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MEMORANDUM

To: Rachna Balakrishna

From: Alan H. Simon

Date: November 16, 2018

Project: 1299 Beacon St. Brookline MA

Subject: Development of Parking Program

Simon Design Engineering (SDE) is pleased to submit the following findings resulting from the Shared Parking Analysis prepared for the proposed age-restricted rental housing development at 1299 Beacon St.

Introduction:

The proposed project is a multi-use development consisting of age-restricted rental housing, a ground floor restaurant, some ground floor retail, and a second-floor low-density showroom/retail. We reviewed the zoning requirements with the Brookline Planning Department and their parking consultant, and were informed that the zoning parking requirements may not adequately address the mixed-use nature of this project, and also that zoning requirements for the restaurant use may not satisfy the parking demand adequately.

SDE met with the peer reviewer and discussed utilizing the Urban Land Institute's (ULI) Shared Parking[1] approach on this project and to present a rationale for the number of spaces provided (or any other reputable approach). The typical base parking ratios were generated by the ULI by observing hourly parking accumulations at various standalone land-uses over the course of a typical year. We arrived at an understanding that adjustments to the ULI's base parking ratios would be required to capture the unique aspects of this project along with an appropriate rationale for your consideration.

Unique Aspects:

- The project combines retail, restaurant and residential components resulting in mixed-use and the possibility of sharing the parking provided.
- Age-restricted housing for residents 55 and over, of which research studies have shown, have a reduced parking demand in comparison to traditional rental housing.
- The project site has ample access to public transit via the Coolidge Corner Green-Line stop directly across from the site and two Bus-Line 66 stops at the intersection of Beacon and Harvard St.
- There is available metered on-street parking for daytime use.
- The increased use of Transportation Network Companies (TNC) providers, e.g., Uber/Lyft in urban areas where parking is perceived as scarce or a hassle.
- Portions of the parking space utilization will be restricted to residents

Land Uses:

The programming information, provided by the client, at full build-out will contain 10,673 gross square feet of mixed-use space consisting of:

- 3,500 square feet of restaurant
- 1,627 square feet of ground-level retail
- 5,498 square feet of low-density showroom retail on the second level

[1] *Shared Parking, second edition, ULI-Urban Land Institute and the International Council of Shopping Centers*

- 80 units of age-restricted residential (55 and older).

SDE utilized this information to develop a shared parking demand model that depicts the approximate number of spaces needed to accommodate the projected peak-hour parking demand for the 1299 Beacon St. development.

Zoning Code Requirement:

Typically, city planners calculate parking demand assuming that each land-use requires an independent supply of spaces. This method typically results in an oversupply of parking. In reality, and contrary to the estimated code requirement, fluctuating patterns of parking utilization typically allow land-uses to share some of the same parking spaces; thereby, reducing the total parking required to support the development.

According to the local zoning requirement the mixed-use portion of the development will require:

- Restaurant: 1 space for every 5 seats
- Ground Floor Retail: 1 space for every 350 gross square feet
- Other Retail: 1 space for every 600 gross square feet

The calculated unadjusted Brookline zoning parking requirement as compared to the ULI's *Shared Parking* model is shown in **Table-1** below. The zoning requirements have been converted to spaces per seat and spaces per 1,000 square feet of gross floor area.

Table-1

Program		Shared Parking				Brookline	
		Weekday		Weekend			
Land Use	Quantity	Base Ratio	Unadjusted Spaces	Base Ratio	Unadjusted Spaces	Base Ratio	Unadjusted Spaces
Ground Floor Retail	1,627	3.6 /ksf	6	4 /ksf	7	2.86 /ksf[a]	5
Retail	5,498	3.6 /ksf	20	4 /ksf	22	1.67 /ksf[a]	9
Restaurant	3,500sf (140 seats)[b]	18 /ksf	63	20 /ksf	70	0.2 /seat	28
Total Parking Spaces			**89**		**99**		**42**

ksf GFA = thousand square feet of gross floor area

[a]Based Zoning By-Law Article VI sec 6.02 Table of Off-Street Parking
[b]Estimated number of restaurant seats based on 60% seating area 40% back-end area and 15sf per person

As indicated in **Table-1** above, the *Shared Parking* requirements are more conservative than the Brookline zoning regulations. The *Shared Parking* ratios are based on stand-alone land-uses that do not reflect local conditions that affect parking demand. The age-restricted residential parking ratio was excluded from the table above as this land-use is not represented in the local zoning code. The subsequent section provides a rationale based on industry data and local conditions for adjusting estimating a parking ratio for age-restricted residential.

Parking Demand Ratios:

SDE utilized the mixed-use parking standards established in the ULI's shared parking model for retail and restaurants to project the approximate peak-hour parking demand for the site; furthermore, we applied both month and time of day adjustments for each proposed land-use to the parking ratios. For the residential component, we utilized parking generation data on age-restricted residential from the ITE and then applied a conservative use factor based upon current research to be in line with the peer reviewer's suggestion. The base ratios used for the shared parking analysis are listed in **Table-2**.

