This undergraduate studio at the College developed this project as a focus for their work in landscape preservation and design. It offered the opportunity to combine conservation studies, site planning, and environmental components in a worthwhile community oriented project. In fact, this is an area that is also being considered for this facility by a recently developed Recreation Master Plan developed by Dorchester County. It is also owned by the Low Country Open Land Trust whose mission is to maintain a conservation orientation on the property. This area has traditionally had considerable development pressure and is being reviewed for expansion of the historic district to help safeguard an important part of the local history. This property furthermore occupies a key location at the end of the Ashley River Historic District and at the intersection of the public access onto the river and onto future planned bikeways. It was felt that having the students evaluate a “suitability study” would help this process and maintain a counterbalance to the recreation notions that were being developed. Our emphasis, therefore, has been to bring forward a conservation ethic that would complement the preservation components as well as address the recreation needs of the county.

The process was first to analyze the natural site and cultural resource components on both a larger scale and on a site specific scale. The larger scale varied based on the type of analysis but was generally within the boundaries established by the South Carolina USGS quad sheet “Stallsville” at scales of 1”=2000’. The site information was gathered on the 60 acre site at scales of 1”=100 and 1”=60’. There were also regional analyses that showed the entire Ashley River Corridor at both 1”=4000’ and 1”=5000’. The study phase included the following drawings:

1. Area wide studies at 1”=4000’ and 5000’
   a. Ashley River and Cypress Swamp Cultural Resource Study
   b. USGS compilation of Ashley and Edisto Regions of SC
2. Stallsville USGS Quad sheet at 1”=2000’
   a. Topography
   b. Soils
   c. Hydrology
   d. Vegetation
   e. Cultural Resources
3. Area wide at 1”=600’
   a. slope and contour analysis
   b. Area wide vegetative cover analysis
4. Eight on site plans and sectional analyses at 1”=60’
After the analysis phase, the class reviewed development options and settled on a primary approach but with some variations as special studies. These drawings and a descriptive short overview of each include the following:

1. An overview of the history of the area with a HAM Smith Compilation of the Historic Land Ownership patterns of the Ashley River district
2. Master Planning Layout by Story Wiggins
3. Building programming and design sketches alternate 1 by Tiffany Williams
4. Building programming and design sketches alternate 2 by Jack Crouch
5. Pond Development by Cashmere Fons
6. Water Access and Development by Richard Pate
7. Kayak Dock Design by Caleb King
8. On Site Trail Design Studies by Elias Hodges
9. Off Site Trail Design Considerations by Sean Hackett
10. Educational Opportunities by Jessica Seaborn
11. Exploring the Ashley River Incorporating GPS Devices: A New Kind of Tour by William Strickland

To summarize the results of these studies, the following points were generally agreed as suitable for this site:

1. The site has been disturbed considerably over the years, leaving a forest cover that is not much older than 15 years. As such, it offers a mostly pine emergent growth with some hardwood cover that is starting to develop. Its critical position at the intersection of the traffic from Summerville, the Ashley River, and the end of the Ashley River Historic District offers unique opportunities for recreation and education. That the site is so heavily disturbed perhaps argues for a more active site rehabilitation to maintain functionality and promote its natural aspects.

2. The development of building facilities was seen as a major opportunity to interpret the site and especially the larger region, provide a focus for community involvement, and be an example of green technologies. These facilities naturally want to be differentiated on either end of the site. One dealing with water access closer to the Ashley River and the Kayak users and the other closer to Ashley River Road addressing the motorist and bicycle users.

3. There are some areas that need further study, however. The off site water impacting the site and the limited access to the water are the two main concerns addressed here. Both of these may require major site changes such as acquiring additional properties or expanding the water feature as a flood control feature. In addition, some considerable portion of the site is scheduled to be utilized for expansion of Bacon’s Bridge Road. The noise is already an issue on site and will likely mean that developing the site as a natural environment is problematic. These aspects were considered a major constraint on the development options of site as a purely natural site.

4. The development of a trail connection from SC Highway165 to Ashley River Road using a separate trail alignment is a remarkable opportunity to expand access opportunities at minimal cost. In fact, the development of trail access
through the site was seen as an important feature, keeping it off the road and expanding the utility and exposure of this site. This could even involve a separate bridge access across the river using the site of the former bridge crossing. Developing this site as the intersection of Greenways and Blueways was considered a major opportunity.

5. Miscellaneous site improvement considerations - such as the expansion of the ditch, the development of on-site trails, and the design of a dock - were considered an important way to minimize impacts on the wetlands and waterways. They seek to also enhance their aesthetic aspect and utility. In this study, the strong recommendation was that the site acquires additional land adjacent to it along the river to expand from only about 50’ of frontage on the river.

