



*Little River*  
**CANYON  
CENTER**  
*Fort Payne, Alabama*



# JACKSONVILLE STATE UNIVERSITY LITTLE RIVER CANYON CENTER FEASIBILITY STUDY



October 2017

Prepared for:  
**Jacksonville State University**



Prepared By:  
**The Kelley Group**



# Little River Canyon Center

Sustainable Growth for the Future

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# Section 1 - Executive Summary

The Kelley Group was selected to study, assess, and define solutions for site preparation, infrastructure assessment, and forecast the economic and environmental impacts for the development elements including a hotel, tree house village, bunkhouse, aerial treetop adventure, and a restaurant/marketplace.

We recommend the establishment of a Board of Directors to create a Development District at Little River Canyon Center (LRCC) in conjunction with the City of Fort Payne. The Development District's Board will be responsible for funding the proposed projects. We recommend the Development District implementing additional taxes for lodging (2%), sales (2%), food and beverage (2%), plus a \$3 per room per night resort fee. The City of Fort Payne currently has a lodging tax of 7%, and the Development District would request 3.5% of the funds to be diverted to the Development District. These revenue streams derived from the tax based generated by the Development District would be used to pay back the upfront infrastructure (water, sanitary sewer, roads) cost to develop the new facilities at the LRCC.

## Highlights:

The proposed hotel is a limited service hotel with approximately 60 rooms and an average daily rate of \$125. The hotel will be constructed on LRCC property and funded by a private hotel corporation.

The bunkhouse will provide a budget priced rate with shared amenities for short-term or extended stays with an average daily rate of \$30. It will be designed to accommodate students, locals and out of town travelers. The Development District would construct the bunkhouse and manage service.

The tree house village consists initially of three tree houses with an average daily rate of \$150, and will provide unique accommodations with swinging bridge connectivity high in the trees for overnight stays. The Development District would construct the tree house village and manage service.

The restaurant will seat approximately 100 customers indoors, and will provide a marketplace for sandwiches and snacks to be enjoyed outdoors. The Development District would construct restaurant structure and parking and lease the facility to a proprietor.

### Expansion of LRCC

The three (3) additional parcels discussed in Section 3 of this report are key to the long-term growth of the LRCC. The 3 parcels provide an alternate access to the LRCC, which is crucial with the anticipated increase in traffic to the new developments and facilities. These parcels are approximately 10 acres and could serve as the future home of the new hotel, restaurant, dormitories, or other future developments. By constructing the new facilities on the newly obtained parcels, the new buildings and large-scale parking lots will not detract from the natural beauty of the entrance drive to the LRCC.

The parcels have a total appraised value of \$288,500. We recommend that the LRCC purchase these parcels for the long-term growth opportunities that they bring to the LRCC.

### Infrastructure Improvements

There are three (3) significant infrastructure improvements to be made at the LRCC in order to attract a hotel and/or a restaurant. The additional parking and roads, installation of a waste water treatment plant (WWTP), and the extension of a gas main. The cost of the parking and roads does differ from each of the masterplans. If LRCC purchases the additional parcels, there will be a significant cost to extend a new entrance drive. The cost for the sewer WWTP and the extension of the gas main is the same for both masterplans and can be seen in the following table.

**Table 1-1: Infrastructure Improvement Construction Cost Summary**

<u>Infrastructure</u>	<u>Masterplan with Current Property (Option 1)</u>	<u>Masterplan with Expansion (Option 2)</u>
Parking and Roads	\$0	\$303,125
Sewer WWTP	\$684,375	\$684,375
Gas Main Extension	\$142,188	\$142,188
Fiber-Optic Extension	\$10,625	\$10,625
<b>Total Construction Cost</b>	<b>\$837,188</b>	<b>\$1,140,313</b>

The WWTP has the largest cost and is also the most important aspect of the infrastructure improvements. There are no other options for sewer service in this area. An onsite WWTP must be designed and constructed for the new developments.

### **Facility Construction Costs**

The following table summarizes the estimated construction costs for each development. The hotel construction costs will be incurred through a public private partnership and is estimated at \$6.6 million. LRCC will be responsible for the Tree House Village, Bunkhouse, and the Marketplace which is estimated at \$2.99 million.

**Table 1-2: Facility Estimated Construction Costs**

<u>Facility</u>	<u>Construction Cost 3rd Party</u>	<u>Construction Cost LRCC</u>
Hotel	\$6,600,000	
Tree House Village		\$799,844
Bunkhouse		\$1,875,000
Marketplace		\$315,625
<b>Total Estimated Construction Costs</b>	<b>\$6,600,000</b>	<b>\$2,990,469</b>

### **Economic Benefits from Construction**

The following table summarizes the estimated economic benefits from the construction of each facility.

- \$3.86 million in supplies and equipment purchased in Fort Payne/DeKalb County
- \$3.45 million in construction payroll
- 121 construction jobs
- \$392,524 in construction related public revenues

**Table 1-3: Total Economic Benefits from Construction**

<u>Facility</u>	<u>Supplies &amp; Equipment Purchased in DeKalb County</u>	<u>Payroll from Construction Jobs</u>	<u>Construction Jobs</u>	<u>Construction Related Public Revenues</u>
Hotel	\$2,640,000	\$2,376,000	80	\$268,990
Tree House Village	\$319,938	\$287,944	14	\$34,101
Bunkhouse	\$750,000	\$675,000	21	\$75,977
Marketplace	\$126,250	\$113,625	6	\$13,456
<b>Total</b>	<b>\$3,863,188</b>	<b>\$3,452,569</b>	<b>121</b>	<b>\$392,524</b>

**Annual Economic Benefits from Operations**

The following table summarizes the estimated annual economic benefits from operations of the new facilities at the LRCC.

- \$3.33 million in gross operating revenue
- \$1.23 million in annual payroll to employees
- \$2.58 million in annual local spending
- \$5.92 million in total annual general economic benefit

**Table 1-4: Annual Economic Benefits from Operations**

<u>Facility</u>	<u>Gross Operating Revenue</u>	<u>Annual Payroll to Employees</u>	<u>Annual local spending</u>	<u>Total Annual General Economic Benefit</u>
Hotel	\$1,929,269	\$760,000	\$1,281,722	\$3,210,991
Tree House Village	\$74,320	\$38,000	\$70,898	\$145,218
Bunkhouse	\$320,765	\$152,000	\$557,644	\$878,409
Marketplace	\$1,006,749	\$285,000	\$677,014	\$1,683,763
<b>Total</b>	<b>\$3,331,103</b>	<b>\$1,235,000</b>	<b>\$2,587,278</b>	<b>\$5,918,381</b>

## Annual Revenues from Taxes and Fees

The following table summarizes the estimated annual revenues from the associated taxes and fees of the new facilities.

- Fort Payne would receive an estimated \$158,970 annually
- DeKalb County would receive an estimated \$72,359 annually
- The State of Alabama would receive an estimated \$196,468 annually
- The newly formed LRCC Development District would receive an estimated \$279,320 annually.

**Table 1-5: Annual Revenues from Taxes and Fees**

<u>Facility</u>	<u>Fort Payne</u>	<u>DeKalb County</u>	<u>State of Alabama</u>	<u>LRCC Development District</u>
Hotel	\$105,976	\$51,402	\$128,440	\$174,449
Tree House Village	\$4,728	\$2,195	\$5,809	\$7,431
Bunkhouse	\$27,956	\$11,992	\$35,138	\$58,360
Marketplace	\$20,310	\$6,770	\$27,081	\$39,080
<b>Total</b>	<b>\$158,970</b>	<b>\$72,359</b>	<b>\$196,468</b>	<b>\$279,320</b>



## Section 2 – Summary and Background

### Project Scope

Jacksonville State University selected The Kelley Group for the Little River Canyon Center feasibility study. The goals of this study are to assess and define solutions for site preparation, perform an infrastructure assessment, and forecast the economic and environmental impacts for the development elements outlined by input from Little River Canyon staff, National Park Service staff and Community Stakeholders. The study will assess and define solutions for site preparation and utility options such as water delivery, sewage, parking, and vehicular and pedestrian access. The study will also identify potential revenue sources including but not limited to federal, state, and private funding. The proposed growth/development elements are as follows:

- Hotel
- Tree House Village
- Bunkhouse Facility
- Aerial Treetop Adventure
- Restaurant/Marketplace

### Little River Canyon Center

Little River Canyon Center (LRCC) headquarters facility was opened to the public in 2008 and is a LEED Certified Silver facility. The Canyon Center building is a 23,000 square feet facility on approximately 60 acres of land owned by Jacksonville State University (JSU) and is adjacent to the Little River Canyon National Preserve. About 7,000 square feet is leased to the National Park Service through General Services Administration. Jacksonville State University operates the additional 16,000 square feet, including a variety of indoor conference spaces, an HD theatre, gift shop and exhibits. The Canyon Center best accommodates conferences for up to two hundred (200) people.



In addition to the state of the art Canyon Center building, an outdoor amphitheater was designed and built in 2012 to Alabama Symphony Orchestra specifications, and includes a performance shell with 50 feet by 75 feet platform. The amphitheater accommodates up to 2,000 people seated in portable lawn chairs. The outdoor space provides a venue for a variety of events.

## Location

LRCC is located 8 miles southeast of Fort Payne, Alabama on Alabama Highway 35.

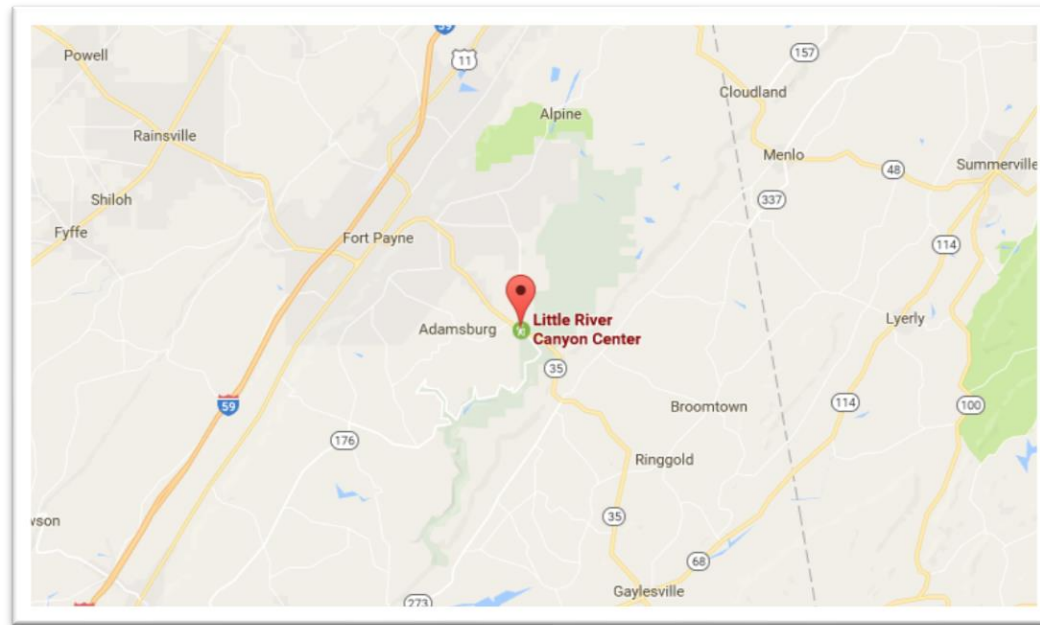


Figure 2-1: LRCC Location Map

## Access

LRCC is accessible from Interstate 59 via Alabama Highway 35. The entrance is off Interstate 59 at Alabama Highway 35 (Exit 218) to Fort Payne/Rainsville. Then 1 mile east on Alabama Highway 35, then north on Gault Ave. for 1 mile, then east on 5<sup>th</sup> Street for 0.4 miles, then left onto Alabama Highway 35/Wallace Ave NE for 7 miles, then left onto Little River trail.

## LRCC Utilization

As the following figure illustrates, LRCC admissions have continued to grow each year. The 2013, 2014, and 2015 data reflects visitors to the Little River Canyon Center. The 2016 data reflects the visitor counts for the day use areas, plus Little River Canyon Center visitors.

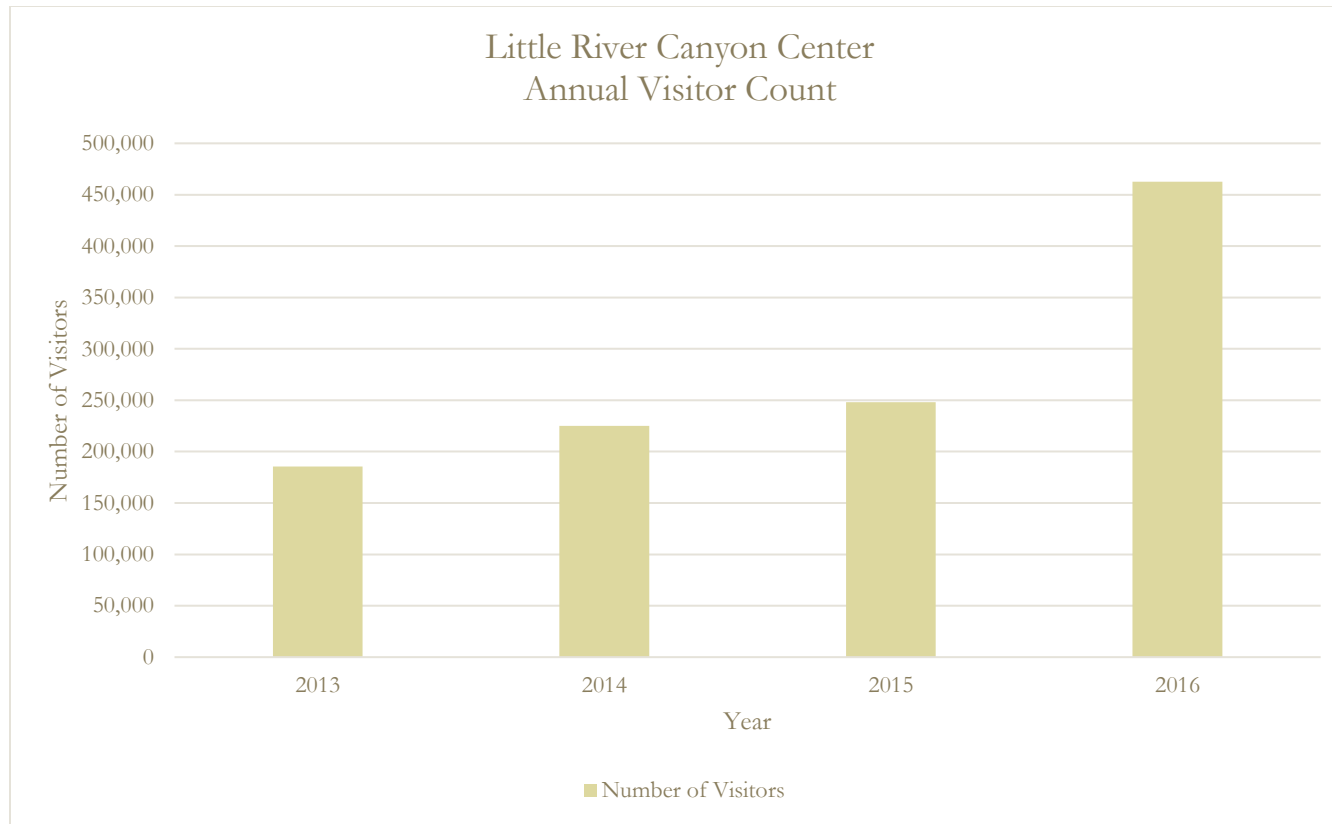


Figure 2-2: LRCC Annual Visitor Count



# Section 3 - Expansion of LRCC

## Jacksonville State University Property

Jacksonville State University owns 3 parcels that collectively create the LRCC. The parcels are shown in red in Figures 3-1 and 3-2.

**Table 3-1: Parcels Owned by JSU**

<u>Parcel No.</u>	<u>Size (Acres)</u>
28 24 09 30 0 000 001.000	43
28 24 09 30 0 000 001.004	10
28 23 07 25 0 000 045.000	5

The LRCC and adjoining parking lots are located within Parcel 01. Parcel 45 contains a house that is currently used for residential purposes by providing short and long-term accommodations for visiting research students.

## Adjoining Properties to LRCC

Multiple parcels owned by multiple parties adjoin the LRCC's parcels. These parcels are shown in Figures 3-1 and 3-2. The parcels are color coded by the owner of each parcel and summarized below. The parcel to the east (shaded in green on Figures 3-1 and 3-2) is part of the Little River Canyon National Preserve and is owned by the National Park Service.

**Table 3-2: Adjacent Parcels to LRCC**

<u>Parcel No.</u>	<u>Owner</u>	<u>Size (Acres)</u>
28 23 07 25 0 000 047.001	Donna Wells	4
28 23 07 25 0 000 020.009	Donna Wells	3
28 23 07 25 0 000 020.008	Donna Wells	3
28 23 07 25 0 000 020.011	Haley Smith	7
28 23 07 25 0 000 020.012	Jerry & Joy Stokes	2
28 24 09 30 0 000 008.000	Charles & Mary Ann Duell	2
28 24 09 30 0 000 008.001	David & Julie Sisam	1
28 24 09 30 0 000 001.002	National Park Service	373

### **Recommended Parcels for LRCC Expansion**

Parcels 47.001, 20.009, and 20.008 are crucial properties for the development and expansion of the LRCC. These three (3) parcels are owned by Donna Wells and are shaded in blue in Figure 3-1 and 3-2. These parcels are the key to expanding LRCC to achieve the expansion goals outlined by LRCC staff, NPS, and Community Stakeholders.

Obtaining the parcels owned by Wells provides an alternative access to LRCC. Additional access to the LRCC is crucial with the anticipated increase in traffic to the proposed facilities. Parcel 20.008 and 20.009 are abutting to Hill Drive. Hill Drive currently has a dedicated 65' right of way (per DeKalb County GIS). An alternate entrance drive is advised to connect from Hill Drive to the west parking lot of the LRCC as shown in Appendix B. Hill Drive connects to County Road 295 and the intersection is only 0.1 miles from Alabama Highway 35.

In addition to creating an alternate access point to the LRCC, these parcels could serve as the future home of the new hotel, restaurant, and dormitories. By constructing the new facilities in this location, the new buildings and large-scale parking lots will not detract from the natural beauty of the LRCC's meandering entrance drive into the site.

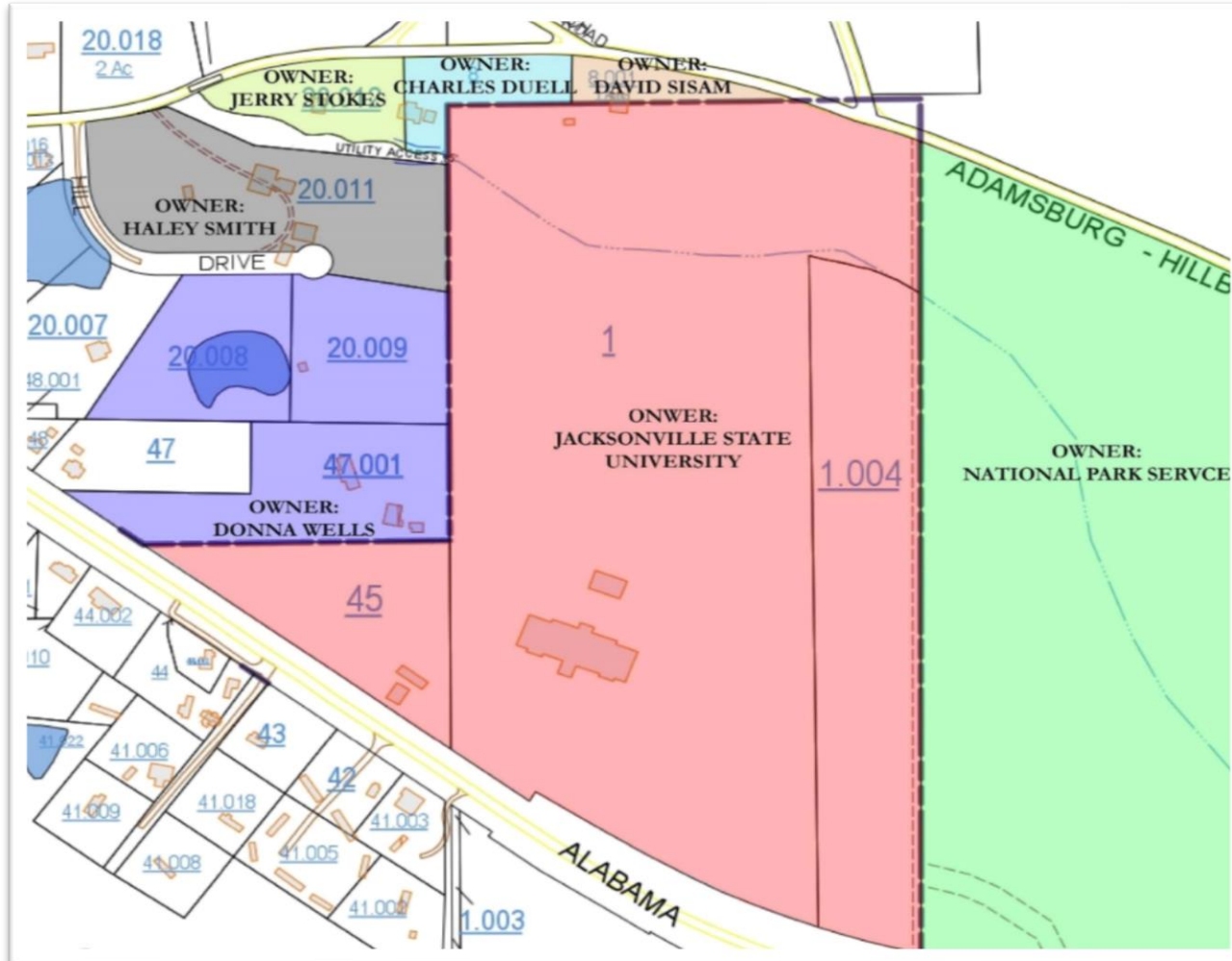


Figure 3-1: Adjacent Parcels to LRCC

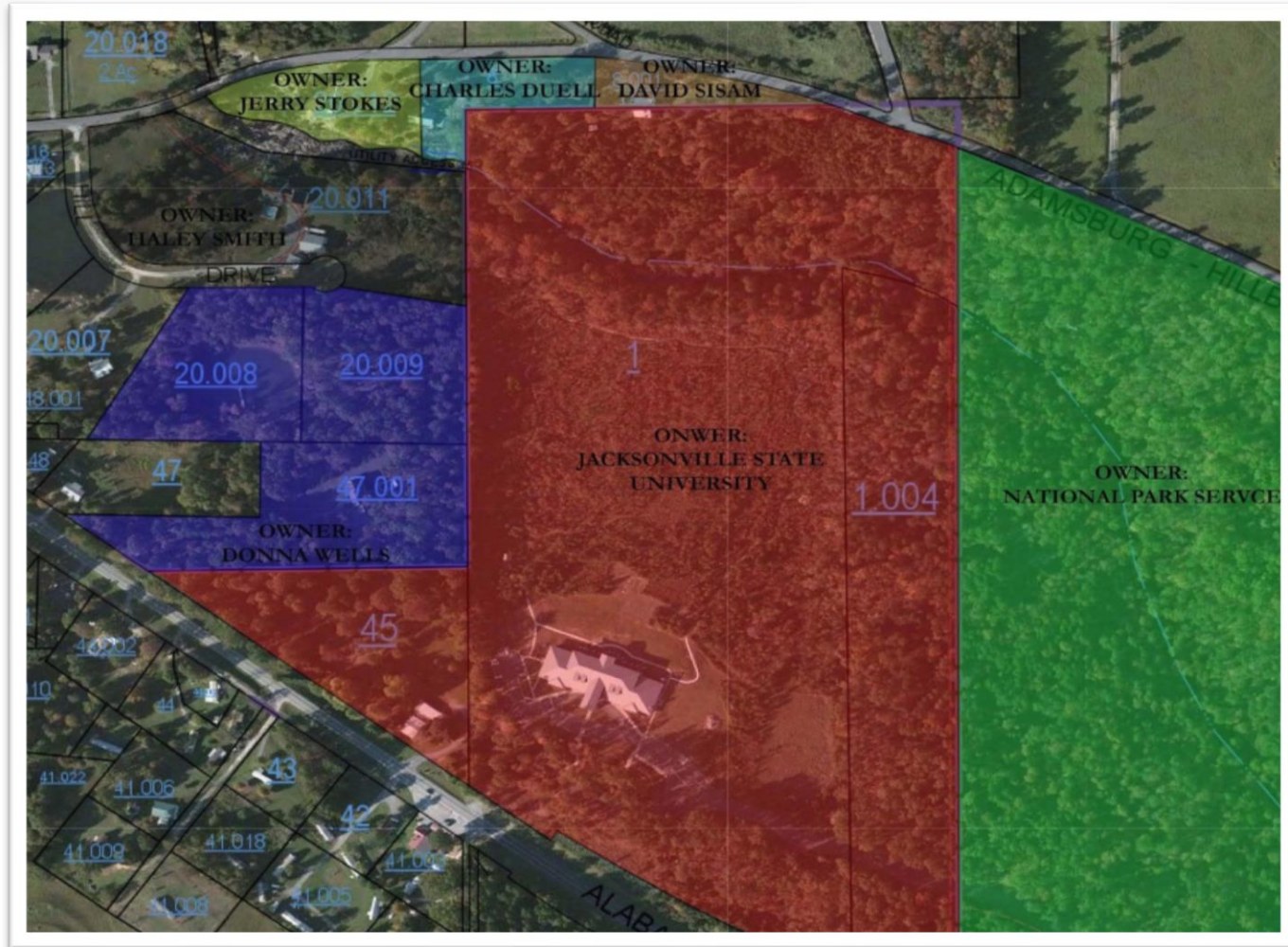


Figure 3-2: Aerial of Adjacent Parcels to LRCC

## Potential Costs

The appraised value from the subject parcels owned by Donna Wells is noted below in Table 3-3. The total tax appraised value for all 3 parcels is \$288,500.

**Table 3-3: Appraised Value per DeKalb County Tax Assessor**

<u>Parcel No.</u>	<u>Appraised Value</u>	<u>Yearly Property Tax</u>
28 23 07 25 0 000 047.001	\$268,900	\$899.95
28 23 07 25 0 000 020.009	\$9,800	\$34.79
28 23 07 25 0 000 020.008	\$9,800	\$34.79





## **Section 4 – Infrastructure Conditions**

This section evaluates the existing infrastructure at LRCC and the future impacts with the new development options being considered. The analysis included transportation and utilities. Construction plans for the Little River Canyon Center dated 9/8/06 were provided to The Kelley Group and were used in the analysis. The proposed improvements and recommendations noted in this section do not constitute engineering design. The findings are subject to change during engineering design of the new developments.

Two different site configurations were analyzed with this study. Option 1 consists of developing on property currently owned by the LRCC, and the associated masterplan can be found in Appendix A. Option 2 represents an alternate site configuration if the LRCC was to purchase the additional parcel, and the associated masterplan can be found in Appendix B. The associated costs for each infrastructure improvement for each option are noted in the following sections. The designs of each infrastructure improvement are subject to change at the time a licensed engineer designs the project.

The most important infrastructure hurdle for the expansion of the LRCC with new developments is providing sanitary sewer service.

