



BUILDING ENVELOPE
CONSULTING
FORENSIC RESTORATION
PARKING DESIGN
PLANNING

HYDE PARK PROJECT PARKING NEEDS ANALYSIS

CAPITAL INVESTMENT GROUP

CINCINNATI, OHIO

March 12, 2018



WALKER
CONSULTANTS

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	3
The Hyde Park Project.....	3
City of Cincinnati Zoning Code	3
SHARED PARKING ANALYSIS.....	5
Shared Parking Methodology.....	5
Land Use Units.....	6
Base Parking Ratio.....	6
Presence Factors.....	7
Driving Ratio	7
Non-Captive Ratio	8
RESULTS AND CONCLUSIONS	9
APPENDIX I – STATEMENT OF LIMITING CONDITIONS	11

TABLE OF EXHIBITS

Exhibit 1: Project Programming Data	3
Exhibit 2: Spaces Required as per City Code.....	4
Exhibit 3: Shared Parking Analysis Equation.....	6
Exhibit 4: Project Programming Data (Using GLA)	6
Exhibit 5: Base Parking Ratios.....	7
Exhibit 6: Employee Driving Ratio	7
Exhibit 7: Shared Parking Summary on a Weekend at 8:00 p.m.....	9
Exhibit 8: Resulting Residential Demand Ratios	10

EXECUTIVE SUMMARY

Walker Consultants (Walker) estimated a recommended number of parking spaces for a Capital Investment Group (CIG) proposed project in Hyde Park, Cincinnati (“the Project”). The Project is planned to be located approximately one half of a mile north of Hyde Park Square, at the intersection of Madison Road and Zumstein Avenue, and is planned to include a restaurant/bar, a fast casual restaurant, apartment units, office space, and a parking structure.

Using shared parking methodology and land use programming data provided by CIG, Walker estimated the total number of spaces needed to accommodate an 85th percentile typical-peak parking demand attributable to the proposed types and quantities of land uses included in the Project. It is important to note that the 85th percentile is derived from peak observed demand, and is therefore a conservative standard to use. Many development projects have ultimately supplied fewer parking spaces than this threshold, and particularly in the case of residential parking, it is often appropriate to supply fewer spaces. Those looking to rent or buy a unit are aware of the parking supplied, and select their building based upon individual preferences, much like other residential amenities.

Shared parking is defined as the ability to use the same parking resource by multiple nearby or adjacent land uses without encroachment, and takes into account that parking may be shared across land uses, and times of day, in lieu of providing a number of spaces for each individual use.

The resulting recommended number of spaces is 335±, with no reserved spaces, and 339± with 179 reserved residential spaces for individuals.

The results, and a detailed summary of all shared parking assumptions used, are detailed in the following table.

Shared Parking Summary Weekend at 8:00 p.m.

Land Use	Quantity	Unit	x	Weekend Base Ratio	x	Driving Ratio	x	Non-Captive Ratio	x	Monthly Factor	x	Hourly Factor	=	Weekend Evening Demand	Peak Occupancy Adjustment
Fast Casual Restaurant	1,695	sf	GLA	12.00	/ksf	GLA		75%		100%		80%		9	9
Employee	1,695	sf	GLA	2.00	/ksf	GLA		81%		100%		90%		2	2
Restaurant/Bar	3,933	sf	GLA	17.00	/ksf	GLA		50%		100%		95%		25	25
Employee	3,933	sf	GLA	3.00	/ksf	GLA		81%		100%		100%		10	10
Office	6,242	sf	GLA	0.03	/ksf	GLA		100%		100%		0%		0	0
Employee	6,242	sf	GLA	0.35	/ksf	GLA		86%		100%		0%		0	0
Residential															
Guest	179	Unit		0.15	/Unit			90%		100%		100%		24	23
Studio	8	Unit		1.00	/Unit			90%		100%		100%		7	7
1-br	108	Unit		1.50	/Unit			90%		100%		100%		146	139
2-br	53	Unit		1.75	/Unit			90%		100%		100%		83	79
3-br	10	Unit		2.00	/Unit			90%		100%		100%		18	17
														Subtotal:	310
														LaRosa's:	25
														Total:	335
														Total assuming 179 reserved spaces:	339

Source: Walker Consultants

Since parking demand attributed to the Project is largely driven by residential parking, reserving one space per apartment unit, or 179 spaces, does not have a large impact on the resulting recommended number of spaces.

