SPRING VALLEY ROTARY SANDHILL CAMPUS

CONTEXT
VICINITY MAP
LOCATION MAP

BOUNDARY OF SITE
FOCUS AREA

PROJECT FOCUS AREA
AGRICULTURE VALUE OF LONG LEAF PINE TREE, Pinus Palustris

Speaking at a recent field day at the PeeDee Agricultural Extension and Research Center in Florence, S.C., T.J. Savarino, an Extension forestry specialist at Clemson University, noted both the historical and modern day importance of longleaf pines in the development of the United States.

Tall and majestic longleaf pine trees once covered more than 90 million acres in the Southeast, though down to about 3 million acres today, these native trees and the ecosystem they support are making a comeback in many areas.

One of the fastest growing agricultural enterprises is eco-agriculture. Many Southeastern land-owners have converted parts of their farmland for contract hunting, fishing, camping and even bird-watching. The ecosystem supported by native longleaf pines fits perfectly into the business plan for such rural enterprises.

From a dollars and cents standpoint, Savarino says longleaf pines are an attractive alternative for land owners in the Southeast.

Timber from these trees is very desirable because it tends to be long, straight and has light growth rings and thus brings a premium price in comparison to lobolly pines.

Longleaf pines produce a high percentage of ‘pole’ timber, used extensively for power poles and for other commercial uses.

Prices for poles tend to not go up and down so much as does the price for saw-timber, making longleaf pines a good economic investment in some cases.

These native trees also produce a huge amount of pine straw. Early in the rotation with longleaf pines, landowners can harvest high volumes of high quality straw, according to Savarino.1
The sandhills Ecoregion is the inland portion of the coastal plain that borders the fall line. This ecoregion is frequently recognized as a physiographic province distinct from the coastal plain, although some researchers incorporate the sandhills within a broader area known as "the inner coastal plain".

Although accurate vegetation maps for pine woodland are not available, the extent of this habitat type can be gauged from soil maps showing the distribution of the sandy soils in the region with which pine woodland is strongly associated. Potential pine woodland habitat in the South Carolina sandhills is illustrated highlighted in yellow, as predicted by soil type. Compared to the adjoining piedmont and upper coastal plain, upland forest cover in the sandhills is relatively unbroken.

Summers in the sandhills are hot and humid, and winters can bring a chill. So the trail should provide areas that take seasonal advantage of shade and breezes. Hours of sunshine range between 6.1 hours per day in January and 10.9 hours per day in June. On balance there are 3011 sunshine hours annually and approximately 8.2 sunlight hours for each day.

So there is plenty of opportunity for a daily exercise routine or romantic stroll by the lake.
SOCIAL & CULTURAL ATTRIBUTES:

COMPOST DEMONSTRATION
PEST CONTROL FOUNDATION DEMONSTRATION
CHIMNEY SWIFT (BIRD HOUSE)

COTTAGE BUILDING (DEPARTMENT OF PESTICIDE REGULATION)

LAKE HOUSE
CHILDREN'S GARDEN
CICD BUILDING (CLEMSON INSTITUTE FOR ECONOMIC COMMUNITY DEVELOPMENT BUILDING)
CELL TOWER
EDUCATION GARDEN
SANDHILL BARN
CU RICHLAND COUNTY EXTENSION OFFICE

PUBLIC SERVICE AT SANDHILLS

Agricultural Service Laboratory
Provide agricultural testing, soil testing, tissue analysis, animal waste analysis, irrigation water analysis, feed & forage testing.

Cooperative Extension Service
Provide expertise in agronomic crops, economic & community development, food safety & nutrition, 4-H, horticulture, livestock & forages, and natural resources.

Department of Pesticide Regulation
Include applicator licensing and education, pesticide container recycling, integrated pest management in schools, endangered species protection, and the worker protection program.

Department of Plant Industry
Protect South Carolina's agricultural resources and natural ecosystems from the introduction and spread of plant and honey bee pests and invasive species.