### **Drives and Parking Lots**

#### Existing

The drives and parking lots are primarily asphalt except for the large gravel parking lot to the east of the LRCC. The LRCC has two driveway connections to Alabama Highway 35. The west access point is not used for a day to day entrance/exit by visitors and staff. The east driveway is the main entrance to LRCC and is ¼ mile long. The primary parking for the LRCC is located in front of the building. The gravel overflow parking lot to the east encompasses approximately 1 acre of land. Several staff members noted that all parking lots, including the gravel overflow lot, are completely full on a busy weekend. This leads to additional visitors to park along the ¼ mile entrance drive or along the shoulder of Highway 35.

Proposed Development Impacts

Masterplan Option One includes parking lots for the Hotel, Restaurant/Marketplace, Bunkhouse, Tree House Village and access to the walking trails. The existing gravel parking lot will be replaced by the hotel and associated parking lot. Gravel parking lots have an average capacity of 100 vehicles/acre and the existing gravel parking lot is approximately 1 acre in size. This results in a major decrease in the available visitor parking capacity. The parking lots for the Hotel, Restaurant/Marketplace, and the Bunkhouse will be dedicated for their use and will not be available for visitors to the LRCC. The total parking capacity will increase by 46 vehicles, but the total parking capacity for visitors to LRCC will decrease by 100 vehicles. Table 4-1 below details the parking capacity at LRCC for Option 1.

**Table 4-1: Option 1 Parking Lot Capacity**

<u>Parking Area</u>	<u>Total Capacity (# of Vehicles)</u>	<u>Total Visitor Capacity (# of Vehicles)</u>
Existing Gravel Parking (Approx. 1 Acre)	-100	-100
Hotel Parking	66	
Restaurant/Marketplace Parking	36	
Bunkhouse Parking	44	
Net Gain/Loss	46	-100

The Hotel, Restaurant/Marketplace and Bunkhouse parking lot costs are included in the estimated development costs in each respective section of this report.

Masterplan Option Two requires purchasing additional parcels and constructing an alternate entrance to LRCC via County Road 261. Adding an additional access point is key for the new developments. The traffic count will substantially increase, and an alternative entrance/exit is warranted. Two parking lots adjacent to the new drive can accommodate 25 vehicles. The existing gravel parking lot will be paved which will increase capacity of the parking lot from 100 parking spaces to 126 parking spaces. Approximately 261 parking spaces will be added to the site with this option including an additional 51 visitor parking spaces as shown in Table 4-2.

**Table 4-2: Option 2 Parking Lot Capacity**

<u>Parking Area</u>	<u>Total Capacity (# of Vehicles)</u>	<u>Total Visitor Capacity (# of Vehicles)</u>
Existing Gravel Parking (Approx. 1 Acre)	-100	-100
Pave the Existing Gravel Parking	126	126
Hotel Parking	64	
Restaurant Parking	60	
Bunkhouse Parking	86	
New Access Drive Parking	25	25
Net Gain/Loss	261	51

The Hotel, Restaurant, and Bunkhouse parking lot costs are included in the estimated development costs in each respective section. The estimated costs of the new entrance drive and associated parking are shown in the following table.

**Table 4-3: Cost Estimate Option 2 Road & Parking Lot**

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Est. Qty.</u>	<u>Total Cost</u>
1	Asphalt Road & Parking	Square Yard	\$15	12,500	\$187,500
2	Striping	Lump Sum	\$10,000	1	\$10,000
3	Contingency for Minor Items	Lump Sum	\$43,437	1	\$45,000
4	Engineering Design including Surveying, Geotechnical, and Permitting	Lump Sum	\$47,056	1	\$60,625
<b>Total Estimated Construction Cost</b>					<b>\$303,125</b>

### Sanitary Sewer

#### Existing

Currently, the wastewater generated at LRCC is treated by an engineered on-site septic system. The wastewater flows out of the LRCC through a 4” PVC pipe and into a 3,000-gallon septic tank, which is used to separate the solids from the liquids. After the 3,000-gallon septic tank, the wastewater flows into a 1,000-gallon septic tank that houses dual pumps. The

wastewater is then pumped out of the septic tank to a diverter valve and into three (3) sets of field lines. The engineered on-site septic system has a capacity of 3,000 gallons per day. There is an expansion area to the west of the current field lines in case the current field lines fail and need to be replaced.

Proposed Development Impacts

The existing sanitary sewer treatment system for LRCC cannot accommodate the increased flows from the new developments. Sanitary sewer treatment options include municipal wastewater treatment and onsite wastewater treatment were considered and analyzed.

The City of Fort Payne was contacted about providing sanitary sewer service to the new developments at the LRCC. The service area for the sewer collection system does not extend to the LRCC. The closest wastewater treatment plant (WWTP) to the LRCC is at DeSoto State Park. Fort Payne recently took over the operations at the DeSoto State Park WWTP. The DeSoto State Park WWTP is approximately 10.5 miles from the LRCC. A centralized pump station at LRCC will pump the wastewater to the DeSoto State Park. A forcemain will be installed from the LRCC to the WWTP. The estimated construction costs to complete the pump station and forcemain is \$5.7 million.

**Table 4-4: Cost Estimate for Municipal Wastewater Treatment**

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Est. Qty.</u>	<u>Total Cost</u>
1	Force Main (6" PVC)	Linear Feet	\$75.00	55,440	\$4,158,000.00
2	Contingency for Minor Items	Lump Sum	\$415,800.00	1	\$415,800.00
3	Engineering Design including Surveying, Geotechnical, and Permitting	Lump Sum	\$1,143,450.00	1	\$1,143,450.00
Total Estimated Construction Cost					\$5,717,250.00

Municipal wastewater treatment is not economically feasible for the new developments at the LRCC.

Onsite wastewater treatment will need to be implemented for the new developments. Onsite wastewater treatment has several primary benefits:

- Demand reduction through non-potable reuse and discharge avoidance
- Peak condition mitigation through dispersed storage capacity
- Deferred costs and expenses of expanding infrastructure to meet demand

The installation of these systems is recommended to be the responsibility of LRCC. While this may present challenges of simple payback, more systems have recently come online and demonstrated economic, social, and environmental benefits.

This can make onsite treatment a compelling design approach for the LRCC based on several potential benefits:

- Capital cost and expense reduction from limited use of municipal treatment services
- Receipt of grants and incentives from government agencies
- Increased market value of building stock and property value
- Market distinction resulting from third party certification (LEED) and environmental press

The most common onsite wastewater system is the conventional septic system which consists of a septic tank and a drain field for ultimate disposal of the septic tank effluent. Despite their simplicity and advantages, conventional septic systems are not appropriate for all sites and soil conditions. When installed at an unsuitable site, a conventional septic system can experience two types of failures: an operational failure, which is noticeable by ponding of effluent on the ground surface or backup into the customer; and a treatment failure, which, though difficult to detect, results in groundwater or surface water pollution from inadequately treated wastewater. Both failures can be prevented by careful site and soil evaluation prior to permitting a conventional septic system on a proposed site.

The soil absorption field is a major issue with commercial septic tanks, i.e. hotel, restaurant, Bunkhouse. The large flows from the Hotel, Restaurant, and Bunkhouse would require a substantial amount of developable land. The actual size of the

soil absorption field will be determined during design by a professional engineer once a topographical survey and soil borings have been completed. A permit will be required from the Alabama Department of Environmental Management (ADEM). Based on preliminary investigation, the conventional septic tank system at LRCC is not a viable option. The topography of the site coupled with the large footprint required for the drain field is not conducive to a conventional septic tank for commercial applications.

An alternative onsite wastewater treatment system will likely be the solution for providing sewer service for the new developments. A small onsite wastewater treatment plant (WWTP) is an economical solution. There are various kinds of onsite wastewater treatment plants and the preferred type will be selected by the designing engineer. These WWTP systems have assorted options that can be selected depending on the following considerations:

- Source and pollutant loading of wastewater influent
- Planned reuse for treated effluent
- Spatial constraints of system size and location
- Maintenance requirements and staff availability.

After wastewater is treated to acceptable limits, the effluent will be discharged to a local body of water. Yellow Creek runs through the LRCC's property and is a convenient discharge location. Due to the high visitor use of Yellow Creek and the Little River at this location, we recommend discharging into the Little River downstream of the public recreational areas of the Little River. All onsite wastewater treatment will be permitted through ADEM. ADEM will dictate discharge limits and testing requirements. High E.coli counts in the Little River have been noted in multiple studies performed by third parties not involving ADEM. Due to these findings, ADEM may require stricter discharge limits.

The estimated construction cost for a package WWTP and a complete effluent pump station is \$684,375.

**Table 4-5: Sanitary Sewer WWTP Construction Cost Estimate**

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Est. Qty.</u>	<u>Total Cost</u>
1	Package WWTP	Lump Sum	\$400,000	1	\$400,000
2	Complete Pump Station including wetwell, duplex pumps, and control panels.	Lump Sum	\$100,000	1	\$100,000
3	Force Main (4" PVC)	Linear Feet	\$6,250	12	\$75,000
4	Contingency for Minor Items	Lump Sum	\$52,500	1	\$52,500
5	Engineering Design including Surveying, Geotechnical, and Permitting	Lump Sum	\$56,875	1	\$56,875
<b>Total Estimated Construction Cost</b>					<b>\$684,375</b>

Annual Operation and Maintenance Costs

Operation and maintenance (O&M) is critical to the proper functionality and longevity of any onsite wastewater system. In general, the O&M of these systems consists of operations labor, system operation expenses, equipment replacement, and waste disposal. The total annual estimated O&M cost for an onsite WWTP is \$22,600.

**Table 4-6: WWTP Annual Operation and Maintenance Cost Estimate**

<u>O&amp;M</u>	<u>Estimated Costs</u>
Operations Labor	\$12,000
System Operation Expenses	\$7,500
Equipment Replacement	\$2,100
Waste Disposal	\$1,000
<b>Total Annual O &amp; M</b>	<b>\$22,600</b>

- Operations Labor
  - In many projects, operator tasks for onsite wastewater treatment systems are included in general facilities management. This is due to both minimal time commitment and integration of components with other



building operations. The majority of onsite wastewater treatment systems are designed to be self-sustaining and in continuous operation. More advanced technologies such as packaged MBR systems have sophisticated automation systems that allow comprehensive remote monitoring and control, as well as automatic shutoff in case of system failure. Thus, operator labor primarily consists of the following:

- Visual Inspection (daily) – Operators perform a walk-through inspection of system components, checking for leaks, sounds or other system abnormalities.
  - Water Sampling (daily) – Samples are drawn from the system and tested for composition, typically at the inflow and outflow of primary/secondary treatment.
  - Component Cleaning (semi-annually) – Automated systems typically perform a back pulsing or auto-cleansing on a weekly basis. Additionally, operators chemically clean filter and membrane components to prevent excessive bio-accumulation.
  - System Adjustment (variable) – Adjustments are made to maintain optimal operating conditions such as consistent flow rates or balanced bacteria levels. This is typical to the first year of operation, and may extend depending on the degree of optimization desired.
  - Response to Alarms (variable) – Operators respond to alarms or signals from the system signaling a system deviation from normal operating ranges.
- System Operation Expenses

Expenses associated directly with system operation consist primarily of energy use and replacement of components. Energy use – though on average the second largest O&M expense – is extremely variable among system types. However, compared to base building HVAC systems, onsite wastewater systems are not significant power users. Energy use will vary significantly based on the number and type of components installed, such as:

- Pumps – Often the largest energy consumer of the system, depending on the length of pipe runs and the flow capacity required.

- Treatment – Energy consumed to screen solids from influent, aerate tanks and recirculate biologically activated solids.
  - Disinfection – Components such as UV and Ozonation that require electricity for final sterilization of water. Post-treatment after water is stored may require additional energy.
  - Monitoring Equipment – Energy consumed by in-line meters, dedicated computer systems for control interface, and system alarms.
- Equipment Replacement

Most onsite wastewater treatment systems are designed to function continuously for 20 years or more without down time, like other critical building systems. However, components will inevitably wear out over time. Replacement of components is typically a minimal expense; replacement costs amounted to 6-9% of system O&M costs.
  - Waste Removal
    - Biosolids, Oils and Grease – Constituents that are screened and skimmed from the influent prior to entry into the treatment process. These are typically dewatered and disposed of in landfills, or sent to a secondary facility for stabilization and reuse as soil amendment.
    - Sludge – Settled solids from the primary and secondary treatment process, often reused within the system for bacteria stabilization. Depending on the system, this may need to be periodically removed by a septage service, discharged to municipal treatment, or transported to a secondary facility for dewatering and stabilization.

#### Planning Period

A twenty (20) year planning period has been established for this study as recommended by Ten States Standards for Wastewater Facilities. With this analysis, we are assuming a 60-room Hotel, a 50 seat Restaurant/Marketplace, a 60-bed Bunkhouse, and 3 Tree Houses. Future additions to the sanitary sewer system may include a dedicated restroom facility, stores, and other commercial improvements.

Average Daily Flow

Average Daily Flow (ADF) was derived from typical wastewater flowrates in the United States (Metcalf and Eddy, 2003).

The following table summarizes the anticipated sanitary sewer flow rate.

**Table 4-7: Sanitary Sewer Average Daily Flow**

<u>Source</u>	<u>Gallons/Day (gpd)</u>	<u>Unit</u>	<u>Number of Units</u>	<u>Average Daily Flow (gpd)</u>
Hotel	200	Room	60	12,000
Restaurant/Marketplace	20	Seat	50	1,000
Bunkhouse	100	Bed	60	6,000
Tree House Village Restroom	150	Tree House	3	450
LRCC Future Expansion	1,500	Acre	3	4,500
<b>Total ADF (gpd)</b>				<b>23,950</b>

The anticipated ADF is 23,950. The anticipated flow rates are subject to change based on the final engineering design of the hotel, restaurant, and bunkhouse.

Peak Flow

The peak flow is used to design sanitary sewer systems. In accordance with Ten States Standards, the peak flow is obtained by multiplying the ADF by the peaking factor (PF). The PF is based on the service area population and the type of development. A peaking factor of 4 was assumed for this study.

**Table 4-8: Sanitary Sewer Peak Flow**

<u>ADF (gpd)</u>	<u>PF</u>	<u>Peak Flow (gpd)</u>
23,950	4	95,800

The peak flow is 95,800 gpd. The flows are subject to change once a final design is complete. The flows noted above were used to estimate the construction cost of the WWTP at LRCC.

## **Storm Sewer**

### Existing

LRCC is currently served by a combination of roadway culverts and subsurface drainage with inlets. The topography of the site slopes towards Yellow Creek. Storm water is routed around the LRCC on the east and west wings. The water then flows down to Yellow Creek.

### Proposed Development Improvements

The Hotel, Restaurant, and Bunkhouse parking lots will each have their own storm sewer system. These systems will consist of a series of catch basins and pipes to convey stormwater to the discharge location. We do not anticipate any issues with conveying stormwater due to the topography of the site. The final discharge locations will be selected by the designing engineer. The associated costs for each storm sewer system is included in the estimated construction costs of each development in the respective sections.

If the additional parcels are purchased and a new drive is constructed, roadway pipe culverts will be required to convey the stormwater from one side of the roadway to the other. The cost of these culverts is minimal and is included in the drive/parking lot estimated cost in the previous section.

A National Pollutant Discharge Elimination System (NPDES) Permit will be required for disturbing one acre or more of soil. Permits are obtained through ADEM. Best Management Practices (BMP) in regard to protecting water quality must be followed during construction. Some BMP include: soil stabilization, sediment control, wind erosion control, tracking control, non-stormwater, waste management and material pollution control.

## Water

### Existing Infrastructure

The LRCC is on the Fort Payne Water Works distribution system. A 6” water main was extended on Alabama Highway 35 to service LRCC during construction. Once on site, the 6” from Fort Payne Water Works splits into a 6” dedicated fire service line, and a 3” potable water service line. A reduced pressure zone (RPZ) device is installed on the 3” potable water line. This device is a type of backflow prevention device used to protect water supplies from contamination. It also reduces the pressure coming into LRCC to a manageable level for all fixtures within the LRCC.

### Proposed Development Impacts

Fort Payne Water Works can supply the necessary water at LRCC. The current water supply would be sufficient to meet various water demand conditions and to meet normal demands during emergencies, such as power outages and disasters. The supply source meets maximum day demand that occur for several consecutive days and are capable of meeting peak hour demands using water supplied from storage facilities.

Fort Payne Water Works will also provide fire flow protection to the new developments. The system will be capable of providing a minimum of 1,000 gpm at a pressure of at least 25 psi. A normal design criterion is to sustain fire flows for a minimum of two hours. Typical service pressure will be consistent with water supply and on the order of 40-60 psi.

Each development will have a separate service connection to the Fort Payne Water Works water supply. The plumbing connection from the meter to the facility will be installed and maintained by the development owner at their own expense and in accordance with the local plumbing code. Each service would be separately metered. Charges for all water use would be on a metered rate basis as determined by the classification of the service and the applicable rate schedule. The associated costs for water service is included in the estimated cost for each development in the respective sections.

## **Electrical**

### Existing Infrastructure

The Fort Payne Improvement Authority (FPIA) provides power to LRCC. Three-phase electric power was extended to the site when the LRCC was constructed. The power is currently supplied on overhead poles and drops to a pad mounted transformer on the west side of LRCC. The transformer then feeds LRCC.

### Proposed Development Impacts

FPIA will supply power to the new developments at LRCC. A new service pole will be installed for each facility and FPIA will run service to the customers meter.

## **Geothermal Field**

### Existing Infrastructure

A vertical closed loop geothermal field was installed behind LRCC. This geothermal system is a closed-loop system that consist of a network of pipes that cycle water or a refrigerant through a closed system where nothing leaves or enters the system except heat. The pipes at the LRCC extend 300 feet into the earth. A pump is used to continually cycle the water or refrigerant through the geothermal field which is then heated or cooled by the earth's constant temperature. As the fluid moves through the pipes inside the LRCC, it is compressed within a heat pump to further increase or decrease its temperature depending on the time of year. The temperature is then exchanged through a heat exchanger for distribution throughout the building.

### Proposed Development Impacts

The proposed developments will not impact the existing geothermal field for the LRCC. The new developments will utilize natural gas service for their heating/cooling and cooking needs.

## Natural Gas

### Existing Infrastructure

Natural gas is not currently on site at the LRCC.

### Proposed Development Impacts

Natural gas service is a necessary component to the new hotel and restaurant at LRCC. Natural gas is an extremely efficient, economical fuel for heating in all types of commercial buildings. The food service industry, i.e. new restaurant, utilizes natural gas for commercial cooking. It is a flexible energy source in being able to supply the restaurant with appliances that can cook food in many ways. In addition to heating, cooling, and restaurant uses; natural gas is used to provide energy to emergency generators.

The DeKalb-Cherokee Counties Gas District was consulted, and the gas service is approximately 2,500 feet from LRCC. The current service line is a 4” low pressure line. This will provide the needed service for the hotel, restaurant, etc. The anticipated cost for the line extension is \$142,187 and is noted in the following table.

**Table 4-9: Gas Main Extension Construction Cost Estimate**

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Est. Qty.</u>	<u>Total Cost</u>
1	4" Low Pressure Gas Main	Linear Feet	\$35	2500	\$87,500
2	Contingency for Minor Items	Lump Sum	\$26,250	1	\$26,250
3	Engineering Design including Surveying, Geotechnical, and Permitting	Lump Sum	\$28,438	1	\$28,438
<b>Total Estimated Construction Cost</b>					<b>\$142,188</b>

## Fiber-Optic Internet

### Existing Infrastructure

Fiber-optic internet is not currently on site at the LRCC.

### Proposed Development Impacts

Fiber-optic internet is a key component to the future development at LRCC. Fiber-optic internet is many times faster than even the highest-speed copper internet connections. Fiber-optic internet offers significant reliability advantages over copper internet connectivity due to the fact that fiber is much stronger than copper. Fiber is resistant to human or electrical interference unless fibers are physically cut.

For the purposes of this report, it was assumed that the internet service provider will extend service along Alabama Highway 35. LRCC will be responsible for the service installation from the Highway to the site.

**Table 4-10: Fiber Extension Construction Cost Estimate**

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Est. Qty.</u>	<u>Total Cost</u>
1	Fiber-Optic Internet	Linear Feet	\$15	500	\$7,500
2	Contingency for Minor Items	Lump Sum	\$1,000	1	\$1,000
3	Engineering Design including Surveying, Geotechnical, and Permitting	Lump Sum	\$2,125	1	\$2,125
<b>Total Estimated Construction Cost</b>					<b>\$10,625</b>





## Section 5 – Hotel

### Previous Market Study Findings

WTL+a, a national real estate consulting firm based in Washington, D.C., completed a Lodging Market Study in 2012 to examine market potentials for lodging concepts at the Little River Canyon Center. The market potential for a “resort-style” hotel containing 50 to 80 rooms with targeted average daily rates (ADRs) of \$150 to \$200 per night was analyzed by WTL+a. The recommended development potentials identified in the study were broken into two (2) phases. Phase I with 35-45 rooms, and Phase II with 20-25 rooms by year seven. WTL+a noted that ADRs should be targeted in the range of \$100 to \$150 per night. The average occupancy percentage was 64% to 65%. The total room count and occupancy percentage calculation table from the study are noted in the following table.

**Table 5-1: WTL+a Projected Occupancy**

<u>Market Segment</u>	<u>2013</u>	<u>2014</u>	<u>2105</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
<u>Roomnight Demand</u>										
Visitors to National Preserve	15,522	15,679	15,837	15,997	16,698	16,867	17,037	18,314	18,499	18,686
Other Overnight Visitors										
Dekalb County	26,429	26,561	26,694	26,827	27,457	27,594	27,732	33,255	33,421	33,588
(3) Cherokee County	69,598	69,946	70,295	70,647	71,000	71,355	71,712	72,071	72,431	72,793
Canyon Center Visitors	1,120	1,160	1,200	2,435	3,151	3,131	3,888	4,024	4,860	5,030
Total-Gross Roomnights:	112,669	113,345	114,027	115,907	118,306	118,946	120,369	127,664	129,210	130,097
Occupiable Nights/Year	365	365	365	365	365	365	365	365	365	365
<u>Gross Room Demand</u>										
All Visitors	309	311	312	318	324	326	330	350	354	356
(4) Plus Inflow @ 10%	31	31	31	32	32	33	33	35	35	36
Subtotal:	340	342	343	350	356	359	363	385	389	392
Occupancy Factors										
(5) Annual Occupancy @	58%	58%	58%	58%	60%	62%	<b>64%</b>	<b>65%</b>	<b>65%</b>	<b>65%</b>
Supportable Rooms:	197	198	199	202	214	222	230	250	253	255
<u>Project Capture</u>										
Assumed @	20%							25%		
Supportable Rooms:	39							63		
Net Increase-Rooms								23		

(1) Assumes 16-month construction period with delivery in mid-2015

(2) Assumes three years to stabilized occupancy levels.

(3) Includes hotel/motel rooms, B&Bs, cabins and campgrounds. It excludes the estimated 13,000 campground sites located in Cherokee County

(4) Assumes "inflow" from other sources of demand not known at this time.

(5) Based on average annual occupancies of the competitive supply in Dekalb County (Table 13). Analysis assumes increase to 65% five years after delivery (2020).

## Local Hotel Market

Multiple hotels are located in and around Fort Payne including Hampton Inn, Holiday Inn Express, Days Inn, Econo Lodge, and Quality Inn. Figure 5-1 represents the various hotels and their respective locations compared to the LRCC. Table 5-2 represents the number of rooms and the average daily rate for each competing hotel.

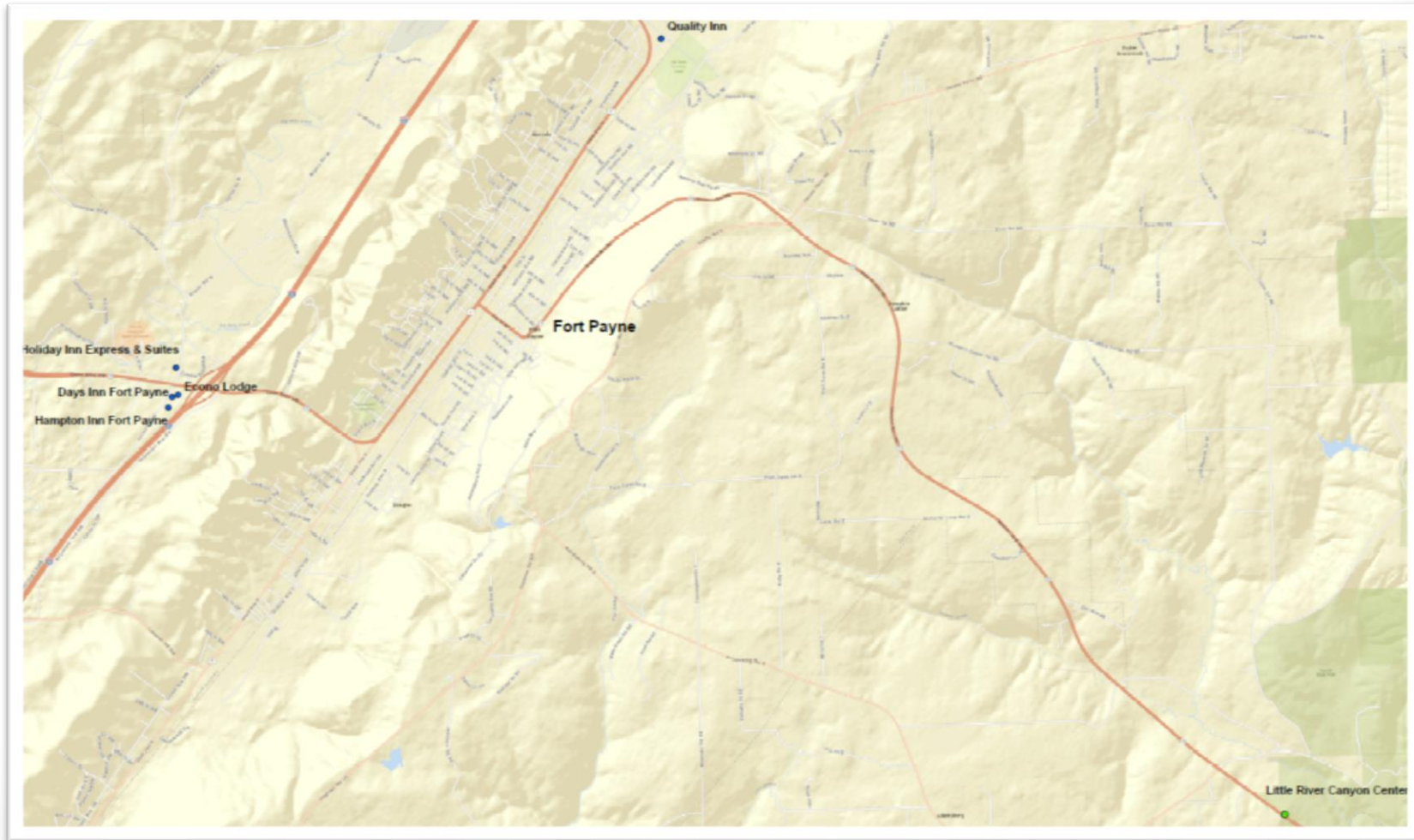


Figure 5-1: Local Hotel Market Vicinity Map

**Table 5-2: Local Hotel Market**

<u>Name</u>	<u># Rooms</u>	<u>Average Daily Rate</u>
Hampton Inn	58*	\$129.00
Holiday Inn Express	60	\$120.00
Days Inn	65	\$70.00
Econo Lodge	79	\$60.00
Quality Inn	42	\$58.00

\*The Hampton Inn is currently expanding to create an additional 28 rooms

### **Construction Cost Estimate**

Hilton Worldwide publishes a yearly Development Costs and Prototype Building Data in the United States, see Appendix C. The estimates used in this data are for suburban, low barrier to entry markets in regions such as the southeastern and midwestern United States. Hilton Worldwide analyzed 6 different hotel chains with various price points and capacities.

