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Memorandum

To: **Kirsten Van Loo**

From: **Daniel Stumpf, PE**

Date: **June 16, 2022**

Subject: **Beaverton Senior Care Facility**
Trip Generation & Parking Analysis

RENEWS: 6/30/2024

Introduction

This memorandum reports the findings of a trip generation analysis and parking analysis related to a proposed Senior Care Facility project, located at 3950 SW Laurelwood Avenue in Beaverton, Oregon. The proposed project will include repurposing an existing single-family detached house as a senior care facility with a legal capacity to accommodate up to 15 senior residents.

The purpose of this memorandum is to examine the projected trip generation of the site with the proposed project in place during the morning peak hour, evening peak hour, and average weekday. The trip generation analysis is intended to determine if the project exceeds the City of Beaverton's trip generation thresholds for requiring a Traffic Impact Analysis (TIA). In addition, a parking analysis was conducted to evaluate adequacy of parking opportunities to accommodate operations of the proposed facility.

Detailed information on trip generation and parking generation calculations as well as supporting materials are included as an attachment to this memorandum.

Location Description

Project Site Description

The subject site is located north of SW Brentwood Street and east of SW Laurelwood Avenue in Beaverton, Oregon. The site consists of a single tax lot (lot 1S112CC-03900), which encompasses an approximate total of 0.46 acres. The site is currently developed with one single-family detached house with a two-car garage, a wide driveway capable to accommodating up to three vehicles, and additional parking opportunities along the edge of the front yard.

The project site is located in a predominantly residential area of the City of Beaverton. The site is surrounded by the Valley Community Presbyterian Church immediately to the south, The Broadmoor Manor Apartments to the southeast, and single-family houses in all other directions.

Vicinity Roadways

The proposed development is adjacent to the nearby roadways of SW Laurelwood Avenue and SW Brentwood Street. Table 1 provides a description of these roadways within the immediate site vicinity.

Table 1: Vicinity Roadway Descriptions

Street Name	Jurisdiction	Functional Classification	Speed (MPH)	On-Street Parking	Curbs & Sidewalks	Bicycle Lanes
SW Laurelwood Avenue	City of Beaverton	Neighborhood Route	30	Partially Permitted (approx. 80 ft south of Brentwood St)	Partial Both Sides	None
SW Brentwood Street	Washington County	Neighborhood Route	25	Permitted Both Sides	Partial Both Sides	None

Notes: Functional Classification and Jurisdiction based on City of Beaverton TSP/Online Interactive Map.

Figure 1 below presents an aerial image of the nearby vicinity with the project site outlined in yellow.

Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)

Trip Generation Analysis

The proposed project will repurpose an existing single-family house as a senior care facility with a legal capacity to accommodate up to 15 senior tenants. Note in actuality the facility will have 12 bedrooms and will likely only serve 12 senior tenants at a time (one resident per room).

To estimate the number of trips that are currently and will be generated by the site, trip rates from the *Trip Generation Manual*[1] were used. Specifically, data from land use codes 210, *Single-Family Detached Housing*, based on the number of dwelling units and 254, *Assisted Living*, based on the number of beds were used to estimate the site's existing and proposed trip generation, respectively.

The trip generation calculations show that the proposed project is expected to generate an additional 2 morning peak hour trips, 3 evening peak hour trips, and 30 average weekday trips relative to the site under existing conditions. The trip generation estimates are summarized in Table 2. Detailed trip generation calculations are included as an attachment to this memorandum

Table 2: Trip Generation Summary

	ITE Code	Size	Morning Peak Hour			Evening Peak Hour			Weekday Total
			Enter	Exit	Total	Enter	Exit	Total	
Existing Conditions									
Single-Family Detached Housing	210	1 unit	0	1	1	1	0	1	10
Proposed Conditions									
Assisted Living	254	15 beds	2	1	3	2	2	4	40
Net Change in Trip Generation									
Net New Trips			**2**	**0**	**2**	**1**	**2**	**3**	**30**

Per the City of Beaverton's Development Code Section 60.55.20.2 Analysis Threshold, "*A Traffic Impact Analysis is required when the proposed land use change or development will generate 300 vehicles or more per day (vpd) in average weekday trips as determined by the City Engineer*." Since the proposed project is projected to generate less than 300 average weekday trips over the existing site conditions, the threshold for requiring a TIA is not met.