Serve to enhance the efficiency of South Carolina's agricultural producers by providing unbiased, third party quality assurance programs for the fertilizer, organic and seed industries.

DPI enhances agricultural security in South Carolina by staffing and equipping the State Plant Emergency Response Team.

Home and Garden Information Center
Provides research-based information on landscaping, gardening, plant health, household pests, food safety & preservation, and nutrition, physical activity & health.

Plant Problem Clinic and Nematode Assay
A multidisciplinary program which provides diagnoses and management recommendations for plant problems.

BUILDINGS AND HISTORY

CICD BUILDING (CLEMSON INSTITUTE FOR ECONOMIC COMMUNITY DEVELOPMENT BUILDING)

Sandhills Research & Education Center Administrative Building is home to Sandhills Research & Education Center/Clemson Institute for Economic-Community Development Administration. A candidate for LEED Gold certification, the unique architecture blends with the local environment to preserve the natural Sandhill setting.

The historic office building was constructed in 1927. It was the first building to be constructed on the new Experiment Station and was considered to be quite handsome. The first Station Superintendent was James A. Riley. He arrived in 1926 and supervised all new construction. Today, the Department of Pesticide Regulation occupies the building.

Lake house was originally called the Pond House, built with WPA(Works Progress Administration) labor. It largely functioned as a community center during the depression. Underprivileged children attended summer camp there and dances were held on the main floor on weekends. WPA projects paid local level and paid local women to blaze a trail around the nearby pond, now available to rent for meetings.

ACTIVITIES

Sparkleberry Country Fair
The last Friday and Saturday in April finds the Sandhills REC hosting this annual rite of Spring. Come join the throngs of visitors and shoppers as you experience the rich agricultural heritage too often forgotten.

Farmers Market
The 2013 season for the popular Sandhill Farmers Market begins in early May attracting vendors and visitors. Live music performed by Keith Tracy is featured every second and fourth Tuesday. In addition to all of the great fresh products available this year the market will also feature select handmade articles.

The weekly market's season runs right up to Thanksgiving.
SOCIAL & CULTURAL ATTRIBUTES:

ECONOMIC

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<tr>
<th>Labor Force &amp; Employment, June 2011</th>
<th>Median Hourly Wage Rates by Occupation</th>
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<tr>
<td>Labor Force</td>
<td>183,196</td>
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<tr>
<td>Employment</td>
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<td>Unemployed Rate</td>
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<td>Per Capita Income</td>
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Demographics

POPULATION

The population of Richland County and its surrounding area was keeping increasing in past 20 years. For example, from 2000 to 2010, the population of Richland county increased 19.9%. According to the data, we can produce the population will still increase at least in next 10-20 years.

MEDIAN HH INCOME IN 2000

AGE

The Median age of Richland County was 32.5, and the Median age of the surrounding area was 35.6 in 2010.

EDUCATION

More highly-educated people in Richland County than surrounding area, because of more schools and universities here, more students activity places are needed.

RACIAL

<table>
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<th>Racial</th>
<th>Percentage</th>
<th>Change</th>
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<td>+10%</td>
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<tr>
<td>Blacks</td>
<td>45%</td>
<td>+21%</td>
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<tr>
<td>Hispanics</td>
<td>5%</td>
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<tr>
<td>Asians</td>
<td>2%</td>
<td>+39%</td>
</tr>
<tr>
<td>Multiracial</td>
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<td>+9%</td>
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Richland County

<table>
<thead>
<tr>
<th>Racial</th>
<th>Percentage</th>
<th>Change</th>
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<td>Whites</td>
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<tr>
<td>Blacks</td>
<td>45%</td>
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<td>+54%</td>
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Sandhill and surrounding area

OVERVIEW

Formed in 1785, Richland County is home to the state's capital and has become the entrepreneurial and legislative hub of South Carolina. Richland County is also home to the University of South Carolina's many campus, and Fort Jackson—the Army's largest and most active initial training base. Richland County's diverse economy. Institutions of higher education, and entrepreneurial spirit make it the ideal location for business. Richland County is business ready, with twenty nine available buildings and fourteen available industrial sites across approximately 756 square miles of business friendly soil.
SOCIAL & CULTURAL ATTRIBUTES:

NORTH SPRING PARK
Richland County Recreation Commission, North Springs Park in Columbia, SC is a private company categorized under Golf instruction.
Provide baseball, golf, softball and tennis places, also have playground.