**Table 5-3: Hilton Worldwide Development Costs**

<u>Hotel Chain</u>	<u>Number of Rooms</u>	<u>Cost/Room</u>
Home 2 Suites by Hilton	107	\$98,191
Hampton Inn	80	\$108,381
Hampton Inn	104	\$97,178
Hampton Inn & Suites	101	\$108,807
Hilton Garden Inn	139	\$112,286
Homewood Suites	121	\$122,570

The estimates include design/engineering fees, permits, construction costs for the building and parking lot, furniture, fixtures, equipment, exterior signs, lighting, and insurance. Land acquisition cost is not included in these estimates.

The Hampton Inn with 80 rooms is the most comparable to the proposed hotel at LRCC. An estimated \$110,000/room was selected which yields a 60-room hotel at \$6.6 million. The Hampton Inn Comp is a 49,000-sq. ft. hotel.

**Table 5-4: Hotel Construction Cost Estimate**

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Est. Qty.</u>	<u>Total Cost</u>
1	Hotel	Room	\$110,000	60	\$6,600,000
<b>Total Estimated Construction Cost</b>					<b>\$6,600,000</b>

The estimated construction cost above is contingent upon the LRCC Board of Director’s (BD) installing a wastewater treatment system. The LRCC BD will not be responsible for the costs associated with the hotel. An established hotel developer will be responsible for the costs. The land for the hotel will be leased from the LRCC BD.

### **Financial Structuring**

The development of the proposed Hotel would represent a major investment in the public facilities available for visitors and guests to enjoy at the LRCC. The proposed facility with approximately 60 guest rooms would be a significant addition to the lodging market in DeKalb County. This section of the report examines the revenue potential from the Hotel as well as additional taxes and fees which would be generated by the facility.

Key data presented in the schedule are as follows:

- **Profit before Debt Service and Income Tax** – the profit amount is taken directly from the five-year cash flow statement presented in the report.
- **Additional Revenues** – the five-year cash flow statement for the Hotel shows the anticipated revenue from Hotel operations. We anticipate there will be additional revenues available to the property by agreement of the sponsoring governments from a number of sources which can be used to augment the financing of the facility.

- **Occupied Room/Rooms Revenue** – these revenues are taken directly from the five-year cash flow statement found in this report. It was assumed the number of occupied rooms would remain constant with the level achieved in the fifth year for a twenty-year projection period and the ADR/net incomes were assumed to increase at 3 percent annually.
- **Additional Revenues for the LRCC BD** – it was assumed the LRCC BD would receive additional revenues to support its financing from:
  - **Create Development District Assessment**
    - Implement a 2 percent lodging tax. This would increase the current lodging tax from 13 percent to 15 percent.
    - Implement a 2 percent sales tax. This would increase the current sales tax from 8 percent to 10 percent.
    - Implement a \$3 per room lodging fee.
    - Create an agreement with the City of Fort Payne that the City lodging taxes of 7% will be split with the LRCC BD (3.5%)

## Financial Analysis

Key Assumptions inherent in the Hotel’s financial analysis and success include:

- Little River Canyon Center will establish a Development District, appoint a Board of Directors for oversight of development, and issue revenue bonds for infrastructure improvements.
- The Hotel will be operated by professional management.
- The Hotel will have access to group leads from professional travel/tourism associations and related organizations.
- A lodging fee, lodging tax, and sales tax, of which a portion will be rebated to the LRCC’s Board of Director’s, is accounted for in the financial structuring section.

- No franchise fees are accounted for in this study. Franchise fees will depend on the hotel specific standards and requirements.
- Property tax is not included in the estimates of cash flow based on the assumption that LRCC will own the land and they are tax exempt.

### Estimated Financial Performance

Our estimates of cash flow from operations for the proposed Hotel for the first five years of operation are based on composite operating performance from limited-service hotels across the United States as published in the 2017 PKF Trends Report (“Trends”). Criteria selected for limited-service hotels include: ADR less than \$125, South Central geography, and less than 100 guest rooms. In addition, amount per available guest room and amount per occupied room benchmarks for all limited-service hotels was also relied upon. All account classifications generally conform to the definitions prescribed by the American Hotel & Motel Association in Uniform System of Accounts for Hotels, 11th edition.

The selected benchmarks from the 2017 PKF Trends Report are in Appendix D.

Cash flow operations for the Hotel’s first five years of operation are in Appendix E.

## **Economic Impact**

Based on the operating assumptions outlined in the previous sections of the report, the estimated economic impacts from the proposed hotel development are provided in this section.

### Economic Benefits from Construction

Based on an estimated development cost of \$6.6 million, construction activity associated with the Hotel will generate:

- \$2.64 million in supplies and equipment purchased in Fort Payne/DeKalb County
- \$2.37 million in payroll from construction jobs
- 80 construction jobs



- \$268,990 in construction-related public revenues generated from taxes and fees derived from construction and construction-related activity.

**Table 5-5: Hotel Economic Benefit from Construction**

General Economic Benefits from Construction

<u>Construction Costs</u>	<u>Value</u>
<b>Total Development Costs</b>	<b>\$6,600,000</b>
Materials (55% of hard costs + supplies & equipment)	\$3,630,000
Materials, supplies, & equipment purchased in Fort Payne/DeKalb County (40%)	\$2,640,000
Labor Costs (36% of hard costs)	\$2,376,000
Average Annual Payroll (9 Months Construction)	\$3,168,000
Average Construction Wage	\$39,840
Average Annual Full Time Equivalent (FTE) Employment	80
Annual Workside Retail Spending by Construction Workers	\$309,882
<b>Local Spending from Construction Materials &amp; Worker Spending</b>	<b>\$2,949,882</b>
<b>General Economic Benefits from Construction</b>	<b>\$6,909,882</b>
<u>Public Revenues from Construction</u>	
<u>Sales Taxes</u>	<u>Value</u>
Fort Payne	\$88,496
DeKalb County	\$29,499
Alabama	\$117,995
Permits & Fees	\$33,000
<b>Total Public Revenue from Construction</b>	<b>\$268,990</b>

Economic Benefits from Operation

Table 5-6 details the economic benefits to the local economy from the operation of the new Hotel, once construction is completed and operations are stabilized, in the third year. The Hotel can be expected to generate:

- \$1.9 million in revenue from hotel operations

- \$760,000 in annual payroll to employees
- \$1.28 million in annual local spending from hotel operations, employees, and guests (assuming the overnight users spend \$40 per visit)
- \$3.2 million in total annual general economic benefit

**Table 5-6: Hotel Annual General Economic Benefit from Operations**

<u>Local Operations of Hotel</u>	<u>Revenue/Expenses</u>	<u>Local Purchases</u>	<u>Total Spending</u>
Gross Annual Revenue (Stabilized Year 3)	\$1,929,269		\$1,929,269
Dept. Expenses	\$494,588	\$494,588	
Operating Expenses	\$604,076		
Utilities	\$71,734	\$71,734	
<b>Total Operational Spending</b>		<b>\$566,322</b>	
<u>Permanent Payroll</u>	<u>Total Employees</u>	<u>Annual Payroll</u>	<u>Emp. Spending/Year</u>
Hotel	40	\$760,000	
Local Purchases by Employees @ \$10 per day	40	\$10	\$146,000
<u>Additional Off-Site Spending by Guests</u>	<u>Total Guest Nights</u>	<u>Spend/Guest/Day</u>	<u>Total Off-Site Spending</u>
Hotel guest off-site spending	14,235	*\$40	\$569,400
<b>Annual Local Purchases - Operation, Employees, Guests</b>			<b>\$1,281,722</b>
<b>Total Annual General Economic Benefit</b>			<b>\$3,210,991</b>

\*\$40 was obtained from the Auburn University: TVA Eco-Tourism Study. Study reflects \$55.08 per day per person. This data reflects a percentage of the expenditure for study purposes.

Local Revenues from Taxes and Fees

The Hotel will generate public revenues from sales and lodging taxes. The Development District will also generate revenues from sales and lodging taxes in addition to the lodging fee. Since the property will be owned by JSU, property taxes are exempt.

Based on current data from the Alabama Department of Revenue, the following sales and lodging taxes would be applicable to operations at the LRCC hotel.

**Table 5-7: Local Hotel Tax Rates**

<u>Local Lodging Tax</u>	<u>Tax Rate</u>
Fort Payne Lodging Tax	7.0%
DeKalb County Lodging Tax	2.0%
Alabama Lodging Tax	4.0%
Development District Lodging Tax	2.0%
<b>Total Lodging Taxes</b>	<b>15.0%</b>
<u>Local Sales Tax</u>	<u>Tax Rate</u>
Fort Payne Sales Tax	3.0%
DeKalb Sales Tax	1.0%
Alabama Sales Tax	4.0%
Development District Sales Tax	2.0%
<b>Total Sales Taxes</b>	<b>10.0%</b>

Table 5-8 illustrates the potential revenues from sales and lodging taxes. Based on the operating assumptions outlined previously in this analysis, operations in the Hotel’s third, stabilized year would generate an estimated \$1.9 million in lodging revenue and \$1.28 million in taxable spending from local spending by employees and guests. This activity would generate a total of \$289,390 in lodging taxes and \$128,172 in sales taxes annually. These combined sales and lodging taxes would generate estimated total public revenues of \$285,818 and Development District revenues of \$174,499 annually.

- Fort Payne would receive an estimated \$105,976 annually
- DeKalb County would receive an estimated \$51,402 annually
- The State of Alabama would receive an estimated \$128,440 annually

- The Development District would receive an estimated \$174,449 annually

**Table 5-8: Annual Revenues from Hotel Taxes and Fees**

Room Revenue (Applied to Lodging Taxes)		\$1,929,269
Taxable Expenditures		\$1,281,722
<u>Local Lodging Tax</u>	<u>Tax Rate</u>	<u>Revenue</u>
Fort Payne Lodging Tax	7.0%	\$135,049
DeKalb County Lodging Tax	2.0%	\$38,585
Alabama Lodging Tax	4.0%	\$77,171
Development District Lodging Tax	2.0%	\$38,585
<b>Total Lodging Taxes</b>	<b>15.0%</b>	<b>\$289,390</b>
Fort Payne Sales Tax	3.0%	\$38,452
DeKalb Sales Tax	1.0%	\$12,817
Alabama Sales Tax	4.0%	\$51,269
Development District Sales Tax	2.0%	\$25,634
<b>Total Sales Taxes</b>	<b>10.0%</b>	<b>\$128,172</b>
<u>Annual Revenues from Taxes and Fees</u>		
Taxes to Fort Payne (Lodging + Sales)		\$105,976
Taxes to DeKalb County (Lodging + Sales)		\$51,402
Taxes to State of Alabama (Lodging + Sales)		\$128,440
Taxes to Development District (Lodging + Sales)		\$131,744
Lodging Fees to Development District		\$42,705
<b>Total Annual Public Revenues</b>		<b>\$285,818</b>
<b>Total Development District Revenues</b>		<b>\$174,449</b>

### Summary of Economic Impacts

The economic benefits to Fort Payne, DeKalb County, and the State of Alabama from the construction and operation of the Hotel at LRCC will be substantial and sustained over a significant period. The key economic benefits are:

#### **During Construction (one-time benefit):**

- \$6.6 million in construction value
- \$2.64 million in supplies & equipment purchased in Fort Payne/DeKalb County.
- \$2.37 million in payroll from construction jobs
- 80 construction jobs
- \$268,990 in construction-related public revenues generated from taxes and fees

#### **During Operations (recurring every year):**

- \$1.9 million in total annual local spending from hotel operations
- \$760,000 in payroll to employees
- \$1.28 million in annual local spending through hotel operations, employees and guests.
- \$3.2 million in total annual generated economic benefit
- Total public revenues of \$105,976 to Fort Payne annually
- Total public revenues of \$51,402 to DeKalb County annually
- Total public revenues of \$128,440 to the State of Alabama annually
- Total Development District Revenues of \$174,449 annually

## Recommendations

### Aesthetics

The vision for the Hotel will be designed with a “lodge feel” in mind, blending in with the natural surroundings and topography. We anticipate the property will have an exterior that complements the landscape and have an appropriate scale relative to the LRCC. The interior spaces would likely have a natural décor.

### Site Improvements, Entry, Lobby, Structure, & Vertical Access

Once guests enter the site, ample parking should be available on the surface lot around the perimeter of the hotel. Site improvements should include free-standing signage, which should be located on the sides of the site with roadway frontage (additional signage should be placed on the exterior of the building). We assume that all signage will adequately identify the property and meet the to-be-determined LRCC standards. Planned landscaping should allow for a positive guest impression and competitive exterior appearance. Sidewalks should be present along the front entrance and around the perimeter of the hotel. Overall, the site improvements for the property should reflect an appropriate look and feel for a hotel at LRCC.

The hotel structure should comprise one single building, which is likely to be constructed of a timber frame. The exterior of the hotel should be finished with an attractive building material, such as stucco, brick, or stone. Stairways and an elevator will provide internal vertical transportation within the main structure as needed. The hotel’s roof should be constructed consistent with the concept of the building construction. The installation of double-paned windows will reduce noise transmission into the rooms. Heating and cooling should be provided by individual in-room systems and several large units for the public areas. Overall, the building components should meet prototype development specifications set forth by the chosen brand. We assume that this type of limited-service hotel will meet the standards for this market and should complement existing nearby improvements. We assume that all structural components will meet local building codes and that no significant defaults will occur during construction that may impact the future operating potential of the hotel.

### Other Public Areas

We have assumed the future development of a limited-service hotel facility. Although facility programs and development specifications may differ among brands and facilities being considered, the limited service programming development specifications are generally consistent. Guests should enter the hotel through a single set of automatic doors, which will open to a small vestibule, and then through a second set of automatic doors. The lobby décor should be attractively finished and in line with brand and LRCC standards. The front desk should feature a stone countertop and should be installed with appropriate property management and telephone systems. The furnishing and finishes in this space should offer an appropriate first impression, and the design of the space should lend itself to adequate efficiency. We assume that all property management and guestroom technology will be appropriately installed for the effective management of hotel operations.

The hotel's breakfast dining area should be located within or adjacent to the lobby, which is appropriate for this type of hotel. The furnishings of the space are expected to be of similar style and finish as lobby and guestroom furnishings. Windows and a mounted television should further enhance the look and functionality of the room.

The hotel should offer a pool, whirlpool, and exercise room as recreational facilities. Other amenities should include a small business center or lobby workstation, a guest laundry room, a small vending area, and ice machines on each floor. Overall, the supporting facilities should be appropriate for a hotel of this type, and we assume that they will meet brand standards.

### Guestrooms

The hotel is expected to feature standard and suite-style configurations, and guestrooms should be present on all levels of the property within the single building. The guestrooms should offer typical amenities for this product tier. In addition to the standard furnishings, rooms should feature an iron and ironing board and a coffeemaker. All guestrooms should provide high-speed, wireless internet access. Suites, which will be available for a premium rate, should feature a larger living area, as well as a microwave and small refrigerator. Overall, the guestrooms should offer a competitive product for this area.

Guestroom restrooms should be of a standard size, with a shower-in-tub, commode, and single sink with vanity area, featuring a stone countertop. The floors are anticipated to be finished with tile, and the walls should be finished with knockdown texture or vinyl wall-covering. Restrooms should feature a hairdryer and complimentary toiletries. Overall, the restroom design is expected to be appropriate for a product of this type.

The interior guestroom corridors should be wide and functional, permitting the easy passage of housekeeping carts. Corridor carpet, wall covering, signage, and lighting are expected to be in keeping with the overall look and design of the rest of the property.

#### Supporting Areas and Engineering Systems

The hotel is expected to be served by the necessary back-of-the-house space, including an in-house laundry facility, administrative offices, and a small kitchen to serve the needs of the proposed property's complimentary breakfast operation. These spaces should be adequate for a hotel of this type and should allow for the efficient operation of the property under competent management.

We assume that the property will be built according to all pertinent codes and brand standards. Moreover, we assume its construction will not create any environmental hazards (such as mold) and that the property will fully comply with the American with Disabilities Act.





## **Section 6 – Tree House Village**

### **Previous Market Study Findings**

A market study has not been performed to date for the Tree House Village at LRCC.

### **Tree House Market**

Little River Canyon is an unforgettable destination, and with that statement comes a level of expectation for unique amenities and the Tree House Village fits the category. Tree House accommodations are becoming very popular and are currently sprinkled throughout the world, primarily in exotic locations. Recently, Red Mountain Park, located in Birmingham, Alabama, is building ten tree houses. Three are complete as of May 2017. This type of eco-tourism accommodations is an evolving market that is showing growing potential for overnight visitors seeking a unique experience.

### **Construction Cost Estimate**

The factors that most affect the cost of a tree house are size, height from ground, quality of finishing details, grade of materials, engineering and design. Commercial tree houses cost between \$100,000 and \$800,000. A restroom/shower facility is also a key required component for the Tree House Village. For the purposes of this report, we estimated the cost of a tree house at \$150,000 and the cost of the restroom/shower facility at \$175,000. Three tree houses are part of the initial phase of the Tree House Village. Table 6-1 summarizes the estimated construction cost.

**Table 6-1: Tree House Village Construction Cost Estimate**

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Est. Qty.</u>	<u>Total Cost</u>
1	Tree House	Each	\$150,000	3	\$450,000
2	Walking Trail	Square Yard	\$35	425	\$14,875
3	Shower and Restroom Facility	Lump Sum	\$175,000	1	\$175,000
4	Architectural Design including Engineering, Surveying, Geotechnical, and Permitting	Lump Sum	\$159,969	1	\$159,969
<b>Total Estimated Construction Cost</b>					<b>\$799,844</b>

### **Financial Structuring**

The LRCC Development Board will be responsible for the complete funding of the Tree House Village. The various funding options are presented in Section 10 of this report.

Key data presented in the schedule are as follows:

- **Profit before Debt Service and Income Tax** – the profit amount is taken directly from the five-year cash flow statement presented in the report.
- **Occupied Room/Rooms Revenue** – these revenues are taken directly from the five-year cash flow statement found in this report. It was assumed the number of occupied rooms would remain constant with the level achieved in the fifth year for a twenty-year projection period and the ADR/net incomes were assumed to increase at 5 percent annually.
- **Additional Revenues for the LRCC BD** – it was assumed the LRCC BD would receive additional revenues to support its financing from:
  - **Create Development District Assessment**
    - Implement a 2 percent lodging tax. This would increase the current lodging tax from 13 percent to 15 percent.

- Implement a 2 percent sales tax. This would increase the current sales tax from 8 percent to 10 percent.
- Implement a \$3 per room lodging fee.
- Create an agreement with the City of Fort Payne that the City lodging taxes of 7% will be split with the LRCC BD (3.5%).

## **Financial Analysis**

Key Assumptions inherent in the Tree House Village's financial analysis and success include:

- LRCC will establish Development District, appoint a Board of Directors for oversight of development, and issue tax-exempt revenue bonds for infrastructure improvements.
- The Tree House Village will be operated by the LRCC Development District.
- The Tree House Village will have access to group leads from professional travel/tourism associations and related organizations.
- A resort fee and/or occupancy tax, of which a portion will be rebated to the LRCC's Board of Director's, is accounted for in the financial structuring section.
- Property tax is not included in the estimates of cash flow based on the assumption that LRCC will own the land and they are tax exempt.
- The Tree House Village will operate from April 15 – November 15 each year.
- An average occupancy rate of 70% is achieved.
- Average Daily Rates were assumed at \$150/night for the first year and increased 3% annually in subsequent years.

### Estimated Financial Performance

Our estimates of cash flow from operation for the proposed Tree House Village for the first five years of operation are based on online treehouse market research. The estimates of cash flow table from operation for the Tree House Village's first five years of operation is in Appendix F.

### **Economic Impact**

Based on the operating assumptions outlined in the previous sections of the report, the estimated economic impacts from the proposed hotel development are provided in this section.

#### Economic Benefits from Construction

Based on an estimated development cost of \$799,844, construction activity associated with the Tree House Village will generate:

- \$319,938 in supplies and equipment purchased in Fort Payne/DeKalb County.
- \$287,944 in payroll from construction jobs.
- 14 construction jobs.
- \$34,101 in construction-related public revenues generated from taxes and fees derived from construction and construction-related activity.

**Table 6-2: Tree House Village Economic Benefits from Construction**

General Economic Benefits from Construction

<u>Construction Costs</u>	<u>Value</u>
<b>Tree House Village Development Costs</b>	<b>\$799,844</b>
Materials (55% of hard costs + supplies & equipment)	\$439,914
Materials, supplies, & equipment purchased in Fort Payne/DeKalb County (40%)	\$319,938
Labor Costs (36% of hard costs)	\$287,944
Average Annual Payroll (6 Months Construction)	\$575,888
Average Construction Wage	\$39,840
Average Annual Full Time Equivalent (FTE) Employment	14
Annual Work Side Retail Spending by Construction Workers	\$56,331
<b>Local Spending from Construction Materials &amp; Worker Spending</b>	<b>\$376,269</b>
<b>General Economic Benefits from Construction</b>	<b>\$856,175</b>
<u>Public Revenues from Construction</u>	
<u>Sales Taxes</u>	<u>Value</u>
Fort Payne	\$11,288
DeKalb County	\$3,763
Alabama	\$15,051
Permits & Fees	\$3,999
<b>Total Public Revenue from Construction</b>	<b>\$34,101</b>

Economic Benefits from Operation

Table 6-3 below details the economic benefits to the local economy from the operation of the Tree House Village, once construction is completed and operations are stabilized, in the third year. The Tree House Village can be expected to generate:

- \$74,320 in revenue from tree house rentals
- \$38,000 in annual payroll to employees
- \$70,898 in annual local spending from operations, employees, and guests (assuming the overnight users spend \$40 per visit)

- \$145,218 in total annual general economic benefit

**Table 6-3: Tree House Village Annual General Economic Benefit from Operations**

<u>Local Operations of Tree House Village</u>	<u>Revenue/Expenses</u>	<u>Local Purchases</u>	<u>Total Spending</u>
Gross Annual Revenue (Stabilized Year 3)	\$74,320		\$74,320
Dept. Expenses	\$15,918	\$15,918	
Operating Expenses	\$43,500		
Utilities	\$22,000	\$22,000	
<b>Total Operational Spending</b>		<b>\$37,918</b>	
<u>Permanent Payroll</u>	<u>Total Employees</u>	<u>Annual Payroll</u>	<u>Emp. Spending/Year</u>
Employee	2	\$38,000	
Local Purchases by Employees @ \$10 per day	2	\$10	\$7,300
<u>Additional Off-Site Spending by Guests</u>	<u>Total Guest Nights</u>	<u>Spend/Guest/Day</u>	<u>Total Off-Site Spending</u>
Tree House Village guest off-site spending	642	*\$40	\$25,680
<b>Annual Local Purchases - Operation, Employees, Guests</b>			<b>\$70,898</b>
<b>Total Annual General Economic Benefit</b>			<b>\$145,218</b>

\*\$40 was obtained from the Auburn University: TVA Eco-Tourism Study. Study reflects \$55.08 per day per person. This data reflects a percentage of the expenditure for study purposes.

Local Revenues from Taxes and Fees

The Tree House Village will generate public revenues from sales and lodging taxes. The Development District will also generate revenues from sales and lodging taxes in addition to the lodging fee. Since the property will be owned by JSU, property taxes are exempt.

**Table 6-4: Local Tree House Village Tax Rates**

<u>Local Lodging Tax</u>	<u>Tax Rate</u>
Fort Payne Lodging Tax	7.0%
DeKalb County Lodging Tax	2.0%
Alabama Lodging Tax	4.0%
Development District Lodging Tax	2.0%
<b>Total Lodging Taxes</b>	<b>15.0%</b>
<u>Local Sales Tax</u>	<u>Tax Rate</u>
Fort Payne Sales Tax	3.0%
DeKalb Sales Tax	1.0%
Alabama Sales Tax	4.0%
Development District Sales Tax	2.0%
<b>Total Sales Taxes</b>	<b>10.0%</b>

Table 6-5, on the following page, illustrates the potential revenues from sales, lodging taxes, and a lodging fee. Based on the operating assumptions outlined previously in this analysis, operations in the Tree House Village’s third, stabilized year would generate an estimated \$74,320 in lodging revenue and \$70,898 in taxable spending from local spending by employees and guests. This activity would generate a total of \$11,147 in lodging taxes and \$7,090 in sales taxes annually. These combined sales and lodging taxes would generate estimated total public revenues of \$12,732 and Development District revenues of \$7,431 annually.

- DeKalb County would receive an estimated \$2,156 annually
- The State of Alabama would receive an estimated \$5,650 annually
- The Development District would receive an estimated \$4,172 annually



**Table 6-5: Annual Revenues from Tree House Village Taxes and Fees**

Room Revenue (Applied to Lodging Taxes)		\$74,320
Taxable Expenditures (Applied to Sales Taxes)		\$70,898
<u>Local Lodging Tax</u>	<u>Tax Rate</u>	<u>Revenue</u>
Fort Payne Lodging Tax	7.0%	\$5,202
DeKalb County Lodging Tax	2.0%	\$1,486
Alabama Lodging Tax	4.0%	\$2,973
Development District Lodging Tax	2.0%	\$1,486
<b>Total Lodging Taxes</b>	<b>15.0%</b>	<b>\$11,147</b>
Fort Payne Sales Tax	3.0%	\$2,127
DeKalb Sales Tax	1.0%	\$709
Alabama Sales Tax	4.0%	\$2,836
Development District Sales Tax	2.0%	\$1,418
<b>Total Sales Taxes</b>	<b>10.0%</b>	<b>\$7,090</b>
<u>Annual Revenues from Taxes and Fees</u>		
Taxes to Fort Payne (Lodging + Sales)		\$4,728
Taxes to DeKalb County (Lodging + Sales)		\$2,195
Taxes to State of Alabama (Lodging + Sales)		\$5,809
Taxes to Development District (Lodging + Sales)		\$5,505
Lodging Fees to Development District		\$1,926
<b>Total Annual Public Revenues</b>		<b>\$12,732</b>
<b>Total Development District Revenues</b>		<b>\$7,431</b>

### Summary of Economic Impacts

The economic benefits to Fort Payne, DeKalb County, and the State of Alabama from the construction and operation of the Tree House Village at LRCC will be substantial and sustained over a significant period. The key economic benefits are:

#### **During Construction (one-time benefit):**

- \$799,844 in construction value
- \$319,938 in supplies & equipment purchased in Fort Payne/DeKalb County.
- \$287,944 in payroll from construction jobs
- 14 construction jobs
- \$34,101 in construction-related public revenues generated from taxes and fees

#### **During Operations (recurring every year):**

- \$74,320 in total annual local spending from tree house operations
- \$38,000 in payroll to employees
- \$70,898 in annual local spending through tree house operations, employees and guests.
- \$145,218 in total annual generated economic benefit.
- Total public revenues of \$4,728 to Fort Payne annually.
- Total public revenues of \$2,195 to DeKalb County annually
- Total public revenues of \$5,809 to the State of Alabama annually
- Total Development District Revenues of \$7,431 annually.

## Recommendations

### Professional Consultant

Industry experts in evaluating, designing, and constructing tree houses must be involved in the construction process. The costs of full service custom tree houses are significant, but the tree houses must be built safely. Tree house consultants specialize in carpentry, tree biology, welding and machining, and engineering. Consultants will aid in evaluating trees, choosing a location, designing, permitting, and constructing the tree house.