6. It is thought that development could in fact help turn around the degradation of the site and provide opportunities to study human impacts for educators and eco tourists. Water quality testing, Vegetation monitoring, and historic site recording were just some of the opportunities that might help to give the site a living classroom or life long learning feel. The opportunities for a virtual classroom to allow for online reporting of test results or observations would further expand the educational opportunities here. In some sense it becomes also an interactive visitor’s center which ties visitors and residents to their land and history. This type of experience benefits greatly from the new global positioning systems in offering self guided tours, methods of recording documentation, and opportunities for managing access to resources.
Stallsville Quad Topography

ASHLEY RIVER AT BACON BRIDGE PARK PLANNING College of Charleston Program in Historic Preservation & Community Planning HPCP340 - SPRING 2009 PROFESSOR JAMES L. WARD done in association with the Low Country Open Land Trust
ASHELEY RIVER AT
BACON BRIDGE
PARK PLANNING

College of Charleston
Program in Historic Preservation & Community Planning
HPCP340—SPRING 2009
PROFESSOR JAMES L. WARD

done in association with
the Low Country Open Land Trust

AREA BASE
NOTES

- Much of the site will need to be cleared of refuse and debris before use.
- There are currently three access issues which need to be resolved:
  - The frontage on the Ashley River is narrow and steep.
  - The location of auto access is dangerous because of incline and proximity to bridge.
  - The ditch that runs through the site divides the east and west portions and does not allow access to both.
- The extent and effects of off-site water entering the site from the east will need to be determined and perhaps mitigated.
- The eastern sector of the site is affected by considerable noise pollution which will increase with the widening of Bacon Bridge Road.
- The intermittent streams running through the site's center may make access difficult during heavy rainfall.
- The berms and piles adjacent to ditches will need to be smoothed and naturalized in some areas.
- Because water frontage is so narrow and activity will be concentrated in this area, we suggest that a portion of the adjacent water front be obtained if possible.

Group 1 Site Plan and Cross Section at Bacon Bridge Road on Ashley River

ASHLEY RIVER AT BACON BRIDGE
PARK PLANNING
College of Charleston
Program in Historic Preservation & Community Planning
HPCP340 - SPRING 2009
PROFESSOR JAMES L. WARD
done in association with the Low Country Open Land Trust
ASHLEY RIVER AT BACON'S BRIDGE
East-West Site Cross Section
Group 1

ASHLEY RIVER AT BACON'S BRIDGE
North-South Site Cross Section
Group 1
**NOTES**
- Area between mounds and ditch closest to highway consists of low-lying vegetation.
- Line running parallel to mounds represents small ditch.

**LEGEND**
- Ditch
- Intermittent stream
- Mounds
- Mature vegetation
- Emergent vegetation
- Pipe
- Proposed highway

1" = 100' - 0"
Exploring the Ashley River

William Strickland
Contents

Introduction…Page 3

Using a GPS Device as a Navigational Tool… Pages 3-4

Getting To and Accessing the Ashley River…. Page 4

Where to Stay… Pages 5-7

Where to Eat… Pages 7-8

Pre-Revolutionary Colonial Dorchester State Historic Site… Page 9

Historic Plantations…
   Drayton Hall…Page 10
   Magnolia Plantation…Page 10
   Middleton Place Plantation…Page 11

Other Historic Sites…
   St. Andrew’s Parish Church… Page 11
   Revolutionary War Sites…Pages 11-12
   Charlestowne Landing…Page 12
   Historic Downtown Charleston… Page 13
Introduction

The purpose of this guide is to provide information for travelers using the Ashley River as a blue way. Travelers may use a GPS device in order to travel around using this guide as well as the guide available on Google Maps. By utilizing these tools, travelers can find exact locations, using the coordinates of the GPS, to find Revolutionary War Sites, Historic Plantation sites, as well as others.

Using a GPS as a Navigational Tool

There are two types of GPS devices: the more commonly used gives turn-by-turn directions, helping drivers to navigate roadways. The other form of GPS provides information of longitudinal and latitudinal location. For navigating the Ashley River, the second form of GPS can be used, in addition to this guide, in order to find different sites along the Ashley River. There are numerous models of these handheld GPS systems available for around $100. Other devices, with extra options may range from $100 to well over $700. The device seen here is the Lowrance iFinder H20.¹ Using the GPS system is relatively simple, especially since navigating the Ashley River requires only its most basic functions. By turning on the device, the system will automatically begin to search for satellites. After finding a sufficient number of satellites, the

¹ Price $169.00, Available at www.thegpsstore.com.
GPS system will list the coordinates, listed N (North) and W (West) if in the United States, Canada, or Mexico. You may then use these coordinates in order to find your way around the sites listed on the Google Map entitled “The Ashley River Corridor” at web address:

http://maps.google.com/maps/mm?hl=en&ie=UTF8&ll=37.0625,-95.677068&spn=32.059939,48.955078&z=4&mid=1240230702

You may also find the map on Google Maps by following these directions. Go to the Google Maps website, address www.maps.google.com. In the search block, type “Ashley River Corridor”, and click on the Ashley River Corridor map in the results.

**Getting To and Accessing the Ashley River**

Most visitors, if flying to the area, will fly into Charleston International Airport in North Charleston, South Carolina. The airport is a short 20 to 30 minute drive from the Bacon Bridge access to the Ashley River or 20 minutes from downtown Charleston.

If you are visiting the Ashley River from Charleston, South Carolina, the nearest city, it is relatively easy to access the river. There are numerous docking sites around downtown. For example, you might call one of the numerous marinas around the city to ask if a kayak put-in is possible.

- Bristol Marina (843) 723 6600
- City Marina (843) 732 5098
There are also a number of parks around the city that the kayaker might use as a kayak put-in. It is advised, however, that kayak users on the Ashley put in at the Bacon’s Bridge Road site, where there are easily accessible docks as well as ample parking.

