

MEMORANDUM

Date:	October 27, 2023	TG:	1.18352.00
To:	Patrick Yamashita – City of Mercer Island		
From:	Michael Swenson – Transpo Group		
cc:	Megan McKay, Johnston Architects Siyu Lee		
Subject:	Mercer Island Residential – Updated Parking Demand Analysis		

This memorandum summarizes the results of the updated parking demand analysis reflecting the current development plan. Overall, the updated project represents a decrease in overall density as compared to the previous analysis. However, since the applicant has proposed a parking management plan, an updated analysis has been prepared to identify the recommended parking allocation for the residential, commercial, and flex parking areas.

Project Description

The proposed project represents a decrease in both the residential density and commercial square footage as compared to the previous analysis. The development plan includes the following:

- 146 residential units
- 5,741 gsf of general retail use
- 4,812 gsf of restaurant space

While the location of the parking garage has not changed, the internal configuration of the garage has been updated and includes the following:

- 57 dedicated commercial parking spaces
- 126 dedicated residential parking spaces
- 9 flex parking spaces

Parking Demand Analysis

The parking demand analysis follows the same methodology as previously accepted by the City. Retail/restaurant parking demand rates are based on Institute of Transportation Engineers (ITE) Parking Generation 5th Edition and residential rates are based on King County Right Size Parking calculator¹.

For retail uses, the parking rate used to estimate the peak parking demand was based on the ITE Parking Generation rates and time of day demand estimates. The ITE Parking Generation land use assumed for the analysis included Shopping Center (LU #820) and High Turnover Sit Down Restaurant (LU #932).

The King County Right Size Parking calculator is an online tool developed by King County that estimates parking/unit ratios for multifamily developments throughout urban areas of King County. The Right Size Parking calculator relies on the unit mix of the proposed development and the

¹ www.rightsizeparking.org

development location to estimate a parking demand ratio. Based on the calculator and unit mix, an average parking rate of 0.83 per unit was assumed.

The estimated peak parking demand, and proposed parking supply are summarized in Table 1. It is important to note that the peak parking demands for the land uses shown below are not forecast to occur at the same time. Detailed parking demand calculations can be found in Attachment A.

Table 1. Parking Demand

Proposed Land Use	Size¹	Rate	Peak Parking Demand
<u>Residential Parking</u>			
Apartments (LU #221)	146 units	0.83 vehicles per unit	122 vehicles
<u>Retail Parking</u>			
Shopping Center (LU #820)	5,741 gsf	1.95 vehicles per 1,000 sf	12 vehicles
Restaurant (LU #932)	4,812 gsf	9.44 vehicles per 1,000 sf	46 vehicles
<small>1. du = dwelling unit, sf = square-foot 2. Mercer Island City Code 19.11.110 B.1</small>			

As shown in Table 1, the peak parking demand for the residential use is 122 vehicles. For the retail land uses, the shopping center use peak is 12 vehicles, and the restaurant peak is 46 vehicles.

As these uses will not peak at the same time during the day, a shared parking analysis was conducted which involves time of day distributions applied to each individual land use's peak parking demand to find overall demand per each hour of day. Attachment A contains a shared parking demand analysis. As shown in Attachment A, the overall peak parking demand for the development is expected to occur at 8 p.m. on a typical weekday with a peak demand of 136 vehicles.

Parking Supply/Allocation

The development includes a total of 192 parking stalls, of which 57 spaces are dedicated to commercial uses, 126 to the residential uses, and 9 flex stalls for commercial employees are included on the residential level.

The peak demand for the total commercial and residential flex uses is 58 vehicles at noon. The city has requested that the commercial parking supply has been set to not exceed 90% utilization with the flex parking spaces. The additional 9 flex spaces on the residential level will be allocated for commercial employees during the day and residential uses in the evening. The occupancy percent of the flex and commercial spaces during the peak times would reach 88%, meeting the threshold of 90%.

The shared parking management plan will be considered mitigation for the proposed project. Details regarding parking enforcement and signage would be provided during the permitting process.

Attachment A: Parking Demand Analysis



Weekday Shared Parking Demand Estimate

Size Rate ¹ Unadjusted Demand Parking Spaces	Retail (LU #820)		Restaurant (LU #932)		Residential (LU#221) Dedicated Parking		Residential Level (LU#221) Flex Parking		Total Commercial & Residential Flex Demand	Total Commercial & Residential Flex Supply	Occupancy (%) of Shared Flex and Commercial Spaces	Cumulative Parking Demand
	5,741 sf		4,812 sf		146 du							
	1.95 vehicles per 1,000 sf		9.44 vehicles per 1,000 sf		.83 vehicles per unit							
	57 shared commercial spaces				126 spaces		9 spaces					
Time of Day ²	% Hourly Demand ²	Hourly Demand	% Hourly Demand ²	Hourly Demand	% Hourly Demand ²	Hourly Demand	% Hourly Demand ²	Hourly Demand	Hourly Demand	Total Spaces	Percent Occupied	Hourly Demand
12-4:00 AM	0%	0	0%	0	100%	122	100%	0	0	66	0%	122
5:00 AM	0%	0	0%	0	94%	115	94%	0	0	66	0%	115
6:00 AM	0%	0	0%	0	83%	101	83%	0	0	66	0%	101
7:00 AM	0%	0	0%	0	71%	87	71%	0	0	66	0%	87
8:00 AM	15%	2	0%	0	61%	74	61%	0	2	66	3%	76
9:00 AM	32%	4	0%	0	55%	67	55%	0	4	66	6%	71
10:00 AM	54%	6	9%	4	54%	66	54%	0	10	66	15%	76
11:00 AM	71%	9	15%	7	53%	65	53%	0	16	66	24%	81
12:00 PM	99%	12	100%	46	50%	61	50%	0	58	66	88%	119
1:00 PM	100%	12	81%	37	49%	60	49%	0	49	66	74%	109
2:00 PM	90%	11	54%	25	49%	60	49%	0	36	66	55%	96
3:00 PM	83%	10	33%	15	50%	61	50%	0	25	66	38%	86
4:00 PM	81%	10	26%	12	58%	71	58%	0	22	66	33%	93
5:00 PM	84%	10	29%	13	64%	78	64%	0	23	66	35%	101
6:00 PM	86%	10	58%	27	67%	82	67%	0	37	66	56%	119
7:00 PM	80%	10	70%	32	70%	85	70%	0	42	66	64%	127
8:00 PM	63%	8	77%	35	76%	93	76%	0	43	66	65%	136
9:00 PM	42%	5	61%	28	83%	101	83%	0	33	66	50%	134
10:00 PM	15%	2	41%	19	90%	110	90%	0	21	66	32%	131
11:00 PM	0%	0	0%	0	93%	113	93%	0	0	66	0%	113
												136

Note: sf = square-feet, DU = dwelling units

1. Retail and Restaurant Parking demand rate based on the ITE Parking Generation, 5th Edition . Residential parking demand rate based on Right Size parking.

2. Time of day based on the ITE Parking Generation, 5th Edition.