### Size

An overnight stay commercial grade tree house will require approximately 400 square feet. As the size increases, so does the potential live loading on the structure. That requires more lumber, more labor, and stronger tree attachment systems.

### Aesthetics

The tree houses should blend seamlessly into the surrounding environment. Natural materials and non-invasive construction methods will be used to minimize the construction impact.

### Restroom/Shower Facility

The tree house units will not have water or sewer available in the units. A restroom/shower facility will be a necessity to keep overnight guests comfortable. A common restroom/shower facility will serve multiple purposes at the Tree House Village. It will not only be used by tree house guests, but it will also serve as a shared restroom facility for day users utilizing LRCC's amenities. The restroom/shower facility will require a minimum of four (4) restroom/shower rooms. Each room consists of a toilet, lavatory, and a shower. The facility will be ADA compliant.

### Accessories

Tree house accessories do not have a drastic impact on the total construction cost. Swings, rope and bucket, flags are in the \$1--\$150 range. Fireman's poles, cargo nets, and small zip lines are in the \$300-\$1000 range. Cable bridges connecting

structures cost \$2,000-\$8,000 depending on numerous factors. Only the more serious accessories start to make a significant cost difference in a tree house.

### Height Above Grade

We recommend the tree houses be built at a height of 8 feet above grade. At 8 feet, workers can reach the platform from the ground or a short step ladder. At 12 feet and higher, larger ladders, ropes, and/or scaffolding are required. For projects at 15 feet to 20 feet, the height can become the primary factor in the overall cost. The additional cost to go higher can be a primary factor for an added view of the surrounding scenery. The professional consultant will aid in selected the appropriate height of the tree houses.

### Quality of Materials

The type of materials used in the construction of the tree houses can amount to thousands of dollars of additional costs. We recommend using reclaimed lumber and recycled products. These products come with an increased cost but continue with the overall positive environmental impact of the LRCC.

### Maintenance

Building structures in a living and growing foundation presents several maintenance challenges not present in traditional structures. The tree houses should have a design life of at least 20 years. Common maintenance issues include wood protection, tree growth, storm damage, animal damage, and roof issues. There are numerous professional tree house consulting companies who perform yearly maintenance inspections for commercial tree houses. We recommend contracting with one of these companies to ensure the continual safe operation of the Tree House Village for years to come.

### Tree House Naming

Most commercial tree houses have unique names associated with each tree house. Several tree house developments around the country have accepted gift donations from private parties to name the tree houses. This model is beneficial to the LRCC BD because the donated money can be used to offset the construction costs of the treehouse.

## **Section 7 – Bunkhouse**

### **Previous Market Study Findings**

WTL+a, a national real estate consulting firm based in Washington, D.C., completed a Lodging Market Study in 2012 to examine market potentials for lodging concepts at the Little River Canyon Center. The market potential for an “economy-style” dorm containing 50 to 80 rooms with targeted average daily rates of \$65 per room per night was analyzed by WTL+a. The recommended development potential identified in the study was a 50-60 room “economy-style” Dormitory. Each room should be of sufficient size to accommodate two (2) people per room. WTL+a also recommended the creation of a structure similar to Dauphin Island Sea Lab with JSU and possibly other institutions.

Based on comments from LRCC representatives and staff, we have assumed a Bunkhouse in lieu of a Dormitory for the LRCC. The Bunkhouse will have limited amenities in each room and common areas, and shared restroom/shower facilities.

### **Construction Cost Estimate**

Dormitories construction cost is dependent on the average room size and any additional amenities such as common areas, classrooms, and computer rooms. Construction costs range from \$50,000 per bed up to \$100,000 per bed. Based on the comments from the LRCC, we are going with a very limited dormitory style facility, the bunkhouse. With an estimated cost of \$25,000 per bed. We are assuming 30 rooms with two (2) beds per room. The estimated construction cost for the Bunkhouse is \$1,875,000.

**Table 7-1: Bunkhouse Construction Cost Estimate**

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Est. Qty.</u>	<u>Total Cost</u>
1	Bunkhouse	Bed	\$25,000	60	\$1,500,000
2	Architectural Design including Engineering, Surveying, Geotechnical, and Permitting	Lump Sum	\$900,000	1	\$375,000
<b>Total Estimated Construction Cost</b>					<b>\$1,875,000</b>

### **Financial Structuring**

The development of the proposed Bunkhouse would represent a major investment in expansion of JSU’s off-site learning. This section of the report examines the revenue potential from the Bunkhouse as well as additional taxes and fees which would be generated by the Bunkhouse. These sources of revenue are then analyzed in Section 10 to determine how they could be used to finance the development of the Bunkhouse.

Key data presented in the schedule are as follows:

- **Profit before Debt Service and Income Tax** – the profit amount is taken directly from the five-year cash flow statement presented in the report.
- **Occupied Room/Rooms Revenue** – these revenues are taken directly from the five-year cash flow statement found in this report. It was assumed the number of occupied rooms would remain constant with the level achieved in the fifth year for a twenty-year projection period and the ADR/net incomes were assumed to increase at 3 percent annually.
- **Additional Revenues for the LRCC BD** – it was assumed the LRCC BD would receive additional revenues to support its financing from two sources.
  - **Create Development Authority Assessment**
    - Implement a 2 percent lodging tax. This would increase the current lodging tax from 13 percent to 15 percent.

- Implement a 2 percent sales tax. This would increase the current sales tax from 8 percent to 10 percent.
- Implement a \$3 per room lodging fee.
- Create an agreement with the City of Fort Payne that the City lodging taxes of 7% will be split with the LRCC BD (3.5%)

## Financial Analysis

Key Assumptions inherent in the Bunkhouse’s financial analysis and success include:

- Little River Canyon Center will establish a Development District, appoint a Board of Directors for oversight of development, and issue tax-exempt revenue bonds for infrastructure improvements.
- The Bunkhouse will be operated by JSU (see alternative in Section 10).
- A lodging fee, lodging tax, and sales tax, of which a portion will be rebated to the LRCC’s Board of Director’s, is accounted for in the financial structuring section.
- Property tax is not included in the estimates of cash flow based on the assumption that JSU will own the land and they are tax exempt.
- JSU and LRCC will create a cooperative curriculum to continually attract students to fill the Bunkhouse.
- The annual occupancy percentage is 90% per WTL+a study

### Estimated Financial Performance

The Bunkhouse will not only be used for student housing at the LRCC, it will also be used like a hotel with a “state park-like simplicity” per WTL+a. Due to this, we used the 2017 PKF Trends Report (“Trends”) for a limited service hotel, ADR less than \$75, South Central Geography, and less than 100 guest rooms. In addition, amount per available guest room and amount per occupied room benchmarks for all limited service hotels was also relied upon.

The selected benchmarks from the 2017 PKF Trends Report are in Appendix G.



## Economic Impact

Based on the operating assumptions outlined in the previous sections of the report, the estimated economic impacts from the proposed Bunkhouse development are provided in this section.

### Economic Benefits from Construction

Based on an estimated development cost of \$1.875 million, construction activity associated with the Bunkhouse will generate:

- \$750,000 in supplies and equipment purchased in Fort Payne/DeKalb County
- \$675,000 million in payroll from construction jobs
- 21 construction jobs
- \$75,977 in construction-related public revenues generated from taxes and fees derived from construction and construction-related activity.

**Table 7-2: Bunkhouse Economic Benefits from Construction**  
General Economic Benefits from Construction

<u>Construction Costs</u>	<u>Value</u>
<b>Bunkhouse</b>	<b>\$1,875,000</b>
Materials (55% of hard costs + supplies & equipment)	\$1,031,250
Materials, supplies, & equipment purchased in Fort Payne/DeKalb County (40%)	\$750,000
Labor Costs (36% of hard costs)	\$675,000
Average Annual Payroll (9 Months Construction)	\$843,750
Average Construction Wage	\$39,840
Average Annual Full Time Equivalent (FTE) Employment	21
Annual Work Side Retail Spending by Construction Workers	\$82,532
<b>Local Spending from Construction Materials &amp; Worker Spending</b>	<b>\$832,532</b>
<b>General Economic Benefits from Construction</b>	<b>\$1,957,532</b>
<u>Public Revenues from Construction</u>	
<u>Sales Taxes</u>	<u>Value</u>
Fort Payne	\$24,976
DeKalb County	\$8,325
Alabama	\$33,301
Permits & Fees	\$9,375
<b>Total Public Revenue from Construction</b>	<b>\$75,977</b>

Economic Benefits from Operation

Table 7-3 below details the economic benefits to the local economy from the operation of the new Bunkhouse, once construction is completed and operations are stabilized, in the third year. The Bunkhouse can be expected to generate:

- \$320,000 in revenue from Bunkhouse operations
- \$152,000 in annual payroll to employees

- \$557,644 in annual local spending from hotel operations, employees, and guests (assuming the overnight users spend \$40 per visit)
- \$878,409 in total annual general economic benefit

**Table 7-3: Annual General Economic Benefit from Operations**

<u>Local Operations of Bunkhouse</u>	<u>Revenue/Expenses</u>	<u>Local Purchases</u>	<u>Total Spending</u>
Gross Annual Revenue (Stabilized Year 3)	\$320,765		\$320,765
Dept. Expenses	\$108,106	\$108,106	
Operating Expenses	\$89,188		
Utilities	\$26,138	\$26,138	
<b>Total Operational Spending</b>		<b>\$132,244</b>	
<u>Permanent Payroll</u>	<u>Total Employees</u>	<u>Annual Payroll</u>	<u>Emp. Spending/Year</u>
Employee	8	\$152,000	
Local Purchases by Employees @ \$10 per day	8	\$10	\$29,200
<u>Additional Off-Site Spending by Guests</u>	<u>Total Guest Nights</u>	<u>Spend/Guest/Day</u>	<u>Total Off-Site Spending</u>
Bunkhouse guest off-site spending	9,855	*\$40	\$394,200
<b>Annual Local Purchases - Operation, Employees, Guests</b>			<b>\$557,644</b>
<b>Total Annual General Economic Benefit</b>			<b>\$878,409</b>

\*\$40 was obtained from the Auburn University: TVA Eco-Tourism Study. Study reflects \$55.08 per day per person. This data reflects a percentage of the expenditure for study purposes.

Revenues from Taxes and Fees

The Bunkhouse will generate public revenues from sales and lodging taxes. The Development District will also generate revenues from sales and lodging taxes in addition to the lodging fee. Since the property will be owned by JSU, property taxes are exempt.

Based on current data from the Alabama Department of Revenue, the following sales and lodging taxes would be applicable to operations at the Bunkhouse.

**Table 7-4: Local Bunkhouse Tax Rates**

<u>Local Lodging Tax</u>	<u>Tax Rate</u>
Fort Payne Lodging Tax	7.0%
DeKalb County Lodging Tax	2.0%
Alabama Lodging Tax	4.0%
Development District Lodging Tax	2.0%
<b>Total Lodging Taxes</b>	<b>15.0%</b>
<u>Local Sales Tax</u>	<u>Tax Rate</u>
Fort Payne Sales Tax	3.0%
DeKalb Sales Tax	1.0%
Alabama Sales Tax	4.0%
Development District Sales Tax	2.0%
<b>Total Sales Taxes</b>	<b>10.0%</b>

Table 7-5, on the following page, illustrates the potential revenues from sales and lodging taxes. Based on the operating assumptions outlined previously in this analysis, operations in the Bunkhouse’s third, stabilized year would generate an estimated \$320,765 in lodging revenue and \$557,664 in taxable spending from local spending by employees and guests. This activity would generate a total of \$48,115 in lodging taxes and \$55,766 in sales taxes annually. These combined sales and lodging taxes would generate estimated total public revenues of \$75,086 and Development District revenues of \$58,360 annually.

- Fort Payne would receive an estimated \$27,956 annually.
- DeKalb County would receive an estimated \$11,992 annually.
- The State of Alabama would receive an estimated \$35,138 annually.

- The Development District would receive an estimated \$58,360 annually.

**Table 7-5: Annual Revenues from Bunkhouse Taxes and Fees**

Room Revenue (Applied to Lodging Taxes)		\$320,765
Taxable Expenditures (Applied to Sales Taxes)		\$557,664
<u>Local Lodging Tax</u>	<u>Tax Rate</u>	<u>Revenue</u>
Fort Payne Lodging Tax	7.0%	\$22,454
DeKalb County Lodging Tax	2.0%	\$6,415
Alabama Lodging Tax	4.0%	\$12,831
Development District Lodging Tax	2.0%	\$6,415
<b>Total Lodging Taxes</b>	<b>8.0%</b>	<b>\$48,115</b>
Fort Payne Sales Tax	3.0%	\$16,729
DeKalb County Sales Tax	1.0%	\$5,577
Alabama Sales Tax	4.0%	\$22,307
Development District Sales Tax	2.0%	\$11,153
<b>Total Sales Taxes</b>	<b>7.0%</b>	<b>\$55,766</b>
<u>Annual Revenues from Taxes and Fees</u>		
Taxes to Fort Payne (Lodging + Sales)		\$27,956
Taxes to DeKalb County (Lodging + Sales)		\$11,992
Taxes to State of Alabama (Lodging + Sales)		\$35,138
Taxes to Development District (Lodging + Sales)		\$28,795
Lodging Fees to Development District		\$29,565
<b>Total Annual Public Revenues</b>		<b>\$75,086</b>
<b>Total Development District Revenues</b>		<b>\$58,360</b>

### Summary of Economic Impacts

The economic benefits to Fort Payne, DeKalb County, and the State of Alabama from the construction and operation of the Bunkhouse at LRCC will be substantial and sustained over a significant period. The key economic benefits are:

#### **During Construction (one-time benefit):**

- \$1.875 million in construction value
- \$750,000 in supplies & equipment purchased in Fort Payne/DeKalb County.
- \$675,000 in payroll from construction jobs
- 21 construction jobs
- \$75,977 in construction-related public revenues generated from taxes and fees

#### **During Operations (recurring every year):**

- \$320,765 in total annual local spending from Bunkhouse operations
- \$152,000 in payroll to employees
- \$557,664 in annual local spending through dorm operations, employees and guests.
- \$878,409 in total annual generated economic benefit
- Total public revenues of \$27,956 to Fort Payne annually
- Total public revenues of \$11,992 to DeKalb County annually
- Total public revenues of \$35,138 to the State of Alabama annually
- Total Development District Revenues of \$58,360 annually

## Recommendations

### Room Size

The square footage per bed has been rising over the years as social spaces, classrooms, and other program spaces are added to dormitories. Dormitories with 325 to 400 square feet per student are not uncommon. Compared to older double loaded corridors of the 50's and 60's at under 200 square feet per bed, this is quite a change.

There are still multiple cases that may indicate a new trend. A school may build less square feet per bed, to provide less amenity spaces to provide basic housing at the lowest possible cost. This trend is what the Dormitories at the LRCC should follow. We recommend a minimum of 250 square feet per bed.

### Quality

There is a growing trend for a higher quality look and feel of the dormitories. Many privately developed projects may look like the home the students came from, but below the surface the durability of institutional construction is often not implemented. This is a constant push/pull in the decision-making by schools on P3 deals, and is affected by the general pressures to keep project costs down. Traditionally, CMU walls and plain finishes are the go to finishing's for dormitories. In order to keep the ADR low, we recommend CMU walls and plain finishes for the Dormitories.

### Security

Most schools have fully embraced the use of card access security systems, and is quickly becoming the standard across all campuses. Some campuses use them for the main entry doors and other campuses use them even further for entry into individual suites. The majority do not use cards to enter individual bedrooms and still use keys or electronic combination locks.

Closed Circuit TV (CCTV) installations are growing but the extent varies depending on location and the culture of the school. Some do not use cameras because the students may not tolerate them as an invasion of privacy. Usually cameras are found

at the exterior of buildings and at the entrances. From there, the use varies, however, more campuses are beginning to use internal cameras showing who among the residents and visitors went room to room.

Incidents around the country are pushing schools to take more proactive stances on security, so the use of these systems and other warning/notification systems is increasing. We recommend the card access and exterior CCTV monitoring for the new Bunkhouse at the LRCC.

#### Sustainability

The LRCC is currently LEED certified silver facility. Industry standards reflect the same silver certification for dormitories. The key focus is on lowering operating costs using more efficient HVAC and electrical systems. Water conservation is also a key factor in the LEED certification. We recommend the new Bunkhouse satisfy the LEED silver certification at a minimum.





# Section 8 – Aerial Treetop Adventure

## Previous Market Study Findings

Adventure Ride Concepts & Systems performed an economic analysis on an Aerial Adventure Park that would capitalize on the advantage of existing visitation of the Little River Canyon National Preserve and to work in conjunction with the existing Little River Canyon Center. The goal of this study was to create the Little River Canyon Adventure Center (LRCAC). The LRCAC would combine traditional outdoor activities with the new technologies to create a full-day outdoor attraction. The planned activities/rides include:

- AvatarOne Canopy Tour
- EcoFlyer Course
- Adventure Tower with Giant Swing and Kids Zone
- Aerial Trekking Course
- Canopy Adventure Hike

The total estimated construction cost is \$1,885,103.98 per the LRCAC study.

The initial construction capital investment will be approximately \$1,944,599. The Adventure Ride Concepts and Systems is removing the \$403,605 in profit from the construction as part of their investment into the LRCAC.

The LRCAC 5-year projection looks very promising if the conversion rate continues to increase as the model suggests.

**LRCAC Activity and Structure Construction Cost Breakdown**

ACTIVITY	COST OF INSTALL	COI SPECIAL MATERIAL	PROFIT & OVERHEAD	TOTAL
Avatar	\$358,365.00	\$175,750.00	\$158,433.00	\$692,548.00
EcoFlyer	\$237,068.00	\$81,350.00	\$101,915.00	\$420,333.00
EcoTrek	\$242,576.00		\$75,410.98	\$317,986.98
Adventure	\$147,944.00		\$45,592.00	\$193,536.00
Adventure	\$22,500.00		\$8,000.00	\$30,500.00
Equipment	\$52,700.00		\$9,300.00	\$62,000.00
Rigging Pods	\$48,200.00		\$5,000.00	\$53,200.00
Fixed Overhead Costs		\$40,000.00		\$40,000.00
Technical Services	\$75,000.00			\$75,000.00
<b>Total</b>	<b>\$1,109,353.00</b>	<b>\$297,100.00</b>	<b>\$403,650.98</b>	<b>\$1,885,103.98</b>

*All pricing based on estimates, final pricing determined after final design*

**Figure 8-1: Activity and Structure Construction Cost**

Little River Canyon Adventure Center 5-year Projections						
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
LRCNP Feb-Nov Attendance	192,584	197,660	2,035,88	209,700	216,216	
Conversion Rate	4%	5%	8%	10%	12%	
Attendance	8,061	9,883	16,287	20,970	25,946	81,147
Revenue	\$590,479.67	\$723,930.95	\$1,193,038.21	\$1,536,036.69	\$1,900,570.22	\$5,944,055.74
Expense	\$571,464.74	\$563,236.95	\$678,041.44	\$737,148.48	\$793,659.27	\$3,343,550.88
Profit	\$19,014.93	\$160,694	\$514,996.77	\$798,888.21	\$1,106,910.95	\$2,600,504.86

*Conversions rate based on projected LRCNP current attendance projections, LRCAC open Feb.-Nov Year 1 higher than conversion rate due to Grand Opening sales*

Figure 8-2: Adventure Center 5-Year Projections

LRCAC will have a significant economic impact on the Canyon Center gift shop. The study concluded that projected revenue for the Canyon Center gift shop to be \$94,302.

# of Visitors per year	8,061	9,883	16,287	20,970	25,946
<b>Per guest retail expenditure</b>					
<b>\$1.93</b>	\$15,557.73	\$19,074.19	\$31,433.91	\$40,472.10	\$50,075.78
<b>\$3.86</b>	\$31,115.46	\$38,148.38	\$62,867.82	\$80,944.20	\$100,151.56
<b>\$5.79</b>	\$46,673.19	\$57,222.57	\$94,301.73	\$121,416.30	\$150,227.34
<b>\$9.66</b>	\$77,869.26	\$95,469.78	\$157,332.42	\$202,570.20	\$250,638.36

Figure 8-3: Gift Shop Revenue

In addition to the direct economic impact of the Canyon Center gift shop, the LRCAC will create between 5.8 direct jobs and 2.9 indirect jobs based on the lowest levels of attendance; and 23.3 direct jobs and 11.6 indirect jobs based on the highest projected attendance. In practice, the LRCAC will create 3 to 5 full-time employees and as many as 24 summer seasonal staff positions.

The following table summarizes the direct sales tax impact from the LRCAC study.

<b>Direct Sales Tax Impact from LRCAC Sales</b>					
# of Visitors per year	8,061	9,883	16,287	20,970	25,946
Projected Gross Revenue	\$590,479.67	\$723,930.95	\$1,193,038.21	\$1,536,036.69	\$1,900,570.22
Alabama Sales Tax 4%	\$23,619.19	\$28,957.24	\$47,721.53	\$61,441.47	\$76,022.81
DeKalb County Sales Tax 1%	\$5,904.80	\$7,239.31	\$11,930.38	\$15,360.37	\$19,005.70
Fort Payne Sales Tax 3%	\$17,714.39	\$21,717.93	\$35,791.15	\$46,081.10	\$57,017.11
<b>Total Sales Tax Impact</b>	<b>\$47,238.37</b>	<b>\$57,914.48</b>	<b>\$95,443.06</b>	<b>\$122,882.94</b>	<b>\$152,045.62</b>

Figure 8-4: Direct Sales Tax Impact

Local business will also see a greater economic impact per the LRCAC study.

## Review

The LRCAC economic study seems like a promising development for the LRCC. The models showed a significant growth within the first 5 years and revenue exploding. If the previous model is correct, there will be a great benefit to LRCC and the surrounding community. We recommend that the aerial adventure be re-visited after the development of hotel, restaurant, and bunkhouse.

The drawback of the aerial adventure area is finding a location for installation that will have a positive impact. The area currently behind LRCC is used by the NPS as a learning area for visitors. This area would no longer be pristine if the aerial adventure attractions are installed.

## Section 9 – Restaurant/Marketplace

### Previous Market Study Findings

A market study has not been completed for a restaurant at the LRCC.

### Restaurant Market

The LRCC is limited on developable land if the additional parcels are not purchased. Due to this, we have proposed a marketplace style restaurant adjacent to the Hotel. The goal of this marketplace is to offer cooked meals, pre-made meals on the go, sell alcohol, and provide a small convenient store type feel for basic food needs. With these goals in mind, the marketplace can reach not only Hotel and Bunkhouse users, but also LRCC day visitors, staff, and the public.

### Construction Cost Estimate

The construction cost estimate for the Marketplace is for a cold, dark shell. A cold, dark shell consists of the shell of a building and delivers to the tenant a concrete floor slab, exterior walls, roof, storefront and electric (without panel), gas, water, and sewer services stubbed to the premises. The tenant will be responsible for the HVAC installation and distribution within the space. The fire sprinklers shall be installed with the shell to meet shell building codes. Construction costs for a cold, dark shell range from \$50 - \$80 per square foot. We chose \$65 per square foot for our analysis.

**Table 9-1: Marketplace Construction Cost Estimate**

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Est. Qty.</u>	<u>Total Cost</u>
1	Cold, Dark Shell	Square Feet	\$65	2,500	\$162,500
2	Architectural Design including Engineering, Surveying, Geotechnical, and Permitting	Lump Sum	\$40,625	1	\$40,625
3	Tenant Improvement Allowance	Square Feet	\$45	2,500	\$112,500
<b>Total Estimated Construction Cost</b>					<b>\$315,625</b>

A TIA is included in the estimated construction costs above. The TIA is worked out during the ground lease portion of the negotiations.

## Financial Structuring

The development of the proposed Marketplace would represent a much-needed amenity at the LRCC. This section of the report examines the revenue potential from the Marketplace as well as additional taxes and fees which would be generated by the facility. These sources of revenue are then analyzed in Section 10 to determine how they could be used to finance the development of the facility.

Key data presented in the schedule are as follows:

- **Profit before Debt Service and Income Tax** – the profit amount is taken directly from the five-year cash flow statement presented in the report.
- **Additional Revenues** – the five-year cash flow statement for the Marketplace does not include additional revenues. We anticipate additional revenue opportunities are possible in the future with events and meetings, but these were not included in the analysis.
- **Food and Beverage Revenue from Hotel Guests** – these revenues assume \$10.15 is spent at the marketplace for every occupied room in the hotel.
- **Food and Beverage Revenue from LRCC Students, Visitors, & Staff** – Auburn University completed an eco-tourism study for TVA for the State of Alabama. They found that visitors spend an average of \$55 per day on food and drink while traveling in northeastern Alabama. We have assumed that \$13.75 of the \$55 will be spent at the Marketplace. We have also assumed that 150 visitors to the LRCC will eat at the Marketplace daily.
- **Additional Revenues for the LRCC BD** – it was assumed the LRCC BD would receive additional revenues to support its financing from:
  - **Create Development Authority Assessment**
    - Implement a 2 percent sales tax. This would increase the current sales tax from 8 percent to 10 percent.

- Implement a 2 percent food and beverage tax. This would increase the sales tax from 10 percent to 12 percent.

## **Financial Analysis**

Key Assumptions inherent in the Marketplace’s financial analysis and success include:

- Little River Canyon Center will establish a Development District, appoint a Board of Directors for oversight of the development, and issue revenue bonds for infrastructure improvements.
- The Marketplace will be operated by professional management.
- Alcohol sales must be permitted in the Development District
- A sales tax and food and beverage tax, of which a portion will be rebated to the LRCC’s Board of Director’s, is accounted for in the financial structuring section.
- No franchise fees are accounted for in this study. Franchise fees will depend on the hotel specific standards and requirements.
- Property tax is not included in the estimates of cash flow based on the assumption that LRCC will own the land and they are tax exempt.

### **Estimated Financial Performance**

Our estimates of cash flow operations for the proposed Marketplace for the first five years of operation are based on food and beverage trends in the Hotel industry from the PKF Trends Report (Appendix G) and from the Auburn-TVA Eco-Tourism Study. Cash flow operations from the proposed Marketplace development are in Appendix H.

## **Economic Impact**

Based on the operating assumptions outlined in the previous sections of the report, the estimated economic impacts from the proposed hotel development are provided in this section.



### Economic Benefits from Construction

Based on an estimated development cost of \$315,625, construction activity associated with the Marketplace will generate:

- \$126,250 in supplies and equipment purchased in DeKalb County
- \$113,625 in payroll from construction jobs
- 6 construction jobs
- \$13,456 in construction-related public revenues generated from taxes and fees derived from construction and construction-related activity.

