



46 Acre Park - Master Plan Design

April 2015



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46 Acre Park - Master Plan Design

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Hairston Park - DeKalb County



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Table of Contents

Chapter 1 - Introduction

- Project Description

 - Property Boundary

 - Property History

- Context

 - Relationship to DeKalb County Parks and Recreation Master Plan 2010-2020

 - Community Context

- Master Plan Delivery

 - Process

 - Sustainability Strategies

 - Landscape Ecology

 - Public Involvement Process

 - Comparative Analysis

 - Park 1 - Glen Emerald Park

 - Park 2 - Hairston Park

 - Park 3 - W. D. Thomson Park

Chapter 2 - Site Assessment

- Site Inventory

 - Topography

 - Vegetation

 - Soils

 - Riparian Environment

- Site Analysis

 - Access Management

 - Permitting Analysis

- Opportunities and Constraints

 - Level of Service Standards

 - Development Programs

 - Connectivity to Other Facilities

Chapter 3 - Master Plan

- Alternative Conceptual Master Plans

 - Master Plan A

 - Master Plan B

 - Master Plan C

- Architectural Elements

 - Community Center

 - Community Center Decks

 - Restroom Facility

 - Large Picnic Shelter

 - Small Picnic Shelter

- Final Master Plan

Table of Contents

Preferred Plan
Final Master Plan Design
Landscape Architecture Elements
Amphitheater
Boardwalk and Trails
Deck/Overlook
Engineering Elements
Parking Paving System
Utility Design Elements

Appendix

Public Involvement
Public Meeting #1 - February 26, 2015
Public Meeting #2 - March 31, 2015
Public Meeting #3 - April 21, 2015
Cost Opinion





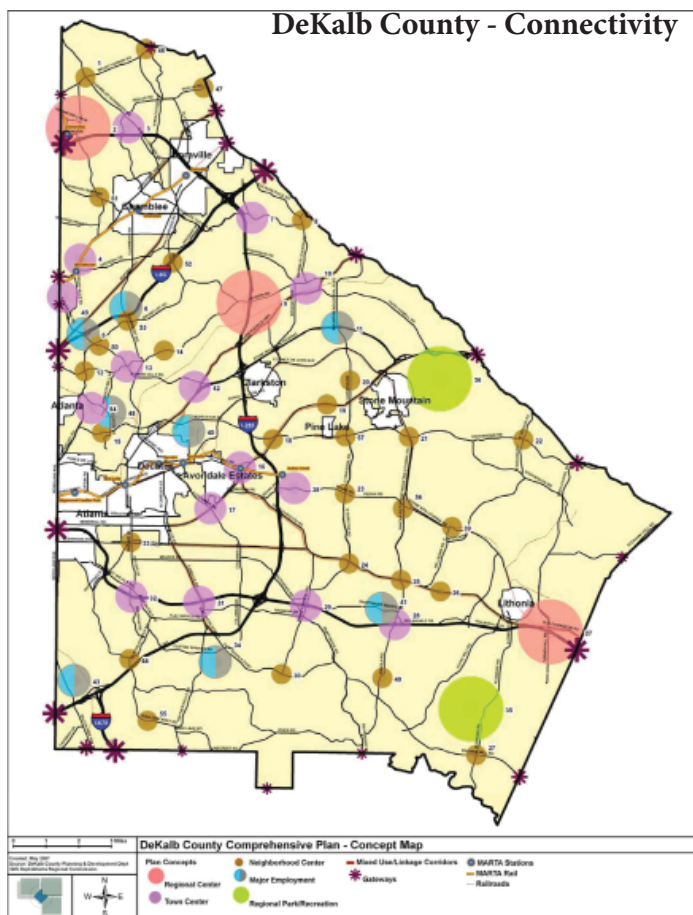
Chapter 1: Introduction



Project Description

DeKalb County is growing and culturally diverse and committed to supporting and improving the health, wellness, and quality of life of its residents. Essential to the quality of life of a community is the opportunity for passive and active recreation. The goal of DeKalb County is to provide 5 acres of park space for every 1,000 community members. With this goal in mind, the DeKalb County Recreation, Parks and Cultural Affairs Department has set aside 46 acres in south-central DeKalb County for the creation of a community park.

The 46 Acre Park will offer space and amenities to the Ellenwood community and fulfill DeKalb County's need to provide programs that promote recreation, and cross-generational activities resulting in healthy lifestyles. Open spaces as well as conserved natural spaces will give the Ellenwood community greater opportunities for social interaction, physical exercise, and enjoyment of the natural environment.



Project Boundary

The 46 Acre Park site is located in south DeKalb County, Georgia, approximately 0.75 miles north of the county line and about midway between the east and west county boundaries. It is bordered by residential properties to the east and west, the South River to the north, and River Road to the south.

Property History

DeKalb County was created in 1822 from portions of Fayette, Henry, and Gwinnett Counties. It was named for Baron Johann DeKalb in honor of his service during the Revolutionary War. Important to the history of DeKalb County is the Civil War and the impact it had on the county. Much of the Battle of Atlanta was fought in DeKalb County followed by General William T. Sherman's March to the Sea in 1864. Sherman's forces tore up the rail-

road that connected Atlanta to Augusta on their way through Decatur and Stone Mountain, effectively cutting off supplies to the Confederate Army.



Following the Civil War and Reconstruction, DeKalb County's economy focused on production of cotton and grain, granite quarrying, and dairy farming. The county was one of the largest milk producers in the southeast, and land near the South River produced 1000 or more pounds of cotton per acre. Land development at the time centered around rivers and along railroads. In the 1960s, the county's economy began its shift away from agriculture as the county became more urban. Today, DeKalb County is the most diverse county in Georgia and the most dense county in the Atlanta metropolitan area in terms of population. DeKalb County is dedicated to serving its thousands of residents, providing services, ensuring public safety, and promoting health and wellness, truly making the county "a clean, green, safe, and thriving community!" The land surrounding and including the 46 Acre Park site was dedicated to agriculture. Although farming is no longer the principal industry,

Ellenwood remains largely a loosely suburban area. Remnants of farming activities remain on the 46 acre park site including re-established woodlands, a house site (with only the chimney remaining), and areas where the ground has been filled or graded.

Today the cohesive and primarily African American neighborhoods surrounding the 46 Acre Park site are fortunate to have strong local leadership and a population eager for community improvements. Our public meeting series emphasized the need for additional park and recreation facilities, not only from a level of service perspective, but from a grass roots level gathered from concerned, advocacy-minded citizens. We have included this text in the history section because it is indicative of how south DeKalb County has grown and evolved. The project team is respectful of this historic community and has strived to provide a comprehensive master plan and thorough public involvement process.

Context

Relationship to DeKalb County 2010-2020 Comprehensive Master Plan for Parks and Recreation

DeKalb County adopted the 2010-2020 Comprehensive Master Plan for Parks and Recreation for the purpose of guiding parks and recreation development over a ten year span. Understanding the relationship of the 46 Acre Park to the DeKalb County 2010-2020 Comprehensive Master Plan for Parks and Recreation is important in accurately meeting the goals and objectives for DeKalb County. The primary purpose of the DeKalb County 2010-2020 Comprehensive Master Plan for Parks and Recreation is to "help create a collective vision for the county in regards to the types of parks and recreation services to be provided over the next decade."

The Vision of the DeKalb County Recreation, Parks, and Cultural Affairs Department is:
"To create and connect communities through people, parks, and programs."

The mission statement for the department is as follows:

"A dedicated and professional team commits to leading the community in to the future to make parks and recreation opportunities the community's connection to a prosperous future; through equitable levels of quality neighborhood and signature parks and recreation services that enhance the quality of life and promote a thriving community."

Public investment discussions were focused on the provision for a large-scale community center. This park element has been a topic in the community before the 46 Acre Park site was made available. Although not typically found in a neighborhood park, the need for a community center building was strongly demonstrated by the residents of Ellenwood.

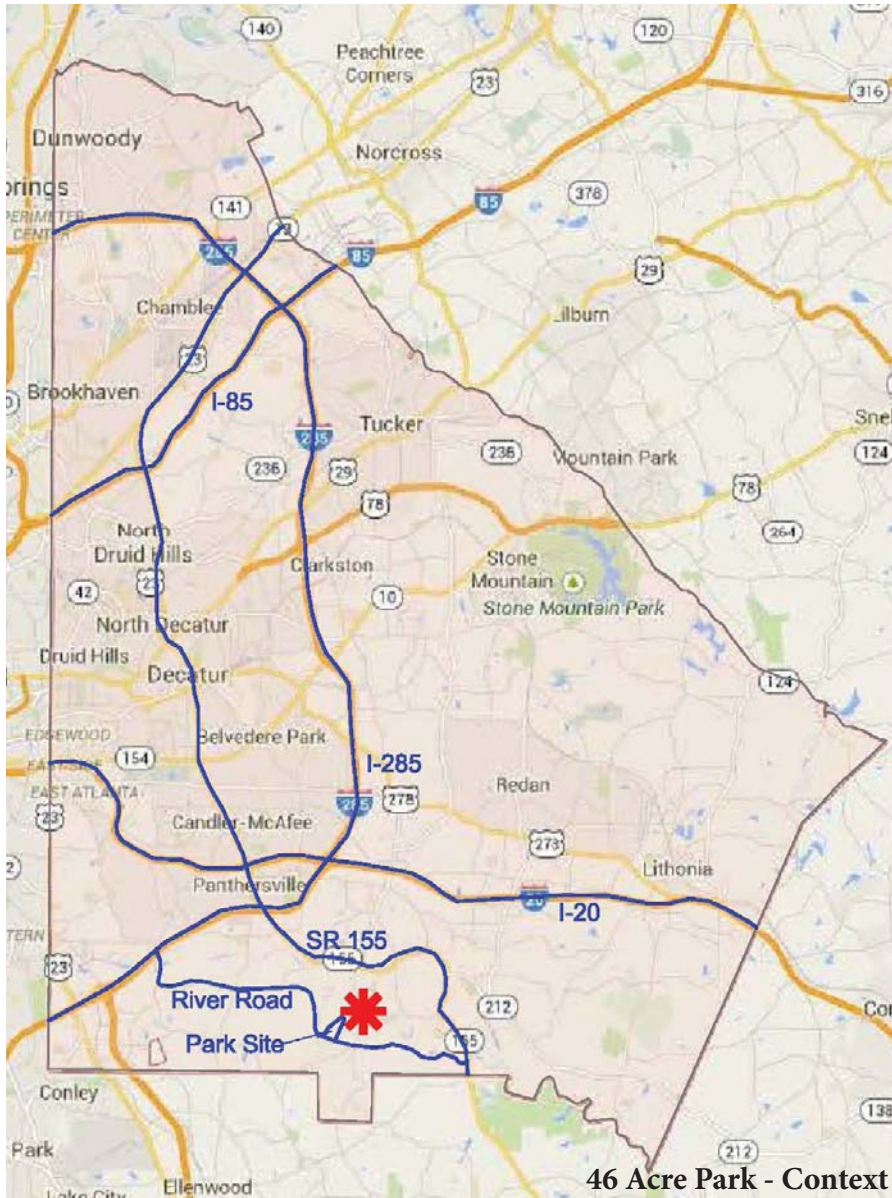


“The main purpose of neighborhood parks is to provide facilities and recreation space for the entire family. Neighborhood parks typically do not include restrooms and have limited parking since most users are expected to walk to the park from their homes. Outdoor lighting is typically not included on sports fields and tennis courts because of the impact they would have on surrounding residential areas. Neighborhood parks are to be used during the day and should be closed at night.”