**Where To Stay**

The nearby city of Charleston has a number of hotels, ranging from the moderately priced to the extremely expensive. Once out of the city, however, the price of hotel rooms drops dramatically, since the attractions of the downtown Charleston area do not drive up costs.

**Downtown Charleston Hotels**

**Charleston Place Hotel**
205 Meeting Street
GPS Location: 32° 46’ 50.66” N, 79° 55’ 56.99” W
Charleston, South Carolina
Price: $$$, Location: In the heart of downtown, with relatively easy access to the Ashley.
The Wentworth Mansion
149 Wentworth Street
GPS Location: 32° 46’ 47.58” N 79° 56’ 23.23” W
Charleston, South Carolina
Price: $$$$$, Location: Relatively easy access to the Ashley.

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2 Image from Internet Website: http://photos.igougo.com/images/p145253-Charleston-Charleston_Place.jpg.
3 Image from Internet Website: http://images.leonardo.com/imgs/R/R16451/R16451_EXT_01_F.jpg.
Days Inn Charleston, Historic District
155 Meeting Street
GPS Location: 32° 46’ 46.80” N, 79° 55’ 53.69” W
Charleston, South Carolina
Price: $$ Location: Relatively Easy Access to the Ashley

Outside of Charleston Hotels

La Quinta Inn and Suites, Riverview
11 Ashley Point Drive
GPS Location: 32° 46’ 35.96” N, 79° 57’ 44.94” W
Charleston, South Carolina
Price: $ Location: Easy Access to the Ashley.

Where to Eat

At Bacon Bridge site:

Fast Food
If you are traveling from the Bacon Bridge site to find food, the quickest way is by using a car. There are a number of fast food and pseudo-fast food (Chili’s, Applebee’s) restaurants very close to the site, near Summerville. You can find this area by leaving the site and turning left, continue until you reach a four-way intersection. Turn right, and continue for approximately 3 miles. The Wendy’s, McDonald’s, etc. signs are difficult to miss.

*Other Restaurants:*

Baan Siam, 214 N. Cedar Street, Summerville, SC
Type: Thai

Belles House of Pizza, 975 Bacon Ridge Road, Summerville, SC
Type: Greek and Italian

Dog and Duck, 1580 Trolley Road, Summerville, SC
Type: English Pub Food

The Red Pepper, 709 North Main Street, Summerville, SC
Type: Specialty, Veal, Steak, Pasta, Salads

*Downtown Charleston:*

*Fast Food*

Charleston’s ‘Fast Food Corridor’ is located on the Highway 17-Crosstown in the northern section of the city.

Restaurants

Homingy Grill, 207 Rutledge Avenue, Charleston, South Carolina
Type: Lowcountry Cuisine
Mercato, 102 North Market Street, Charleston, South Carolina
Type: Italian

Rue de Jean, 39 John Street, Charleston, South Carolina
Type: French Brasserie

Historic Sites Along the Ashley River

Colonial Fort Dorchester

Location: 32°56’49.20” N , 80°10’12.67”W
The settlement around Fort Dorchester thrived between the late-17th century until the American Revolution. There are several Revolutionary war sites surrounding the area. A visit to the park might include a short hike through the surrounding woods, fishing, or visiting the old ruins of a church that existed on at Fort Dorchester. Also, the brick walls, covered in tabby, a vernacular building material, still survive.

_Drayton Hall_

*Location: 32°52’15.71” N, 80°04’34.64” W*

Drayton Hall is located between Ashley River Road as well as the Ashley River. The architecture of the house is the sites most astounding feature. Drayton Hall was built before the Revolution, and was never updated to have modern amenities. For this reason, Drayton Hall is a reminder of what life was like for one family during the early years of settlement in the South Carolina Lowcountry.

_Cost:_

- **Adults:** $14
- **Youth:** $8
- **Child:** $6
- **Grounds Only:** $8
Magnolia Plantation

Location: 32°52’35.31” N, 80°05’00.16” W

Magnolia Plantation is another of the memorable sites located along the Ashley River. While house tours are offered, Magnolia Plantation is most noted for its expansive gardens. Taking a self-guided tour through the gardens might take up to 3 or 4 hours. The large, majestic oaks located beside the Ashley River at the back of the property are the highlight of this self-guided tour.

Cost: From $1.00 to $9.50, depending on which part of the site you are visiting.

Middleton Place Plantation:

Location: 32°54’00.44” N, 80°08’11.30” W

The Middleton family lived on this site for many years, maintaining a plantation as well as an expanse of planned gardens. Tours are offered of one of the wings of the original house, the only thing left remaining after the main section of the house as well as its other wing were burned. Also, it may take several hours to tour the plantation grounds, featuring a geometrical system of gardens. The highlight of the grounds tour is the view of the Ashley River, looking down from where the main house once stood, over the Butterfly Lakes.

St. Andrew’s Parish Church
St. Andrew’s Parish Church was established in 1704 and is located on Ashley River Road.

**Revolutionary War Sites:**

There are a number of sites located along the Ashley River that are associated with the Revolutionary War. These sites may be found at the following coordinates:

- Marion’s Position May 5, 1780.
  Location: 32°57′30.66 N, 80°12′04.50″W

- Raid, Fort Dorchester. Aug 31, 1780
  Location: 32°56′48.65″ N, 80°10′13.20″ W

- Marion’s Men vs. The Loyalists
  Location: 32°54′12.33″ N, 80°07′26.14″W

- British River Crossing
  Location: 32°52′20.51″ N, 80°04′29.02″ W
Charlestowne Landing:
Location: 32°48′24.24″ N, 79°59′13.17″ W
Charlestowne Landing was the original geographical area settled upon by Europeans in the area. There are numerous attractions located on the site now, including archaeological exhibits, trails, as well the Legare-Waring House, from the post-colonial period of the Lowcountry’s history.

