

Friendship Forest Master Plan

Summary Memorandum

**City of Clarkston, Georgia
2016**



Technical Memorandum #1**Date:** July 11, 2015**To:** City of Clarkston**From:** Ron Huffman, ASLA, AICP – Amec Foster Wheeler**Subject:** Friendship Forest Wildlife Sanctuary Database

Friendship Forest Wildlife Sanctuary is an approximate 15.7 acre park located entirely within the City of Clarkston. Access is from E. Ponce De Leon Avenue. The access road is located approximately ½ mile north of the Clarkston CENTRAL Business district. The Wildlife Sanctuary is accessed from a narrow parcel with approximately 150 of frontage along E. Ponce De Leon Avenue. Adjacent to E. Ponce de Leon Avenue is a small gravel parking lot. The parking capacity of the gravel lot is approximate 6-8. The high point for the park site is also located near the access road at E. Ponce De Leon Avenue at an elevation of 1028 ASL. The access road enters the park from the gravel parking area. Access is restricted with a metal swing gate. The access road quickly drops in elevation and terminates in a small parking lot with a turn-around circle located approximately in the middle of the parcel. The access road is paved including the parking and turn-around. There is a network of paved and unpaved pathways that crisscross through the park and link to adjacent neighborhoods. There are several small wooden bridges used along the pathways to provide safe clearance over shallow wet weather swales. Other park facilities include a timber frame picnic shelter and bathroom (approximately 20x30). The picnic shelter sits on a stone patio with a surrounding stepped stone wall and fire pit. There is a former tennis court site that has had the tennis courts removed. There is a mulch path that crosses diagonally through this area. There has been some tree planting in this area as well.

The majority of the site is low and wet. Approximately 50% of the site sits below the 100 Year FEMA flood elevation. The South Fork of Peachtree Creek flows through the site roughly north to south near the western side of the site. The low point of the site is along the creek at about 946 ASL (approximately 82 feet below E. Ponce De Leon Drive). There is evidence of scouring and bank erosion along the creek. A concrete sewer line has been exposed. Manholes are also evident in the Sanctuary. A sewer line was installed (date unknown) along the creek. The National Wetland Inventory maps were consulted and did not indicate the presence of wetlands. However, a visual inspection indicated the presence of wetland plant material, standing water and hydric soils (based on soil probe sample). It is highly likely that much of the flood plain could also be classified as wetland. The upland slopes along the eastern portions of the site contain a nice mixture of hardwoods and pines. Slopes along the eastern boundary are approaching 30%. There are a few specimen trees including a couple of specimen trees located near the access road from E. Ponce de Leon Avenue.

The database for the park inventory was assembled using GIS aerial photography, National Flood Insurance rate maps (to locate the 100 year floodplain), on-site investigation and on-site photography. Attached for reference:

- o Aerial Photography with a 2 foot contour interval and 100 Year Flood Plain
- o Base Map generated from the aerial photography and field checked to identify on-site features such as buildings, parking etc...
- o A photo-board of existing conditions documented during a March site visit.

A review meeting was conducted with City staff on June 18, 2015.

Technical Memorandum #2**Date:** July 11, 2015**To:** City of Clarkston**From:** Ron Huffman, ASLA, AICP – Amec Foster Wheeler**Subject:** Friendship Forest Wildlife Sanctuary Opportunities and Constraints Analysis

Using the base map and database of information, the AMEC team prepared an analysis that focused on the potential of the sanctuary site for enhancement, program delivery etc.... The following criteria were examined: topography and drainage; soils; wetlands; vegetation; land use; views; slopes; sun angles; zoning; bridges and culverts; intersections; access points; and utilities and easements.

Topography and Drainage: The site has an approximate 82 foot elevation change from E. Ponce De Leon Avenue to the S. Fork of Peachtree Creek. The eastern border of the property is highlighted with steep slopes. The remaining 2/3 of the property is low and wet. Several wet weather swales carry water across the site from east to west.

Constraints: Low, wet and flood prone areas restrict/prohibit building development, trail development may also be difficult or more costly. There are also regulatory restrictions due to flood plain, wetlands and streams.

Opportunities: The change in elevation adds visual interest to the site. The low/wet areas contain a diverse habitat that is rich with wildlife.

Soils: A soil probe analysis of the soils around the site indicate a mixture of loaming upland soils and clay/hydric soils in the bottom land.

Constraints: Hydric soils indicate the presence of wetlands. Generally no disturbance in these areas are permitted.