“Community parks are usually reached by automobile, so parking, traffic, and congestion can be issues. The NRPA recommends a minimum of 5 parking spaces per acre for general park use and additional parking for athletic fields and other activities. Community parks generally serve a population residing in a one to two mile radius around the park.”

Chapter 1: Introduction 8

activities. Community parks can include lighted athletic fields, indoor and outdoor recreation centers and pools, walking paths, picnic areas, playgrounds, tennis courts, special event areas, ponds, entertainment areas, concessions, restrooms, natural areas, gardens, and other amenities. Topographic and other natural constraints on the 46 Acre Park site severely limit active recreation facilities such as ball fields and large scale community buildings typically found in a community park. The 46 acre Park should include program elements found in a community park but for the purposes of this master plan it is considered a neighborhood park.



Master Plan Delivery Process

In the development of the master plan for the park, the design team progressed through a multi-step process that led to a consensus Master Plan. The process included:

- Inventory of existing conditions
- Gathering data
- Site visits
- Analyzing data
- Discussion of relevant issues with county staff
- 3 public input meetings
- Conceptual design
- Final master plan
- Presentation to DeKalb County

Through gathering information on existing topography, hydrology, vegetation, soils, and utilities as well as historical and cultural information, the design team was able to develop a strong understanding of the site. By working with county staff and participating in multiple public meetings, the design team was able to fully appreciate the hopes and interest community members had in the park. The conceptual design process involved careful consideration of all of these factors and the creation

of several different design layouts to show the different options. The final master plan was agreed upon after the design options were prioritized and input showed what elements were the most successful in meeting stakeholders and community member's needs.

The goals guiding the master plan of the 46 Acre Park located in the south of DeKalb County, Georgia, include:

- Conservation and preservation of natural resources on the site
- Incorporation of multi-use design elements, such as a nature walk that acts as a trail and an environmental education path

- Focus on sustainability that includes the use of “green technology” in building design and park construction and indigenous plant material choices for planting
- Include the ecology, culture, and historic value that is inherent to the site
- Provide areas and amenities for active and passive recreation, such as open spaces, trails, large and small pavilions, open play fields, courts, outdoor basketball, and children’s play structures
- Design in sustainable and aesthetically pleasing way to make the park both long lasting and attractive.

Sustainability Strategies

The 46-Acre Park will be constructed using sustainable solutions that are restorative, regenerative, and cost effective. The goal of the master plan is to go beyond impact-neutrality and provide solutions that enhance the natural and built environment of the park. We have proposed sustainable solutions that reduce conflicts between environmental, economic, social, and aesthetic needs. Environmental impacts aside, beauty and livability are also key aspects of lasting, sustainable projects. Decisions at the master planning design level are keys to achieving sustainable beauty and sustainable livability. These decisions carry all the way through construction. LEED design concepts will be promoted in the master planning process and we have provided design solutions that combine aesthetics, infrastructure, and functionality to achieve goals for sustainability; these include “longer lifecycle”, use of low-maintenance and locally derived/recycled materials, green roofs and walls, comfortable and shaded outdoor spaces and connections, and elements to improve water quality and reduce carbon emissions and energy costs.

The following LEED principles will be included in the final master plan design:



Design Elements

- Protect indigenous species, maintain viable habitat, and protect natural open space.
- Design for alternative transportation including bicycle storage and plug-in facilities for electric vehicles.
- Protect riparian areas along South River edge and existing drainage swales.
- Consider all issues regarding the lifecycle of materials in order to ensure most appropriate and least damaging selection and design.
- Design buildings and park features to incorporate and use renewable energy.
- Incorporate passive solar heating, day lighting, and natural cooling.
- Consider solar water heating and photovoltaics, or design buildings for future panel installation.
- Design water efficient, low maintenance landscaping through utilization of native plants and other appropriate drought resistant species.
- Consider rooftop water catchment for outdoor watering.
- Design facilities for collection of recyclables.
- Reduce light pollution from park area illumination.
- Make structures adaptable to alternative uses, and choose materials and components that can be reused or recycled.
- Design insect-resistant detailing that will require minimal use of pesticides.

Site Elements

- Design with CPTED (Crime Prevention Through Environmental Design) principles to reduce vandalism and provide crime-deterrence.
- Consider solar access, soils, vegetation, important natural areas during site design.
- Protect trees and topsoil during site work by fencing of the drip line around them.
- Provide for erosion and sedimentation control during all phases of the project.
- Manage storm water on site and provide responsible on-site water management.
- Protect floodplain of the South River.
- Control and manage known invasive plants found on site.
- Protect and restore damaged side slopes.
- Provide for pedestrian site accessibility, safety, and wayfinding.
- Locate park buildings to minimize environmental impact.
- Cluster buildings or build attached units to preserve open space and wildlife habitats, avoid especially sensitive areas including wetlands, and keep roads and service lines short.
- Provide responsible on-site water management including bio-retention and pervious paving materials.
- Situate buildings to benefit existing vegetation to maximize views of vegetation and quiet outdoor spaces.
- Provide outdoor spaces for social interaction and opportunities for outdoor physical activity.

Materials

- Avoid ozone depleting chemicals in mechanical equipment and insulation.
- Use existing tree canopy to minimize heat and cooling requirements.
- Use durable products and building materials which have a record of longer life and reduced maintenance costs.
- Where possible, select building materials that will require little maintenance (painting, retreatment, water-proofing, etc.), or whose maintenance will have minimal environmental impact.
- Where possible purchase locally produced building materials.
- Use building products made from recycled materials
- Where appropriate, to reduce landfill pressure and save natural resources, use salvaged materials: lumber, mill-work, certain plumbing fixtures, and hardware. Make sure these materials are safe, and don't sacrifice energy efficiency or water efficiency.
- Avoid materials that will off gas pollutants such as solvent based finishes, adhesives, carpeting, particle board, and many other building products that release formaldehyde and volatile organic compounds into the air
- Use lumber from independently certified well-managed forests. Avoid lumber products produced from old growth timber when acceptable alternative exist.
- Minimize use of pressure treated lumber.
- Use detailing that will prevent soil contact and rot and where possible, use alternatives such as recycled plastic lumber.
- Install high efficiency LED lighting systems.
- Install water efficient equipment including low-flow toilets and water free urinals.

A primary goal for the 46-Acre Master Plan is to promote design strategies and construction methods that are cost-effective, ecologically sound, and socially beneficial. These policies and principles will be employed for the final master plan design.

Landscape Ecology

The landscape ecology design approach emphasizes the interrelationship between urban hardscape patterns and ecological processes found on the 46 Acre Park site. The master plan will integrate ecologically sound master planning and design. Achieving these objectives will require a balance between consideration of the broader

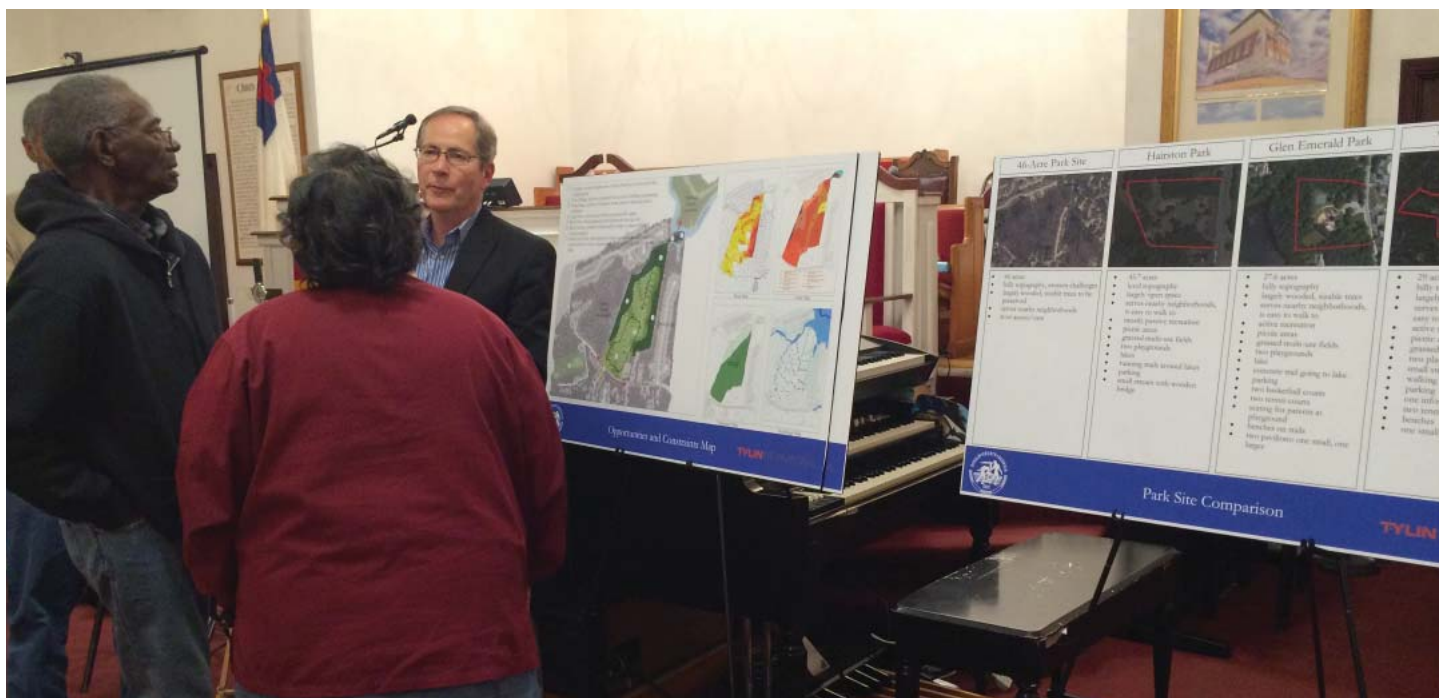
patterns of ecology that provide context for the site and the small scale opportunities to create or enhance habitat value while reducing potential flooding. Resident’s concerns about conserving the natural beauty of the park were considered in the master planning process. Conservation of the natural environment and site ecology rests in the ability to find “win-win” scenarios in which both people of Ellenwood and biodiversity benefit. Sensitivity to ecological patterns found on the park site was considered in each master plan alternative design.

