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June 19, 2015
(Revised July 14, 2015)
(Revised December 3, 2015)

Mr. Maury Stern
Partner
Road & Washington, LLC
c/o Insight Property Group
4601 N Fairfax Drive, Suite 1150
Arlington, VA 22203

Re: Shared Parking Study
Insight at Falls Church
Falls Church, VA
Project #: 14-4039.00

Dear Mr. Stern:

Walker is pleased to present our draft report of the Shared Parking Analysis performed for the Insight at Falls Church Project. Based on the reported programming information received by Walker and the shared parking analysis detailed herein, 778 spaces are recommended for the referenced development project itself. We understand additional parking must be provided on site to account for the public parking spaces lost during construction and estimated the requirement to be 128 spaces. It is assumed some of the public spaces will be utilized by visitors. Accounting for the displaced public parking lot, a capacity between 861 spaces and 906 spaces is recommended.

We thank you for the opportunity to provide our services, and we look forward to discussing the report with you at your earliest convenience.

Sincerely,

WALKER PARKING CONSULTANTS

Michael P. Albers, P.E.
Vice President

Megan Gardo
Parking Analyst

Enclosure



BACKGROUND

Insight Property Group (Insight) engaged Walker Parking Consultants to perform a shared parking analysis of a proposed Insight at Falls Church mixed-used development at the corner of Broad and Washington Streets in Falls Church, VA. Currently, the property is occupied by two multi-story commercial buildings, an Applebee's, private parking to support these uses, and a 58 space publicly owned surface parking lot. The redeveloped property is proposed to include a mix of retail, restaurant, grocery, residential, and office land uses.

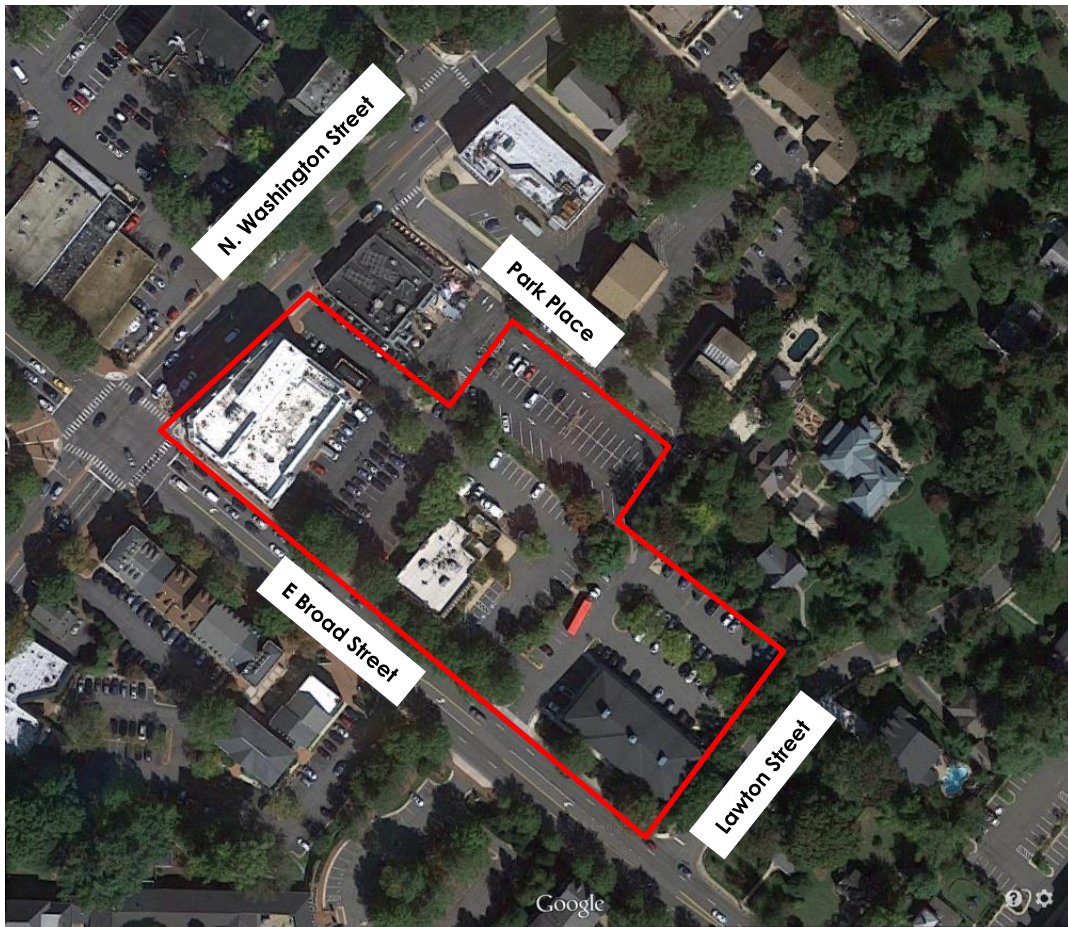
Walker's charge is to recommend future parking capacity for the redevelopment. In addition to assisting Insight in "right-sizing" the parking needs, Walker will recommend, in a future letter report, parking management strategies and methods of operation for Insight's consideration. In the future, we will comment on the methods of designating parking areas, additional opportunities for shared parking, enforcement and basic operation.

SUBJECT PROPERTY

The mixed-use project is located on a tract of land bordered by Park Place to the north, Lawton Street to the east, East Broad Street to the south, and North Washington Street to the west. The general location of the development is shown in Figure 1.