Downtown Charleston:
Downtown Charleston has a great deal of attractions to offer visitors. The city is best-known for its history, which may be observed throughout the peninsula, especially south of Broad Street and along the Market. Carriage Tour tickets are available along the Market, on Market Street (Location: ); there are also a number of house tours.

Several notable houses are:
- The Aiken-Rhett House
- The Calhoun Mansion
- The Edmondston Alston House
- The Wentworth Mansion, noted in the ‘Places to Stay’ section, functions as a hotel, but offers visitors the opportunity to climb several floors up to the hotel’s cupola, which overlooks the city and offers great views of the water. Admission to see the view from the cupola is free, but hotel staff usually do not
allow those not staying at the hotel up to the cupola past dark.
Historical Overview of the Ashley River: HAM Smith’s Account

Compilation by Paul Sайлорs & James L. Ward

May 4, 2009

Note: See attached Key for reference to individual maps.
~The Ashley River Sanctuary~

A Public Nature and Aquatic Center for the Ashley River Scenic Corridor

Park Program

The Ashley River Sanctuary, Dorchester County’s first public park, will be an asset to the community and environment alike. Located at the corner of Ashley River and Baconsbridge Roads, the property offers access to the river for fishing and human-powered boats, as well as walking trails through the woods, picnicking and resting areas and a gathering place and information center.

In the planning of the park, concern about negative impacts on the landscape led to a delicate treatment of the existing features and the rehabilitation of wetlands along the site’s canal. The green movement and local materials were also an inspiration for the architects of the gathering center and outbuildings. Further development options include the creation of network of ponds throughout the site.

The visitor’s experience will be enhanced by educational information dispersed throughout the park, as well as by an interactive, online kayak and canoe guide for the Ashley River Blueway. School groups may also take advantage of the site to conduct water quality testing and learn about local flora and fauna. The Ashley River Greenway, an 11-mile biking and walking path, will link the park to other historic and scenic sites along the Ashley River Scenic Corridor.
Notes

Please refer to the master plan for the location and configuration of the elements and features of the Ashley River Sanctuary.

1. **Gathering Place**
   - Serves as a welcome center for the corner entrance, and a meeting place or classroom for groups
   - Houses temporary and/or permanent exhibits about the Ashley River’s history, environment and current events
   - Restrooms and park information located here

2. **Corner entrance**
   - Parking area contains ~40 informal parking spaces; ground cover will be pervious material
   - Native trees and/or shrubs to be planted around the lot for shade and aesthetic purposes

3. **Baconsbridge entrance**
   - Parking area contains ~30 informal parking spaces; ground cover will be pervious material
   - Restrooms located here
   - Site information provided via signage: trail map and river/boating guide

4. **Nature trails**
   - Provide several ways to pass through the site and give access to main features, which include: gathering place, reconstructed wetlands, rain garden, woods, pond, picnic clearings, & river access
   - Handicapped accessible
   - Plantation mix paths with boardwalk and bridges where appropriate
   - Three water crossings and two viewing points
   - Signage throughout to direct and educate visitors

5. **Bike/service road**
   - Paved road allows vehicle access along north-west edge of site for repairs and emergencies
   - Bike rack and water fountain to be located at the intersection with nature trails
Serves as a leg of the Ashley River Greenway, from Ashley River Road to a pedestrian/bike bridge over the river; this bridge will require the acquisition of a portion of adjacent land

We recommend the appropriation of a portion of the adjacent land for this purpose, as well as to reduce wear and tear on the current, narrow river frontage

6. Canal
   - At least one bank will be reconstructed wetlands along the entire canal, improving biodiversity and aesthetic quality
   - Rain garden located where offsite runoff enters site will purify water
   - Cypress stand to be planted on constructed island

7. River access
   - Fishing, kayaking and canoeing
   - Floating dock makes use of canal and river
   - Trash bins

8. Picnicking/leisure areas
   - Two locations: lower clearing and pond-side
   - The pond should be monitored for water quality; some intervention or further development may be necessary
   - The lower clearing will have picnic tables as well as a simple pavilion
   - Trash bins

9. Right of way
   - Baconsbridge Road will be widened into the site where indicated
   - This area should not be developed but in the mean time it should be cleared of trash and debris
   - In order to mitigate noise pollution, the understory vegetation should be developed along both Baconsbridge and Ashley River Roads

Prepared by Story Wiggins
Dorchester-Ashley River Interpretive Center

The Dorchester-Ashley River Interpretive Center is to be the structural element of the Ashley River Sanctuary, Dorchester County’s premiere public park. The site location is a 60-acre lot at Bacon’s Bridge Road and the Ashley River intersection. It will serve the community by supplying the Sanctuary with structural housing and designated space for the proposed interpretive studies, community outreach and educational programs, park recreation, as well as serve as an official visitor’s center for the Dorchester portion of the scenic Ashley River Corridor, a proposed tri-county network of sites that stretch the Ashley’s length. The intent is to furnish the public with a structured space within the site in order to educate the public within a space that they might directly explore, experience and engage in the site in a spirit of conservation.