Public Involvement Process

Three (3) public stakeholder meetings were administered as part of the master planning process. Each meeting allowed for the public to work alongside designers. Ideas took form and generated discussions for pragmatic design input and implementable design solutions. To keep the conversation moving forward, social media was used to facilitate the master planning process.

Public Meeting #1 – February 26, 2015:

Public Meeting #1 presented a Project Overview and Analysis that included preliminary park programming and assessment. This meeting was structured as a presentation with the opportunity for public interaction. The TYLI Team provided an overview of the project and to assist the community in identifying issues and concerns. Design Programming was the central topic of discussion and included level of service standards for neighborhood parks, park site survey data, site inventory maps, display boards concerning design sustainability, preference boards to determine likes/dislikes for park program elements and an overview of connectivity to other DeKalb County parks and recreation facilities.



Public Meeting #2 – March 11, 2015

Public Meeting #2 provided input on schematic design including three (3) design alternatives. Each design was presented by the Project Team and described in detail. The park designs enabled the community, business leaders and other vital stakeholders to discuss program needs, access management, historic references, desired park design configurations, connectivity input and preferences concerning design elements. A preferred plan was selected with the knowledge that modifications would be required to create a Final 46-Acre Park master plan design.



Public Meeting #3 – April 1, 2015

Public Meeting #3 was conducted as a final presentation to all stakeholders. The presentation was interactive to provide options for fine tuning the master plan design. The following criteria were presented:

- Sustainability Strategy for the Master Plan
- Park Program Elements in graphic and written format
- Architectural Elements
- Landscape Architecture Elements
- Engineering Design Criteria and Best Management Practices for Construction
- 46-Acre Park - Final Master Plan in graphic and written format
- Cost Opinion for the Final Master Plan



Comparative Analysis of 3 DeKalb County Parks

We have selected three parks located in DeKalb County for comparative analysis to the 46 Acre Park. These park sites have similar qualities and comparable acreage, physical features, and topography. The purpose of the com-

parison is to determine how similar DeKalb County parks are used and function.



Park 1 - Glen Emerald Park

Glen Emerald Park comprises 27.6 acres and is located in Southwest DeKalb County. It has hilly topography similar to the 46-Acre Park and has park amenities built into steep slopes. The park is largely wooded and has water access to a local lake. The park is a neighborhood park and is walkable for neighboring residents. The park's amenities include two basketball courts, two tennis courts, two playgrounds, a small wooden structure over two benches next to the playgrounds for parents to sit, a small pavilion next to the playground, a large pavilion in view of the lake, a wide concrete path to the lake that has benches placed strategically along it, a multi-use field, open space at the front of the park, and adequate parking. The site features many mature trees

that are of a good size and provide shade for the trail and several picnic tables that have been located within the wooded area. The wooded area is well maintained and is without underbrush to obstruct pedestrian movement or sight. It is a quiet and peaceful park that is well laid out, providing a comfortable atmosphere. Items that the park did lack were restrooms, sidewalks adjacent to the road leading directly to the park, and pedestrian crossings to accommodate safe access to the park from nearby neighborhoods. Glen Emerald Park is similar to the 46-Acre Park site in that it has some of the same topography challenges. Grade changes are steep at several points in the park leading down to the lake. The number and size of trees on the sites are also shared characteristics. Glen Emerald Park however is smaller than the 46-Acre Park site.



Park 2 - Hairston Park

Hairston Park is comprised of 45.7 acres and is located in central DeKalb County on South Hairston Drive. Park amenities include picnic areas, grassed open play areas, two playgrounds, a small stream with a wooden bridge crossing it, two lakes with trails around them, and adequate parking. Pedestrian access to the park is very good with sidewalks adjacent to the road in front of the park and crosswalks at the intersection. The park is surrounded by both single-family and multi-family residential units, making it easy for residents nearby to walk to the park. Unlike the 46 Acre Park site, Hairston has level topography. Hairston Park was also not as heavily wooded and as Glen Emerald Park or the 46

Acre Park site, nor were the existing trees as large as in the other parks. It is similar to the 46 Acre Park site in that it has water front access and equal acreage. Positive adjustments to the park would be the addition of restrooms and better definition of the trails. The wooded area, through which the trails meander is thick with privet, is hard to see through, and the trails are narrow. Hairston Park is a strong example of what a passive park should look like, exhibiting appropriate amenities and site design.

Park 3 - W. D. Thomson Park

W. D. Thomson is comprised of 29 acres and is located in Central DeKalb County on Clairmont Road. The park



has creek access and is heavily treed with a good number of new trees recently planted throughout the park. Amenities include two tennis courts, unpaved trails, a wooden bridge going over the stream, children's play structure, a multi-use grassed field, an informal basketball court, minimal parking, and a small pavilion with picnic tables. The park is well designed and although dense with vegetation, feels open and comfortable. Benches are appropriately placed for optimal scenic views. It is a quiet neighborhood park with many single-family homes nearby, making it very walkable for area residents. Challenges facing

the park include very sharp changes in topography resulting in a moderate amount of erosion and keeping stream water free of neighborhood water pollution. The park lacked restrooms and sidewalks adjacent to the road the park is on. W.D. Thomson Park is similar to the 46 Acre Park site in that it is heavily wooded, has challenges regarding slope, and in the kinds of amenities that are best suited to the steep topography. The 46 Acre Park site is bigger than the W.D. Thomson Park, has more opportunity for a larger trail system, and has the South River as an aesthetic amenity.

*Aerial maps courtesy of Google Earth.



Chapter 2: Site Assessment

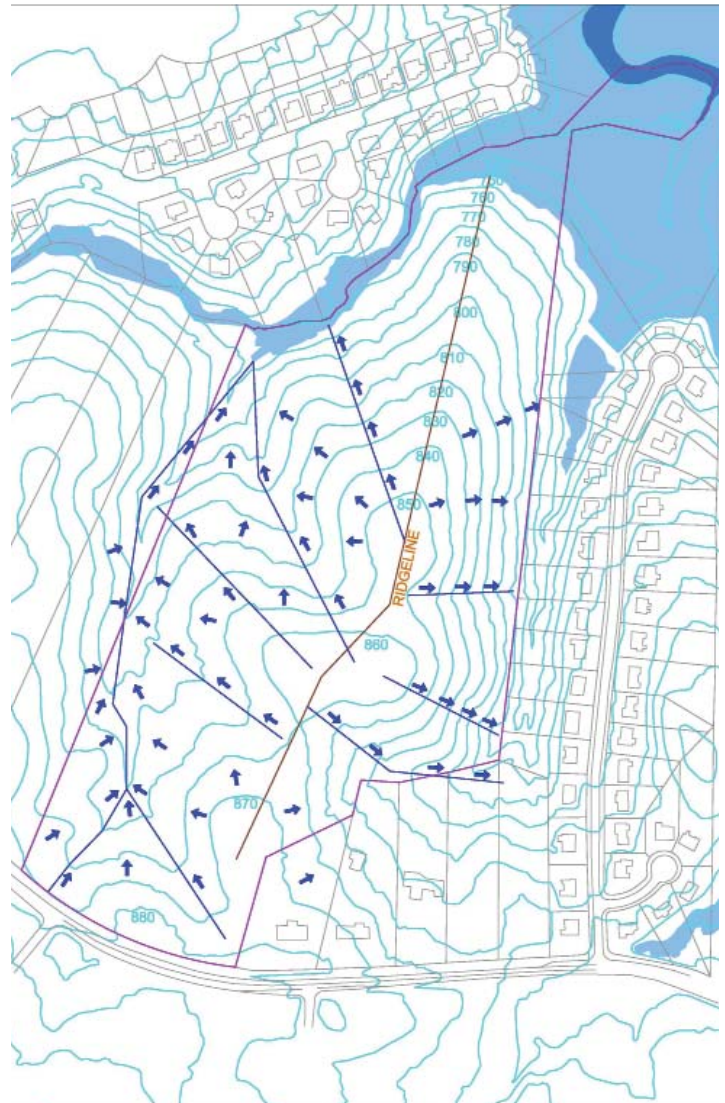
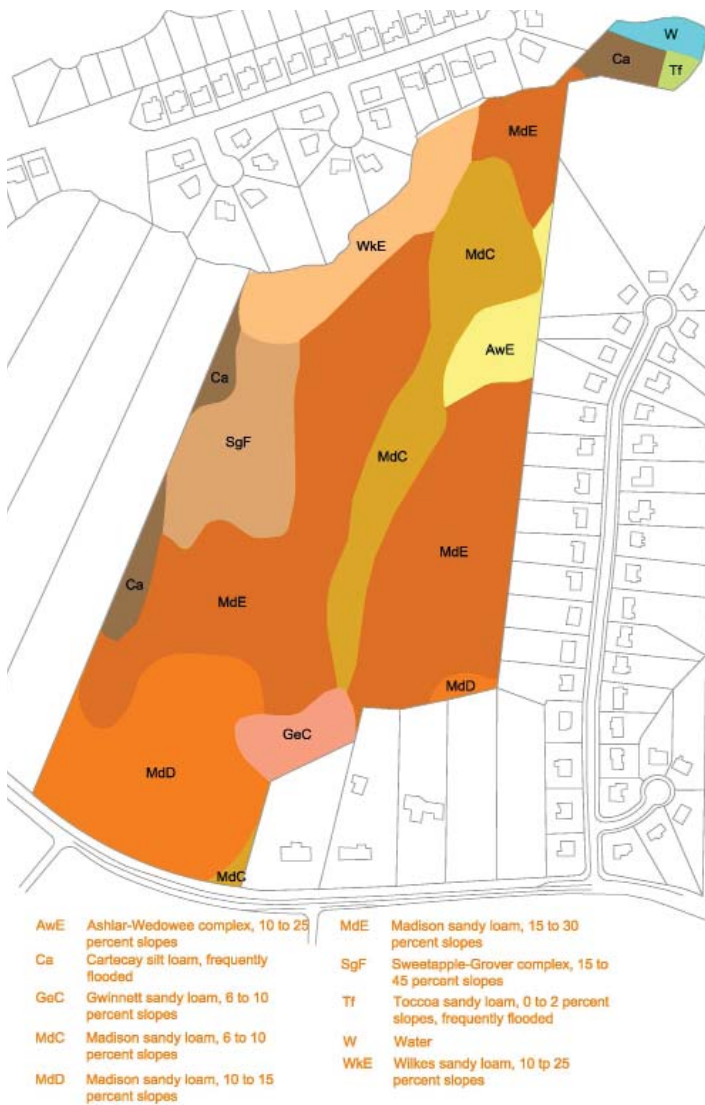
Site Inventory

Site analysis consists of maps that depict the site's topography, vegetation, soils, and riparian environment. All of the maps were created using geographic information provided by DeKalb County. These maps helped to facilitate discussion about the property's capacity for different types of programming options and, along with public meetings, helped the consultant come to a conclusion on the dedicated goals of the park and how it would be designed to meet the community's recreational needs.