SESQUICENTENNIAL STATE PARK
Affectionately known to locals as "Sesqui", is a spacious, green getaway in the heart of the sandhills region. Once you're immersed in the 1,400 acres of pines, camping sites, and nature trails you forget just how close you are to bustling downtown Columbia, South Carolina.
A retreat center complete with a kitchen and overnight, dormitory-style accommodations makes the park an ideal spot for family reunions and group gatherings. Camping sites are also available to overnight guests. The park provides kayak and canoe rentals, fishing, two nature trails and a 6-mile bicycle loop for day-use recreation.

OUTDOOR RECREATION
PUBLIC PARK OUTDOOR RECREATION AREAS WITHIN A 10MINUTE DRIVE OF SANDHILL NEIGHBOURHOODS INCLUDE:

SPRING VALLEY COUNTRY CLUB
Spring Valley Country Club is privately owned by its members. People of all ages take pleasure in the pool facilities and snack bar during the hot summer months here in Columbia. Many leading members of the community have joined Spring Valley because of the vast opportunities available to them for business connections.

POLO ROAD PARK
Has a great array of amenities, including a recreation building, gymnasium, game room, fitness room, classrooms, and a kitchen. The park is also home to its many athletic fields that include lighted softball fields, six lighted soccer fields, and a football field. It is adjacent to Sesquicentennial State Park and hiking trails are accessible from here.

PARKING AND FISHING AREA AT SANDHILL

RICHLAND COUNTY TRAILS
VISUAL FACTORS:

DISTRICT SPACE ANALYSIS

BOUNDARY VIEW QUALITY

SCENIC NODE LEVEL

NOISE AFFECT ANALYSIS

VISUAL QUALITY ANALYSIS

STREET VIEW FROM GOOGLE MAP

EXISTING TRAILS AROUND LAKES
# Trail Typologies:

## Overview

Trails are an integral part of our park and recreation system. They are used by people of all ages and abilities to exercise, relax, socialize, view wildlife, and travel to destinations such as school and work.

Generally, it is preferable to design a trail system with loops that offer a number of options and a variety of experiences, while preventing the need to backtrack. A stacked trail loop system will provide opportunities to design trails that appeal to different user groups: the core trail, which leads from the trail head, can be wide, smooth, open and flowing; while other loops branching from it can be narrower and more challenging. Intersections should occur on relatively level ground and where there is good visibility.

## Typologies

- **Linear**
  - for long distance trails
  - always guides the user back to the trailhead
  - offers a variety of travel distances

- **Loop**
  - for goal oriented trails or access to areas, linking facilities
  - side trails can allow access to secondary recreation features, special features, interpretive information and views
  - can be used to offer a variety of difficulties to suit user ability
  - can work at different layers according to the seasons

- **Stacked loop**
  - for long distance trails
  - always guides the user back to the trailhead
  - no need to retrace steps so can be more interesting to use
  - less physical wear

## Topography

- Poor design: abrupt transitions from one type of design to another
- Tight and technical
- Open and flowing

## Trail Type Matrix

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<tr>
<th>Trail Type</th>
<th>Maintenance</th>
<th>Community</th>
<th>Regional</th>
<th>Nature</th>
<th>Local Access</th>
<th>Mobility</th>
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### Design Features

- surface: gravel, wood, concrete, asphalt
- width: 3-10 ft (1.5-3 m)
- longitudinal slope: 5-20%
- cross slope: 5-15%
- ADA: Yes/No

### Notes

- Trail Design Guidelines for Portland's Park System
- Trail Design Theory

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**References**

1. Trail Design Guidelines for Portland's Park System
2. Trail Design Theory
According to previous site inventory and analysis, the design achieves its master plan objectives by directing movement, enhancing connectivity, increasing use and enabling event programming to revitalize and successfully adapt the existing space. The open spaces and structure have been restored, new sensory gardens created, the play area renewed and enlarged, and sculpture as modern art integrated into the landscape to attract more people here and encourage them to stay for longer periods.

