larger 5-mile radius of this site. This information can be used to further inform the future master plan of Leonard Tract Park.

It is recommended these lists be updated at the start of any future planning process.

Not Provided Within 5 Miles

Aquatic Center
Arts Center
Neighborhood Center
Teen Center
Concessions
Computer Lab
Indoor Stage
Bocce
Handball
Horseshoe
Outdoor Game Tables
Table Tennis - Indoor
Table Tennis - Outdoor
Throwing Pit - Discus/ Shotput
Community Garden
Cistern
Constructed Wetland
Green Roof
Historic Signage
Historic Site
Boat Rentals
Basketball - Indoor (Half Court)
Basketball - Outdoor (Half Court)
Batting Cage
Multipurpose Court
Pickleball Court - Outdoor
Volleyball - Grass
Amusement Train
Carousel
Fitness Station/Equipment - Outdoor
Kiddie Boat Ride
Pedal Boats
Track - Non-Competitive/Lined
Track - Competitive/Lined
Walking Path
BMX Track
Inline Skating
Skate Park

Provided Within 2 Miles

Experience	Parks Providing the Experience
Bike Repair Station	Forest Ridge
Car Charging Station	Annie Louise Wilkerson, MD Nature Preserve
Comfort Station	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Grill	Forest Ridge
Educational Signage	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Outdoor Water Fountain - People	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Community Center	Abbotts Creek
Environmental Education Center	Annie Louise Wilkerson, MD Nature Preserve
Dance Studio	Abbotts Creek
Fitness Center/ Weight Room	Abbotts Creek
Library Room	Annie Louise Wilkerson, MD Nature Preserve
Disc Golf	Forest Ridge
Pollinator/ Native Garden	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Bio-Retention Pond/Rain Garden	Annie Louise Wilkerson, MD Nature Preserve
Permeable Pavement	Annie Louise Wilkerson, MD Nature Preserve
Historic Exhibit	Annie Louise Wilkerson, MD Nature Preserve
Historic Structure	Annie Louise Wilkerson, MD Nature Preserve
Museum	Annie Louise Wilkerson, MD Nature Preserve
Visitor Center	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Canoe & Kayak Launch	Canoe Launch at Falls Dam
Fishing Access	Forest Ridge
Wildlife Viewing	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Nature Education	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Nature-Oriented Exhibit	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Nature-Oriented Educational Signage	Annie Louise Wilkerson, MD Nature Preserve
River	Canoe Launch at Falls Dam
Lake	Forest Ridge
Pond	Annie Louise Wilkerson, MD Nature Preserve
Wetland	Abbotts Creek
Creek	Abbotts Creek, Annie Louise Wilkerson, MD Nature Preserve
Other Natural Water	Annie Louise Wilkerson, MD Nature Preserve
Basketball - Indoor (Full Court)	Abbotts Creek
Multipurpose Field	Abbotts Creek
Open Play Field	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Volleyball - Indoor	Abbotts Creek
Rock Climbing/Bouldering	Annie Louise Wilkerson, MD Nature Preserve
Park Bench	Abbotts Creek, Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Picnic Table	Abbotts Creek, Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Picnic Shelter	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Playgrounds: 2-5	Abbotts Creek, Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Playgrounds: 5-12	Abbotts Creek, Forest Ridge
Playgrounds: Nature-Oriented	Annie Louise Wilkerson, MD Nature Preserve
Trails - Paved	Abbotts Creek, Forest Ridge
Trails - Natural Surface/Unpaved	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Trails - Loop	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge
Mountain Bike Trails	Forest Ridge

Provided Within 5 Miles

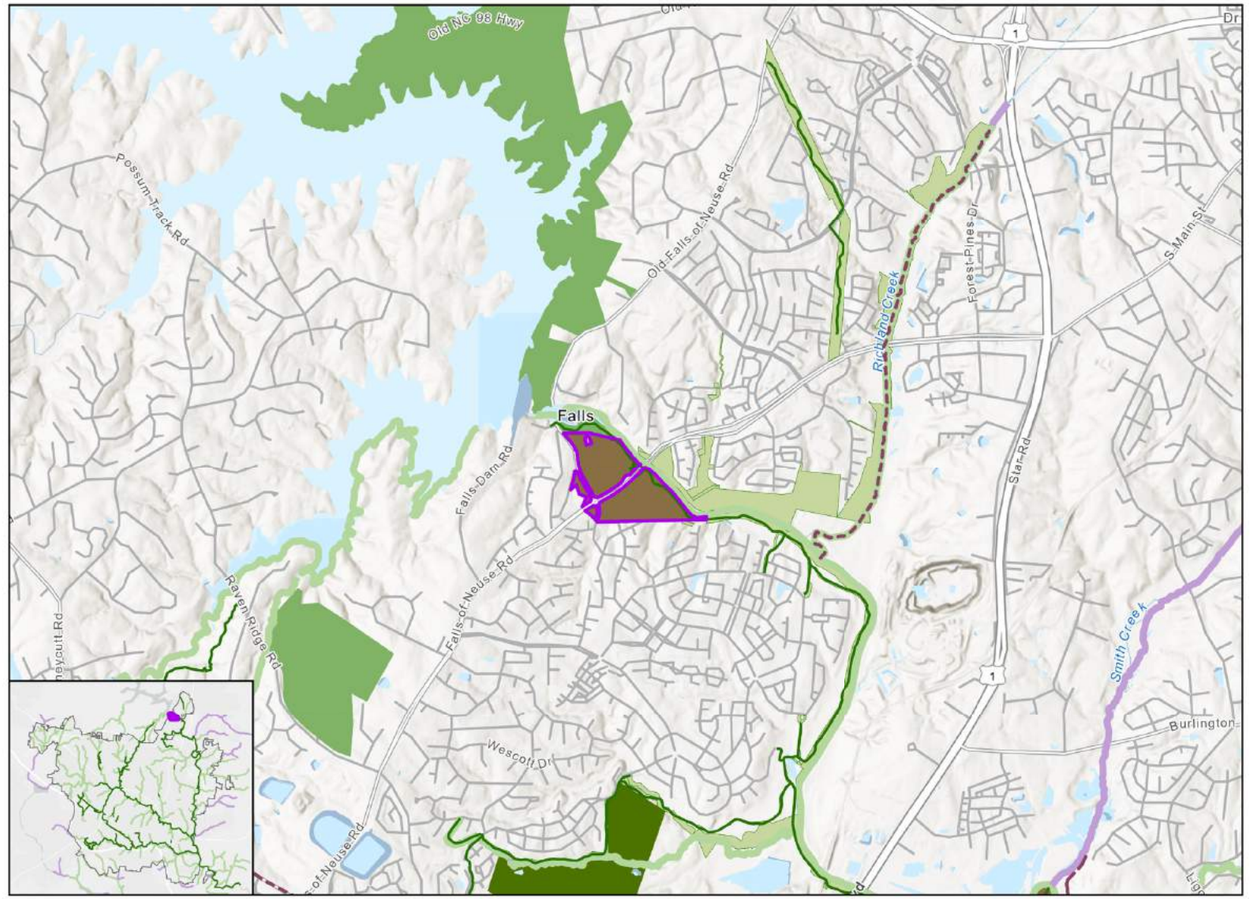
Experience	Parks Providing the Experience
Bike Repair Station	Forest Ridge
Car Charging Station	Annie Louise Wilkerson, MD Nature Preserve
Comfort Station	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Honeycutt, Horseshoe Farm
Grill	Berkshire Downs West, Forest Ridge, Durant Nature Preserve, Honeycutt, Millbrook-Exchange
Educational Signage	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Horseshoe Farm
Outdoor Water Fountain - People	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Honeycutt, Millbrook-Exchange
Outdoor Water Fountain - Dogs	Millbrook-Exchange
Splashpad	Millbrook-Exchange
Swimming Pool - Indoor	Millbrook-Exchange
Swimming Pool - Outdoor	Millbrook-Exchange
Active Adult Center	Millbrook-Exchange
Community Center	Abbotts Creek, Millbrook-Exchange
Environmental Education Center	Annie Louise Wilkerson, MD Nature Preserve
Dance Studio	Abbotts Creek
Fitness Center/ Weight Room	Abbotts Creek, Millbrook-Exchange
Library Room	Annie Louise Wilkerson, MD Nature Preserve, Millbrook-Exchange
Rentable Building	Durant Nature Preserve
Disc Golf	Forest Ridge
Pollinator/ Native Garden	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Horseshoe Farm
Sensory Garden	Durant Nature Preserve
Bio-Retention Pond/Rain Garden	Annie Louise Wilkerson, MD Nature Preserve, Horseshoe Farm
Permeable Pavement	Annie Louise Wilkerson, MD Nature Preserve, Horseshoe Farm
Historic Exhibit	Annie Louise Wilkerson, MD Nature Preserve
Historic Structure	Annie Louise Wilkerson, MD Nature Preserve, Horseshoe Farm
Museum	Annie Louise Wilkerson, MD Nature Preserve
Visitor Center	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve
Canoe & Kayak Launch	Canoe Launch at Falls Dam
Fishing Access	Forest Ridge, Durant Nature Preserve
Wildlife Viewing	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Horseshoe Farm
Nature Education	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Horseshoe Farm
Nature-Oriented Exhibit	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Horseshoe Farm
Nature-Oriented Educational Signage	Annie Louise Wilkerson, MD Nature Preserve, Durant Nature Preserve, Horseshoe Farm

Experience	Parks Providing the Experience
River	Canoe Launch at Falls Dam, Horseshoe Farm
Lake	Forest Ridge, Durant Nature Preserve
Pond	Annie Louise Wilkerson, MD Nature Preserve, Berkshire Downs West
Wetland	Abbotts Creek, Berkshire Downs West, Durant Nature Preserve, Horseshoe Farm
Creek	Abbotts Creek, Annie Louise Wilkerson, MD Nature Preserve, Berkshire Downs West, Durant Nature Preserve, Horseshoe Farm, Millbrook-Exchange
Other Natural Water	Annie Louise Wilkerson, MD Nature Preserve, Durant Nature Preserve
Ballfields	Honeycutt, Millbrook-Exchange
Basketball - Indoor (Full Court)	Abbotts Creek, Millbrook-Exchange
Basketball - Outdoor (Full Court)	Honeycutt, Millbrook-Exchange
Multipurpose Field	Abbotts Creek
Open Play Field	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Honeycutt, Horseshoe Farm, Millbrook-Exchange
Pickleball Court - Indoor	Millbrook-Exchange
Tennis Center	Millbrook-Exchange
Tennis Courts	Millbrook-Exchange
Volleyball - Indoor	Abbotts Creek
Volleyball - Sand	Durant Nature Preserve, Honeycutt
Dog Park	Millbrook-Exchange
Rock Climbing/Bouldering	Annie Louise Wilkerson, MD Nature Preserve
Ampitheatre	Durant Nature Preserve
Park Bench	Abbotts Creek, Annie Louise Wilkerson, MD Nature Preserve, Berkshire Downs West, Forest Ridge, Durant Nature Preserve, Honeycutt, Horseshoe Farm, Millbrook-Exchange
Picnic Table	Abbotts Creek, Annie Louise Wilkerson, MD Nature Preserve, Berkshire Downs West, Forest Ridge, Durant Nature Preserve, Honeycutt, Horseshoe Farm, Millbrook-Exchange
Picnic Shelter	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Honeycutt, Horseshoe Farm, Millbrook-Exchange
Playgrounds: 2-5	Abbotts Creek, Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Honeycutt, Millbrook-Exchange
Playgrounds: 5-12	Abbotts Creek, Berkshire Downs West, Forest Ridge, Honeycutt, Millbrook-Exchange
Playgrounds: Nature-Oriented	Annie Louise Wilkerson, MD Nature Preserve
Trails - Paved	Abbotts Creek, Forest Ridge, Durant Nature Preserve, Honeycutt, Horseshoe Farm, Millbrook-Exchange
Trails - Natural Surface/Unpaved	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Horseshoe Farm, Millbrook-Exchange
Trails - Loop	Annie Louise Wilkerson, MD Nature Preserve, Forest Ridge, Durant Nature Preserve, Horseshoe Farm
Mountain Bike Trails	Forest Ridge, Durant Nature Preserve
Bleachers	Millbrook-Exchange

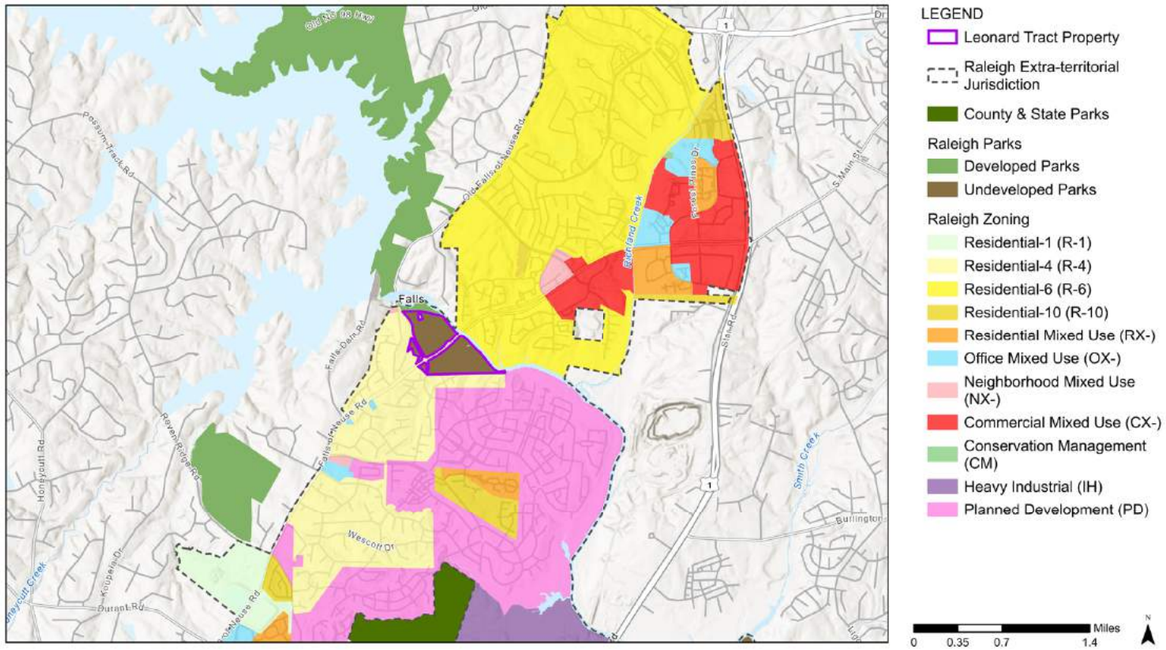
The Neuse River Greenway traverses the Leonard Tract Property and connects it to the nearby park properties of the Canoe Launch at Falls Lake, Abbott's Creek, Thornton Rd. Property, and Horseshoe Farms. There is a nearby proposed trail along the Richland Creek Corridor. There is also the existing Wakefield Greenway Trail that is not connected to the Neuse River Greenway Trail.

Integration of the Neuse River Greenway Trail will be a key focus of future planning for this park site. Special attention should be given to the need for expanded greenway trailhead parking to supplement the existing trailhead at the Canoe Launch location just north of this site.

Greenway Context Map

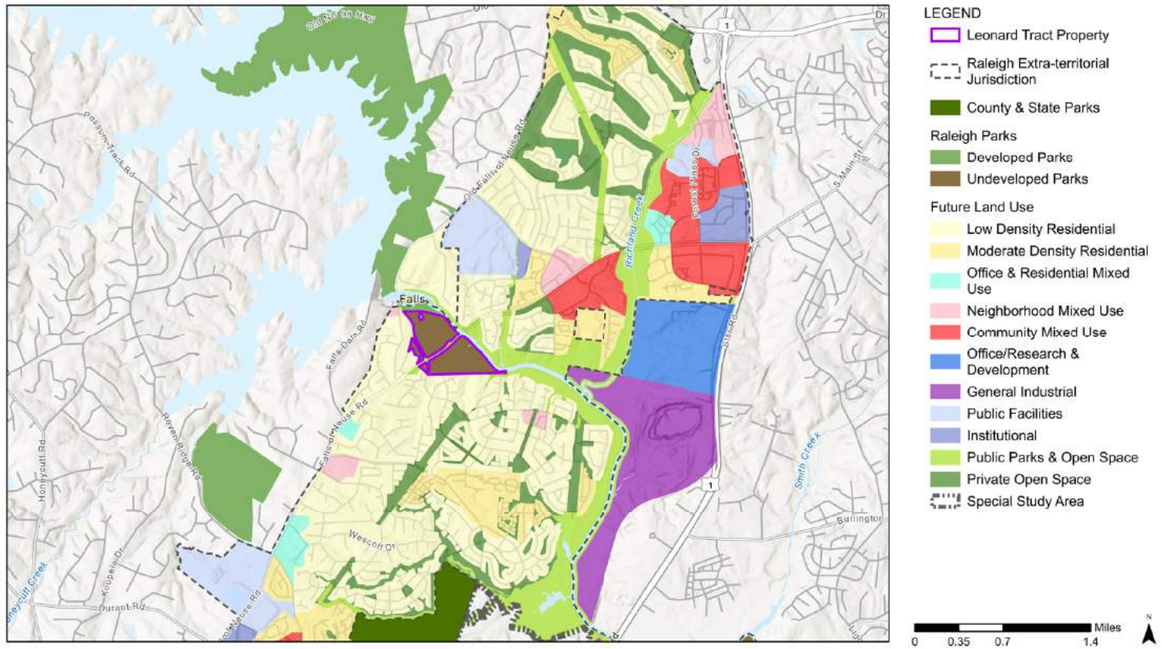


Current Zoning Map



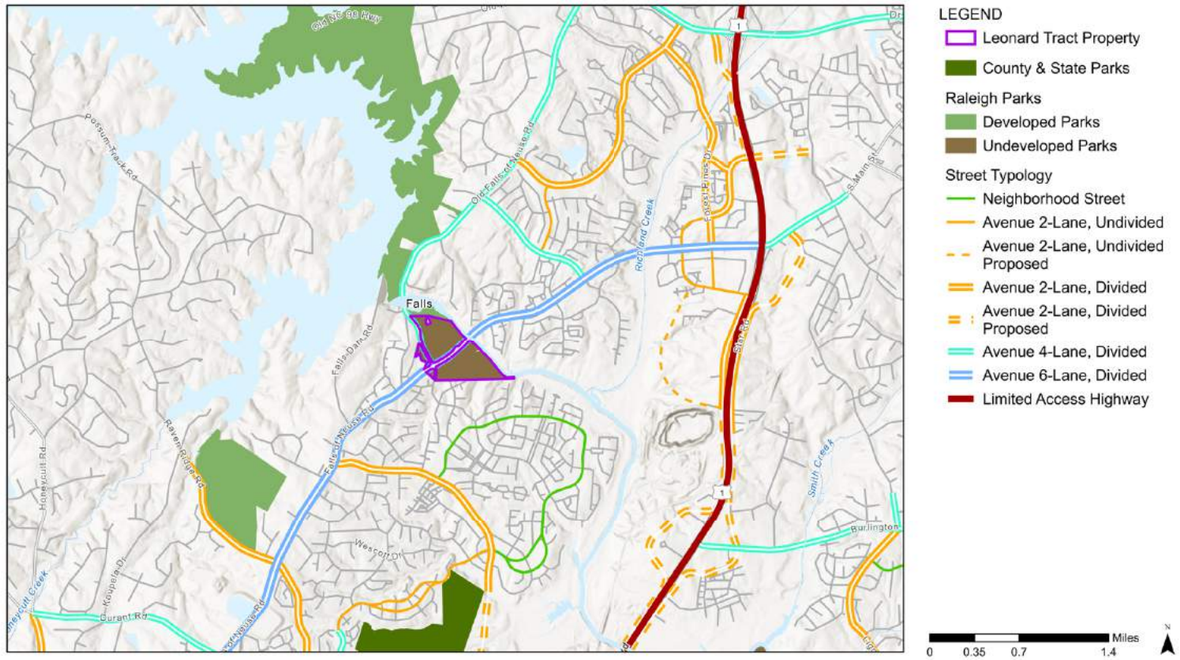
The current zoning surrounding the Leonard Tract Property is primarily residential with a mixture of densities and planned development. There are several parcels zoned commercial & office mixed use to the north east of the property.