[1] Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.

Parking Analysis

Parking Generation

As previously described, the proposed senior care facility will have the legal capacity to accommodate up to 15 senior tenants; however, in actuality the facility will have 12 bedrooms and will likely only serve 12 senior tenants at a time. The peak parking demand that will be generated as a result of the proposed facility was estimated using rates from the manual *Parking Generation Manual*, 5th Edition[2]. Data from land use code 254, *Assisted Living*, was used to estimate peak period parking generation of the proposed use based on the number of occupied beds.

The projected peak parking demand estimates for the proposed development are shown in Table 3. Note that two analysis scenarios were reviewed: parking demand associated with the legal tenant capacity of the facility and the actual tenant capacity of the facility based on the number of available bedrooms. Based on the legal tenant capacity of the facility, the proposed use is projected to generate a peak parking demand of 6 vehicles; however, it is expected that the facility will generate an actual peak parking demand of 5 vehicles since the facility will only have 12 bedrooms with one resident per room. Detailed parking generation calculations are included as an attachment to this memorandum.

Table 3: Parking Generation Summary

	ITE Code	Size	Average Peak Demand
Legal Tenant Capacity			
Assisted Living	254	15 occupied beds	6
Actual Tenant Capacity (Based on Number of Bedrooms)			
Assisted Living	254	12 occupied beds	5

As described previously, the existing on-site house has a two-car garage, a wide driveway capable to accommodating up to three vehicles, and additional parking opportunities along the edge of the front yard. When considering the projected peak parking demand generated by a facility with a capacity to serve up to 12 senior residents, adequate on-site parking spaces are available.

Note that the aforementioned parking demand projections may be conservative since the proposed use will operate with 2 caregivers at any time per day (i.e. 2 employees), residents will not operate personal vehicles, there will generally be 1 resident guest per weekday (2 resident guests per Saturday/Sunday), and a hospice nurse who visits 3 days per week.

Furthermore, the project site is located adjacent to/near bus stops which serve three TriMet bus lines: *#54 – Beaverton-Hillsdale Hwy*, *#55 – Hamilton*, and *#61 – Marquam Hill/Beaverton*. A summarized description of each transit line is shown in Table 4.

[2] Institute of Transportation Engineers (ITE), *Parking Generation Manual*, 5th Edition, 2019.

Table 4: Transit Line Descriptions

Transit Line (TriMet)	Service Area	Service Time			Typical Headways (Minutes)	Nearest Stops
		Day	To	From		
Bus Line #54 - Beaverton-Hillsdale Hwy	Beaverton Transit Center, Hillsdale, Portland City Center	**Wk**	**6:00 AM**	**12:30 AM**	**30 to 60**	SW Laurelwood Avenue at SW Beaverton-Hillsdale Highway
		Sat	**8:05 AM**	**12:30 AM**	**30 to 60**	
		Sun	**8:05 AM**	**12:30 AM**	**30 to 60**	
Bus Line #55 - Hamilton	East Beaverton and Portland City Center	Wk	8:00 AM (3:20 PM)	8:40 AM (6:00 PM)	(110)	SW Laurelwood Avenue at SW Brentwood Street
		Sat	-	-	-	
		Sun	-	-	-	
Bus Line #61 - Marquam Hill /Beaverton	Beaverton Transit Center, Hillsdale, Marquam Hill	Wk	5:10 AM (2:10 PM)	8:40 AM (7:10 PM)	15 to 65 (20 to 55)	SW Laurelwood Avenue at SW Laurel Street, adjacent to a TriMet Park&Ride
		Sat	-	-	-	
		Sun	-	-	-	

BOLDED *text indicates frequent service.*

Additional Parking Options

Although not expected to occur, in the event parking demand of the site exceeds available on-site parking additional locations to accommodate any excess demand generated by the proposed use are available. These opportunities include the following:

- On-street parking along both sides of SW Brentwood Street.
- On-street parking along the east side of SW Laurelwood Avenue (between approximately 80 feet south of SW Brentwood Street and the TriMet Park & Ride).
- TriMet Park & Ride located approximately 550 feet south of the project site.

Alternative Transportation Strategies

No specific transportation demand management strategies are currently being considered. However, the proposed senior care facility may consider the following to mitigate any potential parking demand issues that could occur:

- The care facility could implement a visitor reservation system in order to moderate the number of visitors to the facility per day and coordinate time of day visitations. A check-in system for allowing visitors to enter the facility is already in place, particularly due to the need to prevent the spread of COVID-19 to residents.

