

TECHNICAL MEMORANDUM

DATE: *Wednesday, March 30, 2022*

TO: *Mark Gross - Tuscan Village*

CC: *Tony Nigro - Tuscan Village*

FROM: *Andrew S. Hill, Director of Consulting Services – DESMAN, Inc.*

PROJECT: *Tuscan Village Redevelopment*

PROJECT #: *20-16118.00-3*

RE: *February 2022 South Village and Phase 1 Central Village Shared Parking Analysis*

DEVELOPMENT PROGRAM

Working off the most recent development plan, DESMAN developed an analysis of parking demand and supply for the South Village and Phase 1 of the Central Village. The South Village includes Buildings 100, 200, 300, 400, 500, 520, 600, 700, 800, 900, 1100, and 1400. Phase 1 of the Central Village includes Buildings 1000, 1200, 2000 and 3000. The development program included in this analysis consists of:

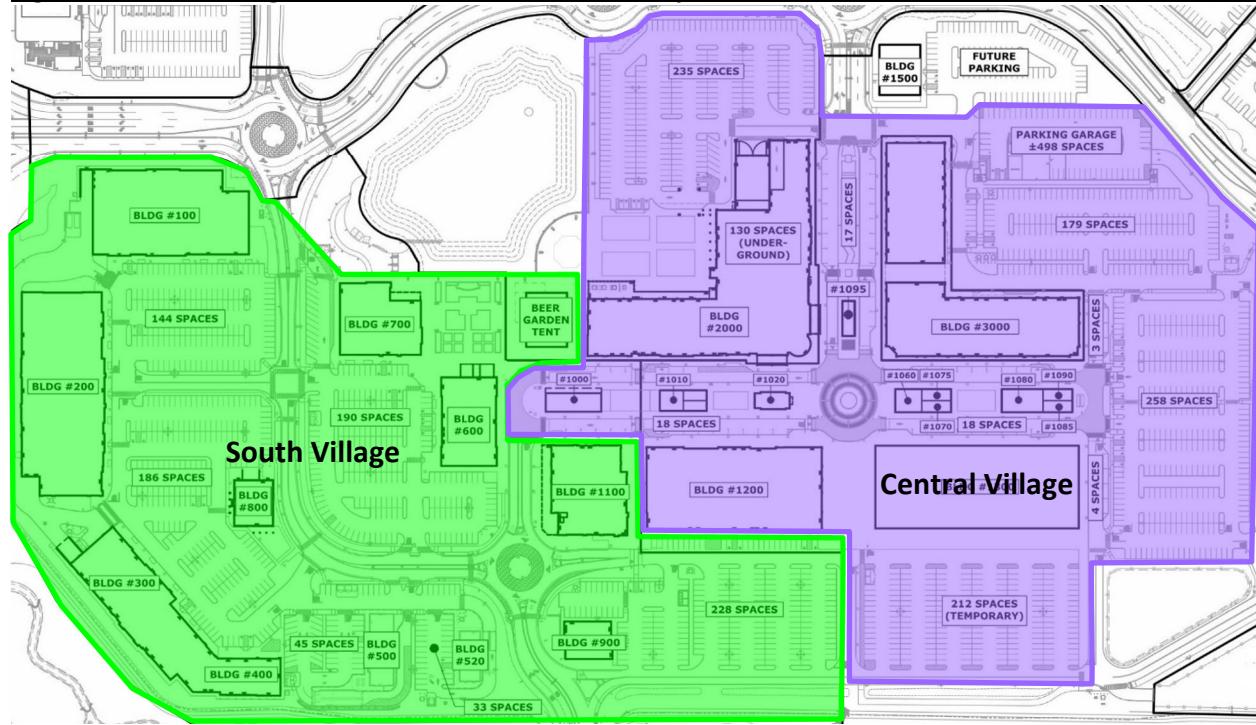
- 188,278 square feet (Gross Leasable Area¹) of soft goods retail;
- 2,494 square feet (Gross Leasable Area) of specialty grocery (e.g., Tuscan Market);
- 9,285 square feet (Gross Floor Area) of fine/casual dining equating to 198 indoor seats and 60 outdoor seats;
- 45,053 square feet (Gross Floor Area) of fast/casual dining equating to 981 indoor seats and 567 outdoor seats;
- 18,568 square feet (Gross Floor Area) of café/take-out restaurant equating to 388 indoor seats and 134 outdoor seats;
- 38,015 square feet (Gross Leasable Area) of furniture or home furnishings retail;
- A 200-seat Seasonal Beer Garden;
- A 25,000 square foot (Gross Leasable Area) lifestyle fitness center;
- 230 residential apartments;
- 70 residential condominiums;
- 69,341 square feet (Gross Floor Area) of general office space;
- 3,507 square feet (Gross Floor Area) of bank space;
- 165 hotel rooms;
- A banquet complex with an indoor seating capacity of up to 300 persons and an outdoor seating capacity of up to 200 persons.

¹ Both the Urban Land Institute (ULI) and the Institute of Transportation Engineers (ITE) use Gross Leasable Area (i.e. Gross Floor Area minus Common Space) as the metric for measuring parking demand for retail, entertainment, and other commercial non-office land uses.

- 16,451 square feet (Gross Floor Area) of common area;
- 2,398 total parking spaces.

There is a total of 826 spaces in the South Village contained in six shared surface parking fields. In Phase 1 of the Central Village, there are five shared lots, one underground garage, one above-grade parking structure, and a handful of on-street parking areas, as shown in **Figure 1**, providing a total of 1,572 parking spaces to support the Central Village buildings². Combined, the South Village and Central Village developments included in this analysis share a total parking supply of 2,398 spaces.

Figure 1: Tuscan Village Site Plan Germane to this Analysis



SHARED USE METHODOLOGY

At the request of Tuscan Brands, DESMAN prepared the following Shared Parking model specific to the subject development. Shared Parking is a methodology for calculating the parking demands of a proposed project developed by the Urban Land Institute (ULI) in collaboration with the Institute of Transportation Engineers (ITE) and the International Council of Shopping Centers (ICSC). This methodology is a departure from the standard zoning ordinance method of calculating required parking which is to apply a parking demand ratio (or parking requirement per local code or ordinance) to each component within a project, sum the total of all demands and build against this figure. This traditional methodology treats parking demand as a fixed, unwavering phenomenon and, as a result, often results in the provision of parking supply greater than the true need of the development. This methodology allows the planner to accurately determine the need for the development as an organic whole, rather than an assembly of disparate parts.

² The 130-space underground garage beneath Building 2000 is reserved exclusively for condominium tenants and their guests and 322 of the 498 spaces in the above-grade parking structure next to Building 3000 are reserved for apartment tenants and their guests.

The result is provision of a parking supply to support the project which is adequate to meet the project's needs without building excess parking spaces.

Shared Parking models are comprised of industry standard base parking demand ratios, adjusted to reflect for variations in demand specific to each project's composition and locality, as well as fluctuations in demand according to time of day and year. Base parking demand ratios are developed through the long-term study of stand-alone land uses (i.e. office buildings, retail stores, hotel, etc.) with their own dedicated parking facilities. Researchers perform occupancy counts at different times of day, different days of the week, and different times of the year, to isolate the busiest hour of the busiest weekday and/or weekend day annually.

Table 1: Base Parking Demand Ratios

Land Use	User Group	Weekday	Weekend	Unit	Source
Standard Retail	Customer	2.90	3.20	/ksf GLA	Shared Parking: 3rd Edition . Washington DC: ULI-The Urban Land Institute , 2020, p.16
	Employee	0.70	0.80	/ksf GLA	Shared Parking: 3rd Edition . Washington DC: ULI-The Urban Land Institute , 2020, p.16
Specialty Grocery	Customer	3.50	3.70	/ksf GLA	DESMAN Inc. (proprietary information from 14 Trader Joes and Whole Foods, 2003-2006).
	Employee	0.60	0.50	/ksf GLA	DESMAN Inc. (proprietary information from 14 Trader Joes and Whole Foods, 2003-2006).
Fine/Casual Dining	Customer (indoors)	0.73	0.54	/indoor seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.717-718
	Customer (outdoors)	0.73	0.54	/outdoor seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.717-718
	Employee	0.13	0.09	/seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.717-718
Fast Casual Dining	Customer (indoors)	0.49	0.47	/indoor seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.734-735
	Customer (outdoors)	0.49	0.47	/outdoor seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.734-735
	Employee	0.09	0.08	/seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.734-735
Café/Take Out	Customer (indoors)	0.52	0.58	/indoor seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.764-765
	Customer (outdoors)	0.52	0.58	/outdoor seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.764-765
Furniture/Furnishings	Employee	0.09	0.10	/seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.764-765
	Customer	0.77	1.42	/ksf GFA	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.678-679
Seasonal Beer Garden	Employee	0.07	0.16	/ksf GFA	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.678-679
	Customer	0.52	0.58	/seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.717-718
Lifestyle/Fitness	Employee	0.09	0.10	/seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.717-718
	Customer	6.60	5.50	/ksf GLA	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
Active Entertainment	Employee	0.40	0.25	/ksf GLA	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
	Customer	5.50	6.00	/ksf GLA	DESMAN Inc (proprietary information from Kings [2005], Funny Bone Comedy Club, Great Escape Room, Ace Ping Pong Bar, Mind Trek VR Arcade, Fight Club Dart Bar [2016-2018])
Residential, Suburban	Employees	1.25	1.50	/ksf GLA	
	1-Bedroom	0.90	0.90	/unit	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
	2-Bedroom	1.65	1.65	/unit	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
	3-Bedroom	2.50	2.50	/unit	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
	Condominium	1.85	1.85	/unit	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
General Office	Guest	0.10	0.10	/unit	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
	Visitor	0.30	0.03	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI-The Urban Land Institute , 2020, p.16
Medical Office Building	Employee	3.50	0.35	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI-The Urban Land Institute , 2020, p.16
	Visitor	3.00	0.00	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
Bank	Employee	1.60	0.00	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
	Visitor	3.50	3.00	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI-The Urban Land Institute , 2020, p.15
Hotel	Employee	2.50	1.75	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI-The Urban Land Institute , 2020, p.16
	Visitor	1.00	1.00	/room	Shared Parking: 3rd Edition . Washington DC: ULI-The Urban Land Institute , 2020, p.16
Banquet Facilities	Employee	0.15	0.15	/room	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute , 2020, p.16
	Customer (indoors)	0.54	0.73	/indoor seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.717-718
	Customer (outdoors)	0.54	0.73	/outdoor seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.717-718
	Employee	0.09	0.13	/seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers , 2019, p.717-718

Once the peak hour is isolated, researchers divide the number of vehicles parked by the key driving element in each land use, such as the number of hotel rooms or total gross leasable square footage of the building. This division renders a parking demand ratio; the mathematic expression of the number of cars parked at the busiest hour of the busiest day related to the land use's key driver.

The Urban Land Institute (ULI), the Institute of Transportation Engineers (ITE), the International Council of Shopping Center (ICSC), the International Parking Institute (IPI), the National Parking Association (NPA), the American Planning Association (APA) and other agencies gather and consolidate these individual studies into peer-reviewed, statistically reliable resources for application in planning studies, such as this one. DESMAN applied the base demand ratios to the proposed program shown in **Table 1**, above.

Adjustments to base demand ratios can be applied to reflect the actual conditions in the project site. These applied factors included adjustments to reflect choice of transportation mode, internal rates of capture, and other local factors.

Mode adjustments reflect the percentage of users expected to drive themselves to a project, versus arriving by other means. The most recent [2020] American Community Survey (ACS) covering Salem, New Hampshire³ and administered by the US Census Bureau, reported that 83.9% of the local populace drove themselves to work in a personal vehicle; the remainder either carpooled (9.3%), worked from home (5.8%), or walked (0.9%). This is the basis for DESMAN's assumptions regarding mode adjustment specific to the project for employees. Data on mode use by shoppers, diners, tourists and other patrons in Salem is not available, so DESMAN made no adjustment for these users.

Capture adjustments – the percentage of persons already on the project site for one reason, but patronizing another business – is applied so that demand associated with one land use is not credited against another land use during the modeling process. For example, the office worker who goes to Starbucks on break does not generate any new or additional parking demand by getting a latte. If that employee's parking demand is already 'credited' to his office, the capture adjustment to Starbucks assures that his parking demand is NOT associated with the coffee shop, i.e. "double counting" him. Some of these reductions will remain fairly stable, regardless of the day of week or time of day, while others will fluctuate according to time of day or day of the week. Within the proposed project site, DESMAN assumed that the largest 'captive population' would be hotel guests, area employees or project residents who might also patronize retail stores, restaurants, or health clubs onsite without necessarily generating any additional trips or resulting parking demand.

