



Ahead of the Curve  
in creative parking solutions

SHARED PARKING ANALYSIS

**LANE PARKE**  
MOUNTAIN BROOK, ALABAMA

Prepared for:  
GOODWYN, MILLS, & CAWOOD,  
INC.

APRIL, 2013



**WALKER**  
PARKING CONSULTANTS



January 6, 2012  
Updated April 19, 2013

Jeffrey Brewer  
Goodwyn, Mills, and Cawood, Inc.  
2701 1st Avenue South  
Birmingham, AL 35233

Re: Shared Use Analysis  
Lane Parke Mixed-Use Development  
Mountain Brook, Alabama  
Walker Project # 15-1901.10  
**FINAL REPORT**

Dear Mr. Brewer:

Goodwyn, Mills, and Cawood, Inc. retained Walker Parking Consultants (Walker) to perform a shared parking analysis on the Lane Parke Mixed-Use Development in Mountain Brook, Alabama. The following report details our methodology, analysis and findings surrounding the projected parking demand for this development.

When evaluating parking supply needs for Lane Parke, Walker projected the parking demand exerted during the busiest hour of the busiest month of the year. The philosophy behind this approach is simple; if the planned supply is adequate to meet demand at the pinnacle hour of the year, it will be adequate to meet demand during the other 8,759 hours of the year as well.

## **PROJECT BACKGROUND**

The development at Lane Parke is a mixed-used development featuring retail, office space, restaurant space, and residential. The following uses are planned at build out:

### *PHASE I:*

16,215 sq. ft. of retail space  
11,157 sq. ft. of pharmacy space  
6,500 sq. ft. of fast food restaurant space  
28,300 sq. ft. of grocery space;  
276 Apartments; and  
100 room hotel space with 6,655 sq. ft. of meeting space.

### *PHASE II*

33,200 sq. ft. of retail space  
4,340 sq. ft. of bank space  
10,000 sq. ft. of fine/casual dining

## METHODOLOGY

Walker designed a shared use parking demand model specifically for Lane Parke. This model is developed from basic demand ratios developed by Walker, the Urban Land Institute, the Institute of Transportation Engineers and other agencies. Base ratios are developed by observing hourly accumulations of vehicles around standalone land uses during the course of a standard year (365 consecutive days) and identifying design conditions for a weekday and a weekend. At the peak hour of the year, a comparison is made between the total number of cars parked and a key driver specific to the land use (square footage for most land uses, rooms for a hotel, bedrooms for a residential complex, seats for a theater or cinema, etc.)

Some base ratios were supplemented by additional data and fieldwork. Base ratios are shown in the following table.

**Table 1: Recommended Parking Ratios**

Land Use	Weekday		Weekend		Unit	Source	Total	
	Visitor	Employee	Visitor	Employee			Weekday	Weekend
Retail	2.90	0.70	3.20	0.80	/ksf GLA	1	3.60	4.00
Pharmacy	4.90	1.20	4.00	1.00	/ksf GLA	2	6.10	5.00
Family Restaurant	9.00	1.50	12.75	2.25	/ksf GLA	2	10.50	15.00
Fast Food	12.75	2.25	12.00	2.00	/ksf GLA	2	15.00	14.00
Hotel-Business	1.00	0.25	0.90	0.18	/room	2,5	1.25	1.08
Meeting Space	30.00		30.00		/ksf GLA	5	30.00	30.00
Residential Shared, Rental	0.15	1.5	0.15	1.5	/unit	2,3	1.65	1.65
Bank (Drive In Branch)	3.00	1.60	3.00	1.60	/ksf GLA	2	4.60	4.60
Grocery	3.80	1.00	4.90	0.90	/ksf GLA		4.80	5.80

### Sources

1. *Parking Requirements for Shopping Centers*, Second Edition. Washington DC: ULI-The Urban Land Institute, 1999
2. *Parking Generation*, Third Edition. Washington DC: Institute of Transportation Engineers, 2004
3. Data collected by Team Members
5. Gerald Salzman, "Hotel Parking: How Much Is Enough?" *Urban Land*, January 1988.

Walker utilized these basic ratios and specifically tailored them to Lane Parke using three factors to customize the model.

The first factor is a driving ratio. The driving ratio represents the percentage of users arriving at the site by means other than personal vehicle. According to the 2000 U.S. Census, approximately 97 percent of Mountain Brook residents arrive to work via private vehicle.

The second factor is the non-captive ratio. Non-captive ratios are typically expressed as a percentage of users who create no incremental parking demand when visiting more than one land use on the same trip. (For example, the office building employee who walks to a retailer during lunch.) Overall, the effects of the captive market can be significant. The use of the non-captive ratio factor ensures that patrons are not counted twice in the overall parking demand estimate for the study area.

Walker based the non-captive ratios on actual observations at mixed-use developments around the country. Adjustments to base demand ratios to render project-specific ratios are shown in the following table.