The following table presents the initial base demand ratio of spaces per residential unit, and the resulting demand ratio per unit after the driving ratio and peak occupancy adjustment was applied.

Resulting Residential Demand Ratios

Residential Unit	Base Demand Ratio Per Unit	Driving Ratio	Peak Occupancy Adjustment	Resulting Demand Ratio Per Unit
Studio	1.00	90%	95%	0.86
1-bedroom	1.50	90%	95%	1.28
2-bedroom	1.75	90%	95%	1.50
3-bedroom	2.00	90%	95%	1.71

Source: Walker Consultants

INTRODUCTION
THE HYDE PARK PROJECT

Per CIG’s current plans, the Project is planned to be located approximately one half of a mile north of Hyde Park Square, at the intersection of Madison Road and Zumstein Avenue, bordered by the proposed Wasson Way (bike) Trail to the north, and Besuden Drive to the west.

The project is planned to include restaurant/bar parcels, a fast casual restaurant, apartment units, and office space. The most recent programming data, provided by CIG, is presented in Exhibit 1.

Exhibit 1: Project Programming Data

Land Use	Quantity	Unit
LaRosa’s (Restaurant)	4,252	sf GFA
Fast Casual Restaurant	1,883	sf GFA
Restaurant/Bar	4,370	sf GFA
Office	6,936	sf GFA
Residential		
Studio	8	Unit
1-br	108	Unit
2-br	53	Unit
3-br	10	Unit

Source: Walker Consultants

LaRosa’s Pizzeria is currently housed on the proposed site, and will remain on site in a comparable location and space. The majority of the restaurant’s business is carry-out and delivery orders, and as such, the restaurant has requested 25 spaces for the exclusive use of its business. Since CIG has agreed to these spaces, LaRosa’s is not included in the shared parking analysis, but the 25 spaces are added to the total number of recommended spaces for the Project.

CITY OF CINCINNATI ZONING CODE

§ 1425-19 of the Zoning Code of the City of Cincinnati stipulates the number of off-street parking spaces required per unit of land use. Using the code’s parking requirements, and § 1425-11 stipulations for rounding figures (round up to one space is 0.51 or greater, or down if 0.50 or less), Walker estimated the number of spaces required for the Project per the code. The code parking requirements include the following:

- Restaurant: 1 per 150 sf
- Office: 1 per 750 sf
- Multi-Family Residential: 1 per unit

The spaces required for each land use included in the Project, as per City code, are presented in Exhibit 2. The Code stipulates that 258 spaces would be required for the Project. As is discussed in further detail in the following sections of this report, Walker’s shared parking methodology resulted in at least 335± recommended

spaces, which means that Walker’s recommended number of spaces more than meets the required number of spaces, as per City code.

Exhibit 2: Spaces Required as per City Code

Land Use	Requirement	Quantity	Unit	Spaces Required
Restaurant	1 per 150 sf	10,505	GFA	70
Office	1 per 750 sf	6,936	GFA	9
Mult-Family Residential	1 per unit	179	Unit	179
Total				258

Source: Walker Consultants

SHARED PARKING ANALYSIS

SHARED PARKING METHODOLOGY

The Project is mixed-use and presents the opportunity to implement shared parking. That is, parking may be shared across land uses, and times of day, in lieu of providing a number of spaces for each individual use. For instance, a resident parked at home, who patronizes an on-site restaurant would count as demand generated for one space, rather than two spaces. Similarly, a restaurant patron visiting the restaurant in the middle of the day could park in a space vacated by a resident during work hours.

Shared parking methodology was developed in the 1980s, and has since been a widely-accepted industry standard for rightsizing parking facilities. Adopted by cities throughout the U.S., and codified in zoning ordinances as an acceptable practice, shared parking is endorsed by the Urban Land Institute (ULI), the American Planning Association (APA), the National Parking Association (NPA), and International Council of Shopping Centers (ICSC), as an acceptable method of parking planning and management.