Applied capture assumptions to this model were as follows:

- *Retail*: Fifteen percent (15%) of patrons would be captive within the project on weekdays, decreasing to 10% on weekday evenings, and 5% on weekends and weekend evenings.
- *Grocery*: Fifteen percent (15%) of patrons would be captive within the project on weekdays, decreasing to 10% on weekday evenings, and 5% on weekends and weekend evenings.
- *Fine/Casual, Fast Casual and Café/Take-Out Restaurants*: Fifteen percent (15%) of patrons would be captive within the project on weekdays, decreasing to 10% on weekday evenings, and 5% on weekends and weekend evenings.
- *Seasonal Beer Garden*: Five percent (5%) of patrons would be captive within the project on weekdays, weekends, and evenings.
- *Lifestyle Fitness Center*: Twenty percent (20%) of patrons would be captive within the project on weekdays, decreasing to 5% on weekday evenings, weekends and weekend evenings.
- *Banquet Space*: Events booked for this venue on the occasional weekday or weekday evenings would be roughly half the size of weekend events. On weekdays, roughly twenty-five percent (25%) of attendees would already be parked on-site as hotel guests; on weekday evening, roughly fifty percent (50%) of event attendees would already be parked as hotel guests. On weekend days, approximately fifty percent (50%) of event attendees would also be hotel guests. On events only scheduled for a weekend evening, only thirty-three percent (33%) of Saturday evening event attendees would be hotel guests.

A summary of applied adjustments to base demand ratios are shown in **Table 2**, next page.

³ Census Tract 1003,01 in Rockingham County, New Hampshire.

Table 2: Applied Mode and Capture Adjustments

WEEKDAYS												
		DAYTIME (6:00 AM - 4:59 PM)					EVENING (5:00 PM - 12:00 AM)					
Land Use	User Group	Base	Modal	Capture	Local	Project	Base	Modal	Capture	Local	Project	
Standard Retail	Customer	2.90	1.00	0.85	0.98	2.42	/ksf GLA	Standard Retail	Customer	2.90	1.00	0.90
	Employee	0.70	0.88	1.00	0.98	0.60	/ksf GLA		Employee	0.70	0.88	1.00
Specialty Grocery	Customer	3.50	1.00	0.85	0.98	2.92	/ksf GLA	Specialty Grocery	Customer	3.50	1.00	0.90
	Employee	0.60	0.88	1.00	0.98	0.52	/ksf GLA		Employee	0.60	0.88	1.00
Fine/Casual Dining	Customer (indoors)	0.73	1.00	0.85	0.98	0.61	/indoor seat	Fine/Casual Dining	Customer (indoors)	0.73	1.00	0.90
	Customer (outdoors)	0.73	1.00	0.85	0.98	0.61	/outdoor seat		Customer (outdoors)	0.73	1.00	0.90
	Employee	0.13	0.88	1.00	0.98	0.11	/seat		Employee	0.13	0.88	1.00
Fast Casual Dining	Customer (indoors)	0.49	1.00	0.85	0.98	0.41	/indoor seat	Fast Casual Dining	Customer (indoors)	0.49	1.00	0.90
	Customer (outdoors)	0.49	1.00	0.85	0.98	0.41	/outdoor seat		Customer (outdoors)	0.49	1.00	0.90
	Employee	0.09	0.88	1.00	0.98	0.08	/seat		Employee	0.09	0.88	1.00
Café/Take Out	Customer (indoors)	0.52	1.00	0.85	0.98	0.43	/indoor seat	Café/Take Out	Customer (indoors)	0.52	1.00	0.90
	Customer (outdoors)	0.52	1.00	0.85	0.98	0.43	/outdoor seat		Customer (outdoors)	0.52	1.00	0.90
	Employee	0.09	0.88	1.00	0.98	0.08	/seat		Employee	0.09	0.88	1.00
Furniture/Furnishings	Customer	0.77	1.00	1.00	0.98	0.75	/ksf GFA	Furniture/Furnishings	Customer	0.77	1.00	1.00
	Employee	0.07	0.88	1.00	0.98	0.06	/ksf GFA		Employee	0.07	0.88	1.00
Seasonal Beer Garden	Customer	0.52	1.00	0.95	0.98	0.48	/seat	Seasonal Beer Garden	Customer	0.52	1.00	0.95
	Employee	0.09	0.88	1.00	0.98	0.08	/seat		Employee	0.09	0.88	1.00
Lifestyle/Fitness	Customer	6.60	1.00	0.80	0.98	5.17	/ksf GLA	Lifestyle/Fitness	Customer	6.60	1.00	0.95
	Employee	0.40	0.88	1.00	0.98	0.34	/ksf GLA		Employee	0.40	0.88	1.00
Active Entertainment	Customer	5.50	1.00	0.85	0.98	4.58	/ksf GLA	Active Entertainment	Customer	5.50	1.00	0.90
	Employees	1.25	0.88	1.00	0.98	1.08	/ksf GLA		Employees	1.25	0.88	1.00
Residential, Suburban	1-Bedroom	0.90	1.00	1.00	0.98	0.88	/unit	Residential, Suburban	1-Bedroom	0.90	1.00	1.00
	2-Bedroom	1.65	1.00	1.00	0.98	1.62	/unit		2-Bedroom	1.65	1.00	1.00
	3-Bedroom	2.50	1.00	1.00	0.98	2.45	/unit		3-Bedroom	2.50	1.00	1.00
	Condominium	1.85	1.00	1.00	0.98	1.81	/unit		Condominium	1.85	1.00	1.00
	Guest	0.10	1.00	1.00	0.98	0.10	/unit		Guest	0.10	1.00	1.00
General Office	Visitor	0.30	1.00	1.00	0.98	0.29	/ksf GFA	General Office	Visitor	0.30	1.00	1.00
	Employee	3.50	0.88	1.00	0.98	3.02	/ksf GFA		Employee	3.50	0.88	1.00
Medical Office Building	Visitor	3.00	1.00	1.00	0.98	2.94	/ksf GFA	Medical Office Building	Visitor	3.00	1.00	1.00
	Employee	1.60	0.88	1.00	0.98	1.38	/ksf GFA		Employee	1.60	0.88	1.00
Bank	Visitor	3.50	1.00	0.95	0.98	3.26	/ksf GFA	Bank	Visitor	3.50	1.00	0.95
	Employee	2.50	0.88	1.00	0.98	2.16	/ksf GFA		Employee	2.50	0.88	1.00
Hotel	Visitor	1.00	1.00	1.00	0.98	0.98	/room	Hotel	Visitor	1.00	1.00	1.00
	Employee	0.15	0.88	1.00	0.98	0.13	/room		Employee	0.15	0.88	1.00
Banquet Facilities	Customer (indoors)	0.54	1.00	0.75	0.98	0.40	/indoor seat	Banquet Facilities	Customer (indoors)	0.54	1.00	0.50
	Customer (outdoors)	0.54	1.00	0.75	0.98	0.40	/outdoor seat		Customer (outdoors)	0.54	1.00	0.50
	Employee	0.09	0.88	1.00	0.98	0.08	/seat		Employee	0.09	0.88	1.00
WEEKENDS												
		DAYTIME (6:00 AM - 4:59 PM)					EVENING (5:00 PM - 12:00 AM)					
Land Use	User Group	Base	Modal	Capture	Local	Project	Base	Modal	Capture	Local	Project	
Standard Retail	Customer	3.20	1.00	0.95	0.95	2.89	/ksf GLA	Standard Retail	Customer	3.20	1.00	0.95
	Employee	0.80	0.88	1.00	0.95	0.67	/ksf GLA		Employee	0.80	0.88	1.00
Specialty Grocery	Customer	3.70	1.00	0.95	0.95	3.34	/ksf GLA	Specialty Grocery	Customer	3.70	1.00	0.95
	Employee	0.50	0.88	1.00	0.95	0.42	/ksf GLA		Employee	0.50	0.88	1.00
Fine/Casual Dining	Customer (indoors)	0.54	1.00	0.95	0.95	0.49	/indoor seat	Fine/Casual Dining	Customer (indoors)	0.54	1.00	0.95
	Customer (outdoors)	0.54	1.00	0.95	0.95	0.49	/outdoor seat		Customer (outdoors)	0.54	1.00	0.95
	Employee	0.09	0.88	1.00	0.95	0.08	/seat		Employee	0.09	0.88	1.00
Fast Casual Dining	Customer (indoors)	0.47	1.00	0.95	0.95	0.42	/indoor seat	Fast Casual Dining	Customer (indoors)	0.47	1.00	0.95
	Customer (outdoors)	0.47	1.00	0.95	0.95	0.42	/outdoor seat		Customer (outdoors)	0.47	1.00	0.95
	Employee	0.08	0.88	1.00	0.95	0.07	/seat		Employee	0.08	0.88	1.00
Café/Take Out	Customer (indoors)	0.58	1.00	0.95	0.95	0.52	/indoor seat	Café/Take Out	Customer (indoors)	0.58	1.00	0.95
	Customer (outdoors)	0.58	1.00	0.95	0.95	0.52	/outdoor seat		Customer (outdoors)	0.58	1.00	0.95
	Employee	0.10	0.88	1.00	0.95	0.08	/seat		Employee	0.10	0.88	1.00
Furniture/Furnishings	Customer	1.42	1.00	1.00	0.95	1.35	/ksf GFA	Furniture/Furnishings	Customer	1.42	1.00	1.00
	Employee	0.16	0.88	1.00	0.95	0.13	/ksf GFA		Employee	0.16	0.88	1.00
Seasonal Beer Garden	Customer	0.58	1.00	0.95	0.95	0.52	/seat	Seasonal Beer Garden	Customer	0.58	1.00	0.95
	Employee	0.10	0.88	1.00	0.95	0.08	/seat		Employee	0.10	0.88	1.00
Lifestyle/Fitness	Customer	5.50	1.00	0.95	0.95	4.96	/ksf GLA	Lifestyle/Fitness	Customer	5.50	1.00	0.95
	Employee	0.25	0.88	1.00	0.95	0.21	/ksf GLA		Employee	0.25	0.88	1.00
Active Entertainment	Customer	6.00	1.00	0.95	0.95	5.42	/ksf GLA	Active Entertainment	Customer	6.00	1.00	0.95
	Employees	1.50	0.88	1.00	0.95	1.25	/ksf GLA		Employees	1.50	0.88	1.00
Residential, Suburban	1-Bedroom	0.90	1.00	1.00	0.95	0.86	/unit	Residential, Suburban	1-Bedroom	0.90	1.00	1.00
	2-Bedroom	1.65	1.00	1.00	0.95	1.57	/unit		2-Bedroom	1.65	1.00	1.00
	3-Bedroom	2.50	1.00	1.00	0.95	2.38	/unit		3-Bedroom	2.50	1.00	1.00
	Condominium	1.85	1.00	1.00	0.95	1.76	/unit		Condominium	1.85	1.00	1.00
	Guest	0.10	1.00	1.00	0.95	0.10	/unit		Guest	0.10	1.00	1.00
General Office	Visitor	0.03	1.00	1.00	0.95	0.03	/ksf GFA	General Office	Visitor	0.03	1.00	1.00
	Employee	0.35	0.88	1.00	0.95	0.29	/ksf GFA		Employee	0.35	0.88	1.00
Medical Office Building	Visitor	0.00	1.00	1.00	0.95	0.00	/ksf GFA	Medical Office Building	Visitor	0.00	1.00	1.00
	Employee	0.00	0.88	1.00	0.95	0.00	/ksf GFA		Employee	0.00	0.88	1.00
Bank	Visitor	3.00	1.00	0.95	0.95	2.71	/ksf GFA	Bank	Visitor	3.00	1.00	0.95
	Employee	1.75	0.88	1.00	0.95	1.46	/ksf GFA		Employee	1.75	0.88	1.00
Hotel	Visitor	1.00	1.00	1.00	0.95	0.95	/room	Hotel	Visitor	1.00	1.00	1.00
	Employee	0.15	0.88	1.00	0.95	0.13	/room		Employee	0.15	0.88	1.00
Banquet Facilities	Customer (indoors)	0.73	1.00	0.50	0.95	0.35	/indoor seat	Banquet Facilities	Customer (indoors)	0.73	1.00	0.33
	Customer (outdoors)	0.73	1.00	0.50	0.95	0.35	/outdoor seat		Customer (outdoors)	0.73	1.00	0.33
	Employee	0.13	0.88	1.00	0.95	0.11	/seat		Employee	0.13	0.88	1.00

Local adjustments are applied based on an existing, occupied land use program and observed occupancy conditions; they calibrate results further to align them with local dynamics. This process is addressed later in the report.