**Table 2: Adjustments to Base Ratios for Driving and Captive Users at Build-Out**

Land Use	Driving Ratio				Non Captive Ratio			
	Weekday		Weekend		Weekday		Weekend	
	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening
Retail	95%	97%	95%	95%	90%	90%	90%	90%
Employee	90%	90%	90%	90%	100%	100%	100%	100%
Pharmacy	95%	97%	95%	95%	100%	100%	100%	95%
Employee	90%	90%	90%	90%	100%	100%	100%	100%
Family Restaurant	95%	97%	95%	95%	80%	80%	80%	80%
Employee	90%	90%	90%	90%	100%	100%	100%	100%
Fast Food	95%	97%	95%	95%	10%	15%	30%	40%
Employee	90%	90%	90%	90%	100%	100%	100%	100%
Hotel-Business	66%	66%	77%	77%	100%	100%	100%	100%
Convention (>50 sq ft / guest room)	75%	75%	75%	75%	60%	60%	70%	70%
Employee	90%	90%	90%	90%	100%	100%	100%	100%
Residential Guest	100%	100%	100%	100%	100%	100%	100%	100%
Residential Shared, Rental	100%	100%	100%	100%	100%	100%	100%	100%
Bank (Drive In Branch)	95%	97%	95%	95%	95%	100%	95%	100%
Employee	90%	90%	90%	90%	100%	100%	100%	100%
Grocery	95%	97%	95%	95%	90%	90%	90%	90%
Employee	90%	90%	90%	90%	100%	100%	100%	100%

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The final factor applied to the shared use analysis was presence. Presence is expressed as a percentage of peak potential demand modified for time of day and month of year. Presence can have a significant effect on parking demand in a mixed-use development. For example, a 10,000 square feet retail store has a peak parking demand equal to 36 parking spaces on a weekday or 40 spaces on weekend day at the peak hour. However, this demand is dependent upon the time of day. At 3:00 a.m., the store is unlikely to project any parking demand at all.



Historically, when designing a new development, planners calculated the parking demand for each land use component as a stand-alone entity, providing each use with an independent parking supply. This assured a parking surplus for the development, but increased the developed area and amount of impervious area. In reality fluctuating patterns of demand allow different land uses to share some or all of the same facility, thereby reducing the total number of parking spaces and thus impervious area needed to support a development. By ensuring a development offers an appropriate parking supply for the busiest hour of the year (without an unneeded surplus), owners are also able to maximize open space and undeveloped area.

The more the individual utilization patterns of land uses differ from each other, the more complimentary they are to shared parking use. For example, an office and a retail component are complimentary as they experience peak demand periods at different times during the day and days of the week.

Figure 1 illustrates hourly variations in presence on a weekday and weekend for some the major land uses.