- If necessary, the senior care facility could coordinate a parking agreement with the Valley Community Presbyterian Church to the south of the site.

Conclusions

The proposed senior care facility is projected to generate an additional 2 morning peak hour trips, 3 evening peak hour trips, and 30 average weekday trips relative to the site under existing conditions. According to City of Beaverton's Development Code Section 60.55.20.2, the proposed project is not projected to trigger the City's average daily trip generation threshold for requiring a full Traffic Impact Analysis. Therefore, the preparation of this trip generation analysis is sufficient to report the minimal impacts of the proposed development to the transportation system.

The proposed senior care facility is projected to generate a peak parking demand of 5 vehicles, based on the assumption the facility will only 12 senior residents, or 1 resident per bedroom. The existing on-site house has a two-car garage, a wide driveway capable to accommodating up to three vehicles, and additional parking opportunities along the edge of the front yard. Therefore, adequate on-site parking spaces are available. Note that if excess parking demand issues occur, the following may be considered by the care facility:

- The care facility could implement a visitor reservation system in order to moderate the number of visitors to the facility per day and coordinate time of day visitations. A check-in system for allowing visitors to enter the facility is already in place, particularly due to the need to prevent the spread of COVID-19 to residents.
- If necessary, the senior care facility could coordinate a parking agreement with the Valley Community Presbyterian Church to the south of the site.

If you have any questions or concerns regarding this analysis or need further assistance, please don't hesitate to contact us.

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use:	Single-Family Detached Housing
Land Use Code:	210
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	Dwelling Units
Trip Type:	Vehicle
Variable Quantity:	1

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

AM PEAK HOUR

Trip Rate: 0.7

	Enter	Exit	Total
Directional Split	26%	74%	
Trip Ends	0	1	1

PM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	1	0	1

WEEKDAY

Trip Rate: 9.43

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	5	5	10

SATURDAY

Trip Rate: 9.48

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	5	5	10

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use:	Assisted Living
Land Use Code:	254
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	Beds
Trip Type:	Vehicle
Variable Quantity:	15

AM PEAK HOUR

Trip Rate: 0.18

	Enter	Exit	Total
Directional Split	60%	40%	
Trip Ends	2	1	3

PM PEAK HOUR

Trip Rate: 0.24

	Enter	Exit	Total
Directional Split	39%	61%	
Trip Ends	2	2	4

WEEKDAY

Trip Rate: 2.60

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	20	20	40

SATURDAY

Trip Rate: 2.93

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	22	22	44

PARKING GENERATION CALCULATIONS
Actual Capacity

Land Use:	Assisted Living
Land Use Code:	254
On a:	Weekday (Monday - Friday)
Setting/Location:	General Urban/Suburban
Variable:	Occupied Beds
Variable Value:	12

WEEKDAY

Peak Period	11:00 AM - 3:00 PM	
Number of Study Sites	10	
Avg. Size of Study Sites	102	occupied beds
Avg. Peak Period Parking Demand	0.39	veh. per occ. bed
Standard Deviation	0.11	
Coefficient of Variation	28%	
Range	0.27 - 0.61	veh. per occ. bed
85th Percentile Rate:	0.58	veh. per occ. bed
33rd Percentile Rate:	0.33	veh. per occ. bed

Peak Parking Demand	**5**

Source: *Parking Generation Manual*, 5th Edition

PARKING GENERATION CALCULATIONS
Legal Capacity

Land Use:	Assisted Living
Land Use Code:	254
On a:	Weekday (Monday - Friday)
Setting/Location:	General Urban/Suburban
Variable:	Occupied Beds
Variable Value:	15

WEEKDAY

Peak Period	11:00 AM - 3:00 PM	
Number of Study Sites	10	
Avg. Size of Study Sites	102	occupied beds
Avg. Peak Period Parking Demand	0.39	veh. per occ. bed
Standard Deviation	0.11	
Coefficient of Variation	28%	
Range	0.27 - 0.61	veh. per occ. bed
85th Percentile Rate:	0.58	veh. per occ. bed
33rd Percentile Rate:	0.33	veh. per occ. bed

Peak Parking Demand	**6**

Source: *Parking Generation Manual* , 5th Edition