Opportunities: The loamy upland soils and the hydric soils are excellent to support diverse plant materials.

Wetlands: The National wetland Inventory maps did not indicate the presence of wetlands. However, based on site investigation, it is highly likely that large portions of the bottom land areas of the site would be classified as wetlands or emerging wetlands.

Constraints: Designated wetlands are restricted from development impacts. Any impacts require federal permitting.

Opportunities: Wetlands usually host a great diversity of wildlife. Opportunities to enhance the wetland, explore education signage, observation platforms and boardwalks are abundant.

Vegetation: The site has a diverse range of plant material and vegetation. The upland areas includes a mix of hardwood and pines. The lowland areas includes plants such as musclewood, black willow and swamp maples. The low areas were also overrun with invasive species such as privet. There are also a few specimen trees noted in the upland areas.

Constraints: Invasive species can cause serious impacts to the wetland and upland ecosystems if they are not held in check.

Opportunities: An abundance of opportunities exist to enhance the existing pattern of vegetation. Specimen trees need to be identified and located. Specimen trees are ideal locations for outdoor classrooms (i.e. a story tree).

Land Use: The site is surrounded by low density and medium/high density residential developments. The southern boundary along Clark Street and Lincoln Street are low density, single family residential. The western, northern and portions of the eastern boundary include apartment style residential developments. There are access paths and trails connecting to most of the apartment developments.

Constraints: There is potential for vandalism and associated negative impacts from unregulated access.

Opportunities: The access paths provide a unique opportunity to link residential developments and provide connecting pedestrian and bicycle access. The abundance of surrounding residential represent a pool of potential users.

Views: Due to the large change in elevation there are distant views across the site. Especially in winter conditions with minimal vegetated coverage, there are views within and through the site. Notable views include the entry view down the access road; the view along the length of the S. Fork of Peachtree Creek and views up through the hardwood uplands.

Constraints: Unchecked invasive vegetation and undergrowth restrict views within much of the site and along pathways.

Opportunities: Clearance of invasive undergrowth and landscape management to remove dead or dying plant materials could open up distant views. Opening up of views will increase safety and improve enjoyment of the facilities.

Slopes: The eastern border of the site is flanked by steeply sloping grades in excess of 30%. The balance of the site is low and lies within the large portion of the 100 year floodplain for the S. Fork of Peachtree Creek.

Constraints: Steep slopes are always constraining by driving up costs for development, adding to the difficulty of managing storm water and creating obstacles for ADA access. Low areas also have challenges with storm water drainage, and development costs.

Opportunities: Slopes add visual excitement and visual interest to the site. Opportunities for boardwalks in the low areas and observation platforms in the sloping areas could be explored.

Sun Angles: The majority of the site is wooded and sun angles are not seen as a key site factor. However, Eastern boundary includes large west and northwest facing slopes. The southern boundary includes large north facing slopes. There is also one major clearing associated with the former (now removed) tennis courts.

Constraints: The abundance of shade all over the wooded site generally minimizes impacts of sun angles. The creative use of vegetation to manage sun angles etc... is lost.

Opportunities: Landscape management of the sloping border areas of the site could take advantage of sun angles to determine an acceptable mix of enhancing plant material.

Zoning: TBD

Bridges and Culverts: There is a stone culvert along the entrance road and there are several small wooden bridges crossing wet weather swales in the bottom portions of the site.

Constraints: Storm water management needs to be fully assessed to determine the impacts to the bridges and culverts. The wooden bridges create maintenance issues and the stone culvert appeared to be small and possibly undersized to handle the volume of storm water along the entry road. There was also evidence of storm water washing across the entry road.

Opportunities: Bridges and culverts create an opportunity for visual enhancement of a project site. The existing stone culvert establishes a nice visual standard that could be replicated throughout the site.

Intersections: The only vehicular intersections associated with the site are the access points along E. Ponce de Leon Avenue. These are not true intersections. However, there are several intersecting pathways throughout the site. There is a confusing network of paths that intersect in the vicinity of the picnic pavilion and the vehicular turn around.

Constraints: There is a lack of wayfinding signage which leads to confusion and loss of orientation to someone not familiar with the site.

Opportunities: Vehicular access is restricted which allows for easier monitoring, improved safety, and less site impact. The abundance of existing paths and intersecting paths allows for reorganization and prioritization with minimal impact to the site. Safety is improved with prominent intersecting paths. There is an obvious opportunity to create meaningful interpretive/educational and wayfinding signage.