**Figure 1: Example of Variations in Presence by Time of Day - Weekday**

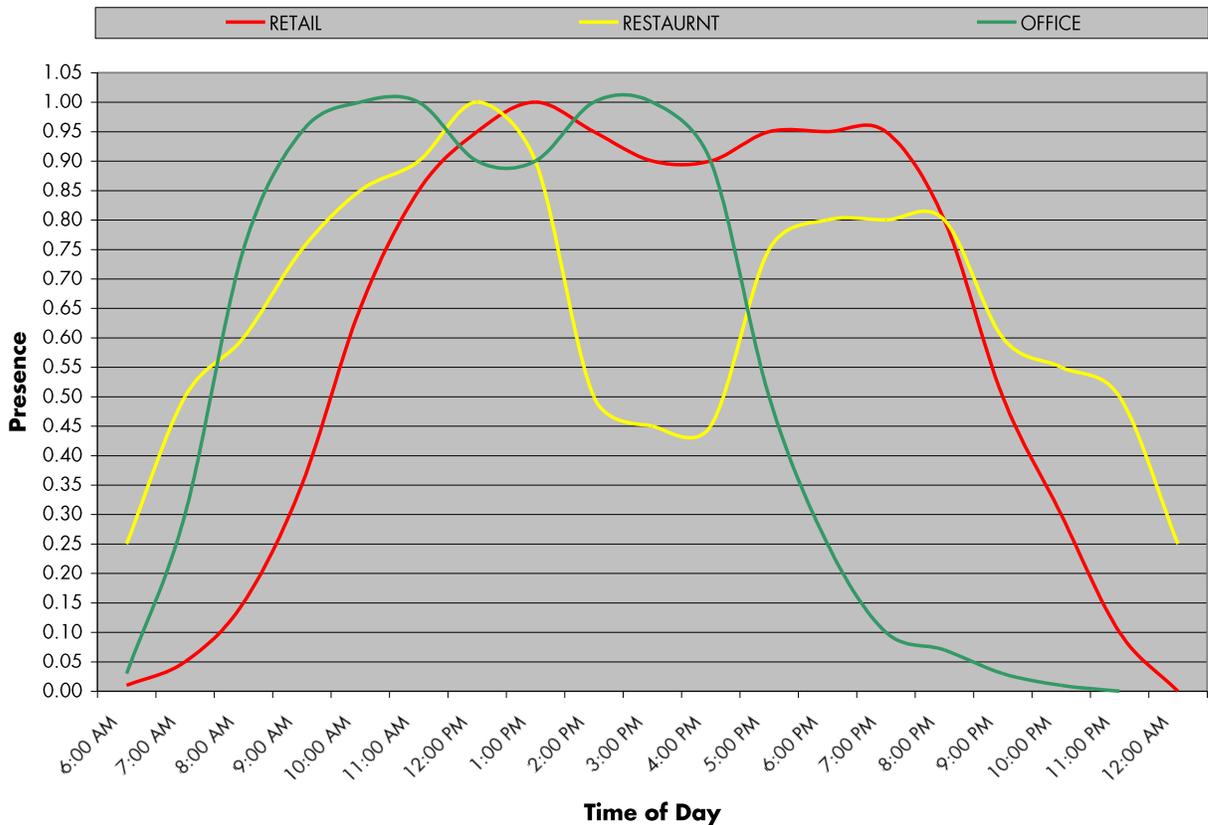
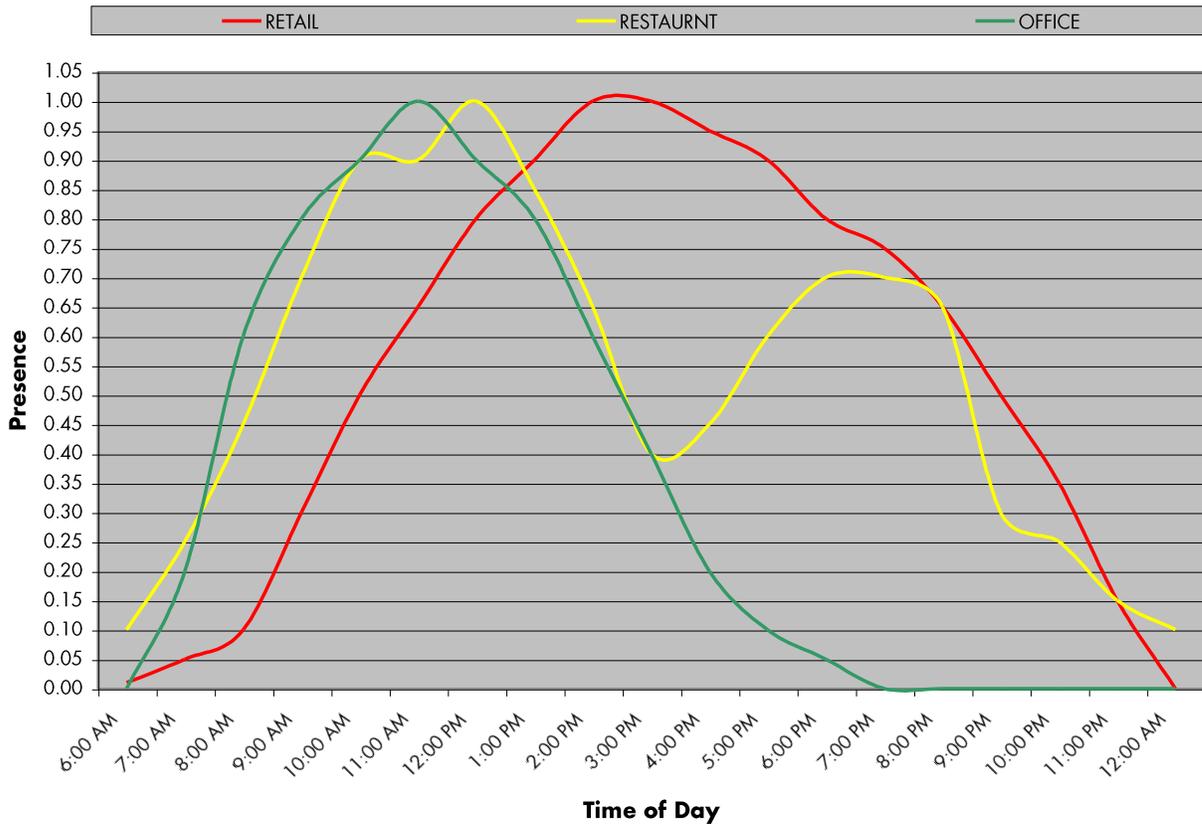




Figure 2: Example of Variations in Presence by Time of Day - Weekend



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Parking demand is also influenced by the time of year. The volume of patronage for a retail establishment peaks during the holiday season and decreases rapidly thereafter. Subsequently, so does parking demand for the overall development. Retailers report peak annual activity the two weeks prior to Christmas. During this time, parking demand may equal 100 percent of peak projections. Inversely, office demand decreases as employees are absent on vacation. These variations for time of day and time of year were also calculated for Lane Parke and applied to the model.