Future Land Use Map



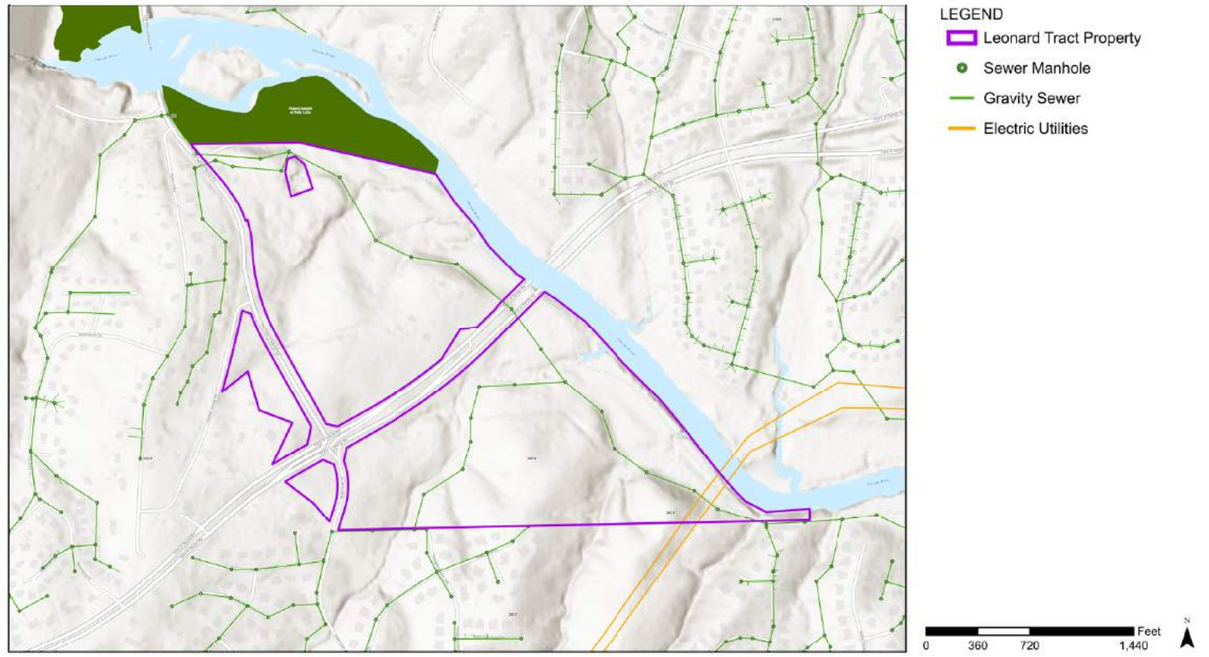
The future land use somewhat reflects the current zoning. For the foreseeable future, the primary land use in the surrounding area is likely to remain low or moderate density residential (primarily single family homes and townhouses). Further land use policy guidance is available in the Falls North Small Area Plan. (https://cityofraleigh0drupal.blob.core.usgovcloudapi.net/drupal-prod/COR22/FallsNorthFinalReport.pdf) There is also the addition to general industrial to the east of the Neuse River, as well as the addition of more private and public open space in the area.

Street Typology Map



Falls of the Neuse Rd. currently separates the Leonard Tract in two. There are no proposed roads through the site or directly nearby.

Utilities Map



There are currently gravity sewers and sewer manholes on the Leonard Tract property. There are also electric utilities that go over the south-eastern tip of the property.

Site Analysis

There are entrances to the site from the north off Old Falls of Neuse Rd. and from Falls of Neuse Rd. There is no current parking on site but there is parking immediately adjacent to the site at the Canoe Launch at Falls Dam.

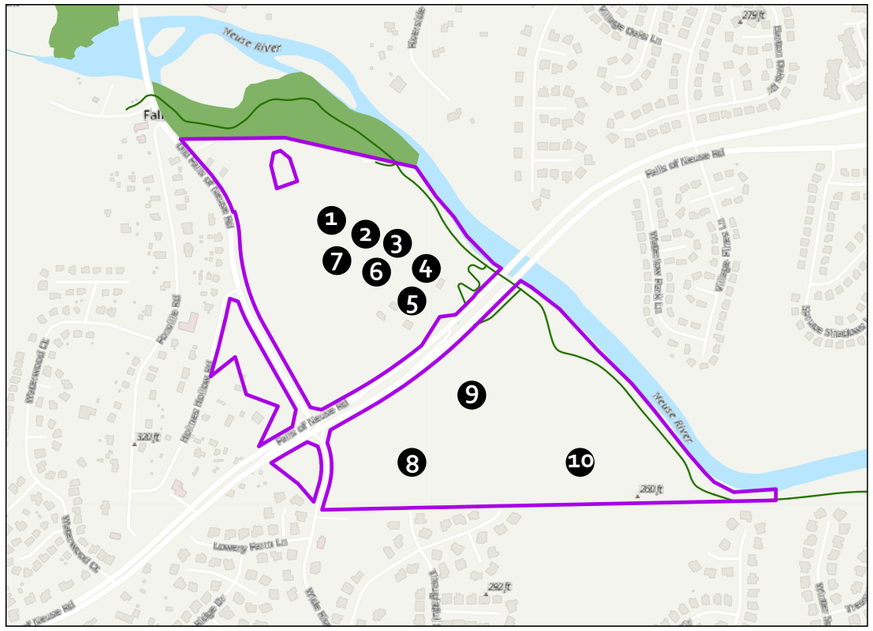
The landscape at the Leonard Tract Property is mostly forested with a few fields in the north and includes a creek and wetland area on the southern portion of the site.

The northern part of the site includes a former homestead site that is evidenced not only by plant species, but by some remaining infrastructure (such as dilapidated fences and fence posts) as well. The southern section of the site seems to have seen less development and offers natural resource habitats with more integrity than the northern half of the site.

There are several opportunities & constraints on site highlighted by the site images found on page 17.

Existing Conditions

Site Images Key



LEGEND
- Leonard Tract Property
- Raleigh Greenways
- Raleigh Parks

0 0.05 0.1 0.2 Miles

N

Site Images

Creek

Dumping

Woods

Rolling Topography

Cane Break

Old dilapidated fences

Blooming understory

Field

Invasives

Dumping on site

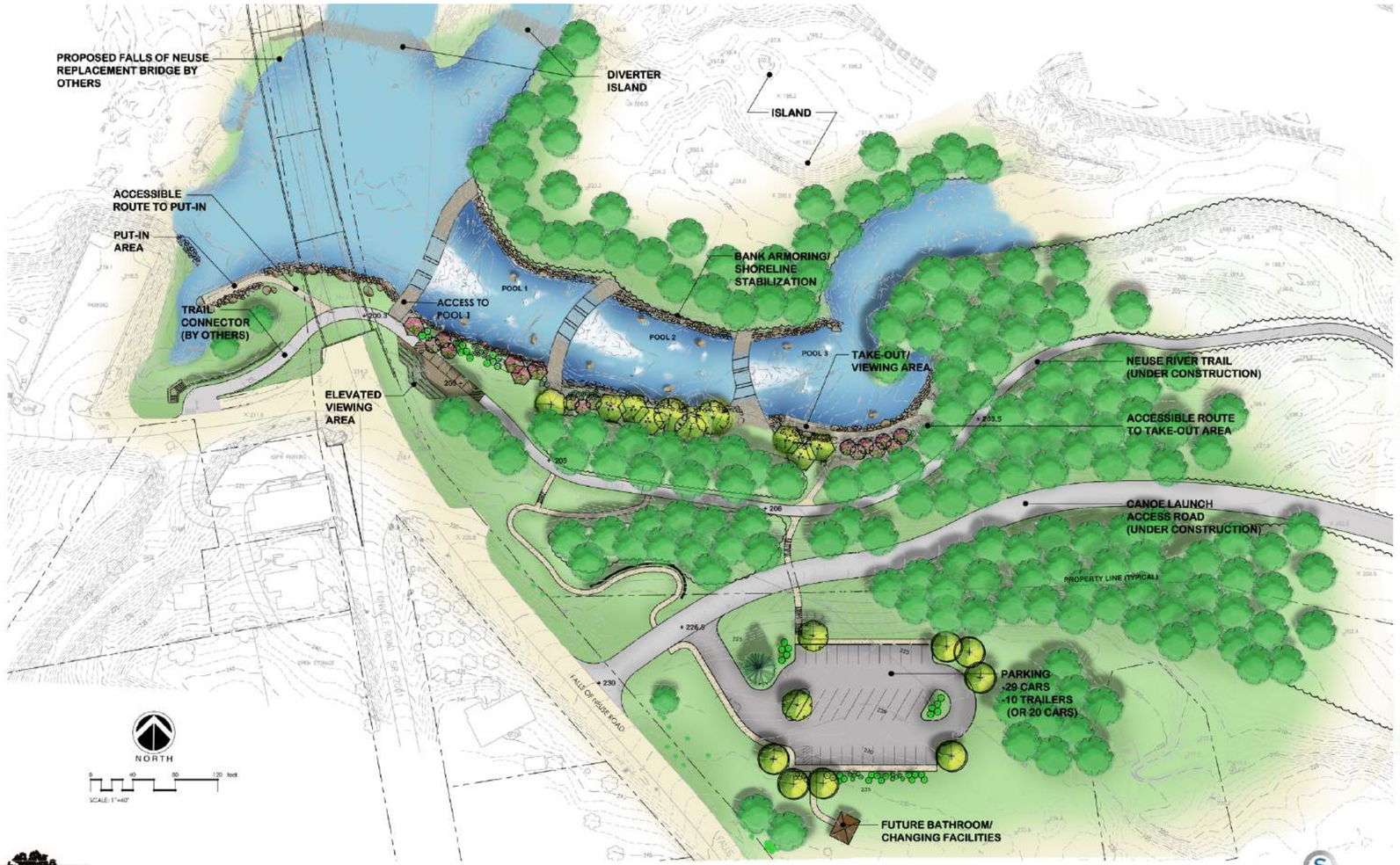
Falls Park on the Neuse River
(Formerly Known As Falls Whitewater Park)

The development of a whitewater park in the Neuse River below Falls Dam has been in consideration since construction began on Falls Dam in 1978. A feasibility study completed in March 2011 resulted in a conceptual plan for the proposed whitewater park to be developed within a span of approximately 600 feet of the Neuse River, beginning in the southern channel of the river immediately east of the Falls of Neuse Road bridge.

Access improvements proposed in the Falls Park on the Neuse River conceptual plan include a new put-in just upstream of the Falls of Neuse Road bridge and a take-out at the downstream-most pool at the end of the whitewater improvements. Additional river access at various points along the whitewater course, together with a hardened area at the waters edge along the southern bank, would allow for broader access by the general public in addition to whitewater paddlers. The conceptual plan also proposed additional restroom facilities, parking, and improvements to accessibility and circulation.

A Memorandum of Understanding (MOU) was executed in July 2012 between the City of Raleigh and the Falls Whitewater Park Committee (FWPC), which memorialized an agreement “to work together to plan for the construction of a whitewater park on the Neuse River downstream of Falls Lake, including a portion of the area currently managed by the City as the Falls Dam Access on the Neuse River Canoe Trail… Planning for the park will include assessment of opportunities to incorporate existing and proposed features such as picnic shelters, comfort stations, trails, and adjacent wooded areas.”

At this time, sufficient funding is not available to pursue further design, environmental assessment & permitting, or construction of the proposed whitewater features and associated park improvements. The 2012 Memorandum of Understanding also states that, “The FWPC is the designated fiscal agent for the project, meaning that the FWPC has agreed to be responsible for fundraising and solicitation of other resources including grants, in-kind contributions, and corporate donations necessary for construction of the Park. The FWPC makes no guarantees of any kind as to how much money it will be able to raise for the Park. Moreover, FWPC, as a new non-profit entity, has no source of funds of its own that it can provide for the construction of the Park. FWPC agrees to investigate multiple avenues of raising funds and to seek, at its own expense, 501(c)(3) status. This agreement does not preclude the opportunity for the City to also seek funding for the Park.”



Site Acquisition & Previously Conducted Assessments

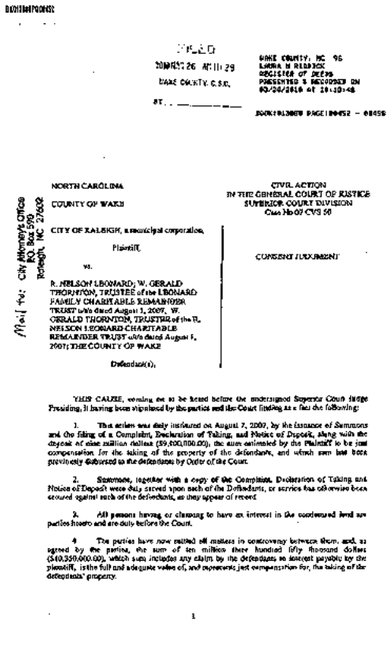
The site was acquired in 2007 through condemnation, and the Civil Action Memorandum can be found in Appendix A (pg 38). At the time of acquisition, an application was submitted for the Clean Water Management Trust Fund Grant, but was not awarded.

There are three relevant assessments that should be cataloged in the Leonard Tract Pre-Development Assessment Plan so that all relevant information is cataloged together.

These assessments include

- Phase 1 Environmental Site Assessment (2008)
- Phase 2 Assessment of the Inholding area within the Northern Parcel of the Leonard Tract (2009)
- Limited Soil Sampling following the removal of one Underground Storage Tank (2012)

These assessments can be found in Appendix B (page 40), Appendix C (page 51) and Appendix D (page 59).



WAKE COUNTY, NC
LAURA M RIDDICK
REGISTER OF DEEDS
PRESENTED & RECORDED IN
03-26-2010 AT 10:10:48

BOOK 013089 PAGE 00452 - 00458

NORTH CAROLINA
COUNTY OF WAKE

CIVIL ACTION
IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
Case No 07 CVS 50

CITY OF RALEIGH, a municipal corporation,
Plaintiff,
vs.
R. NELSON LEONARD; W. GERALD THORNTON, TRUSTEE of the LEONARD FAMILY CHARITABLE REMAINDER TRUST u/w/o dated August 1, 2007, W. GERALD THORNTON, TRUSTEE of the R. NELSON LEONARD CHARITABLE REMAINDER TRUST u/w/o dated August 1, 2007; THE COUNTY OF WAKE
Defendant(s).

CONSENT JUDGMENT

THIS CAUSE, coming on to be heard before the undersigned Superior Court Judge Presiding, it having been stipulated by the parties and the Court finding as a fact the following:

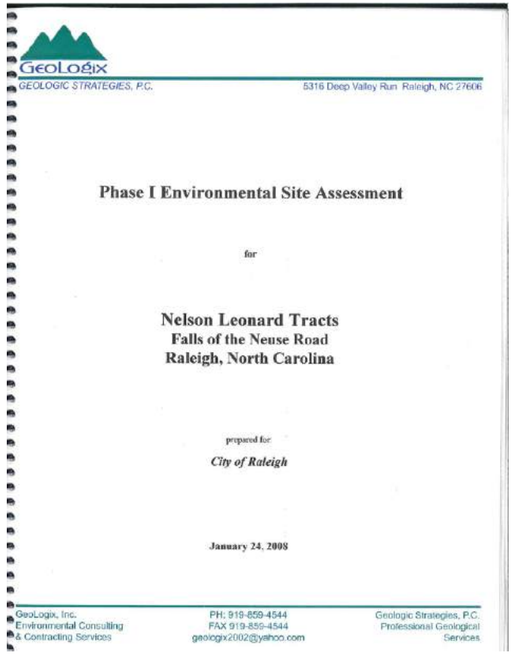
1. That action was duly instituted on August 7, 2007, by the issuance of Summons and the filing of a Complaint, Declaration of Taking, and Notice of Deposit, along with the deposit of nine million dollars ($9,000,000.00), the sum estimated by the Plaintiff to be just compensation for the taking of the property of the defendants, and which sum has been previously disbursed to the defendants by Order of the Court.

2. Summons, together with a copy of the Complaint, Declaration of Taking and Notice of Deposit were duly served upon each of the Defendants, or service has otherwise been secured against each of the defendants, as they appear of record.

3. All persons having or claiming to have an interest in the condemned land are parties hereto and are duly before the Court.

4. The parties have now settled all matters in controversy between them, and, as agreed by the parties, the sum of ten million three hundred fifty thousand dollars ($10,350,000.00), which sum includes any claim by the defendants to interest payable by the plaintiff, is the full and adequate value of, and just compensation for, the taking of the defendants' property.

1



GeoLogix
GEOLOGIC STRATEGIES, P.C.
5316 Deep Valley Run Raleigh, NC 27606

Phase I Environmental Site Assessment

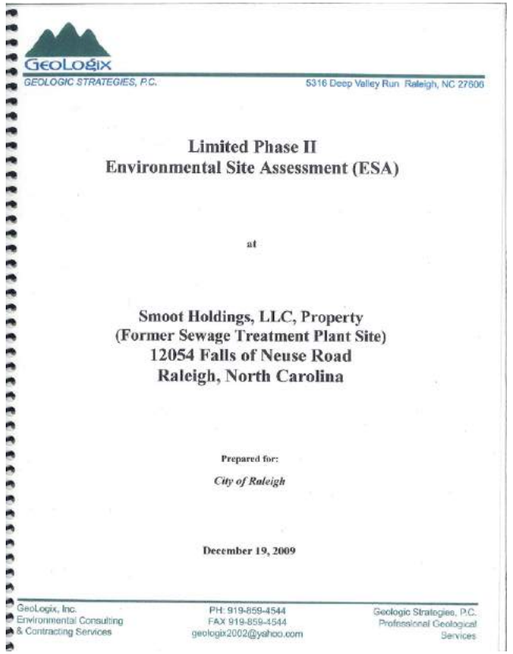
for

Nelson Leonard Tracts
Falls of the Neuse Road
Raleigh, North Carolina

prepared for:
City of Raleigh

January 24, 2008

GeoLogix, Inc.
Environmental Consulting
& Contracting Services
PH: 919-859-4544
FAX 919-859-4544
geologix2002@yahoo.com
Geologic Strategies, P.C.
Professional Geological
Services



GeoLogix
GEOLOGIC STRATEGIES, P.C.
5316 Deep Valley Run Raleigh, NC 27606

Limited Phase II
Environmental Site Assessment (ESA)

at

Smoot Holdings, LLC, Property
(Former Sewage Treatment Plant Site)
12054 Falls of Neuse Road
Raleigh, North Carolina

Prepared for:
City of Raleigh

December 19, 2009

GeoLogix, Inc.
Environmental Consulting
& Contracting Services
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Geologic Strategies, P.C.
Professional Geological
Services

February 29, 2012

City of Raleigh Parks and Recreation
Facilities Management Department
222 W. Hargett Street, Suite 605
Raleigh, North Carolina 27602

Attention: Mr. Brian Taylor

Subject: Report of Soil Sampling
Post Underground Storage Tank Removal
Leonard Tract
Raleigh, North Carolina
Matrix Job Number: 120248

Dear Mr. Taylor:

Matrix Health and Safety Consultants, L.L.C. (Matrix) is pleased to present this report of the limited soil sampling following the removal of an one Underground Storage Tank (UST) located at the Leonard Tract located in Raleigh, North Carolina. This report presents known project information, survey procedures, survey results and recommended response actions.

PROJECT INFORMATION

Matrix collected 3 soil samples from the excavation following the removal of a 1,000 gallon UST. Two soil samples were collected from the north and south ends of the excavation and one sample was collected from the stockpile soil. The samples were delivered to PRISM Laboratories, Inc. in Charlotte, North Carolina and analyzed for Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) utilizing EPA Method 8015C.

The following table summarizes the sample locations and laboratory results. The full laboratory analysis reports is attached as an appendix with this report.