Accordingly, the design programming for the buildings must promote a direct engagement of the natural environment. The use of green architecture coupled with a design that’s integrated in the site in concept, function scale and materials will promote the message of conservation intrinsic to the site. This proposed design is chosen because of its potential for person-to-nature interaction, its site-specificity, as well as its minimal environmental impact. In an effort
to preserve the cultural landscape, scale of the structure is not to exceed or even meet the site’s tree canopy.

The Center is deliberately situated in direct contact with the site’s most prominent feature, the Ashley River. Nestled within this wooded site, the center will be located waterside and physically span across a stream, elevated, at an especially scenic juncture, in an effort to keep the building within context and site-specific. Accentuating the water feature in this way will enhance the participatory aspect for visitors and their ability to observe, explore and interact with the natural environment through the sights and sounds of the Ashley as well as keeping the structure Heavy window glazing on the North facade will further highlight the focus of site interaction bringing the sight of outside nature in and to the viewer. While a contrasting “living” wall, housing and promoting the area flora and fauna, on the South façade will emphasize drawing the visitor from inside and out to nature. Both ideas make the site, the Ashley River, the Dorchester Sanctuary easily accessible.

The choice of alternative construction materials for green building is also a focus of the Center. Rammed earth is the choice of wall construction. Rammed earth construction involves the compaction of soil in form work and produces walls that are very durable, require little maintenance, and are naturally resistant to fire, termites, and weather [277]. Walls constructed of properly selected soils, when provided with adequate roof overhangs and foundation drainage, survive for many hundreds of years, in wet and dry climates [162] and possess the ability to sustain lateral forces exerted them from earthquake loading [161]. It is the most environmentally sound thermally massive material that is also locally available. The lighting design is based on energy conservation and so the extensive glazing with large, fully shaded and operable windows make maximum use of natural daylight and so minimal use of artificial light, as well as providing great views to the outside. Sustainable wood framing and ample roof overhang provides direct sun-shading as well as preservation of the earthen walls.

STRUCTURAL PROPOSALS
Dorchester-Bacon's Bridge
ASHLEY RIVER PARK PAVILION CONCEPT

JOHN B. CROUCH | HPCP 340
General Project Overview: The project presented consists of a conceptual comprehensive plan for Dorchester County, South Carolina’s first county park. The material presented consists of a Master plan, Designs for trails, recreational facilities, buildings and suggestions on how to best utilize the facility. Throughout our work specific goals were kept in mind. These are:

- To conserve the existing character of the Ashley River historic corridor.
- Plan for an increase in vehicular and pedestrian traffic into the area
- Minimize harm to the existing natural landscape
- Recreate an accurate vernacular landscape
- Foster the further development of a cohesive park system throughout the Charleston Metropolitan Area

Individual Project Overview: My project dealt with the design of the main park pavilion building. This building would provide restroom facilities and a small community center. While designing the structure I kept the following goals in mind:

- Create a structure that will not alter the overall character of the site.
- Use design elements that fit with existing structures in the Ashley River historic corridor.
- Make sure the building is both cost effective to construct and maintain
- Use materials that are durable to ensure the longevity of the structure
- Put an emphasis on green technology to allow the structure to contribute to the improvement of the environment.

Basis for Design: The layout and design of the structure references multiple styles and types of architecture. The inspiration for the design is primarily found in the traditional vernacular architecture of the Low country area of South Carolina, with particular emphasis on beach houses, rural buildings (Such as those found at the Penn School, on St. Helena Island, SC) and open air structures (Such as sweet grass basket stands). Contemporary local vernacular architecture (such as the Middleton Inn) also influences the design. The layout of the building is rooted in the traditional dog-run form. Projects done by the Auburn University Rural Institute also provide inspiration to both the design and layout. All of these influences can be seen in different aspects of the design.
**Materials:** The Materials used have been chosen based on both their look and long term durability. The primary building materials include:

- Wood Siding
- Tabby
- Metal Roof
- Stone/Concrete Floors

**Green Technology:** Green technology is an important factor of this building. The use of this technology will assist in the preservation of the vegetation and integrity of the site. The use of these technologies will remove the need for utility hook-ups. Additionally, this building could serve as an inspiration for other green projects in the region. The green technology featured in this building includes:

- Green Roof
- Photovoltaic Panels
- LED Lighting
- Grey Water Recycling
- Cistern & Water Collection
Proposal for Constructed Wetlands Design
For the Development of the Bacons Bridge Landing Site

For the development of the Bacons Bridge Landing site, located between the Ashley River and Bacons Bridge Roads, I propose an alternative approach to the design of a public park. For this site I have designed a constructed wetland that will cover roughly 16 acres. The purpose of this design is to both improve and accommodate the storm water runoff from the surrounding area. In addition, this constructed wetland is intended to improve natural water purification, promote wetlands research as well as use for educational and recreational purposes. Also, the creation of this wetland area will provide a safe and healthy habitat for local wildlife.

The design calls for a wetland area that will cover roughly 700,000 square feet of land, which would be able to accommodate about 2,000,000 cubic feet of storm water. Using the rational formula (Q=CiA), I have determined that a wetland of this size would have to be able to accommodate a maximum rainfall of approximately 120,000 cubic feet per hour. Given this information, it is easy to see that this design will be more than able to accommodate the maximum amount of storm water that could potentially fall on this area.

