April 12, 2016

Ms. Melanie Rippetoe, City Planner
The City of Town and Country
1011 Municipal Center
Town and Country, MO 63131

RE: Mason Woods Village & Town Center Parking Study
Lochmueller #515-0151-0PK

Dear Ms. Rippetoe:

The City of Town and Country (City) contracted with Lochmueller Group in January of 2016 to assess the parking conditions for the Mason Woods Village Shopping Center. The purpose of this analysis was to determine an appropriate recommendation for the parking capacity at Town Center, a planned retail center adjacent to Mason Woods Village, as well as evaluate the potential for shared parking between the two shopping centers.

Additionally, the existing parking characteristics were evaluated at the Ballwin Grove Shopping Center, approximately 2.5 miles west of Mason Woods Village in order to determine parking characteristics of comparable land use in the evaluation of the proposed shopping center. There is also a perceived parking shortage at the Ballwin Grove Shopping Center; therefore, the City of Ballwin's parking requirements were analyzed and compared to the City of Town and Country's parking requirements. This comparison will help the City of Town and Country avoid similar parking issues.

The proposed development will be located immediately east of the Mason Woods Village Shopping Center on the south side of Clayton Road. It will contain approximately 8,000 square feet of restaurant space. In addition to the restaurants, there will be a large plaza which is designated for a future farmers market and other special events. There is also a significant amount of green space and a water feature planned for the southern portion of the property.

It is difficult to estimate realistic parking demands for the plaza and green space uses, as they do not contain attractions such as ball fields and pools, which are the main drivers for parking demands. The extent of future events that may be held on the plaza space is also unknown, making it difficult to determine parking demands. The new Town Center parking allotments will instead be sized according to the various restaurant uses. In addition, overflow parking capacity will be evaluated in the adjacent Mason Woods Village parking facilities to accommodate special events.

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PHONE: 314.621.3395

Existing Parking Supply and Demand at the Mason Woods Village Shopping Center

Mason Woods Village Shopping Center contains a variety of office, retail, and restaurant uses. There are currently 242 total parking spaces available in the shopping center, which have been divided into five parking areas for the purposes of this study, as outlined in **Figure 1**.

Area A (35 spaces) includes the single-aisle of parking spaces west of the western Clayton Road entrance. Area B (64 spaces) encompasses the northern half of the main shopping center parking field, which is located between the western and central Clayton Road entrances. Area C (74 spaces) encompasses the southern half of the main shopping center parking field and fronts the majority of the smaller retail storefronts. Area D (8 spaces) contains a small number of parking spaces in front of Midland States Bank between the central and eastern Clayton Road entrances. Finally, Area E (61 spaces) includes all of the parking spaces behind the eastern retail buildings and provides access to the office uses on the lower level of those buildings. The parking spaces located between the western retail buildings and the apartment complex in the southwest corner of the property were marked reserved for the apartments and therefore were not accounted for in this study.