Access Points: There are numerous access points for the site. The primary vehicular access point is from E. Ponce De Leon Avenue. There is a small one way loop access road at E. Ponce De Leon Avenue. The site could also be accessed from the end of Clark Street. There is currently no vehicular access in to the site at that point. Clark Street dead ends at the park boundary.

There are an abundance of pedestrian paths with access points along all of the site boundaries. There is paved pedestrian access to Clark Street. All other connecting access paths are unpaved.

Constraints: One vehicular access point with gated control may constrain public safety operations and monitoring. Gated public access also limits the use of existing building facilities. The current vehicular access point does not meet ADA standards. The abundance of connecting access paths is confusing and difficult to monitor or police. Safety may be an issue. Many of the access points are "informal" and do not meet ADA access standards.

Opportunities: The abundance of access points links surrounding residential areas to the site. The enhancement of the access points will allow for greater connectivity between the neighborhoods and will reduce the need for vehicular access. Limited and gated vehicular access allows for easier site management.

Utilities and Easements: There is a sewer line and associated easement running along the S. Fork of Peachtree Creek. There are also power poles running the length of the entry road with overhead power lines.

Constraints: The sewer line has been exposed along the eastern bank of the creek. There is potential for this condition to worsen. If the sewer line is built with perforated manholes, then there could be an odor problem. The sewer easement may restrict enhanced path development. The overhead power lines are minimal but could easily be impacted from storm damage from falling limbs and debris.

Opportunities: A sewer easement is often an ideal location for a pathway. Sewer easements are typically cleared during construction and maintained sporadically. Pathway development along this corridor causes minimal impact to the site. Stream bank restoration as part of the protection of the sewer line may be eligible for alternative state funding and grants. It may be cost effective to bury the overhead electric lines. Electric service needs are minimal.

Regulatory Concerns: Many regulatory concerns need to be addressed including ADA for accessibility; NPDES for management of stormwater; State and local stream buffer requirements; Section 404 for impacts to Wetlands and stream buffers; roadway development standards for vehicular access.



View of entry sign from E. Ponce De Leon Avenue.



View of the unpaved parking area near the entrance from E. Ponce De Leon Avenue.



View of the existing picnic pavilion, restroom, fire pit and stone patio.

Figure 1: Aerial Photo of the Friendship Forest Wildlife Sanctuary. (Site Boundary in red, 100 year floodplain highlighted in blue)



Figure 2: Base map illustrating known existing conditions.