Sample Identification	Sample Location	Diesel Range Organics mg/kg	Gasoline Range Organics mg/kg
01 (North End)	North End of Excavation	14	BRL
02 (South End)	South End of Excavation	BRL	BRL
03 (Stock Pile)	Stock Pile Soil	23	BRL

BRL – Below Reporting Limit

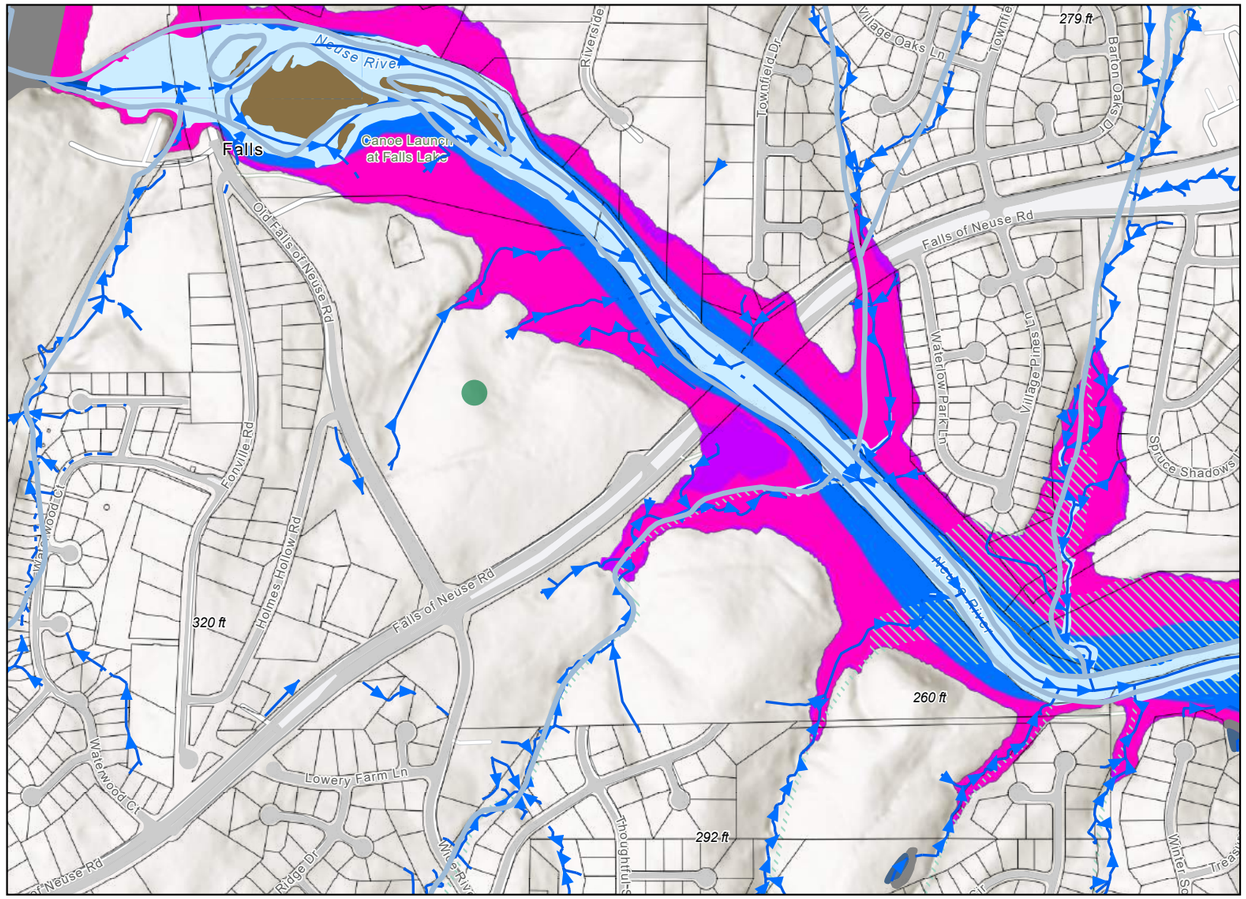
Laboratory results identified Diesel Range Organics exceeded the North Carolina Department of Environment and Natural Resources action level of 10 milligrams per kilogram (mg/kg). Once the action level for DRO or GRO has been exceeded the UST removal becomes a regulated removal and is subject to the requirements for assessment and cleanup.

The Neuse River lies adjacent to the northeastern and eastern portions of the Leonard Tract, representing the most significant hydrological feature on the Property. Approximately 21 acres of the Tract is located within the 100-year floodplain, with roughly 5.8 of those acres lying directly in the floodway and subject to frequent flooding. All the additional hydrological features, including a single blue line stream and multiple stormwater channels, drain from the west/southwest to the east/ northeast and discharge into the Neuse River.

In the northern portion of the Leonard Tract, significant hydrological features include several upland seeps and a depressional wetland-like community. This upland wetland has not been officially delineated and is not included in the USFWS National Wetlands Index (NWI). However, this site supports a high density of giant cane (Arundinaria gigantea), as well as hydrophilic plants associated with wetland communities such as arrow arum (Peltandra virginica), false nettle (Boehmeria cylindrica) and lizard's tail (Saururus cernuus). Erosional channels were observed scattered throughout the northern portions of the Tract, although the extent and severity were relatively limited. One particularly significant upland seep was identified in the northern portion of the Tract that may have been previously used as a well-water source by the former landowners and/or their livestock. Sustained flow and the presence of large stones possibly used to create a small pool provided the evidence for this assumption.

The single blue line stream on the Property lies within the southern portion of the Tract and drains from the southwest to the northeast before passing under the Greenway via a large culvert and emptying into the Neuse River. Several stormwater channels are present in the southern portion of the Tract and drain into the blue line stream. A major stormwater channel located in the southernmost portion of the Tract flows into a freshwater forested-shrub wetland (NWI), measuring approximately 1.8 acres, before discharging into the Neuse River. Freshwater forested-shrub wetlands (NWI) have also been delineated along the immediate riparian areas surrounding the blue line stream and the large stormwater channel in the southernmost portion of the Tract.

Hydrology Map



The two most dominant upland soils occurring on the Leonard Tract include the well-drained Pacolet and Cecil soil series, comprised predominantly of sandy loam. Partially hydric and poorly drained soils, such as Chewacla and Wehadkee series, are found in small areas of the Tract closest to the Neuse River. The topography of the Tract is more variable in the southern portion compared to the northern portion, and thus the southern portion exhibits more diverse soil types.

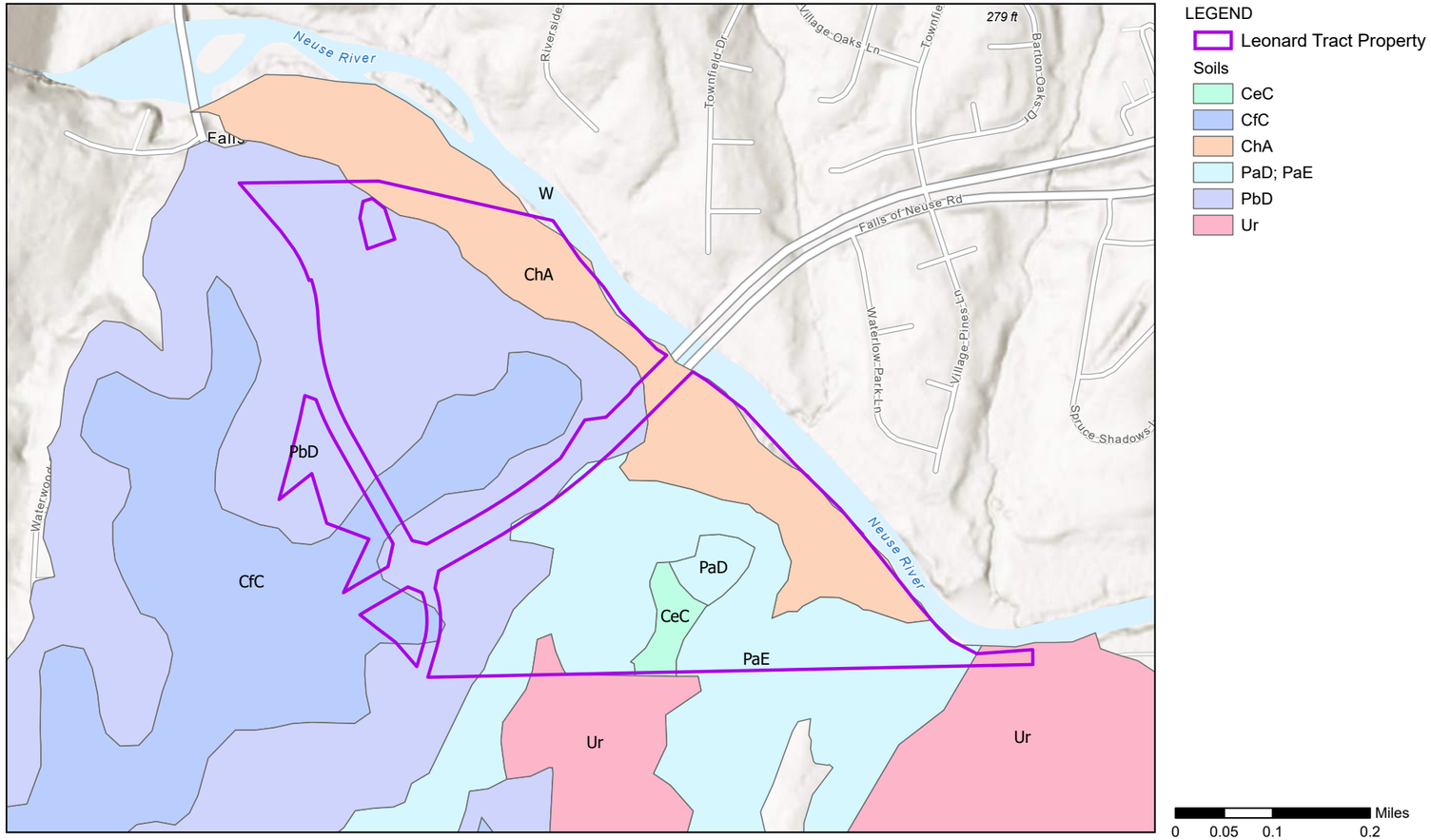
The most upland portions of the Leonard Tract exhibit soils most suitable for facility development but the topography and stormwater drainage channels will present challenges. The majority of the upland areas exhibit well-drained sandy loam soils; however, topographical depressions and erosional channels may contain different soil types not recorded on the available soil survey. The most poorly drained soils are found in the lower-lying portions of the Tract that are closest to the Neuse River. The Neuse River is protected by the Neuse River Buffer Rules, and any development that results in excessive run-off and/or sedimentation in the Neuse River will be prohibited. The Neuse River Buffer Rules also dictate that no development of permanent structure will be permitted within 50-feet of the River, which ensures protections for the most sensitive portions of the Tract.

Table of Soils Found Within or Adjacent to Leonard Tract Property Boundaries

Soil Abbreviation*	Soil Type Name	Drainage Class	Hydric Rating
Ce	Cecil sandy loam	Well-drained	Non-hydric
Cf	Cecil-urban land complex	Well-drained	Non-hydric
Ch	Chewacla silty clay loam	Poorly drained	Partially hydric
Pa	Pacolet sandy loam	Well-drained	Non-hydric
Pb	Pacolet- urban land complex	Well-drained	Non-hydric
Ur	Urban land	---	---
W	Water	---	---

*Percent-slope indicated by A, B, and C ratings in increasing order. Soils that have been heavily eroded are denoted with “2” after the soil type abbreviation.

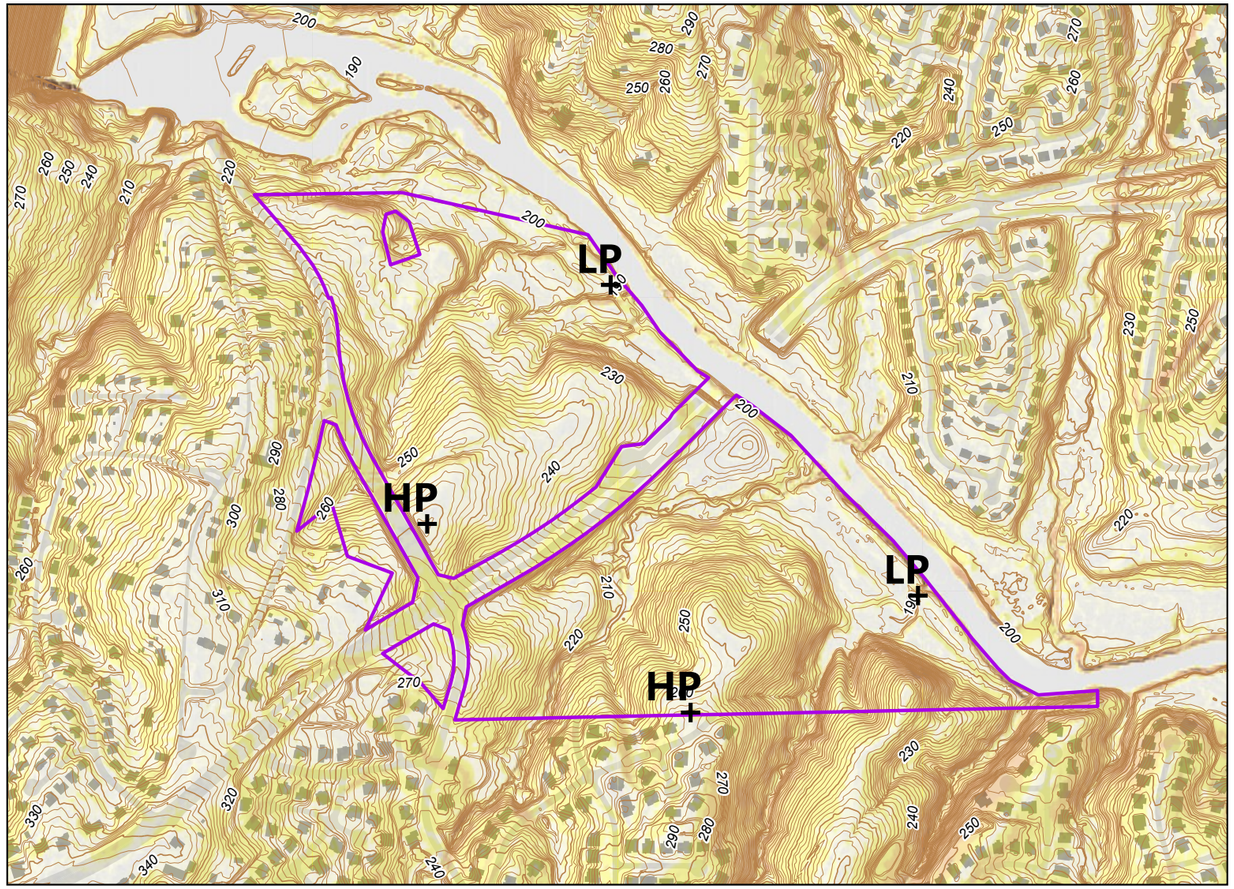
Soils & Geology Map

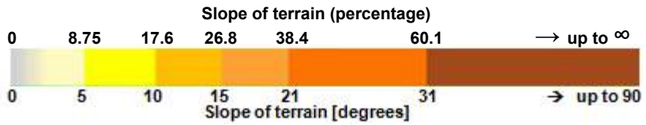


On both larger parcels, the terrain slopes from the southwest part of the Leonard Tract Property towards the Neuse River to the northeast of the property. The high points (HP) are noted on the southwest areas of the property and the low points (LP) is found in the northeastern area. The site has some gently sloping areas (0-8.75%) especially in the northern parcel but significant portions of the site are characterized by steep slopes (38%-60%) and very steep slopes (>60%) especially in the southern parcel.

The natural topography of the site will heavily influence the developable area, and may dictate site programming. Hiking and biking trails, as well as other forms of low-impact recreation that can take advantage this topography should be considered.

Slope & Topography Map





The Leonard Tract encompasses roughly 83.6 acres of rolling topography, mixed forests, and multiple natural communities/habitat types.

List of wildlife species observed at the Leonard Tract

This list is not meant to be exhaustive and represents observations made during multiple site visits by Raleigh PRCR staff. More wildlife species will likely be found within the Leonard Tract after additional ecological monitoring and biological sampling.

Common Name	Scientific Name	Native (Y/N)	Special Status*
Bird species			
American crow	*Corvus brachyrhynchos*	Y	-----
American robin	*Turdus migratorius*	Y	-----
blue jay	*Cyanocitta cristata*	Y	-----
Carolina chickadee	*Poecile carolinensis*	Y	-----
eastern towhee	*Pipilo erythrophthalmus*	Y	-----
hairy woodpecker	*Leuconotopicus villosus*	Y	-----
northern cardinal	*Cardinalis cardinalis*	Y	-----
white-eyed vireo	*Vireo griseus*	Y	Critically Imperiled (NC)
Mammal species			
coyote (scat)	*Canis latrans*	Y	-----
white-tailed deer	*Odocoileus virginianus*	Y	-----
Reptile species			
eastern box turtle	*Terrapene carolina carolina*	Y	NC conservation need
black racer	*Coluber constrictor*	Y	-----
DeKay's brown snake	*Storeria dekayi*	Y	-----
Amphibian species			
American toad	*Anaxyrus americanus*	Y	-----
northern cricket frog	*Acris crepitans*	Y	-----

** Some wildlife species were unable to be identified to species, therefore it may be possible that other wildlife species associated with a special conservation status exist onsite.*

List of plant species observed at the Leonard Tract

This list is not meant to be exhaustive and represents observations made during multiple site visits by Raleigh PRCR staff. More wildlife species will likely be found within the Leonard Tract after additional ecological monitoring and biological sampling.

Common Name	Scientific Name	Native (Y/N)	Special Status*
Grass species			
bluestem grasses	*Andropogon* spp.	Y	-----
crab grasses	*Digitaria spp.*	Y & N	-----
crown grasses	*Paspalum spp.*	Y & N	-----
fescue grasses	*Festuca spp.*	N	-----
giant cane	*Arundinaria gigantea*	Y	-----
Japanese stiltgrass	*Microstegium vimineum*	N	-----
Johnson grass	*Sorghum halepense*	N	-----
monkey grass	*Liriope muscari*	N	-----
panic grasses	*Panicum* spp.	Y	-----
purpletop grass	*Tridens flavus*	Y	-----
river oats	*Chasmanthium latifolium*	Y	-----
rosette panic grasses	*Dicanthelium* spp.	Y	-----
rushes	*Juncus* spp.	Y	-----*
sedges	*Carex* spp.	Y	-----*
wood oats	*Chasmanthium* spp.	Y	-----
Forb species			
asters	*Aster* spp.	Y	-----*
bedstraws	*Galium* spp.	Y	-----
black snakeroot	*Actaea racemosa*	Y	-----
bonesets	*Eupatorium* spp.	Y	-----*
Christmas fern	*Polystichum acrostichoides*	Y	-----
cinnamon fern	*Osmundastrum cinnamomeum*	Y	-----
common jewelweed	*Impatiens capensis*	Y	-----
common ragweed	*Ambrosia artemisiifolia*	Y	-----
crane-fly orchid	*Tipularia discolor*	Y	-----
false nettle	*Boehmeria cylindrica*	Y	-----
false Solomon's seal	*Maianthemum racemosum*	Y	-----
green arum	*Peltandra virginica*	Y	-----
goldenrods	*Solidago* spp.	Y	-----
heartleaf	*Hexastylis* sp.	Y	-----
hemp dogbane	*Apocynum cannabinum*	Y	-----
Jack-in-the-pulpit	*Arisaema triphyllum*	Y	-----
lizard's tail	*Saururus cernuus*	Y	-----
partridge berry	*Mitchella repens*	Y	-----
peas - legumes	*Lespedeza* spp.	Y & N	-----
peas - legumes	*Desmodium* spp.	Y	-----
sensitive fern	*Onoclea sensibilis*	Y	-----
shrub yellowroot	*Xanthorhiza simplicissima*	Y	-----
skullcaps	*Scutellaria spp.*	Y	-----*
smartweeds	*Polygonum spp.*	Y & N	-----
sneezeweed	*Helenium autumnale*	Y	-----
Solomon's seal	*Polygonatum biflorum*	Y	-----
southern lady fern	*Athyrium asplenioides*	Y	-----
spotted wintergreen	*Chimaphila maculata*	Y	-----
sweet everlasting	*Pseudognaphalium obtusifolium*	Y	-----
tall rattlesnake root	*Nabalus altissimus*	Y	-----
Virginia dayflower	*Commelina virginica*	Y	-----
white milkweed	*Asclepias variegata*	Y	-----
wingstem	*Verbesina alternifolia*	Y	-----

List of plant species observed at the Leonard Tract Continued

Shrub/vine species			
English ivy	*Hedera helix*	N	-----
greenbriers	*Smilax* spp.	Y	-----
groundsel tree	*Baccharis halimifolia*	Y	-----
Japanese honeysuckle	*Lonicera japonica*	N	-----
kudzu	*Pueraria montana*	N	-----
leatherleaf mahonia	*Mahonia bealei*	N	-----
multiflora rose	*Rosa multiflora*	N	-----
privets	*Ligustrum* spp.	N	-----
wax myrtle	*Myrica cerifera*	Y	-----
wild blueberries	*Vaccinium* spp.	Y	-----
wild grapes	*Vitis* spp.	Y	-----
wild olives	*Elaeagnus* spp.	N	-----
Tree species			
American beech	*Fagus grandifolia*	Y	-----
American sycamore	*Platanus occidentalis*	Y	-----
black walnut	*Juglans nigra*	Y	-----
black gum	*Nyssa sylvatica*	Y	-----
Callery pear	*Pyrus calleryana*	N	-----
eastern hophornbeam	*Ostrya virginiana*	Y	-----
eastern hornbeam	*Carpinus caroliniana*	Y	-----
green ash	*Fraxinus pennsylvanica*	Y	-----
loblolly pine	*Pinus taeda*	Y	-----
mockernut hickory	*Carya tomentosa*	Y	-----
northern red oak	*Quercus rubra*	Y	-----
pignut hickory	*Carya glabra*	Y	-----
post oak	*Quercus stellata*	Y	-----
red maple	*Acer rubrum*	Y	-----
river birch	*Betula nigra*	Y	-----
shortleaf pine	*Pinus echinata*	Y	-----
sourwood	*Oxydendrum arboretum*	Y	-----
southern hackberry	*Celtis laevigata*	Y	-----
southern red oak	*Quercus falcata*	Y	-----
sugar maple	*Acer saccharum*	Y	-----
sweetgum	*Liquidambar styraciflua*	Y	-----
water oak	*Quercus nigra*	Y	-----
white oak	*Quercus alba*	Y	-----
winged elm	*Ulmus alata*	Y	-----
yellow poplar	*Liriodendron tulipfera*	Y	-----

** Some wildlife species were unable to be identified to species, therefore it may be possible that other wildlife species associated with a special conservation status exist onsite.*

NC Natural Heritage Program

NC DEPARTMENT OF
NATURAL AND CULTURAL RESOURCES

Roy Cooper, **Governor**
Susi Hamilton, **Secretary**
Walter Clark, **Director, Land and Water Stewardship**

NCNHDE-13210

October 29, 2020

Emma Liles
City of Raleigh
222 W Hargett St
Raleigh, NC 27602
RE: Leonard Tract Pre-Development Assessment

Dear Emma Liles:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

A query of the NCNHP database indicates that there are records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. These results are presented in the attached 'Documented Occurrences' tables and map.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is documented within the project area or indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: https://www.fws.gov/offices/Directory/ListOffices.cfm?statecode=37.