**Table 9-2: Marketplace Economic Benefits from Construction**

General Economic Benefits from Construction

<u>Construction Costs</u>	<u>Value</u>
<b>Marketplace Development Costs</b>	<b>\$315,625</b>
Materials (55% of hard costs + supplies & equipment)	\$173,594
Materials, supplies, & equipment purchased in Fort Payne/DeKalb County (40%)	\$126,250
Labor Costs (36% of hard costs)	\$113,625
Average Annual Payroll (6 Months Construction)	\$227,250
Average Construction Wage	\$39,840
Average Annual Full Time Equivalent (FTE) Employment	6
Annual Work Side Retail Spending by Construction Workers	\$22,229
<b>Local Spending from Construction Materials &amp; Worker Spending</b>	<b>\$148,479</b>
<b>General Economic Benefits from Construction</b>	<b>\$337,854</b>
<u>Public Revenues from Construction</u>	
<u>Sales Taxes</u>	<u>Value</u>
Fort Payne	\$4,454
DeKalb County	\$1,485
Alabama	\$5,939
Permits & Fees	\$1,578
<b>Total Public Revenue from Construction</b>	<b>\$13,456</b>

Economic Benefits from Operation

Table 9-3 details the economic benefits to the local economy from the operation of the new Marketplace, once construction is completed and operations are stabilized, in the third year. The Marketplace can be expected to generate:

- \$1 million in revenue from operations
- \$285,000 in annual payroll to employees

- \$677,014 in annual local spending from hotel operations, employees, and guests (assuming the overnight users spend \$40 per visit)
- \$1.68 million in total annual general economic benefit

**Table 9-3: Marketplace Annual General Economic Benefit from Operations**

<u>Local Operations of Marketplace</u>	<u>Revenue/Expenses</u>	<u>Local Purchases</u>	<u>Total Spending</u>
Gross Annual Revenue (Stabilized Year 3)	\$1,006,749		\$1,006,749
Dept. Expenses	\$808,561	\$606,420	
Operating Expenses	\$54,086		
Utilities	\$15,843	\$15,843	
<b>Total Operational Spending</b>		<b>\$622,264</b>	
<u>Permanent Payroll</u>	<u>Total Employees</u>	<u>Annual Payroll</u>	<u>Emp. Spending/Year</u>
Employee	15	\$285,000	
Local Purchases by Employees @ \$10 per day	15	\$10	\$54,750
<b>Annual Local Purchases - Operation, Employees, Guests</b>			<b>\$677,014</b>
<b>Total Annual General Economic Benefit</b>			<b>\$1,683,763</b>

Local Revenues from Taxes

The Marketplace will generate public revenues from sales taxes for DeKalb County and the State of Alabama. Since the property will be owned by LRCC, property taxes are exempt.

Based on current data from the Alabama Department of Revenue, the following sales taxes would be applicable to operations at the Marketplace.

**Table 9-4: Local Marketplace Tax Rates**

<u>Local Sales Tax</u>	<u>Tax Rate</u>
Fort Payne Sales Tax	3.0%
DeKalb Sales Tax	1.0%
Alabama Sales Tax	4.0%
Development District Sales Tax	2.0%
Development District Food & Beverage Tax	2.0%
<b>Total Sales Taxes</b>	<b>12.0%</b>

Table 9-5 illustrates the potential revenues from sales taxes. Based on the operating assumptions outlined previously in this analysis, operations in the Marketplace’s third, stabilized year would generate an estimated \$677,014 in taxable spending from local spending by employees and guests. This activity would generate a total of \$81,241 in sales taxes annually. These taxes would generate estimated total public revenues of \$54,161 in the third year of operation. The newly formed development district will receive a \$13,540 in sales taxes, and \$13,540 in food and beverage taxes. We also recommend that the restaurant pay a monthly lease to LRCC in the amount of \$1,000 per month, \$12,000 annually.

- Fort Payne would receive an estimated \$20,310 annually.
- DeKalb County would receive an estimated \$6,770 annually.
- The State of Alabama would receive an estimated \$27,080 annually.
- The Development District would receive an estimated \$39,081 annually.

**Table 9-5: Annual Revenues from Marketplace Taxes**

Taxable Expenditures (Applied to Sales Taxes)		\$677,014
<u>Local Sales Tax</u>	<u>Tax Rate</u>	<u>Revenue</u>
Fort Payne Sales Tax	3.0%	\$20,310
DeKalb Sales Tax	1.0%	\$6,770
Alabama Sales Tax	4.0%	\$27,081
Development District Sales Tax	2.0%	\$13,540
Development District Food and Beverage Tax	2.0%	\$13,540
<b>Total Sales Taxes</b>	<b>12.0%</b>	<b>\$81,241</b>
<u>Annual Revenues from Taxes</u>		
Taxes to Fort Payne		\$20,310
Taxes to DeKalb County		\$6,770
Taxes to State of Alabama		\$27,081
Taxes to Development District (Sales + Food)		\$27,081
<b>Total Annual Public Revenues</b>		<b>\$54,161</b>
<b>Total Development District Revenues</b>		<b>\$27,080</b>

### Summary of Economic Impacts

The economic benefits to DeKalb County and the State of Alabama from the construction and operation of the Marketplace at LRCC will be substantial and sustained over a significant period. The key economic benefits are:

#### **During Construction (one-time benefit):**

- \$315,625 in construction value.
- \$126,250 in supplies & equipment purchased in DeKalb County.
- \$227,250 in payroll from construction jobs.
- 6 construction jobs.
- \$9,002 in construction-related public revenues generated from taxes and fees.

#### **During Operations (recurring every year):**

- \$1 million in total annual local spending from Marketplace operations.
- \$285,000 in payroll to employees.
- \$677,014 in annual local spending through Marketplace operations, employees and guests.
- \$1.68 million in total annual generated economic benefit.
- Total public revenues of \$20,310 to Fort Payne annually.
- Total public revenues of \$6,770 to DeKalb County annually.
- Total public revenues of \$27,081 to the State of Alabama annually.
- Total Development District Revenues of \$39,080 annually.

## Recommendations

### Sustainability

The LRCC is currently LEED certified silver facility. The Marketplace should continue with at least a LEED certified silver facility.

### Aesthetics

The Marketplace will complement the “lodge feel” of the hotel. The structure should blend in with the natural surroundings and topography. We anticipate the property will have an exterior that complements the landscape and have an appropriate scale relative to the LRCC and the Hotel.

### Dark Shell

We recommend that LRCC construct a cold dark shell which is a commercial building with an unfinished interior and lacking heating, ventilating, and HVAC, and usually without lighting, plumbing, ceilings, or interior walls. The cold, dark shell is ready for vanilla shell improvements (VSI), which are to be completed by the tenant once the lease agreement is executed. In many cases, the landlord (LRCC) will offer financial incentives in the form of a tenant improvement allowance (TIA), which pays for or at least partially defrays the cost of any improvements necessary for the tenant to occupy the building. TIA do not usually include furniture, fixtures, and equipment (FFE).

## Section 10 – Partnerships and Funding Opportunities

### Public/Private Partnerships

A public-private partnership (P3) is a contractual arrangement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility.

The use of public money to encourage hospitality development has become common practice in the United States. Today the use of public financing arrangements is used to encourage, not only hotels, but hotel and restaurant projects of all sizes. These incentives can take many forms that are detailed by Nelson, Baltin and Feighner (2012). Among them are:

- tax rebates and deferrals including payments in lieu of taxes
- waiving development impact fees and/or building permits
- lowering development costs by subsidizing one or more aspects of the project, particularly related infrastructure (water, sewer, roads)
- assisting the project with public debt instruments which include user fees, occupancy tax and direct subsidies through development grants

The P3 financing approach toward funding projects is increasingly attractive. A trend since the economic crash of 2009 for universities has been a P3 for dormitories.

P3 will allow schools to keep their housing programs up to date without using their own resources while at the same time generating additional revenue for the school under a comparatively short ground lease arrangement. The program will also provide flexibility for changes in housing operations and institutional leadership that are common in higher education.



State universities that face funding cuts in these areas and an increasing number of state legislatures are giving these institutions the authority to pursue these arrangements. Another example of a P3 to build student housing dates back to 2011: New Jersey's Montclair State University negotiated a P3 with Georgia-based Provident Resources Group, a private nonprofit corporation, which financed a \$211 million, 2,000-bed project through tax-exempt bonds. Capstone Development Corporation, based in Alabama, designed the project and New Jersey-based Terminal Construction Corporation oversaw its construction. In one type of partnership, the university owns the land and gives the developer a ground lease to build and operate the facility for, typically, 60 to 80 years.

Another approach calls for the university to negotiate a long-term ground lease with a nonprofit foundation, which allows tax-exempt bonds to be issued to fund the project; the bonds are later repaid through project revenue. Under this platform, the developer receives a fee for delivering services such as coordinating bond financing, managing design and construction, and managing the finished property.

A third option would call for the parties to negotiate a joint ownership agreement in which the university could contribute land or a building to the partnership and get a percentage of the equity in the partnership in return. The developer would contribute the remaining equity, obtain financing and assume all construction risk.

#### 7-Keys to Successful P3s

The following are to be considered “best practices” in the development of public-private partnerships (P3s). It is recognized that the methodology for implementation of P3s can vary, depending on the nature of a given project and local concerns. Given this, it is the position of the NCPPP that these are “best practices”:

1. Public Sector Champion

Recognized public figures should serve as the spokespersons and advocates for the project and the use of a P3. Well-informed champions can play a critical role in minimizing misperceptions about the value to the public of an effectively developed P3.

## 2. Statutory Environment

There should be a statutory foundation for the implementation of each partnership. Transparency and a competitive proposal process should be delineated in this statute. However, unsolicited proposals can be a positive catalyst for initiating creative, innovative approaches to addressing specific public-sector needs.

## 3. Public Sector's Organized Structure

The public sector should have a dedicated team for P3 projects or programs. This unit should be involved from conceptualization to negotiation, through final monitoring of the execution of the partnership. This unit should develop Requests for Proposals (RFPs) that include performance goals, not design specifications. Consideration of proposals should be based on best value, not lowest prices. Thorough, inclusive value for money (VFM) calculations provide a powerful tool for evaluating overall economic value.

## 4. Detailed Contract (Business Plan)

A P3 is a contractual relationship between the public and private sectors for the execution of a project or service. This contract should include a detailed description of the responsibilities, risks and benefits of both the public and private partners. Such an agreement will increase the probability of success of the partnership. Realizing that all contingencies cannot be foreseen, a good contract will include a clearly defined method of dispute resolution.

## 5. Clearly Defined Revenue Stream

While the private partner may provide a portion or all of the funding for capital improvements, there must be an identifiable revenue stream sufficient to retire this investment and provide an acceptable rate of return over the term of the partnership. The income stream can be generated by a variety and combination of sources (fees, tolls, availability payments, shadow tolls, tax increment financing, commercial use of underutilized assets

or a wide range of additional options), but must be reasonably assured for the length of the partnership's investment period.

#### 6. Stakeholder Support

More people will be affected by a partnership than just the public officials and the private sector partner. Affected employees, the portions of the public receiving the service, the press, appropriate labor unions and relevant interest groups will all have opinions, and may have misconceptions about a partnership and its value to all the public. It is important to communicate openly and candidly with these stakeholders to minimize potential resistance to establishing a partnership.

#### 7. Pick your Partner Carefully

The “best value” (not always lowest price) in a partnership is critical in maintaining the long-term relationship that is central to a successful partnership. A candidate's experience in the specific area of partnerships being considered is an important factor in identifying the right partner. Equally, the financial capacity of the private partner should be considered in the final selection process.

### Grants

#### Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) is the federal program to conserve irreplaceable lands and improve outdoor recreation opportunities throughout the nation. The program works in partnership with state and local efforts to acquire and protect inholdings and expansions in our national parks, national wildlife refuges, national forests, national trails, and BLM areas. LWCF grants to states support the acquisition and development of state and local parks and recreational facilities.

Now, a broad-based coalition of conservation, recreation, environment, business, historic and cultural organizations, as well as many others are working together to secure full and dedicated funding of the LWCF. At the congressionally authorized

level of \$900 million annually, LWCF can help preserve natural areas, historical sites, wildlife habitat, and ensure that all Americans have access to quality outdoor recreation.

The Alabama Department of Economic and Community Affairs (ADECA) is the state agency that administers LWCF for Alabama. In years past, the grant award ceiling has been \$50,000. In 2016, the LWCF program provided up to 50 percent of project costs, not to exceed \$150,000.00. The project sponsor must match these funds dollar for dollar with cash or in-kind match. If the project exceeds \$300,000.00, the project sponsor must pay the excess project costs. The LWCF grant funds are distributed on a cost reimbursable basis.

Public outdoor recreation areas and facilities for coordinated use by the general public and by public schools, including colleges and universities, are eligible for LWCF assistance provided such facilities are not part of the normal and usual program and responsibility of the educational institution. Utilizing LWCF for additional property purchase would be a recommendation for expanding Little River Canyon Center property for development.

#### Broadband USDA

The United States Department of Agriculture offers a Community Connections Program. This program helps fund broadband deployment into rural communities where it is not yet economically viable for private sector providers to deliver service. For more information on other programs administered by Rural Utility Service (RUS) Telecommunications, contact [www.usda.gov](http://www.usda.gov). The funds can be utilized for:

- The construction, acquisition, or leasing of facilities, spectrum, land or buildings used to deploy broadband service for all residential and business customers located within the Proposed Funded Service Area (PFSA).
- All participating critical community facilities (such as public schools, fire stations, and public libraries).
- The cost of providing broadband service free of charge to the critical community facilities for 2 years.

- Less than 10% of the grant amount or up to \$150,000 may be used for the improvement, expansion, construction or acquisition of a community center that provides online access to the public.

Other funding stipulations:

- Buildings constructed with grant funds must be located on property owned by the awardee
- Leasing expenses will only be covered through the advance of funds period included in the award documents
- Grantees must have legal authority to provide, construct, operate and maintain the proposed facilities or services
- Partnerships with other federal, state, local, private and non-profit entities are encouraged
- For additional detail see Code of Federal Regulations 7 CFR, Part 1739
- Matching funds of at least 15% from non-federal sources are required and can be used for operating costs

### **Development District**

An efficient and effective way to fund public improvements in advance of growth, while at the same time ensuring that new growth pays for the improvements, is through the use of a Development District. One may want to view the taxes and/ or assessments that are levied by Development Districts as a “user fee” rather than a “tax”, meaning that the District is created over a specific land area and the dollars are being collected by the District to pay for the public improvements within the District. In other words, the District occupants are paying for public improvements for which they derive benefit and existing municipal partners who are outside the District boundaries are not paying for the District improvements. As a result, Districts are much more transparent and easily understood. More importantly, Districts provide a more efficient form of financing because infrastructure improvements can be delivered in advance of growth, are funded exclusively by participants within the District, are secured by regulations that ensure collection of the funds by the District, and often deliver higher-quality public improvements than might otherwise be economically feasible.

Development District financing typically involves the issuance of tax-exempt bonds to finance public improvements within a specified geographical area, or district. Districts may construct public improvements and/or purchase public improvements with the bond proceeds. The bonds are repaid from the improvement taxes, assessments, and/or an ad valorem property tax imposed on the land within the district. Property owners in the district thus finance the improvements without any city/county-wide taxpayer subsidy. The bonds are typically underwritten in private offerings managed by underwriting firms who specialize in this type of development district.

- Development Districts cover a specific geographic area and as such there is a clearer connection between the taxes/assessments being levied by a District and the benefits that the residents in the District are receiving.
- Development District taxes / assessments are levied on a per user basis and differ from impact fees in that the fees are derived from individual users not individual businesses.
- Over time Development Districts draw upon a large pool of people to finance public infrastructure.
- Development Districts often require the preparation of an annual budget thereby making them more accountable and transparent.
- Development Districts may be used in combination with other financing mechanisms thereby accelerating the financing of public improvements in advance of growth.
- One time Impact fees to a new business do not readily allow for the issuance of bonds to finance the construction of infrastructure in advance of growth.

This study recommends a Development District be established to improve the LRCC property. A Board of Directors should be appointed to issue tax exempt bonds, implement utility infrastructure, oversee property development and manage P3s relationships. The Development District should implement a 2 percent sales tax, 2 percent lodging tax, 2 percent food and beverage tax, and a \$3 per night lodging fee.

## New Market Tax Credit (Enacting Legislation Act Number 2012-483)

The New Market Tax Credit (NMTC) is a federal program designed to assist low income communities develop through incentive based initiatives. Little River Canyon qualifies as an economically distressed area based on the criteria required.

Over the past decade, our nation's low-income communities have suffered due to factors such as dormant manufacturing facilities, inadequate education and healthcare services, vacant commercial properties, and lower property values. As a result, many of these communities find it difficult to attract the necessary capital from private investors. The New Markets Tax Credit Program (NMTC Program) helps economically distressed communities attract private capital by providing investors with a Federal tax credit. Investments made through the NMTC Program are used to finance businesses.

### Community Development Entity (CDE) Application Process

The applying entity needs to be a CDE for federal purposes and needs to be authorized to serve business in Alabama. The CDE shall submit an application to the Department of Commerce to certify a proposed investment as a qualified investment. The qualified community development entity must issue the qualified investment in exchange for cash within 180 days after it receives certification approving an investment as a qualified investment (this includes a 90-day cure period), otherwise the certification is void.

The State has an annual CAP limit of \$20,000,000 of tax credits in any tax year based on the scheduled utilization of tax credits without regard to the potential for taxpayers to carry forward tax credits to later tax years. A transaction CAP limit is applied to any qualified active low income community business that may not receive more than a total of \$10,000,000 in qualified low income community investments under this program. The credit against federal income taxes is 39% and for state income taxes is 50% of the total investment of the project. The credit is for a 7-year period. The credit claimed for Year 1 is 0.0% and for Years 2-7 is 8.33%.

Year: 2017  
 Shaded by: Census Tract, 2010

- Insufficient Data
- Severe Distress or Non-Metropolitan
- Eligible
- Not Eligible

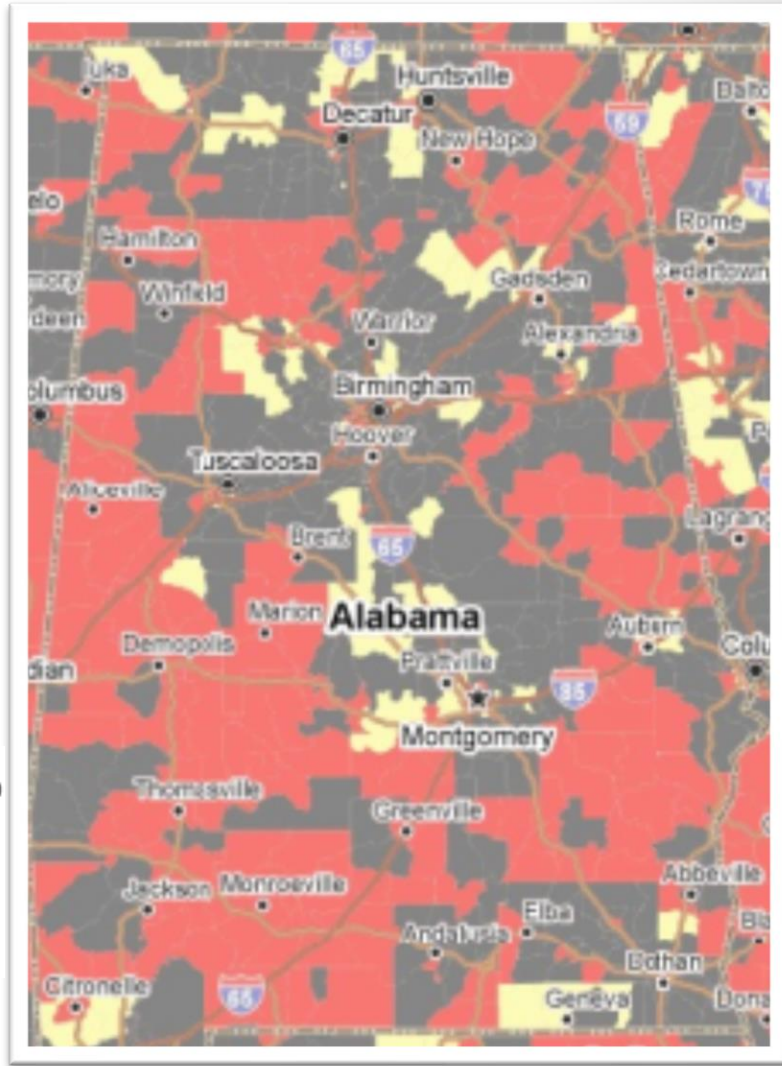


Figure 10-1: New Market Tax Credit Program Eligibility for 2017





## Section 11 – Environmental Impact

### Topography

LRCC is located within the Little River Canyon National Preserve (the preserve). The preserve sits at the southern edge of the Cumberland Plateau. This is a distinct physiographic region just to the west of the main Appalachian Mountain uplift. Composed of sandstone and other sedimentary rocks, this area has been eroded by water over millions of years to create a landscape of ridges, outcroppings, and gorges.

The general grade of the land is toward Yellow Creek. Surface drainage is not a problem. A detailed topographical map developed by the USGS is shown in Figure 11-1.

### Soils

The USDA Natural Resources Conservation Service provides web soil surveys for more than 95% of the nation's counties. Table 11-1 and Figure 11-2 are excerpts from the complete web soil survey that can be found in Appendix J. Sandy loams dominate the soil conditions at LRCC. Sandy loam soils have visible particle of sand mixed into the soils. When sandy loam soils are compressed, they hold their shape but break apart easily. An

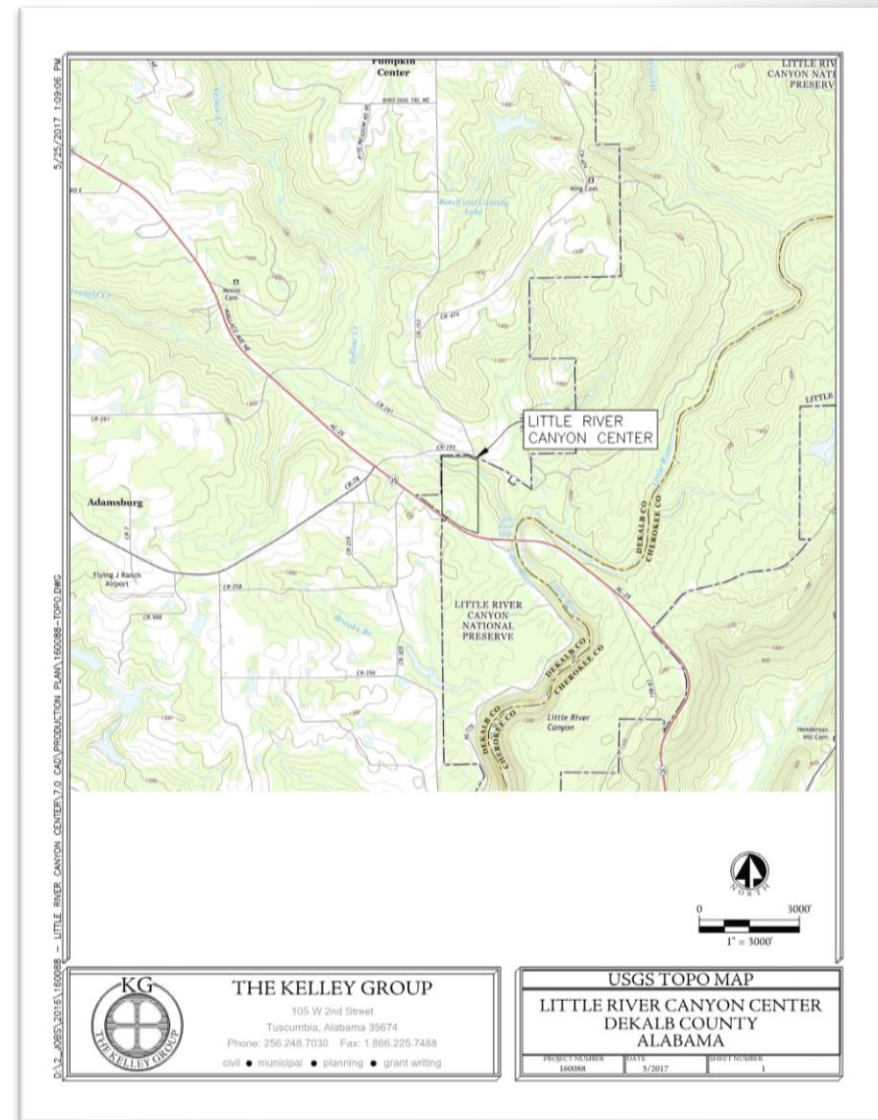


Figure 11-1: USGS Topographical Map

additional USDA soil report is located in Appendix K. This report evaluates the likelihood of producing onsite septic systems. The LRCC property is rated very poorly when it comes to percolation due to the soil type and the slope.

**Table 11-1: Soil Types at LRCC**

<u>Map Unit Symbol</u>	<u>Map Unit Name</u>	<u>Acres in LRCC</u>	<u>Percentage of LRCC</u>
Au	Atkins silty loam	0.2	0.3%
Co	Crossville rocky loam	2.4	3.4%
Hc	Hartsells fine sandy loam, 2 to 6 percent slopes, eroded	0.5	0.6%
Hf	Hartsells fine sandy loam, 6 to 10 percent slopes	15.1	20.9%
Hg	Hartsells fine sandy loam, 6 to 10 percent slopes, shallow	24.7	34.1%
Hh	Hartsells fine sandy loam, undulating	0.2	0.3%
Mn	Muskingum stony fine sandy loam, 10 to 20 percent slopes, very stony	21.4	29.5%
Mo	Muskingum stony fine sandy loam, 5 to 10 percent slopes, very stony	4.9	6.8%
Rc	Rockland, sandstone, rolling	3	4.1%

**Watershed**

LRCC is located within the Little River Canyon National Preserve and is part of the Little River Watershed. The Little River Watershed is in the northeastern portion of the Upper Coosa



**Figure 11-2: USDA Soil Map for LRCC**

Watershed and has a drainage basin of approximately 199 square miles. The headwaters of the Little River and its East Fork and West Fork tributaries are in Dade, Walker, and Chattooga Counties, Georgia. Then, Little River flows southwesterly then easterly through DeKalb and Cherokee counties, Alabama into Weiss Lake. The majority of the watershed is located in DeKalb County with Little River flowing through Desoto State Park and Little River Canyon National Preserve. The principal nearby towns are Fort Payne, Mentone, Collinsville, and Centre. Although, this area is mostly rural, it is strategically located between Chattanooga, Tennessee, and Atlanta, Georgia.

The East Fork Little River Sub-Watershed headwaters are located in Walker and Chattanooga Counties, Georgia which flow southwesterly then easterly through DeKalb County, Alabama. The West Fork Little River Sub-Watershed headwaters are located in Dade and Walker Counties, Georgia which flow south-south-west through DeKalb County where it converges with the East Fork Little River at the DeKalb County and Cherokee County border to form the Little River. The river starts at about 1,900 feet elevation and drops to approximately 650 feet along a 27-mile stretch to the mouth at Weiss Lake. The river falls about 46 feet per mile. The East Fork Little River SubWatershed, West Fork Little River Sub-Watershed and Little River SubWatershed combines to cover

<u>Stream</u>	<u>From</u>	<u>To</u>	<u>Classification</u>
COOSA RIVER (Weiss Lake)	Spring Creek	Alabama-Georgia state line	S/F&W
Bouldin Tailrace Canal (Callaway Creek)	COOSA RIVER	Bouldin Dam	F&W
Terrapin Creek	COOSA RIVER	Cherokee County Road 8	S/F&W
Terrapin Creek	Cherokee County Road 8	U.S. Highway 278	F&W
Terrapin Creek	U.S. Highway 278	Calhoun County Road 70, east of Vigo	PWS/S/F&W
Terrapin Creek	Calhoun County Road 70, east of Vigo	Alabama-Georgia state line	F&W
Little River and tributaries	COOSA RIVER (Weiss Lake)	Junction of East Fork of Little River and West Fork of Little River	PWS/S/F&W <sup>3</sup>
East Fork of Little River and tributaries	Little River	Alabama-Georgia state line	PWS/S/F&W <sup>3</sup>
West Fork of Little River and tributaries	Little River	Alabama-Georgia state line	PWS/S/F&W <sup>3</sup>

Figure 11-3: ADEM Little River Watershed Water Use Classifications

approximately 199 square miles and comprises the entire Little River Watershed. The Little River Watershed is part of the Coosa River Basin. Little River then serves as one of the Etowah Tributaries to the Coosa River which is part of the Alabama-Coosa-Tallapoosa Basin.