Soils

The property contains 10 different soil map units. 73% of the soil falls within a category of Madison sandy loam. Madison sandy loam is moderately suited to urban and recreational uses due to slope. Challenges regarding slope will be overcome by good design and proper placement of buildings. Some of the other 27% of the soil on the property is not suitable for building because of very steep slopes resulting in areas that are frequently flooded during storm events and remain wet for extended periods.

- **AwE:** Ashlar-Wedowee complex, 10 to 25 percent slopes. Ashlar soils are found on hills and side slopes and are well drained. They are not well suited to urban and recreational uses due to slope. Also, shallow rock below these soils can limit the area's use. If the area has eroded, the soil may be more clay-like. This soil type is suitable as topsoil.
- **Ca:** Cartecay silt loam, frequently flooded. These areas are usually level with deep soil that does not drain well. Areas with this soil are usually wooded and are not considered suitable for urban and recreational purposes due to wetness and flooding. This soil type is suitable as topsoil.
- **GeC:** Gwinnett sandy loam, 6 to 10 percent slopes. A deep, well drained soil found at the top of ridgelines that has a deep root zone for planting. Moderately suited to urban and recreational uses due to slope. This soil is not suitable topsoil.
- **MdC:** Madison sandy loam, 6 to 10 percent slopes. A deep, well drained soil found on ridgelines and hill tops that has a deep root zone for planting. Moderately suited to urban and recreational uses due to slope. This soil is not suitable topsoil.
- **MdD:** Madison sandy loam, 10 to 15 percent slopes. A deep, well drained soil found on ridgelines and hill tops that has a deep root zone for planting. Moderately suited to urban and recreational uses due to slope. This soil is not suitable topsoil.
- **MdE:** Madison sandy loam, 15 to 30 percent slopes. A deep, well drained soil found on steep hillsides and uplands that has a deep root zone for planting. This soil is poorly suited to urban and recreational uses due to slope. This soil is not suitable topsoil.
- **SgF:** Sweetapple-Grover complex, 15 to 45 percent slopes. This soil is somewhat deep, very well drained, and found on hillsides and uplands. It is poorly suited to urban and recreational uses due to slope. Some rock may also be found 2 to 4 feet below the soil. This soil is not suitable topsoil.
- **Tf:** Toccoa sandy loam, 0 to 2 percent slopes, frequently flooded. A deep, well drained soil found on flood plains. The root zone is deep but the water table is high in these areas. This soil is poorly suited to recreational uses due to flooding, but is suitable as topsoil.
- **W:** Water.
- **WkE:** Wilkes sandy loam, 10 to 25 percent slopes. This soil type has a loamy surface layer and clayey subsoil. Soil is typically deep. This soil is poorly suited to urban uses because of wetness and depth of rock, but can be appropriate for recreational uses if the wetness factor is taken into account as well. This soil is not suitable topsoil.



Riparian Environment

The South River is an important amenity and is located at the northern boundary of the park site. It is accessible through a narrow section of property owned by DeKalb County. The river's edge is difficult to reach on foot and the park property owned by DeKalb County is quite narrow. Accessing the river from the park should become a priority for the master plan. It is apparent that viewing the river will only be possible from an elevated deck with access through the difficult and environmentally sensitive terrain via a boardwalk system. At a minimum, one small pedestrian bridge will be required to cross the existing narrow drainage canal. Access to the river for water recreation does not appear to likely due to questionable low water quality and lack of park facilities both up and down stream. Field observations indicate that the river does have aesthetic value and the potential for passive and active recreation opportunities. Unfortunately, two (2) cast iron sanitary main pipes cross the drainage ditch and river near the DeKalb County property boundary. There is also evidence of random dumping of tires, trash, and fill dirt that detract from the appearance of the river edge.

Engaging the community for the purpose of raising awareness of perceived environmental problems, organizing for cleanup efforts and fundraising for recreation facilities is a time tested method for improving park and recreation projects. It may be in the interest of DeKalb County to promote river clean up to add value to the 46 Acre Park. There is little doubt the riparian environment of the 46 Acre Park has been degraded. Invasive plant Chinese

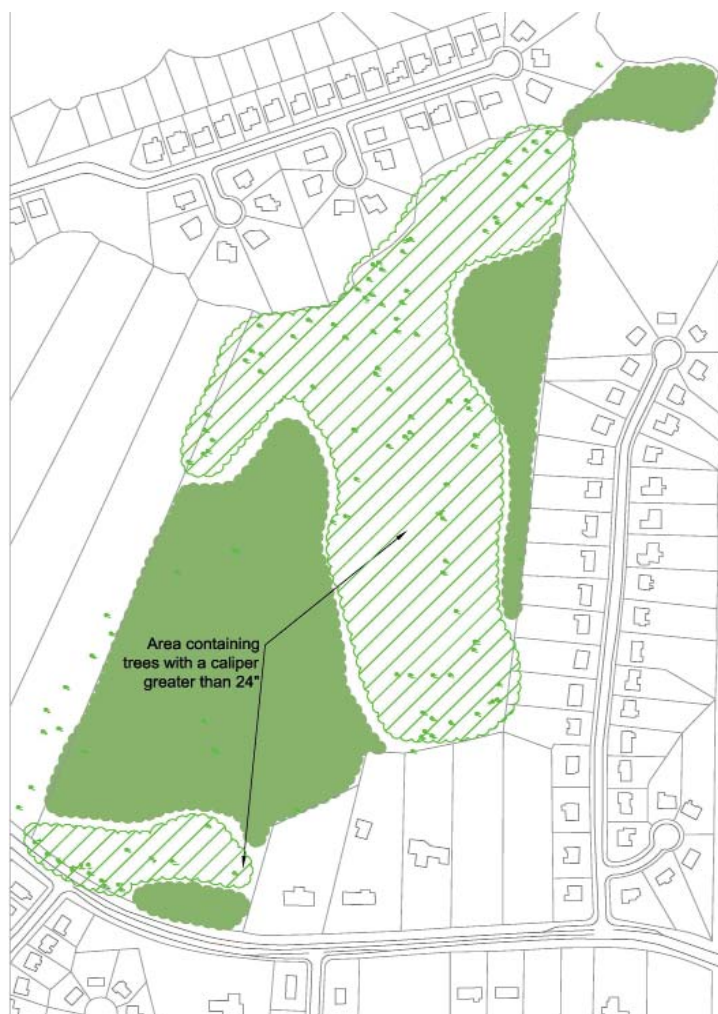
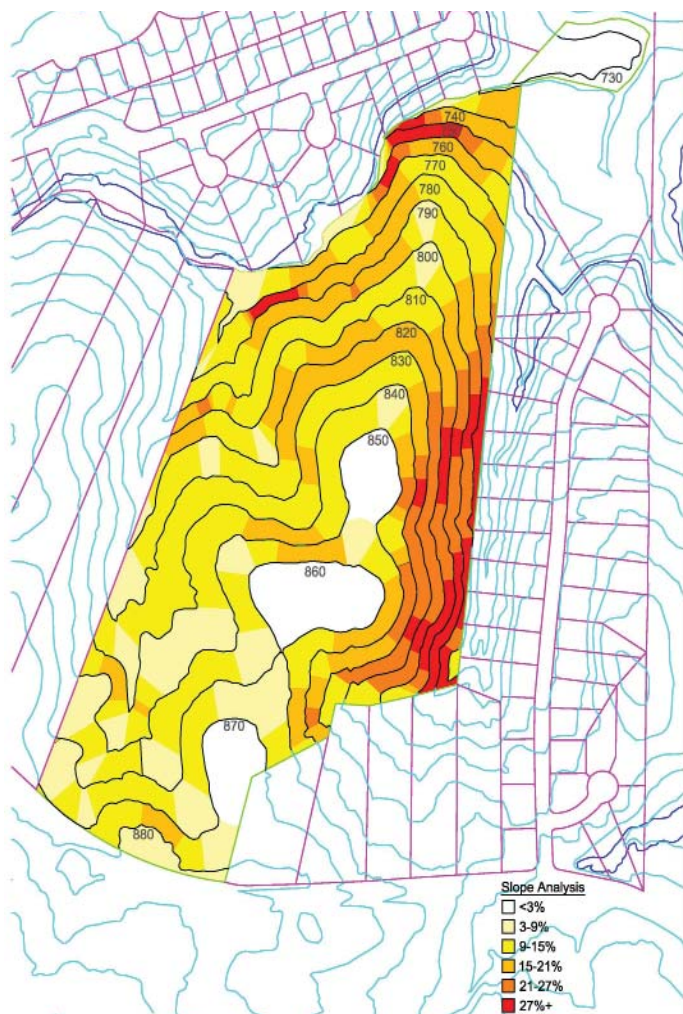
Privet was observed and there was evidence of erosion along the river bank. According to the South River Watershed Alliance (SRWA), invasive Chinese Privet has overtaken Georgia native riparian plants including Rivercane (*Arundinaria*). SRWA research indicates that native Rivercane “is three times more effective at reducing harmful pollutants from agricultural runoff than a typical forested buffer along waterways. Canebrakes are highly effective at reducing erosion with their matted root structures called rhizomes. The tough, flexible canes filter and deposit organic matter from flood waters rebuilding soil quality. Canebrake restoration following privet removal can effectively stabilize soils, staunch intrusions of exotic plants, and increase overall ecosystem function.” SRWA has organized several events using volunteers to remove the invasive Privet and replace it with Rivercane to improve water quality.

Topography

The topography of the site is dominated by a ridgeline that runs down the middle of the property. With a more broad area at the top of the ridge and steep slopes along the side of the property, buildable area is limited to the top of the ridgeline located at the front of the property closest to River Road. The site appears to have once been farm land and has manmade dips in the topography on the south side of the stream. The steepest area can be found on the east side, running into a valley that separates the property from the adjacent neighborhood.

Vegetation/Signature Trees Mapping

Though the site may have once been farm land, it is completely forested today. Hardwoods are prevalent on site including trees that exceed 24 inches in caliper. These larger oak, poplar, maple, and sweetgum trees can be found at the bottom of the ridge along the stream. Also along the stream is a thick brush area mainly comprised of privet.