This trail connects four parts of different categories: art, education, entertainment, ecology and culture, which makes the function more worthwhile, moreover it will be more attractive.
A. Vista Point  
High point on site  
Tower  
Interesting viewsed

B. Longleaf Pine Tree Center  
Education & Culture  
Plant pine trees to create a circular trail  
Different ages of trees

C. Fishing Area  
Fishing club  
Outdoor recreation  
Entertainment

D. Community Garden  
Close to western residential areas  
Close to water

E. Picnic Area  
Between two lakes  
Entertainment  
Close to Lake House

F. Wetland Trail  
Existing trail  
Broad walk way  
Protect habitat

G. Children’s Garden  
Existing  
Playground  
Education

H. Sculpture Park  
Continues along side the trail  
Modern  
Public Art

I. Education Garden  
Education  
Culture

J. Energy Garden  
Solar energy light  
Limited tree cover  
Good sunshine  
Evening lighting

K. Playground  
For children  
Colorful

L. Seasonal Garden  
Landscape value  
Different colors in different season

M. Shrub Maze  
With tower in center  
Start point and end point on the trail

N. Lawn Terrace  
Event place

O. Farmer’s Market
THE PINES

Paved pathway

Existing roads and proposed roads

Natural sandy pathway

Intersection

Four ecology parts:
Forest, grassland, wetland, and human activity
Four areas of interest—culture, education, art, entertainment—provide multiple opportunities for enjoyment.

- **Culture**: Community Garden
- **Education**: Longleaf Pine Trees Center
- **Entertainment**: Playground
- **Education**: Seasonal Garden
- **Entertainment**: Fishing Area
- **Entertainment**: Picnic Area
- **Art**: Lawn Terrace
- **Education**: Solar Energy Garden
- **Education**: Farm Market
- **Entertainment**: Tree Maze
- **Art**: Sculpture Garden
The list show a suggestion for the plant choice in seasonal garden. It provide different view in different season. They are all native in South Carolina, and will be gorgeous in spring and fall. Both of the flowers and fruits are attractive. The Mountain Laurel bloom only in June and July, but it can attract birds.
To protect habitat, access from the trail to the lake is limited. The trees provide shade for pedestrians and aquatic life. At some points on the trail along the lake, access is provided for a good view of the lake.
According to analysis, 60% of site is woodland, and almost 85% of the trees are longleaf pine trees. A big loop as an informal pathway will be built in this area for the residents around the north part. A towel will be built at the vista point on site for interesting viewshed. A longleaf pine tree education center will be an entrance from the forest area into other areas. Here is a signage made for education.

Here is a unit in the longleaf pine tree education center. Mature pine trees (dominate trees, codominant trees, intermediate trees, overtopped or suppressed trees) will be planted in the center, and then sapling, bottlebrush, and grass. From the center, the height of pine trees change gradually.

Also, these forests can be home to hundreds of different plants and animals, with as many as 50 species of wildflower, grass, shrub and fern in a single square yard of the forest's open, sun-bathed floor. Some researchers estimate that the longleaf pine ecosystem is one of the most diverse outside of the Tropics.

The developing ecosystem is wonderful habitat for a variety of wildlife, including quail, turkey, deer, songbirds and gopher tortoises—the only native tortoise east of the Mississippi River. This tortoise thrives in the open understory of longleaf forests, an ecosystem in part sculpted by frequent fires that would destroy forests dominated by other tree species.
The grassland near Clemson Rd, avoid blocking the view from the commercial area to site. It is an essential part from outside to human activity area. It can also provide space for some activity for both commercial area and Sandhill campus.

On the other hand, when people walk on the trail, the wildflowers provide interesting views shed in different seasons.