Figure 1: Property Location



Source: Google, 2015

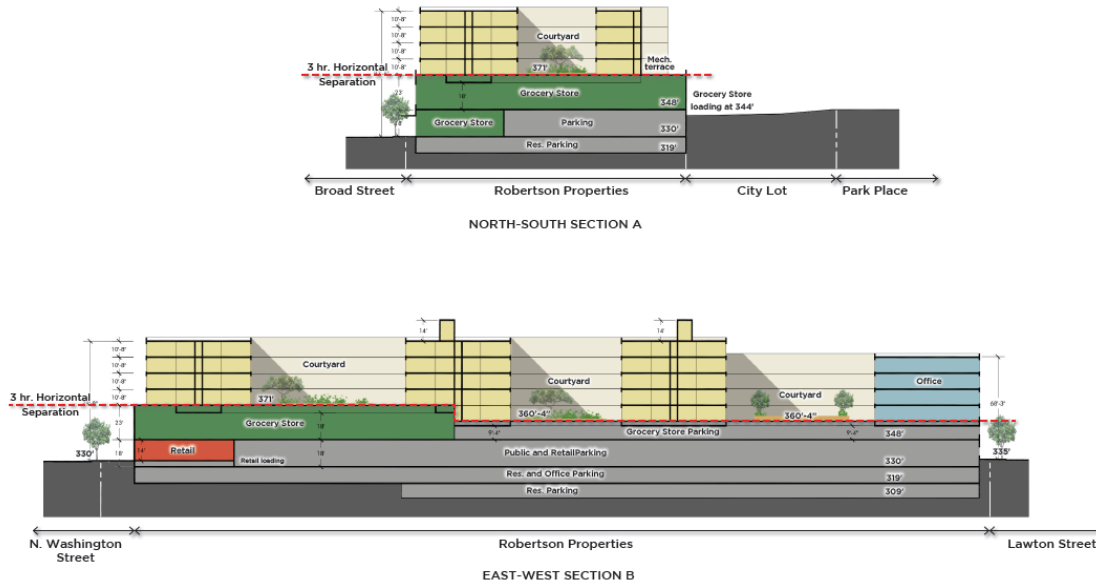
PROJECT UNDERSTANDING

Walker's analysis is based on the programming drawings developed by MV+A dated 6/30/15 and additional discussions with Insight. The project is anticipated to include the following:

- 32,400 SF of office space
- 8,200 SF of retail space
- 8,000 SF of fine/casual dining space
- 3,950 SF of fast/casual dining space
- 46,050 SF grocery space
- 304 residential rental units



Figure 2: Site Plan/Elevation Plan



Source: MV+A, 2015

Walker's Shared Parking Model utilizes parking ratios expressed as a ratio of x spaces per y units. The units vary depending upon the land use – i.e., keys for a hotel, units for a residential complex, or square feet of building space. Additionally, parking generation rates for retail and restaurant land uses are based on the gross leasable area (GLA), whereas the rates for office land uses are based on the total gross building area (GFA). In this analysis, Walker was instructed by Insight to use the GFA quantities for the retail and restaurant uses, as there were no significant differences in the GFA and GLA values.

SHARED PARKING ANALYSIS

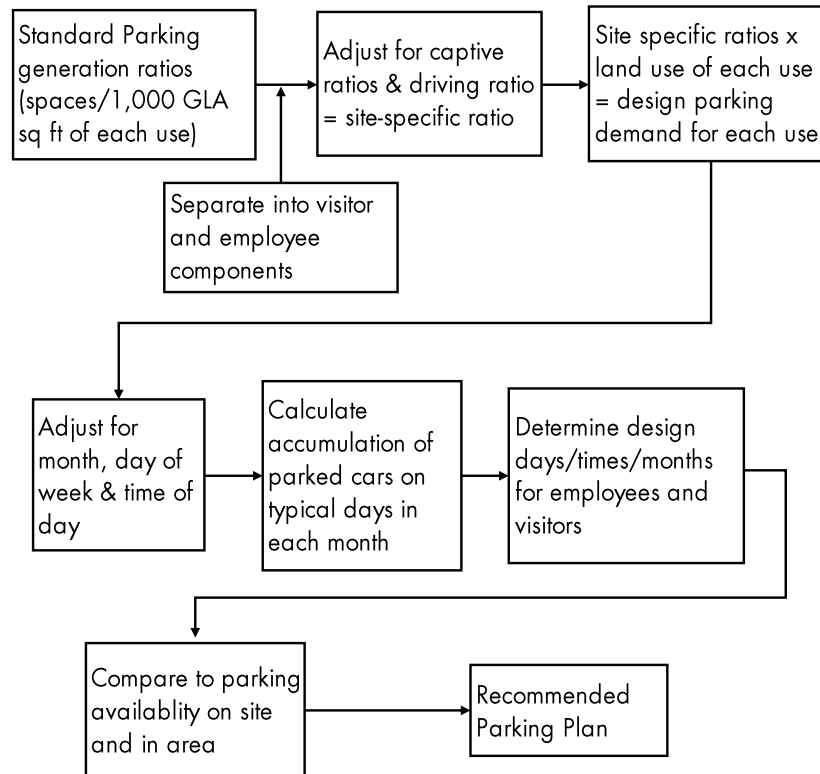
METHODOLOGY

Shared parking is possible where parking spaces can be used to serve two or more individual land uses without conflict or encroachment. One of the fundamental principles of downtown planning from the earliest days of the automobile has always been to share parking resources rather than to have each use or building have its own parking. The resurgence of many central cities resulting from the addition of vibrant office, residential, retail, and entertainment developments continues to rely heavily on shared parking for economic viability. In addition, mixed-use projects in many different settings have benefited from shared parking. Shared parking offers numerous benefits to a community at large, not the least of which is the environmental benefit of significantly reducing the amount of parking provided to serve commercial development.

The following flow chart describes the logical progression of a basic shared parking analysis.