Site Analysis

Access Management

The main park entrance will be from River Road and preferably directly across from one of the existing side entrances connecting to River Road. It is advisable to provide a full intersection at the park entrance. The two possible intersecting streets across from the park are Ridgetop Drive near the center of the park site and Catalpa Park, which is located towards the eastern portion of the park site.

An entrance across from Catalpa Park is the better location based on River Road geometry being tangent in this area. A new park entrance across from Catalpa Park would form a simple 90-degree intersection with River Road. The intersection could be expanded to provide a right turn lane from the east and a left turn lane from the west for safe turning movements into the park. Also, this section of River Road is fairly flat, which makes the turning movements easier by not having downhill grades. The disadvantage of this location is that it requires property acquisition on the north side of River Road. However, if this area becomes the preferred location for the main park entrance and facilities buildings, then the property acquisition provides a dual benefit.

An entrance across from Ridgetop Drive would also work well creating a simple 90-degree intersection with River Road for the new park entrance. This intersection would be somewhat more complex since River Road curves to the left, east of Ridgetop Drive. The intersection could also be expanded to provide a right turn lane from the east and left turn lane from the west. In conjunction with the turn lanes, trees would be removed in front of the new park to provide for proper lines of sight along River Road. Creating turn lanes for a new intersection at the park entrance can be accomplished within the existing right-of-way of River Road. Any additional right-of-way needed for the right turn lanes can be part of the new park property or the property acquisitions across from Catalpa Park.



Connectivity to Other Facilities

The location of the 46-Acre Park presents a new opportunity to connect two other DeKalb County parks, County Line Park and Chapel Park, through property owned by DeKalb County. A portion of land along the South River is under the operation of the county's sanitation department and could potentially allow park visitors to travel from site to site without getting into their automobiles. The design team has illustrated a proposed ADA trail extending through the South River riparian environment utilizing a combination of boardwalks and compacted gravel trails.

Opportunities and Constraints

Level of Service Standards

Analysis of existing parks, open space, trails, and recreation systems are often conducted in order to try and determine how the systems are serving the public. Level of Service standards (LOS) have been defined for parks and recre-

ation systems that relate project location criteria to a particular recreational use. LOS standards guide the capacity of various components and facilities that make up parks and recreation facilities to meet the needs of the public. This is often expressed in terms of the size or quantity of a given facility per unit of population. In order to standardize parks and recreation planning, universities, agencies, and parks and recreation professional have long been looking for a way to benchmark and provide “national standards” for how much acreage, how many ball fields, pools, playgrounds, and other facilities are required. The National Recreation and Parks Association (NRPA) have long sought to provide guidelines for standardizing recreation facility requirements. Several research documents have been published dating back to early in the twentieth century culminating with “Recreation, Park and Open Spaces Standards and Guidelines” by Roger Lancaster is 1983. Since that time, various publications have updated and expanded upon possible “standards,” several of which have been published by NRPA.

For the purpose of this Master Plan, national standards were referenced as “norms” for possible programming elements for the 46-Acre Park. These are compared with the analysis from the DeKalb County 2010-2020 Master Plan for Parks and Recreation. Both provide accurate information and are further refined through public involve-



ment meetings performed as part of this Master Plan study. Cost is the final consideration in determining the programming elements.

Taken together and through averaging techniques, a park program can be developed that accurately reflects park and recreation needs for the 46-Acre Park. As the 46-Acre Park lies between a community and neighborhood park, each is listed in the table below.

Community Park	Serves 2 or more neighborhoods (3 miles radius), served by arterial and collector streets	Active/passive recreation: soccer, baseball/softball, nature paths, hard courts, picnicing, open shelters, play structures, restrooms.
Neighborhood Park	Recreation/social focus, informal active and reflective recreation for all ages	Active recreation: children's playground & hard court games. Passive recreation: connecting trails, seating structures, & open grassed play area.

The complete list of possible park programs and amenities for the 46-Acre Park includes:

Community Center:

- Gymnasium
- Activity Rooms
- Swimming Pool

Active Recreation:

- Basketball/Multi-Use Courts
- Children's Play Structure
- Fit Trail System

Passive Recreation:

- Sheltered Picnicking
- Nature Trails/Boardwalks/Overlooks
- Observation Tower
- Open Grassed Play Areas
- Amphitheater

Programming-Related Elements:

- Vehicular Parking/Drop-off Area
- Community Center/Interpretive Building
- Access Management/Crosswalks/Traffic Control
- Bicycle Parking
- Area Lighting
- Interpretive Displays & Wayfinding Signs
- Connectivity to other park facilities
- Acquisition Opportunities
- Amphitheater





Chapter 3: Master Plan

Alternative Conceptual Master Plans

Master Plan Concept A

Concept A has the largest and most extensive set of amenities and illustrates where they fit on the 46 acre site.



- ① 230'x150' Community Center (35,000 sq ft)
- ② Playground
- ③ 75'x75' large picnic structure (5,625 sq ft)
- ④ (4) 20'x20' small picnic structures (400 sq ft/structure)
- ⑤ Track and Field
- ⑥ 4 level Amphitheater

- ⑦ View Tower
- ⑧ ADA Connectivity Path
- ⑨ Walking/Running Trails
- ⑩ Boardwalk/Overlook
- ⑪ Pedestrian Bridge
- ⑫ Bioretention

Master Plan Concept B

Concept B shows a plan similar to 'A' but with amenities that fall into a mid-range size. Locations of amenities change to some degree based on their size and the site's topography.



- ① 125'x80' Community Center (20,000 sq ft)
- ② Playground
- ③ 70'x70' large picnic structure (4,900 sq ft)
- ④ (4) 20'x20' small picnic structures (400 sq ft/structure)
- ⑤ Walking Track and Field
- ⑥ 2 level Amphitheater

- ⑦ View Tower
- ⑧ ADA Connectivity Path
- ⑨ Walking/Running Trails
- ⑩ Boardwalk/Overlook
- ⑪ Pedestrian Bridge
- ⑫ Bioretention

Master Plan Concept C

Concept C shows a plan similar to 'A' and 'B' but with amenities that are less elaborate than the first two plans. The smaller sized amenities allows them to fit at different locations.

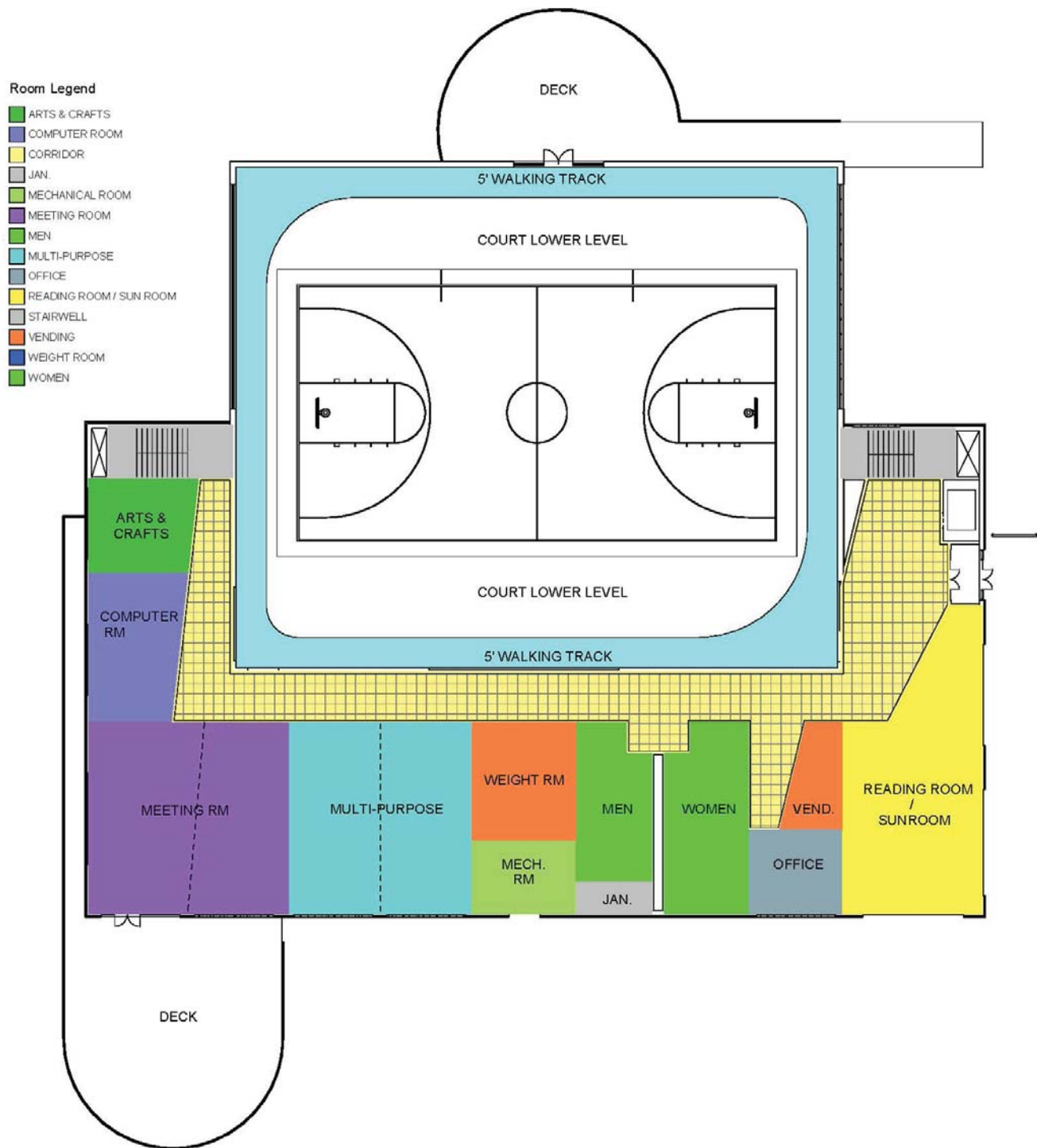


- | | |
|---|--------------------------|
| ① 80'x60' Community Center (10,000 sq ft) | ⑥ View Tower |
| ② 70'x70' large picnic structure (4,900 sq ft) | ⑦ ADA Connectivity Path |
| ③ (4) 20'x20' small picnic structures (400 sq ft/structure) | ⑧ Walking/Running Trails |
| ④ Walking Track | ⑨ Boardwalk/Overlook |
| ⑤ 1 level Amphitheater | ⑩ Pedestrian Bridge |
| | ⑪ Bioretention |

Architectural Elements

Community Center

The new 35,000 SF Community Center for DeKalb County's 46 Acre Park is finished with traditional brick and metal panels. The brick is intended to adapt the new facility to the existing community and the colorful metal panels are to add playful character to the outdoor green space. Sustainable design is incorporated into the structure by adapting the building to the existing site, water and energy efficient systems/components, indoor environmental quality, selection of finish materials, reused/reclaimed materials, and recycled construction waste.