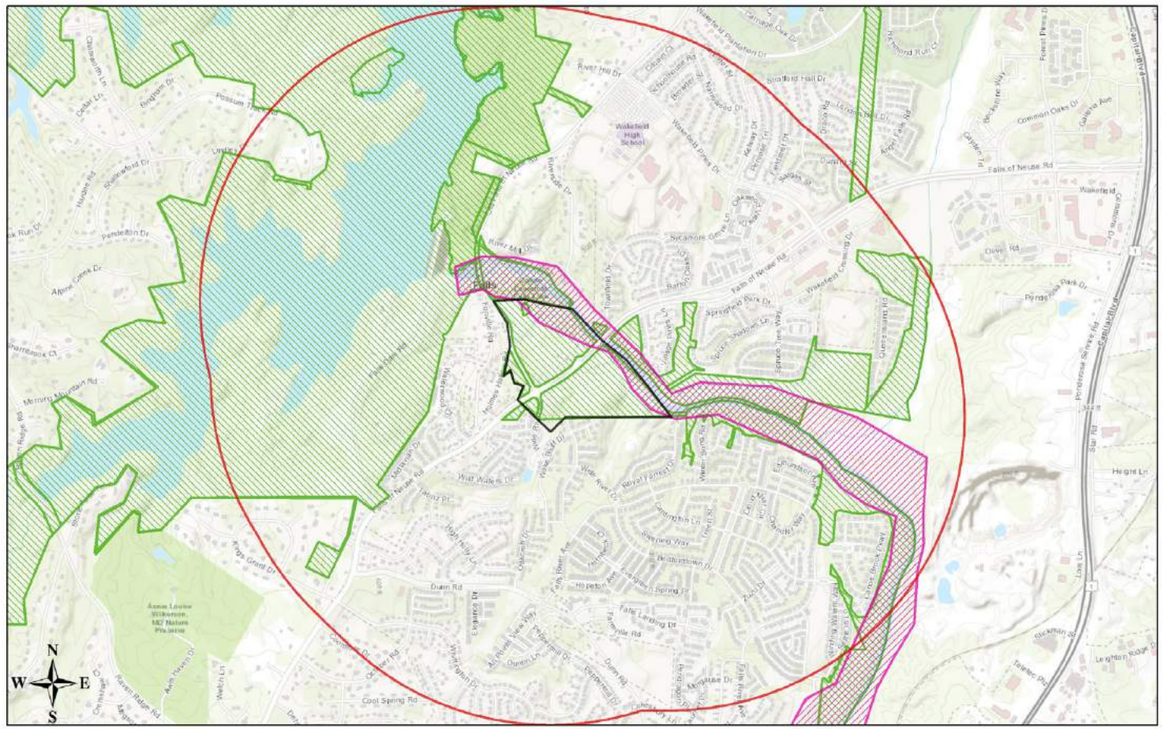
Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also please note that the NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Clean Water Management Trust Fund easement, or an occurrence of a Federally-listed species is documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

DEPARTMENT OF NATURAL AND CULTURAL RESOURCES
121 W. JONES STREET, RALEIGH, NC 27603 • 1651 MAIL SERVICE CENTER, RALEIGH, NC 27699
OFC 919.707.9120 • FAX 919.707.9121



October 29, 2020

Project Boundary
Buffered Project Boundary
NHP Natural Area (NHNA)
Managed Area (MAREA)

1:24,849

0 0.2 0.4 0.8 mi
0 0.325 0.65 1.3 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Intersecting the Project Area
Leonard Tract Pre-Development Assessment
October 29, 2020
NCNHDE-13210

Element Occurrences Documented Within Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Dragonfly or Damselfly	26060	Gomphurus septima	Septima's Clubtail	2012-05-03	BC	3-Medium	---	Significantly Rare	G2	S3
Dragonfly or Damselfly	33693	Gomphurus ventricosus	Skillet Clubtail	2010-05-12	C	3-Medium	---	Significantly Rare	G3	S1
Freshwater Bivalve	29256	Alasmidonta undulata	Triangle Floater	2017-10-30	E	3-Medium	---	Threatened	G4	S3
Freshwater Bivalve	36501	Elliptio roanokensis	Roanoke Slabshell	2016-07-27	E	3-Medium	---	Special Concern	G3	S3
Freshwater Bivalve	19137	Lampsilis radiata	Eastern Lampmussel	2018-06-29	E	3-Medium	---	Threatened	G5	S3

Natural Areas Documented Within Project Area

Site Name	Representational Rating	Collective Rating
Upper Neuse River Floodplain	R2 (Very High)	C3 (High)

Managed Areas Documented Within Project Area*

Managed Area Name	Owner	Owner Type
Butner-Falls of Neuse Game Land	NC Wildlife Resources Commission	State
Falls Lake	US Army Corps of Engineers	Federal
City of Raleigh Open Space - Planned White Water Park	City of Raleigh	Local Government
City of Raleigh Open Space	City of Raleigh	Local Government
City of Raleigh Open Space	City of Raleigh	Local Government
City of Raleigh Open Space	City of Raleigh	Local Government

*NOTE: If the proposed project intersects with a conservation/managed area, please contact the landowner directly for additional information. If the project intersects with a Dedicated Nature Preserve (DNP), Registered Natural Heritage Area (RHA), or Federally-listed species, NCNHP staff may provide additional correspondence regarding the project.

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/help. Data query generated on October 29, 2020; source: NCNHP, Q3 October 2020. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
Leonard Tract Pre-Development Assessment
October 29, 2020
NCNHDE-13210

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Amphibian	11026	Necturus lewisi	Neuse River Waterdog	1979-02-06	X	2-High	Proposed Threatened	Special Concern	G2	S2
Dragonfly or Damselfly	32043	Coryphaeschna ingens	Regal Darner	2004-Pre	H?	5-Very Low	---	Significantly Rare	G5	S2?
Dragonfly or Damselfly	26060	Gomphurus septima	Septima's Clubtail	2012-05-03	BC	3-Medium	---	Significantly Rare	G2	S3
Dragonfly or Damselfly	33693	Gomphurus ventricosus	Skillet Clubtail	2010-05-12	C	3-Medium	---	Significantly Rare	G3	S1
Freshwater Bivalve	29256	Alasmidonta undulata	Triangle Floater	2017-10-30	E	3-Medium	---	Threatened	G4	S3
Freshwater Bivalve	36501	Elliptio roanokensis	Roanoke Slabshell	2016-07-27	E	3-Medium	---	Special Concern	G3	S3
Freshwater Bivalve	19137	Lampsilis radiata	Eastern Lampmussel	2018-06-29	E	3-Medium	---	Threatened	G5	S3
Mammal	16534	Myotis austroriparius	Southeastern Bat	1982-Pre	X	2-High	---	Special Concern	G4	S2
Mammal	38967	Myotis austroriparius	Southeastern Bat	2017-06-27	E	2-High	---	Special Concern	G4	S2
Vascular Plant	2242	Micranthes pensylvanica	Swamp Saxifrage	1986-04-19	X?	3-Medium	---	Endangered	G5	S1

Natural Areas Documented Within a One-mile Radius of the Project Area

Site Name	Representational Rating	Collective Rating
Upper Neuse River Floodplain	R2 (Very High)	C3 (High)

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
Butner-Falls of Neuse Game Land	NC Wildlife Resources Commission	State
Falls Lake	US Army Corps of Engineers	Federal
Forest Ridge Park	US Army Corps of Engineers	Federal
Wake County Open Space Easement	Wake County	Local Government
City of Raleigh Open Space - Planned White Water Park	City of Raleigh	Local Government
City of Raleigh Open Space	City of Raleigh	Local Government
City of Raleigh Greenway - Richland Creek Greenway	City of Raleigh	Local Government
City of Raleigh Greenway - Wakefield Trail	City of Raleigh	Local Government
North American Land Trust Easement	North American Land Trust	Private
City of Raleigh Open Space	City of Raleigh	Local Government
City of Raleigh Open Space	City of Raleigh	Local Government

Previous Land Use Maps

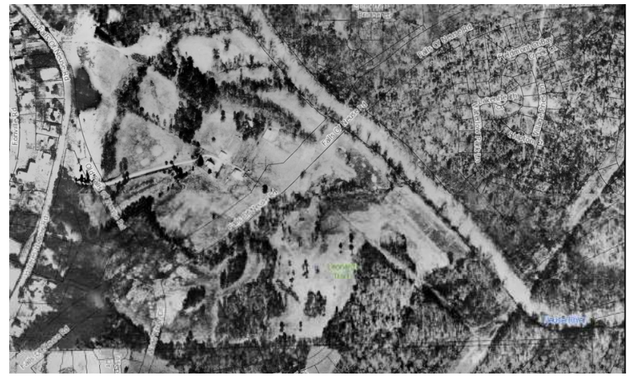
The Leonard Tract was acquired by the City of Raleigh in 2010, and evidence of past land use activities can be readily observed throughout the Property. These relics of past use, as well as historic aerial photographs, suggest that most of the Tract was formerly used as pastureland. This is supported by the conspicuous remnants of dilapidated fences and fence posts that were used to separate the pastures on the Property. Additional evidence suggests that other agricultural practices such as row-cropping occurred on the site, although it is difficult to gauge the extent of these activities.

The Leonard Tract featured at least two residences and several other structures presumed to be barns and/or storage buildings. These buildings were demolished and removed after the City acquired the Property in 2010. Old roadbeds and driveways can be found traversing the Tract and are most concentrated near the central portion of the Property where the residences and other buildings were previously located. The construction of Falls of Neuse Rd. began in 2010 as well and bisected the Property, dividing the Tract into the northern and southern portions outlined on the maps and referenced above. Evidence from historic aerial photographs suggests that the Tract was utilized as pastureland until rough 2008-2009, just prior to acquisition by the City.

Man-made drainage ditches and the remnants of a small impoundment near an upland seep provide insight into how previous landowners managed the surface water on the Tract. These actions have altered the natural hydrology of the site and have likely resulted in the loss or reduction of additional wetland habitats that may have previously existed in the upland portions of the Tract. The rapid development of the surrounding area, including the construction of Falls of Neuse Rd., has created negative impacts associated with stormwater run-off, including heavy erosion and scouring in the more upland portions, and sedimentation in the lower-lying areas and streams/drainage channels.

1959

1971



1981

1988

1999

2010

2019

State Historic Preservation Office

The NC State Historic Preservation Office (SHPO) was consulted during the pre-development site assessment to ensure no significant cultural or archaeological sites have been identified onsite, and the SHPO response is included below. The SHPO recommendations related to land-disturbing activities should be considered during any development planning processes.

SHPO response:
“There are no previously recorded archaeological sites located at the property submitted. However, portions of the property do contain areas of high potential for archaeological resources. For any ground disturbing activities planned in the project area in the future, please submit a description of the project to this office for review and comment. We may recommend that an archaeological survey be conducted by an experienced archaeologist prior to construction. We have determined that the project as proposed will not have an effect on any historic structures.”

North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office
Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary Susi H. Hamilton

Office of Archives and History
Deputy Secretary Kevin Cherry

December 10, 2020

Emma Liles
Park Planner
City of Raleigh
222 West Hargett Street
Raleigh, NC 27601

Emma.Liles@raleighnc.gov

Re: Leonard Property, Raleigh, Wake County, ER 20-2352

Dear Ms. Liles:

Thank you for your submission concerning the above-referenced project. We have reviewed the materials provided and offer the following comments.

No previously recorded archaeological sites located at the property submitted. However, portions of the property do contain areas of high potential for archaeological resources. For any ground disturbing activities are planned in the project area in the future, please submit a description of the project to this office for review and comment. We may recommend that an archaeological survey be conducted by an experienced archaeologist prior to construction.

We have determined that the project as proposed will not have an effect on any historic structures.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation’s Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

Location: 109 East Jones Street, Raleigh NC 27601 **Mailing Address**: 4617 Mail Service Center, Raleigh NC 27699-4617 **Telephone/Fax**: (919) 814-6570/814-6598

Park Access Analysis

Park Access is a measure of how well different areas of the city are currently served by Raleigh's system of parks and greenway trails. Each census block in the city is assigned a Park Access grade based on four factors:

1. Distance to Nearest Park: How far residents need to travel to reach the nearest public park;

2. Distance to Nearest Greenway Trail: How far residents need to travel to reach the nearest greenway trail;

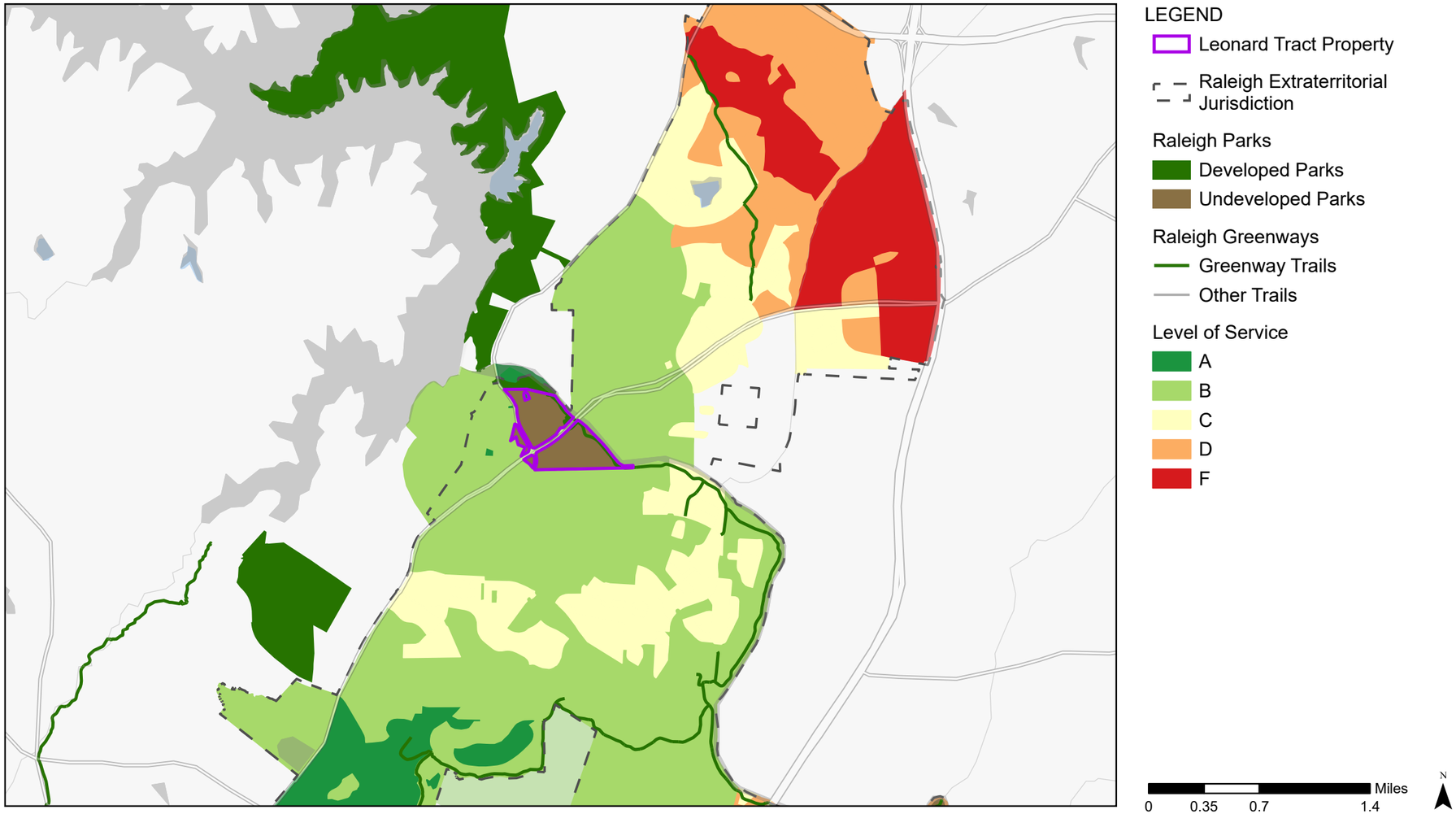
3. Acres of Open Space: How many acres of park land are accessible nearby;

4. Park Experiences: The number and variety of park experiences available nearby;

Communities with an "A" letter grade have very good park access relative to other areas of the city. These neighborhoods are likely located within a 10-minute walk of a park, have access to many acres of open space, and can enjoy a wide variety of park experiences within a short distance of home.

Communities with a "D" or "F" letter grade have poor access to parks relative to other areas of the city. Residents in these areas may have to travel several miles to reach the nearest public park, and may only have access to a limited variety of park experiences.

Prioritizing investments in communities with low Park Access scores helps to promote Raleigh's goal of providing every citizen with safe, convenient access to a park or greenway trail.



Equity Priority Analysis

Equity Priority can be determined by analyzing five key indicators of community health and well-being, as defined by Wake County Human Services' *Community Vulnerability Index*:

1. Unemployment: Population age 16 and over who are unemployed in the civilian labor force;

2. Low Educational Attainment: Population over age 25 who have less than a high school diploma;

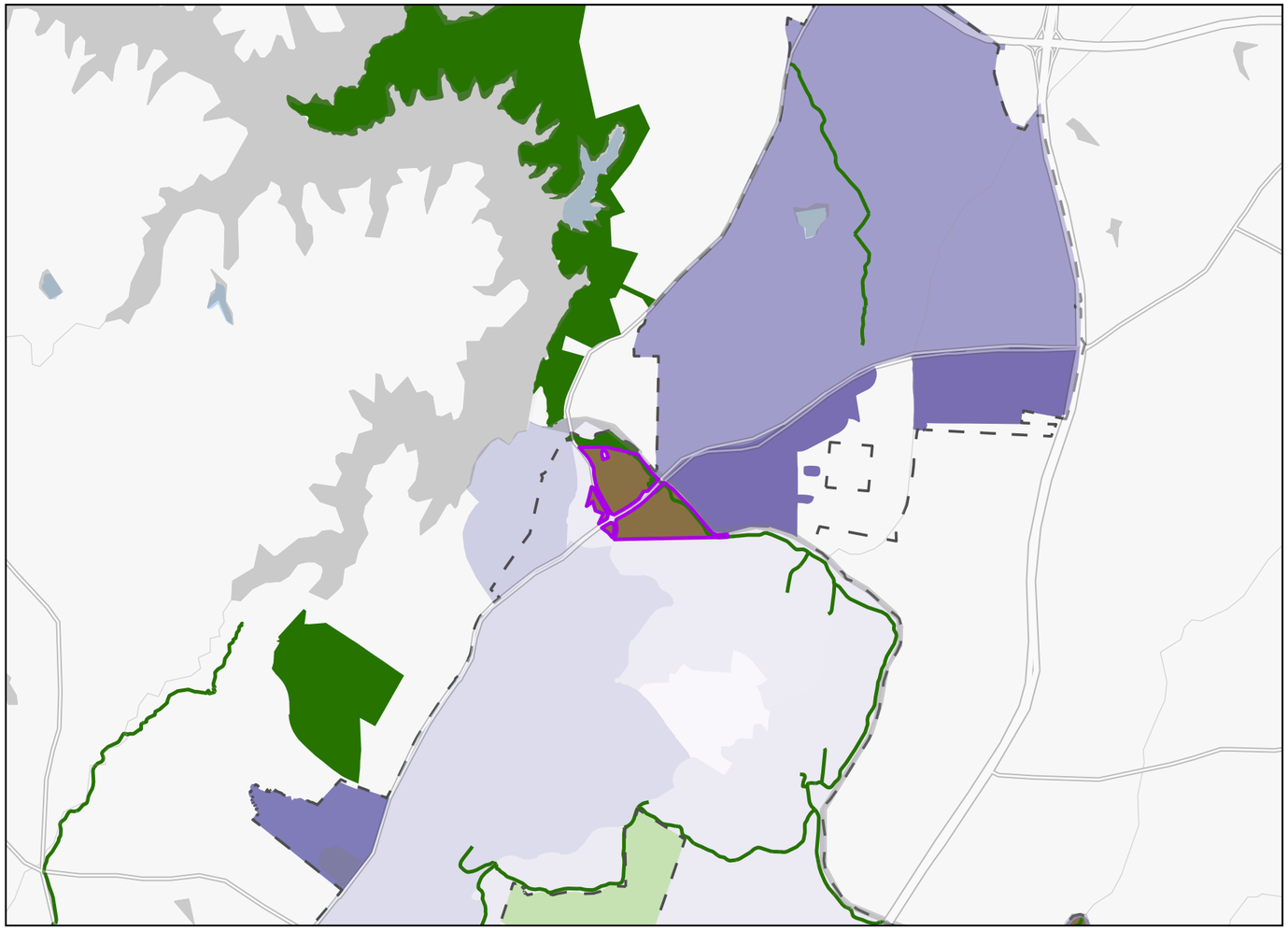
3. Age Dependency: Population under the age of 18 and over the age of 64 combined;

4. Housing Vacancy: The total number of vacant or unoccupied housing units in a block group;

5. Poverty Rate: The population living below the federal poverty threshold in Wake County;

Communities exhibiting a high concentration of these five demographic and socieconomic indicators are more likely to experience negative health outcomes such as heart disease, obesity, chronic stress, and depression—outcomes which can be mitigated with better access to high-quality open spaces, outdoor recreation, and safe places to play and exercise.