Figure 3: Shared Parking Analysis Methodology



Source: Adapted from Transportation Planning Handbook, ITE, 1999

The ability to share parking spaces is the result of two conditions:

1. Variations in the accumulation of vehicles by hour, by day or by season at the individual land uses.
2. Relationships among the land uses that result in visiting multiple land uses on the same auto trip. For example, a substantial percentage of patrons at one business (restaurant) may be employees of a nearby business (office). This is referred to as the "effects of the captive market." These patrons are already parking and contribute only once to the number of peak hour parkers. In other words, the parking demand ratio for individual land uses should be factored downward in proportion to the captive market support received from neighboring land uses.

Although the interplay of land uses can reduce the overall demand, it should be noted that there are limits imposed by proximity of land uses to each other and to parking facilities. While "shared parking" by definition is capitalizing on the different demand period for a combination of land uses, it is not logical to assume that a hotel (with peak demand in the evening) can share with an office building (with peak demand during the day) if the two land uses are too far apart. Human behavior, such as limits to the distance users are willing to walk from a parking facility to their final destinations, restricts shared parking opportunities.

Walker's Shared Parking Model is based on the Urban Land Institute and International Council of Shopping Center's *Shared Parking*¹ publication. Walker led a team of consultants in writing the updated *Shared Parking Second Edition* and features the most up-to-date parking demand model. The model is designed to recommend the parking capacities of a mixed-use development from 6:00 a.m. to 12:00 midnight on a typical weekday and a Saturday for every month of the year based on 85th percentile level of activity conditions. While it is not a "predictor" of parking demand, it is an industry-accepted method of generating a parking capacity recommendation for a proposed development project.

BASE PARKING DEMAND

Base parking demand ratios, as found in the ULI Shared Parking model and in some cases refined through additional research by Walker, are used as a starting point in the analysis. Based on research on the parking generation rates for free-standing developments, these industry standards are later adjusted to reflect site-specific conditions. Table 1 shows the base ratios for visitors and employees for a weekday and weekend.

Table 1: Base Demand Ratios

Land Use	Weekday		Weekend		Unit	Total	
	Visitor	Employee	Visitor	Employee		Weekday	Weekend
Retail	2.90	0.70	3.20	0.80	/ksf GLA	3.60	4.00
Supermarket	3.80	1.00	4.90	0.90	/ksf GLA	4.80	5.80
Fine/Casual Dining	15.25	2.75	17.00	3.00	/ksf GLA	18.00	20.00
Fast Casual/Fast Food	12.75	2.25	12.00	2.00	/ksf GLA	15.00	14.00
Residential : Studio Efficiency	0.10	1.00	0.15	1.00	/unit	1.10	1.15
1 bedroom	0.10	1.50	0.15	1.50	/unit	1.60	1.65
2 bedroom	0.10	1.70	0.15	1.70	/unit	1.80	1.85
>3 bedroom	0.10	2.00	0.15	2.00	/unit	2.10	2.15
Office	0.30	3.47	0.03	0.35	/ksf GFA	3.77	0.38

Source: Walker Parking Consultants, 2015

The base ratios are modified by applying driving ratios, non-captive factors, and presence factors. The following sections present a brief explanation of these adjustments.

UNSHARED PARKING DEMAND

Assuming that each of these land uses required a separate pool of parking spaces, the peak unshared parking demand for the whole project is 1,065 spaces, occurring on a

¹ *Shared Parking (Second Edition)*, 2005, The Urban Land Institute, Washington, D.C.

weekday, as shown in Table 2. Also shown is the unshared weekend parking demand, which is 1,032 spaces.

Table 2: Unshared Parking Demand

Land Use	Quantity	Weekdays			Weekends		
		Base Ratio	Unit	Unadj Pkg Sp	Base Ratio	Units	Unadj Pkg Sp
Retail	8,200	2.90 /ksf	GLA	24	3.20 /ksf	GLA	26
Employee		0.70		6	0.80		7
Supermarket	46,050	3.80 /ksf	GLA	175	4.90 /ksf	GLA	226
Employee		1.00		46	0.90		41
Fine/Casual Dining	8,000	15.25 /ksf	GLA	122	17.00 /ksf	GLA	136
Employee		2.75		22	3.00		24
Fast Casual/Fast Food	3,950	12.75 /ksf	GLA	50	12.00 /ksf	GLA	47
Employee		2.25		9	2.00		8
Residential Guest	304	0.10 /unit		30	0.15 /unit		46
Residential rental							
Studio/Efficiency	33	1.00 /unit		33	1.00	0.00	33
1 bedroom	180	1.50 /unit		270	1.50	0.00	270
2 bedroom	86	1.70 /unit		146	1.70	0.00	146
>3 bedroom	5	2.00 /ksf	GFA	10	2.00	0.00	10
Office	32,400	0.30 /ksf	GFA	10	0.03 /ksf	GFA	1
Employee		3.47		112	0.35		11
Subtotal Customer/Guest				411			482
Subtotal Employee/Resident				654			550
TOTAL				1,065			1,032

Source: Walker Parking Consultants, 2015

Please note that these figures only show the demand associated with the new development. Any "public" demand resulting from demolishing the parking lot on Park Place has not been account in the unshared parking demand shown in Table 2.

DRIVING RATIO ADJUSTMENTS

Adjustments are made to account for the number of patrons who arrive at the subject property by means other than personal vehicle.

Walker used data generated by the U.S. Census Bureau to make adjustments to the driving ratio. According to census data, approximately 67 percent of employees in the immediate area drive or ride to work in a personal vehicle near the project site. Walker assumed that 67 percent of all employees in the area arrive via personal vehicle², while the other 33 percent utilize another means of transportation, such as mass transit, bicycle,

² Includes both single occupancy vehicles and carpooling.



or walking. It is important to note that service industry-related land uses, such as retail and restaurant, generally experience lower drive ratios than employees in an office setting. This has been accounted for in Walker's model.