Front View from River Road



West View



Top Front View from River Road



East View



Community Center Decks

The new Community Center for DeKalb County's 46 Acre Park will include two outdoor decks, one on the west side of the building and one on the east side of the building. Both decks will be constructed out of LEED approved deck product.

West Side Deck



West Side Deck from the Rear



East Side Deck

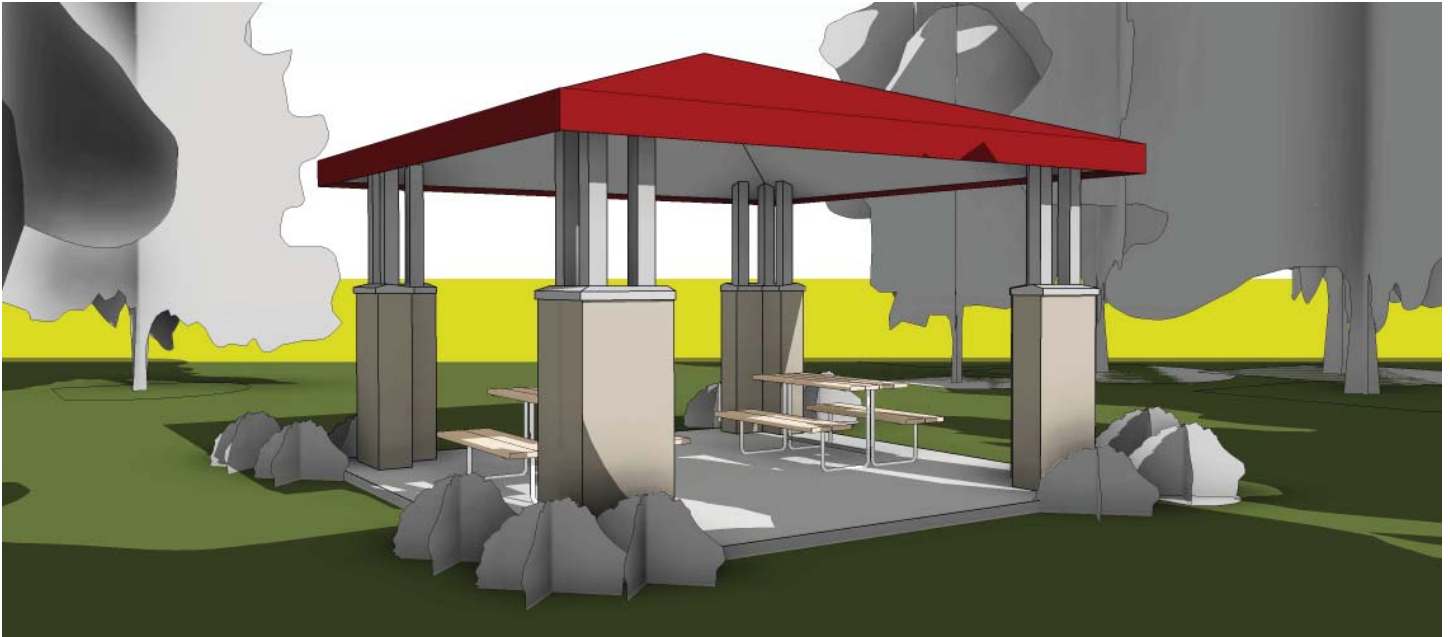


East Side Deck from the Front of the Community Center



Large and Small Picnic Shelters

The Large Picnic shelter is 5,625 SF and is 8 sided octagon in shape. The Small Picnic shelter is 400 SF and is square in shape. These picnic shelters can be found along the walking path on the site. Each are traditional in design and are constructed with sustainable materials. The finishes on the shelters are stacked stone columns and reclaimed wood materials.



Final Master Plan

The final plan was created by the consultant team after a review of the data collected at the public meetings, review of comments from community members, and study of the natural features of the site. At the public meetings, residents discussed their vision for their community and the kinds of amenities and programs they believed would help make Ellenwood a better place to work, live, and grow. Such park amenities and elements focused on physical activity, social interaction, Senior programming, and a community building that would allow residents to meet throughout the year. The consultant team talked with residents, conducted an interactive survey to garner information on what park elements were the most important to residents, presented different park amenity and layout concepts, and received input on the different park concepts before creating a final plan. The final plan was presented to the public and to the Commissioner Larry Johnson, who was in attendance, at the final public meeting on April 21, 2015.



- | | |
|---|---------------------------------|
| ① 230'x150' Community Center (35,000 sq ft) | ⑧ ADA Connectivity Path |
| ② Playground and Multi-Use Court | ⑨ Walking/Running Trails |
| ③ 75'x75' large picnic structure (5,625 sq ft) | ⑩ Boardwalk/Overlook |
| ④ (5) 20'x20' small picnic structures (400 sq ft/structure) | ⑪ Pedestrian Bridge |
| ⑤ ADA Walking Trail and Field & Exercise Stations | ⑫ Bioretention |
| ⑥ 3 level Amphitheater | ⑬ Pedestrian Crosswalk |
| ⑦ View Tower | ⑭ Paver Block in Parking Stalls |
| | ⑮ Kiosk |

Landscape Architecture Elements

Amphitheater

A three leveled amphitheater will be located along the Connectivity Path on the left side of the property where the site's downward sloping topography lends itself to the terracing of an amphitheater. At the base of the amphitheater will be a stage to create a space suitable to performances and other presentations for the community.

Boardwalk/Overlook

The Boardwalk will be a part of the Connectivity Path that meets ADA requirements, allowing the park visitor to cross over water-logged soil and a steep slope and will also connect to the Overlook, allowing the visitor to have access to the view of the river.

Walking/Running Trails

These trails will be cleared gravel/compressed dirt trails that run up and down the changing topography of the site. These trails will not meet ADA requirements are best suited to individuals wishing to walk/run a more strenuous path.

Connectivity Path

The Connectivity Path will be an 8-foot wide permanent path that stretches the length of the park site connecting the DeKalb County-owned property across the South River with Couty Line Park across River Road. This path will meet ADA requirements, allowing all park visitors the opportunity to move between the different sites.

Amphitheater - Example



Boardwalk/Overlook - Example



Biking/Hiking Trail - Example



ADA Accessible Paved Trail - Example



Children's Playground

The Children's Playground will be located next to the Multi-Use Court and the Community Center for easy access. There are two play structures planned: a 2-6 year olds structure and a 6-12 year olds structure. Trees will be planted near the playground area to provide shade. Playground equipment will be prefabricated and seating areas will be located on the edge of the playground area for parents.

Open Field

Behind the Community Center the Open Field for unstructured play, sports, and other activities will be found within a looped walking/running path that is also connected to the trails. This specific looped walking/running path and the paths leading to it from the Community Center will be permanent paths that meet ADA requirements.

Adult Fitness Trail

Also within and along the looped walking/running path will be Adult Fitness Stations. These will be small areas with prefabricated outdoor exercise equipment that is suitable for the physical activity of Seniors.

Multi-Use Court

Next to the playground and community center will be a multi-use court that could be used for a number activities from basketball to four-square. This space will be fenced to contain activities and prevent them from spilling down the sloped terrain around the court.

Children's Playground - Example



Open Field - Example



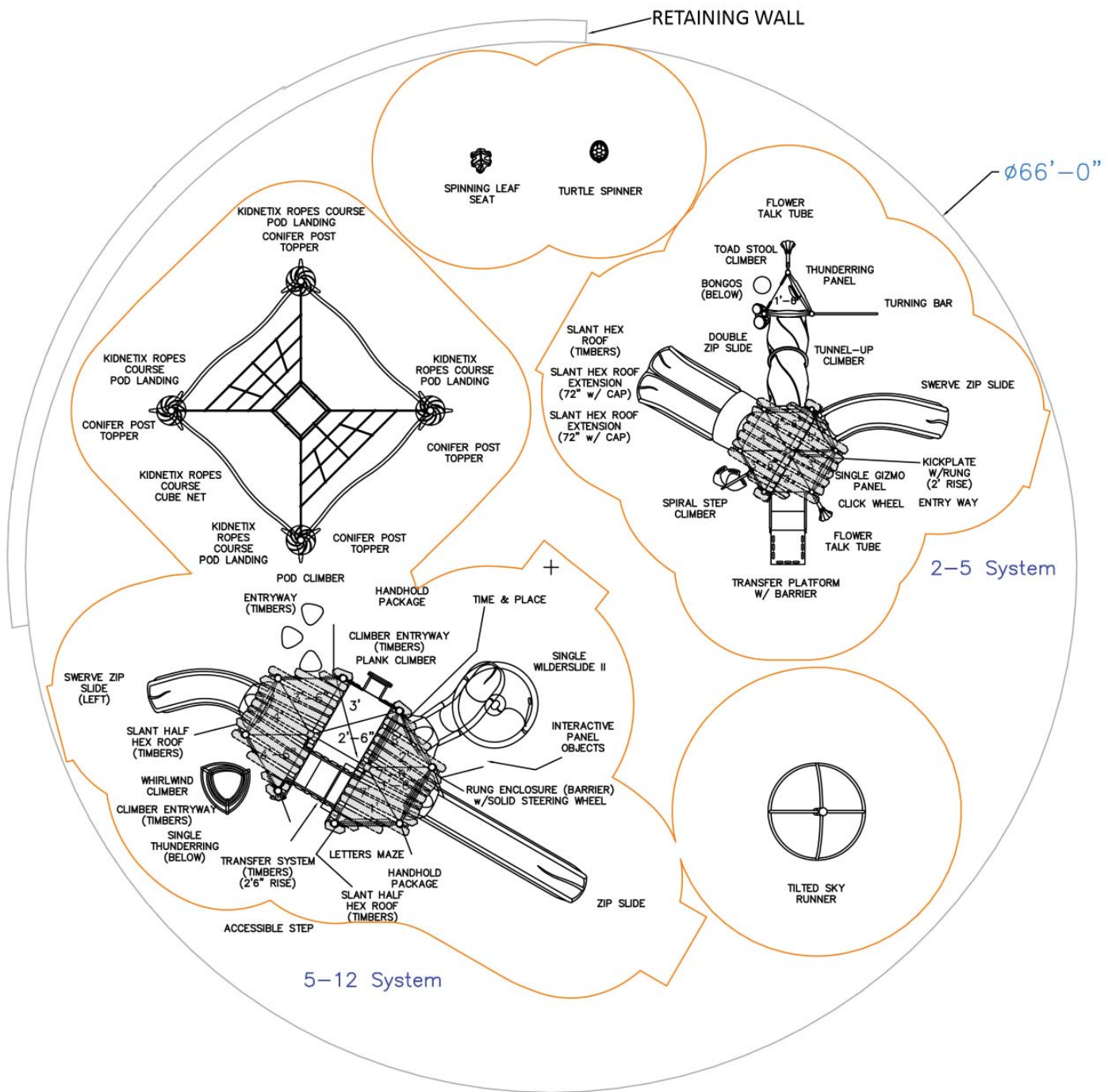
Adult Fitness Trail - Example



Multi-Use Court - Example



Children's Playground - Example Layout



Bioretention Pond

The Bioretention Pond is located at the front of the property on the left side of the entrance and is made up of three separate pond areas that are connected across the varying topography. The ponds are each on a different slope, which assists water in moving from one area to the next as it slowly drains back into the natural system. The ponds will be edged with rock, which will be visible during dry periods.