## PARKING DEMAND PROJECTIONS (PHASES I & II)

Parking demand is a dynamic, fluid force, subject to variations according to the availability of alternative transportation, the proximity of complimentary land uses, variations of user presence according to time of day and time of year, building occupancy rates and a host of other factors. Inversely, parking supply tends to be a fixed quantity, limited by the amount of space that can be allocated to parking facilities. The parking ratios expressed in this analysis have been based on observations of similar developments. Walker has conducted numerous studies and consulted leading organizations, such as the Institute of Transportation Engineers (ITE), the Urban Land Institute (ULI), and the international council of shopping centers (ICSC) in determining the appropriate ratios to be used in the shared parking model

### PHASE I

The peak hour for Phase I is projected to occur at 7:00 p.m. on a December weekend. The projected peak hour demand for the new uses at the development (i.e. the busiest hour of the busiest weekday of the year) based on shared parking, drive ratios, and captive ratios, is 755± spaces (1,084 unadjusted). Parking demand accumulations for the busiest hour of the busiest weekday and weekend of the year are presented in the following two tables for Phase I.

**Table 3: Peak Hour Demand Projections – Weekday PHASE I**

Land Use	Unadjusted Demand	Month Adj December	Weekday			Demand December 6:00 PM
			Pk Hr Adj 6:00 PM	Non Captive Evening	Drive Ratio Evening	
Retail	47	100%	80%	90%	97%	33
Employee	11	100%	95%	100%	90%	9
Pharmacy	55	100%	70%	100%	97%	37
Employee	13	100%	75%	100%	90%	9
Fine/Casual Dining	99	100%	95%	80%	97%	73
Employee	18	100%	100%	100%	90%	16
Fast Food	77	100%	85%	15%	97%	9
Employee	14	100%	90%	100%	90%	11
Hotel-Business	100	67%	75%	100%	66%	33
Meeting Space (>50 sq ft / gue	110	60%	50%	60%	75%	15
Employee	25	100%	40%	100%	90%	9
Residential Guest	7	100%	60%	100%	100%	4
Residential Shared, Rental	414	100%	90%	100%	100%	373
Grocery	108	95%	70%	90%	97%	63
Employee	28	100%	80%	100%	90%	20
Subtotal Customer/Guest Spaces	603					267
Subtotal Employee Spaces	523					447
Total Parking Spaces	1,126					714

<b>Shared Parking Reduction</b>	<b>Spaces:</b>	<b>412</b>
	<b>% reduction</b>	<b>37%</b>



Table 4: Peak Hour Demand Projections – Weekend PHASE 1

Land Use	Unadjusted Demand	Month Adj December	Weekend		Drive Ratio Evening	Demand December 7:00 PM
			Pk Hr Adj 7:00 PM	Non Captive Evening		
Retail	52	100%	75%	90%	95%	33
Employee	13	100%	80%	100%	90%	9
Pharmacy	45	100%	100%	95%	95%	41
Employee	11	100%	100%	100%	90%	10
Fine/Casual Dining	111	100%	95%	80%	95%	80
Employee	20	100%	100%	100%	90%	18
Fast Food	72	100%	80%	40%	95%	22
Employee	12	100%	90%	100%	90%	10
Hotel-Business	90	67%	75%	100%	77%	35
Meeting Space (>50 sq ft / guest room)	55	60%	30%	70%	75%	5
Employee	18	100%	55%	100%	90%	9
Residential Guest	7	100%	100%	100%	100%	7
Residential Shared, Rental	414	100%	97%	100%	100%	402
Grocery	139	95%	58%	90%	95%	65
Employee	25	100%	40%	100%	90%	9
Subtotal Customer/Guest Spaces	571					288
Subtotal Employee Spaces	513					467
Total Parking Spaces	1,084					755

<b>Shared Parking Reduction</b>	<b>Spaces:</b>	<b>329</b>
	<b>% reduction</b>	<b>30%</b>



**PHASE II**

The peak hour for Phase II (which includes Phase I demand) is projected to occur at 7:00 p.m. on a December weekend. The projected peak hour demand for the new uses at the development (i.e. the busiest hour of the busiest weekday of the year) based on shared parking, drive ratios, and captive ratios, is 993± spaces (1,437 unadjusted). Parking demand accumulations for the busiest hour of the busiest weekday and weekend of the year are presented in the following two tables for Phase II.

**Table 5: Peak Hour Demand Projections – Weekday PHASE II**

Land Use	Unadjusted Demand	Month Adj December	Weekday			Demand December 6:00 PM
			Pk Hr Adj 6:00 PM	Non Captive Evening	Drive Ratio Evening	
Retail	143	100%	80%	90%	97%	100
Employee	35	100%	95%	100%	90%	30
Pharmacy	55	100%	70%	100%	97%	37
Employee	13	100%	75%	100%	90%	9
Fine/Casual Dining	252	100%	95%	80%	97%	186
Employee	45	100%	100%	100%	90%	41
Fast Food	77	100%	85%	15%	97%	9
Employee	14	100%	90%	100%	90%	11
Hotel-Business	100	67%	75%	100%	66%	33
Meeting Space (>50 sq ft / gue:	110	60%	50%	60%	75%	15
Employee	25	100%	40%	100%	90%	9
Residential Guest	7	100%	60%	100%	100%	4
Residential Shared, Rental	414	100%	90%	100%	100%	373
Bank (Drive In Branch)	13	100%	0%	100%	97%	0
Employee	7	100%	0%	100%	90%	0
Grocery	108	95%	70%	90%	97%	63
Employee	28	100%	80%	100%	90%	20
Subtotal Customer/Guest Spaces	865					447
Subtotal Employee Spaces	581					493
Total Parking Spaces	1,446					940