Walker also made adjustments to the residential drive ratio, also known as the residential car ownership rate. While vehicle ownership varies depending on the number of people in the household and whether the space is an apartment or a condo, the residential vehicle ownership rate in the immediate area around the Insight project is approximately 85%. Approximately 85% of households in the area own one or more vehicles, while the remaining 15% of households do not own a vehicle.

Table 3 illustrates the driving ratios for weekday and weekend employees and guests used in this analysis.

Table 3: Drive Ratios

Land Use	Weekday		Weekend	
	Daytime	Evening	Daytime	Evening
Retail	97%	97%	97%	97%
Employee	62%	67%	67%	72%
Supermarket	97%	97%	97%	97%
Employee	62%	67%	67%	72%
Fine/Casual Dining	97%	97%	97%	97%
Employee	62%	67%	67%	72%
Fast Casual/Fast Food	97%	97%	97%	97%
Employee	62%	67%	67%	72%
Residential Guest	97%	97%	97%	97%
Residential	85%	85%	85%	85%
Studio/Efficiency	85%	85%	85%	85%
1 bedroom	85%	85%	85%	85%
2 bedroom	85%	85%	85%	85%
≥3 bedroom	85%	85%	85%	85%
Office	97%	97%	97%	97%
Employee	67%	72%	72%	77%

Source: Walker Parking Consultants, 2015

NON-CAPTIVE ADJUSTMENTS

“Captive market” is borrowed from market researchers to describe people who are already present in the immediate vicinity at certain times of the day. In the shared parking analysis, the term “captive market” reflects the adjustment of parking needs and vehicular trip generation rates due to the interaction among uses in an area. Traditionally, the non-captive adjustment is used to fine-tune the parking needs of restaurants and retail patronized by employees of adjacent office buildings, or other persons already counted as being parked for the day.

Walker, in designing a shared use analysis, uses the inverse or non-captive ratio, which is the percentage of parkers who are not already counted as being parked. There is usually a primary land use, in this case the residential and office space, which account for the longest parking durations of a vehicle.

Table 4 details the weekday and weekend non-captive factors used in this analysis.

Table 4: Non-Captive Ratios

Land Use	Weekday		Weekend	
	Daytime	Evening	Daytime	Evening
Retail	86%	83%	90%	77%
Employee	100%	100%	100%	100%
Supermarket	81%	78%	85%	72%
Employee	100%	100%	100%	100%
Fine/Casual Dining	93%	95%	92%	96%
Employee	100%	100%	100%	100%
Fast Casual/Fast Food	50%	66%	68%	68%
Employee	100%	100%	100%	100%
Residential Guest	100%	100%	100%	100%
Residential	100%	100%	100%	100%
Studio/Efficiency	100%	100%	100%	100%
1 bedroom	100%	100%	100%	100%
2 bedroom	100%	100%	100%	100%
≥3 bedroom	100%	100%	100%	100%
Office	100%	100%	100%	100%
Employee	100%	100%	100%	100%

Source: Walker Parking Consultants, 2015

In order to estimate the retail non-captive factor, we assumed that a small percentage of restaurant customers, residents and employees would visit the retail tenants. Similar assumptions were made for the grocery store patrons, with slightly more employees and residents frequenting the supermarket. Lastly, we assumed a large number of employees, residents, and retail patrons would also visit the fast food and fine/casual dining restaurants while already parked for their primary destination.

PRESENCE FACTORS

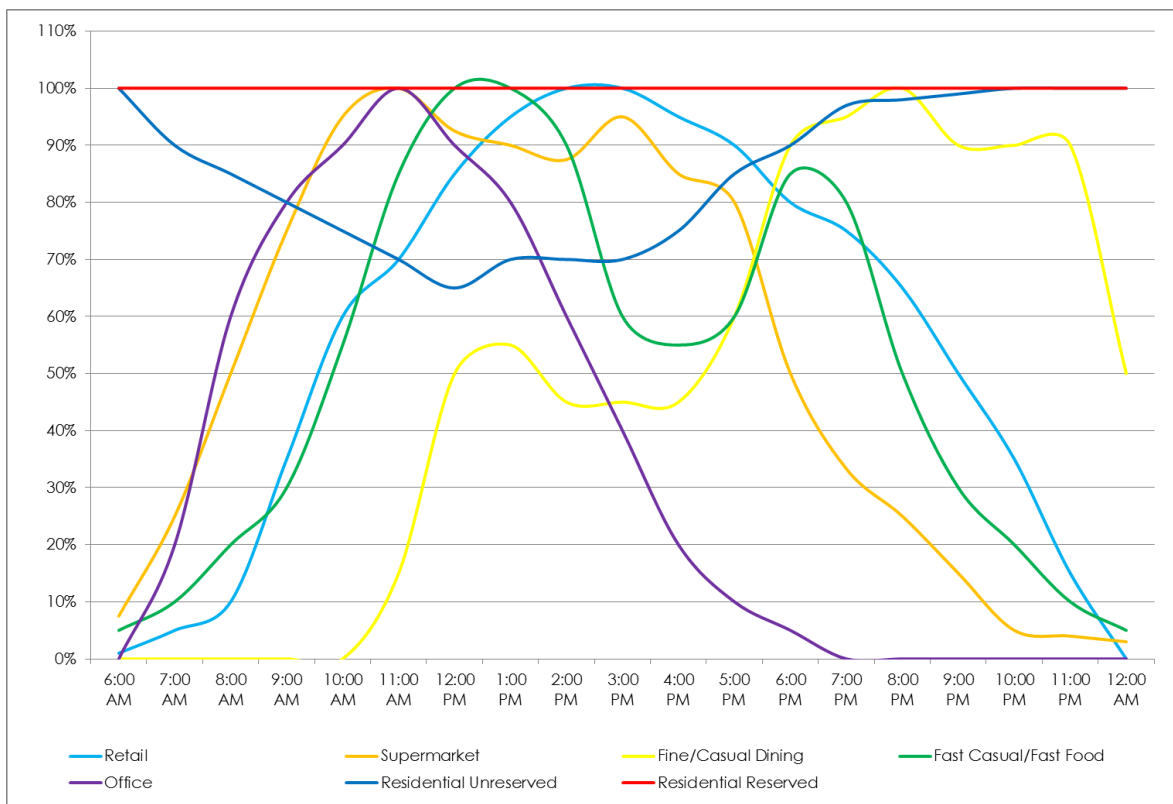
Presence is the last factor applied to the shared parking model. It is expressed as a percentage of potential demand modified for time of day and time of year. Considering that parking demand for each land use may peak at different times generally means that fewer parking spaces are needed for the combination of land uses in a project than would be required if each land use were considered separately.