Prioritizing investments in these communities helps ensure that PRCR sites, facilities, and programs are more accessible to the communities that will benefit most from these public resources.



10-Minute Walk Demographics

There are only 1,059 people within a ten-minute walk from the Leonard Tract property. This population has a much higher median household income, has more 45-75 year-olds & less 20-45 year olds, and has a larger white population than the average in the City of Raleigh. Within this population 85% of people own their home as opposed to renting, 11% of households have at least one person with a disability, 1% of households are below the poverty level, and 0% speak limited to no English.

1,059

Population

40.4

Median Age

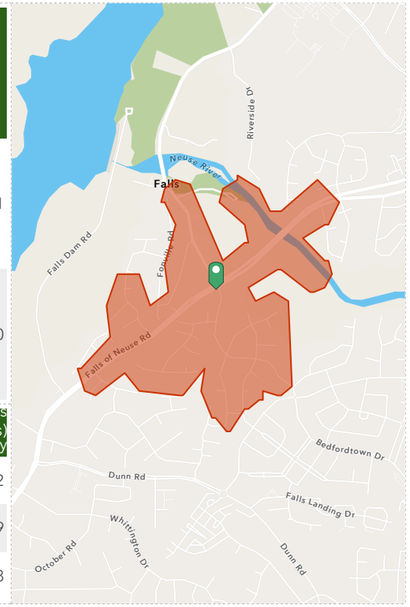
3.0

Average Household Size

353

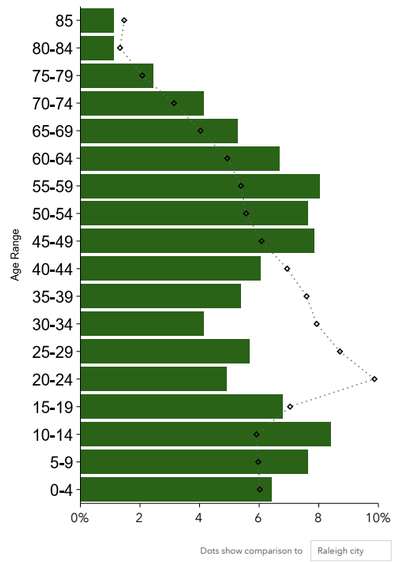
Total Households

Median Household Income	
10 minutes	$136,001
Cities and Towns (Places)	
Raleigh city	$68,980

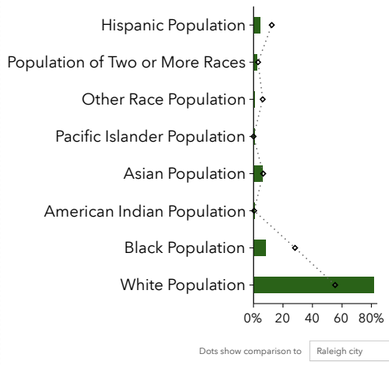


Projected Population Growth	10 minutes	Cities and Towns (Places) Raleigh city
2010 Total Population (U.S. Census)	982	404,692
2019 Total Population	1,059	476,639
2024 Total Population	1,118	520,228

Population by 5-year Age Increments



Population by Race & Ethnicity



11%

Households with 1+ Persons with a Disability

0%

% Population that Speaks Limited to No English

Workday Driv

Dominant Tapestry Segment Name

1%

Households Below the Poverty Level

Owner/Renter Occupied Housing Units	10 minutes	Cities and Towns (Places) Raleigh city
2019 Total Households	353	193,330
2019 Owner Occupied Housing Units (Esri) (%)	85%	51%
2019 Renter Occupied Housing Units (Esri) (%)	16%	49%

Data Source: ESRI Community Analyst

5-Minute Drive Demographics

There are 17,579 people within a five-minute drive from the Leonard Tract property. This population is similar to the ten-minute walk population in terms of median household income, age, and race. This population also has a high percentage of home owners, 15% of households have at least one person with a disability, 4% of households are below the poverty level, and 1% speak limited to no English.

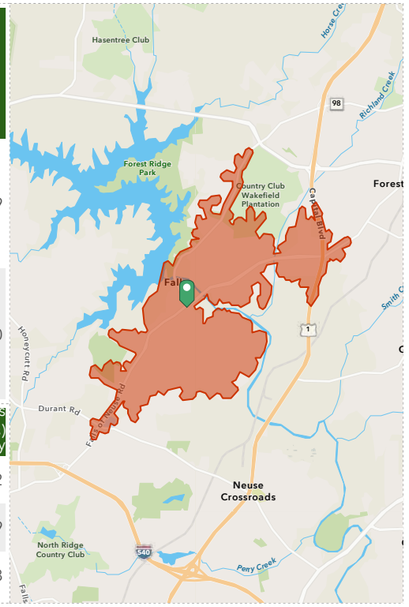
17,579
Population

37.0
Median Age

2.7
Average Household Size

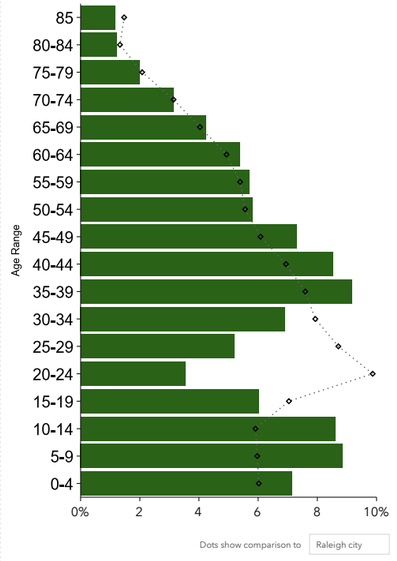
6,521
Total Households

Median Household Income	
5 minutes	$113,089
Cities and Towns (Places)	
Raleigh city	$68,980

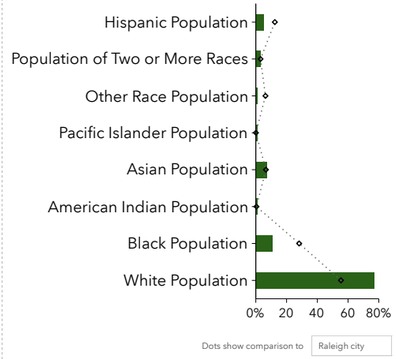


Projected Population Growth	5 minutes	Cities and Towns (Places) Raleigh city
2010 Total Population (U.S. Census)	13,891	404,692
2019 Total Population	17,579	476,639
2024 Total Population	19,453	520,228

Population by 5-year Age Increments



Population by Race & Ethnicity



15%
Households with 1+ Persons with a Disability

1%
% Population that Speaks Limited to No English

Boomburbs
Dominant Tapestry Segment Name

4%
Households Below the Poverty Level

Owner/Renter Occupied Housing Units	5 minutes	Cities and Towns (Places) Raleigh city
2019 Total Households	6,521	193,330
2019 Owner Occupied Housing Units (Esri) (%)	72%	51%
2019 Renter Occupied Housing Units (Esri) (%)	28%	49%

Data Source: ESRI Community Analyst

Suitability Analysis

Site & Context Analysis of the Thornton Rd. Property yielded many results that should be considered when deciding where on the site it is appropriate for development. The findings of from this analysis are summarized below:

Existing Conditions

- The existing greenway trails are suitable uses as low-impact development in the very limited disturbance areas.

Slope & Topography

- The steep slopes should have very limited disturbance so as not to cause erosion issues

Soils & Geology

- Development in areas of the site with poorly drained & partially- hydric soils should be limited because of the frequency of inundation

Hydrology

- Development within the 100-year floodplain and wetlands should be very limited because of the frequency of inundation

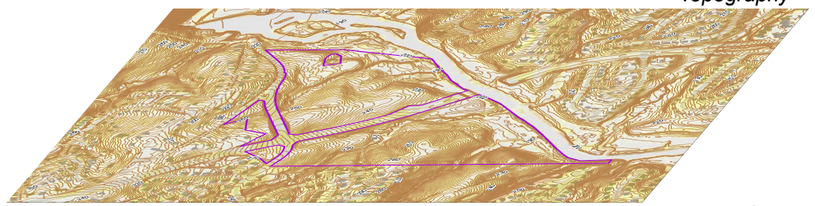
Utilities

- Areas that overlap with the sewer should have limited development so regular maintenance can be conducted.

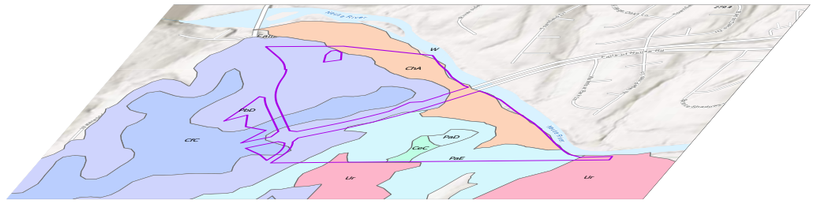
Suitability Overlay Diagram

Existing Conditions

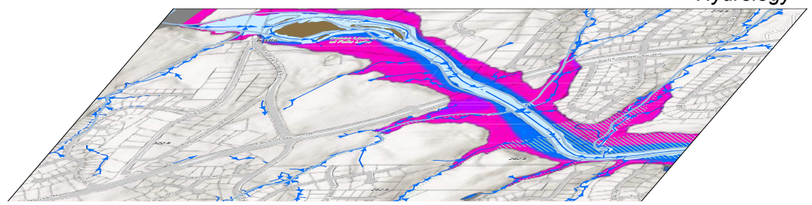
Slope & Topography



Soils



Hydrology



Utilities

There are other results from the PDAP beyond just what affects site suitability. When public engagement begins with the start of the site development process, the project manager should keep the following in mind:

Site Vicinity

- The Leonard Tract Property has several Community & Homeowner Associations nearby as well as a few elementary schools. Efforts should be made to include these communities in the park planning process.

Park & Greenway System Context

- The Leonard Tract Property should be planned within the larger context of the surrounding parks and greenways. When the site is developed, the experiences it provides should complement the park & greenway system in the area to help provide a broad range of activities for the community.

Zoning & Future Land Use

- Any development of the Leonard Tract Property should work in conjunction with the City of Raleigh Planning Dept. to incorporate any plans from the nearby special study area.

Park Access, Equity, & Demographics

- The area surrounding the property has B & C grades for park access. The development of this site should help improve these grades.
- There is an area near the property with a lower equity score than the surrounding census blocks. Public engagement should target outreach in this area.
- Public engagement should focus on outreach that recognizes the populations who speak limited English and the populations with disabilities.

Based on the analysis of the site suitability overlay, the following map delineates approximate areas of the site that are recommended to have very limited, limited, or regular development.

Very Limited Development

- These areas are suitable for low impact uses such as natural surface trails, canoe/kayak launches, invasive removal, and river bank stabilization

Limited Development

- Development in these areas may be restricted by the presence of steep slopes or frequent inundation within poorly drained & partially- hydric soils.

Regular Development

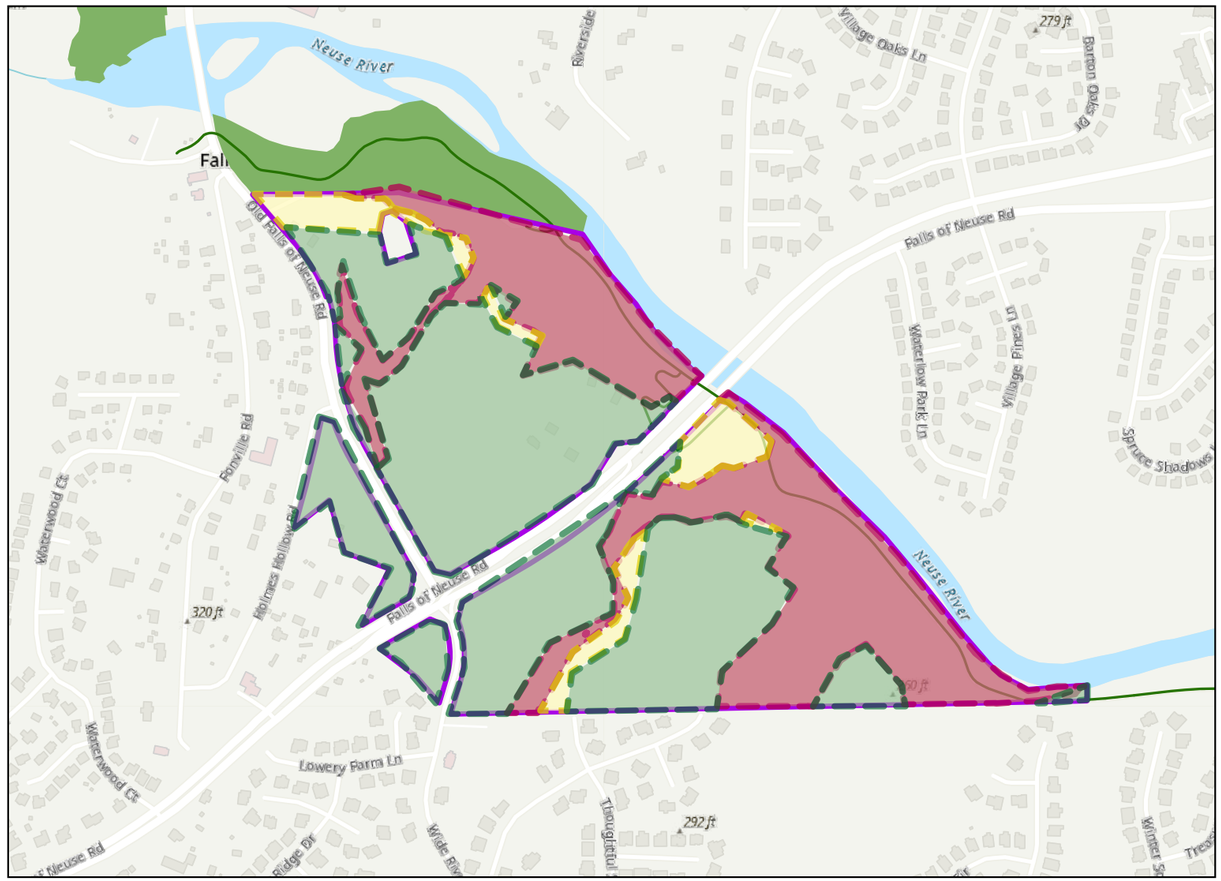
- These areas have no significant or special limitations on development and are open to most design choices that will facilitate a versatile park property.

Special consideration should be given to the relationship between disconnected parcels at this site. Falls of Neuse Rd bisects the two main portions of the park property, and currently the only safe pedestrian crossing between these two areas is via the Neuse River Greenway Trail underneath the Falls of Neuse Rd bridge.

Future planning of this park site may consider disposition of the remnant parcels west of Old Falls of Neuse Rd, if a suitable use that complements the park cannot be found for these parcels.

Site Suitability Analysis - Development Capacity	
Area Suitable for Very Limited Development	28 Acres
Area Suitable for Limited Development	5 Acres
Area Suitable for Regular Development	51 Acres
Total Park Area	84 Acres

Site Suitability Map



LEGEND

- Leonard Tract Property
- Raleigh Greenways
- Raleigh Parks
- Very Limited Development
- Limited Development
- Regular Development

Interim Management Recommendations

Primary Short-term Goals And Objectives

1. Implementation of coordinated monitoring and mapping efforts aiding in the development of biological inventories, identifying unauthorized uses, and potentially negative impacts to natural resources
2. Evaluation and control of invasive plant species
3. Evaluation of site characteristics and ecological features using Raleigh PRCR Nature Preserves/ Protected Natural Areas criteria
4. Reduction of unauthorized vehicular and foot traffic to prevent illegal hunting and the degradation of sensitive ecological resources

Long-term Goals

1. Implementation of additional ecological monitoring and mapping efforts
2. Retention and protection of documented significant plant and animal species
3. Improvement of wildlife habitat and natural plant communities through ecological restoration practices

Current ArcGIS Online Database with Site Visit Data

Site Monitoring and Mapping

Coordinated monitoring, sampling, and mapping techniques should be employed by PRCR to document the significant ecological features located on the Leonard Tract. Structured monitoring strategies can be used to address a variety of natural resource and land use concerns. For example, monitoring efforts will be needed to document the presence and distribution of rare plants and animals in order to ensure their protection, to identify and map the locations of invasive plant species targeted for control, and to help gauge the extent of unauthorized access and use that may be occurring onsite.

Current Management

To date, there have been no formal biological surveys conducted at the Leonard Tract, nor have any regular ecological monitoring protocols been established.

Recommended Management

Expansion of monitoring efforts and capabilities

- PRCR staff will monitor for the presence of any significant/rare/protected plant and wildlife species, ensuring at least four site visits per year to align with seasonal windows.

- PRCR staff should document the occurrence of invasive plant species found onsite, along with the approximate locations and levels of infestation whenever possible. Maintaining invasive plant species records will help simplify information sharing and future planning efforts.

- PRCR staff should engage with state and local government agencies for monitoring assistance Agencies such as the NC Forest Service, NC Wildlife Resources Commission, NC Natural Heritage Program, NC Dept. of Agriculture and Consumer Services, NC Dept. of Environmental Quality, and others may be able to provide input and expertise that could help bolster monitoring efforts.

- PRCR staff should engage with local volunteers through community outreach and education in order to encourage Citizen Science monitoring efforts. The organization of single-day or multi-day group monitoring events designed to address specific concerns may prove helpful. Some observations gained through volunteer efforts may need to be verified by qualified PRCR staff, depending on the level of expertise demonstrated by the participants.

Evaluation and Control of Invasive Plant Species

Several varieties of non-native invasive plant species have been observed onsite at the Leonard Tract, many of which are listed in the tables above. This list of invasive plant species is not comprehensive and was compiled only after limited field observations. There are undoubtedly additional invasive plants species currently occurring onsite. As previously mentioned, monitoring efforts focused on the documentation of invasive plant species will be needed to inform the most effective and appropriate management strategies. PRCR should prioritize invasive species control efforts to address those species that pose the greatest ecological threats.

Current Management

No invasive plant species control efforts are currently being conducted on the Leonard Tract.

Invasive Species on Site

Recommended Management

Identification and prioritization of invasive species control

- PRCR staff should identify and prioritize invasive species control efforts based on the level of ecological threat posed by those species found on site. Resource allocation and the feasibility of control will need to be considered when developing plans for invasive species management.

- There is a concentrated area of non-native invasive plants in the western/southwestern section of the property that was formerly a home site. These concentrated populations can serve as a seed source for the establishment of additional invasive plants elsewhere in the Tract. This area should be prioritized for invasive species control efforts.

- Additional invasive plant species are concentrated along the southern boundary line (Old Falls of Neuse Rd.), as well as centrally located in the Tract where past land use and human habitation has resulted in the establishment of problematic non-native plant species.

- PRCR staff will use herbicides to control invasive plant species when necessary. All herbicide applications on PRCR properties should follow the City of Raleigh Pesticide Policy and be approved by appropriate PRCR staff.

- PRCR staff from the Natural Resources Section and from the Parks Division will work together closely to coordinate resources needed for invasive plant control.