The Alabama-Coosa-Tallapoosa Basin is acknowledged as one of the most biologically diverse and threatened river basins in the nation. According to the Alabama Water Watch, it has been designated as Alabama’s first Outstanding National Resource Water. It hosts an environment capable of supporting rare and endangered species such as the Green Pitcher Plant and the Blue Shiner. It is one of the very few rivers which forms and flows for almost its entire length on the top of a mountain. Table 12-2 below summarizes some of the key features and issues within the Little River Watershed.

The Alabama Department of Environmental Management applied “water use classifications” to the waters of Little River and its tributaries, highlighted in Figure 11-3. Water use classification pertaining to the Little River include public water supply (PWS), swimming and other whole-body water-contact sports (S), and fish and wildlife (F&W). These classifications are assigned state or federally established limits for selected water quality parameters that will serve as benchmarks for water samples taken within the watershed.

**Table 11-2: Little River Watershed Characteristics**

<u>Key Features</u>	<u>Key Issues</u>
Little River Canyon National Preserve	Septic Tanks failing
Desoto State Park	High E.coli counts in river
Desoto Falls	Uncontrolled development and increased tourism
ONRW Designation	Increased sedimentation in river
Biological Diversity	Litter in river
Rural Area	Concentrated animal feeding operations
Recreational Opportunities	Road construction and bridge replacement
Summer Camps	Security of partial dam
Land Conservation Holdings	Clear cutting with no BMPs
Town of Mentone	Lack of enforcement and education

## Alabama Highway 35 Traffic Counts

The Alabama Department of Transportation (ALDOT) completes traffic counts around the State on a yearly basis and produces the Annual Average Daily Traffic counts for each monitoring point on their website. ALDOT has setup 2 monitoring points on Alabama Highway 35 near both entrances of the LRCC. Station 604 is located near the west entrance drive of LRCC, south of County Road 258. Station 807 is located just west of the Dekalb/Cherokee County line near the east entrance of LRCC. Figure 11-4 denotes the AADT ALDOT recorded from 2013-2015. There is a continual increase in traffic along the Highway 35 corridor.

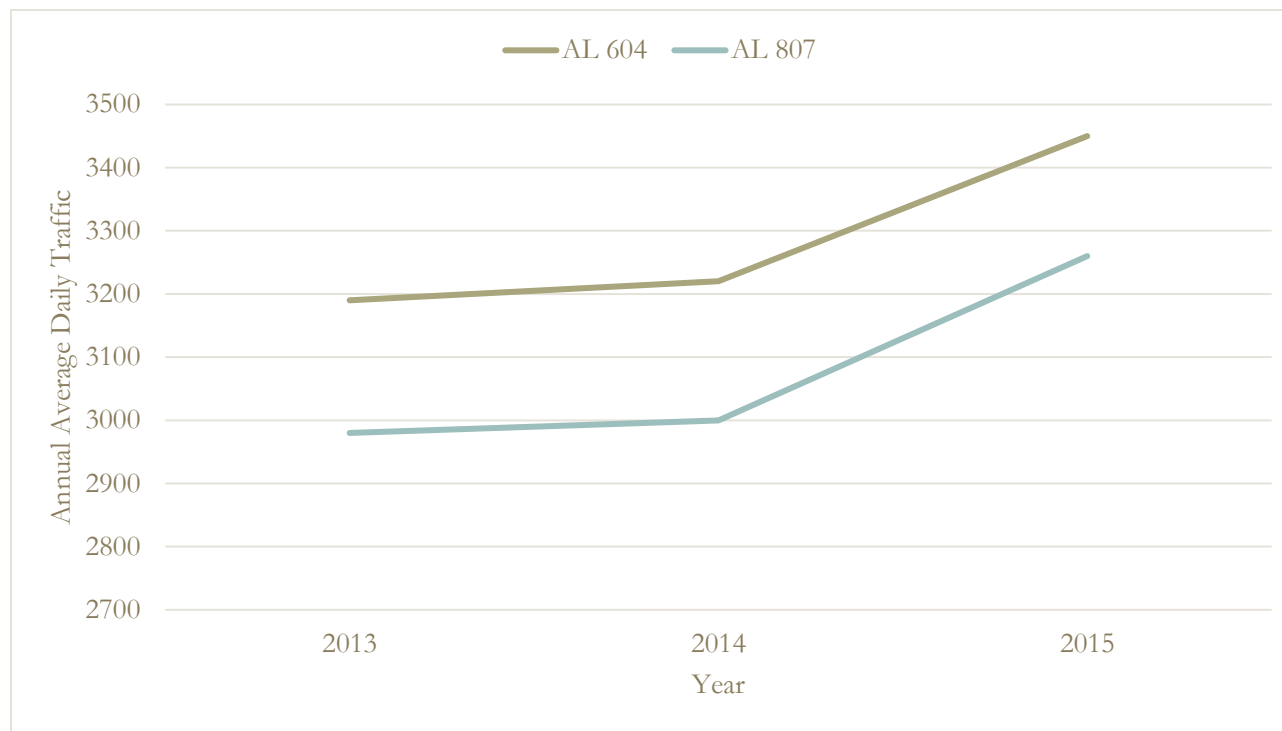


Figure 11-4: ALDOT AADT



# Section 12 – Findings and Recommendations

## Expansion of LRCC

The three (3) additional parcels discussed in Section 3 of this report are key to the long-term growth of the LRCC. The 3 parcels provide an alternate access to the LRCC which is crucial with the anticipated increase in traffic to the new developments and facilities. These parcels are approximately 10 acres and could serve as the future home of the new hotel, restaurant, dormitories, or other future developments. By constructing the new facilities on the newly obtained parcels, the new buildings and large-scale parking lots will not detract from the natural beauty of the entrance drive to the LRCC.

The parcels have a total appraised value of \$288,500. We recommend that the LRCC purchase these parcels for the long-term growth opportunities that they bring to the LRCC.

## Infrastructure Improvements

There are three (3) significant infrastructure improvements to be made at the LRCC in order to attract a hotel and/or a restaurant. The additional parking and roads, installation of a waste water treatment plant (WWTP), and the extension of a gas main. The cost of the parking and roads does differ from each of the masterplans. If LRCC purchases the additional parcels, there will be a significant cost to extend a new entrance drive. The cost for the sewer WWTP and the extension of the gas main is the same for both masterplans and can be seen in the following table.

**Table 12-1: Infrastructure Improvement Construction Cost Summary**

<u>Infrastructure</u>	<u>Masterplan with Current Property (Option 1)</u>	<u>Masterplan with Expansion (Option 2)</u>
Parking and Roads	\$0	\$303,125
Sewer WWTP	\$684,375	\$684,375
Gas Main Extension	\$142,188	\$142,188
Fiber-Optic Extension	\$10,625	\$10,625
Total Construction Cost	\$837,188	\$1,140,313



The WWTP has the largest cost and is also the most important aspect of the infrastructure improvements. There are no other options for sewer service in this area. An onsite WWTP must be designed and constructed for the new developments.

### **Facility Construction Costs**

The following table summarizes the estimated construction costs for each development. The hotel construction costs will be incurred through a public private partnership and is estimated at \$6.6 million. LRCC will be responsible for the Tree House Village, Bunkhouse, and the Marketplace which is estimated at \$2.99 million.

**Table 12-2: Facility Estimated Construction Costs**

<u>Facility</u>	<u>Construction Cost 3rd Party</u>	<u>Construction Cost LRCC</u>
Hotel	\$6,600,000	
Tree House Village		\$799,844
Bunkhouse		\$1,875,000
Marketplace		\$315,625
<b>Total Estimated Construction Costs</b>	<b>\$6,600,000</b>	<b>\$2,990,469</b>

### **Economic Benefits from Construction**

The following table summarizes the estimated economic benefits from the construction of each facility.

- \$3.86 million in supplies and equipment purchased in Fort Payne/DeKalb County
- \$3.45 million in construction payroll
- 121 construction jobs
- \$392,524 in construction related public revenues

**Table 12-3: Total Economic Benefits from Construction**

<u>Facility</u>	<u>Supplies &amp; Equipment Purchased in DeKalb County</u>	<u>Payroll from Construction Jobs</u>	<u>Construction Jobs</u>	<u>Construction Related Public Revenues</u>
Hotel	\$2,640,000	\$2,376,000	80	\$268,990
Tree House Village	\$319,938	\$287,944	14	\$34,101
Bunkhouse	\$750,000	\$675,000	21	\$75,977
Marketplace	\$126,250	\$113,625	6	\$13,456
<b>Total</b>	<b>\$3,863,188</b>	<b>\$3,452,569</b>	<b>121</b>	<b>\$392,524</b>

**Annual Economic Benefits from Operations**

The following table summarizes the estimated annual economic benefits from operations of the new facilities at the LRCC.

- \$3.33 million in gross operating revenue
- \$1.23 million in annual payroll to employees
- \$2.58 million in annual local spending
- \$5.92 million in total annual general economic benefit

**Table 12-4: Annual Economic Benefits from Operations**

<u>Facility</u>	<u>Gross Operating Revenue</u>	<u>Annual Payroll to Employees</u>	<u>Annual local spending</u>	<u>Total Annual General Economic Benefit</u>
Hotel	\$1,929,269	\$760,000	\$1,281,722	\$3,210,991
Tree House Village	\$74,320	\$38,000	\$70,898	\$145,218
Bunkhouse	\$320,765	\$152,000	\$557,644	\$878,409
Marketplace	\$1,006,749	\$285,000	\$677,014	\$1,683,763
<b>Total</b>	<b>\$3,331,103</b>	<b>\$1,235,000</b>	<b>\$2,587,278</b>	<b>\$5,918,381</b>

## Annual Revenues from Taxes and Fees

The following table summarizes the estimated annual revenues from the associated taxes and fees of the new facilities.

- Fort Payne would receive an estimated \$158,970 annually
- DeKalb County would receive an estimated \$72,359 annually
- The State of Alabama would receive an estimated \$196,468 annually
- The newly formed LRCC Development District would receive an estimated \$279,320 annually.

**Table 12-5: Annual Revenues from Taxes and Fees**

<u>Facility</u>	<u>Fort Payne</u>	<u>DeKalb County</u>	<u>State of Alabama</u>	<u>LRCC Development District</u>
Hotel	\$105,976	\$51,402	\$128,440	\$174,449
Tree House Village	\$4,728	\$2,195	\$5,809	\$7,431
Bunkhouse	\$27,956	\$11,992	\$35,138	\$58,360
Marketplace	\$20,310	\$6,770	\$27,081	\$39,080
<b>Total</b>	<b>\$158,970</b>	<b>\$72,359</b>	<b>\$196,468</b>	<b>\$279,320</b>

## Section 13 – Assumptions and Limiting Conditions

- All cost estimates are based on experience, qualifications, and professional judgement. The Kelley Group has no control over costs of labor, materials, equipment, or services furnished by others or over the competitive bidding process or market conditions. The Kelley Group does not guarantee or warrant that proposals, bids, or actual construction costs will not vary from the above estimate.
- This report is set forth as a feasibility study of the LRCC property and adjacent parcels; this is not an appraisal report.
- This report is to be used in whole and not in part.
- No responsibility is assumed for matters of a legal nature, nor do we render any opinion as to title, which is assumed to be marketable and free of any deed restrictions and easements. The property is evaluated as though free and clear unless otherwise stated.
- The Americans with Disabilities Act (ADA) became effective on January 26, 1992. We have assumed the proposed hotel, restaurant, dormitories, and all other amenities will be designed and constructed to be in full compliance with the ADA.
- We have made no survey of the site, and we assume no responsibility in connection with such matters. Sketches, photographs, maps, and other exhibits are included to assist the reader in visualizing the property. It is assumed that the use of the described real estate will be within the boundaries of the property described, and that no encroachment will exist.
- The property is assumed to be in full compliance with all applicable federal, state, local, and private codes, laws, consents, licenses, and regulations (including a liquor license where appropriate), and that all licenses, permits, certificates, franchises, and so forth can be freely renewed or transferred to a purchaser.
- None of this material may be reproduced in any form without written permission, and the report cannot be disseminated to the public through advertising, public relations, news, sales, or other media.
- The quality of a restaurant and lodging facility's on-site management has a direct effect on a property's economic viability. The financial forecasts presented in this analysis assumed responsible ownership and competent management. Any departure from this assumption may have a significant impact on the projected operating results.

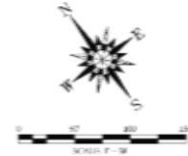
- Alcohol sales must be permitted in the Development District

Appendix A  
LRCC Masterplan  
With Current Property  
Option 1



**PLAN KEY**

- ① HOTEL IN ROOMS
- ② MAIN BUILDING SEATS
- ③ RESTROOMS BUILDING
- ④ HOTEL PARKING LOT, 40 PARKING SPACES
- ⑤ RESTROOMS PARKING LOT, 40 PARKING SPACES
- ⑥ MARKETPLACE PARKING LOT, 40 PARKING SPACES
- ⑦ BATHING TRAILHEAD
- ⑧ TRAILHEAD VILLAGE, 10 SPACES
- ⑨ ARCHITECTURAL SITE
- ⑩ OUTDOOR ACTIVITY RECREATION AREA
- ⑪ SIDEWALK FROM HOTEL TO HOTEL
- ⑫ SIDEWALK FROM HOTEL TO MARKETPLACE
- ⑬ SIDEWALK FROM HOTEL TO MARKETPLACE



LITTLE RIVER CANYON CENTER MASTER PLAN - OPTION 1  
 JACKSONVILLE STATE UNIVERSITY



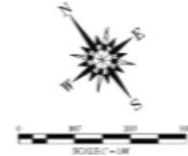
Appendix B  
LRCC Masterplan  
With Expansion  
Option 2





**PLAN KEY**

- ⊙ HOTEL, 14 ROOMS
- ⊙ RESTAURANT, 100 SEATS
- ⊙ DECK/OUTLOOK PLATFORM
- ⊙ HOTEL PARKING LOT, 44 PARKING SPACES
- ⊙ RESTAURANT PARKING LOT, 40 PARKING SPACES
- ⊙ DECK/OUTLOOK PARKING LOT, 16 PARKING SPACES
- ⊙ NEW INFRASTRUCTURE CONNECTION TO EXISTING
- ⊙ VISITOR PARKING, 14 PARKING SPACES
- ⊙ VISITOR PARKING, 11 PARKING SPACES
- ⊙ WALKING TRAIL, 0.5 MILES
- ⊙ EXISTING TRAILHEAD
- ⊙ TRAIL/BILOW VEGETATION, 5.5 ACRES
- ⊙ AECOLOGICAL SITE
- ⊙ OUTDOOR ACTIVITY/RECREATIONAL AREA
- ⊙ SIDEWALK, PAVEMENT TO HOTEL RESTAURANT
- ⊙ SIDEWALK FROM DECK/OUTLOOK TO RESTAURANT
- ⊙ RESTROOM/CHANGING FACILITY
- ⊙ EXISTING GRAVEL PARKING LOT, 130 PARKING SPACES



LITTLE RIVER CANYON CENTER MASTER PLAN - OPTION 2  
 JACKSONVILLE STATE UNIVERSITY

# Appendix C

## Hilton Worldwide Development Costs and Prototype Building Data



## Development Costs and Prototype Building Data - United States

October 1, 2015

These estimates are for suburban, low barrier to entry markets in regions such as the southeastern and midwestern U.S. Adjustments should be made for other markets, in particular urban and high barrier to entry markets and regions such as the northeastern and western U.S.

PROTOTYPE DESIGN SUMMARY	HOME 2 SUITES BY HILTON	HAMPTON INN	HAMPTON INN (Center Loaded Lobby)	HAMPTON INN (Center Loaded Lobby)	HAMPTON INN & SUITES (Center Loaded Lobby)	HILTON GARDEN INN	HOMESWOOD SUITES
PROTOTYPE VERSION	2.1	7.0	NA	NA	5.0	8.0	9.2
DATE	October 2012	August 2014	NA	NA	August 2014	December 2014	February 1, 2014
DATE STANDARDS VERSION	2014 Edition 7/1/2014	2014 Edition 7/1/2014	2014 Edition 7/1/2014	2014 Edition 7/1/2014	2014 Edition 7/1/2014	2014 Edition 7/1/2014	2014 Edition 7/1/2014
NUMBER OF KEYS	107	80	104	104	101	139	121
NUMBER OF FLOORS	4	4	4	4	4	5	4
GROSS BUILDING AREA	56,651	49,889	50,000	50,000	61,222	85,441	84,764
GROSS BUILDING AREA/KEY	529.4	613.4	509.9	509.9	605.0	614.7	700.5
STRUCTURAL SYSTEM	Wood Frame	CMU & Precast Plank	CMU & Precast Plank	CMU & Precast Plank	CMU & Precast Plank	CMU & Precast Plank	CMU & Precast Plank
LAND REQUIRED - ACRES	1.97	1.59	1.72	1.72	2.11	3.22	2.48
LAND REQUIRED - SQ. FT.	86,940	69,297	75,000	75,000	91,939	140,119	108,182
NUMBER OF PARKING SPACES	107	80	104	104	101	139	121
MP/PT							
LAND COST PER SQ. FT. (TED BY OWNER)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CONSTRUCTION COST PER SQ. FT.	\$113.00	\$137.00	\$115.00	\$115.00	\$136.00	\$140.00	\$139.00
DEVELOPMENT COST MODEL	Item Cost	Cost/Key	Cost/Key	Cost/Key	Item Cost	Cost/Key	Cost/Key
LAND (TED BY OWNER)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DESIGN & ENGINEERING	\$230,000	\$2,605	\$3,849	\$3,849	\$230,000	2,475	\$3,955
PERMITS, LICENSES & FEES	\$100,000	935	\$1,177	\$1,177	\$100,000	1,386	\$2,211
CONSTRUCTION	7,431,281	69,158	73,248	73,248	8,998,192	85,131	136
FURNITURE, FIXTURES & EQUIP.							
Guestrooms	\$1,300,000	11,000	\$4,243	\$4,243	\$790,000	7,900	\$11,642
Guestroom Corridors	\$83,500	500	\$166	\$166	\$30,000	300	\$100
Public Areas	\$246,000	\$2,200	\$4,248	\$4,248	\$242,800	2,400	\$2,831
Restroom/Supplies & Equipment	\$214,000	\$1,000	\$1,186	\$1,186	\$111,000	1,100	\$1,921
Site Renovation	\$8,025	575	\$14	\$14	\$7,275	575	\$12.6
Telephone Switch & Install's	\$35,000	\$327	\$682	\$682	\$35,000	\$347	\$682
Laundry-Main & Guest	\$45,000	\$421	\$979	\$979	\$45,000	\$446	\$979
ETL	\$10,000	\$91	\$203	\$203	\$10,000	\$99	\$203
Security & Communications	\$31,000	\$296	\$635	\$635	\$33,300	\$332	\$635
IT/Electrical	\$42,000	\$400	\$875	\$875	\$43,500	\$435	\$875
Fire Alarm & Test	\$200,226	\$2,248	\$4,248	\$4,248	\$192,200	\$1,922	\$4,248
TOTAL FF&E	\$2,426,161	\$22,674	\$43	\$43	\$1,874,996	\$18,756	\$27
EXTERIOR SIGNAGE	\$10,000	\$178	\$635	\$635	\$10,000	\$100	\$635
CORNER LIGHTING (HAMPTON)	\$45,000	\$421	\$979	\$979	\$45,000	\$446	\$979
INVENTORIES	\$45,000	\$421	\$979	\$979	\$45,000	\$446	\$979
PRE-OPENING	\$100,000	\$935	\$1,177	\$1,177	\$100,000	\$1,386	\$2,211
PROJECT MANAGEMENT	\$90,000	\$841	\$1,999	\$1,999	\$90,000	\$900	\$1,999
INSURANCE	\$35,000	\$327	\$682	\$682	\$35,000	\$347	\$682
FINANCIAL, TAXES & LEGAL	\$50,000	\$467	\$982	\$982	\$50,000	\$495	\$982
CONTINGENCY (TED BY OWNER)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL DEVELOPMENT COSTS	\$10,946,442	\$98,191	\$185,446	\$185,446	\$10,989,537	\$108,907	\$172,821

**NOTES & ASSUMPTIONS**

- \* These cost models are based on averages in the United States of America from data which has been collected from a variety of sources. The estimates do not include extra costs that are associated with conditions such as coastal requirements, seismic requirements, unmet requirements, etc.
- \* Hilton Worldwide does not make any representation or guarantee that these numbers are valid, accurate, reliable or complete. Any use of this information is solely at the risk and discretion of the user.
- \* FF&E, Freight & Tax is calculated at 16% of Guestroom FF&E, Guestroom Corridors FF&E, Public Areas FF&E, and Operating Supplies & Equipment. 2% freight and 8% tax.
- \* The cost for wood frame construction is assumed to be \$4 to \$10 per sq. ft. less than brick and plank construction.
- \* Estimates based on Cost Per Key may vary substantially for properties with more or fewer keys than the prototype.

# Appendix D

Hotel - Limited Service Hotel 2017

PKF Trends Report Summary

Operating Statement

**Limited Service Hotel 2017 PKF Trends Report Summary Operating Statement**

	<u>2016 Dollars per Available Room</u>	<u>Change from Prior Year</u>	<u>2016 Percent of Revenue</u>	<u>2016 Dollars per Occupied Room</u>
<b>Revenues</b>				
Rooms	\$28,422	1.9%	97.9%	\$109.85
Other Operated Departments	\$411	1.2%	1.4%	\$1.59
Miscellaneous Income	\$213	13.7%	0.7%	\$0.82
<b>Total Operating Revenue</b>	<b>\$29,046</b>	<b>2.0%</b>	<b>100.0%</b>	<b>\$112.26</b>
<b>Departmental Expenses*</b>				
Rooms	\$7,146	3.6%	25.1%	\$27.62
Other Operated Departments	\$362	-2.6%	88.2%	\$1.40
<b>Total Departmental Expenses</b>	<b>\$7,509</b>	<b>3.3%</b>	<b>25.9%</b>	<b>\$29.02</b>
<b>Total Departmental Profit</b>	<b>\$21,538</b>	<b>1.5%</b>	<b>74.2%</b>	<b>\$83.24</b>
<b>Undistributed Operating Expenses</b>				
Administrative and General	\$2,413	2.4%	8.3%	\$9.33
Information and Telecommunications Systems	\$320	2.4%	1.1%	\$1.24
Sales and Marketing	\$3,303	2.9%	11.4%	\$12.77
Property Operation and Maintenance	\$1,412	3.3%	4.9%	\$5.46
Utilities	\$1,147	-4.3%	4.0%	\$4.43
<b>Total Undistributed Expenses</b>	<b>\$8,595</b>	<b>1.8%</b>	<b>29.6%</b>	<b>\$33.22</b>
<b>Gross Operating Profit</b>	<b>\$12,943</b>	<b>1.4%</b>	<b>44.6%</b>	<b>\$50.02</b>
<b>Management Fees</b>	<b>\$944</b>	<b>1.8%</b>	<b>3.3%</b>	<b>\$3.65</b>
<b>Income Before Non-Operating Income and Expenses</b>	<b>\$11,998</b>	<b>1.3%</b>	<b>41.3%</b>	<b>\$46.37</b>
<b>Non-Operating Income and Expenses</b>				
Income	\$27	6.4%	0.1%	\$0.10
Rent	\$876	3.5%	3.0%	\$3.39
Property and Other Taxes	\$1,207	2.6%	4.2%	\$4.67
Insurance	\$317	-1.0%	1.1%	\$1.23
Other	\$899	7.2%	3.1%	\$3.47

Total Non-Operating Income and Expenses	\$3,272	3.6%	11.3%	\$12.65
<b>EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)</b>	<b>\$8,726</b>	<b>0.5%</b>	<b>30.0%</b>	<b>\$33.73</b>
Percent of Occupancy	70.9%	-0.6%		
Average Daily Rate	\$109.85	2.5%		
RevPAR	\$77.87	1.9%		
Average Size (Rooms)	111	0.0%		

**Limited Service Hotel 2017 PKF Trends Report Summary Operating Statement, ADR Over \$115**

	<b>Over \$115</b>			
	2016 Dollars per Available Room	Change from Prior Year	2016 Percent of Revenue	2016 Dollars Per Occupied Room
<b>Revenues</b>				
Rooms	\$40,783	2.5%	97.1%	\$146.58
Other Operated Departments	803	4.1%	1.9%	2.89
Miscellaneous Income	424	19.1%	1.0%	1.52
Total Operating Revenue	\$42,009	2.7%	100.0%	\$150.99
<b>Departmental Expenses*</b>				
Rooms	\$9,159	2.3%	22.5%	\$32.92
Other Operated Departments	589	-0.8%	73.4%	2.12
Total Departmental Expenses	\$9,748	2.2%	23.2%	\$35.04
<b>Total Departmental Profit</b>	\$32,262	2.8%	76.8%	\$115.95
<b>Undistributed Operating Expenses</b>				
Administrative and General	\$3,124	2.5%	7.4%	\$11.23
Information and Telecommunications Systems	472	0.9%	1.1%	1.70
Sales and Marketing	5,041	3.9%	12.0%	18.12
Property Operation and Maintenance	1,702	3.2%	4.1%	6.12
Utilities	1,366	-4.1%	3.3%	4.91
Total Undistributed Expenses	\$11,706	2.3%	27.9%	\$42.07
<b>Gross Operating Profit</b>	\$20,556	3.1%	48.9%	\$73.88
<b>Management Fees</b>	\$1,412	2.4%	3.4%	\$5.07
<b>Income Before Non-Operating Income and Expenses</b>	\$19,144	3.1%	45.6%	\$68.81
<b>Non-Operating Income and Expenses</b>				
Income	\$53	4.5%	0.1%	\$0.19
Rent	1783	4.6%	4.2%	6.41

Property and Other Taxes	1829	2.4%	4.4%	6.57
Insurance	354	-1.0%	0.8%	1.27
Other	781	5.6%	1.9%	2.81
Total Non-Operating Income and Expenses	\$4,694	3.4%	11.2%	\$16.87
<b>EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)</b>	<b>\$14,450</b>	<b>3.0%</b>	<b>34.4%</b>	<b>\$51.94</b>
Percent of Occupancy	76.2%	0.0%		
Average Daily Rate	\$146.58	2.4%		
RevPAR	\$111.73	2.5%		
Average Size (Rooms)	113	0.0%		



Limited Service Hotel 2017 PKF Trends Report Summary Operating Statement, South Central Region