<b>Shared Parking Reduction</b>	<b>Spaces:</b>	<b>506</b>
	<b>% reduction</b>	<b>35%</b>

**Table 6: Peak Hour Demand Projections – Weekend PHASE II**

Land Use	Unadjusted Demand	Month Adj December	Weekend			Demand December 7:00 PM
			Pk Hr Adj 7:00 PM	Non Captive Evening	Drive Ratio Evening	
Retail	158	100%	75%	90%	95%	101
Employee	40	100%	80%	100%	90%	29
Pharmacy	45	100%	100%	95%	95%	41
Employee	11	100%	100%	100%	90%	10
Fine/Casual Dining	281	100%	95%	80%	95%	203
Employee	50	100%	100%	100%	90%	45
Fast Food	72	100%	80%	40%	95%	22
Employee	12	100%	90%	100%	90%	10
Hotel-Business	90	67%	75%	100%	77%	35
Meeting Space (>50 sq ft / guest room)	55	60%	30%	70%	75%	5
Employee	18	100%	55%	100%	90%	9
Residential Guest	7	100%	100%	100%	100%	7
Residential Shared, Rental	414	100%	97%	100%	100%	402
Bank (Drive In Branch)	13	100%	0%	100%	95%	0
Employee	7	100%	0%	100%	90%	0
Grocery	139	95%	58%	90%	95%	65
Employee	25	100%	40%	100%	90%	9
Subtotal Customer/Guest Spaces	860					479
Subtotal Employee Spaces	577					514
Total Parking Spaces	1,437					993

<b>Shared Parking Reduction</b>	<b>Spaces:</b>	<b>444</b>
	<b>% reduction</b>	<b>31%</b>

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## DEMAND BY USER

The premise of shared parking is the ability to reduce the required parking supply due to the different parking needs of different users and different land use types. Identifying parking demand by user type is even more important as the tasks of designating parking areas and managing parking assets come into play.

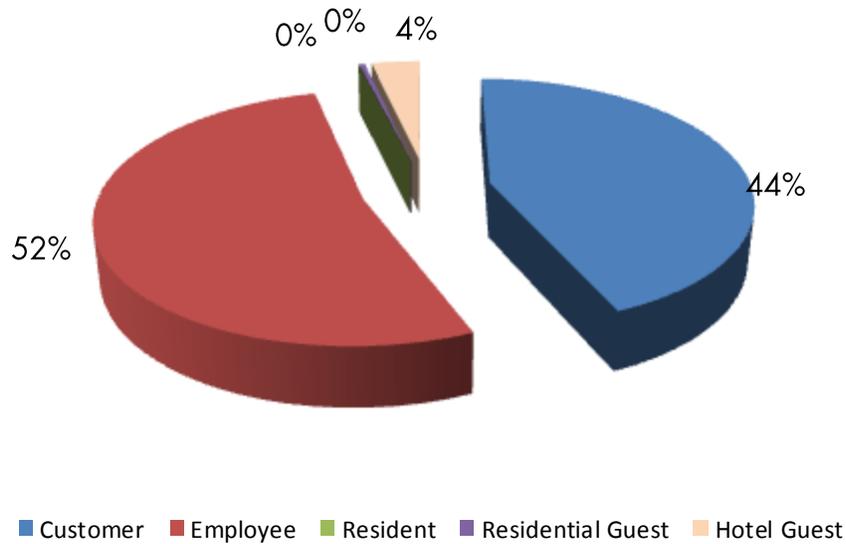
Some user groups will accept different levels of service. That is, some users will walk farther from parking to their destinations, while some will demand closer, more convenient parking. Generally, office employees will walk farther from parking locations to work. However, office workers typically like to park in the same area every day, in order to reduce search times. Retail/restaurant customers typically require nearby parking that is easy to identify. Residents require designated, secure parking areas that are protected from weather and adjacent to residential units.

The following tables and graphs depict parking demand by user type.