The final factor comprising the model is the adjustment to reflect for variances for temporal and seasonal *presence*. *Presence* is the expression of parking demand for specific users and land uses according to time of day and time of year. Presence is expressed as a percentage of peak potential demand modified for time of day or year.

For example, the model projects that 5,000 square feet of general retail has a peak parking demand equal up to 15 spaces on a weekday and 19 parking spaces on a weekend. However, this demand is influenced by the hours of operation. At 3:00 AM, a retail store is unlikely to project any parking demand at all. Additionally, parking demand is influenced by the time of year. Traditionally, retail stores are busiest as the winter holidays approach and least busy in January and February, when fewer people shop. Therefore, parking demand associated with a retail store also decreases.

Presence becomes a significant factor in a mixed-use environment like Tuscan Village because it allows different land uses to share the same parking supply. For example, if an office building is placed next to a hotel, summing the peak projected demand of each of the land uses would result in parking supply substantially larger than necessary, as the hotel is largely empty when the office building is occupied and vice versa. However, applying presence factors to the peak demand projections to adjust for hours of operation and use trends, the owner actually needs to provide only a fraction of the spaces needed for the combined land uses to adequately support both the hotel and the office building. The assumption is that demand for the hotel will peak in overnight, while demand for the office space will peak during standard business hours. These presence trends of parking demand for these land uses are complimentary and allow for some sharing of the same spaces, reducing total peak demand.

Variations for time of day and time of year for weekends (Saturdays) were also calculated for Tuscan Village and applied to the model. The majority of presence adjustments were taken from the ULI's **Shared Parking: 3rd Edition**. Presence factors were applied to projections of gross demand and used to generate hourly parking demand projections for a typical weekday and weekend day throughout the year. DESMAN used these projections to isolate the peak hour in each month. The applied presence adjustments for time of year are shown below in **Table 3** on the next page, and time of day presence adjustments are included as **Tables 4** (weekdays) and **5** (weekends) on the following pages.

Note: Neither the Urban Land Institute, the Institute of Transportation Engineers, the American Planning Association, nor the International Council of Shopping Centers have a prescribed methodology for addressing demand associated with outdoor, seasonal seating. As a general rule, in temperate climates in the South and Far West or in settings subject to major seasonal changes in activity such as resort communities, the total combined seating capacity is used. In settings where outdoor seating is only used on a limited basis, it is generally excluded from demand projections.

DESMAN has developed a methodology for addressing this issue based on study of fourteen separate restaurants in the Boston area featuring seasonal outdoor seating as part of a prior engagement. Working with each restaurant, DESMAN analyzed sales receipts to identify the impact of providing outdoor seating had on activity levels, assuming that sales were a reasonable proxy for patron activity, including parking. DESMAN also executed targeted observations of hourly activity at each site on a representative summer weekday and summer weekend day to establish variations in presence according to time of day for indoor and outdoor seating areas. This methodology and associated factors have been applied to our analysis for this project as footnoted on the following pages.

Table 3: Applied Monthly Presence Factors

Land Use	User Group	January	February	March	April	May	June	July	August	September	October	November	December	Holidays	
Standard Retail	Customer	59%	61%	69%	67%	72%	72%	70%	73%	66%	68%	76%	100%	85%	1
	Employee	69%	71%	79%	77%	82%	82%	80%	83%	76%	78%	86%	100%	95%	1
Specialty Grocery	Customer	95%	90%	95%	95%	95%	90%	85%	80%	85%	90%	95%	100%	100%	2
	Employee	100%	100%	100%	100%	100%	95%	90%	90%	95%	95%	100%	100%	100%	2
Fine/Casual Dining	Customer (indoors)	88%	87%	96%	93%	89%	83%	88%	77%	81%	88%	97%	100%	95%	3
	Customer (outdoors)	0%	0%	0%	0%	50%	75%	100%	85%	75%	50%	0%	0%	0%	3
	Employee	88%	87%	100%	95%	100%	96%	95%	98%	91%	94%	92%	95%	75%	4
Fast Casual Dining	Customer (indoors)	86%	86%	95%	93%	79%	65%	47%	47%	58%	72%	98%	100%	95%	3
	Customer (outdoors)	0%	0%	0%	0%	50%	75%	100%	85%	75%	50%	0%	0%	0%	3
	Employee	88%	87%	100%	95%	100%	96%	95%	98%	91%	94%	92%	95%	75%	4
Café/Take Out	Customer (indoors)	88%	88%	99%	94%	86%	71%	54%	59%	67%	77%	96%	97%	100%	3
	Customer (outdoors)	0%	0%	0%	0%	50%	75%	100%	85%	75%	50%	0%	0%	0%	3
	Employee	92%	85%	93%	92%	97%	93%	95%	95%	90%	93%	95%	100%	98%	5
Furniture/Furnishings	Customer	87%	87%	94%	100%	97%	90%	91%	95%	90%	91%	93%	95%	85%	6
	Employee	87%	87%	94%	100%	97%	90%	91%	95%	90%	91%	93%	95%	85%	6
Seasonal Beer Garden	Customer	0%	0%	0%	25%	60%	90%	100%	100%	90%	60%	0%	0%	0%	9
	Employee	0%	0%	0%	25%	60%	90%	100%	100%	90%	60%	0%	0%	0%	9
Lifestyle/Fitness	Customer	100%	95%	85%	70%	65%	65%	65%	70%	80%	85%	85%	100%	95%	1
	Employee	100%	100%	95%	80%	75%	75%	75%	80%	90%	95%	95%	100%	90%	1
Active Entertainment	Customer	84%	86%	98%	99%	100%	91%	94%	96%	92%	98%	96%	90%	95%	7
	Employees	90%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	95%	7
Residential, Suburban	1-Bedroom	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
	2-Bedroom	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
	3-Bedroom	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
	Condominium	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
	Guest	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
General Office	Visitor	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
	Employee	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
Medical Office Building	Visitor	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
	Employee	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
Bank	Visitor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	1
	Employee	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	100%	1
Hotel	Visitor	80%	90%	100%	100%	90%	90%	100%	100%	100%	75%	75%	50%	100%	1
	Employee	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	90%	90%	1
Banquet Facilities	Customer (indoors)	70%	70%	85%	90%	95%	100%	100%	100%	95%	90%	85%	90%	80%	8
	Customer (outdoors)	0%	0%	0%	50%	100%	100%	90%	90%	95%	100%	0%	0%	0%	8
	Employee	85%	85%	85%	90%	95%	100%	100%	100%	100%	95%	90%	90%	85%	8

Notes:

1. Sourced from [ULI's Shared Parking: 3rd Edition](#), 2020, pg. 19
2. Sourced from 2004-2007 sales records at 14 Trader Joes and Whole Foods in MA and RI.
3. Sourced from restaurant sales records for calendar 2008 and reported splits between indoor and outdoor seating for May through October 2018 at 14 Boston-area locations.
4. Sourced from [ITE's Parking Generation: 5th Edition](#), 2019, pg. 810 (Food Services and Drinking Places)
5. Sourced from [ITE's Parking Generation: 5th Edition](#), 2019, pg. 810 (Food and Beverage Stores)
6. Sourced from [ITE's Parking Generation: 5th Edition](#), 2019, pg. 812 (Furniture & Home Furnishings Stores)
7. Sourced from 2004-2006 sales data at 3 Kings locations in MA and two Funny Bone Comedy Clubs, two Great Escape Rooms, and one each: Ace Ping Pong Bar, Mind Trek VR Arcade, Fight Club Dart Bar [2016-2018].
8. Sourced from banquet sales records from five Hyatt facilities in FL, 2012-2013.
9. Sourced from 2015-2018 sales data provided by Harpoon Brewery under NDA.

Table 4: Applied Daily Presence Factors for a Weekday

Land Use	User Group	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00 AM
Standard Retail (Typical)	Customer	1%	5%	15%	35%	65%	85%	95%	100%	95%	90%	85%	90%	90%	90%	80%	50%	30%	10%	0%
	Employee	10%	15%	25%	45%	75%	95%	100%	100%	100%	100%	100%	100%	100%	100%	90%	60%	40%	20%	0%
Standard Retail (December)	Customer	1%	5%	15%	30%	55%	75%	90%	100%	100%	100%	95%	85%	80%	75%	65%	50%	30%	10%	0%
	Employee	10%	15%	25%	45%	75%	95%	100%	100%	100%	100%	100%	100%	100%	100%	90%	60%	40%	20%	0%
Standard Retail (Holidays)	Customer	1%	5%	10%	20%	40%	65%	90%	100%	100%	100%	95%	85%	70%	55%	40%	25%	15%	5%	0%
	Employee	10%	15%	25%	45%	75%	95%	100%	100%	100%	100%	100%	100%	100%	100%	90%	60%	40%	20%	0%
Specialty Grocery	Customer	0%	3%	23%	35%	68%	71%	80%	78%	63%	72%	85%	96%	100%	94%	71%	48%	10%	2%	0%
	Employee	5%	15%	40%	60%	75%	95%	100%	100%	95%	90%	95%	100%	100%	100%	85%	75%	45%	15%	5%
Fine/Casual Dining	Customer (indoors)	0%	0%	0%	0%	15%	40%	75%	75%	65%	40%	50%	75%	95%	100%	100%	100%	95%	75%	25%
	Customer (outdoors)	0%	0%	0%	0%	0%	25%	75%	75%	64%	40%	50%	75%	95%	100%	90%	70%	55%	45%	5%
	Employee	0%	20%	50%	75%	90%	90%	90%	90%	75%	75%	100%	100%	100%	100%	100%	100%	85%	35%	1
Fast Casual Dining	Customer (indoors)	25%	50%	75%	85%	90%	100%	90%	90%	50%	45%	45%	75%	80%	80%	80%	60%	55%	50%	25%
	Customer (outdoors)	0%	0%	0%	0%	25%	50%	100%	75%	50%	25%	15%	35%	50%	90%	95%	65%	45%	30%	15%
	Employee	50%	75%	90%	100%	100%	100%	100%	100%	75%	75%	95%	95%	95%	95%	80%	65%	65%	35%	1
Café/Take Out	Customer (indoors)	5%	10%	20%	30%	55%	85%	100%	100%	90%	60%	55%	60%	85%	80%	50%	30%	20%	10%	5%
	Customer (outdoors)	5%	10%	20%	30%	55%	85%	100%	100%	90%	60%	55%	60%	85%	80%	50%	30%	20%	10%	5%
	Employee	20%	20%	30%	40%	75%	100%	100%	100%	95%	70%	60%	70%	90%	90%	60%	40%	30%	20%	1
Furniture/Furnishings	Customer	5%	10%	20%	40%	60%	80%	90%	90%	90%	85%	80%	70%	75%	85%	100%	85%	60%	10%	1%
	Employee	25%	35%	55%	65%	75%	85%	95%	95%	100%	100%	100%	100%	100%	100%	100%	75%	50%	25%	10%
Seasonal Beer Garden	Customer	0%	0%	0%	0%	0%	15%	30%	55%	50%	40%	45%	80%	100%	90%	75%	50%	25%	0%	0%
	Employee	0%	0%	0%	10%	20%	30%	50%	70%	80%	90%	100%	100%	100%	100%	90%	70%	50%	25%	10%
Lifestyle/Fitness	Customer	70%	40%	40%	70%	70%	80%	60%	70%	70%	70%	80%	90%	100%	90%	80%	70%	35%	10%	0%
	Employee	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	100%	100%	75%	50%	20%	20%	0%	1
Active Entertainment	Customer	0%	0%	0%	0%	5%	10%	15%	20%	30%	30%	50%	75%	95%	100%	100%	95%	95%	75%	25%
	Employees	0%	5%	10%	15%	20%	25%	30%	40%	50%	60%	75%	100%	100%	100%	100%	100%	100%	85%	35%
Residential, Suburban	1-Bedroom	100%	95%	88%	80%	75%	70%	68%	65%	65%	68%	71%	74%	77%	80%	83%	86%	89%	92%	100%
	2-Bedroom	100%	95%	88%	80%	75%	70%	68%	65%	65%	68%	71%	74%	77%	80%	83%	86%	89%	92%	100%
	3-Bedroom	100%	95%	88%	80%	75%	70%	68%	65%	65%	68%	71%	74%	77%	80%	83%	86%	89%	92%	100%
	Condominium	100%	95%	88%	80%	75%	70%	68%	65%	65%	68%	71%	74%	77%	80%	83%	86%	89%	92%	100%
	Guest	0%	10%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	60%	100%	100%	100%	80%
General Office	Visitor	0%	1%	20%	60%	100%	45%	15%	45%	95%	45%	15%	10%	5%	2%	1%	0%	0%	0%	0%
	Employee	3%	15%	50%	90%	100%	100%	85%	85%	95%	95%	85%	60%	25%	15%	5%	3%	1%	0%	0%
Medical Office Building	Visitor	0%	10%	40%	85%	100%	100%	75%	60%	95%	90%	80%	35%	25%	10%	5%	0%	0%	0%	1
	Employee	0%	20%	60%	100%	100%	100%	100%	100%	100%	100%	100%	100%	75%	40%	25%	0%	0%	0%	0%
Bank	Visitor	0%	0%	50%	90%	100%	50%	50%	50%	70%	50%	80%	100%	0%	0%	0%	0%	0%	0%	0%
	Employee	0%	0%	60%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%
Hotel	Visitor	95%	90%	80%	70%	60%	60%	55%	55%	60%	60%	65%	70%	75%	80%	85%	95%	100%	100%	1
	Employee	10%	30%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	20%	20%	20%	20%	10%	5%
Banquet Facilities	Customer (indoors)	0%	0%	0%	0%	25%	50%	95%	90%	70%	50%	30%	85%	95%	100%	95%	80%	70%	60%	40%
	Customer (outdoors)	0%	0%	0%	0%	25%	50%	95%	90%	70%	50%	85%	95%	100%	100%	85%	65%	40%	20%	10%
	Employee	5%	10%	20%	50%	70%	90%	95%	90%	80%	80%	90%	100%	100%	100%	100%	90%	80%	70%	50%