- Impacts from the emerald ash borer (Agrilus planipennis) have also been observed on the Leonard Tract. The emerald ash borer is an invasive forest pest that has become pervasive throughout the region, and control efforts may not be feasible given the overwhelming prevalence of this non-native buprestid species. Green ash trees located along the headwater streams and the riparian areas along the Neuse River have been highly impacted. Pesticide injection treatments can be used to preserve specimen ash trees, heritage ash trees, or ash trees that provide unique aesthetic value.

Evaluate Site for Nature Preserve Criteria

Once more information is gathered through further site-assessment and ecological monitoring, the Leonard Tract can be better evaluated using criteria to help gauge options for future use.

The PRCR Nature Preserves/Protected Natural Areas criteria was defined in 2011 by the Nature Preserves Task Force. The Task Force was created to develop criteria that the City could use to determine which properties should be designated as Nature Parks, Nature Preserves, and Protected Natural Areas. A variety of biotic and abiotic elements were considered when developing these criteria with the goal of selecting the parks that possess high-quality habitat and natural communities, significant plant and animal species, and other natural resources that would merit a special designation. Once the Leonard Tract has been adequately evaluated using these criteria, a formal recommendation for a special designation can be issued.

Reduction of unauthorized access and use to prevent the degradation of sensitive ecological resources

Several examples of unauthorized access to the Leonard Tract have been observed, mostly concentrated near the western portion of the Tract closest to the Neuse River Canoe Launch parking area and a small privately-owned in-holding contained within the Tract. Social trails can be found originating from the Canoe Launch parking lot, as well as from the neighboring Greenway. However, these social trails seem to primarily be short segments that do not appear to be jeopardizing any natural resources at this time. Evidence of unauthorized vehicular traffic was observed leading to/from the privately-owned parcel within the Leonard Tract. A small pile of corn was located near this parcel which could indicate that illegal hunting is occurring on the Tract as well. The level of unauthorized access and use needs to be further evaluated and deterrents should be put in place to prevent the most egregious examples.

<u>Current Management</u>

No efforts are currently being made to restrict or control unauthorized access and use on the Leonard Tract.

<u>Recommended Management</u>

Evaluation of unauthorized access level, access points, and potential damage

- PRCR staff should take steps to gauge the level of unauthorized access to the property and to identify the illegal points of entry. The impacts created by unauthorized vehicular and foot traffic should be evaluated, with a focus on the most environmentally sensitive areas or locations where significant plants or animals have been documented. Trail cameras may prove useful for monitoring unauthorized use. Once the prevalence and impacts from unauthorized access are better understood, PRCR can develop management strategies to address these issues.

- PRCR staff should address the most problematic access points first, with the addition of signage and physical barriers to discourage illegal access. The property boundaries should be marked with appropriate signage or purple paint that clearly indicates PRCR property lines, and explicitly prohibits trespassing and hunting. While signage and other indicators may prove to be minimally effective, the establishment of cable gates, iron gates, and even felled trees or debris piles may act as physical barriers to access.

Appendix A: Civil Action Memorandum (2007)

FILED
2010 MAR 26 AM 11:29
WAKE COUNTY, C.S.C.
BY ...

WAKE COUNTY, NC 96
LAURA M RIDDICK
REGISTER OF DEEDS
PRESENTED & RECORDED ON
03/26/2010 AT 10:13:48

BOOK:013888 PAGE:00452 - 00456

Mail to: City Attorney's Office
PO. Box 590
Raleigh, NC 27602

NORTH CAROLINA

COUNTY OF WAKE

CIVIL ACTION
IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
Case No 07 CVS 50

CITY OF RALEIGH, a municipal corporation,

Plaintiff,

vs.

R. NELSON LEONARD; W. GERALD THORNTON, TRUSTEE of the LEONARD FAMILY CHARITABLE REMAINDER TRUST u/t/a dated August 1, 2007; W. GERALD THORNTON, TRUSTEE of the R. NELSON LEONARD CHARITABLE REMAINDER TRUST u/t/a dated August 1, 2007; THE COUNTY OF WAKE

Defendant(s).

CONSENT JUDGMENT

THIS CAUSE, coming on to be heard before the undersigned Superior Court Judge Presiding, it having been stipulated by the parties and the Court finding as a fact the following:

1. This action was duly instituted on August 7, 2007, by the issuance of Summons and the filing of a Complaint, Declaration of Taking, and Notice of Deposit, along with the deposit of nine million dollars ($9,000,000.00), the sum estimated by the Plaintiff to be just compensation for the taking of the property of the defendants, and which sum has been previously disbursed to the defendants by Order of the Court.

2. Summons, together with a copy of the Complaint, Declaration of Taking and Notice of Deposit were duly served upon each of the Defendants, or service has otherwise been secured against each of the defendants, as they appear of record.

3. All persons having or claiming to have an interest in the condemned land are parties hereto and are duly before the Court.

4. The parties have now settled all matters in controversy between them, and, as agreed by the parties, the sum of ten million three hundred fifty thousand dollars ($10,350,000.00), which sum includes any claim by the defendants to interest payable by the plaintiff, is the full and adequate value of, and represents just compensation for, the taking of the defendants' property.

5. The County of Wake was joined as a party defendant to this action solely in its capacity as holder of liens for ad valorem taxes on the subject property. Subsequent to the filing of this action, all ad valorem taxes on the property have been fully paid, and defendant Wake County has accordingly filed a Stipulation with the Court that it has no further interest in the property or in these proceedings.

ON THE FOREGOING FINDINGS AND STIPULATIONS, THE COURT CONCLUDES AS A MATTER OF LAW THE FOLLOWING:

1. The plaintiff was entitled to acquire and did acquire on August 7, 2007 the property of the defendants as described herein.

2. These proceedings as appears from the Pleadings are regular in every respect and no just cause has been shown against granting the prayer contained in the Complaint, Declaration and Notice.

3. Except as expressly set forth herein, the defendants are not entitled to any further relief from the plaintiff as a result of the taking.

4. Defendants R. Nelson Leonard; W. Gerald Thornton, Trustee of the Leonard Family Charitable Remainder Trust u/t/a dated August 1, 2007; and W. Gerald Thornton, Trustee of the R. Nelson Leonard Charitable Remainder Trust u/t/a dated August 1, 2007 are entitled to be disbursed all condemnation proceeds.

NOW THEREFORE, IT IS ORDERED, ADJUDGED AND DECREED that:

1. The Plaintiff, City of Raleigh, on August 7, 2007, by the filing of a Complaint, Declaration of Taking, and Notice of Deposit, has condemned and shall be permanently vested with, the property, interest or estate, described as follows:

See Exhibit A, attached and incorporated hereinto.

2. The City of Raleigh shall pay into the Court the additional sum of one million, three hundred fifty thousand dollars ($1,350,000.00).

3. The total, additional sum of one million, three hundred fifty thousand dollars ($1,350,000.00) ordered to be deposited herein by the plaintiff shall, by agreement between the parties, be disbursed by the Clerk to Manning, Fulton, P.A., on behalf of and in trust for the defendant property owners, R. Nelson Leonard; W. Gerald Thornton, Trustee of the Leonard Family Charitable Remainder Trust u/t/a dated August 1, 2007; and W. Gerald Thornton, Trustee of the R. Nelson Leonard Charitable Remainder Trust u/t/a dated August 1, 2007.

4. A copy of this Judgment shall be certified under seal of the Court to the Register of Deeds of this County, and the Register of Deeds shall be ordered to record this Judgment among the land records of the County.

5. The Plaintiff, City of Raleigh, shall pay the costs of this action.

This 24 day of March 2010.

SUPERIOR COURT JUDGE PRESIDING

Consented To:

PLAINTIFF,
CITY OF RALEIGH

By: Francis P. Rasberry
Francis P. Rasberry, Jr.
NC State Bar No. 5806
Deputy City Attorney
One Exchange Plaza, St. 1020
Raleigh, NC 27602
(919) 831-6560

Consented To:

DEFENDANTS,

R. NELSON LEONARD; W. GERALD THORNTON, TRUSTEE of the LEONARD FAMILY CHARITABLE REMAINDER TRUST u/t/a dated August 1, 2007; W. GERALD THORNTON, TRUSTEE of the R. NELSON LEONARD CHARITABLE REMAINDER TRUST u/t/a dated August 1, 2007

By: John B. McMillan
John B. McMillan
Manning, Fulton, & Skinner PA
P.O. Box 20389
Raleigh, NC 27612-3970
(919) 787-8880

CERTIFIED TRUE COPY FROM OFFICE
Clerk of Superior Court, Wake County
By: Deputy/Assistant Clerk
Date: 5-25-10

Exhibit A

1. DESCRIPTION OF ENTIRE TRACT OR TRACTS AFFECTED BY TAKING:

Parcel I.D. 0091437
Pin Number 1729238316

Being that 85.46 acre parcel located at 12028 Falls of Neuse Road, having the above noted parcel I.D. and PIN numbers, respectively, and further described in instruments as follows: Deed Book 1263, Page 551; Deed Book 1562, Page 369; Deed Book 1751, Page 400, and Deed Book 1952, Page 163, WCR, saving and excepting the property described as tract #102 of Schedule A of Book 2529 Page 611, and those parcels excepted in Book 1952, Page 163, WCR. See also Deed Book 2271, Page 240, WCR.

2 STATEMENT OF THE PROPERTY TAKEN:

FEE SIMPLE INTEREST IN THE 85.46 ACRE PARCEL

GeoLogix

GEOLOGIC STRATEGIES, P.C. 5316 Deep Valley Run Raleigh, NC 27606

Phase I Environmental Site Assessment

for

Nelson Leonard Tracts
Falls of the Neuse Road
Raleigh, North Carolina

prepared for:

City of Raleigh

January 24, 2008

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& Contracting Services

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Geologic Strategies, P.C.
Professional Geological
Services

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1.0 EXECUTIVE SUMMARY

A Phase I Environmental Site Assessment was conducted by *GeoLogix* personnel on three tracts totaling 85.46 acres of land located on the east side of Falls of the Neuse Road and south of the Neuse River below the Falls Lake Dam in Raleigh, North Carolina. The tracts and structures on the tracts studied in this report will be referred to as the "subject property" or "tracts". Information regarding the subject property was gathered through an on-site reconnaissance, a review of aerial photographs, interviews, and a review of environmental regulatory agency database information. A vicinity map is contained in Appendix A, and a site property map is contained in Appendix B.

A number of structures were situated on the subject property. In addition to Mr. Leonard's residence in the central region of the property, two residential structures were observed in the northwest corner of the subject property fronting onto Falls of the Neuse Road. While it appears that small portions of the subject property were used for residential purposes, the bulk of the subject property was used as grazing pastureland for livestock. In addition to the residences, structures on site included barn/shed (near Mr. Leonard's residence), a mobile home, and several other barns/sheds previously used to store hay/ feed for the livestock. Aerial photographs from 1949, 1965, 1971, 1981, 1993, and 2005 were reviewed as part of this study. In the 1949 photo, the small residences in the northwest corner of the subject property at Falls of the Neuse Road were visible, and the Leonard residence and another structure were visible in the central region of the tracts. Much of the central and southwest regions of the tract were cleared with the remainder of the subject property generally wooded. In the 1965 photo, it appeared that additional land had been cleared. It also appeared that some land disturbing activity was underway in the northwest region of the subject property. In the 1971 photo, it appeared that a small structure was situated in the area where land disturbance was visible in the earlier photo. An additional structure was visible near the Leonard residence. In the 1981 photo, it appeared that additional land-disturbing activity was underway in the northwest region of the subject property. The subject property appeared much the same as it does today in the 1993 and 2005 photos. Copies of the aerial photographs reviewed in this study are contained in Appendix C.

There was physical evidence observed during the site reconnaissance to indicate the existence of an underground fuel storage tank (UST) on the subject property. The fill and vent pipes of a UST were observed in vegetation just behind the Leonard residence (location marked on an aerial photo behind the property map in Appendix B). According to Mr. Leonard, the UST has a capacity of 1,000 gallons and is used to contain heating oil. Mr. Leonard indicated that the UST was reportedly installed about twenty years ago. While unlikely, it is unlikely that other old, unregistered UST(s) are located on the subject property. A propane gas storage tank was observed near the mobile home behind the residence, and near the residences along Falls of the Neuse Road. There was no indication of a release from the propane tanks. Above ground fuel tanks were observed behind one of the residences located in the northwest region of the subject property along Falls of the Neuse Road. One of the tanks appeared to be empty, but the other may contain product. No other above ground fuel tanks were observed on the subject property.

A radial database search was ordered from Environmental Data Resources (EDR). No NPL sites, UST/groundwater/release incidents, RCRA hazardous waste notifiers, CERCLIS facilities, Hazardous Waste Sites/Hazardous Substances Disposal Sites, or permitted solid waste facilities were identified within or close to standard ASTM search distances in the EDR radial database search. Falls Lake was identified as a Department of Defense site since it is under the jurisdiction of the U. S. Army Corps of Engineers. No adverse impact to the subject property from Falls Lake would be anticipated. No other facilities of concern were identified.

Solid waste was observed on the subject property around the residences and other structures. Solid waste was also observed buried in the north-central region of the subject property (approximate location marked on an aerial photo behind the property map in Appendix B) where construction work on a water pipeline is currently underway. A contractor on site indicated that his company discovered the solid waste buried during excavation for their project. The buried waste was discovered just before Thanksgiving. Excavated solid waste, along with soil, was stockpiled to either side of the contractor's excavation project. The waste was likely disposed/buried at that location years ago. It may be the remnants of a former structure. Otherwise, only isolated waste items were observed on the tracts. There was no other evidence of landfilling, burial, or significant dumping of solid wastes on site. The discovery of the solid waste burial site is consistent with the common practice of burying wastes on farms as observed on other similar sites. There was no conclusive evidence of hazardous or toxic substances being used or stored on site. However, it is possible that some of those wastes may be present in the storage shed/barn near the Nelson residence.

No significant potential environmental concerns were identified on adjacent properties.

In summary, this Phase I assessment revealed the potential for environmental contamination or environmental impairment at the subject property. Two Recognized Environmental Conditions (REC) were associated with the subject property for in-scope items. One REC is the area of buried solid waste at the contractor project in the north-central region of the subject property. Another potential area of concern/REC is the 1,000-gallon capacity heating oil UST located behind the Leonard residence. It is unknown if a release(s) has occurred from the UST. Accordingly, there is some potential for subsurface environmental contamination to exist on the subject property 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.

There were some "data gaps" of ten to fifteen years encountered in conducting this Phase I ESA. However, the use of the property appears has been documented. Based on interview information, the property was used for residential and for livestock grazing. Accordingly, the data gaps encountered are considered inconsequential. An environmental lien search was commissioned from EDR. No environmental liens or Activity Use Limitations (AUL) were indicated. A copy of the environmental lien search is contained in Appendix F behind the gold divider page. There was nothing regarding the sale price of the subject property that would indicate that the subject property was underpriced in order to sell a parcel with suspect conditions.

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 ASTM Standard E-1527-05 including the new All Appropriate Inquiry Rules adopted into the ASTM standards and effective November 1, 2006. An exception to the standard was that a formal chain-of-title search was not conducted. *GeoLogix* was able to reach appropriate conclusions regarding the subject property without conducting a formal title search.

2.0 OBJECTIVES, PURPOSE and SCOPE

The objective of this Phase I Environmental Site Assessment was to assess the environmental status of the subject property for the purpose of identifying existing or potential environmental liabilities which could be reasonably anticipated. The work was performed under the provisions of an agreement between Mr. Jim Holden, representing the City of Raleigh Administrative Services/Real Estate office, and *GeoLogix*.

This report is presented as follows: Section 2.0 outlines the scope of the services performed in conducting this assessment and the limitations of the assessment. Section 3.0 provides a description of the site, and Section 4.0 discusses the site history. Section 5.0 summarizes the physical environmental setting of the subject property, and Section 6.0 presents information obtained during the site reconnaissance. Section 7.0 summarizes the information obtained from a review of government environmental regulatory agency databases ordered from Environmental Data Resources (EDR) and the results of environmental lien searches, Sanborn maps, and City Directory information, if available. Section 8.0 includes the summary and conclusions reached from this assessment.

Appendices at the conclusion of this report include the following: Site location map, site property map, aerial photographs, U. S. Geological Survey topographic quadrangle map, representative photographs of the subject property, environmental regulatory agency information (EDR radial search), environmental lien search, and qualifications of *GeoLogix* personnel.

The scope of this project included a visual inspection of the property to check for conditions indicative of past use or storage of hazardous or toxic substances/wastes or other environmental contaminants. During the site walkover, a search was conducted for specific items outlined in Section 6 of this report. Readily available information regarding historical site usage, surface and subsurface conditions, interviews with persons associated with the tract, and a review of governmental regulatory information was used in preparation of this report. The scope of this Phase I assessment did not include, nor was *GeoLogix* requested to conduct, a detailed groundwater review, asbestos testing, vapor intrusion assessment, mold/mildew assessment, lead-based paint assessment, wetlands study, or sampling of air, soil, surface water or groundwater for environmental contaminants.

The scope of work conducted in this assessment was agreed upon in discussions between Mr. Jim Holden of the City of Raleigh, and Mr. Rob Livermon of *GeoLogix*. Routine services performed were in general accordance with ASTM Standard E-1527-05, including the new requirements of All Appropriate Inquiry (AAI) rules effective November 1, 2006. One exception to the ASTM standard was that a formal chain-of-title search was not conducted. *GeoLogix's* tasks consisted of the following:

Task 1 - Historic Activities Review

GeoLogix researched readily available historic information regarding past users, owners, or activities conducted on, or adjacent to, the subject property which may have resulted in an adverse environmental impact.

Task 2 - Environmental Incidents and Regulatory Agency Review

This task involved identification of known or suspected environmental incidents or regulatory/compliance enforcement action on or near the subject property. Readily-available environmental incident and regulatory information databases were researched. An environmental lien search was ordered from Environmental Data Resources.

Task 3 - Review of Area Environmental Setting

Information on site topography, surface water, anticipated groundwater information, and the surrounding area was reviewed to characterize the physical environmental setting of the site. Informational sources can include maps, topographic maps, reports, publicly accessible documentation, and interviews.

Task 4 - Site Reconnaissance

GeoLogix conducted a site reconnaissance on readily-accessible areas of the subject property to observe current site conditions and evaluate potential sources of environmental contamination identified in Tasks 1 and 2. Observations were made of adjacent property during the site reconnaissance and the vehicle reconnaissance.

Task 5 - Phase 1 Report Preparation

Information collected in the four tasks above was evaluated and summarized in this report. The report is based on information from the field reconnaissance and visual observations made on the site and adjacent property. Available information was interpreted and documentation reviewed.

This report is intended for the use by City of Raleigh entities and City employees. The scope of services performed in this assessment may not be appropriate to satisfy the needs of other users. Any use or re-use of this document or the findings, conclusions, or recommendations present are at the risk of the user.

This study was undertaken and completed in accordance with the professional standards and generally accepted practices of environmental consultants at the time of preparation of this study. The scope of services for this assessment was limited and should not be construed as a guarantee that no currently unrecognized environmental concerns exist at the site. The study was not intended to be a definitive investigation of potential environmental concerns at the subject property. The scope of this Phase I report did not include, nor was *GeoLogix* requested to conduct, a detailed groundwater review, asbestos testing, mold/mildew assessment, lead-based paint assessment, vapor intrusion assessment, wetlands study, or sampling of air, soil, surface water or groundwater for environmental contaminants.

The opinions and recommendations presented in this report apply to the site conditions at the time of the assessment and those reasonably foreseeable. They cannot necessarily apply to site changes of which *GeoLogix* was not aware and has not had the opportunity to evaluate.

3.0 SITE OVERVIEW

3.1 Site Location

This report provides the results of a Phase I Environmental Site Assessment (ESA) conducted by *GeoLogix* on three tracts of land totaling 85.46 acres and the structures thereon. The property is located east of, and adjacent to, Falls of the Neuse Road, and south of the Neuse River in Raleigh, North Carolina. It is just downstream of the Falls Lake dam. Site vicinity (Appendix A) and site property (Appendix B) maps are included in this report.

3.2 Adjoining and Surrounding Property Use

The subject property is surrounded by varied land uses. There are single-family residences, a church, a park along the Neuse River, and nearby commercial businesses. The western property boundary of the subject property is bounded by Falls of the Neuse Road, and across the road are residences, a church, and commercial businesses. To the north and northeast, the subject property is bounded by the Neuse River. The southern property boundary is bounded by some residential lots and undeveloped woods. To the southwest, the subject property is bounded by older residences and their associated lots.

3.3 Vehicle Reconnaissance

A vehicle reconnaissance was performed to verify surrounding land usage and identify potential sources of environmental concerns in the vicinity of the subject property. The vehicle reconnaissance was performed on the following roads: Falls of the Neuse Road, Fonville Road, and Lowery Farm Lane. Land usage observed in the vicinity of the subject property included older residences, a City of Raleigh park, new residences in subdivisions, commercial businesses, a church, and undeveloped woods. No facilities were identified as significant potential off-site environmental concerns during the vehicle reconnaissance.