Figure 1: Mason Woods Village Shopping Center Parking Areas

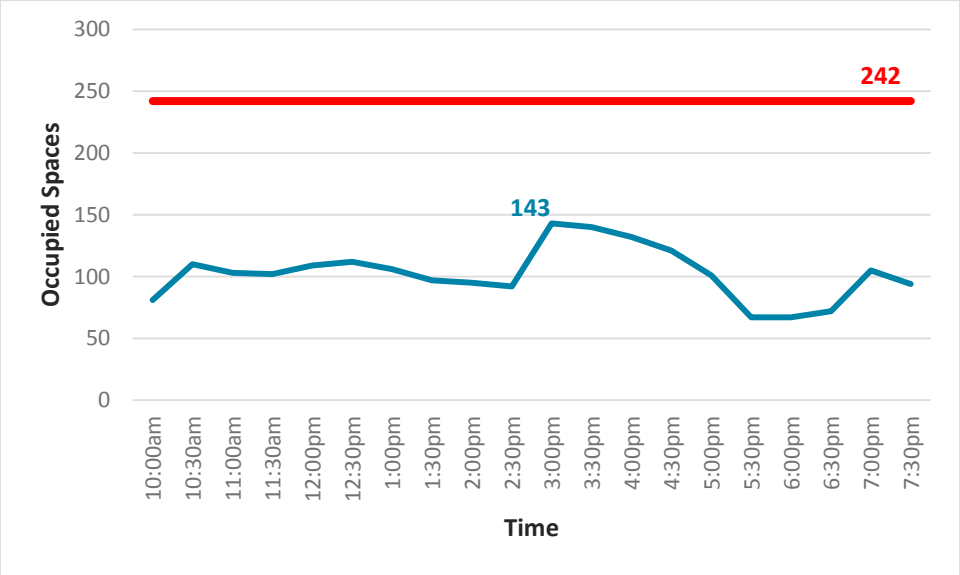
In an effort to determine the full shared parking potential between the Mason Woods Village Shopping Center and the adjacent property, the utilization of these five parking areas were documented every half

hour between 10:00 a.m. and 8:00.p.m. on two Saturdays in February of 2016. The results of these occupancy counts are provided in **Table 1**, which reflect the average of the both Saturday counts. A supporting graphical representation of the parking demand is shown in **Figure 2**.

Table 1: Mason Woods Village Shopping Center Existing Parking Utilization

Facility	Total		A		B		C		D		E	
Total Spaces	**242**		**35**		**64**		**74**		**8**		**61**	
10:00am	81	33%	5	14%	27	42%	42	57%	3	38%	4	7%
10:30am	110	45%	7	20%	31	48%	61	82%	5	63%	6	10%
11:00am	103	43%	4	11%	36	56%	51	69%	4	50%	8	13%
11:30am	102	42%	7	20%	35	55%	44	59%	5	63%	11	18%
12:00pm	109	45%	8	23%	33	52%	52	70%	5	63%	11	18%
12:30pm	112	46%	9	26%	32	50%	57	77%	4	50%	10	16%
1:00pm	106	44%	16	46%	31	48%	43	58%	3	38%	13	21%
1:30pm	97	40%	12	34%	34	53%	37	50%	4	50%	10	16%
2:00pm	95	39%	14	40%	35	55%	33	45%	3	38%	10	16%
2:30pm	92	38%	11	31%	35	55%	36	49%	3	38%	7	11%
3:00pm	143	59%	29	83%	47	73%	57	77%	3	38%	7	11%
3:30pm	140	58%	24	69%	43	67%	61	82%	4	50%	8	13%
4:00pm	132	55%	24	69%	47	73%	51	69%	4	50%	6	10%
4:30pm	121	50%	26	74%	35	55%	50	68%	6	75%	4	7%
5:00pm	101	42%	20	57%	39	61%	34	46%	5	63%	3	5%
5:30pm	67	28%	19	54%	23	36%	22	30%	0	0%	3	5%
6:00pm	67	28%	23	66%	19	30%	20	27%	3	38%	2	3%
6:30pm	72	30%	22	63%	23	36%	25	34%	1	13%	1	2%
7:00pm	105	43%	29	83%	34	53%	41	55%	0	0%	1	2%
7:30pm	94	39%	26	74%	31	48%	36	49%	0	0%	1	2%

Figure 2: Mason Woods Village Existing Parking Utilization



The occupancy counts reveal that there is relatively low demand at the Mason Woods Village Shopping Center throughout the day. The maximum occupancy for the center as a whole was 59% at 3:00pm; however, some of the individual parking areas do have higher utilization at various times throughout the day. The results of these occupancy counts show that there could be a potential for Mason Woods Village to accommodate a significant amount of overflow traffic for special events at the adjacent property.

Existing Supply and Demand at Ballwin Grove Shopping Center

In order to determine parking characteristics for comparable restaurants, the Ballwin Grove Shopping Center was also analyzed. Ballwin Grove is located at the southwest corner of Clayton Road and Henry Avenue and contains a mix of retail and restaurant uses.