Figure 3: Parking Demand by User Type – Weekday Peak (PHASES I & II)

User	Weekday @ 6:00 PM
Customer	410
Employee	493
Resident	0
Residential Guest	4
Hotel Guest	33
Total	940

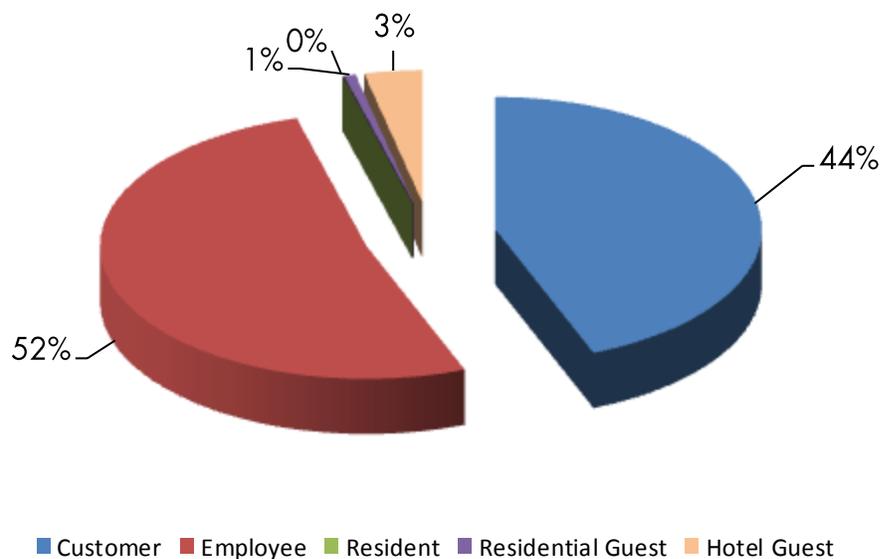


Weekday parking conditions peak during the 6:00 p.m. hour with 940 spaces occupied.



Figure 4: Parking Demand by User Type – Weekend Peak (PHASES I & II)

User	Weekend @ 7:00 PM
Customer	437
Employee	514
Resident	0
Residential Guest	7
Hotel Guest	35
Total	993



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During peak weekend conditions, the peak demand is 993 spaces.

## SEASONALITY

An integral part of calculating shared parking demand is to understand the seasonality of demand for each land use type. The monthly factors established by ULI's "Shared Parking, 2nd Edition" are used not only to determine the interplay between uses during different times of the year, but also combine to determine the overall demand throughout the year. The recommended design demand for the overall site with Phases I and II is 993 spaces for the base programming, as stated in Table 4. However, this design demand is projected to occur at a particular time and does not represent the year-round demand for the development as shown in the following table and graph.

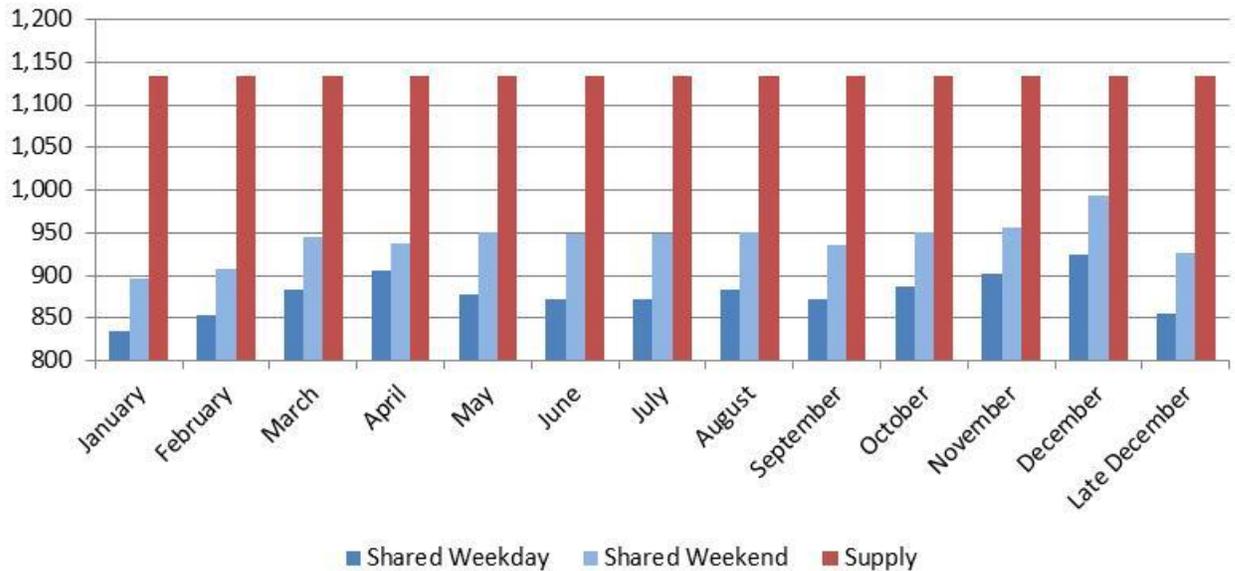


Table 7: Seasonality of Demand

	Shared Weekday		Shared Weekend	
	Demand	% of Peak	Demand	% of Peak
January	835	89%	896	90%
February	854	91%	907	91%
March	883	94%	946	95%
April	905	96%	937	94%
May	877	93%	951	96%
June	872	93%	948	95%
July	872	93%	948	95%
August	883	94%	951	96%
September	873	93%	935	94%
October	888	94%	951	96%
November	902	96%	956	96%
December	925	98%	993	100%
Late December	856	91%	926	93%