	South Central			
	2016 Dollars per Available Room	Change from Prior Year	2016 Percent of Revenue	2016 Dollars Per Occupied Room
<b>Revenues</b>				
Rooms	\$24,369	-0.4%	97.9%	\$98.33
Other Operated Departments	366	-3.4%	1.5%	1.48
Miscellaneous Income	165	10.3%	0.7%	0.67
Total Operating Revenue	\$24,900	-0.4%	100.0%	\$100.47
<b>Departmental Expenses*</b>				
Rooms	\$6,160	2.8%	25.3%	\$24.86
Other Operated Departments	317	-1.2%	86.7%	1.28
Total Departmental Expenses	\$6,477	2.6%	26.0%	\$26.14
<b>Total Departmental Profit</b>	\$18,423	-1.4%	74.0%	\$74.33
<b>Undistributed Operating Expenses</b>				
Administrative and General	\$2,161	1.6%	8.7%	\$8.72
Information and Telecommunications Systems	270	1.5%	1.1%	1.09
Sales and Marketing	2,856	0.0%	11.5%	11.52
Property Operation and Maintenance	1,252	3.5%	5.0%	5.05
Utilities	996	-4.3%	4.0%	4.02
Total Undistributed Expenses	\$7,534	0.5%	30.3%	\$30.40
<b>Gross Operating Profit</b>	\$10,889	-2.6%	43.7%	\$43.94
<b>Management Fees</b>	\$800	-0.8%	3.2%	\$3.23
<b>Income Before Non-Operating Income and Expenses</b>	\$10,089	-2.7%	40.5%	\$40.71
<b>Non-Operating Income and Expenses</b>				
Income	\$3	5.1%	0.0%	\$0.01
Rent	514	2.8%	2.1%	2.07

Property and Other Taxes	1,184	4.2%	4.8%	4.78
Insurance	302	-0.5%	1.2%	1.22
Other	1,392	1.2%	5.6%	5.62
Total Non-Operating Income and Expenses	\$3,389	2.3%	13.6%	\$13.67
<b>EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)</b>	<b>\$6,700</b>	<b>-5.1%</b>	<b>26.9%</b>	<b>\$27.03</b>
Percent of Occupancy	67.9%	-1.4%		
Average Daily Rate	\$98.33	1.0%		
RevPAR	\$66.77	-0.4%		
Average Size (Rooms)	110	0.0%		

**Limited Service Hotel 2017 PKF Trends Report Summary Operating Statement, Under 100 Rooms**

	<b>Under 100 Rooms</b>			
	2016 Dollars per Available Room	Change from Prior Year	2016 Percent of Revenue	2016 Dollars Per Occupied Room
<b>Revenues</b>				
Rooms	\$28,919	1.6%	98.4%	\$111.23
Other Operated Departments	280	0.9%	1.0%	1.08
Miscellaneous Income	203	17.6%	0.7%	0.78
Total Operating Revenue	\$29,402	1.7%	100.0%	\$113.09
<b>Departmental Expenses*</b>				
Rooms	\$7,513	2.9%	26.0%	\$28.90
Other Operated Departments	308	-6.2%	110.1%	1.18
Total Departmental Expenses	\$7,821	2.5%	26.6%	\$30.08
<b>Total Departmental Profit</b>	\$21,582	1.4%	73.4%	\$83.01
<b>Undistributed Operating Expenses</b>				
Administrative and General	\$2,824	2.0%	9.6%	\$10.86
Information and Telecommunications Systems	438	2.0%	1.5%	1.69
Sales and Marketing	3,282	3.2%	11.2%	12.62
Property Operation and Maintenance	1,444	3.0%	4.9%	5.55
Utilities	1,127	-4.1%	3.8%	4.33
Total Undistributed Expenses	\$9,114	1.8%	31.0%	\$35.05
<b>Gross Operating Profit</b>	\$12,468	1.1%	42.4%	\$47.95
<b>Management Fees</b>	\$1,144	1.0%	3.9%	\$4.40
<b>Income Before Non-Operating Income and Expenses</b>	\$11,324	1.1%	38.5%	\$43.56
<b>Non-Operating Income and Expenses</b>				
Income	\$23	8.9%	0.1%	\$0.09
Rent	1,019	2.9%	3.5%	3.92

Property and Other Taxes	1,171	1.7%	4.0%	4.50
Insurance	314	2.0%	1.1%	1.21
Other	2,468	6.6%	8.4%	9.49
Total Non-Operating Income and Expenses	\$4,949	4.3%	16.8%	\$19.04
<b>EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)</b>	<b>\$6,375</b>	<b>-1.3%</b>	<b>21.7%</b>	<b>\$24.52</b>
Percent of Occupancy	71.2%	0.0%		
Average Daily Rate	\$111.23	1.6%		
RevPAR	\$79.23	1.6%		
Average Size (Rooms)	75	0.0%		

# Appendix E

## Hotel Estimates of Cash Flow Before Debt

**Hotel**  
**Little River Canyon Center**  
**Estimates of Cash Flow Before Debt**  
**Service and Income Taxes**

	2019		2020		2021		2022		2023	
	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio
Number of Days Open/Year	365		365		365		365		365	
Available Rooms (Daily)	60		60		60		60		60	
Available Rooms (Annually)	21,900		21,900		21,900		21,900		21,900	
Occupancy Percentage		64%		65%		65%		65%		66%
Occupied Rooms	14,016		14,235		14,235		14,235		14,454	
Average Room Rate		\$125.00		\$128.75		\$132.61		\$136.59		\$140.69
<b>Revenues</b>										
Rooms	\$1,752,000	97.8%	\$1,832,756	97.8%	\$1,887,739	97.8%	\$1,944,371	97.8%	\$2,033,513	97.8%
Other Operated Departments	\$24,528	1.4%	\$25,659	1.4%	\$26,428	1.4%	\$27,221	1.4%	\$28,469	1.4%
Miscellaneous Income	\$14,016	0.8%	\$14,662	0.8%	\$15,102	0.8%	\$15,555	0.8%	\$16,268	0.8%
<b>Total Operating Revenue</b>	<b>\$1,790,544</b>	<b>100.0%</b>	<b>\$1,873,077</b>	<b>100.0%</b>	<b>\$1,929,269</b>	<b>100.0%</b>	<b>\$1,987,147</b>	<b>100.0%</b>	<b>\$2,078,250</b>	<b>100.0%</b>
<b>Departmental Expenses*</b>										
Rooms	\$434,496	24.8%	\$454,524	24.8%	\$468,159	24.8%	\$482,204	24.8%	\$504,311	24.8%
Other Operated Departments	\$24,528	100.0%	\$25,659	100.0%	\$26,428	100.0%	\$27,221	100.0%	\$28,469	100.0%
Total Departmental Expenses	\$459,024	25.6%	\$480,182	25.6%	\$494,588	25.6%	\$509,425	25.6%	\$532,780	25.6%
<b>Total Departmental Profit</b>	<b>\$1,331,520</b>	<b>74.4%</b>	<b>\$1,392,895</b>	<b>74.4%</b>	<b>\$1,434,682</b>	<b>74.4%</b>	<b>\$1,477,722</b>	<b>74.4%</b>	<b>\$1,545,470</b>	<b>74.4%</b>
<b>Undistributed Operating Expenses</b>										
Administrative and General	\$154,176	8.6%	\$161,283	8.6%	\$166,121	8.6%	\$171,105	8.6%	\$178,949	8.6%
Information and Telecommunications Systems	\$24,528	1.4%	\$25,659	1.4%	\$26,428	1.4%	\$27,221	1.4%	\$28,469	1.4%
Sales and Marketing	\$231,264	12.9%	\$241,924	12.9%	\$249,182	12.9%	\$256,657	12.9%	\$268,424	12.9%
Property Operation and Maintenance	\$84,096	4.7%	\$87,972	4.7%	\$90,611	4.7%	\$93,330	4.7%	\$97,609	4.7%
Utilities	\$66,576	3.7%	\$69,645	3.7%	\$71,734	3.7%	\$73,886	3.7%	\$77,273	3.7%
Total Undistributed Expenses	\$560,640	31.3%	\$586,482	31.3%	\$604,076	31.3%	\$622,199	31.3%	\$650,724	31.3%
<b>Gross Operating Profit</b>	<b>\$770,880</b>	<b>43.1%</b>	<b>\$806,413</b>	<b>43.1%</b>	<b>\$830,605</b>	<b>43.1%</b>	<b>\$855,523</b>	<b>43.1%</b>	<b>\$894,746</b>	<b>43.1%</b>

<b>Management Fees</b>	\$70,080	3.9%	\$73,310	3.9%	\$75,510	3.9%	\$77,775	3.9%	\$81,341	3.9%
<b>Income Before Non-Operating Income and Expenses</b>	<b>\$700,800</b>	<b>39.1%</b>	<b>\$733,103</b>	<b>39.1%</b>	<b>\$755,096</b>	<b>39.1%</b>	<b>\$777,748</b>	<b>39.1%</b>	<b>\$813,405</b>	<b>39.1%</b>
<b>Non-Operating Income and Expenses</b>										
Income	\$701	0.0%	\$733	0.0%	\$755	0.0%	\$778	0.0%	\$813	0.0%
Rent	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%
Property and Other Taxes	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%
Insurance	\$17,520	1.0%	\$18,328	1.0%	\$18,877	1.0%	\$19,444	1.0%	\$20,335	1.0%
Other	\$42,048	2.3%	\$43,986	2.3%	\$45,306	2.3%	\$46,665	2.3%	\$48,804	2.3%
Total Non-Operating Income and Expenses	\$60,269	3.4%	\$63,047	3.4%	\$64,938	3.4%	\$66,886	3.4%	\$69,953	3.4%
<b>EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)</b>	<b>\$640,531</b>	<b>35.8%</b>	<b>\$670,056</b>	<b>35.8%</b>	<b>\$690,157</b>	<b>35.8%</b>	<b>\$710,862</b>	<b>35.8%</b>	<b>\$743,452</b>	<b>35.8%</b>

# Appendix F

## Tree House Village

### Estimate of Cash Flow Before Debt



**Tree House Village  
Little River Canyon Center  
Estimates of Cash Flow Before Debt  
Service and Income Taxes**

	2019		2020		2021		2022		2023	
	<u>Amount</u>	<u>Ratio</u>	<u>Amount</u>	<u>Ratio</u>	<u>Amount</u>	<u>Ratio</u>	<u>Amount</u>	<u>Ratio</u>	<u>Amount</u>	<u>Ratio</u>
Number of Days Open/Year	214		214		214		214		214	
Available Rooms (Daily)	3		3		3		3		3	
Available Rooms (Annually)	642		642		642		642		642	
Occupancy Percentage		70%		70%		70%		70%		70%
Occupied Rooms	449		449		449		449		449	
Average Room Rate		\$150.00		\$157.50		\$165.38		\$173.64		\$182.33
<b>Revenues</b>										
Tree House Rental	\$67,410	100.0%	\$70,781	100.0%	\$74,320	100.0%	\$78,036	100.0%	\$81,937	100.0%
<b>Total Operating Revenue</b>	<b>\$67,410</b>	<b>100.0%</b>	<b>\$70,781</b>	<b>100.0%</b>	<b>\$74,320</b>	<b>100.0%</b>	<b>\$78,036</b>	<b>100.0%</b>	<b>\$81,937</b>	<b>100.0%</b>
<b>Departmental Expenses*</b>										
Tree House	\$15,000	22.3%	\$15,300	21.6%	\$15,918	21.4%	\$16,892	21.6%	\$18,285	22.3%
Total Departmental Expenses	\$15,000	22.3%	\$15,300	21.6%	\$15,918	21.4%	\$16,892	21.6%	\$18,285	22.3%
<b>Total Departmental Profit</b>	<b>\$52,410</b>	<b>77.7%</b>	<b>\$55,481</b>	<b>78.4%</b>	<b>\$58,401</b>	<b>78.6%</b>	<b>\$61,143</b>	<b>78.4%</b>	<b>\$63,652</b>	<b>77.7%</b>
<b>Undistributed Operating Expenses</b>										
Administrative and General	\$5,000	7.4%	\$5,100	7.2%	\$5,306	7.1%	\$5,631	7.2%	\$6,095	7.4%
Sales and Marketing	\$4,500	6.7%	\$4,590	6.5%	\$4,775	6.4%	\$5,068	6.5%	\$5,485	6.7%
Property Operation and Maintenance	\$12,000	17.8%	\$12,240	17.3%	\$12,734	17.1%	\$13,514	17.3%	\$14,628	17.9%
Utilities	\$22,000	32.6%	\$22,440	31.7%	\$23,347	31.4%	\$24,776	31.7%	\$26,818	32.7%
Total Undistributed Expenses	\$43,500	64.5%	\$44,370	62.7%	\$46,163	62.1%	\$48,988	62.8%	\$53,026	64.7%
<b>Gross Operating Profit</b>	<b>\$8,910</b>	<b>13.2%</b>	<b>\$11,111</b>	<b>15.7%</b>	<b>\$12,239</b>	<b>16.5%</b>	<b>\$12,155</b>	<b>15.6%</b>	<b>\$10,626</b>	<b>13.0%</b>
<b>Income Before Non-Operating Income and Expenses</b>	<b>\$8,910</b>	<b>13.2%</b>	<b>\$11,111</b>	<b>15.7%</b>	<b>\$12,239</b>	<b>16.5%</b>	<b>\$12,155</b>	<b>15.6%</b>	<b>\$10,626</b>	<b>13.0%</b>

**Non-Operating Income and Expenses**

Insurance	\$3,500	5.2%	\$3,570	5.0%	\$3,714	5.0%	\$3,942	5.1%	\$4,266	5.2%
Miscellaneous	\$1,250	1.9%	\$1,275	1.8%	\$1,327	1.8%	\$1,408	1.8%	\$1,524	1.9%
Total Non-Operating Income and Expenses	\$4,750	7.0%	\$4,845	6.8%	\$5,041	6.8%	\$5,349	6.9%	\$5,790	7.1%
<b>EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)</b>	<b>\$4,160</b>	<b>6.2%</b>	<b>\$6,266</b>	<b>8.9%</b>	<b>\$7,198</b>	<b>9.7%</b>	<b>\$6,806</b>	<b>8.7%</b>	<b>\$4,836</b>	<b>5.9%</b>

Note: The accompanying report and summary of significant assumptions are an integral part of these prospective analyses and should be read in conjunction with this schedule.

# Appendix G

## Dormitory - Limited Service Hotel 2017 PKF Trends Report Summary Operating Statement

**Limited Service Hotel 2017 PKF Trends Report Summary Operating Statement, ADR less than \$75**

	Under \$75			
	2016 Dollars per Available Room	Change from Prior Year	2016 Percent of Revenue	2016 Dollars Per Occupied Room
<b>Revenues</b>				
Rooms	\$15,181	1.5%	99.1%	\$66.47
Other Operated Departments	55	0.4%	0.4%	0.24
Miscellaneous Income	77	25.1%	0.5%	0.34
Total Operating Revenue	\$15,313	1.6%	100.0%	\$67.04
<b>Departmental Expenses*</b>				
Rooms	\$4,755	6.7%	31.3%	\$20.82
Other Operated Departments	79	1.1%	143.7%	0.34
Total Departmental Expenses	\$4,833	6.6%	31.6%	\$21.16
<b>Total Departmental Profit</b>	\$10,480	-0.6%	68.4%	\$45.88
<b>Undistributed Operating Expenses</b>				
Administrative and General	\$1,588	4.9%	10.4%	\$6.95
Information and Telecommunications Systems	126	4.9%	0.8%	0.55
Sales and Marketing	1,438	-0.2%	9.4%	6.30
Property Operation and Maintenance	1,044	3.8%	6.8%	4.57
Utilities	858	-5.0%	5.6%	3.76
Total Undistributed Expenses	\$5,054	1.4%	33.0%	\$22.13
<b>Gross Operating Profit</b>	\$5,426	-2.3%	35.4%	\$23.75
<b>Management Fees</b>	\$394	2.0%	2.6%	\$1.72
<b>Income Before Non-Operating Income and Expenses</b>	\$5,032	-2.6%	32.9%	\$22.03
<b>Non-Operating Income and Expenses</b>				
Income	-	N/C	0.0%	-
Rent	\$53	-0.5%	0.3%	\$0.23
Property and Other Taxes	657	5.1%	4.3%	2.88

Insurance	337	-0.5%	2.2%	1.47
Other	12	-31.8%	0.1%	0.05
Total Non-Operating Income and Expenses	\$1,059	2.3%	6.9%	\$4.64
<b>EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)</b>	<b>\$3,973</b>	<b>-3.8%</b>	<b>25.9%</b>	<b>\$17.40</b>
Percent of Occupancy	62.6%	-1.0%		
Average Daily Rate	\$66.47	2.6%		
RevPAR	\$41.59	1.5%		
Average Size (Rooms)	121	0.0%		

# Appendix H

## Dormitory

### Estimate of Cash Flow Before Debt

**Dormitory**  
**Little River Canyon Center**  
**Estimates of Cash Flow Before Debt**  
**Service and Income Taxes**

	<u>2019</u>		<u>2020</u>		<u>2021</u>		<u>2022</u>		<u>2023</u>	
	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio
Number of Days Open/Year	365		365		365		365		365	
Available Rooms (Daily)	30		30		30		30		30	
Available Rooms (Annually)	10,950		10,950		10,950		10,950		10,950	
Occupancy Percentage		90%		90%		90%		90%		90%
Occupied Rooms	9,855		9,855		9,855		9,855		9,855	
Average Room Rate		\$30.00		\$30.90		\$31.83		\$32.78		\$33.77
<b>Revenues</b>										
Rooms	\$295,650	98.1%	\$304,520	97.8%	\$313,655	97.8%	\$323,065	97.8%	\$332,757	97.8%
Other Operated Departments	\$2,365	0.8%	\$3,451	1.1%	\$3,555	1.1%	\$3,661	1.1%	\$3,771	1.1%
Miscellaneous Income	\$3,351	1.1%	\$3,451	1.1%	\$3,555	1.1%	\$3,661	1.1%	\$3,771	1.1%
<b>Total Operating Revenue</b>	<b>\$301,366</b>	<b>100.0%</b>	<b>\$311,422</b>	<b>100.0%</b>	<b>\$320,765</b>	<b>100.0%</b>	<b>\$330,388</b>	<b>100.0%</b>	<b>\$340,299</b>	<b>100.0%</b>
<b>Departmental Expenses*</b>										
Rooms	\$98,550	33.3%	\$101,507	33.3%	\$104,552	33.3%	\$107,688	33.3%	\$110,919	33.3%
Other Operated Departments	\$3,351	141.7%	\$3,451	100.0%	\$3,555	100.0%	\$3,661	100.0%	\$3,771	100.0%
Total Departmental Expenses	\$101,901	33.8%	\$104,958	33.7%	\$108,106	33.7%	\$111,350	33.7%	\$114,690	33.7%
<b>Total Departmental Profit</b>	<b>\$199,465</b>	<b>66.2%</b>	<b>\$206,464</b>	<b>66.3%</b>	<b>\$212,658</b>	<b>66.3%</b>	<b>\$219,038</b>	<b>66.3%</b>	<b>\$225,609</b>	<b>66.3%</b>
<b>Undistributed Operating Expenses</b>										
Administrative and General	\$19,710	6.5%	\$20,301	6.5%	\$20,910	6.5%	\$21,538	6.5%	\$22,184	6.5%
Information and Telecommunications Systems	\$5,420	1.8%	\$5,583	1.8%	\$5,750	1.8%	\$5,923	1.8%	\$6,101	1.8%
Sales and Marketing	\$9,855	3.3%	\$10,151	3.3%	\$10,455	3.3%	\$10,769	3.3%	\$11,092	3.3%
Property Operation and Maintenance	\$29,565	9.8%	\$30,452	9.8%	\$31,366	9.8%	\$32,306	9.8%	\$33,276	9.8%
Utilities	\$24,638	8.2%	\$25,377	8.1%	\$26,138	8.1%	\$26,922	8.1%	\$27,730	8.1%
Total Undistributed Expenses	\$89,188	29.6%	\$91,863	29.5%	\$94,619	29.5%	\$97,458	29.5%	\$100,382	29.5%
<b>Gross Operating Profit</b>	<b>\$110,277</b>	<b>36.6%</b>	<b>\$114,601</b>	<b>36.8%</b>	<b>\$118,039</b>	<b>36.8%</b>	<b>\$121,580</b>	<b>36.8%</b>	<b>\$125,227</b>	<b>36.8%</b>

<b>Management Fees</b>	\$9,855	3.3%	\$10,151	3.3%	\$10,455	3.3%	\$10,769	3.3%	\$11,092	3.3%
<b>Income Before Non-Operating Income and Expenses</b>	<b>\$100,422</b>	<b>33.3%</b>	<b>\$104,450</b>	<b>33.5%</b>	<b>\$107,584</b>	<b>33.5%</b>	<b>\$110,811</b>	<b>33.5%</b>	<b>\$114,136</b>	<b>33.5%</b>
<b>Non-Operating Income and Expenses</b>										
Income	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%
Rent	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%
Property and Other Taxes	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%	\$-	0.0%
Insurance	\$14,487	4.8%	\$14,921	4.8%	\$15,369	4.8%	\$15,830	4.8%	\$16,305	4.8%
Other	\$493	0.2%	\$508	0.2%	\$523	0.2%	\$538	0.2%	\$555	0.2%
Total Non-Operating Income and Expenses	\$14,980	5.0%	\$15,429	5.0%	\$15,892	5.0%	\$16,369	5.0%	\$16,860	5.0%
<b>EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)</b>	<b>\$85,443</b>	<b>28.4%</b>	<b>\$89,021</b>	<b>28.6%</b>	<b>\$91,692</b>	<b>28.6%</b>	<b>\$94,443</b>	<b>28.6%</b>	<b>\$97,276</b>	<b>28.6%</b>

Note: The accompanying report and summary of significant assumptions are an integral part of these prospective analyses and should be read in conjunction with this schedule.



# Appendix I

## Marketplace

### Estimate of Cash Flow Before Debt

**Marketplace**  
**Little River Canyon Center**  
**Estimates of Cash Flow Before Debt**  
**Service and Income Taxes**

	2019		2020		2021		2022		2023	
	<u>Amount</u>	<u>Ratio</u>	<u>Amount</u>	<u>Ratio</u>	<u>Amount</u>	<u>Ratio</u>	<u>Amount</u>	<u>Ratio</u>	<u>Amount</u>	<u>Ratio</u>
<b>Revenues</b>										
Food and Beverage from Hotel Guests	\$168,571	18.3%	\$171,942	18.3%	\$184,189	18.3%	\$201,268	18.3%	\$222,163	18.3%
Food and Beverage from LRCC Students, Visitors, & Staff	\$752,812	81.7%	\$767,868	81.7%	\$822,560	81.7%	\$898,833	81.7%	\$992,144	81.7%
<b>Total Operating Revenue</b>	<b>\$921,383</b>	<b>100.0%</b>	<b>\$939,811</b>	<b>100.0%</b>	<b>\$1,006,749</b>	<b>100.0%</b>	<b>\$1,100,101</b>	<b>100.0%</b>	<b>\$1,214,306</b>	<b>100.0%</b>
<b>Departmental Expenses*</b>										
Food and Beverage	\$730,000	79.2%	\$744,600	79.2%	\$797,634	79.2%	\$871,596	79.2%	\$962,079	79.2%
Other Operated Departments	\$10,000	1.1%	\$10,200	1.1%	\$10,926	1.1%	\$11,940	1.1%	\$13,179	1.1%
Total Departmental Expenses	\$740,000	80.3%	\$754,800	80.3%	\$808,561	80.3%	\$883,536	80.3%	\$975,258	80.3%
<b>Total Departmental Profit</b>	<b>\$181,383</b>	<b>19.7%</b>	<b>\$185,011</b>	<b>19.7%</b>	<b>\$198,188</b>	<b>19.7%</b>	<b>\$216,565</b>	<b>19.7%</b>	<b>\$239,048</b>	<b>19.7%</b>
<b>Undistributed Operating Expenses</b>										
Administrative and General	\$24,000	2.6%	\$24,480	2.6%	\$26,224	2.6%	\$28,655	2.6%	\$31,630	2.6%
Sales and Marketing	\$3,500	0.4%	\$3,570	0.4%	\$3,824	0.4%	\$4,179	0.4%	\$4,613	0.4%
Property Operation and Maintenance	\$7,500	0.8%	\$7,650	0.8%	\$8,195	0.8%	\$8,955	0.8%	\$9,884	0.8%
Utilities	\$14,500	1.6%	\$14,790	1.6%	\$15,843	1.6%	\$17,313	1.6%	\$19,110	1.6%
Total Undistributed Expenses	\$49,500	5.4%	\$50,490	5.4%	\$54,086	5.4%	\$59,101	5.4%	\$65,237	5.4%
<b>Gross Operating Profit</b>	<b>\$131,883</b>	<b>14.3%</b>	<b>\$134,521</b>	<b>14.3%</b>	<b>\$144,102</b>	<b>14.3%</b>	<b>\$157,464</b>	<b>14.3%</b>	<b>\$173,811</b>	<b>14.3%</b>
<b>Income Before Non-Operating Income and Expenses</b>	<b>\$131,883</b>	<b>14.3%</b>	<b>\$134,521</b>	<b>14.3%</b>	<b>\$144,102</b>	<b>14.3%</b>	<b>\$157,464</b>	<b>14.3%</b>	<b>\$173,811</b>	<b>14.3%</b>
<b>Non-Operating Income and Expenses</b>										
Insurance	\$3,500	0.4%	\$3,570	0.4%	\$3,824	0.4%	\$4,179	0.4%	\$4,613	0.4%
Rent	\$12,000	1.3%	\$12,000	1.3%	\$12,000	1.2%	\$12,000	1.1%	\$12,000	1.0%
Total Non-Operating Income and Expenses	\$15,500	1.7%	\$15,570	1.7%	\$15,824	1.6%	\$16,179	1.5%	\$16,613	1.4%

<b>EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)</b>	<b>\$116,383</b>	<b>12.6%</b>	<b>\$118,951</b>	<b>12.7%</b>	<b>\$128,278</b>	<b>12.7%</b>	<b>\$141,285</b>	<b>12.8%</b>	<b>\$157,198</b>	<b>12.9%</b>
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Note: The accompanying report and summary of significant assumptions are an integral part of these prospective analyses and should be read in conjunction with this schedule.