As shown in **Figure 3**, there are a total of **239** parking spaces, which were divided into four parking areas for a more detailed analysis. Area A (13 spaces) is located at the southwest corner of the property behind the retail and restaurant buildings. Area B (155 spaces) is the main parking field for the retail and restaurant uses at the shopping center. Area C (8 spaces) includes the parallel parking spaces along the access roadway that separates the main portion of the shopping center from the CVS pharmacy property. Area D (63 spaces) includes the parking spaces around the north and east sides of the CVS pharmacy.

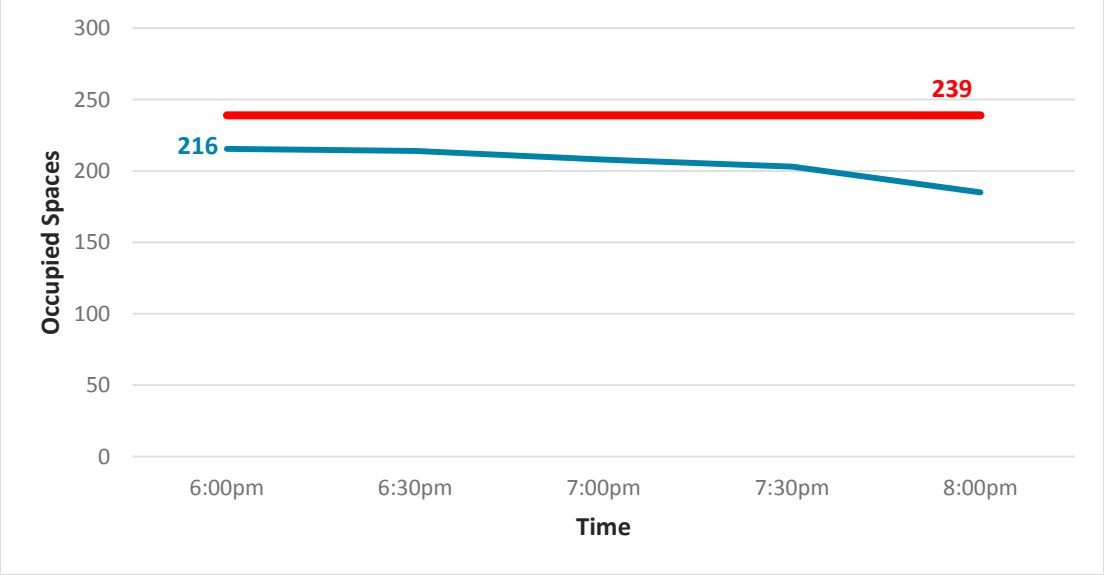
Figure 3: Ballwin Grove Shopping Center Parking Areas

To determine a logical restaurant peak parking demand rate, occupancy counts were also performed at the Ballwin Grove Shopping Center on two Saturdays in February of 2016. Occupancy counts were performed every half hour between 6:00 p.m. and 8:30 p.m. The results of the occupancy counts, which were averaged between the two Saturdays, are outlined in **Table 2** and a supplemental graphical representation is provided in **Figure 4**.

Table 2: Ballwin Grove Existing Parking Utilization

Facility	Total Spaces	Occupancy Counts				
		6:00pm	6:30pm	7:00pm	7:30pm	8:00pm
Total	239	217	215	209	204	187
		90%	90%	87%	85%	77%
A	13	15	15	14	14	12
		112%	112%	104%	104%	88%
B	155	153	149	149	149	141
		99%	96%	96%	96%	91%
C	8	13	12	12	13	13
		156%	150%	150%	156%	156%
D	63	36	39	34	28	21
		56%	61%	53%	44%	33%

Figure 4: Ballwin Grove Existing Parking Utilization



The peak occupancy at the Ballwin Grove Shopping Center occurred at 6:00 p.m. with 90% of the overall parking supply utilized. However, both Areas A and C recorded illegally parked vehicles which pushed their utilization over 100% and Area B (the main parking field for restaurants) peaked at 99% occupancy, which is well above recommended guidelines for excess capacity to facilitate circulation and parking turnover. Vehicles circling the parking facilities to find an open space were observed frequently. The only parking area that had any excess capacity was the lot surrounding the CVS pharmacy.