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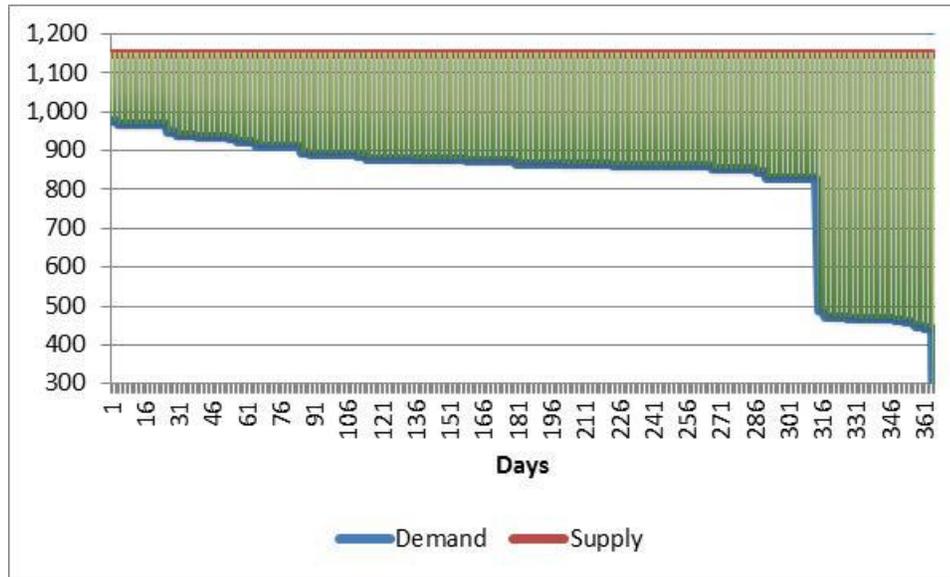
Figure 5: Peak Demand by Month



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Figure 6: Projected Parking Surplus by Day



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## LOCAL REQUIREMENTS

The planning parking supply does meet current code requirements when comparing the planning parking supply to parking needs using shared parking methodology as permitted by the Village Overlay Standards. Even though local code for unshared parking in Mountain Brook dictates that 1,231 spaces should be established to support the base programming, the Village Overlay Standards, as described below, permit reductions for shared parking arrangements.

Table 8: Local Code Requirements (unshared)

Land Use	Required Parking Ratio	Phase 1		Phase 2		Total
		Units	Spaces	Units	Spaces	
Retail	5.0 per 1,000 sf	68,172	341	47,540	238	579
Hotel	1 per key	100	100	0	0	100
Residential	2 per du	276	552	0	0	552
Required			993		238	1,231
Supply			890		244	1,134
Over/(Short)			(103)		6	(97)

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In our experience, many municipalities are now allowing for shared parking reductions, through individual requests (supported by a professional analysis) or adopted into the ordinances as a standard. Using the Village Overlay Standards, [Article XXXI. Section 129-555.(b) (3)], a reduction considering shared parking methodology may be proposed.

"d. The cumulative requirements of uses sharing the parking may be reduced for uses having different hours of operation or different peak period of demand. The proposed reduction shall be based upon recognized industry sources, such as the more recent edition of the Urban Land Institute Shared Parking Model or other similar and equivalent study or data, and upon evidence that such model is applicable to the agreement..."

Consequently, we prepared a model replacing the ULI base parking demand ratios with the current code required ratios, thereby applying the shared parking concept to the local parking requirements. The resultant is a need for 993 spaces, which is less than the planned 1,134 spaces.