FRIENDSHIP FOREST WILDLIFE SANCTUARY MASTER PLAN

SITE INVENTORY/SITE ANALYSIS

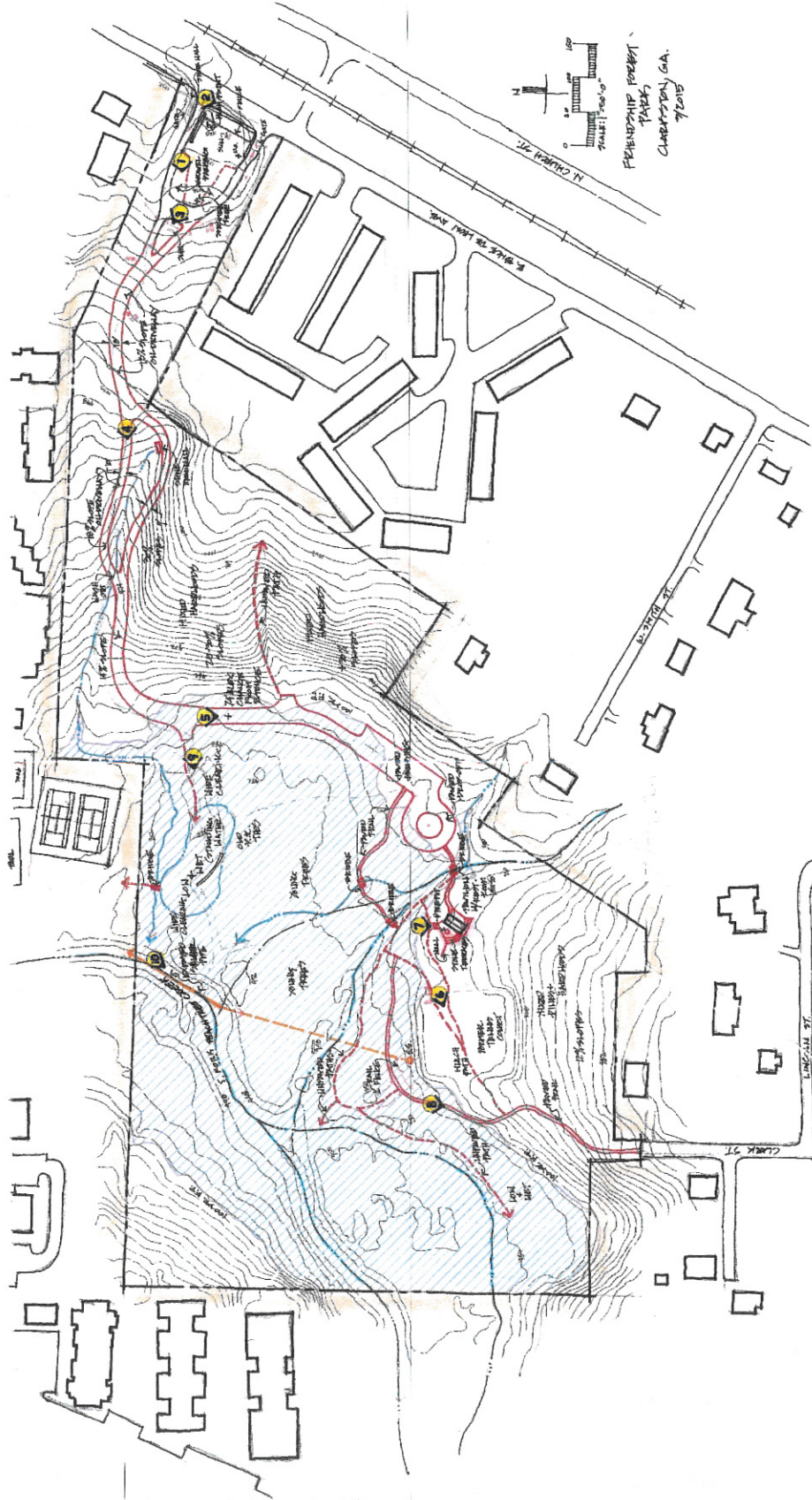


Figure 3: Photo inventory of existing conditions. (See Figure 2 for photo locations)



Friendship Forest Wildlife Sanctuary Master Plan

City of Clarkston, Georgia



Technical Memorandum #3**Date:** January 2016**To:** City of Clarkston**From:** Ron Huffman, ASLA, AICP - Amec Foster Wheeler**Subject:** Friendship Forest Final Master PlanPrimary Master Planning Concepts:**Overall District Plan**

The master plan for Friendship Forest Wildlife Sanctuary recommends the creation of management districts as the fundamental building blocks to guide any and all future park improvements. Following a district master plan will insure that future changes and park improvements are appropriate and not misplaced. An example of a misplaced improvement would be a playground in a conservation area or an athletic field in the education district. The master plan uses the district concept to organize existing park features and provide direction for future planned improvements. As an example, the existing pavilion can be retained and used in the "Education" district as an outdoor classroom. The master plan recommends establishing 5 districts including a Trailhead District; an Upland Management District; a Floodplain District; An Education District; and a Conservation District.

Trailhead District

The trailhead district encompasses the small amount of land (around 5%) currently used for parking that is adjacent to E. Ponce De Leon Avenue. The purpose of a trailhead district is to limit vehicular access to the park and provide a proper front door entry. The trailhead district will include entry signage, directional signage, restroom facilities, parking, pedestrian and bicycle access and trail orientation maps.

Upland Management District

The Upland Management District encompasses approximately 40% of the parkland and includes the higher ground and sloping areas covered in hardwood trees. The upland district includes the majority of the larger specimen trees found on site as well as a pair of existing trails.

Floodplain District

The Floodplain District includes a portion of the FEMA 100 Year flood zone east of the creek that was formerly occupied by an athletic field. This area tends to stay wet and is an opportunity to create a wetland habitat with open water for bird and wildlife enhancement. Approximately 15% of the site is planned as a Floodplain District.

Education District

The Education District is geographically located in the center of the park area and encompasses much of the former remnant facilities including the parking area, the turn around, the pavilion and restroom. The Education district occupies around 10% of the site. It is recommended that vehicular access be restricted and opened only for school groups and educational event. It is also recommended that the restroom be removed and replaced with a restroom in the Trailhead District. The Education District becomes the hub for a series of spoke like themed trails. Four themed trails are shown in the master plan including a Cardinal Trail, a Blue heron Trail, a Brown Thrasher Trail and a Yellow Finch Trail.