4.0 HISTORICAL SITE USE AND PROPERTY CONDITIONS

4.1 Current and Prior Ownership

The subject property is currently under the ownership of the City of Raleigh. Prior to that, the subject property was owned by Nelson R. Leonard, who, according to information he furnished in an interview, owned all three tract comprising the subject property since the 1950's. Prior to acquisition by the City of Raleigh, Mr. Leonard was the owner of the 35.16-acre tract (Deed Book 0016, Page 0-E-). The other two tracts had been in the name of W. Gerald Thornton, Trustee, in a charitable remainder trust. Additional information is contained in Section 4.4. A formal chain-of-title search was not conducted. *GeoLogix* was able reach conclusions regarding the subject property without conducting a formal chain-of-title search.

4.2 Interviews

Interviews were conducted with Mr. Nelson R. Leonard, who still currently lives on one of the tracts, and with Mr. Joe Richardson, a contractor working on site at the time of the site reconnaissance. Mr. Leonard was able to provide current and historical information regarding the subject property. Mr. Richardson explained the contract work underway on site, and furnished information regarding the solid waste discovered buried in the north-central region of the subject property.

4.3 Aerial Photograph Review

The study included a review of aerial photographs available at the U. S. Department of Agriculture (USDA), Natural Resources Conservation Office (formerly the Soil Conservation Service) offices in Raleigh, North Carolina. The first available aerial photograph of the subject property was taken in 1949.

Aerial photographs reviewed included:

- Photo BOP-3F-88, Grid L-4, flown March 24, 1949- USDA Natural Resources Conservation
- Photo BOP-7FF-176, Grid M-4, flown March 15, 1965- USDA Natural Resources Conservation
- Photo BOP-3MM-48, Grid M-4, flown February 23, 1971- USDA Natural Resources Conservation
- Photo 40 37183, 278-64, flown April 27, 1981 - USDA Natural Resources Conservation
- Photo NAPP-6137-230, Grid G-5, flown February 23, 1993- USDA Natural Resource Conservation
- 2005 photo courtesy of Wake County GIS web site

In the 1949 photo, two residences in the northwest corner of the subject property near Falls of the Neuse Road were visible. The Leonard residence and another structure were visible in the central region of the subject property. Central and southwest regions of the subject property appeared cleared. The remainder of the subject property was wooded.

In the 1965 photo, additional land was cleared/open, and it appeared that land disturbing activity had taken place or was underway in the northwest region of the subject property. In the 1971 photo, it appeared that a small structure was situated in the area where land disturbance was visible in the 1965 photo. Another structure was added in the central region of the subject property near the Leonard residence. In the 1981 photo, it appeared that more land-disturbing activity was again underway in the northwest region of the subject property. The subject property appeared similar to today's appearance in the 1993 and 2005 photos.

4.4 Chain-of-Title Search

The subject property is now under the ownership of the City of Raleigh. Prior to that, the subject property was most recently owned by Nelson R. Leonard or his charitable remainder trust. The 35.16-acre tract was most recently in Mr. Leonard's name (Deed Book 00166, Page 0-E-) as of January 19, 2002. Prior to that, that particular tract was in the name of Nelson R. and Barbara N. Leonard (Deed Book 2271, Page 240). Mr. Leonard indicated in an interview that they owned the subject property since the 1950's. With regard to the other two tracts (14.30 and 36.00 acres), they had been in the name of W. Gerald Thornton, Trustee (charitable remainder trust) as of August 3, 2007. The 14.30-acre tract was found at Deed Book 12691, Page 1613, and the 36.00-acre tract at Deed Book 12691, Page 1618. Prior to that, those tracts were in the name of Leonard R. Nelson as of January 19, 2002 (Deed Book 00166, Page 0-E-). Again, Mr. Leonard indicated that he had been involved in ownership of the property since the 1950's. A formal title search was not conducted as part of this Phase I environmental study. *GeoLogix* was able to reach appropriate conclusions regarding the subject property without conducting a formal title search.

5.0 ENVIRONMENTAL SETTING/CONDITIONS

5.1 Surface Water Characteristics

Surface water drainage characteristics were determined from information derived during the site reconnaissance and from a review of the USGS topographic map for the Wake Forest Quadrangle. The Neuse River bounds the northeast side of the subject property. There is a large branch which flows from south to north in the central region of the tract. Other small branches/intermittent streams are located on site, but there were no other significant water bodies, creeks, branches, ponds, or impoundments observed on the subject property. Surface runoff on the site appears to be directed generally from south to north or southwest to northeast. No facilities were identified as a potential upgradient source of surface water environmental contamination which could cause environmental impact to the subject property.

5.2 Groundwater Characteristics

The subject property is located geologically in the Raleigh Belt (Geologic Map of North Carolina - 1985). Metamorphic rocks associated with the Raleigh Belt in this area would primarily consist of injected gneisses such as biotite gneiss and schists. 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 and rivers. Based on the historical groundwater flow characteristics in this area, groundwater flow typically mirrors surface topography. Accordingly, groundwater flow in the vicinity of the subject property would be anticipated to be generally from south to north or southwest to northeast. No visible source of environmental contamination was identified upgradient which would significantly impact groundwater in the vicinity of the subject property.

6.0 SITE INSPECTION

6.1 Site Inspection Methodology

A site walkover on the subject property was performed by *GeoLogix* personnel on January 19, 2008. Site walkovers are performed for the purpose of observing conditions which might indicate the presence of environmental contaminants on the subject property and/or on adjacent properties. The limits of the property included in this study are depicted in the Site Property Map included with this report (Appendix B). The following site descriptions are based on field observations and supplemented by information from other sources.

6.2 Site Inspection Observations

6.2.1 Roadway Access to Site

The subject property is accessible via Falls of the Neuse Road.

6.2.2 Wooded Areas and Variations of Vegetation

Generally, the southeastern, south-central, and northeast regions of the subject property are at least somewhat wooded. There are trees at many other locations on site, but much of the remainder of the subject property is open pastureland.

6.2.3 Water Bodies, Swamps, Rivers, Lakes, Pits, Ponds, Lagoons, Surface Impoundments or Holding Ponds

The Neuse River forms the northeast boundary of the subject property. A large branch flows from south to north in the central region of the subject property. There were other small draws and intermittent streams, but no other significant water bodies observed on the subject property.

6.2.4 Solid Waste, Landfill, Dumping, Disturbed Soils, Direct Burial Activity

During excavation for a City of Raleigh water line project dissecting the central region of the subject property from south to north, a contractor discovered solid waste buried during soil excavation. The waste burial site is located in the north-central region of the subject property in the upland area outside of the floodplain. The solid waste/soil was placed to the side of the excavation (see picture in Appendix E). Waste items were observed in proximity to a number of the structures on site, but there was no other evidence of landfilling, burial, or dumping of wastes on the subject property. Otherwise, only scattered isolated solid waste was observed disposed on site.

6.2.5 Underground/Aboveground Storage Tanks

Evidence (fill and vent pipes) of an underground fuel storage tank, reportedly with a capacity of 1,000 gallons, was observed behind the Leonard residence in the central region of the site. The UST is not registered - it was a heating oil tank. No other fill pipes, vent pipes, mounds, or depressions suggesting other USTs were observed on the subject property during the site reconnaissance. Several above ground propane fuel tanks were observed near residential structures on site. No release was indicated from any of the propane tanks. Two above ground fuel tanks were observed at one of the residences along Falls of the Neuse Road in the northwest region of the subject property. No other above ground tanks were observed on site.

6.2.6 Potable Water and Sewage Disposal

Water and sewer services are available on the subject property via the City of Raleigh water and sewer systems along Falls of the Neuse Road.

6.2.7 Drains, Floor Drains and Sumps

No drains, floor drains, or sumps were observed during the on-site reconnaissance. However, there may be drains in bathrooms in the residential structures.

6.2.8 Wells, Piezometers and Other Subsurface Monitoring Devices

A well was previously used at the Leonard residence. Wells may also be present at the two residences along Falls of the Neuse Road in the northwest region of the subject property. No other water wells, piezometers, or other subsurface monitoring devices were observed on the subject property.

6.2.9 Wastewater Discharges

Other than sanitary wastes, there were no other processes on the subject property which would generate a wastewater discharge.

6.2.10 Groundwater or Surface Water Contamination

No evidence of groundwater or surface water contamination was observed on the subject property during the site reconnaissance. However, without installation of monitoring wells and collection of surface water and groundwater samples, *GeoLogix* is unable to determine the actual quality of surface water or groundwater located in the vicinity of the subject property.

6.2.11 Stained or Discolored Soils or Pavement

No stained or discolored soils or pavement were observed on site.

6.2.12 Distressed, Discolored, or Stained Vegetation

No evidence of chemically distressed, discolored, or stained vegetation was observed on the subject property during the site reconnaissance.

6.2.13 Buildings, Structures, Foundations, and Old Ruins

The Leonard residence, a mobile home, two other residences along Falls of the Neuse Road, and a number of farm-related structures are situated on the subject property (see pictures in Appendix E). No other structures/buildings, structural ruins, or foundational remnants were observed on site.

6.2.14 Electrical Equipment/Suspected PCB-Filled Equipment

Electrical transformers were observed on the subject property during the site reconnaissance. The transformers did not have any visible markings. Accordingly, it is not known if the transformers contain PCBs, or in the past contained PCBs. However, there was no indication of a release from any of the transformers.

6.2.15 Utilities

Phone, electrical, sewer, and water utilities were present on the subject property. An electrical transmission line crosses the extreme eastern region of the tract. No other active utilities were observed on site.

6.2.16 Foul/Suspicious Odors

There was no evidence of foul/suspicious odors noted during the site reconnaissance.

6.2.17 Hazardous Substances/Hazardous Wastes

No specific hazardous substances or hazardous wastes were specifically observed on the subject property.

6.2.18 Chemicals, Chemical Spills or Releases

There was no evidence of chemical spills or releases observed on the subject property during the site reconnaissance.

6.2.19 Storage Containers and Drums

A generally empty fifty-five gallon drum was observed between the Leonard residence and two hay storage barns to the northeast. No other drums or significant-sized containers were observed on site during the site reconnaissance. No release was observed from the drums or other containers.

6.2.20 Petroleum Products

Heating oil is stored in a 1,000-gallon capacity UST at the Leonard residence. Two above ground fuel storage tanks were observed at one of the residences along Falls of the Neuse Road. One appeared to be empty, while the other may contain product. Propane gas tanks were also observed on site.

6.2.21 Pesticides, Herbicides, Soil Conditioners, Fertilizers and Farm Wastes

There was no evidence of any of the above products or evidence of over-application of products, etc., observed on the subject property during the site reconnaissance.

6.2.22 Air Emissions

There are no activities on the subject property which would generate air emissions.

6.2.23 Other Known or Observed Environmentally Sensitive or Suspected Conditions

There were no other known or observed environmentally sensitive or suspected conditions observed during the site reconnaissance.

7.0 ENVIRONMENTAL/REGULATORY AGENCY REVIEW

7.1 Federal and State Regulatory Agencies

A radial search for facilities located within standard ASTM search distances of the subject property was ordered from Environmental Data Resources (EDR). The radial search databases/results are contained in Appendix F. EDR compiles the radial search information from state and federal environmental regulatory agency databases. As evidenced in the EDR report, many regulatory databases were reviewed. The following is a sampling of some of the major databases reviewed including:

- Federal National Priorities List (NPL). The NPL is the U. S. Environmental Protection Agency's (EPA) database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program.
- Resource Conservation and Recovery Act (RCRA) notifiers. This database is a compilation of facilities which have notified appropriate regulatory agencies that they generate, store, transport, treat and/or dispose of hazardous wastes.
- UST/groundwater/release incidents. This is a database of sites where release incidents involving Underground Storage Tanks (USTs) and certain other spills which may affect groundwater are reported.
- CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) sites. This is a compilation of facilities which EPA has investigated or is currently investigating for a release or threatened release of hazardous substances as defined by CERCLA.
- Solid waste facilities. This is a database of permitted solid waste facilities.
- Hazardous Substances/Hazardous Waste Disposal Sites. This is a database of hazardous substance disposal sites and hazardous waste sites.

The following was indicated during the review of environmental regulatory agency listings:

- No NPL sites were positively identified within the standard ASTM search distance of one mile.

- No facilities were identified as RCRA hazardous waste notifiers within or close to the standard ASTM search distance of one mile.
- No facilities were identified as having a UST/groundwater/release incident within or close to the standard ASTM search distance of ½ mile.
- No CERCLIS facilities were identified within or close to the standard ASTM search distance of ½ mile.
- No permitted solid waste management facilities were identified within ½ mile of the subject property.
- No Hazardous Waste Sites or Hazardous Substances Disposal Sites were identified within one mile of the subject property.

The Falls Lake project, under the jurisdiction of the U. S. Army Corps of Engineers, was identified as a Department of Defense facility. No adverse environmental impact to the subject property from Falls Lake would be anticipated. No other facilities of any kind were identified on the EDR in the radial database search.

The subject property was not identified in any of the databases.

7.2 Environmental Lien Search

Environmental lien searches for the three tracts were ordered from EDR. The EDR contractor did not find an environmental lien or Activity Use Limitation (AUL) associated with the subject property tracts.

Environmental lien search information from EDR is contained behind the gold divider page at the end of Appendix F.

7.3 Sanborn Maps

Sanborn Map coverage for the subject property was not available. A document from EDR indicating that Sanborn coverage was not available is contained after the EDR radial search report in Appendix F.

8.0 CONCLUSIONS AND RECOMMENDATIONS

On January 19, 2008, *GeoLogix* personnel conducted the site reconnaissance portion of a Phase I Environmental Site Assessment on three tracts totaling 85.46 acres of land located in northern Raleigh, North Carolina. The subject property is situated south of the Neuse River, and east of Falls of the Neuse Road.

The Leonard residence, a mobile home, barn/shed, and another barn are situated in the central region of the subject property. Two residential structures were located in the northwest region of the tracts near Falls of the Neuse Road. Several other barns/sheds situated on the subject property. No other significant buildings or foundational remnants were observed on the subject property during the site reconnaissance. Aerial photographs were available for certain years between 1949 and 2005. In the 1949 photo, structures visible included two small residences in the northwest corner of the subject property near Falls of the Neuse Road, and the Leonard residence and another structure in the central region of the subject property. Central and southwest regions of the subject property appeared cleared. The remainder of the subject property was wooded. In the 1965 photo, additional land had been cleared, and it appeared that land disturbing activity was underway in the northwest region of the subject property. In the 1971 photo, an additional structure was visible near to the Leonard residence. In the 1981 photo, it appeared that more land-disturbing activity was taking place in the northwest region of the subject property. The subject property appeared similar to today's appearance in the 1993 and 2005 photos.

Fill and vent pipes of a reported heating oil underground storage tank (UST) were observed just behind the Leonard residence. No other evidence of an underground storage tank (UST) was observed on the subject property. Propane gas tanks were present on site at the mobile home and old residences. Two above ground tanks were located at one of the residences along Falls of the Neuse Road. No other above ground fuel tanks were observed.

A radial database search was ordered from Environmental Data Resources (EDR). No NPL sites, UST/groundwater/release incidents, permitted solid waste facilities, RCRA hazardous waste notifiers, CERCLIS facilities, hazardous substances disposal sites/hazardous waste sites were identified. Falls Lake, under the U. S. Army Corps of Engineers jurisdiction, was listed as a Department of Defense facility. No adverse environmental impact to the subject property would be anticipated from Falls Lake. No other facilities of concern were identified in the database search.

A pile of solid waste and dirt containing construction rubble was excavated by a contractor working on a City of Raleigh water line project. The buried solid waste was situated in the north-central region of the subject property at a higher elevation than the Neuse River floodplain. There was no other evidence of landfilling or burial of solid wastes on site. There were other locations on site where solid waste was observed disposed near residences or possibly dumped there by off-site parties. Otherwise, solid waste was observed on site at isolated locations. No significant adverse environmental impact to the subject property would be anticipated from the solid wastes observed.

"Data gaps" of ten to fifteen years were encountered in conducting this Phase I ESA. However, based on historical information gathered during the conduct of this study, the past use of the subject property has generally been documented. The subject property has been used for residential and livestock grazing purposes. Accordingly, the data gaps encountered are generally considered inconsequential.

In summary, the Phase I Environmental Site Assessment (ESA) conducted on the subject property did not reveal any conclusive evidence of environmental contamination or environmental impairment. However, two Recognized Environmental Conditions (REC) were observed associated with the subject property for in-scope items. The RECs/areas of concern included the buried solid waste discovered during an excavation project in the north-central region of the property, and an underground storage tank (UST) discovered behind the Nelson Leonard residence. Both of these locations are marked on an aerial photograph contained behind the subject property map in Appendix B. The UST location is not within the Neuse River floodplain, and the solid waste burial site does not appear to be located within the floodplain. The UST was reportedly used to contain heating oil. These two REC's, especially the UST, pose some potential for environmental contamination to exist on site. Based on currently available information, there is some potential for subsurface environmental contamination to exist at the location of these RECs. Otherwise, the potential for environmental contamination to exist on the remainder of the subject property appears to be low.

Since the property has already been acquired by the City of Raleigh, there is no need for further investigation of the subject property for in-scope items at this time. However, the City may wish to further investigate the solid waste burial site and/or the UST location at a later date.

Asbestos assessments, lead-based paint assessments, and mold/mildew assessments are not considered part of the scope of a Phase I ESA. Due to the age of the buildings on the subject property, some or all of these constituents could be present. However, that cannot be confirmed without conducting appropriate assessments.

Robert H. Livermon, Jr., P. G.

NORTH CAROLINA LICENSED SEAL 633 GEOLOGIST ROBERT H. LIVERMON, JR.

APPENDICES

GeoLogix
GEOLOGIC STRATEGIES, P.C. 5316 Deep Valley Run Raleigh, NC 27606

Limited Phase II
Environmental Site Assessment (ESA)

at

Smoot Holdings, LLC, Property
(Former Sewage Treatment Plant Site)
12054 Falls of Neuse Road
Raleigh, North Carolina

Prepared for:

City of Raleigh

December 19, 2009

GeoLogix, Inc.
Environmental Consulting
& Contracting Services

PH: 919-859-4544
FAX 919-859-4544
geologix2002@yahoo.com

Geologic Strategies, P.C.
Professional Geological
Services

LIMITED PHASE II
ENVIRONMENTAL SITE ASSESSMENT (ESA)

at

Smoot Holdings, LLC, Property (0.48 Acres)
12054 Falls of Neuse Road
Raleigh, North Carolina

BACKGROUND

The City of Raleigh currently owns land completely surrounding a 0.48-acre tract owned by Smoot Holdings, LLC, at 12054 Falls of Neuse Road in Raleigh, North Carolina. The City plans to purchase the 0.48-acre tract. A site vicinity map is contained in Appendix A.

In a telephone interview, Mr. Smoot confirmed that he operated a package sewage treatment plant on the property. The treatment plant served a residential subdivision located across Falls of Neuse Road. According to Mr. Smoot, the plant ceased operating in the early 1990's. Since then, much of the sewage treatment plant apparatus/equipment has been removed.

During the on-site work, a small shed, a concrete septic/waste receiving tank, and the probable foundation of the former chlorine contact chamber were observed. A large ravine adjacent to the concrete septic/waste receiving tank was reportedly the former location of two clarifiers. Both clarifiers and the chlorine contact chamber have been dismantled and removed. According to interview information from Mr. Smoot, the treatment plant did not have an emergency diesel generator back-up system. Accordingly, there was no fuel storage tank present on site to fuel a generator.

In initial discussions with City of Raleigh personnel, the scope of the limited Phase II environmental assessment was to include obtaining soil and groundwater samples and analyzing them for fecal coliform bacteria to determine if remnants of bacterial contaminants remained in the soil and/or groundwater from the sewage plant operation. However, discussions with analytical laboratory personnel indicated that there was no analysis for fecal coliform bacteria in soil. Accordingly, only groundwater samples were to be obtained for fecal coliform bacteria analyses.

ANALYTICAL RESULTS

Sample No. GW-1 was found to contain no positive results in the sample analysis for fecal coliform bacteria.

The analytical laboratory results are contained in Appendix D.

CONCLUSIONS and RECOMMENDATIONS

Based on the results of the laboratory analyses (see page 3 of the lab report in Appendix D), no residual fecal coliform was found to be present in the groundwater sample.

The result of the analysis is not surprising since the sewage treatment plant, according to interview information, has not been operated since the early 1990's. In fact, due to natural processes and the length of time since the sewage treatment plant has been operated, no residual fecal coliform bacteria would be anticipated to remain in the groundwater on site.