Shared parking is defined as the ability to use the same parking resource by multiple nearby or adjacent land uses without encroachment. Shared parking takes into account the parking demand for more than 45 different land uses, the availability and use of alternative modes of transportation, captive market effects, and daily, hourly, and seasonal variations. In this case, the shared parking analysis recognizes the interrelationship of parking among residents and employees, and on-site restaurants.

The shared parking model generates parking demand estimates for one 19-hour day (6 a.m. – 1 a.m.) during the workweek, and one 19-hour day during the weekend, for each month of the year. Of these generated estimates, the highest estimate is used to recommend necessary capacity intended to accommodate 85th percentile demand conditions. Shared parking is based on the 85th percentile of peak-hour observations, which is a standard espoused by the ITA, the NPA's Parking Consultants Council, and renowned parking planners. The goal of a shared parking analysis is to find the balance between providing adequate parking to support a development from a commercial and operation standpoint, and to protect the interests of neighboring property owners, while minimizing the negative aspects of excessive land area or resources devoted to parking. The ultimate result of a shared parking analysis is to the peak period, reasonably predictable, worst-case parking demand scenario.

A shared parking analysis begins by taking land use quantities of the Project, including gross leasable area (GLA) of restaurants and the office, and the number of residential units of each unit size, and multiplying these quantities by a base parking demand ratio and monthly and hourly adjustment factors. Walker also applies an adjustment to account for the driving ratio, which is used to estimate transportation modal split, and another factor to account for the best estimate of captive market effects (called the non-captive ratio), which accounts for attendees on-site for more than one reason and who are not creating additional parking demand.

Exhibit 3 presents an illustrative view of the equation used to estimate parking demand. The Shared Parking Analysis section of this report discusses each component and follows the equation from left to right.

Exhibit 3: Shared Parking Analysis Equation

Land Use Units	X	Base Parking Ratio	X	Monthly Factor	X	Hourly Factor	X	Driving Ratio	X	Non-Captive Ratio	=	TOTAL
----------------	---	--------------------	---	----------------	---	---------------	---	---------------	---	-------------------	---	-------

Source: Walker Consultants

LAND USE UNITS

Land use units were estimated using CIG’s most recently available project program description. The Project includes restaurants, apartments, office space, and a parking structure.

The shared parking base ratios assume that gross leasable area (GLA) is applied, as opposed to gross floor area (GFA). CIG provided GFA data, which includes square feed that GLA does not include, like the space between walls, and space for stairs and mechanical areas. The conversion of GFA to GLA depends a great deal upon the design of the project, and as such, there is not a standard conversion ratio. This analysis, therefore, used a conservative estimate, and assumed that GLA is 90 percent of GFA. The programming data, assuming GFA, is presented in Exhibit 4.

Exhibit 4: Project Programming Data (Using GLA)

Land Use	Quantity	Unit
LaRosa’s (Restaurant)	3,827	sf GLA
Fast Casual Restaurant	1,695	sf GLA
Restaurant/Bar	3,933	sf GLA
Office	6,242	sf GLA
Residential		
Studio	8	Unit
1-br	108	Unit
2-br	53	Unit
3-br	10	Unit

Source: CIG

LaRosa’s Pizzeria is a popular pizza chain that originated in Cincinnati. LaRosa’s has requested 25 spaces for its establishment, since most of its business is carry-out and delivery orders. Since CIG has agreed to supply these spaces, LaRosa’s was not included in the shared parking analysis, but the 25 spaces were added into the final recommended total number of spaces.

BASE PARKING RATIO

The base parking demand ratios represent how many spaces should be supplied to each use if the spaces are unshared, and the project is located in a suburban context where the driving ratio is at or near 100 percent. Exhibit 5 presents the base parking rates employed, rates taken from the Second Edition of ULI *Shared Parking*, and informed by thousands of field parking occupancy studies performed by dozens of parking and transportation professionals over decades. These ratios have been vetted by a team of consultants who specialize in parking demand analyses and who mutually agreed upon the use of these ratios prior to the publication of the Second Edition of *Shared Parking*.