Notes:

1. Sourced from [ULI's Shared Parking: 3rd Edition](#), 2020, pg. 20
2. Sourced from 2004-2007 sales records and time cards at 14 Trader Joes and Whole Foods in MA and RI.
3. Sourced from sales records and time cards at 3 Jordan's Furniture locations in MA & NH, 2014-2015.
4. Sourced from 2004-2006 time cards and head counts at 3 Kings locations in MA + staffing and headcount data from Funny Bone Comedy Club, Great Escape Room, Ace Ping Pong Bar, Mind Trek VR Arcade, Flight Club Dart Bar [2016-2018].
5. Sourced from banquet sales bookings and time cards from five Hyatt facilities in FL, 2012-2013.
6. Sourced from observed splits between indoor and outdoor seating at 14 Boston-area locations observed during July 2008.
7. Sourced from 2015-2018 sales and employee timecard data provided by Harpoon Brewery under NDA.

Table 5: Applied Daily Presence Factors for a Weekend

Land Use	User Group	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00 AM
Standard Retail (Typical)	Customer	1%	5%	15%	35%	65%	85%	95%	100%	95%	90%	85%	90%	90%	90%	80%	50%	30%	10%	0%
Standard Retail (Typical)	Employee	10%	15%	25%	45%	75%	95%	100%	100%	100%	100%	100%	100%	100%	100%	90%	60%	40%	20%	0%
Standard Retail (December)	Customer	0%	0%	0%	0%	35%	63%	75%	82%	74%	68%	57%	58%	73%	89%	100%	100%	100%	88%	50%
Standard Retail (December)	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	10%
Standard Retail (Holidays)	Customer	1%	5%	10%	20%	40%	60%	80%	95%	100%	100%	100%	95%	70%	60%	50%	30%	20%	10%	0%
Standard Retail (Holidays)	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	0%
Specialty Grocery	Customer	0%	12%	37%	53%	87%	100%	95%	89%	84%	82%	75%	66%	58%	44%	21%	18%	3%	1%	0%
Specialty Grocery	Employee	10%	20%	40%	60%	80%	100%	100%	100%	100%	100%	95%	85%	75%	65%	50%	40%	20%	10%	5%
Fine/Casual Dining	Customer (indoors)	0%	0%	0%	0%	15%	50%	55%	45%	45%	45%	45%	45%	60%	90%	95%	100%	90%	90%	50%
Fine/Casual Dining	Customer (outdoors)	0%	0%	0%	0%	0%	5%	50%	55%	35%	25%	35%	35%	50%	90%	100%	85%	60%	40%	20%
Fine/Casual Dining	Employee	0%	20%	30%	60%	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%	100%	85%	50%
Fast Casual Dining	Customer (indoors)	10%	25%	45%	70%	90%	90%	100%	85%	65%	40%	45%	60%	70%	70%	65%	30%	25%	15%	10%
Fast Casual Dining	Customer (outdoors)	0%	0%	10%	20%	50%	55%	65%	45%	35%	20%	35%	50%	80%	100%	90%	70%	50%	30%	10%
Fast Casual Dining	Employee	50%	75%	90%	90%	100%	100%	100%	100%	100%	75%	75%	95%	95%	95%	95%	80%	65%	65%	35%
Café/Take Out	Customer (indoors)	5%	10%	20%	30%	55%	85%	100%	100%	90%	60%	55%	60%	85%	80%	50%	30%	20%	10%	5%
Café/Take Out	Customer (outdoors)	5%	10%	20%	30%	55%	85%	100%	100%	90%	60%	55%	60%	85%	80%	50%	30%	20%	10%	5%
Café/Take Out	Employee	15%	20%	30%	40%	75%	100%	100%	100%	95%	70%	60%	70%	90%	90%	60%	40%	30%	20%	20%
Furniture/Furnishings	Customer	5%	10%	25%	45%	66%	80%	90%	95%	100%	95%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Furniture/Furnishings	Employee	25%	50%	75%	85%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Seasonal Beer Garden	Customer	0%	0%	0%	0%	0%	25%	50%	75%	60%	55%	65%	85%	95%	100%	100%	100%	100%	50%	25%
Seasonal Beer Garden	Employee	0%	0%	0%	15%	30%	60%	80%	80%	85%	90%	95%	100%	100%	100%	100%	100%	75%	50%	25%
Lifestyle/Fitness	Customer	80%	45%	35%	50%	35%	50%	50%	30%	25%	30%	55%	100%	95%	60%	30%	10%	1%	1%	0%
Lifestyle/Fitness	Employee	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	75%	100%	100%	100%	75%	50%	20%	20%	0%
Active Entertainment	Customer	0%	0%	0%	0%	15%	20%	35%	40%	45%	55%	60%	75%	95%	100%	100%	100%	95%	95%	75%
Active Entertainment	Employees	0%	0%	10%	20%	30%	40%	50%	55%	60%	65%	75%	90%	100%	100%	100%	100%	100%	85%	35%
Residential, Suburban	1-Bedroom	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
Residential, Suburban	2-Bedroom	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
Residential, Suburban	3-Bedroom	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
Residential, Suburban	Condominium	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
Residential, Suburban	Guest	0%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	80%	50%
General Office	Visitor	0%	20%	60%	80%	90%	100%	90%	80%	60%	40%	20%	10%	5%	0%	0%	0%	0%	0%	0%
General Office	Employee	0%	20%	60%	80%	90%	100%	90%	80%	60%	40%	20%	10%	5%	0%	0%	0%	0%	0%	0%
Medical Office Building	Visitor	0%	0%	90%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	0%	0%	0%
Medical Office Building	Employee	0%	0%	60%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	0%	0%	0%
Bank	Visitor	0%	0%	25%	40%	75%	100%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bank	Employee	0%	0%	90%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Hotel	Visitor	95%	90%	80%	70%	60%	60%	55%	55%	60%	60%	65%	70%	75%	75%	80%	85%	95%	100%	100%
Hotel	Employee	100%	100%	90%	80%	70%	70%	65%	65%	70%	70%	75%	80%	0%	0%	0%	0%	60%	100%	100%
Banquet Facilities	Customer (indoors)	0%	0%	0%	0%	25%	50%	95%	90%	80%	70%	50%	85%	90%	95%	100%	95%	80%	70%	60%
Banquet Facilities	Customer (outdoors)	0%	0%	0%	0%	25%	50%	95%	90%	80%	85%	90%	95%	100%	100%	95%	80%	60%	30%	15%
Banquet Facilities	Employee	0%	0%	0%	0%	25%	50%	95%	90%	80%	70%	50%	85%	90%	95%	100%	95%	80%	70%	60%

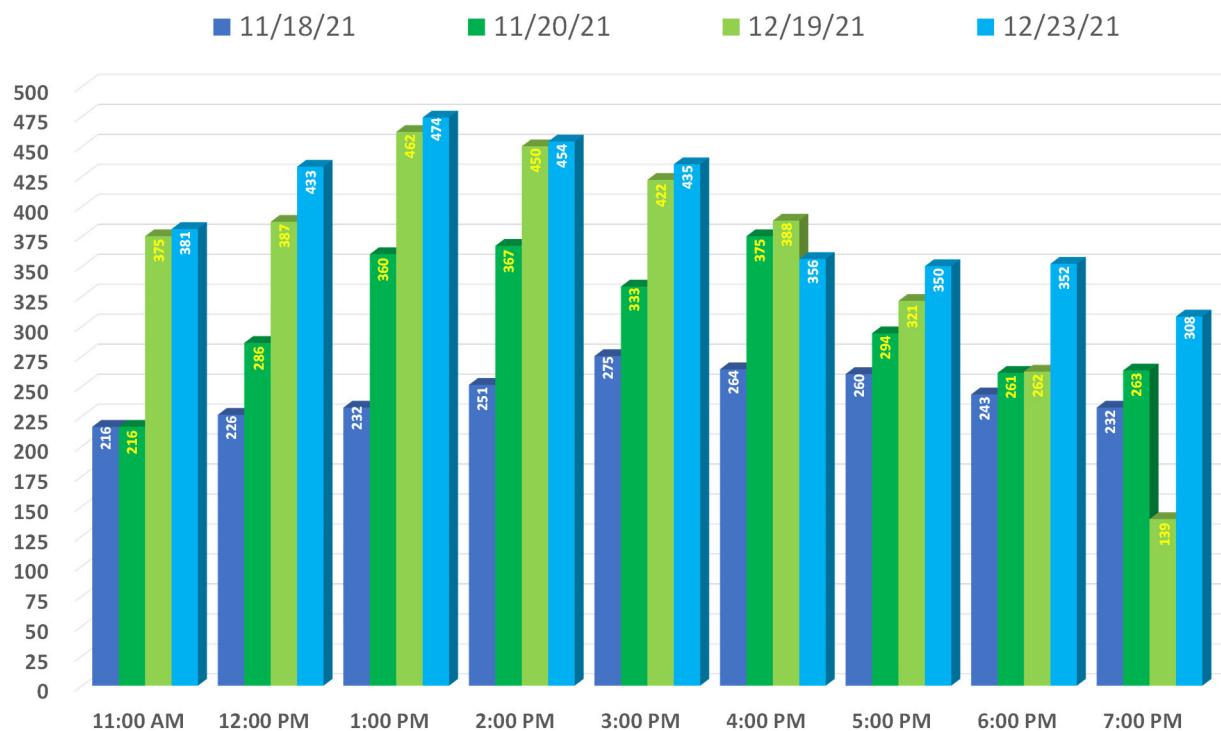
Notes:

1. Sourced from [ULI's Shared Parking: 3rd Edition](#), 2020, pg. 21
2. Sourced from 2004-2007 sales records and time cards at 14 Trader Joes and Whole Foods in MA and RI.
3. Sourced from sales records and time cards at 3 Jordan's Furniture locations in MA & NH, 2014-2015.
4. Sourced from 2004-2006 time cards and head counts at 3 Kings locations in MA + staffing and headcount data from Funny Bone Comedy Club, Great Escape Room, Ace Ping Pong Bar, Mind Trek VR Arcade, Fight Club Dart Bar [2016-2018].
5. Sourced from banquet sales bookings and time cards from five Hyatt facilities in FL, 2012-2013.
6. Sourced from observed splits between indoor and outdoor seating at 14 Boston-area locations observed during July 2008.
7. Sourced from 2015-2018 sales and employee timecard data provided by Harpoon Brewery under NDA.

In projects still in the planning or design stage, adjusting base ratios to reflect mode choice, capture and presence factors completes the process. In projects in development, where one or more phases have been complete, the model can be further calibrated to align with local conditions not addressed by the adjustments for mode choice, capture and presence. This is done by performing field observations, and recording those conditions, inputting the program in place, producing projections, comparing them to field data, and adjusting the model to align with observed occupancy. The result of this process is a more refined, accurate, and project-specific set of projections of future need which result in a more efficient parking supply.

An initial series of hourly parking occupancy counts were performed between 10:00 AM and 9:00 PM on Thursday, November 18, 2021 and again between 10:00 AM and 9:00 PM on Saturday, November 20, 2021. A second set of parking occupancy counts were performed between 10:00 AM and 8:00 PM on Sunday, December 19, 2021 and again on Thursday, December 23, 2021 between 10:00 AM and 7:00 PM. A distilled record of these hourly occupancy levels spanning the period from 11:00 AM to 7:00 PM across all four days is shown below in **Figure 2**.