Analysis of the Ballwin Grove Shopping Center Occupancy Counts

There were two main goals of performing occupancy counts at the Ballwin Grove Shopping Center. First, the restaurants present are similar in character to the ones proposed for the Town Center development in the City of Town and Country. A local parking generation rate was desired to help correctly size the parking facilities on the Town Center property. Second, the City of Town and Country does not wish to see similar parking deficiencies at the proposed development. Therefore, both cities' parking requirements were analyzed to help determine if Town and Country's existing requirements are appropriate for this type of development.

The only retail use still open during the occupancy counts starting at 6:00 p.m. was the CVS pharmacy. Through observations it was determined that CVS was not generating a significant amount of parking demand during the count period. In a conservative effort, it was assumed that all but ten of the vehicles parked in the shopping center were restaurant patrons and would be accounted for in the calculation of a custom parking demand rate.

There was a peak of 216 vehicles observed at the shopping center. By assuming that ten of those vehicles were either CVS employees and/or patrons, it was estimated that 206 of those vehicles were related to the restaurant uses. The three restaurants open during that time comprise a total of 10,989 square feet. Using these figures, that equates to a peak demand of 18.7 vehicles per 1,000 square feet.

A review of the City of Ballwin's parking requirements revealed that the required parking for restaurants is one space per 200 square feet, or five spaces per 1,000 square feet. This requirement is significantly lower than the City of Town and Country's requirement of 20 spaces per 1,000 square feet. As shown by the occupancy counts at the Ballwin Grove Shopping Center, the actual peak demand for these types of restaurants is significantly higher than Ballwin's requirements and much closer to the City of Town and Country's requirements. Therefore, it has been determined that Town and Country's requirement of 20 spaces per 1,000 square feet of restaurant space is appropriate.

Projected Parking Demands of the Town Center Development

A total of 8,000 square feet of restaurant space is proposed in the Town Center development adjacent to Mason Woods Village. It is recommended that the entirety of the parking demand produced by these restaurants should be contained within the Town Center property, leaving any overflow potential within Mason Woods Village for special events.

Using the City's requirements of 20 spaces per 1,000 square feet of restaurant, 160 parking spaces would need to be provided. However, three scenarios comprising different restaurant type assumptions were evaluated to determine the potential, projected parking demands. These scenarios and their associated parking demands are provided in **Table 3**.

Three forecasted capacity scenarios were analyzed to determine the necessary parking lot size in the Town Center development. These scenarios outlined various restaurant types which could occupy the space.

- **Scenario 1** assumes all 8,000 square feet of the space occupied by restaurants similar to the ones currently occupying the Ballwin Grove Shopping Center, and using the custom parking demand calculated from that center.
- **Scenario 2** assumes 4,000 square feet of the space will be occupied by a high-turnover sit-down (HTSD) restaurant, which are reasonably priced, chain restaurants that have a turnover rate of less than one hour. The remaining 4,000 square feet of the space would be occupied by a fast-casual restaurant, such as a St. Louis Bread Company.
- **Scenario 3** assumes 4,000 square feet of HTSD, and 4,000 square feet of "Quality" restaurant use. A quality restaurant contains full-service dining with turnover rates of longer than one hour.