In addition to providing ample space for the accommodation of storm water runoff, this constructed wetland will create a beautiful, natural looking environment for both visitors, and local wildlife. Given the local schools in the surrounding area, this wetland area would be an excellent place for educational field trips. It will also provide
researchers and visitors alike with an easily accessible environment to study and observe nature.

Notes

Please refer to the plan for the constructed wetland to see the following element and features of the design.

1. Overall Plan for Wetland Area
   a. The constructed wetland will cover roughly 16 acres, or 700,000sqf.
   b. Inlet and outlet connecting the wetland area to the existing drainage canal onsite.
   c. Culvert running under Bacons Bridge Rd. that will connect the site with the existing wetlands on the East side of the road, and allow storm water runoff to drain into the proposed wetland area.

2. Section Drawing
   a. Proposed grades for the shelf and bank of the wetlands.
   b. Proposed water level allowing for a three foot variance in water level.
   c. Sandy loam layer for planting, and compacted fill layer composed of course sand or gravel.

3. Vegetation
   a. Woody Trees and Shrubs:
      i. Beech Tree and Bald Cypress Tree.
   b. Emergent vegetation:
      i. Spartina and Juncus.
   c. Rooted surface vegetation:
      i. Pond Weed

4. Pictures of desired aesthetic qualities.
   a. Example of desired edge.
   b. Example of the desired reflected landscape.
Goals and Objectives
Design a 16 acre constructed wetland that will:

- Improve/accommodate storm water runoff for the surrounding area.
- Promote use for educational and recreational purposes.
- Improve water purification.
- Promote wetland research.
- Provide a healthy habitat for wildlife.

By: Cassandra Fonseca
Prepared for Instructor James L. Ward
HRCP 340 Spring Semester
April 26, 2009
Summary: Wetland Creation at Bacons Bridge

Storm water management was the major reason behind my decision to explore the possibility of converting the canal running through the property into a wetland habitat, however throughout the process, my focus turned more to creating an aesthetic and educational experience for visitors while still serving as a functioning eco landscape.

The wetlands creation project I took on began with the research in creating the wetlands and determining whether or not the site was sustainable for the habitat. From books such as *Creating Fresh Water Wetlands*, I was able to conclude that the site was able to sustain a wetland habit that would be functional in many aspects. The site contains two major storm water drains coming from the eastern side of the property along Bacon’s Bridge Road. By constructing the wetlands, we would be able to reduce the amounts of sediment and nutrients entering from the busy road and neighboring properties. The wetlands are also to drastically slow down the flow of storm water, allowing sediment to settle out and giving the vegetation a chance to remove excess nutrients from the water before they reach the river. The other function would be to render the erosion of the canals banks. Currently, the banks are lined with tree roots and unstable soil which over time will make the canal too shallow for kayak access. If the site were to become a park, this would be very critical to keeping a clean, accessible stream available for use.
There is a steady water source coming from the Ashley River and enough potential bank to have three to four feet of wetland plants of different varieties. My plan consisted of an overview look of the proposal’s location with the modified banks and two cross sections. The cross sections were to take a detailed look into the canals current state and to show a modified look into a typical wetland bank. I showed the water level at two stages in its highest and lowest tides and how far up the bank it would reach so that the width and slope of the modified bank could be determined. I also included in the modified cross section showing the possibility of having to place a wall around the roots of a tree if the case need be that there is a tree close to the bank is too significant to be cut down.

The plan was to explore the possibilities of creating this habitat and throughout this process I learned of the possibilities of creating landscapes that are functional and aesthetically pleasing. I hope to see further actions taken and these ideas strongly considered.
Storm water runoff is a serious threat to streams, rivers, and the bay. Water quality is affected as storm water carries sediment from upland erosion, nutrients from agricultural and residential fertilizers, and pollutants such as heavy metals and petroleum from roadways. Water quantity is also affected. As development progresses and more land is covered by impervious surfaces less water is able to infiltrate into the ground. There is less groundwater recharge and more surface water runoff. The volume of water running off the land overfills storm sewers, floods the landscape, and deepens and widens streams such as the canal.

The area of the canal running from the storm water drain to the Ashley River should be deepened to allow more flow of water coming from the tidal river and storm water drain. The upper banks will be hydro-seeded to stabilize the exposed soil.
Trails

The property on Bacon’s Bridge Road has many different potential functions. Due to the site’s location on the historic Ashley River, its proximity to historic plantations, and nearness to the town of Summerville, it would be critical for the county to have a public park here. After walking the property and viewing its natural beauty, a network of trails could be configured as a link to nearby plantations and would also give the public an opportunity to view the low country’s natural habitat, while preventing a major on the environment. The trails would have a variety of uses for the entire public to enjoy.