The shared parking demand model evaluates parking demand for each land use from 6:00 a.m. to midnight on weekdays and weekends for every month of the year.³

The model concludes that peak weekend parking demand occurs around 7:00 p.m. when the residential and restaurant space are at or near their peak demand. Figure 4 shows the major land uses and their projected hourly occupancy rates. As an example, fine/casual dining experiences a smaller peak around lunch time and reaches its overall peak around 8:00 p.m. before rapidly falling by midnight.

Figure 4: Hourly Presence Factors - Weekend



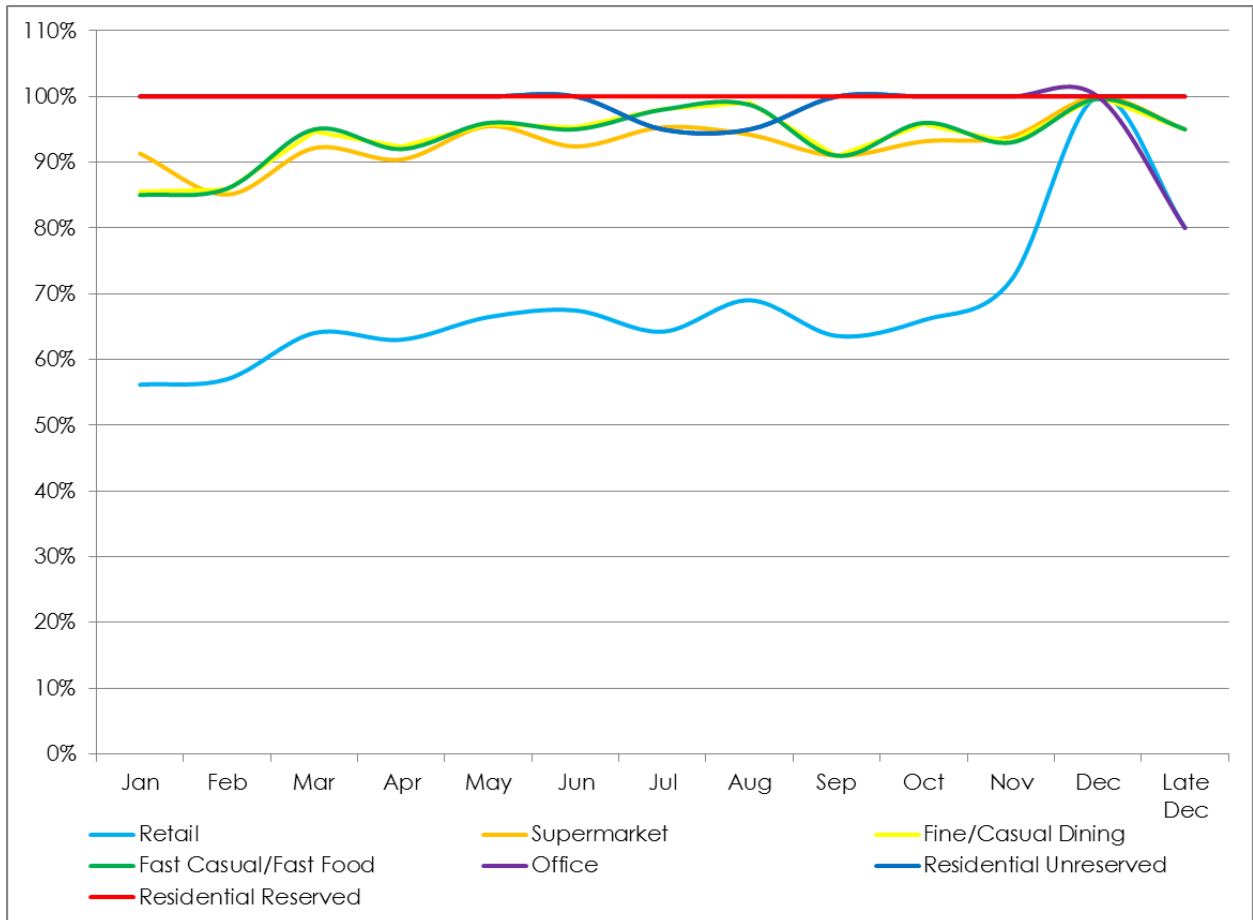
Source: Walker Parking Consultants, 2015

The monthly presence factors used in our model for the major land uses are shown in Figure 5. Retail parking peaks during the holiday shopping season in December, and quickly falls off thereafter. Late December (post-Christmas) is calculated separately due to the change in patterns. The retail spike accounts for the December peak projected by our model.