Table-2

Land Use	Weekday		Weekend		Source	Total		
	Customer	Employee	Customer	Employee		Weekday	Weekend	
Retail	2.9	0.7	3.2	0.8	1[a]	**3.6**	**4**	/ksf
Restaurant	15.25	2.75	17	3	1[b]	**18**	**20**	/ksf
Age-restricted housing	0.8	0.1			2	**0.9**	**0.9**	/Unit

ksf = thousand square feet of gross floor area

Sources:

1. *Shared Parking 2nd edition, Land Uses: [a]Community shopping, [b]Fine/Casual Dining Restaurant*
2. *ITE Senior housing trip generation and parking demand characteristics technical paper by Stephen B. Corcoran, P.E. recommends 0.4 spaces per unit. The 0.8 ratio proposed provides a safety factor of 50%*

The recommended ratios from ULI and ITE reflect stand-alone conditions in suburban settings with little to no transit, minimal ridesharing, and no TNCs. To capture the unique aspects of this project, we applied the following factors when developing the shared parking model.

1. Transportation Mode – This represents the percentage of users arriving at the site by means other than a personal vehicle which would require on-site parking. According to the approved traffic study prepared by Vanasse & Associates, Inc. (VAI) for this project, they determined that 50% of retail/restaurant customers will arrive at the site by other means. This was based on survey data of percentage of auto-use of the existing retail. This factor was used in this shared parking analysis for those uses. Residential was not adjusted.

   This reduction is due to direct access to the Coolidge Corner Green-Line stop and two Bus-Line 66 stops at Harvard St. along with the increased use of ride-hailing services. We have also applied this adjustment to employee parking due to the service nature of the proposed land-uses. The service employees are more likely to utilize public transportation rather than drive.

   - A 50% mode adjustment was applied to both customer and employee parking ratios during the daytime and evening hours for the ground level retail use.
   - Low-density showroom retail typically operates from 10 am to 6 pm requiring less parking in the evening. A 90% mode adjustment for the second level low-density retail was applied during the evening with 10% remaining for employees who work after hours to close up shop.
   - A 50% mode adjustment was applied for the restaurant during daytime hours.

- A 10% mode adjustment was applied for restaurant employees in the evening. It is assumed some employees will work late hours when public transit is no longer operating; thereby, requiring additional employee spots in the evening.

2. Residential Parking – The 0.9 ratio listed in the table above consists of 0.8 spaces per unit for residents including 0.1 spaces per unit for visitors/tradespeople (10%). The visitor ratio will provide eight additional parking spaces. We believe the combined ratio is more than adequate to supply parking for age-restricted residential.

   A ratio of 0.9 is more than double that of the findings of ITE research which includes residents, visitors, and employees for stand-alone land use of this type. The peak parking demand at most senior facilities occurs midday, with Mother's Day having the highest parking demand of the year. Per the traffic report prepared by VAI, it is estimated that 65% of residential users will arrive at the site by means other than a personal vehicle. Due to this reduction in transportation mode, it is reasonable to conclude fewer residents will own vehicles; thereby, reducing the parking demand. Therefore, a ratio of 0.9 spaces per unit provides a conservative level of safety and will provide flexibility in the development should the residential user type change in the future. Neither mode adjustments, time-of-day, nor monthly adjustments were applied to the residential unit parking as it is assumed these spaces will be reserved and not available for sharing with the general public. However, the eight visitor parking spaces were included in the overall total of shareable parking spaces and adjusted accordingly.

The factors indicated above were applied to the base parking ratios to provide project-specific projections. The specifics are illustrated in the tables provided in the appendix.

Shared Parking Conclusion

Parking demand is influenced by the time-of-year, time-of-day and the availability of alternative transportation, building occupancy rates, and many other factors. However, the available parking supply is usually fixed, limited by the amount of space available on a given site.

After utilizing effects of shared parking, transportation mode adjustments, monthly factor, and time-of-day factor the projected weekend peak-hour parking demand for the site is **116**± spaces on the busiest weekend of the year. The retail/restaurant peak-hour demand is projected to occur in December at 8:00 PM. In conclusion, the projected peak-hour weekend demand represents a 33% reduction from the unadjusted weekend parking demand projected for this project.

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APPENDIX

SHARED PARKING DEMAND SUMMARY
PEAK MONTH DAILY PARKING DEMAND BY HOUR
GRAPH DEPICTING PEAK MONTH DAILY PARKING DEMAND BY HOUR

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Table
Project: 1299 Beacon Street Brookline MA
Description: Shared Parking Model