- Types of Trails
  - Maintenance Trail
  - Mountain Biking Trail
  - Walking Trail
  - No Horse Trail
- Trail Build up
  - Trail composition would consist of two layers of compacted materials
  - The trails would have a 2% crown which would allow for water runoff
  - Ditches would be required on both sides of the trails to help with the water runoff
  - The top layer of the trails would be plantation mix with a four to six inch depth, which is already used at the historic plantation in the area.
  - The bottom layer would be R.O.C with a depth of six to eight inches.
  - These two materials would allow for water infiltration and reduce the chance of puddles on the trails.
- Trail Width
  - Trail width would be six to eight feet in all areas
  - A width of more than eight feet would not be advised because it would take away from the natural aspect of the property.
- **Trail Maintenance**
  - A Trail Maintenance Road would be required to access the areas of the park.
  - Trail Maintenance would have to take place at set intervals throughout the year.
  - Adding plantation mix to trail areas would be required
  - Boards on the boardwalks would have to be replaced when broken or rotted

- **Bridge**
  - At least one bridge would be necessary for a maintenance road and would allow access for emergency vehicles
  - The width and style of the bridge would be determined later
  - A recommended bridge with of fourteen feet would be advised to allow for the uses of maintenance trailers

- **Boardwalks**
  - Boardwalks would be necessary for trails that would cut throw low lying areas and
  - In addition, if the idea to reconstruct wetlands is approved then the boardwalks would be necessary over the ponds.
  - Boardwalks would have rest areas with benches and wildlife viewing stations with an educational plaque describing the surroundings.
  - The width of boardwalks would be the same as the trails, except for the wildlife viewing stations and the rest areas.
  - The rest areas would be three feet wide and ten feet long
  - The wildlife viewing station would have to be determined by the area.
ASHLEY RIVER ROAD GREENWAY

SEAN HACKETT

-A GREENWAY IS A LINEAR PUBLIC CORRIDOR FOR PEDESTRIANS AND CYCLISTS THAT CONNECT PARKS, NATURAL RESOURCES, CULTURAL FEATURES, AND HISTORIC SITES. THE GOAL OF THE ASHLEY RIVER GREENWAY IS TO UNIFY THE ASHLEY RIVER HISTORIC DISTRICT WITH A PEDESTRIAN PATH. TO ACCOMPLISH THE GOAL OF UNIFICATION COORDINATION BETWEEN SEVERAL AGENCIES AND IS REQUIRED. CHARLESTON CO. PARKS AND REC, DORCHESTER CO. PARKS AND REC, SCE&G, SC STATE PARKS, DRAYTON HALL, MAGNOLIA GARDENS, AND MIDDLETON PLACE ARE ALL AFFECTED BY THE PROPOSED GREENWAY

-WITHIN THE COMMUNITY THERE IS MUCH SUPPORT FOR ADDITIONAL WALKING AND BIKING TRAILS ALONG THE ASHLEY RIVER. IN THE DORCHESTER CO. PARKS AND RECREATION MASTER PLAN A COMMUNITY ATTITUDE AND INTREST SURVEY STATED THAT OVER 70% OF RESPONDENTS WANTED MORE TRAILS. THE MASTER PLAN ALSO CALLS FOR PLANNING AND PROMOTION OF GREENWAY DEVELOPMENT OVER THE NEXT 10 YEARS. THE ASHLEY RIVER ROAD CORRIDOR MANAGMENT PLAN LISTS THE DEVELOPMENT OF A BICYCLE/ PEDESTRIAN TRAIL AS ACTION 2.4 IN THE ENHANCEMENT OF ASHLEY RIVER ROAD.
SITING OF THE GREENWAY SHOULD BE DONE ON LOCATION BUT IT IS RECOMMENDED THAT THE GREENWAY SHOULD BE PLACED WITHIN THE UTILITY EASEMENT AND/OR BEHIND BERMS THAT RUN ALONG ASHLEY RIVER ROAD.

THERE ARE THREE SEGMENTS OF THE ASHLEY RIVER ROAD GREENWAY:

1) BEGIN AT WEST BRIDGE ROAD WHERE EXISTING BIKE PATH ENDS, SECTION 1 EXTENDS .4.3 MI. TO MIDDLETON PLACE. THIS FIRST SEGMENT SHOULD MIMIC THE 10' WIDE ASPHALT DESIGN OF THE EXISTING BIKE PATH.

2) BEGIN AT MIDDLETON PLACE SECTION 2 EXTENDS TO THE PROPOSED PARK AT BACONS BRIDGE RD. THE 5.6 MI SECTION WOULD BE 6' WIDE AND COMPOSED OF LOW-COST, LOW-MAINTENANCE MATERIALS.

3) BEGIN AT THE PROPOSED PARK AT BACONS BRIDGE RD. THE THIRD SECTION WOULD CROSS THE ASHLEY RIVER AT A PEDESTRIAN BRIDGE USING EXISTING REVETMENTS, THEN TURN EAST AND GO TO COLONIAL FORT DORCHESTER. THE 3.1 MI. SECTION WOULD BE ASPHALT PAVED MIMICKING SECTION 1.

THE ASHLEY RIVER ROAD GREENWAY

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TO ACCOMPLISH THE GOAL OF UNIFICATION, COORDINATION BETWEEN SEVERAL AGENCIES IS REQUIRED. CHARLESTON CO. PARKS AND REC, DORCHESTER CO. PARKS AND REC, SC & GA STATE PARKS, DRAYTON HALL, MAGNOLIA GARDENS, AND MIDDLETON PLACE ARE ALL AFFECTED BY THE PROPOSED GREENWAY.