³ An additional analysis of the last week of December is included and considered a "thirteenth month." During this unique period, special analysis is required due to the difference in parking demand patterns, as opposed to the first three weeks of December.



Figure 5: Monthly Presence Factors



Source: Walker Parking Consultants, 2015

OPERATIONAL ASSUMPTIONS

There are several unique operational elements that impact the development of the shared parking model for the Insight at Falls Church project.

The parking for the project is anticipated to be provided on four levels, two below grade, one on grade with Broad Street and one on grade with Park Place. The majority of the parking on the upper most level (Park Place level) is intended to be reserved for grocery customers and employees through the use of PARCS equipment. Because these spaces will not be shared with other land uses, Walker developed the model to show a minimum occupancy of 169 spaces. However, there are occasions when the grocery demand may exceed the allotted area and overflow into the general shared parking areas on the lower floors. An example of this case can be seen in Table 7, where the grocery space is expected to generate 200+ spaces during the alternative peak hour.



Second, in order to develop the Insight at Falls Church project, a small parcel of land off of Park Place and encompassing a public surface parking lot of 58 spaces will be demolished. These lost spaces must be accounted for in the new garage. Insight currently plans to provide an additional 70 public spaces, for a total of 128 public spaces within the garage. Presumably, demand in the existing lot fluctuates and will continue to fluctuate when additional spaces are added to the available supply. For design purposes we have assumed the “public” parking demand is always 128 spaces. It is important to note that current operational plans do not include paid commercial parking or placing control equipment at the remaining entrances. The absence of these parking management elements makes limiting abuses of the parking system difficult. It is possible that more than the 128 “public” (non-development oriented) parkers could utilize the garage, reducing the available parking supply for development customers and employees.

With 304 residential units, the residential land use is anticipated to be the largest demand generator on site. The base parking ratio for residential rental housing varies from one space per unit for a studio to two spaces per unit for a three-bedroom, plus a partial space per unit for guests. Based on our discussions with Insight, residential parking will be provided on the lower levels of the garage in an access controlled area and will be shared with the office only. During the weekday, office and residential demand is well balanced for shared parking; most of the spaces vacated by residents are occupied by office employees. However, on the weekend, the number of spaces needed to support the office demand is less than the number of spaces vacated by residents, resulting in empty spaces that are unavailable to share with the retail parkers.

Walker's shared parking model does not account for these unavailable spaces throughout the day. However, because the peak hour demand is projected to occur in the evening on both a weekday and a Saturday, the majority of the restricted spaces will be occupied by residents.

SHARED PARKING DEMAND

The recommended peak hour occupancies for a weekday and weekend using the shared parking methodology are presented in the tables below. The unadjusted or unshared parking demand is also shown for comparison.

Assuming that each of these land uses required a separate pool of parking spaces, a peak unshared parking demand of 1,065 spaces on a weekday is expected. Adjusting for shared parking, the weekday shared peak parking demand is anticipated to occur in December, with 761 parking spaces occupied at around 7:00 p.m. The shared parking recommendation represents a 29 percent reduction.



The table below also includes an alternate peak hour in the late afternoon for comparison, when office demand increases and restaurant demand decreases.

Table 5: Weekday Shared Parking Demand

Land Use	Unadj Demand	Month Adj December	Pk Hr Adj 7:00 PM	Non Captive Evening	Drive Ratio Evening	Demand December	Demand December
						7:00 PM	5:00 PM
Retail	24	100%	75%	83%	97%	15	17
Employee	6	100%	95%	100%	67%	4	4
Supermarket	175	100%	45%	78%	97%	60	133
Employee	46	100%	50%	100%	67%	15	26
Supermarket - Gated Area*	0	100%	55%	78%	97%	94	10
Employee	0	100%	50%	100%	67%	0	0
Fine/Casual Dining	122	100%	100%	95%	97%	113	82
Employee	22	100%	100%	100%	67%	15	14
Fast Casual/Fast Food	50	100%	80%	66%	97%	25	15
Employee	9	100%	90%	100%	67%	5	4
Residential Guest	30	100%	100%	100%	97%	29	12
Residential Reserved - Rental	0	100%	100%	100%	85%	0	0
Residential Unreserved - Rental	459	100%	97%	100%	85%	378	332
Office	10	100%	2%	100%	97%	0	1
Employee	112	100%	10%	100%	72%	8	38
Subtotal Customer/Guest	411					336	270
Subtotal Employee/Resident	654					425	418
Total Parking Spaces Required	1,065					761	688