Table 9: Code Requirement, Adjusted for Shared Parking

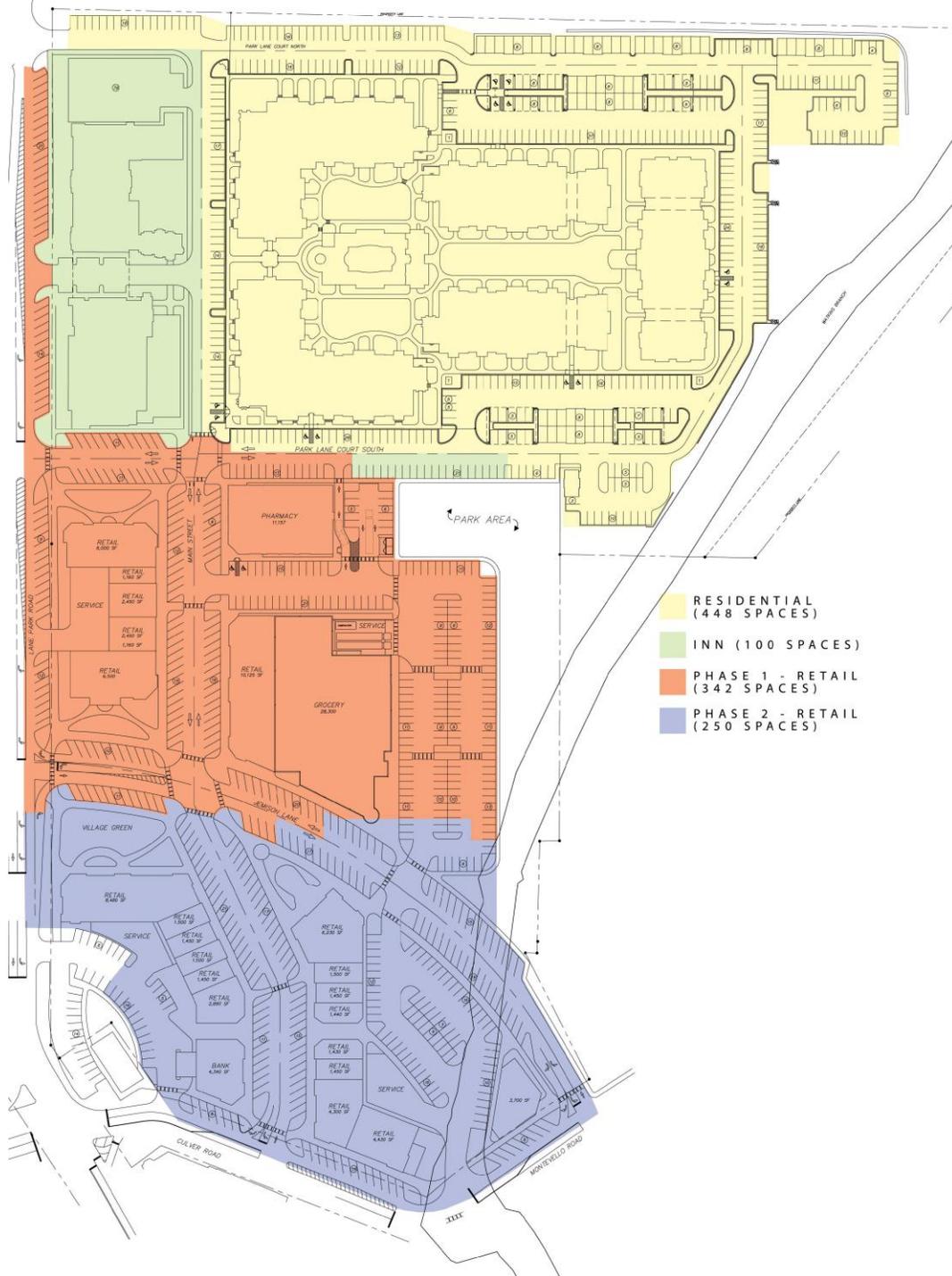
Land Use	Weekend	
	Unadjusted Demand	Demand December 7:00 PM
Retail	158	101
Employee	40	29
Pharmacy	45	41
Employee	11	10
Fine/Casual Dining	281	203
Employee	50	45
Fast Food	72	22
Employee	12	10
Hotel-Business	90	35
Meeting Space (>50 sq ft / guest room)	55	5
Employee	18	9
Residential Guest	7	7
Residential Shared, Rental	414	402
Bank (Drive In Branch)	13	0
Employee	7	0
Grocery	139	65
Employee	25	9
Subtotal Customer/Guest Spaces	860	479
Subtotal Employee Spaces	577	514
Total Parking Spaces	1,437	993
<b>Shared Parking Reduction</b>		<b>Spaces: 444 31%</b>



### PARKING SUPPLY/SITE PLAN

Lane Parke will provide approximately 1,134± spaces on-site in multiple surface lots, shown on the following figure. (NOTE: Phase 2 parking supply is actually 244 spaces, not 250 as indicated on the map)

Figure 7: Site





**ALTERNATE PARKING LOCATIONS**

From time to time, additional parking may be needed for Lane Parke. The developer has identified off-site parking facilities that may be available to accommodate parking during peak holiday periods. The developer is currently investigating one or more of the following options:

- 1. Botanical Gardens: 215± spaces
- 2. Birmingham Zoo: 515± spaces
- 3. Shades Valley Presbyterian: 110± spaces
- 4. Mountain Brook Elementary: 76± spaces (plus an underground parking facility, size unknown at this time)
- 5. George Ladd Building: 100± spaces
- 6. Office Park Circle: 900± spaces
- 7. BB & T Office Building: 375± spaces

**VALET PARKING**

The opportunity may exist to offer seasonal valet parking to the restaurant patrons. This alternative may increase the level of service provided and may increase the utilization of less desirable, unused parking spaces. Several restaurants typically offer valet parking as an amenity to their guests, and as a way to maximize parking resources.

**PARKING SUPPLY/DEMAND SUMMARY**

The peak hour shared parking demand is projected to occur at 7:00 p.m. in December on a weekend. Based on the proposed mix of uses and applying shared parking, drive ratios, and captive ratios, the projected annual peak hour demand figure for Lane Parke by phase is listed below:

	<u>Peak Demand</u>	<u>Supply</u>	<u>Surplus</u>
Phase I	755	890	135
Phase II	993	1,134	141

Respectfully Submitted,  
WALKER PARKING CONSULTANTS

Jeffrey A. Colvin, AICP  
Parking Consultant