Conservation District

The Conservation District is the largest single contiguous district and occupies the majority of the land west of the creek and substantial portions of land east of the creek. Approximately 30% of the site is contained in the conservation district. The majority of the land in the district is included in the 100 year floodplain and is subject to periodic inundation. The Conservation district is established to guide replanting and management of riparian zones along Peachtree Creek.

Overall Master Plan

In addition to the establishment of management districts, the master plan recommends improvements within each district including new facilities.

The Trailhead District would include a paved and reorganized parking area (to save specimen trees and provide visibility from E. Ponce De Leon avenue); a family restroom; a trailhead plaza with seating and bicycle parking; park entry signage; park orientation signage; sidewalk connection to E. Ponce De Leon Avenue; fencing; walls; and landscape planting.

The Upland Management Districts include trails and interpretive markers. The eastern Upland management District includes the Cardinal Trail with an interpretive marker focused on Forest Management. The eastern Upland District also includes conversion of the former access road into a 12' multi-use trail that links the Trailhead District to the southern park access at Clark Street. The southern Upland District located adjacent to the parks southern boundary includes the themed "Yellow Finch" trail, interpretive markers with a focus on native plants and wildflowers. This portion of the Upland District includes an extension of the 12' multi-use trail.

The Education District includes the existing park pavilion that should be refurbished as an outdoor classroom. The existing restroom is recommended for removal. The former central parking area could be removed or replaced with a porous paved surface. If the existing parking area is not removed, it should only be accessible for scheduled educational programming activities.

The Floodplain District includes consolidation of existing trails into the "Blue Heron Trail" and recommends construction of boardwalks to provide safe access across wet and inundated areas. Other recommended facilities include a shallow open water pond, an elevated viewing platform, a creek viewing platform, and interpretive signs with a focus on wetlands and riparian zones.

The Conservation District includes consolidation of trails to form the "Brown Thrasher" trail and construction of a viewing platform overlooking the creek. It is also recommended that portions of the creek banks damaged from scour and utility lines be restored with proper riparian vegetation. Interpretive signs with a focus on invasive plant species and the benefits of conservation are recommended along the trails in this district.

The recommendations for the themed trails and trail amenities vary depending on the district. The park master plan recommends construction of a paved 12 foot multi-use trail that extends from the Trail head District to Clark Street. A large portion of this trail is already paved including the former park access road and a concrete trail. Widening the concrete trail and establishing proper connections between trail segments is all that is required to establish the 12 foot trail. The remaining park trails should be maintained as mulch trails with the exception of boardwalk segments in wet areas.

Trailhead Master Plan

The East Ponce De Leon Avenue trail head master plan was designed to establish an attractive front door entry into the park. The current gravel parking area is elevated above the road and difficult to access. Gravel parking is also placed under large specimen trees that could impact their chances for survival. The proposed plan protects the specimen trees, cuts the site down to provide easy visibility into the trailhead from the street and provides a safe access turn lane from the East Ponce De Leon Avenue. The design includes a small paved parking area for 21 cars, and a trailhead plaza that includes a seat wall, family restroom, water fountain, bike racks and orientation signage. The frontage along East Ponce De Leon Avenue includes a new entry sign and fencing designed to continue the materials theme used in the streetscape and at Milam Park.

The following pages include the illustrations listed below:

Figure 4: Friendship Forest District Master Plan

Figure 5: Friendship Forest Master Plan

Figure 6: Friendship Forest Trailhead Master Plan

Figure 4: Friendship Forest District Master Plan

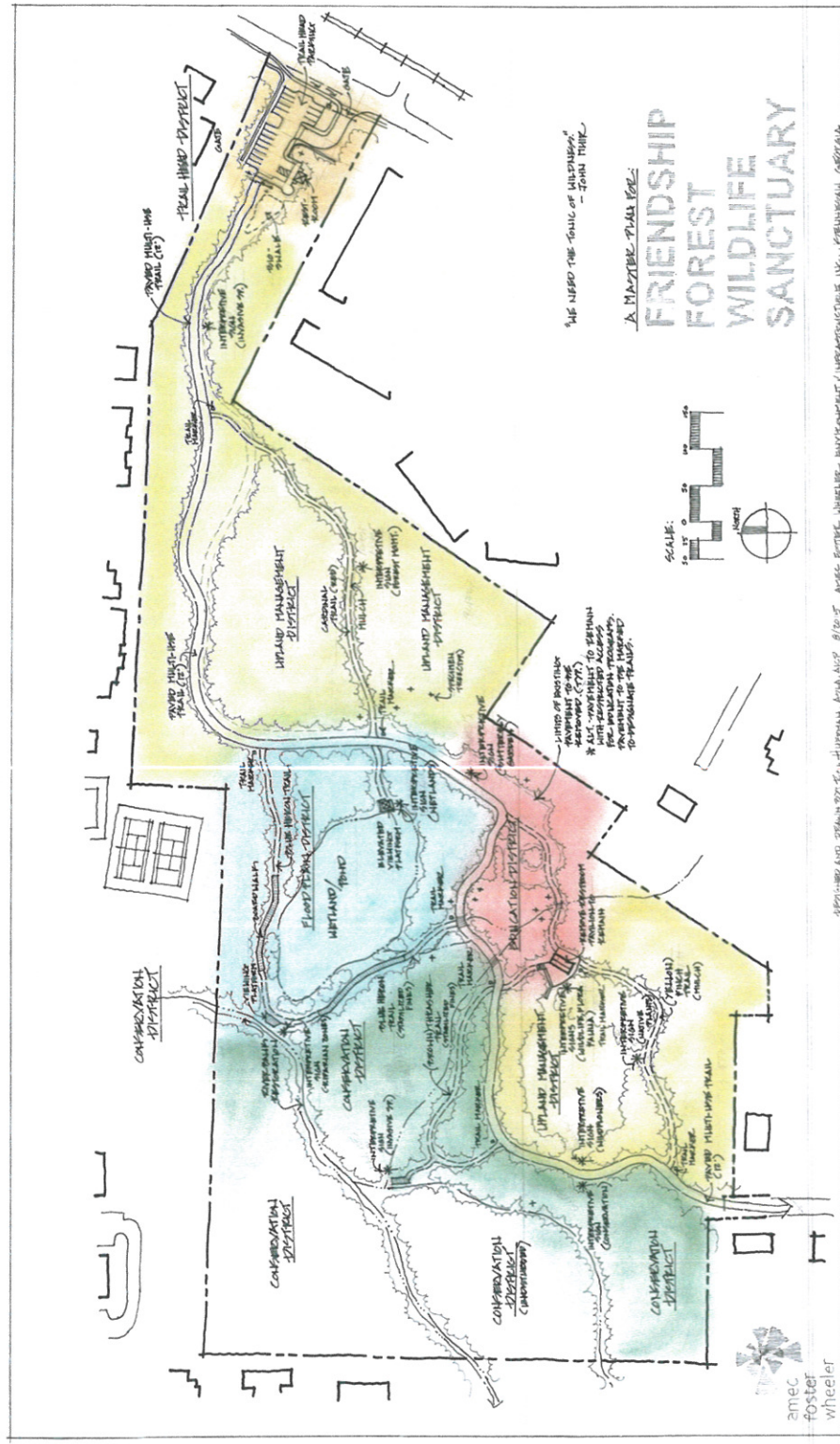
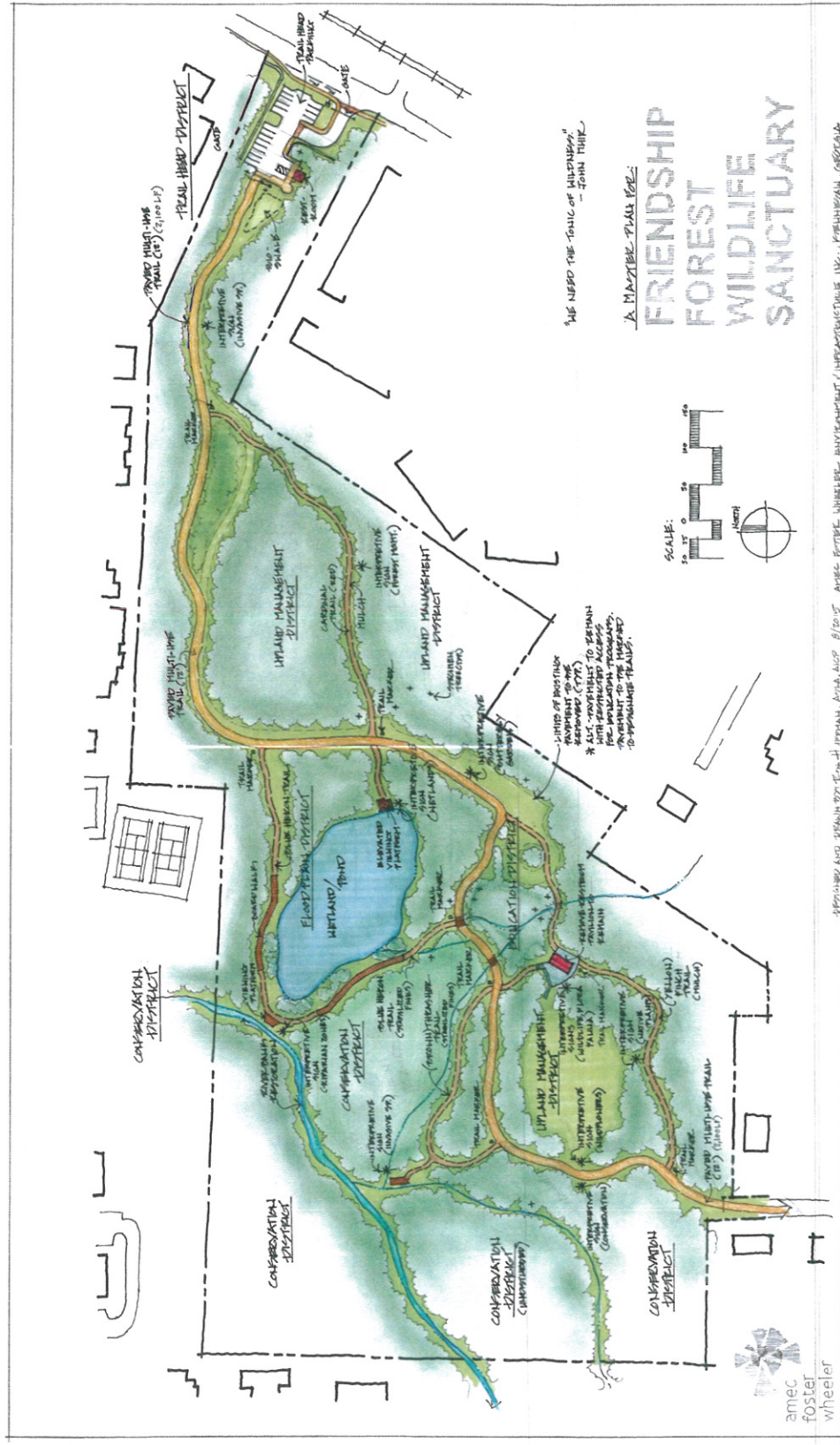