11/16/2018

SHARED PARKING DEMAND SUMMARY

PEAK MONTH: DECEMBER -- PEAK PERIOD: 8 PM, WEEKEND

			Weekday				Weekend				Weekday			Weekend		
	Project Data		Base	Mode	Project		Base	Mode	Project		Peak Hr Adj	Peak Mo Adj	Estimated Parking	Peak Hr Adj	Peak Mo Adj	Estimated Parking
Land Use	Quantity	Unit	Rate	Adj	Rate	Unit	Rate	Adj	Rate	Unit	1 PM	December	Demand	8 PM	December	Demand
Retail	1,769	sf GLA	2.90	0.50	1.45	/ksf GLA	3.20	0.50	1.60	/ksf GLA	1.00	1.00	3	0.65	1.00	2
Employee			0.70	0.50	0.35	/ksf GLA	0.80	0.50	0.40	/ksf GLA	1.00	1.00	1	0.75	1.00	0
Restaurant	3,500	sf GLA	15.25	0.50	7.63	/ksf GLA	17.00	0.50	8.50	/ksf GLA	0.75	1.00	20	1.00	1.00	30
Employee			2.75	0.50	1.38	/ksf GLA	3.00	0.90	2.70	/ksf GLA	0.90	1.00	5	1.00	1.00	10
Second Floor Retail	5,491	sf GLA	2.90	1.00	2.90	/ksf GLA	3.20	0.10	0.32	/ksf GLA	1.00	1.00	16	0.50	1.00	1
Employee			0.70	1.00	0.70	/ksf GLA	0.80	0.50	0.40	/ksf GLA	1.00	1.00	4	0.50	1.00	1
Age-Restricted Rental Housing	80	units	0.00	0.35	0.00	/unit	0.00	0.35	0.00	/unit	0.70	1.00	0	0.98	1.00	0
Reserved	0.8	sp/unit	1	1.00	1	/unit	1	1.00	1	/unit	1.00	1.00	64	1.00	1.00	64
Guest	80	units	0	1.00	0	/unit	0	1.00	0	/unit	0.20	1.00	2	1.00	1.00	8
												Customer	41		Customer	41
												Employee	10		Employee	11
												Reserved	64		Reserved	64
												Total	115		Total	116
												Shared Parking Reduction	33%			33%

ULI base data have been modified from default values.

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Table
Project: 1299 Beacon Street Brookline MA
Description: Shared Parking Model

11/16/2018

December
Weekday Estimated Peak-Hour Parking Demand

																				Overall Pk	AM Peak Hr	PM Peak Hr	Eve Peak Hr
	Monthly Adj.	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM	1 PM	11 AM	1 PM	7 PM
Retail	100%	-	-	-	1	1	2	2	3	3	3	2	2	2	2	2	1	1	-	-	3	2	3	2
Employee	100%	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	1	-	1	-
Restaurant	100%	-	-	-	-	4	11	20	20	17	11	13	20	25	27	27	27	25	20	7	20	11	20	27
Employee	100%	-	1	3	4	5	5	5	5	5	4	4	5	9	9	9	9	9	8	3	5	5	5	9
Second Floor Retail	100%	-	1	2	6	10	14	15	16	15	14	14	15	2	2	1	1	-	-	-	16	14	16	2
Employee	100%	-	1	2	3	3	4	4	4	4	4	4	4	2	2	2	2	1	-	-	4	4	4	2
Reserved	100%	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
Guest	100%	-	1	2	2	2	2	2	2	2	2	2	3	5	8	8	8	8	6	4	2	2	2	8
TOTAL DEMAND	Customer	-	2	4	9	17	29	39	41	37	30	31	40	34	39	38	37	34	26	11	41	29	41	39
	Employee	-	2	5	7	8	9	10	10	10	9	9	9	11	11	11	11	10	8	3	10	9	10	11
	Reserved	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
		64	68	73	80	89	102	113	115	111	103	104	113	109	114	113	112	108	98	78	115	102	115	114
																					115	102	115	114

Footnote(s):

December
Weekend Estimated Peak-Hour Parking Demand

																				Overall Pk	AM Peak Hr	PM Peak Hr	Eve Peak Hr
		6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM	8 PM	11 AM	1 PM	8 PM
Retail	100%	-	-	-	1	2	2	3	3	3	3	3	3	2	2	2	2	1	-	-	2	2	3	2
Employee	100%	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	1	-
Restaurant	100%	-	-	-	-	-	5	15	17	14	14	14	18	27	29	30	27	27	27	15	30	5	17	30
Employee	100%	-	1	2	3	4	4	4	4	4	4	4	6	10	10	10	10	10	8	5	10	4	4	10
Second Floor Retail	100%	1	2	4	5	10	15	18	18	16	11	10	11	2	1	1	1	-	-	-	1	15	18	1
Employee	100%	-	-	-	1	2	2	3	4	4	4	4	3	1	1	1	1	-	-	-	1	2	4	1
Reserved	100%	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
Guest	100%	-	2	2	2	2	2	2	2	2	2	2	3	5	8	8	8	8	6	4	8	2	2	8
TOTAL DEMAND	Customer	1	4	6	8	14	24	38	40	35	30	29	35	36	40	41	38	36	33	19	41	24	40	41
	Employee	-	1	2	4	6	6	8	9	9	9	9	9	11	11	11	11	10	8	5	11	6	9	11
	Reserved	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
		65	69	72	76	84	94	110	113	108	103	102	108	111	115	116	113	110	105	88	116	94	113	116

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Peak Month Daily Parking Demand by Hour