Parking

The entrance to 46 Acre Park will line up with Ridgetop Drive off of River Road. The parking area located at the front of the property will adequately consist of both standard and handicap parking spaces. The entrance and exit to the park will be separated by a curbed median to allow for clear direction within the parking area. In the middle

of the parking area, an island will collect rainwater runoff and behave as bioretention. The standard parking stalls will have permeable paver block to reduce stormwater runoff as much as possible. Additionally, the parking area will also include a drop-off at the entrance to the community center.

Observation Tower

Located behind the Open Field at the highest point on the site, the View Tower will be a wooden structure that will allow park visitors to look over the tree line and see the natural beauty of the area around them. Stairs will allow the visitors to reach different heights of the tower. Visitors will also be able to reach the tower from several different directions by way of the trail system.

Pedestrian Bridge

At the rear of the property, going over the South River will be a pedestrian bridge to connect the 46 Acre Park with property owned by DeKalb County that eventually connects to Chapel Park. The pedestrian bridge will allow park visitors to cross the river and give them the chance to see the river area around them.

Bioretention Pond - Example



Parking - Example



Observation Tower - Example



Pedestrian Bridge - Example



Engineering Elements

Sustainability & LEED

The TYLI Team believes in design solutions that are restorative, regenerative, and productive; today's sustainable park and recreation design must go far beyond mere impact-neutrality. We believe in sustainable solutions that find a creative tension between environmental, social, and aesthetic needs. We believe that beauty and livability are key aspects of lasting, sustainable projects. Decisions regarding sustainability at the master plan design level

are keys to achieving beauty and livability and are equally important to those made at the detailed design level. To that end, and supporting our design processes at all scales, our team employs LEED concepts in all of our park and recreation design work from conceptual design through implementation. We continually explore techniques to combine aesthetics, infrastructure, and functionality to achieve goals for sustainability and view park design as a “longer lifecycle” projects including use of low-maintenance and locally derived/recycled materials, bioretention storm water treatment, comfortable and shaded outdoor spaces and connections, and elements to improve water quality and reduce carbon emissions and energy costs. Finally, our team believes that sustainability is necessary on a regional level and must be cost effective to maintain over time.

Landscape Ecology and Resiliency

The landscape ecology design approach emphasizes the interrelationship between intensely designed landscape patterns and localized ecological and socioeconomic processes on different scales for park and recreation projects. Our approach integrates native ecology with parks design. We feel that creating an ecological-based design will strengthen the 46 Acre Park environment as a whole. This is especially vital when one considers the possibility of expanding the park system to include County Line Park and Chapel Hill Park across the South River. To be applicable to the existing conceptual master plan, such a design must be based on spatially relationships between park uses and ecosystem patterns of the park site. The concept of combining ecosystem networks and development patterns is advisable for linking ecological processes to ecosystem pattern features in the Ellenwood neighborhood and surrounding areas of DeKalb County. Achieving the objectives of the 46 Acre Park Master Plan project will require a balance between consideration of the broader patterns of native ecology and current/future park implementation efforts. The greatest chance for success rests in the ability to find “win-win” scenarios in which both hardscape park and recreation systems and natural environments coexist with biodiversity benefits in both systems that fits contextually within DeKalb County.

Bioretention System

The 46 Acre Park Master Plan provides an opportunity to incorporate Low Impact Design (LID) features like bio-retention and rain gardens to manage storm water, provide water quality and improve aesthetics of the storm water system. Storm water attenuation will be provided with a series of ponds each flowing or cascading into the next. This discharge will be filtered or percolate into the ground before reaching the South River.

Benefits of bioretention and rain garden systems for the project:

- Fairly inexpensive to install
- Provides water quality treatment
- Provides attenuation of the runoff
- Increases biodiversity in an urban setting
- Improves the aesthetics of the streetscape

Utility Systems

At the front of the property, in the right-of-way, are existing utilities that can be accessed for use on the site. On the north side of River Road, in the right-of-way, is a 6” AC water line and 12” ductile iron water line. On the south side of River Road, in the right-of-way, is an 8” sanitary sewer line.

Appendix

Public Involvement

T. Y. LIN INTERNATIONAL MEETING NOTES

Subject: First Public Meeting
Client: DeKalb County Department of Recreation, Parks and Cultural Affairs
Project: 46 Acre Neighborhood Park Master Plan Project #: 458592.00
Meeting Date: February 26, 2015 Meeting Location: Poplar Springs Baptist Church
Notes by: Claire Clack

Presentation/Meeting Description:

The PowerPoint delivered by David Gjertson presented information on the master plan design process, how the consultants would work through the project, what the park program development would focus on, different elements of passive and active recreation that could possibly be included in the park, and a few challenges posed by the site itself. The presentation included images that showed the natural features of the site including topography, vegetation, hydrology, and soil analysis.

Following the presentation, members of the community asked a number of questions, made comments, and expressed their thoughts on the park. Topics discussed can be found below.

The final part of the meeting actively engaged the community members in attendance. They were given stickers labeled 1-4 and asked to place them on boards at the front of the room that depicted potential site amenities. They were asked to place the stickers on the 4 amenities that they felt were the most important, with 1 being the most important, 2 the next amenity of importance, and so on. DeKalb County representatives and consultants discussed the project additionally and answered questions with community members during this time. After this time of active interaction, the meeting was adjourned.

Attendees:

- Marvin F. Billups, Jr., DeKalb County
- Vineet Nagarkar, DeKalb County
- Edward Venson, DeKalb County
- Carol Underwood, DeKalb County
- David Gjertson, T.Y. Lin International
- Coy Cooper, Brown Design Group
- Claire Clack, T.Y. Lin International

Topics Discussed:

- Activities for seniors (programming for the park)
- Activities for teens as well
- Active recreation
- A community center/recreation center (essentially a space for programs)
- Paths for walking
- Community has received promises for parks/recreation centers in the past- other studies have been conducted- community members expressed hope that this master plan would be put into action
- Additional space/parking for Ellenwood Day Festival
- paved multi-use trail

- “Playgrown” (a playground for seniors)
- demographics of the area and what age groups would have needs that should be met by the park programming
- Traffic- vehicles often drive fast down River Road. Community members expressed a desire that traffic be slowed in some way.

Interactive Survey Results:

	1	2	3	4	Total	Notes Added to Post-its
Restroom Building	3	1	5	2	11	
Boardwalk/Trails	3	9	0	2	14	
Community Center/Gym	18	6	5	4	33	Community Center and Seniors - Sidewalks for safety
Interpretive Signage	0	0	0	2	2	Showing Community History
Gazebo	0	0	0	4	4	
Canopy Walk/Ropes Course	2	5	0	0	7	
Public Art	0	2	1	1	3	
Basketball/Multi-Use Courts	1	2	3	2	8	Basketball and tennis courts
Children’s Playground	1	2	8	6	17	
Fit Trail System	0	1	2	4	7	
Amphitheater	0	4	2	2	8	
Controlled Crosswalk	0	0	2	1	3	
River Pedestrian Bridge	1	2	1	2	6	
Volleyball Court	0	0	0	0	0	
Picnic Shelter	0	3	6	4	13	
Observation Deck	0	0	0	0	0	
Senior Programs	8	1	2	2	13	Inside basketball, inside walking trail, game room, community center

T.Y. LIN INTERNATIONAL MEETING NOTES

Subject: Second Public Meeting
 Client: DeKalb County Department of Recreation, Parks and Cultural Affairs
 Project: 46 Acre Neighborhood Park Master Plan Project #: 458592.00
 Meeting Date: March 31, 2015 Meeting Location: Fire Station #4
 Notes by: Claire Clack

Presentation/Meeting Description:

David Gjertson began the meeting by delivering a PowerPoint presentation that started with a brief overview of the first public meeting and what was gleaned from that discussion. Data collected at the first public meeting showed that community members were most focused on two amenities: a community center and children’s play areas. Other amenities included in the concepts were picnic shelters, an amphitheater, connectivity to nearby parks, adequate parking, crosswalks/traffic control, river access, an observation tower, and boardwalks and trails complete with ADA “Senior Fit” elements. Three different park concepts were presented that showed different levels of park amenities, including 3 community centers of different sizes. Images in the presentation included

examples of park amenities and community center concept drawings from Project Architect Coy Cooper, Jr.

Following the presentation was a question and answer session in which Commissioner Larry Johnson, DeKalb County Project Manager Vineet Nagarkar, and Consultant Project Manager David Gjertson all participated. Topics of discussion can be found below. After the question and answer session the meeting was officially adjourned and present community members were given the opportunity to walk about and look at the presentation materials.

Attendees:

- Larry Johnson, Commissioner, DeKalb County
- Vineet Nagarkar, DeKalb County
- Edward Venson, DeKalb County
- Carol Underwood, DeKalb County
- David Gjertson, T.Y. Lin International
- Claire Clack, T.Y. Lin International

Topics Discussed:

- A swimming pool
- Flexibility of the community center building (wall partitions to allow for rooms of different sizes)
- “Senior Fit” elements along the ADA path
- The necessity of curb cuts to meet ADA requirements
- Park safety
- Where park funding will come from; how community members can get involved; who they can talk to to promote the funding of the park; fundraising.
- Traffic and pedestrian safety on River Road
- The opportunity for members of the community to be selected for the construction of the park

T.Y. LIN INTERNATIONAL MEETING NOTES

Subject: Workshop #3 – 46 Acre Park, DeKalb County (Ellenwood)
Client: DeKalb County Department of Recreation, Parks and Cultural Affairs
Project: 46 Acre Neighborhood Park Master Plan Project #: 458592.00
Meeting Date: April 21, 2015 Meeting Location: Narvie J. Harris Elementary School
Notes by: David Gjertson

Presentation/Meeting Description:

The presentation began with an introduction from Commissioner Larry Johnson thanking residents for attending and showing support for the park master plan. He briefly discussed funding options and the importance of the community staying involved with the project after formal submittal of the master plan documents. A PowerPoint presentation was provided by David Gjertson that started with a brief overview of the second public meeting. Data collected at the second public meeting indicated that community members were most focused on the Community Center and the programs and activities that could be offered in and around the building. The project team presented the Final Master Plan site design and conceptual building plans of the community center based on comments from the two (2) previous public meetings. The park master plan includes the following features; 25,000 S.F. community center, parking for approximately 150 cars including 15 handicap spaces near the front door, one (1) large group picnic shelter (75' x 75'), five (5) small family picnic shelters, ½ court basketball and multi-use play area, large area for children's play structure for various age groups, rustic amphitheater with area for a stage, overlook

tower, ADA trail extending from River Road to the South River including conceptual location for a bridge over the river, connectivity to County Line Park and Chapel Park, crosswalk/traffic control at River Road, boardwalks and trails complete with ADA “Senior Fit” elements surrounding a grassed play area near the center of the site, various trails for hiking and bicycling and retention area with “tiered” ponds and rock waterfalls. Other display boards and images in the presentation included examples of park amenities and community center architectural concept drawings from Project Architect Coy Cooper, Jr.