Figure 5: Friendship Forest Master Plan



PREPARED AND REVISED BY: amec foster wheeler, 4000 ALBANY AVENUE, SUITE 8100, ALBANY, GEORGIA 31707

Figure 6: Friendship Forest Trailhead Master Plan



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Friendship Forest
Wildlife Sanctuary

City of Clarkston, DeKalb County, Georgia

ITEM NO.	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	ESTIMATED COST
	Mobilization/Insurance	LS	1	\$ 10,000.00	\$ 10,000.00
	Erosion Control	LS	1	\$ 10,000.00	\$ 10,000.00
	Construction Exit	LS	1	\$ 1,500.00	\$ 1,500.00
	Water Quality Monitoring	Mo.	6	\$ 700.00	\$ 4,200.00
	Grading/Demolition (Pond)	SY	4728	\$ 20.00	\$ 94,560.00
	12' Asphalt Paved Multi-Use Trail	SF	23,400	\$ 6.00	\$ 140,400.00
	6' Mulch Trail	SF	7872	\$ 2.00	\$ 15,744.00
	6' Stabilized Gravel Trail	SF	6450	\$ 3.50	\$ 22,575.00
	6' Boardwalk - no handrails	LF	260	\$ 100.00	\$ 26,000.00
	Interpretive Signage	EA.	10	\$ 5,000.00	\$ 50,000.00
	Trail Markers	EA.	8	\$ 1,000.00	\$ 8,000.00
	Elevated Viewing Platform (12')	LS	1	\$ 50,000.00	\$ 50,000.00
	Viewing Platform - Rivers edge	LS	2	\$ 25,000.00	\$ 50,000.00
	Asphalt Removal/Misc Demo	SF	19800	\$ 1.50	\$ 29,700.00
	Riverbank Restoration	LF	500	\$ 300.00	\$ 150,000.00
				\$	\$ -
				\$	\$ -
				\$	\$ -
	Park Subtotal - (no trailhead features)			\$	\$ 662,679.00