Exhibit 5: Base Parking Ratios

Land Use	Weekday		Weekend		Per Unit
	Visitor	Employee	Visitor	Employee	
Fast Casual Restaurant	12.75	2.75	12.00	2.00	/ ksf GLA
Restaurant/Bar	15.25	2.25	17.00	3.00	/ksf GLA
Office (<25,000 sf)	0.30	3.50	0.03	0.35	/ksf GLA
Residential Guest	0.10		0.15		/Unit
Studio	0.10	1.00	0.15	1.00	/Unit
1-br	0.10	1.50	0.15	1.50	/Unit
2-br	0.10	1.75	0.15	1.75	/Unit
3-br	0.10	2.00	0.15	2.00	/Unit

Source: *Shared Parking*, Second Edition; Urban Land Institute; and International Council of Shopping Centers, 2005.

PRESENCE FACTORS

Monthly and hourly factors, or “presence” factors, are applied to account for parking demand variability by hour of day and month of year. Presence is expressed as a peak potential demand, modified for presence factors. The fact that parking demand for each component may peak at different times generally means that fewer parking spaces are needed for the project than would be required if each component were a freestanding development. For example, residential parking tends to peak in evening, after work hours, and office parking tends to peak mid-morning, after employees have arrived to work for the day. Similarly, shops may peak in December, when retail activity is at a high, but a nearby museum or park may peak during the summer months. In this case, the parking system demand is estimated to peak on a weekend evening in December.

DRIVING RATIO

The driving ratio represents the percentage of users arriving at the site by a personal vehicle. Per US Census data, approximately 81 percent of residents in Cincinnati arrive to work via a personal vehicle. Walker typically assumes a five percentage-point increase above the driving ratio for office employees, as opposed to those who work in the service industry. The resulting employee driving ratios assumed were 81 percent for restaurant employees, and 86 percent for office employees. The US Census data is presented in Exhibit 6.

Exhibit 6: Employee Driving Ratio

Transportation Mode*	Employees	Vehicles
Drove Alone	99,804	99,804
Carpooled**	10,048	5,024
Public Transit	10,080	10,080
Walked	7,483	7,483
Other	1,369	1,369
Total:	128,784	123,760
Driving Ratio:		81%

* No individuals working from home were added.

** Assumes two passengers per carpool vehicle.

Source: <https://datausa.io/profile/geo/cincinnati-oh/>

It was assumed that 100 percent of visitors to the office would drive alone. It was assumed that 90 percent of residential visitors would drive alone to the Project on a weekend evening, and that 90 percent of individual residents own a personal vehicle. Finally, given that Uber and Lyft have had the greatest impact on weekend leisure travel (as opposed to work commutes), including restaurants which have reported a 50 percent decline in valet parking in recent years¹, it was assumed that 50 percent of restaurant/bar patrons, and 75 percent of fast casual restaurant patrons, would drive alone to the Project. This assumption was also shaped by the neighborhood, and an assumption that residents of the neighborhood within walking distance would patronize these restaurants, as well as patron access to the proposed Wasson Way bike trail, adjacent to the Project.

NON-CAPTIVE RATIO

A shared parking analysis recognizes that people often visit two or more land uses housed within the same development site, without increasing their on-site parking use. For example, an apartment resident who dines at a restaurant is only generating parking demand for one space, instead of two spaces.

It is assumed that employees of all uses are 100 percent captive to their places of employment, meaning that employees' purpose of their trip to the Project is for employment. Similarly, residents are considered as 100 percent captive to the Project.

This analysis assumed that five percent of residents, and five percent of employees would patronize both the restaurant/bar, and that two percent of residents and employees would patronize the fast casual restaurant. This assumption resulted in non-captive ratios of 71 percent for the fast food restaurant, and 78 percent for the restaurant/bar locations.

¹ Source: <http://www.sandiegouniontribune.com/business/growth-development/sd-fi-ace-parking-uber-lyft-competition-20180222-story.html>

RESULTS AND CONCLUSIONS

Using the methods discussed above, Walker estimated the total number of spaces needed to accommodate the 85th percentile typical peak parking demand attributed to the land uses included in the Project. Walker also assumed a 95 percent peak apartment occupancy rate, as per CIG’s reported peak occupancy rates in Cincinnati.