Project Manager Vineet Nagarkar, Consultant Project Manager David Gjertson and Deputy Director Marvin Billups, Jr. participated in the question and answer session at the conclusion of the presentation. Topics of discussion can be found below. After the question and answer session the meeting was officially adjourned and present community members were given the opportunity to walk about and look at the presentation materials.

Attendees:

- Larry Johnson, Commissioner, DeKalb County
- Marvin Billups, Jr., Deputy Director of Recreations, Parks & cultural Affairs
- Vineet Nagarkar, DeKalb County
- Edward Venson, DeKalb County
- Carol Underwood, DeKalb County
- David Gjertson, T.Y. Lin International
- Coy Cooper, Brown Design Group

Topics Discussed:

- Provide a swimming pool, none was indicated on the plans; it was explained that the cost is very high and it was not an item high on the list of preferred amenities. Mr. Gjertson was corrected in that a swimming pool had been discussed at the previous workshops but no graphics were provided.
- Ice skating rink was suggested by Commissioner Johnson
- Design flexibility of the community center building was discussed; how much space was provided and concern was expressed that the community center as provided did not meet the needs of the community. Clarification was provided and each room area was described in detail.
- Safe and accessible connectivity across River Road was discussed and it was clarified that the master plan will clearly illustrate decal/Accel lanes and a pedestrian actuated crosswalk signal. Additional signage will be provided from each direction (east & west) to alert drivers of the crosswalk and pedestrian traffic.
- Park funding was discussed at length by Marvin Billups, Jr., Deputy Director of Recreations, Parks & Cultural Affairs explaining how valuable the master plan could be in obtaining the necessary funding. Also, how community members can get involved; who they can talk to promote the funding of the park; fundraising.
- Maintain enthusiasm in the community for the design of the park to facilitate implementation

46 Acre Park - Cost Opinion													
	Phase 1				Phase 2				Phase 3				ALL PHASES
	Quantity	Unit	Unit Cost	TOTAL	Quantity	Unit	Unit Cost	TOTAL	Quantity	Unit	Unit Cost	TOTAL	
Site Preparation													
Vegetative Clear & Grub	10	AC	\$4,500.00	\$45,000	5	AC	\$4,500.00	\$22,500	5	AC	\$4,500.00	\$22,500	\$90,000
Tree Protection Fencing	500	LF	\$2.00	\$1,000	250	LF	\$2.00	\$500	250	LF	\$2.00	\$500	\$2,000
Erosion Control/BMP	4000	LF	\$2.00	\$8,000	500	LF	\$2.00	\$1,000	1500	LF	\$2.00	\$3,000	\$12,000
Site Work													
Site Grading													
Rough Grading (Parking & Retention)	1	LS		\$75,000		LS				LS			\$75,000
Rough Grading (Open Play, Trails)		LS			1	LS		\$25,000		LS			\$25,000
Rough Grading (Building Pads)		LS				LS			1	LS		\$25,000	\$25,000
Retaining Wall Construction	350	LF	\$175.00	\$61,250	500	LF	175.00	\$87,500	150	LF	\$175.00	\$26,250	\$175,000
Storm Water Management													
Deleterious Materials Removal	1	LS	\$9,000.00	\$15,000	1	LS	5000.00	\$5,000	1	LS	\$2,500.00	\$2,500	\$22,500
BMP Retention/Rock Setting	1	LS	\$65,000.00	\$65,000	0	LS		\$-		LS		\$-	\$65,000
BMP Bio-Retention (Parking Areas)	0	SF	\$10.00	\$80,000	0	SF	10.00	\$-		SF	\$10.00	\$10	\$80,010
Piping System	2500	LF	\$15.00	\$37,500	500	LF	15.00	\$7,500	1500	LF	\$15.00	\$22,500	\$67,500
Drainage Structures	1	LS		\$5,000	1	LS		\$2,500		LS		\$2,500	\$10,000
Vehicular Use Areas													
Asphalt Paving Parking	40330	SF	\$1.75	\$70,578	0	SF		\$-		SF		\$-	\$70,578
Asphalt Accel/Decel Lanes	8400	SF	\$1.75	\$14,700	0	SF		\$-		SF		\$-	\$14,700
Concrete Curb	3720	LF	\$12.00	\$44,640	0	LF		\$-		LF		\$-	\$44,640
Concrete Paving	6360	SF	\$3.00	\$19,080	0	SF		\$-		SF		\$-	\$19,080
Specialized Paving	1260	SF	\$6.50	\$8,190	0	SF		\$-		SF		\$-	\$8,190
Permeable Paving Parking	22330	SF	\$6.50	\$145,145	0	SF		\$-		SF		\$-	\$145,145
Site Electrical													
Vehicular Use Lighting	1	LS	\$25,000	\$25,000	0			\$-				\$-	\$25,000
Pedestrian Lighting	0	LS		\$-	0			\$-	1	LS	20000.00	\$20,000	\$20,000
Solar Applications for Lighting	0	LS		\$-	1	LS	30000.00	\$30,000				\$-	\$30,000
Site Utilities													
Water System (incl meters, pipe, etc.)		LS		\$-		LS		\$-	1	LS	8500.00	\$8,500	\$8,500
Sanitary Sewer Service		LS		\$-		LS		\$-	1	LS	10000.00	\$10,000	\$10,000
Site Structures													
Community Center Building		SF		\$-		SF		\$-	35,000	SF	170.00	\$5,950,000	\$5,950,000
Community Center Outdoor Decks		SF		\$-		SF		\$-	1500	SF	50.00	\$75,000	\$75,000
Large Picnic Shelter (75' x 75')		EA		\$-	1	EA	75000.00	\$75,000		EA		\$-	\$75,000
Small Picnic Shelter (20' x 20')		EA		\$-	5	EA	25000.00	\$125,000		EA		\$-	\$125,000

Observation Tower		EA		\$-	1	EA	75000.00	\$75,000		EA		\$-	\$75,000
Bridge		EA		\$-		EA		\$-	1	EA	150000.00	\$150,000	\$150,000
Boardwalk/Overlook System		LF		\$-	3000	SF	100.00	\$300,000	0	LF		\$-	\$300,000
Park Amenities													
Basketball/Multi-Use Court (All)		LS		\$-	1	LS	25000.00	\$25,000		LS		\$-	\$25,000
Play Structure (ages 2 - 6)	1	EA	\$25,000.00	\$25,000	0	EA		\$-		EA		\$-	\$25,000
Play Structure (Ages 7 - 12)	1	EA	\$50,000.00	\$50,000	0	EA		\$-		EA		\$-	\$50,000
Play Structure Walls & Surface	1	LS	\$87,000.00	\$87,000	0	LS		\$-		LS		\$-	\$87,000
10' Asphalt ADA Trail	62000	SF	\$1.75	\$108,500	0	SF		\$-		SF		\$-	\$108,500
4' Hiking./Biking Unpaved Trail		SF		\$-	25760	SF	0.55	\$14,168		SF		\$-	\$14,168
Amphitheater		LS		\$-		LS		\$-	1	LS		\$80,250	\$80,250
Fit Trail (Adults 9 Stations)		LS		\$-	1	LS	50000.00	\$50,000		LS		\$-	\$50,000
Benches	10	EA	\$2,000.00	\$20,000	0	EA	2000.00	\$-	5	EA	2500.00	\$12,500	\$32,500
Trash Receptacles	5	EA	\$1,000.00	\$5,000	0	EA		\$-	3	EA	1000.00	\$3,000	\$8,000
Traffic Bollards	0	EA		\$-	0	EA		\$-	6	EA	500.00	\$3,000	\$3,000
Bicycle Racks	4	EA	\$3,500.00	\$14,000	2	EA	3500.00	\$7,000	1	EA	3500.00	\$3,500	\$24,500
Water Fountain	2	EA	\$2,500.00	\$5,000	0	EA		\$-	2	EA	2500.00	\$5,000	\$10,000
Canine Drinking Fountain	1	EA	\$2,500.00	\$2,500	0	EA		\$-	1	EA	2500.00	\$2,500	\$5,000
Picnic Tables	0	EA		\$-	15	EA	500.00	\$7,500		EA		\$-	\$7,500
Landscape													
Canopy Trees	50	EA	\$500.00	\$25,000	0	EA	500.00	\$-	0	EA	500.00	\$-	\$25,000
Understory Trees	20	EA	\$375.00	\$7,500	0	EA	375.00	\$-	0	EA	375.00	\$-	\$7,500
Shrubs/Ground Cover	1500	EA	\$20.00	\$30,000	0	EA	20.00	\$-	0	EA	20.00	\$-	\$30,000
Sodded Areas (incl Free Play Lawn)	40000	SF	\$0.55	\$22,000	120000	SF	0.55	\$66,000	10000	SF	0.55	\$5,500	\$93,500
Landscape Rock Setting	1	LS	\$12,000	\$12,000	0	LS		\$-	1	LS	5000.00	\$5,000	\$17,000

SUBTOTAL	\$1,133,583
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SUBTOTAL	\$992,168
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SUBTOTAL	\$6,438,510
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GRAND SUBTOTAL	\$8,498,260.50
MOBILIZATION, FEES, BONDS, ETC. (10% TOTAL)	\$849,826.05
SUBTOTAL	\$9,348,086.55
15% CONTINGENCY FOR MASTER PLAN LEVEL COST OPINION	\$1,402,212.98
SUBTOTAL	\$10,750,299.53
12% DESIGN, ENGINEERING AND PROGRAM MANAGEMENT FEES	\$1,290,035.94
PROJECT TOTAL - ALL PHASES	\$12,040,335.48