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Friendship Forest
Wildlife Sanctuary

City of Clarkston, DeKalb County, Georgia

ITEM NO.	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	ESTIMATED COST
	Asphalt Paving	SF	10,446	\$ 6.00	\$ 62,676.00
	Concrete Sidewalk	SF	1900	\$ 6.25	\$ 11,875.00
	Concrete Pavers	SF	280	\$ 35.00	\$ 9,800.00
	Decorative Wooden Fence 4'	LF	115	\$ 58.00	\$ 6,670.00
	6' Granite Rubble Wall	LF	216	\$ 150.00	\$ 32,400.00
	4' Granite Rubble Wall	LF	105	\$ 120.00	\$ 12,600.00
	Vehicle Entry Gate - Custom	EA.	1	\$ 10,000.00	\$ 10,000.00
	Park Entry Sign	EA.	1	\$ 15,000.00	\$ 15,000.00
	Granite Seat Wall	EA.	30	\$ 95.00	\$ 2,850.00
	Park Trail/Map Orientation Sign	EA.	1	\$ 2,500.00	\$ 2,500.00
	Trail Gate	EA.	1	\$ 1,500.00	\$ 1,500.00
	Family Restroom with Utilities	LS	1	\$ 75,000.00	\$ 75,000.00
	Bike Rack	EA.	1	\$ 1,200.00	\$ 1,200.00
	Trash Receptacles	EA.	1	\$ 950.00	\$ 950.00
	Picnic Tables	EA.	3	\$ 950.00	\$ 2,850.00
	Pavement Striping	LF	250	\$ 3.00	\$ 750.00
	Bio-Swale with Outlet Structure	EA.	1	\$ 15,000.00	\$ 15,000.00
					\$ -
	Trailhead Subtotal - this page				\$ 263,621.00

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Friendship Forest
Wildlife Sanctuary

City of Clarkston, DeKalb County, Georgia

ITEM NO.	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	ESTIMATED COST
	Ground Cover/Sod	SF	2000	\$ 0.65	\$ 1,300.00
	Grading	Sy	4750	\$ 20.00	\$ 95,000.00
	Erosion Control	LS	1	\$ 10,000.00	\$ 10,000.00
	Construction Exit	EA.	1	\$ 1,500.00	\$ 1,500.00
	Trees	EA.	28	\$ 250.00	\$ 7,000.00
	Shrubs	EA.	75	\$ 35.00	\$ 2,625.00
	Planting Soil/Mulch	LS	1	\$ 2,000.00	\$ 2,000.00
	Trailhead Surveying	LS	1	\$ 7,500.00	\$ 7,500.00
	Trailhead Engineering	LS	1	\$ 39,000.00	\$ 39,000.00
	Drinking Fountain	LS	1	\$ 2,500.00	\$ 2,500.00
	Trailhead Contingency - Approx. 20%	LS	1	\$ 80,000.00	\$ 80,000.00
	Place holder			\$ -	\$ -
	Place holder			\$ -	\$ -
	TrailheadSubtotal - this page				\$ 248,425.00
	Total Trailhead				\$ 512,046.00
	Park Grand Total				\$ 1,174,725.00

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Friendship Forest
Wildlife Sanctuary

City of Clarkston, DeKalb County, Georgia

ITEM NO.	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	ESTIMATED COST
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This Opinion of Probable Construction Costs is made on the basis of AMECFW's judgement as experienced and qualified professionals generally familiar with Park projects. Cost items and estimated quantities were determined from the Concept Plans presented to City Council in October, 2015. Unit costs were based on pricing from product suppliers, data published in the RS Means publication "Site Work and Landscape Cost Data", and misc. published costs. The accuracy for this Opinion of Probable Construction of Costs is in the range of +/- 20%. AMEC has no control over the costs of;

- labor, materials, equipment, or services furnished by others,
- the construction contractor's methods of determining prices
- competitive bidding or market conditions

AMECFW cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from AMECFW's prepared Opinion of Probable Construction Costs or the above stated accuracy range. This Opinion of Probable Construction Cost does not include design consultation fees for items requiring additional design.