Walker also investigated the impact of reserving one residential parking space per unit, or 179 spaces reserved to individuals. Since parking demand is largely driven by the residents on-site (assuming the apartment units are fully occupied), reserving the 179 spaces had little impact on the overall recommended number of spaces.

The recommended number of spaces is 335±, with no reserved spaces, and 339± with 179 reserved residential spaces.

The result, and a detailed summary of all shared parking assumptions used, are detailed in Exhibit 7.

Exhibit 7: Shared Parking Summary on a Weekend at 8:00 p.m.

Land Use	Quantity	Unit	x	Weekend Base Ratio	x	Driving Ratio	x	Non-Captive Ratio	x	Monthly Factor	x	Hourly Factor	=	Weekend Evening Demand	Peak Occupancy Adjustment
Fast Casual Restaurant	1,695	sf GLA		12.00 /ksf GLA		75%		71%		100%		80%		9	9
Employee	1,695	sf GLA		2.00 /ksf GLA		81%		100%		100%		90%		2	2
Restaurant/Bar	3,933	sf GLA		17.00 /ksf GLA		50%		78%		100%		95%		25	25
Employee	3,933	sf GLA		3.00 /ksf GLA		81%		100%		100%		100%		10	10
Office	6,242	sf GLA		0.03 /ksf GLA		100%		100%		100%		0%		0	0
Employee	6,242	sf GLA		0.35 /ksf GLA		86%		100%		100%		0%		0	0
Residential															
Guest	179	Unit		0.15 /Unit		90%		100%		100%		100%		24	23
Studio	8	Unit		1.00 /Unit		90%		100%		100%		100%		7	7
1-br	108	Unit		1.50 /Unit		90%		100%		100%		100%		146	139
2-br	53	Unit		1.75 /Unit		90%		100%		100%		100%		83	79
3-br	10	Unit		2.00 /Unit		90%		100%		100%		100%		18	17
														Subtotal:	310
														LaRosa's:	25
														Total:	335
														Total assuming 179 reserved spaces:	339

Source: Walker Consultants

Demand is driven by the residents occupying the apartment units. The following table presents the initial base demand ratio of spaces per residential unit, and the resulting demand ratio per unit after the driving ratio and peak occupancy adjustment was applied.

Exhibit 8: Resulting Residential Demand Ratios

Residential Unit	Base Demand Ratio Per Unit	Driving Ratio	Peak Occupancy Adjustment	Resulting Demand Ratio Per Unit
Studio	1.00	90%	95%	0.86
1-bedroom	1.50	90%	95%	1.28
2-bedroom	1.75	90%	95%	1.50
3-bedroom	2.00	90%	95%	1.71

Source: Walker Consultants

APPENDIX I – STATEMENT OF LIMITING CONDITIONS

This report is subject to the following limiting conditions:

1. This report is based on assumptions outside the control of Walker Parking Consultants/Engineers, Inc. (“Walker”) and/or our client. Therefore, Walker cannot guarantee the results.
2. The results and conclusions presented in this report may be dependent on assumptions regarding the future local, national, or international economy. These assumptions and resultant conclusions may be invalid in the event of war, terrorism, economic recession, rationing, or other events that may cause a significant change in economic conditions.
3. Walker assumes no responsibility for any events or circumstances that take place or change subsequent to the date of this report.
4. Walker is not qualified to detect hazardous substances or environmental matter, has not considered such, and therefore urges the client to retain an expert in this field, if relevant to this study.
5. Sketches, photographs, maps and other exhibits included herein may not be of engineering quality or to a consistent scale, and should not be relied upon as such.
6. All information, estimates, and opinions obtained from parties not employed by Walker, are assumed to be accurate. We assume no liability resulting from information presented by the client or client’s representatives, or received from any third-party sources.
7. All mortgages, liens, encumbrances, leases, and servitudes have been disregarded unless specified otherwise. Unless noted, we assume that there are no encroachments, zoning violations, or building violations affecting the subject properties.
8. This report is to be used in whole and not in part. None of the contents of this report may be reproduced or disseminated in any form for external use by anyone other than our client without our written permission.
9. The projections presented in the analysis assume responsible ownership and competent management. Any departure from this assumption may have a negative impact on the conclusions.