Figure 2: 2021 Occupancy Count Summary



The active land use program during the November counts in the South Village included:

- 26,450 SF of furniture/furnishings retail in Building 100;
- 25,156 SF of general retail in Building 200;
- 2,815 SF of general retail and a 2,300 SF café/take-out restaurant with 47 indoor seats and 24 outdoor seats in Building 400;
- 3,507 Sf of bank in Building 520;

- 2,494 SF of specialty grocery, a 3,520 SF fast/casual restaurant with 72 indoor seats and 130 outdoor seats, and 7,056 SF of general retail in Building 600;
- 15,248 SF of general retail in Building 700;
- 5,727 SF of fast/casual restaurant with 150 indoor seats and 98 outdoor seats in Building 800;
- 4,935 SF of general retail in Building 900; and –
- 25,000 SF of lifestyle fitness center in Building 1100.

The active land use program during the December counts included as the previously listed land uses plus an additional 15,163 SF of general retail in Building 200.

When calibrating a model (i.e., applying the local adjustment) to align with actual conditions, it is very common for the model to generate demand projections which are greater than actual observed conditions as the base demand ratios are based on an 85th percentile standard; this means that, of all the land uses studied to render the demand ratio, 85% generated demand less than the recommended ratio and only 15% exhibited demand equal to or greater than the demand ratio. In simple terms, this means the base demand ratios are engineered to be inherently conservative and are intended to represent a level of demand which is exceptionally high, not average or typical.

By the same token, it is extremely rare when actual observed conditions exceed model outputs, which would suggest the project is generating a level of demand well above the 85th percentile standard. When this occurs, a consultant is tasked with investigating the nature of variance and determining whether there has been an error in methodology or if the project is simply exceptional relative to the data pool used to generate the demand ratios.

Comparison of the parking occupancy counts conducted in November to parking model outputs using the November land use program indicated that the model was generating peak hour parking demand projections on a November weekday that were 47% **higher** than observed conditions and that the model outputs were, on average 23% higher than actual observed occupancy. Inversely, on a November weekend day, the model outputs were an average of 3% **lower** than observed condition and, in some cases, as much as 26% lower than observed occupancy.

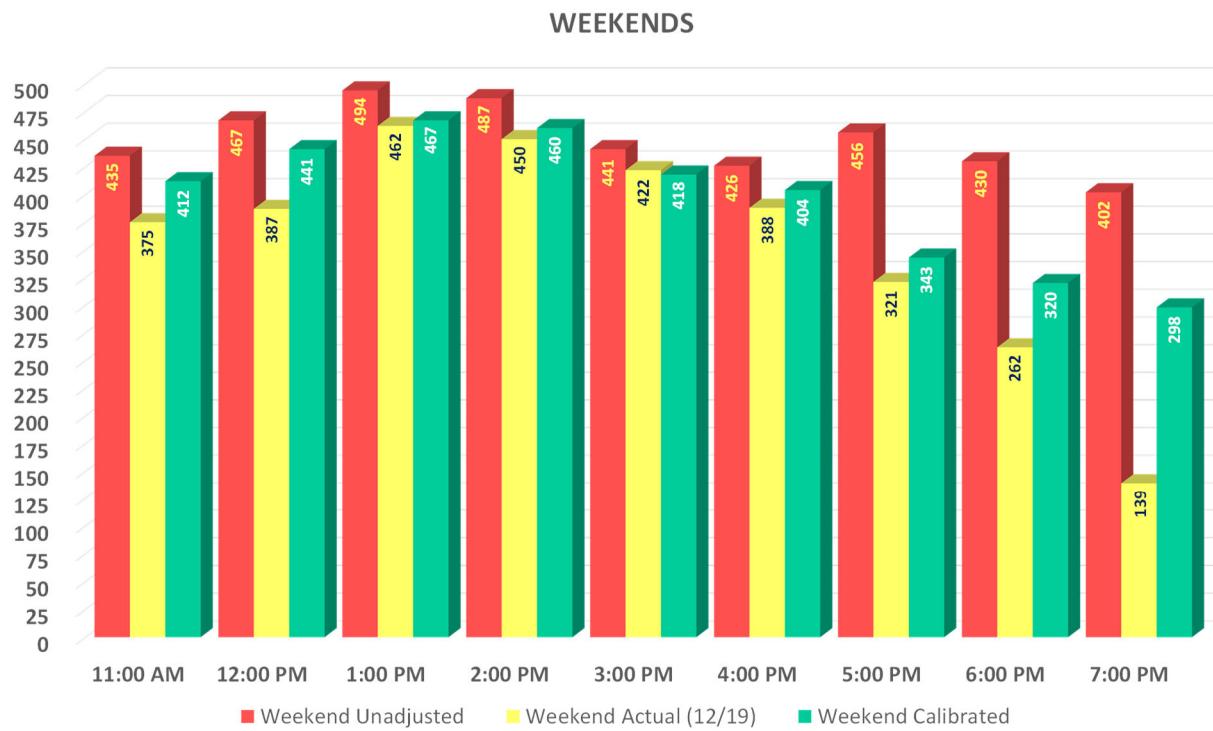
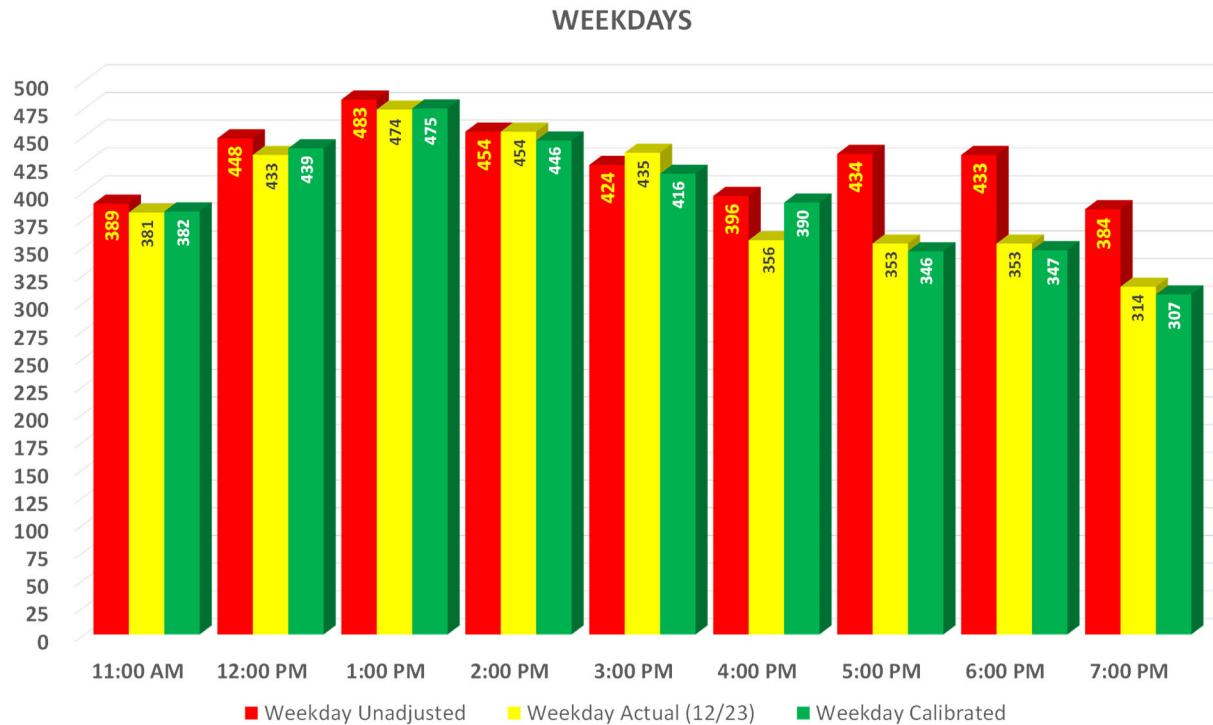
In contrast, comparison of model outputs using the December land use program to actual observed conditions on a December weekday indicate the model was forecasting results that were, on average, 9% higher than actual conditions, but the difference between peak hour projections and actual conditions at the peak hour on a weekday was only 2%, with the model projections being the greater of the two numbers. On weekends in December, the model projections were an average of 40% higher than actual observed conditions, with difference between model projections and actual conditions at the peak hour on a December Saturday being 7%, with the model projections being the greater of the two numbers.

Calibration to align the model with actual observed conditions in December 2021 required the following local adjustments:

- A reduction to base demand ratios of .02 on weekdays (6:00 AM-4:59 PM);
- A reduction to base demand ratios of .185 on weekday evenings (5:00 PM-12:00 AM);
- A reduction to base demand ratios of .05 on weekend days (6:00 AM-4:59 PM); and –
- A reduction to base demand ratios of .25 on weekday evenings (5:00 PM-12:00 AM).

These applied local adjustments are included in Table 2 on page 5 of this report. As shown in **Figure 3**, these adjustments brought model outputs in close alignment with actual observed conditions.

Figure 3: Comparison of Unadjusted and Calibrated Projections to Observed Conditions



PARKING DEMAND PROJECTIONS

The model developed by DESMAN projects parking demand for a typically busy weekday and weekend day between the hours of 6:00 AM and 12:00 AM for each month of the year, as well as the last two weeks of December (shown as “Holidays” in the model). Hourly parking demand projections are presented according to land use and user. DESMAN’s model has the capacity to isolate parking demand projections for the busiest hour of each weekday and weekend day as well.

The following sections illustrate projected gross demand (before application of presence factors) and peak hour demand (factoring in presence) for the proposed program as DESMAN understands it.

SOUTH VILLAGE

The South Village program includes retail, grocery, dining, furniture/furnishings, a beer garden, fitness, and bank land uses as well as 826 parking spaces as shown in **Table 6**.

Table 6: South Village Development Program

Buildings	Standard Retail (sf GLA)	Specialty Grocery (sf GLA)	Fast/Casual Dining (indr sts) (otdr sts) (sf GFA)	Café/Take-Out Dining (indr sts) (otdr sts) (sf GFA)	Furniture/Furnishings (sf GLA)	Seasonal Beer Garden (seats) (sf GFA)	Fitness (sf GLA)	Bank (sf GFA)	Common Area Space (sf GFA)	Parking (spaces)
100	8,039					26,450			1,473	72
200	45,656								550	72
300	15,384									62
400	13,683			67 24 3,552					600	62
500				102 16 5,046				3,507		78
600	7,056	2,494	72 130 3,520						936	95
700	15,248									95
800			150 98 5,727							62
900	4,935								198	114
1100							25,000			114
1400					200					0
SV Subtotal	110,001	2,494	222 228 9,247	169 40	8,598	26,450 200 0	25,000	3,507	3,757	826

The South Village development program generates gross demand for up to 957 spaces on a weekday and 1,053 spaces on a weekend as shown in **Table 7**.