Table 3: Forecasted Peak Parking Needs

Scenario 1	**8,000 s.f. using custom parking demand from Ballwin Grove**	
Peak Parking Ratio	18.7	Vehicles / 1,000 s.f.
Peak Parking Demand	150	Vehicles
10% Buffer*	15	Spaces
Suggested Parking Supply	*165*	*Spaces*
Scenario 2	**4,000 s.f. HTSD & 4,000 s.f. Fast Casual**	
HTSD Peak Parking Ratio**	16.3	Vehicles / 1,000 s.f.
Peak HTSD Parking Demand	65	Vehicles
Fast Casual Parking Ratio***	12.9	Vehicles / 1,000 s.f.
Peak Fast Casual Parking Demand	52	Vehicles
Total Peak Parking Demand	117	Vehicles
10% Buffer*	12	Spaces
Suggested Parking Supply	*129*	*Spaces*
Scenario 3	**4,000 s.f. HTSD & 4,000 s.f. Quality**	
HTSD Peak Parking Ratio**	16.3	Vehicles / 1,000 s.f.
Peak HTSD Parking Demand	65	Vehicles
Peak Quality Parking Ratio**	16.4	Vehicles / 1,000 s.f.
Peak Quality Parking Demand	66	Vehicles
Total Peak Parking Demand	131	Vehicles
10% Buffer*	13	Spaces
Suggested Parking Supply	*144*	*Spaces*

***An additional 10% of parking spaces should be added to facilitate turnover and circulation**

****Parking ratio taken from ITE Parking Generation Manual 4th Edition**

*****Parking demand ratio taken from a previous parking study for a new St. Louis Bread Co.**

Overflow Parking Supply

As mentioned above, there are significant parking surpluses in the Mason Woods Village Shopping Center adjacent to the planned Town Center development. These surpluses could be utilized to accommodate overflow parking for special events in the plaza or designated park areas of the Town Center property. It has been determined that Parking Areas B-E on the Mason Woods Village property could be utilized for overflow parking, while Area A is too far of a walk for patrons of the Town Center property to traverse. The overflow parking potential has been broken down into three time periods (morning, afternoon and evening) and is provided in **Table 4** below. It should be noted that convenient and well-lit pedestrian access needs to be present between the two properties for shared parking to be viable.

Table 4: Overflow Potential at Mason Woods Village

Time Period	Minimum Spaces Available	Maximum Spaces Available
Morning (10 a.m. – 12 p.m.)	104 (10:30 a.m.)	131 (10:00 a.m.)
Afternoon (12 p.m. – 5 p.m.)	91 (3:30 p.m.)	126 (2:00 p.m.)
Evening (5 p.m. – 8 p.m.)	126 (5:00 p.m.)	163 (6:00 p.m.)

Conclusions

- Mason Woods Village has the capacity to accommodate overflow parking from the adjacent Town Center property, as it has a peak occupancy of only 59% at 3:00 p.m.
- Ballwin Grove Shopping Center has a significant parking shortage on Saturday evenings, with several of the parking areas at or above capacity.
- As the City of Town and Country does not want a similar parking shortage at the proposed development, the two cities' parking requirements were reviewed and it was determined that Ballwin's requirements for restaurants are only a quarter of Town and Country's current requirements. This low parking requirement is likely the reason that parking is in short supply at the Ballwin Grove Shopping Center.
- Depending on the type of restaurants to occupy the proposed 8,000 s.f. of space in the Town Center development, suggested parking facility sizes range from 129 spaces for lower-intensity restaurants to 165 spaces for high-intensity restaurants similar to the ones at the Ballwin Grove Shopping Center.
- There is significant capacity for overflow parking at Mason Woods Village to accommodate special events at Town Center. A minimum of 91 spaces are available in the four proximate parking areas at 3:30 p.m. A maximum of 163 spaces are available at 6:00 p.m.

We trust you will find this information useful. Please contact me at (314) 621-3395, Ext. 2622 if you have any questions or comments concerning this report.

Sincerely,
Lochmueller Group, Inc.

Scott J. Smith, P.E.
Branch Manager – Missouri Region

cc: Dustin B. Riechmann, P.E., PTOE, Manager of Traffic Services – Lochmueller Group
Chris L. Joannes, Transportation Planner – Lochmueller Group
Project File