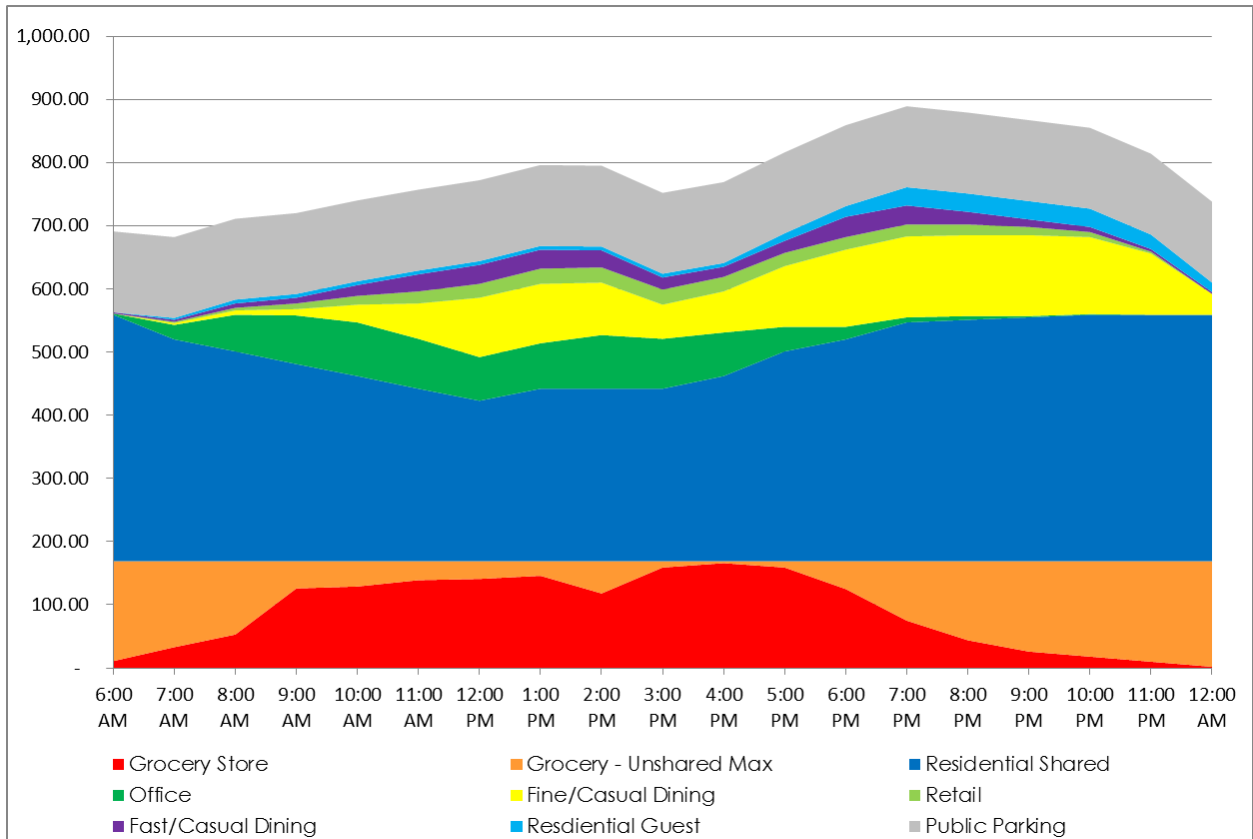
Note: *A reserved floor for the grocery store, with 169 spaces is planned for the project. During most hours of the day, grocery demand is anticipated to be less than 169 spaces. However, these spaces cannot be used by customers of the other land uses and are thus always "full" regardless of whether they are occupied. The "supermarket – gated area" land use represents the difference between the recommended grocery demand and 169 spaces.

Source: Walker Parking Consultants, 2015

The figure below shows the cumulative parking demand for each land use from 6:00 a.m. until midnight during a weekday in December during peak conditions. Per Insight, 169 grocery spaces are 100% reserved. The next largest user group are residents. Together, grocery and residential demand account for more than half of the demand generated by the project.



Figure 6: Weekday Parking Demand



Source: Walker Parking Consultants, 2015

As stated earlier, Walker's shared parking model is based on the needs of the planned development. However, the proposed garage will also include 128 public parking spaces, increasing the garage's capacity to 889 spaces. A subsequent line item discounts the total parking required by assuming residential guests will utilize the public parking spaces.

Table 6: Total Spaces Required – Weekday

	December	
	7:00 PM	5:00 PM
Project Parking Spaces Required	761	688
Public Parking Provided	128	128
Total Parking Garage Capacity	889	816
Less Residential Guest Parking	(29)	(12)
Proposed Parking Garage Capacity	860	804

Source: Walker Parking Consultants, 2015

Peak parking demand during the weekend is expected to occur in December at 7:00 p.m., with around 778 parking spaces. The unadjusted parking demand is projected at 1,032 spaces. The shared parking projection represents a 25 percent reduction from the unadjusted calculation. Again, we have included an alternate daytime peak hour for comparison.

Table 7: Weekend Shared Parking Demand

Land Use	Unadj Demand	Month Adj December	Pk Hr Adj 7:00 PM	Non Captive Evening	Drive Ratio Evening	Demand	Demand
						December 7:00 PM	December 5:00 PM
Retail	26	100%	75%	77%	97%	15	20
Employee	7	100%	80%	100%	72%	4	4
Supermarket	226	100%	33%	72%	97%	53	149
Employee	41	100%	40%	100%	72%	12	15
Supermarket - Gated Area*	0	100%	67%	72%	97%	104	5
Employee	0	100%	60%	100%	72%	0	0
Fine/Casual Dining	136	100%	95%	96%	97%	120	73
Employee	24	100%	100%	100%	72%	17	16
Fast Casual/Fast Food	47	100%	80%	68%	97%	25	19
Employee	8	100%	90%	100%	72%	5	4
Residential Guest	46	100%	100%	100%	97%	45	18
Residential Reserved - Rental	0	100%	100%	100%	85%	0	0
Residential Unreserved - Rental	459	100%	97%	100%	85%	378	332
Office	1	100%	0%	100%	97%	0	0
Employee	11	100%	0%	100%	77%	0	1
Subtotal Customer/Guest	482					362	284
Subtotal Employee/Resident	550					416	372
Total Parking Spaces Required	1,032					778	656

Note: *A reserved floor for the grocery store, with 169 spaces is planned for the project. During most hours of the day, grocery demand is anticipated to be less than 169 spaces. However, these spaces cannot be used by customers of the other land uses and are thus always "full" regardless of whether they are occupied. The "supermarket – gated area" land use represents the difference between the recommended grocery demand and 169 spaces.