Table 7: South Village Projected Gross Demand

Land Use	User Group	Land Use Data	WEEKDAYS		WEEKDAY EVENINGS		WEEKEND DAYS		WEEKEND EVENINGS	
			Project Ratio	Vehicles	Project Ratio	Vehicles	Project Ratio	Vehicles	Project Ratio	Vehicles
Standard Retail	Customer	110,001 sf GLA	2.42 /ksf GLA	266	2.13 /ksf GLA	234	2.89 /ksf GLA	318	2.28 /ksf GLA	251
	Employee		0.60 /ksf GLA	66	0.50 /ksf GLA	55	0.67 /ksf GLA	74	0.53 /ksf GLA	58
Specialty Grocery	Customer	2,494 sf GLA	2.92 /ksf GLA	7	2.57 /ksf GLA	6	3.34 /ksf GLA	8	2.64 /ksf GLA	7
	Employee		0.52 /ksf GLA	1	0.43 /ksf GLA	1	0.42 /ksf GLA	1	0.33 /ksf GLA	1
Fast Casual Dining	Customer (indoors)	222 indoor seats	0.41 /indoor seat	91	0.36 /indoor seat	80	0.42 /indoor seat	94	0.33 /indoor seat	74
	Customer (outdoors)	228 outdoor seats	0.41 /outdoor seat	93	0.36 /outdoor seat	82	0.42 /outdoor seat	97	0.33 /outdoor seat	76
	Employee		0.08 /seat	35	0.06 /seat	29	0.07 /seat	30	0.05 /seat	24
Café/Take Out	Customer (indoors)	169 indoor seats	0.43 /indoor seat	73	0.38 /indoor seat	64	0.52 /indoor seat	88	0.41 /indoor seat	70
	Customer (outdoors)	40 outdoor seats	0.43 /outdoor seat	17	0.38 /outdoor seat	15	0.52 /outdoor seat	21	0.41 /outdoor seat	17
	Employee		0.08 /seat	16	0.06 /seat	13	0.08 /seat	17	0.07 /seat	14
Furniture/Furnishings	Customer	26,450 sf GLA	0.75 /ksf GFA	20	0.63 /ksf GFA	17	1.35 /ksf GFA	36	1.07 /ksf GFA	28
	Employee		0.06 /ksf GFA	2	0.05 /ksf GFA	1	0.13 /ksf GFA	4	0.11 /ksf GFA	3
Seasonal Beer Garden	Customer	200 seats	0.48 /seat	97	0.40 /seat	81	0.52 /seat	105	0.41 /seat	83
	Employee		0.08 /seat	16	0.06 /seat	13	0.08 /seat	17	0.07 /seat	13
Lifestyle/Fitness	Customer	25,000 sf GLA	5.17 /ksf GLA	129	5.11 /ksf GLA	128	4.96 /ksf GLA	124	3.92 /ksf GLA	98
	Employee		0.34 /ksf GLA	9	0.29 /ksf GLA	7	0.21 /ksf GLA	5	0.17 /ksf GLA	4
Bank	Visitor	3,507 sf GFA	3.26 /ksf GFA	11	2.71 /ksf GFA	10	2.71 /ksf GFA	9	2.14 /ksf GFA	7
	Employee		2.16 /ksf GFA	8	1.79 /ksf GFA	6	1.46 /ksf GFA	5	1.16 /ksf GFA	4
<i>Subtotal Customers and Guests</i>				804		717		900		711
<i>Subtotal Residents and Visitors</i>				0		0		0		0
<i>Subtotal Employees</i>				153		125		153		121
TOTAL				957		842		1,053		832

Adjusting for presence, the projected peak hour demand is actually 670 spaces on weekdays and 665 spaces on weekends, as shown in **Table 8** on the next page.

Application of presence factors reduces gross projected demand for weekdays by 30% (from 957 to 670, a difference of 287 spaces) and 37% on weekends (from 1,053 to 665, a difference of 388 spaces) when compared to the projected peak hour demand.

Table 8: South Village Peak Hour Demand Projections and Adequacy

Land Use	User	Month: Hour:	WEEKDAYS												December 1:00 PM	Holidays 1:00 PM
			January 1:00 PM	February 1:00 PM	March 1:00 PM	April 1:00 PM	May 1:00 PM	June 1:00 PM	July 1:00 PM	August 1:00 PM	September 1:00 PM	October 1:00 PM	November 1:00 PM			
Standard Retail	Customer	157	162	184	178	192	192	186	194	176	181	202	266	226	266	226
	Employee	46	47	52	51	54	54	53	55	50	51	57	66	63		
Specialty Grocery	Customer	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5
	Employee	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fast Casual Dining	Customer (indoors)	70	70	78	76	65	53	38	38	48	48	80	82	78	78	78
	Customer (outdoors)	0	0	0	0	35	52	70	59	52	35	0	0	0	0	0
	Employee	31	30	35	33	35	34	33	34	32	33	32	33	26	26	26
Café/Take Out	Customer (indoors)	64	64	72	69	63	52	39	43	49	56	70	71	73	73	73
	Customer (outdoors)	0	0	0	0	9	13	17	14	13	9	0	0	0	0	0
	Employee	15	14	15	15	16	15	15	15	14	15	15	16	16	16	16
Furniture/Furnishings	Customer	16	16	17	18	17	16	16	17	16	16	17	17	17	15	15
	Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Seasonal Beer Garden	Customer	0	0	0	13	32	48	53	53	48	32	0	0	0	0	0
	Employee	0	0	0	3	7	10	11	11	10	7	0	0	0	0	0
Lifestyle/Fitness	Customer	90	86	77	63	59	59	59	63	72	77	77	90	86	86	86
	Employee	7	7	6	5	5	5	5	5	6	6	6	7	6	6	6
Bank	Visitor	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	Employee	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	<i>Subtotal Customers and Guests</i>	408	409	439	428	483	496	489	491	485	476	457	537	489		
<i>Subtotal Residents and Visitors</i>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Subtotal Employees</i>		110	109	119	118	128	129	128	131	123	123	121	133	120		
TOTAL		518	518	558	546	611	625	617	622	608	599	578	670	609		
Total Supply		826	826	826	826	826	826	826	826	826	826	826	826	826	826	826
Surplus/(Deficit)		308	308	268	280	215	201	209	204	218	227	248	156	217		

Land Use	User	Month: Hour:	WEEKENDS												December 12:00 PM	Holidays 12:00 PM
			January 12:00 PM	February 12:00 PM	March 12:00 PM	April 12:00 PM	May 12:00 PM	June 12:00 PM	July 12:00 PM	August 12:00 PM	September 12:00 PM	October 12:00 PM	November 12:00 PM			
Standard Retail	Customer	178	184	208	202	218	218	211	221	199	205	230	239	216	216	216
	Employee	51	53	58	57	61	61	59	61	56	58	64	74	70		
Specialty Grocery	Customer	7	7	7	7	7	7	6	6	6	7	7	8	8	8	8
	Employee	1	1	1	1	1	1	1	1	1	1	1	1	1		
Fast Casual Dining	Customer (indoors)	81	81	89	87	74	61	44	44	55	68	92	94	89	89	89
	Customer (outdoors)	0	0	0	0	32	47	63	54	47	32	0	0	0		
	Employee	26	26	30	29	30	29	29	27	27	28	28	29	23		
Café/Take Out	Customer (indoors)	77	77	87	83	76	62	48	52	59	68	84	85	88	88	88
	Customer (outdoors)	0	0	0	0	11	16	21	18	16	11	0	0	0		
	Employee	16	14	16	16	16	16	16	15	15	16	16	17	17		
Furniture/Furnishings	Customer	28	28	30	32	31	29	29	31	29	29	30	31	28	28	28
	Employee	3	3	4	4	4	4	4	4	4	4	4	4	3		
Seasonal Beer Garden	Customer	0	0	0	13	32	47	53	53	47	32	0	0	0	0	0
	Employee	0	0	0	3	8	12	14	14	12	8	0	0	0		
Lifestyle/Fitness	Customer	62	59	53	43	40	40	40	43	50	53	53	62	59	59	59
	Employee	3	3	2	2	2	2	2	2	2	2	2	3	2		
Bank	Visitor	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	Employee	5	5	5	5	5	5	5	5	5	5	5	5	4		
	<i>Subtotal Customers and Guests</i>	441	444	482	475	529	535	523	530	516	513	504	527	496		
<i>Subtotal Residents and Visitors</i>		0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Subtotal Employees</i>		105	105	116	117	127	130	130	132	122	122	120	133	120		
TOTAL		546	549	598	592	656	665	653	662	638	635	624	660	616		
Total Supply		826	826	826	826	826	826	826	826	826	826	826	826	826		
Surplus/(Deficit)		280	277	228	234	170	161	173	164	188	191	202	166	210		

PEAK HOUR = 12:00 PM

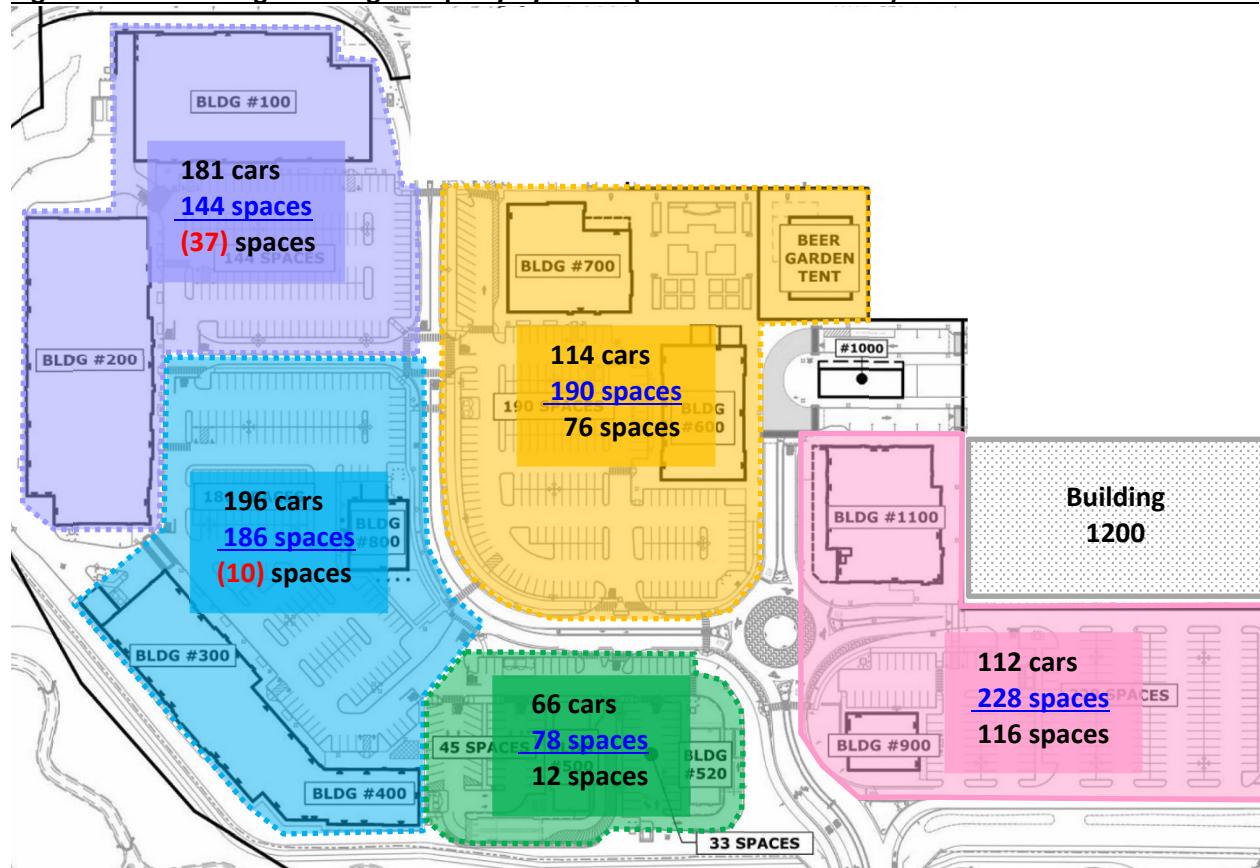
When compared to the busiest hour of the busiest day (a December weekday at 1:00 PM) of the year, the planned parking supply (826 spaces) is adequate to meet the peak hour projected demand (670 cars) with a surplus of 156 spaces. For the majority of the year, peak hour demand on weekends is projected to not exceed 75% of the total supply, but in December utilization may peak at 81% of total capacity.

The planned supply (826 spaces) is adequate to meet peak hour demand (665 cars) across the South Village on the busiest hour of the busiest weekend day of the year (June Saturday at 12:00 PM) with a surplus of 161 spaces projected. With the exception of peak hour conditions in December, peak hour utilization never

exceeds 73% of total capacity and, even at the peak hour on a December Saturday, still utilizes just 79% of the total supply.

On a parcel-by-parcel basis, surpluses at the peak hour (December weekday at 1:00 PM) are projected for the parking associated with Buildings 500 and 520, Buildings 600, 700 and 1400, and Buildings 900 and 1100. These surpluses will off-set the shortfalls associated with Buildings 100 and 200 and Buildings 300, 400, and 800, shown in **Figure 4**. In order to address this issue and preserve capacity for customers within the South Village, DESMAN would propose assigning the South Village employees to park on the parcel behind the future Building 1200 to assure close capacity for patrons and visitors.

Figure 4: South Village Parking Adequacy by Parcel (Peak Hour Weekend)



CENTRAL VILLAGE PHASE 1

The land use program for the Central Village provided to DESMAN is shown in **Table 9**.