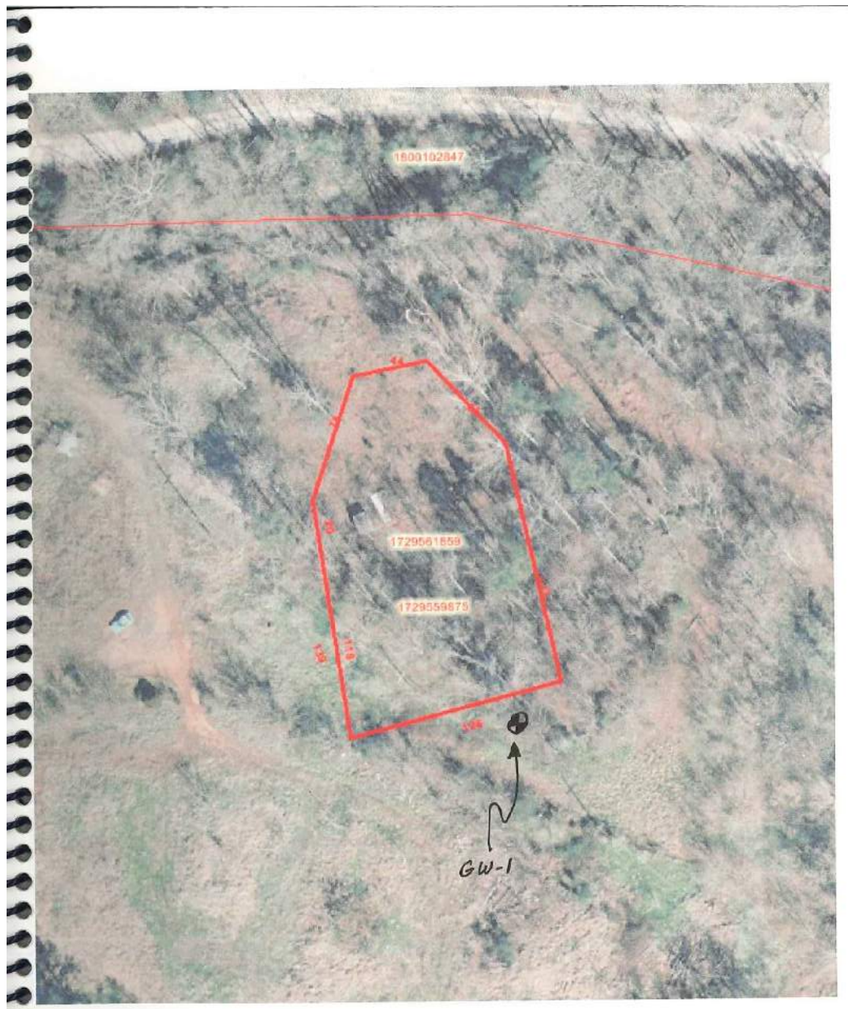
The sampling event conducted at the subject property represented an attempt to detect the presence of bacterial contaminants in the groundwater on site due to the previous operation of a package sewage treatment plant on site. Due to the limited nature of the assessment, there is always the potential that contaminants could escape detection due to the limitations of the study or the inaccuracy of information furnished by other parties used to arrive at the conclusions reached in this report. *GeoLogix* is not responsible for any inaccuracy of information furnished by other parties used to arrive at the conclusions reach 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.

Robert H. Livermon, Jr., P. G.

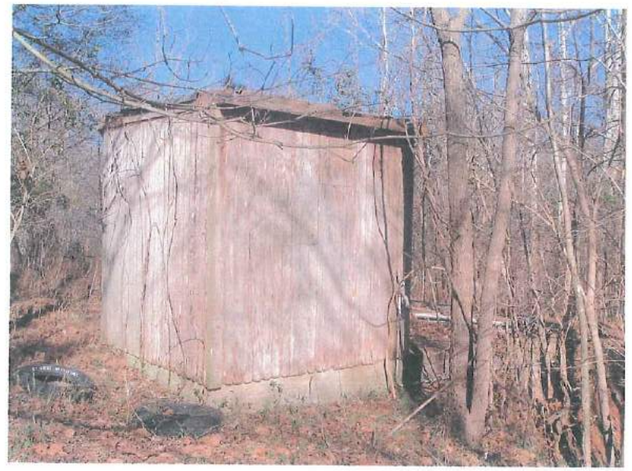
NORTH CAROLINA LICENSED SEAL 633 GEOLOGIST ROBERT H. LIVERMON JR.

Appendix B

Aerial Property Map Depicting Sample Location



Shed and Septic/Waste Receiving Tank – First Attempt at a Borehole was Behind Orange Marker



Another View of Shed and Septic/Waste Receiving Tank

Ravine Where Two Clarifiers Were Previously Located

Sample Location for GW-1 at Lower End of Ravine

Appendix D

Analytical Laboratory Results
Chain-of-Custody

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515

www.encolabs.com

Tuesday, December 15, 2009

GEOLOGIX (GE024)

Attn: ROB LIVERMON

5316 DEEP VALLEY RUN

RALEIGH, NC 27606-

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: City of Raleigh- Smoot Tract
ENCO Workorder: C913898

Dear ROB LIVERMON,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Thursday, December 10, 2009.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Stephanie Franz
Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 7.

www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: GW-1	Lab ID: C913898-01	Sampled: 12/10/09 12:00	Received: 12/10/09 15:00
Parameter	**Hold Date/Time(s)**	**Prep Date/Time(s)**	**Analysis Date/Time(s)**
SM 9222D	12/10/09 18:00 12/11/09 18:59	12/10/09 16:35	12/11/2009 14:45

www.encolabs.com

SAMPLE DETECTION SUMMARY

No positive results detected.

www.encolabs.com

ANALYTICAL RESULTS

Description: GW-1
Matrix: Water
Project: City of Raleigh- Smoot Tract

Lab Sample ID: C913898-01
Sampled: 12/10/09 12:00
Sampled By: Robert H. Livermon

Received: 12/10/09 15:00
Work Order: C913898

Microbiological Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Coliform, Fecal [ECL-0038] ^	4	U	CFU/100ml	1	4	9L11010	SM 9222D	12/11/09 14:45	CCB	

www.encolabs.com

QUALITY CONTROL

Microbiological Parameters - Quality Control

Batch 9L11010 - NO PREP

Blank (9L11010-BLK1) Prepared: 12/10/2009 14:25 Analyzed: 12/11/2009 14:45

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Coliform, Fecal	1	U	1	CFU/100ml							

Duplicate (9L11010-DUP1) Prepared: 12/10/2009 14:31 Analyzed: 12/11/2009 14:45

Source: C913552-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Coliform, Fecal	1	U	1	CFU/100ml		1 U				25	

www.encolabs.com

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.

ENCO

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr. Orlando, FL 32824 (407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211 Jacksonville, FL 32216-6069 (904) 296-3007 Fax (904) 296-6210

1915 Rexford Way Cary, NC 27513 (919) 677-1669 Fax (919) 677-0848

Page 1 of 1

Client Name: GEOLOGIX (GEO24) | Project Number: [None]

Address: 330 DEEP VALLEY RUN | Project Name or #: City of Raleigh- Shoot Tract

City/State/Zip: RALEIGH, NC 27610 | PO # / Billing Info: —

Tel: (919) 859-1544 Fax: [illegible] | Project Owner: ROB LIVERMON

Sampler's Name: Robert H. Livermon, Jr. | Billing Contact: Accounts Payable

Sampler's Signature: Robert H. Livermon, Jr. | Quote # (if required): —

Requested Analyses: Coliform, Fecal - as E. coli

Requested Turnaround Times

Note: Rush requests subject to acceptance by the laboratory

✓ Standard

Expedited

Due __/__/__

Lab Workorder: C913898

Matrix	Sample ID/Field Point Name	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	# of Containers	Preservation (see codes)	Sample Comments
	Sample Name: GW-1	12/10/09	1200	G	WA	1	X	Cool/ice
	[redacted]				WA	[redacted]	X	
	[redacted]				WA	[redacted]	X	

Relinquished By: Robert H. Livermon, Jr. — Date: 12/10/09 — Time: 1500

Received By: [signature] — Date: 12-10-09 — Time: 15:00

Preservation: 1=HCl, 2=HNO3, 3=H2SO4, 4=NaOH, 5=Other

Temperature: 3.8°C

Condition: X Acceptable Unacceptable

Matrix: GW=Groundwater, SD=Solid, SE=Sediment, SW=Surface Water, WW=Wastewater, A=Air, O=Other

Preservation: 1=HCl, 2=HNO3, 3=H2SO4, 4=NaOH, 5=Other

ENCO

www.encolabs.com

MATRIX
Health & Safety Consultants, L.L.C.

February 29, 2012

City of Raleigh Parks and Recreation
Facilities Management Department
222 W. Hargett Street, Suite 605
Raleigh, North Carolina 27602

Attention: Mr. Brian Taylor

Subject: Report of Soil Sampling
Post Underground Storage Tank Removal
Leonard Tract
Raleigh, North Carolina
Matrix Job Number: 120248

Dear Mr. Taylor:

Matrix Health and Safety Consultants, L.L.C. (Matrix) is pleased to present this report of the limited soil sampling following the removal of an one Underground Storage Tank (UST) located at the Leonard Tract located in Raleigh, North Carolina. This report presents known project information, survey procedures, survey results and recommended response actions.

PROJECT INFORMATION

Matrix collected 3 soil samples from the excavation following the removal of a 1,000 gallon UST. Two soil samples were collected from the north and south ends of the excavation and one sample was collected from the stockpile soil. The samples were delivered to PRISM Laboratories, Inc. in Charlotte, North Carolina and analyzed for Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) utilizing EPA Method 8015C.

The following table summarizes the sample locations and laboratory results. The full laboratory analysis reports is attached as an appendix with this report.

Sample Identification	Sample Location	Diesel Range Organics mg/kg	Gasoline Range Organics mg/kg
01 (North End)	North End of Excavation	14	BRL
02 (South End)	South End of Excavation	BRL	BRL
03 (Stock Pile)	Stock Pile Soil	23	BRL

BRL – Below Reporting Limit

Laboratory results identified Diesel Range Organics exceeded the North Carolina Department of Environment and Natural Resources action level of 10 milligrams per kilogram (mg/kg). Once the action level for DRO or GRO has been exceeded the UST removal becomes a regulated removal and is subject to the requirements for assessment and cleanup.

Matrix appreciates the opportunity to have provided these services. We would be glad to discuss any of the results contained in this report, at your convenience. If there are any questions concerning this report or results, please contact us.

Sincerely,
MATRIX HEALTH AND SAFETY CONSULTANTS, L.L.C.

Todd E. Daugherty
Project Principal
North Carolina Asbestos Inspector No. 11650

Attachments: Laboratory Report

PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert No. 37735
VA Certification No. 1287

Case Narrative

02/24/2012

Matrix Health & Safety Consultants, LLC
Todd Daugherty
2900 Yonkers Road
Raleigh, NC 27604

Project: Leonard Tract

Lab Submittal Date: 02/16/2012
Prism Work Order: 2020368

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

PRISM LABORATORIES, INC.

VP Laboratory Services

Reviewed By

Data Qualifiers Key Reference:

SR	Surrogate recovery outside the QC limits.
BRL	Below Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
*	Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

Limited Soil Sampling
Post UST Removal
Leonard Tract
Raleigh, NC
Matrix Job Number: 120248

February 29, 2012

PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

Sample Receipt Summary

02/24/2012

Prism Work Order: 2020368

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
01 (North End)	2020368-01	Solid	02/15/12	02/16/12
02 (South End)	2020368-02	Solid	02/15/12	02/16/12
03 (Stock Pile)	2020368-03	Solid	02/15/12	02/16/12

Samples received in good condition at 5.8 degrees C unless otherwise noted.

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Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

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Laboratory Report

02/24/2012

Matrix Health & Safety Consultants, LLC
Attn: Todd Daugherty
2900 Yonkers Road
Raleigh, NC 27604

Project: Leonard Tract

Sample Matrix: Solid

Client Sample ID: 01 (North End)
Prism Sample ID: 2020368-01
Prism Work Order: 2020368
Time Collected: 02/15/12 11:30
Time Submitted: 02/16/12 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	**14**	**mg/kg dry**	**8.5**	**2.5**	**1**	***8015C**	**2/22/12 11:50**	**JMV**	**P2B0378**
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*80 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	2.5	0.33	50	*8015C	2/20/12 22:41	CBL	P2B0381
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*136 %*		*55-129*	*SR*
General Chemistry Parameters									
% Solids	**82.5**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/21/12 14:30**	**JAB**	**P2B0411**

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Laboratory Report

02/24/2012

Matrix Health & Safety Consultants, LLC
Attn: Todd Daugherty
2900 Yonkers Road
Raleigh, NC 27604

Project: Leonard Tract

Sample Matrix: Solid

Client Sample ID: 02 (South End)
Prism Sample ID: 2020368-02
Prism Work Order: 2020368
Time Collected: 02/15/12 11:30
Time Submitted: 02/16/12 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	9.0	2.7	1	*8015C	2/22/12 10:05	JMV	P2B0378
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*74 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	3.1	0.40	50	*8015C	2/20/12 23:08	CBL	P2B0381
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*133 %*		*55-129*	*SR*
General Chemistry Parameters									
% Solids	**77.2**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/21/12 14:30**	**JAB**	**P2B0411**

PRISM LABORATORIES, INC | Full-Service Analytical & Environmental Solutions

Laboratory Report

02/24/2012

Matrix Health & Safety Consultants, LLC
Attn: Todd Daugherty
2900 Yonkers Road
Raleigh, NC 27604

Project: Leonard Tract

Sample Matrix: Solid

Client Sample ID: 03 (Stock Pile)
Prism Sample ID: 2020368-03
Prism Work Order: 2020368
Time Collected: 02/15/12 11:30
Time Submitted: 02/16/12 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	23	mg/kg dry	8.3	2.4	1	*8015C	2/22/12 12:26	JMV	P2B0378
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			72 %		49-124	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	3.0	0.39	50	*8015C	2/20/12 23:35	CBL	P2B0381
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			146 %		55-129	SR
General Chemistry Parameters									
% Solids	84.4	% by Weight	0.100	0.100	1	*SM2540 G	2/21/12 14:30	JAB	P2B0411

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PRISM LABORATORIES, INC | Full-Service Analytical & Environmental Solutions

Level II QC Report

2/24/12

Matrix Health & Safety Consultants, LLC
Attn: Todd Daugherty
2900 Yonkers Road
Raleigh, NC 27604

Project: Leonard Tract

Prism Work Order: 2020368
Time Submitted: 2/16/2012 9:20:00AM

Gasoline Range Organics by GC/FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P2B0381 - 5035										
Blank (P2B0381-BLK1)			Prepared & Analyzed: 02/20/12							
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	*5.35*		*mg/kg wet*	*5.000*		*107*	*55-129*			
LCS (P2B0381-BS1)			Prepared & Analyzed: 02/20/12							
Gasoline Range Organics	46.1	5.0	mg/kg wet	50.00		92	67-116			
Surrogate: a,a,a-Trifluorotoluene	*6.10*		*mg/kg wet*	*5.000*		*122*	*55-129*			
LCS Dup (P2B0381-BSD1)			Prepared & Analyzed: 02/20/12							
Gasoline Range Organics	46.8	5.0	mg/kg wet	50.00		94	67-116	1	200	
Surrogate: a,a,a-Trifluorotoluene	*6.25*		*mg/kg wet*	*5.000*		*125*	*55-129*			

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PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

Level II QC Report
2/24/12

Matrix Health & Safety Consultants, LLC
Attn: Todd Daugherty
2900 Yonkers Road
Raleigh, NC 27604

Project: Leonard Tract

Prism Work Order: 2020368
Time Submitted: 2/16/2012 9:20:00AM

Diesel Range Organics by GC/FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P2B0378 - 3545A										
Blank (P2B0378-BLK1)				Prepared: 02/20/12 Analyzed: 02/22/12						
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: o-Terphenyl	*1.62*		*mg/kg wet*	*1.600*		*101*	*49-124*			
LCS (P2B0378-BS1)				Prepared: 02/20/12 Analyzed: 02/22/12						
Diesel Range Organics	70.5	7.0	mg/kg wet	79.84		88	55-109			
Surrogate: o-Terphenyl	*1.72*		*mg/kg wet*	*1.597*		*108*	*49-124*			
LCS Dup (P2B0378-BSD1)				Prepared: 02/20/12 Analyzed: 02/22/12						
Diesel Range Organics	74.5	7.0	mg/kg wet	79.87		93	55-109	6	200	
Surrogate: o-Terphenyl	*1.84*		*mg/kg wet*	*1.597*		*115*	*49-124*			

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Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/526-0409

PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

Level II QC Report
2/24/12

Matrix Health & Safety Consultants, LLC
Attn: Todd Daugherty
2900 Yonkers Road
Raleigh, NC 27604

Project: Leonard Tract

Prism Work Order: 2020368
Time Submitted: 2/16/2012 9:20:00AM

General Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P2B0411 - NO PREP										
Blank (P2B0411-BLK1)				Prepared & Analyzed: 02/21/12						
% Solids	99.9	0.100	% by Weight							
Duplicate (P2B0411-DUP1)		Source: 2020368-01		Prepared & Analyzed: 02/21/12						
% Solids	80.3	0.100	% by Weight		82.5			3	20	

Sample Extraction Data

Prep Method: 3545A

Lab Number	Batch	Initial	Final	Date/Time
2020368-01	P2B0378	25.06 g	1 mL	02/20/12 11:00
2020368-02	P2B0378	25.05 g	1 mL	02/20/12 11:00
2020368-03	P2B0378	25.04 g	1 mL	02/20/12 11:00

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date/Time
2020368-01	P2B0381	11.95 g	5 mL	02/20/12 14:53
2020368-02	P2B0381	10.51 g	5 mL	02/20/12 14:53
2020368-03	P2B0381	9.8 g	5 mL	02/20/12 14:53

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/526-0409

PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
Phone: 704/529-6364 • Fax: 704/525-0409

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1 QUOTE # TO ENSURE PROPER BILLING:

Client Company Name: MATRIX HEALTH & SAFETY
Report To/Contact Name: Todd Daugherty
Reporting Address: 2900 Yonkers Road Raleigh, NC 27604
Phone: 919-933-2520 Fax (Yes) (No): 919-882-9926
Email (Yes) (No) Email Address: Todd@matrixhsc.com
EDD Type: PDF___ Excel___ Other___
Site Location Name: Leonard Tract
Site Location Physical Address: ___

Project Name: Leonard Tract Reg. UST
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)
*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements
Invoice To: SAME
Address: ___

Purchase Order No./Billing Reference ___
Requested Due Date ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☒ 5 Days
"Working Days" ☐ 6-9 Days ☐ Standard 10 days ☐ Rush Work Must Be Pre-Approved
Samples received after 15:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

LAB USE ONLY

	YES	NO	N/A
Samples INTACT upon arrival?	✓		
Received ON WET ICE, Temp 5.8	✓		
PROPER PRESERVATIVES indicated?	✓		
Received WITHIN HOLDING TIMES?	✓		
CUSTODY SEALS INTACT?			✓
VOLATILES rec'd W/OUT HEADSPACE?			✓
PROPER CONTAINERS used?	✓		

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL
Certification: NELAC___ USACE___ FL___ NC___ SC___ OTHER___ N/A___
Water Chlorinated: YES___ NO___
Sample Iced Upon Collection: YES X NO___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER *TYPE SEE BELOW	NO.	SIZE	PRESERVATIVES	ANALYSES REQUESTED DRO	GRO	REMARKS	PRISM LAB ID NO.
DN-01	2-15-12	1130	SOIL					X		North End	01
DS-02								X		South End	02
DST-03								X		Stock Pile	03
GN-01							methanol		X	North End	01
GS-02							methanol		X	South End	02
GST-03							methanol		X	Stock Pile	03

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature: Todd E. Daugherty Sampled By (Print Name): Todd E. Daugherty Affiliation: MATRIX

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

		Date	Military Hours
Relinquished By: (Signature)	Received By: (Signature)	2/15/12	17:30
Relinquished By: (Signature)	Received By: (Signature) Sherman Wiles	2-15-12	14:30
Relinquished By: (Signature)	Received For Prism Laboratories By:	2-16-12	9:05

Additional Comments: REC'D: 2/16/12 9:20

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.
☐ Fed Ex ☐ UPS ☐ Hand-delivered ☒ Prism Field Service ☐ Other___
COC Group No. 2020368

PRISM USE ONLY
Site Arrival Time:
Site Departure Time:
Field Tech Rate:
Mileage:

SEE REVERSE FOR TERMS & CONDITIONS

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC
☐___	☐___	☐___	☐___	☐___	☐___	☐___	☐___	☐___

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic, TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

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Acknowledgments

Parks, Recreation and Cultural Resources Department

Oscar Carmona, Director
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Scott Payne, Assistant Director
Sally Thigpen, Assistant Director
Ken Hisler, Assistant Director
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Brian England, Preserve Manager, Annie Louise Wilkerson, MD Nature Preserve Park
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