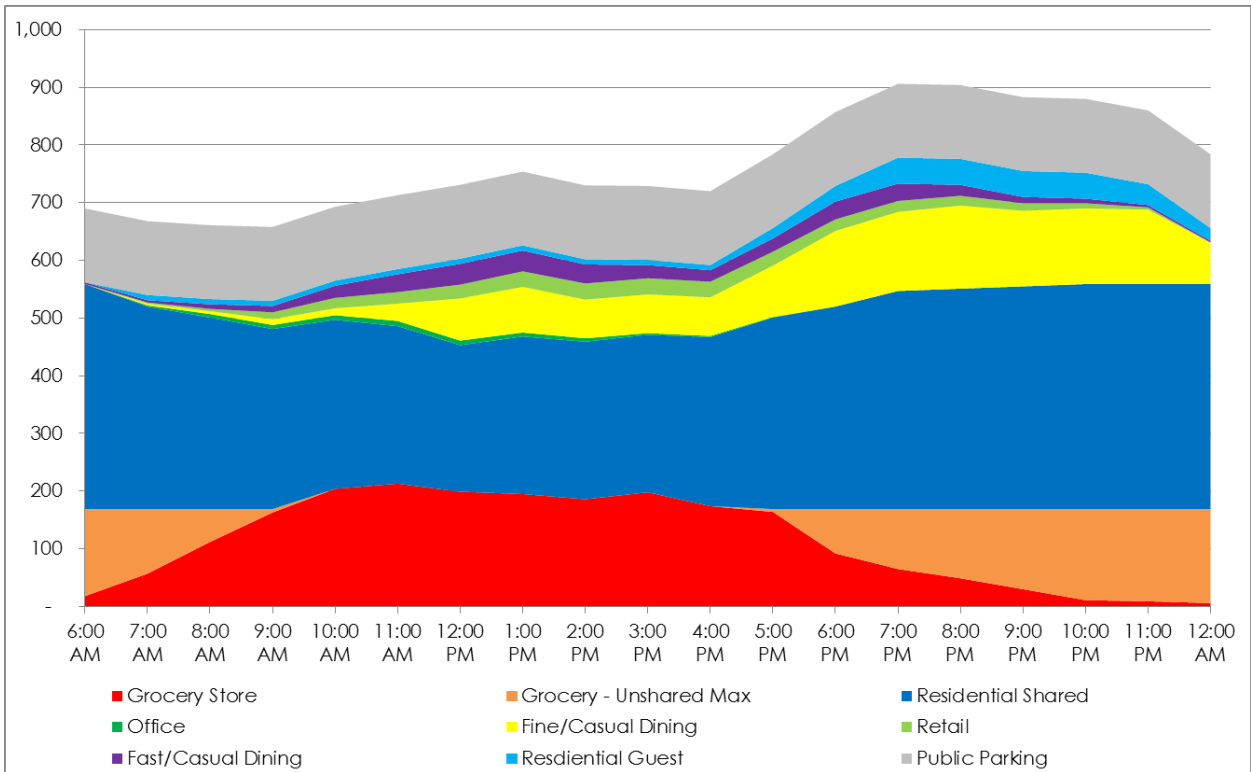
Source: Walker Parking Consultants, 2015

The following figure shows the cumulative parking demand for each land use from 6:00 a.m. until midnight during a Saturday in December during peak conditions. Again, the grocery and residential land uses account for more than half the demand generated by the project.

It is important to note that the residential parking area (as many as 390 spaces) will be access controlled and unavailable for sharing with retail and restaurant parkers. As such, daytime demand may be greater than pictured in the figure below. We assume office employees will park in the access controlled area.



Figure 7: Weekend Parking Demand



Source: Walker Parking Consultants, 2015

The recommended parking garage capacity is based on the combined total of the planned development and the 128 public parking spaces. A subsequent line item discounts the total parking required by assuming residential guests will utilize the public parking spaces. This reduces the proposed capacity of the parking garage to 861 spaces.

Table 8: Total Spaces Required – Weekend

	December	
	7:00 PM	5:00 PM
Project Parking Spaces Required	778	656
Public Parking Required	128	128
Total Parking Garage Capacity	906	784
Less Residential Guest Parking	(45)	(18)
Proposed Parking Garage Capacity	861	766

Source: Walker Parking Consultants, 2015

CONCLUSIONS

While shared parking is an industry-accepted method of generating parking capacity recommendations, it is not a predictor of business activity levels, which vary greatly across the nation. Walker's shared parking analysis provides a recommended parking capacity for the proposed development that is based on 85th percentile level of activity conditions. Furthermore, it's important to note that peak demand conditions may only be experienced a few times each year.

Based on the development program provided by Insight, the recommended shared parking demand for the Insight at Falls Church development project is 778 spaces. The peak is expected to occur during a Saturday, around 7:00 p.m. in December. In addition to the demand associated with the new development, Insight is providing replacement parking for the lost public parking lot within the garage. Assuming Insight provides 128 public parking spaces, the garage would need to accommodate approximately 906 spaces during peak conditions. However, it is likely that some of the "public" parking will be utilized by residential guests, reducing the recommended parking garage capacity to approximately 861 spaces.

In addition to accommodating the public parking lost during construction, there are several other operating elements specific to this project; specifically, the practice of reserving parking for residential and grocery parkers. Reserving parking reduces the benefits of shared parking and increases the parking needed to support a development. For this project, leasing agreements require Insight to provide a 169-space, reserved parking area for grocery customers and employees.

Insight also plans to utilize access control equipment to restrict access to the lower levels of the parking garage to residents and office employees only. During a weekday, the balance between these two uses ensures adequate utilization of these spaces. However, on the weekend, there may be unused spaces in the reserved section throughout the day.

Walker's shared parking model did not account for these unavailable spaces throughout the day. However, because the peak hour demand is projected to occur in the evening on both a weekday and a Saturday, the majority of the restricted spaces will be occupied by residents.