Table 9: Central Village Phase 1 Development Program

	Standard Retail	Fine/Casual Dining		Fast/Casual Dining			Café/Take-Out Dining			Furniture/Furnishings	Multi-Family Residential			General Office	Hotel	Banquet Space			
Buildings	(sf GLA)	(indr sts)	(otdr sts)	(sf GFA)	(indr sts)	(otdr sts)	(sf GFA)	(indr sts)	(otdr sts)	(sf GFA)	(sf GLA)	(units)	(units)	(units)	(units)	(sf GFA)	(rooms)	(indr sts)	(otdr sts)
1000	9,040							206	96	9,048									
1200	12,623			291	94	13,068				11,565					69,341				
1300																			
1500																			
2000	29,543																		
3000	27,071	198	60	9,285	290	189	14,738	13	8	930					70	165	300	200	
<i>Subtotal</i>	<i>78,277</i>	<i>198</i>	<i>60</i>	<i>9,285</i>	<i>759</i>	<i>339</i>	<i>35,806</i>	<i>219</i>	<i>104</i>	<i>9,978</i>	<i>11,565</i>	<i>140</i>	<i>80</i>	<i>10</i>	<i>70</i>	<i>69,341</i>	<i>165</i>	<i>300</i>	<i>200</i>

The initial phase of development will be supported by a planned parking supply of 1,572 spaces, consisting of:

- 60 on-street parking spaces around the ‘town square’;
- A 212-space temporary surface parking lot;
- A 130-space underground ‘residents only’ parking garage;
- A 235-space surface lot adjacent to Buildings 1400 and 2000;
- A 498-space parking structure of which 322 spaces are reserved for residents and their guests;
- Two surface lots totaling 437 spaces next to Building 3000.

The Central Village Phase 1 development program generates gross demand for up to 2,211 spaces on a weekday and 2,023 spaces on a weekend as shown in **Table 10**.

Table 10: Central Village Phase 1 Projected Gross Demand

Land Use	User Group	Land Use Data	WEEKDAYS		WEEKDAY EVENINGS		WEEKEND DAYS		WEEKEND EVENINGS	
			Project Ratio	Vehicles						
Standard Retail	Customer	78,277 sf GLA	2.42 /ksf GLA	189	2.13 /ksf GLA	167	2.89 /ksf GLA	226	2.28 /ksf GLA	178
	Employee		0.60 /ksf GLA	47	0.50 /ksf GLA	39	0.67 /ksf GLA	52	0.53 /ksf GLA	41
Fine/Casual Dining	Customer (indoors)	198 indoor seats	0.61 /indoor seat	120	0.54 /indoor seat	106	0.49 /indoor seat	96	0.38 /indoor seat	76
	Customer (outdoors)	60 outdoor seats	0.61 /outdoor seat	36	0.54 /outdoor seat	32	0.49 /outdoor seat	29	0.38 /outdoor seat	23
	Employee		0.11 /seat	29	0.09 /seat	24	0.08 /seat	19	0.06 /seat	15
Fast Casual Dining	Customer (indoors)	759 indoor seats	0.41 /indoor seat	310	0.36 /indoor seat	273	0.42 /indoor seat	322	0.33 /indoor seat	254
	Customer (outdoors)	339 outdoor seats	0.41 /outdoor seat	138	0.36 /outdoor seat	122	0.42 /outdoor seat	144	0.33 /outdoor seat	114
	Employee		0.08 /seat	85	0.06 /seat	71	0.07 /seat	73	0.05 /seat	58
Café/Take Out	Customer (indoors)	219 indoor seats	0.43 /indoor seat	95	0.38 /indoor seat	84	0.52 /indoor seat	115	0.41 /indoor seat	91
	Customer (outdoors)	104 outdoor seats	0.43 /outdoor seat	45	0.38 /outdoor seat	40	0.52 /outdoor seat	54	0.41 /outdoor seat	43
	Employee		0.08 /seat	25	0.06 /seat	21	0.08 /seat	27	0.07 /seat	21
Furniture/Furnishings	Customer	11,565 sf GLA	0.75 /ksf GFA	9	0.63 /ksf GFA	7	1.35 /ksf GFA	16	1.07 /ksf GFA	12
	Employee		0.06 /ksf GFA	1	0.05 /ksf GFA	1	0.13 /ksf GFA	2	0.11 /ksf GFA	1
Residential, Suburban	1-Bedroom	140 units	0.88 /unit	123	0.73 /unit	103	0.86 /unit	120	0.68 /unit	95
	2-Bedroom	80 units	1.62 /unit	129	1.34 /unit	108	1.57 /unit	125	1.24 /unit	99
	3-Bedroom	10 units	2.45 /unit	25	2.04 /unit	20	2.38 /unit	24	1.88 /unit	19
	Condominium	70 units	1.81 /unit	127	1.51 /unit	106	1.76 /unit	123	1.39 /unit	97
	Guest	300 units	0.10 /unit	29	0.08 /unit	24	0.10 /unit	29	0.08 /unit	23
General Office	Visitor	69,341 sf GFA	0.29 /ksf GFA	20	0.24 /ksf GFA	17	0.03 /ksf GFA	2	0.02 /ksf GFA	2
	Employee		3.02 /ksf GFA	209	2.51 /ksf GFA	174	0.29 /ksf GFA	20	0.23 /ksf GFA	16
Hotel	Visitor	165 room	0.98 /room	162	0.82 /room	134	0.95 /room	157	0.75 /room	124
	Employee		0.13 /room	21	0.11 /room	18	0.13 /room	21	0.10 /room	16
Banquet Facilities	Customer (indoors)	300 sf GFA	0.40 /ksf GFA	119	0.22 /ksf GFA	66	0.35 /ksf GFA	104	0.18 /ksf GFA	54
	Customer (outdoors)	200	0.40 /ksf GFA	79	0.22 /ksf GFA	44	0.35 /ksf GFA	69	0.18 /ksf GFA	36
	Employee	500	0.08 /ksf GFA	39	0.06 /ksf GFA	32	0.11 /ksf GFA	54	0.09 /ksf GFA	43
<i>Subtotal Customers and Guests</i>				1,322		1,092		1,334		1,007
<i>Subtotal Residents and Visitors</i>				433		361		421		333
<i>Subtotal Employees</i>				456		380		268		211
TOTAL				2,211		1,833		2,023		1,551

Adjusting for presence and reserved parking, the projected peak hour demand is actually 1,776 spaces on weekdays and 1,577 spaces on weekends, as shown in **Table 11**, next page. These projections include a “Residential Adjustment” which represents the number of reserved parking spaces not in use by residential tenants or their guests at any given time. While these spaces are technically unoccupied, they are not available to other users and are therefore, for all practical purposes, filled.

Application of presence factors reduces gross projected demand for weekdays by 20% (from 2,211 to 1,776, a difference of 435 spaces) and 22% on weekends (from 2,023 to 1,577, a difference of 446 spaces) when compared to the projected peak hour demand.

When compared to the busiest hour of the busiest day (a May weekday at 12:00 PM) of the year, the planned parking supply (1,572 spaces) is inadequate to meet the projected demand (1,776 cars) by a shortfall of 204 spaces. At the peak weekend hour (a May Saturday at 12:00 PM), the planned parking supply is inadequate to meet the need for 1,577 spaces by a shortfall of 5 spaces.

Table 11: Central Village Phase 1 Peak Hour Demand Projections and Adequacy

Land Use	User	Month: Hour:	WEEKDAYS												Holidays 12:00 PM
			January 12:00 PM	February 12:00 PM	March 12:00 PM	April 12:00 PM	May 12:00 PM	June 12:00 PM	July 12:00 PM	August 12:00 PM	September 12:00 PM	October 12:00 PM	November 12:00 PM	December 12:00 PM	
Standard Retail	Customer	106	110	124	120	129	129	126	131	119	122	136	170	145	
	Employee	32	33	37	36	39	39	38	39	36	37	40	47	45	
Fine/Casual Dining	Customer (indoors)	79	78	86	84	80	75	79	69	73	79	87	90	86	
	Customer (outdoors)	0	0	0	0	14	20	27	23	20	14	0	0	0	
Fast Casual Dining	Customer (indoors)	267	267	295	288	245	202	146	146	180	223	304	310	295	
	Customer (outdoors)	0	0	0	0	69	104	138	117	104	69	0	0	0	
Café/Take Out	Customer (indoors)	84	84	94	89	82	67	51	56	64	73	91	92	95	
	Customer (outdoors)	0	0	0	0	23	34	45	38	34	23	0	0	0	
Employee	23	21	23	23	24	23	24	24	23	23	23	24	25	25	
	Customer	7	7	8	8	8	7	7	8	7	7	8	8	7	
Furniture/Furnishings	Employee	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Customer	84	84	84	84	84	84	79	79	84	84	84	84	84	
Residential, Suburban	1-Bedroom	84	88	88	88	88	88	83	83	88	88	88	88	88	
	2-Bedroom	17	17	17	17	17	17	16	16	17	17	17	17	17	
	3-Bedroom	86	86	86	86	86	86	82	82	86	86	86	86	86	
	Condominium	6	6	6	6	6	6	6	6	6	6	6	6	6	
	Guest	178	178	178	178	178	178	169	169	178	178	178	178	178	
General Office	Visitor	3	3	3	3	3	3	3	3	3	3	3	3	3	
	Employee	178	178	178	178	178	178	169	169	178	178	178	178	178	
Hotel	Visitor	71	80	89	89	80	80	89	89	67	67	67	45	89	
	Employee	19	21	21	21	21	21	21	21	21	21	21	19	19	
Banquet Facilities	Customer (indoors)	79	79	96	102	107	113	113	113	107	102	96	102	90	
	Customer (outdoors)	0	0	0	38	75	75	68	68	71	75	0	0	0	
	Employee	31	31	31	33	35	37	37	37	35	33	33	33	31	
<i>Subtotal Customers and Guests</i>		696	708	795	821	915	909	892	861	849	857	792	820	809	
<i>Subtotal Residents and Visitors</i>		281	281	281	281	281	281	266	266	281	281	281	281	281	
<i>Residential Adjustment</i>		171	171	171	171	171	171	186	186	171	171	171	171	171	
<i>Subtotal Employees</i>		382	382	402	398	409	406	396	400	397	400	399	409	347	
TOTAL		1,530	1,542	1,649	1,671	1,776	1,767	1,740	1,713	1,698	1,709	1,643	1,681	1,608	
Total Supply		1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	
Surplus/(Deficit)		42	30	(77)	(99)	(204)	(195)	(168)	(141)	(126)	(137)	(71)	(109)	(36)	
Land Use	User	Month: Hour:	WEEKENDS												Holidays 12:00 PM
			January 12:00 PM	February 12:00 PM	March 12:00 PM	April 12:00 PM	May 12:00 PM	June 12:00 PM	July 12:00 PM	August 12:00 PM	September 12:00 PM	October 12:00 PM	November 12:00 PM	December 12:00 PM	
Standard Retail	Customer	127	131	148	144	155	155	150	157	142	146	163	170	154	
	Employee	36	37	41	40	43	43	42	43	40	41	45	52	49	
Fine/Casual Dining	Customer (indoors)	42	42	46	45	43	40	42	37	39	42	47	48	46	
	Customer (outdoors)	0	0	0	0	7	11	15	12	11	7	0	0	0	
Fast Casual Dining	Customer (indoors)	277	277	306	299	254	209	151	151	187	232	316	322	306	
	Customer (outdoors)	0	0	0	0	47	70	94	80	70	47	0	0	0	
Café/Take Out	Customer (indoors)	101	101	114	108	99	82	62	68	77	89	110	112	115	
	Customer (outdoors)	0	0	0	0	27	41	54	46	41	27	0	0	0	
Furniture/Furnishings	Customer	13	13	14	14	14	13	13	14	13	13	13	14	12	
	Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	
Residential, Suburban	1-Bedroom	78	78	78	78	78	78	74	74	78	78	78	78	78	
	2-Bedroom	81	81	81	81	81	81	77	77	81	81	81	81	81	
	3-Bedroom	16	16	16	16	16	16	15	15	16	16	16	16	16	
	Condominium	80	80	80	80	80	80	76	76	80	80	80	80	80	
	Guest	6	6	6	6	6	6	6	6	6	6	6	6	6	
General Office	Visitor	2	2	2	2	2	2	2	2	2	2	2	2	1	
	Employee	18	18	18	18	18	18	17	17	18	18	18	18	14	
Hotel	Visitor	69	78	86	86	78	78	86	86	65	65	65	63	86	
	Employee	12	14	14	14	14	14	14	14	14	14	14	12	12	
Banquet Facilities	Customer (indoors)	69	69	84	89	94	99	99	99	94	89	84	89	79	
	Customer (outdoors)	0	0	0	33	66	66	59	59	62	66	0	0	0	
	Employee	44	44	44	46	49	51	51	51	49	46	46	46	44	
<i>Subtotal Customers and Guests</i>		706	719	806	826	892	872	833	817	809	831	806	806	805	
<i>Subtotal Residents and Visitors</i>		255	255	255	255	255	255	242	242	255	255	255	255	255	
<i>Residential Adjustment</i>		191	191	191	191	191	191	204	204	191	191	191	191	191	
<i>Subtotal Employees</i>		214	214	231	228	239	237	235	239	228	231	231	240	213	
TOTAL		1,366	1,379	1,483	1,500	1,577	1,555	1,514	1,502	1,483	1,508	1,483	1,492	1,464	
Total Supply		1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	1,572	
Surplus/(Deficit)		206	193	89	72	(5)	17	58	70	89	64	89	80	108	