# Appendix J

## USDA Soils Report



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for DeKalb County, Alabama

LRCC



May 1, 2017

## Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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## How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

#### Custom Soil Resource Report

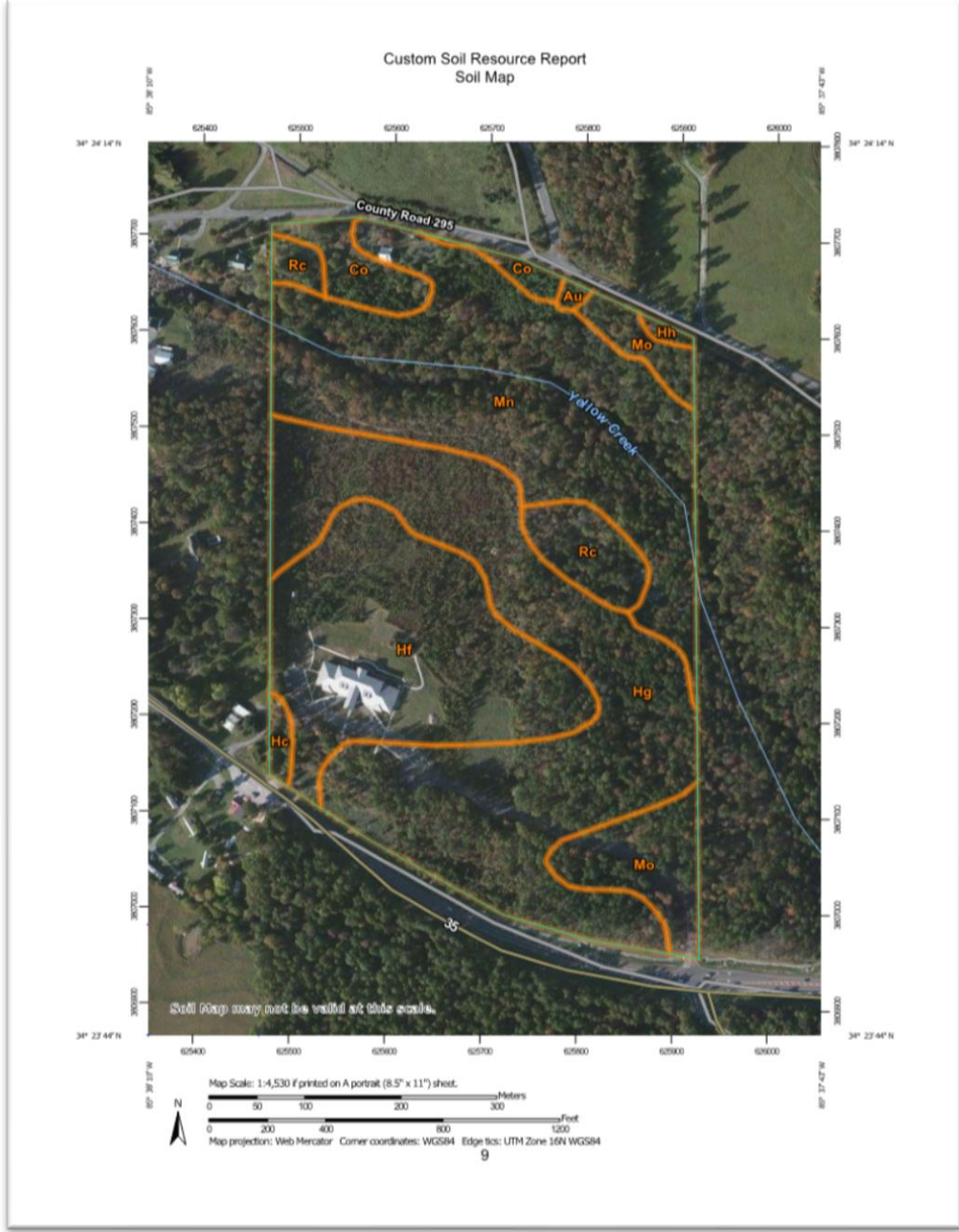
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

## Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.





### Custom Soil Resource Report

#### MAP LEGEND

	Area of Interest (AOI)		Soil Area
	Soil Map Unit Polygons		Story Spot
	Soil Map Unit Lines		Very Stony Spot
	Soil Map Unit Points		Wet Spot
	Special Point Features		Other
	Borrow Pit		Special Line Features
	Clay Spot		Streams and Canals
	Closed Depression		Rails
	Gravel Pit		Interstate Highways
	Landfill		US Routes
	Levee Flow		Major Roads
	Marsh or swamp		Local Roads
	Mine or Quarry		Background
	Miscellaneous Water		Aerial Photography
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slits or Slip		
	Sodic Spot		

#### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeKalb County, Alabama  
Survey Area Data: Version 8, Sep 23, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 12, 2011—Jan 4, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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## Map Unit Legend

DeKalb County, Alabama (AL049)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Au	Atkins silt loam	0.2	0.3%
Co	Crossville rocky loam, rolling	2.4	3.4%
Hc	Hartsells (Wynnvile) fine sandy loam, 2 to 6 percent slopes, eroded	0.5	0.6%
Hf	Hartsells fine sandy loam, 6 to 10 percent slopes	15.1	20.9%
Hg	Hartsells fine sandy loam, 6 to 10 percent slopes, shallow	24.7	34.1%
Hh	Hartsells fine sandy loam, undulating	0.2	0.3%
Mn	Muskingum (Gorgas) stony fine sandy loam, 10 to 20 percent slopes, very stony	21.4	29.5%
Mo	Muskingum (Gorgas) stony fine sandy loam, 5 to 10 percent slopes, very stony	4.9	6.8%
Rc	Rockland, sandstone, rolling	3.0	4.1%
<b>Totals for Area of Interest</b>		<b>72.4</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They

generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## DeKalb County, Alabama

### Au—Atkins silt loam

#### Map Unit Setting

National map unit symbol: c1h0  
Elevation: 50 to 300 feet  
Mean annual precipitation: 45 to 56 inches  
Mean annual air temperature: 57 to 68 degrees F  
Frost-free period: 185 to 210 days  
Farmland classification: Farmland of statewide importance

#### Map Unit Composition

Atkins, (wehadkee), and similar soils: 85 percent  
Estimates are based on observations, descriptions, and transects of the mapunit.

#### Description of Atkins, (wehadkee)

##### Setting

Landform: Drainageways  
Landform position (two-dimensional): Toeslope  
Landform position (three-dimensional): Dip  
Down-slope shape: Concave  
Across-slope shape: Concave  
Parent material: Alluvium derived from sandstone and shale

##### Typical profile

H1 - 0 to 10 inches: silt loam  
H2 - 10 to 60 inches: loam

##### Properties and qualities

Slope: 0 to 2 percent  
Depth to restrictive feature: More than 80 inches  
Natural drainage class: Poorly drained  
Runoff class: Low  
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)  
Depth to water table: About 0 to 12 inches  
Frequency of flooding: Frequent  
Frequency of ponding: None  
Available water storage in profile: High (about 9.7 inches)

##### Interpretive groups

Land capability classification (irrigated): None specified  
Land capability classification (nonirrigated): 4w  
Hydrologic Soil Group: B/D  
Hydric soil rating: Yes

### Co—Crossville rocky loam, rolling

#### Map Unit Setting

National map unit symbol: c1hf  
Elevation: 10 to 1,600 feet  
Mean annual precipitation: 45 to 56 inches  
Mean annual air temperature: 57 to 68 degrees F  
Frost-free period: 185 to 210 days  
Farmland classification: Not prime farmland

#### Map Unit Composition

Crossville, (gorgas), and similar soils: 85 percent  
Minor components: 3 percent  
Estimates are based on observations, descriptions, and transects of the mapunit.

#### Description of Crossville, (gorgas)

##### Setting

Landform: Hillslopes  
Landform position (two-dimensional): Shoulder  
Landform position (three-dimensional): Side slope  
Down-slope shape: Convex  
Across-slope shape: Convex  
Parent material: Loamy residuum weathered from sandstone

##### Typical profile

H1 - 0 to 5 inches: stony loam  
H2 - 5 to 15 inches: sandy loam  
H3 - 15 to 80 inches: unweathered bedrock

##### Properties and qualities

Slope: 5 to 10 percent  
Depth to restrictive feature: 14 to 40 inches to lithic bedrock  
Natural drainage class: Well drained  
Runoff class: Low  
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)  
Depth to water table: More than 80 inches  
Frequency of flooding: None  
Frequency of ponding: None  
Available water storage in profile: Very low (about 1.6 inches)

##### Interpretive groups

Land capability classification (irrigated): None specified  
Land capability classification (nonirrigated): 6s  
Hydrologic Soil Group: D  
Hydric soil rating: No

##### Minor Components

###### Wehadkee

Percent of map unit: 3 percent

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Landform: Drainageways  
Landform position (two-dimensional): Toeslope  
Landform position (three-dimensional): Dip  
Down-slope shape: Concave  
Across-slope shape: Concave  
Hydric soil rating: Yes

**Hc—Hartsells (Wynnville) fine sandy loam, 2 to 6 percent slopes, eroded**

**Map Unit Setting**

National map unit symbol: 2sr77  
Elevation: 750 to 2,000 feet  
Mean annual precipitation: 51 to 63 inches  
Mean annual air temperature: 57 to 64 degrees F  
Frost-free period: 180 to 220 days  
Farmland classification: All areas are prime farmland

**Map Unit Composition**

Hartsells (wynnville) and similar soils: 85 percent  
Minor components: 15 percent  
Estimates are based on observations, descriptions, and transects of the mapunit.

**Description of Hartsells (wynnville)**

**Setting**

Landform: Ridges  
Landform position (two-dimensional): Summit, footslope  
Landform position (three-dimensional): Crest  
Down-slope shape: Convex  
Across-slope shape: Convex  
Parent material: Loamy residuum weathered from sandstone and shale

**Typical profile**

Ap - 0 to 7 inches: fine sandy loam  
Bw - 7 to 23 inches: loam  
E/Btx - 23 to 26 inches: sandy loam  
E/Btx - 26 to 33 inches: loam  
Btx - 33 to 48 inches: sandy clay loam  
Bt - 48 to 57 inches: sandy clay loam  
R - 57 to 80 inches: bedrock

**Properties and qualities**

Slope: 2 to 6 percent  
Depth to restrictive feature: 18 to 24 inches to fragipan; 55 to 60 inches to lithic bedrock  
Natural drainage class: Moderately well drained  
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.07 in/hr)  
Depth to water table: About 16 to 20 inches  
Frequency of flooding: None

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Frequency of ponding: None  
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
Available water storage in profile: Low (about 3.9 inches)

**Interpretive groups**

Land capability classification (irrigated): None specified  
Land capability classification (nonirrigated): 2e  
Hydrologic Soil Group: D  
Hydric soil rating: No

**Minor Components**

**Hartsells**

Percent of map unit: 8 percent  
Landform: Hillslopes  
Landform position (two-dimensional): Shoulder  
Landform position (three-dimensional): Side slope  
Down-slope shape: Convex  
Across-slope shape: Convex  
Hydric soil rating: No

**Muskingum (gorgas)**

Percent of map unit: 5 percent  
Landform: Hillslopes  
Landform position (two-dimensional): Backslope  
Landform position (three-dimensional): Side slope  
Down-slope shape: Linear  
Across-slope shape: Convex  
Hydric soil rating: No

**Cotaco**

Percent of map unit: 2 percent  
Landform: Ridges  
Landform position (two-dimensional): Toeslope  
Landform position (three-dimensional): Dip  
Down-slope shape: Linear  
Across-slope shape: Concave  
Hydric soil rating: No

**Hf—Hartsells fine sandy loam, 6 to 10 percent slopes**

**Map Unit Setting**

National map unit symbol: 2sr78  
Elevation: 310 to 1,950 feet  
Mean annual precipitation: 45 to 56 inches  
Mean annual air temperature: 57 to 64 degrees F  
Frost-free period: 180 to 220 days  
Farmland classification: Farmland of statewide importance

**Map Unit Composition**

*Hartsells and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hartsells**

**Setting**

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy residuum weathered from sandstone

**Typical profile**

*A - 0 to 5 inches:* fine sandy loam

*Bt - 5 to 30 inches:* sandy clay loam

*BC - 30 to 36 inches:* sandy clay loam

*R - 36 to 80 inches:* bedrock

**Properties and qualities**

*Slope:* 6 to 10 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Low (about 3.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* C

*Hydric soil rating:* No

**Minor Components**

**Wynnville**

*Percent of map unit:* 8 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Summit, footslope

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Linker**

*Percent of map unit:* 6 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Muskingum (gorgas)**

*Percent of map unit:* 1 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Hg—Hartsells fine sandy loam, 6 to 10 percent slopes, shallow**

**Map Unit Setting**

*National map unit symbol:* 2wc1w

*Elevation:* 590 to 1,900 feet

*Mean annual precipitation:* 45 to 56 inches

*Mean annual air temperature:* 57 to 64 degrees F

*Frost-free period:* 180 to 220 days

*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Hartsells, shallow, and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hartsells, Shallow**

**Setting**

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy residuum weathered from sandstone

**Typical profile**

*A - 0 to 5 inches:* fine sandy loam

*Bt - 5 to 30 inches:* sandy clay loam

*BC - 30 to 36 inches:* sandy clay loam

*R - 36 to 80 inches:* bedrock

**Properties and qualities**

*Slope:* 6 to 10 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Low

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*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 3.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* C  
*Hydric soil rating:* No

**Minor Components**

**Muskingum, (gorgas)**

*Percent of map unit:* 8 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Linker**

*Percent of map unit:* 6 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Interfluvium  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Atkins, (kinston)**

*Percent of map unit:* 1 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope, interfluvium  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Hh—Hartsells fine sandy loam, undulating**

**Map Unit Setting**

*National map unit symbol:* c1j5  
*Elevation:* 800 to 1,200 feet  
*Mean annual precipitation:* 45 to 56 inches  
*Mean annual air temperature:* 57 to 68 degrees F

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*Frost-free period:* 185 to 210 days  
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Hartsells and similar soils:* 90 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hartsells**

**Setting**

*Landform:* Ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy residuum weathered from sandstone

**Typical profile**

*H1 - 0 to 11 inches:* fine sandy loam  
*H2 - 11 to 30 inches:* loam  
*H3 - 30 to 40 inches:* loam  
*H4 - 40 to 52 inches:* loam  
*H5 - 52 to 80 inches:* unweathered bedrock

**Properties and qualities**

*Slope:* 2 to 5 percent  
*Depth to restrictive feature:* 39 to 59 inches to lithic bedrock  
*Natural drainage class:* Moderately well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.07 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 8.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C  
*Hydric soil rating:* No

**Mn—Muskingum (Gorgas) stony fine sandy loam, 10 to 20 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol:* 2sr8b  
*Elevation:* 490 to 1,940 feet  
*Mean annual precipitation:* 45 to 56 inches  
*Mean annual air temperature:* 57 to 64 degrees F  
*Frost-free period:* 180 to 220 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Muskingum (gorgas) and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Muskingum (gorgas)**

**Setting**

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy residuum weathered from sandstone

**Typical profile**

*A - 0 to 6 inches:* stony fine sandy loam

*Bt - 6 to 16 inches:* sandy loam

*R - 16 to 80 inches:* bedrock

**Properties and qualities**

*Slope:* 10 to 20 percent

*Percent of area covered with surface fragments:* 3.0 percent

*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.07 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* Very low (about 1.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* D

*Hydric soil rating:* No

**Minor Components**

**Enders**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Apison**

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Hartsells**

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Mo—Muskingum (Gorgas) stony fine sandy loam, 5 to 10 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol:* 2sr85

*Elevation:* 490 to 1,280 feet

*Mean annual precipitation:* 45 to 56 inches

*Mean annual air temperature:* 57 to 64 degrees F

*Frost-free period:* 185 to 210 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Muskingum (gorgas) and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Muskingum (gorgas)**

**Setting**

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy residuum weathered from sandstone

**Typical profile**

*A - 0 to 6 inches:* stony fine sandy loam

*Bt - 6 to 16 inches:* sandy loam

*R - 16 to 80 inches:* bedrock

**Properties and qualities**

*Slope:* 5 to 10 percent

*Percent of area covered with surface fragments:* 3.0 percent

*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Low

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*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.07 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Very low (about 1.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

**Minor Components**

**Enders**

*Percent of map unit:* 5 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Apison**

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Hartsells**

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Rc—Rockland, sandstone, rolling**

**Map Unit Setting**

*National map unit symbol:* c1km  
*Elevation:* 10 to 1,600 feet  
*Mean annual precipitation:* 45 to 56 inches  
*Mean annual air temperature:* 57 to 68 degrees F

Custom Soil Resource Report

*Frost-free period:* 185 to 210 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Lithic hapludults and similar soils:* 85 percent  
*Minor components:* 3 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Lithic Hapludults**

**Setting**

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from sandstone

**Typical profile**

*H1 - 0 to 4 inches:* stony sandy loam  
*H2 - 4 to 12 inches:* sandy loam  
*H3 - 12 to 80 inches:* unweathered bedrock

**Properties and qualities**

*Slope:* 5 to 10 percent  
*Percent of area covered with surface fragments:* 15.0 percent  
*Depth to restrictive feature:* 8 to 20 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.07 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Very low (about 1.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

**Minor Components**

**Wehadkee**

*Percent of map unit:* 3 percent  
*Landform:* Drainageways  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes



## References

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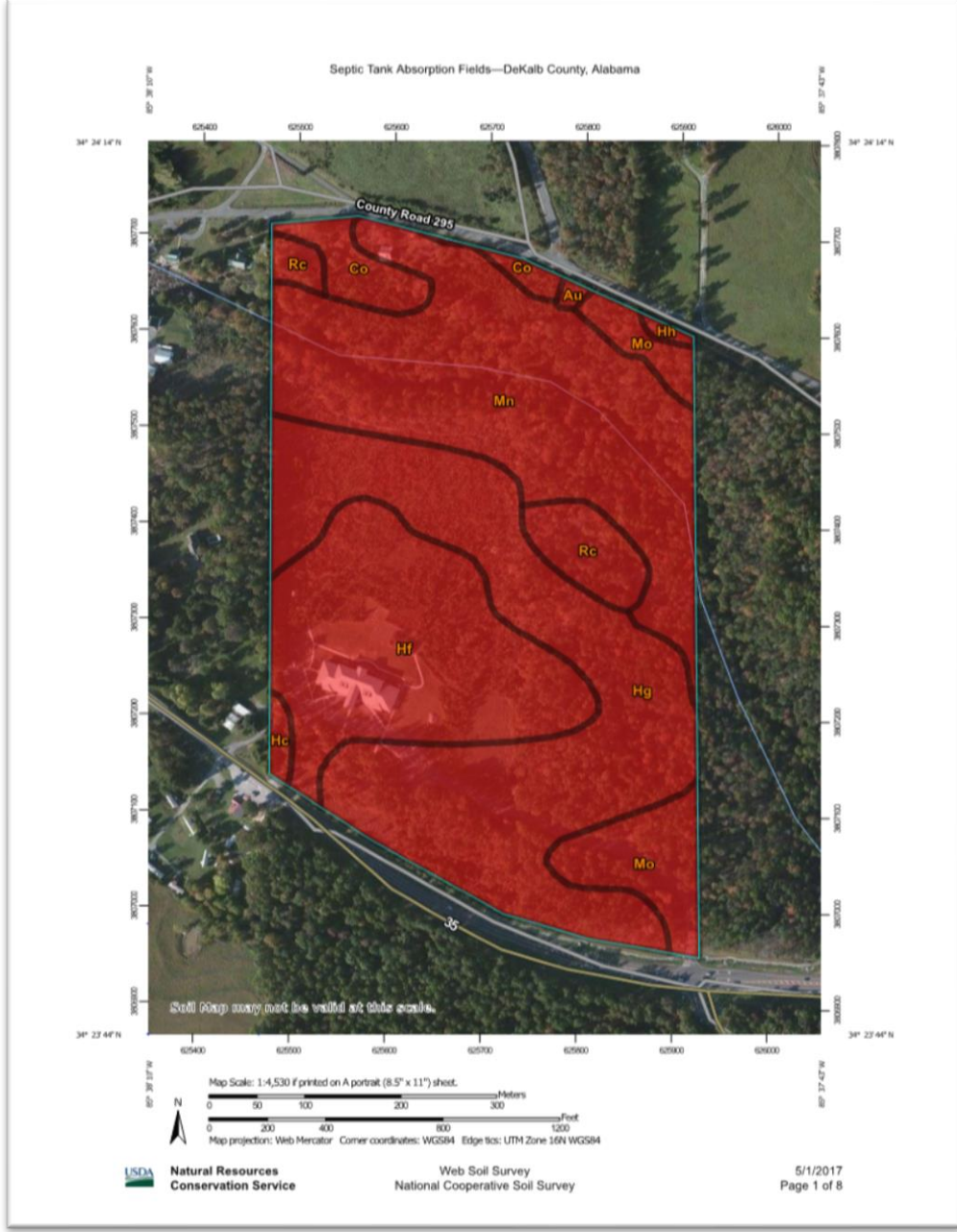
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# Appendix K

## USDA Septic Tank Absorption Fields



Septic Tank Absorption Fields—DeKalb County, Alabama

**USDA** Natural Resources Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

5/1/2017  
Page 2 of 8

### MAP LEGEND

<p><b>Area of Interest (AOI)</b></p> <ul style="list-style-type: none"> <li>Area of Interest (AOI) <span style="display: inline-block; width: 15px; height: 10px; border: 1px solid black; background-color: #f0f0f0; margin-right: 5px;"></span></li> </ul>	<p><b>Background</b></p> <ul style="list-style-type: none"> <li>Aerial Photography <span style="display: inline-block; width: 15px; height: 10px; background-color: #808080; margin-right: 5px;"></span></li> </ul>	<p><b>Soils</b></p> <ul style="list-style-type: none"> <li>Soil Rating Polygons               <ul style="list-style-type: none"> <li>Very limited <span style="display: inline-block; width: 10px; height: 10px; background-color: #ff0000; margin-right: 5px;"></span></li> <li>Somewhat limited <span style="display: inline-block; width: 10px; height: 10px; background-color: #ffff00; margin-right: 5px;"></span></li> <li>Not limited <span style="display: inline-block; width: 10px; height: 10px; background-color: #00ff00; margin-right: 5px;"></span></li> <li>Not rated or not available <span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span></li> </ul> </li> <li>Soil Rating Lines               <ul style="list-style-type: none"> <li>Very limited <span style="display: inline-block; width: 10px; border-bottom: 2px solid red; margin-right: 5px;"></span></li> <li>Somewhat limited <span style="display: inline-block; width: 10px; border-bottom: 2px solid orange; margin-right: 5px;"></span></li> <li>Not limited <span style="display: inline-block; width: 10px; border-bottom: 2px solid green; margin-right: 5px;"></span></li> <li>Not rated or not available <span style="display: inline-block; width: 10px; border-bottom: 2px dashed black; margin-right: 5px;"></span></li> </ul> </li> <li>Soil Rating Points               <ul style="list-style-type: none"> <li>Very limited <span style="display: inline-block; width: 10px; height: 10px; background-color: #ff0000; margin-right: 5px;"></span></li> <li>Somewhat limited <span style="display: inline-block; width: 10px; height: 10px; background-color: #ffff00; margin-right: 5px;"></span></li> <li>Not limited <span style="display: inline-block; width: 10px; height: 10px; background-color: #00ff00; margin-right: 5px;"></span></li> <li>Not rated or not available <span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span></li> </ul> </li> </ul>	<p><b>Water Features</b></p> <ul style="list-style-type: none"> <li>Streams and Canals <span style="display: inline-block; width: 15px; border-bottom: 1px solid blue; margin-right: 5px;"></span></li> </ul>	<p><b>Transportation</b></p> <ul style="list-style-type: none"> <li>Rails <span style="display: inline-block; width: 15px; border-bottom: 1px dashed black; margin-right: 5px;"></span></li> <li>Interstate Highways <span style="display: inline-block; width: 15px; border-bottom: 3px solid red; margin-right: 5px;"></span></li> <li>US Routes <span style="display: inline-block; width: 15px; border-bottom: 2px solid orange; margin-right: 5px;"></span></li> <li>Major Roads <span style="display: inline-block; width: 15px; border-bottom: 2px solid yellow; margin-right: 5px;"></span></li> <li>Local Roads <span style="display: inline-block; width: 15px; border-bottom: 2px solid gray; margin-right: 5px;"></span></li> </ul>
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### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

**Warning:** Soil Map may not be valid at this scale.  
 Enlargement of maps beyond the scale of mapping can cause misrepresentation of the detail, mapping and accuracy of soil line positions. It may also not show the small areas containing soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: [http://www.nrcs.usda.gov/wss/nrcswebsoilsurvey](#)  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeKalb County, Alabama  
 Survey Area Data: Version 6, Sep 23, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 12, 2011—Jan 4, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

### Septic Tank Absorption Fields

Septic Tank Absorption Fields— Summary by Map Unit — DeKalb County, Alabama (AL049)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Au	Atkins silt loam	Very limited	Atkins, (Wehadkee) (85%)	Flooding (1.00) Depth to saturated zone (1.00) Slow water movement (0.50)	0.2	0.3%
Co	Crossville rocky loam, rolling	Very limited	Crossville, (Gorgas) (85%) Wehadkee (3%)	Depth to bedrock (1.00) Seepage, bottom layer (1.00) Flooding (1.00) Depth to saturated zone (1.00) Slow water movement (0.50)	2.4	3.4%
Hc	Hartsells (Wynnvil) fine sandy loam, 2 to 6 percent slopes, eroded	Very limited	Hartsells (Wynnvil) (85%) Hartsells (8%) Muskingum (Gorgas) (5%) Cotaco (2%)	Depth to saturated zone (1.00) Slow water movement (1.00) Depth to bedrock (0.38) Depth to bedrock (1.00) Slow water movement (0.50) Depth to bedrock (1.00) Slope (1.00) Seepage, bottom layer (1.00) Ponding (1.00) Depth to saturated zone (1.00) Seepage, bottom layer (1.00)	0.5	0.6%

Septic Tank Absorption Fields— Summary by Map Unit — DeKalb County, Alabama (AL049)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slow water movement (0.50)		
Hf	Hartsells fine sandy loam, 6 to 10 percent slopes	Very limited	Hartsells (85%) Wynnvil (8%) Linker (6%) Muskingum (Gorgas) (1%)	Depth to bedrock (1.00) Slow water movement (0.50) Depth to saturated zone (1.00) Slow water movement (1.00) Depth to bedrock (1.00) Slow water movement (0.50) Depth to bedrock (1.00) Slope (1.00) Seepage, bottom layer (1.00)	15.1	20.9%
Hg	Hartsells fine sandy loam, 6 to 10 percent slopes, shallow	Very limited	Hartsells, shallow (85%) Muskingum, (Gorgas) (8%) Linker (6%) Atkins, (Kinston) (1%)	Depth to bedrock (1.00) Slow water movement (0.50) Depth to bedrock (1.00) Slope (1.00) Seepage, bottom layer (1.00) Depth to bedrock (1.00) Slow water movement (0.50) Flooding (1.00) Depth to saturated zone (1.00) Slow water movement (0.50)	24.7	34.1%

Septic Tank Absorption Fields— Summary by Map Unit — DeKalb County, Alabama (AL049)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Hh	Hartsells fine sandy loam, undulating	Very limited	Hartsells (90%)	Depth to saturated zone (1.00) Slow water movement (1.00) Depth to bedrock (0.68)	0.2	0.3%
Mn	Muskingum (Gorgas) stony fine sandy loam, 10 to 20 percent slopes, very stony	Very limited	Muskingum (Gorgas) (85%)	Depth to bedrock (1.00) Slope (1.00) Seepage, bottom layer (1.00)	21.4	29.5%
			Enders (5%)	Slow water movement (1.00) Depth to bedrock (0.77)		
			Apison (5%)	Slow water movement (1.00) Depth to bedrock (1.00)		
			Hartsells (5%)	Depth to bedrock (1.00) Slow water movement (0.50)		
Mo	Muskingum (Gorgas) stony fine sandy loam, 5 to 10 percent slopes, very stony	Very limited	Muskingum (Gorgas) (85%)	Depth to bedrock (1.00) Seepage, bottom layer (1.00)	4.9	6.8%
			Enders (5%)	Slow water movement (1.00) Depth to bedrock (0.77)		
			Apison (5%)	Slow water movement (1.00) Depth to bedrock (1.00)		
			Hartsells (5%)	Depth to bedrock (1.00) Slow water movement (0.50)		

Septic Tank Absorption Fields— Summary by Map Unit — DeKalb County, Alabama (AL049)						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Rc	Rockland, sandstone, rolling	Very limited	Lithic Hapludults (85%) Wehadkee (3%)	Depth to bedrock (1.00) Seepage, bottom layer (1.00) Flooding (1.00) Depth to saturated zone (1.00) Slow water movement (0.50)	3.0	4.1%
<b>Totals for Area of Interest</b>					<b>72.4</b>	<b>100.0%</b>
Septic Tank Absorption Fields— Summary by Rating Value						
Rating		Acres in AOI		Percent of AOI		
Very limited		72.4		100.0%		
<b>Totals for Area of Interest</b>		<b>72.4</b>		<b>100.0%</b>		

## Description

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

## Rating Options

*Aggregation Method: Dominant Condition*

*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*