WITHIN THE COMMUNITY THERE IS MUCH SUPPORT FOR ADDITIONAL WALKING AND BIKING TRAILS ALONG THE ASHLEY RIVER. IN THE DORCHESTER CO. PARKS AND RECREATION MASTER PLAN A COMMUNITY ATTITUDE AND INTEREST SURVEY STATED THAT OVER 70% OF RESPONDENTS WANTED MORE TRAILS. THE MASTER PLAN ALSO CALLS FOR PLANNING AND PROMOTION OF GREENWAY DEVELOPMENT OVER THE NEXT 10 YEARS. THE ASHLEY RIVER ROAD CORRIDOR MANAGEMENT PLAN USES THE DEVELOPMENT OF A BICYCLE/PEDESTRIAN TRAIL AS ACTION 2.4 IN THE ENHANCEMENT OF ASHLEY RIVER ROAD.

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THERE ARE THREE SEGMENTS OF THE ASHLEY RIVER ROAD GREENWAY:

1) BEGINNING AT WEST BRIDGE RD WHERE EXISTING BIKE PATH ENDS. SECTION 1 EXTENDS 0.5 ML TO MIDDLETON PLACE. THIS FIRST SEGMENT SHOULD MIMIC THE 10" WIDE ASPHALT DESIGN OF THE EXISTING BIKE PATH.
2) BEGINNING AT MIDDLETON PLACE SECTION 2 EXTENDS TO THE PROPOSED PARK AT BACONS BRIDGE RD. THE 0.5 ML SECTION WOULD BE 6" WIDE AND COMPOSED OF LOW-COST LOW-MAINTENANCE MATERIALS.
3) BEGINNING AT THE PROPOSED PARK AT BACONS BRIDGE RD. THE THIRD SECTION WOULD CROSS THE ASHLEY RIVER AT A PEDESTRIAN BRIDGE USING EXISTING REVEEMENTS, THEN TURN EAST AND GO TO COLONIAL PORT DORCHESTER. THE 0.5 ML SECTION WOULD BE ASPHALT PAVED MIMICKING SECTION 1.

SEAN HACKETT
LANDSCAPE DESIGN STUDIO (SPRING 2009)
PROF. WARD
Educational Aspects of the Bacons Bridge Park Proposal

Education is an extremely important part of any park that is proposed. Children can benefit greatly from the outdoor classroom that is in such close proximity. The possibilities of education range from elementary schools to Jr High to High Schools to Self Learning. These can be achieved through the school system and the teachers involvement in an outdoor classroom and also through self guided tours through the park highlighting significant trees and animals. Another great opportunity is the options of water quality testing.

Community Involvement is something that is needed when dealing with opening any park. The park is nothing without the community to enjoy it. Some great ways to get the community involved is through activities in the park such as Saturday morning crafts or bike tours through the area. Boy Scouts could also benefit greatly from the area. A boy scout group out of Andersonville Georgia created a guided tour through the Andersonville Historical Prison. This would be a great way to have a tour that incorporates all of the children’s senses and allows them to become better acquainted with the surroundings. The formal name for the hike is listed as the Andersonville National Historic Site Educational hike and can be found online.
Identifying the plants and trees is another aspect of the area that is imperative. A problem that arose when discussing this is to allow for signage in a non-crowded way. The park does not need to be cluttered with signs and this can easily happen. A solution to this is signs such as those found at Middleton place. They are small black plaques that have only the name and the scientific name listed. They are not large and bulky and can only be seen if you look for them. As in they are not popping out at you. I believe that this type of signs is the best way to allow for children to get the just of the tree or plant and allow for extra research outside the park.

Water Quality testing by High School students would be an awesome opportunity for involvement and education. There are many books that outline specifics of water quality management and testing and these books should be suggested to teachers that may conduct water quality tests. There are many ways to test the water and many safety precautions that are necessary. I feel that the children would greatly benefit from the testing and management and the children would truly enjoy the outdoor opportunity to learn and engage in the activity.
Explore Your Surroundings!

Educate Children and Connect with your Community!

Signs to Identify Plants and Trees
Signs or plaques in an educational setting are a great way to identify common trees and plants. The problem comes in with having too many signs and signs away from the naturalistic feel of the area. From an educational standpoint signs are imperative and can be achieved in a discreet way. Middleton Plaza has the perfect signs that are about 3 inches high and 8 inches wide. They are attached to the tree and display the common name and the scientific name. The plaques are black and the lettering is raised in a nice gold hue. This would be a perfect understated way to get the names to the students and avoid a sign pile-up.

Water Quality Testing
Water Quality Testing is a great way to get students involved in their surroundings. Water Quality is extremely important and essential to our lives. Teaching children the importance of this will help them connect with the water and better understand the wetlands. A great tool for teachers to use is the Field Manual for Water Quality Monitoring. The manual gives detailed instructions to performing tests like pH, balance of the water, oxygen content, and more! The manual has a complete list of safety instructions and tools that are necessary. The pictures to the left of the testing sample being placed into the water is detailed in the manual and would be a great way to test water in our area.

Interactive Tour
A great way to view the area could be through an interactive tour of sorts. Once the final placement of the trail has been set and the trees are identified, a worksheet through the wetlands will be produced. A Boy Scout troop in Georgia developed a worksheet that we will use as a guide. They had different activities and questions to be answered every few minutes. We could have students pair off and begin the tour without even a tour guide. They would be identifying trees, collecting water samples, and observing birds in the bird watching area. The area is perfect for this type of activity because it will be a mapped out area, relatively small environment that is full of educational tools.