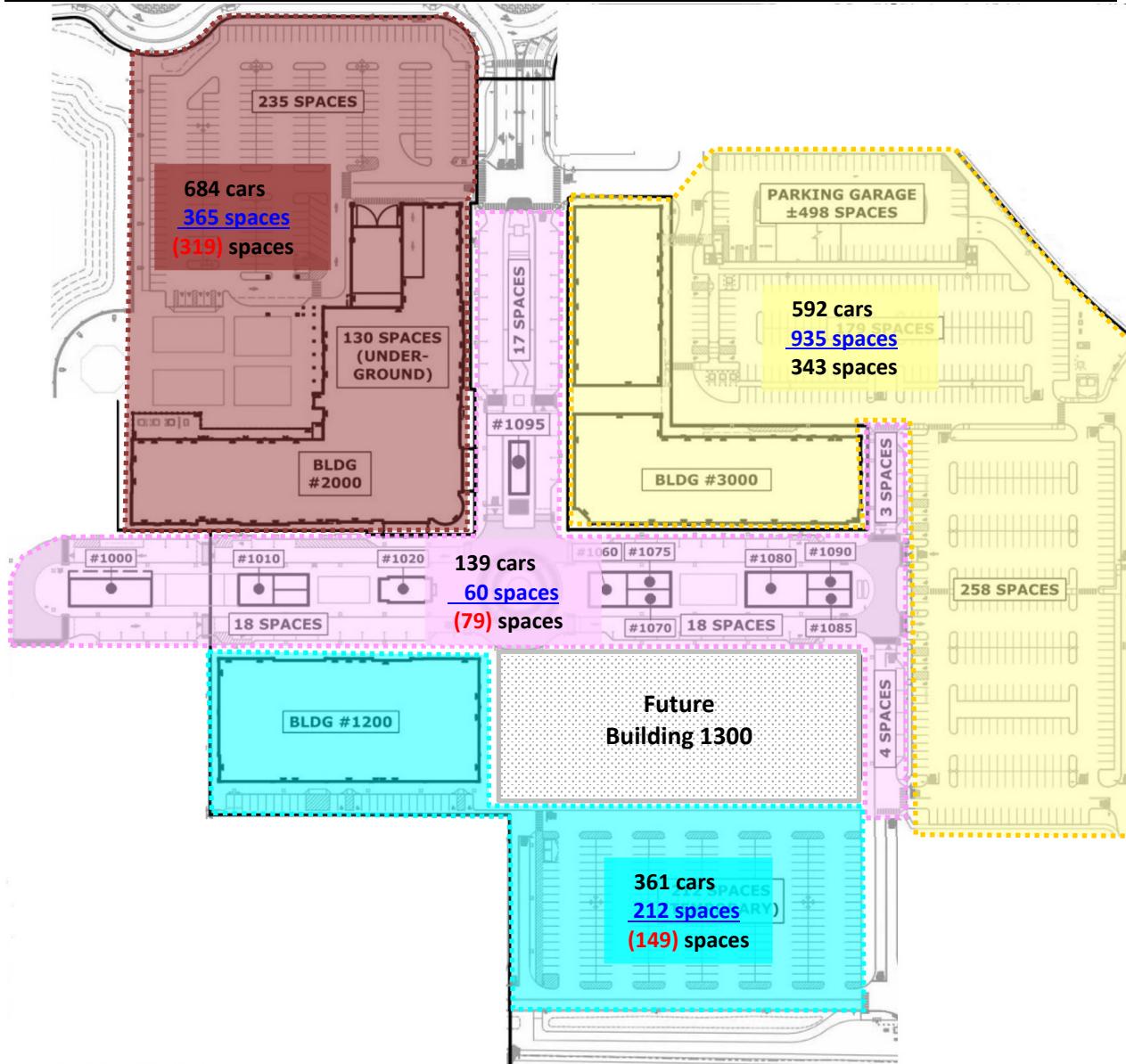
PEAK HOUR = 

In terms of distribution of peak hour demand across the four clusters (e.g., Buildings 1000-1095, Building 1200, Building and 2000, Building 3000), significant shortfalls are associated with Buildings 1000-1095, Building 1200 and Building 2000 as shown in **Figure 5**, next page.

To assure there is adequate capacity within Phase 1 of the Central Village, employees of all buildings should be directed to the farthest sections of the surface lots adjacent to Building 3000, which will open up roughly 400 spaces in closer facilities at the peak hour. Valets associated with the hotel and/or banquet facilities should be directed to park in the first two floors of the above-grade parking structure as well, as these spaces will be less proximate and desirable for discretionary parkers such as shoppers, diners, hotel guests, and event attendees.

Even with these adjustments, the Central Village will still be faced with a peak hour shortfall of over 200 spaces at the peak hour which may require leveraging against the available capacity in the South Village and/or the temporary parking area where the future Building 1300 will go.

Figure 5: Central Village Parking Adequacy by Facility (Peak Hour Weekday)



COMBINED PROGRAM

The combined program incorporates all land uses detailed for the South Village and Central Village Phase 1 programs. The combined development program generates gross demand for up to 3,167 spaces on a weekday and 3,075 spaces on a weekend as shown in **Table 12**.

Table 12: Combined Program Projected Gross Demand

Land Use	User Group	Land Use Data	WEEKDAYS		WEEKDAY EVENINGS		WEEKEND DAYS		WEEKEND EVENINGS	
			Project Ratio	Vehicles						
Standard Retail	Customer	188,278 sf GLA	2.42 /ksf GLA	455	2.13 /ksf GLA	400	2.89 /ksf GLA	544	2.28 /ksf GLA	429
	Employee		0.60 /ksf GLA	114	0.50 /ksf GLA	95	0.67 /ksf GLA	126	0.53 /ksf GLA	99
Specialty Grocery	Customer	2,494 sf GLA	2.92 /ksf GLA	7	2.57 /ksf GLA	6	3.34 /ksf GLA	8	2.64 /ksf GLA	7
	Employee		0.52 /ksf GLA	1	0.43 /ksf GLA	1	0.42 /ksf GLA	1	0.33 /ksf GLA	1
Fine/Casual Dining	Customer (indoors)	198 indoor seats	0.61 /indoor seat	120	0.54 /indoor seat	106	0.49 /indoor seat	96	0.38 /indoor seat	76
	Customer (outdoors)	60 outdoor seats	0.61 /outdoor seat	36	0.54 /outdoor seat	32	0.49 /outdoor seat	29	0.38 /outdoor seat	23
	Employee		0.11 /seat	29	0.09 /seat	24	0.08 /seat	19	0.06 /seat	15
Fast Casual Dining	Customer (indoors)	981 indoor seats	0.41 /indoor seat	400	0.36 /indoor seat	353	0.42 /indoor seat	416	0.33 /indoor seat	329
	Customer (outdoors)	567 outdoor seats	0.41 /outdoor seat	231	0.36 /outdoor seat	204	0.42 /outdoor seat	241	0.33 /outdoor seat	190
	Employee		0.08 /seat	120	0.06 /seat	100	0.07 /seat	104	0.05 /seat	82
Café/Take Out	Customer (indoors)	388 indoor seats	0.43 /indoor seat	168	0.38 /indoor seat	148	0.52 /indoor seat	203	0.41 /indoor seat	160
	Customer (outdoors)	144 outdoor seats	0.43 /outdoor seat	62	0.38 /outdoor seat	55	0.52 /outdoor seat	75	0.41 /outdoor seat	60
	Employee		0.08 /seat	41	0.06 /seat	34	0.08 /seat	44	0.07 /seat	35
Furniture/Furnishings	Customer	38,015 sf GFA	0.75 /ksf GFA	29	0.63 /ksf GFA	24	1.35 /ksf GFA	51	1.07 /ksf GFA	40
	Employee		0.06 /ksf GFA	2	0.05 /ksf GFA	2	0.13 /ksf GFA	5	0.11 /ksf GFA	4
Seasonal Beer Garden	Customer	200 seats	0.48 /seat	97	0.40 /seat	81	0.52 /seat	105	0.41 /seat	83
	Employee		0.08 /seat	16	0.06 /seat	13	0.08 /seat	17	0.07 /seat	13
Lifestyle/Fitness	Customer	25,000 sf GLA	5.17 /ksf GLA	129	5.11 /ksf GLA	128	4.96 /ksf GLA	124	3.92 /ksf GLA	98
	Employee		0.34 /ksf GLA	9	0.29 /ksf GLA	7	0.21 /ksf GLA	5	0.17 /ksf GLA	4
Active Entertainment	Customer	0 sf GLA	4.58 /ksf GLA	0	4.03 /ksf GLA	0	5.42 /ksf GLA	0	4.28 /ksf GLA	0
	Employees		1.08 /ksf GLA	0	0.90 /ksf GLA	0	1.25 /ksf GLA	0	0.99 /ksf GLA	0
Residential, Suburban	1-Bedroom	140 units	0.88 /unit	123	0.73 /unit	103	0.86 /unit	120	0.68 /unit	95
	2-Bedroom	80 units	1.62 /unit	129	1.34 /unit	108	1.57 /unit	125	1.24 /unit	99
	3-Bedroom	10 units	2.45 /unit	25	2.04 /unit	20	2.38 /unit	24	1.88 /unit	19
	Condominium	70 units	1.81 /unit	127	1.51 /unit	106	1.76 /unit	123	1.39 /unit	97
	Guest	300 units	0.10 /unit	29	0.08 /unit	24	0.10 /unit	29	0.08 /unit	23
General Office	Visitor	69,341 sf GFA	0.29 /ksf GFA	20	0.24 /ksf GFA	17	0.03 /ksf GFA	2	0.02 /ksf GFA	2
	Employee		3.02 /ksf GFA	209	2.51 /ksf GFA	174	0.29 /ksf GFA	20	0.23 /ksf GFA	16
Medical Office Building	Visitor	0 sf GFA	2.94 /ksf GFA	0	2.45 /ksf GFA	0	0.00 /ksf GFA	0	0.00 /ksf GFA	0
	Employee		1.38 /ksf GFA	0	1.15 /ksf GFA	0	0.00 /ksf GFA	0	0.00 /ksf GFA	0
Bank	Visitor	3,507 sf GFA	3.26 /ksf GFA	11	2.71 /ksf GFA	10	2.71 /ksf GFA	9	2.14 /ksf GFA	7
	Employee		2.16 /ksf GFA	8	1.79 /ksf GFA	6	1.46 /ksf GFA	5	1.16 /ksf GFA	4
Hotel	Visitor	165 room	0.98 /room	162	0.82 /room	134	0.95 /room	157	0.75 /room	124
	Employee		0.13 /room	21	0.11 /room	18	0.13 /room	21	0.10 /room	16
Banquet Facilities	Customer (indoors)	300 sf GFA	0.40 /ksf GFA	119	0.22 /ksf GFA	66	0.35 /ksf GFA	104	0.18 /ksf GFA	54
	Customer (outdoors)	200 sf GFA	0.40 /ksf GFA	79	0.22 /ksf GFA	44	0.35 /ksf GFA	69	0.18 /ksf GFA	36
	Employee	500	0.08 /ksf GFA	39	0.06 /ksf GFA	32	0.11 /ksf GFA	54	0.09 /ksf GFA	43
<i>Subtotal Customers and Guests</i>				2,125		1,808		2,233		1,718
<i>Subtotal Residents and Visitors</i>				433		361		421		333
<i>Subtotal Employees</i>				609		506		421		332
TOTAL				3,167		2,675		3,075		2,383

Adjusting for presence, the projected peak hour demand is actually 2,368 spaces on weekdays and 2,232 spaces on weekends, as shown in **Table 13** on the next page.

Application of presence factors reduces gross projected demand for weekdays by 25% (from 3,167 to 2,368, a difference of 799 spaces) and 27% on weekends (from 3,075 to 2,232, a difference of 843 spaces) when compared to the projected peak hour demand.

When compared to the busiest hour of the busiest day (a June weekday at 12:00 PM) of the year, the combined planned parking supply (2,398 spaces) is adequate to meet the projected demand (2,368 cars) with a surplus of 30 spaces.

The planned supply (2,398 spaces) is also adequate to meet peak hour demand (2,232 cars) across the site on the busiest hour of the busiest weekend day of the year (a May Saturday at 12:00 PM) with a surplus of 166 spaces projected.

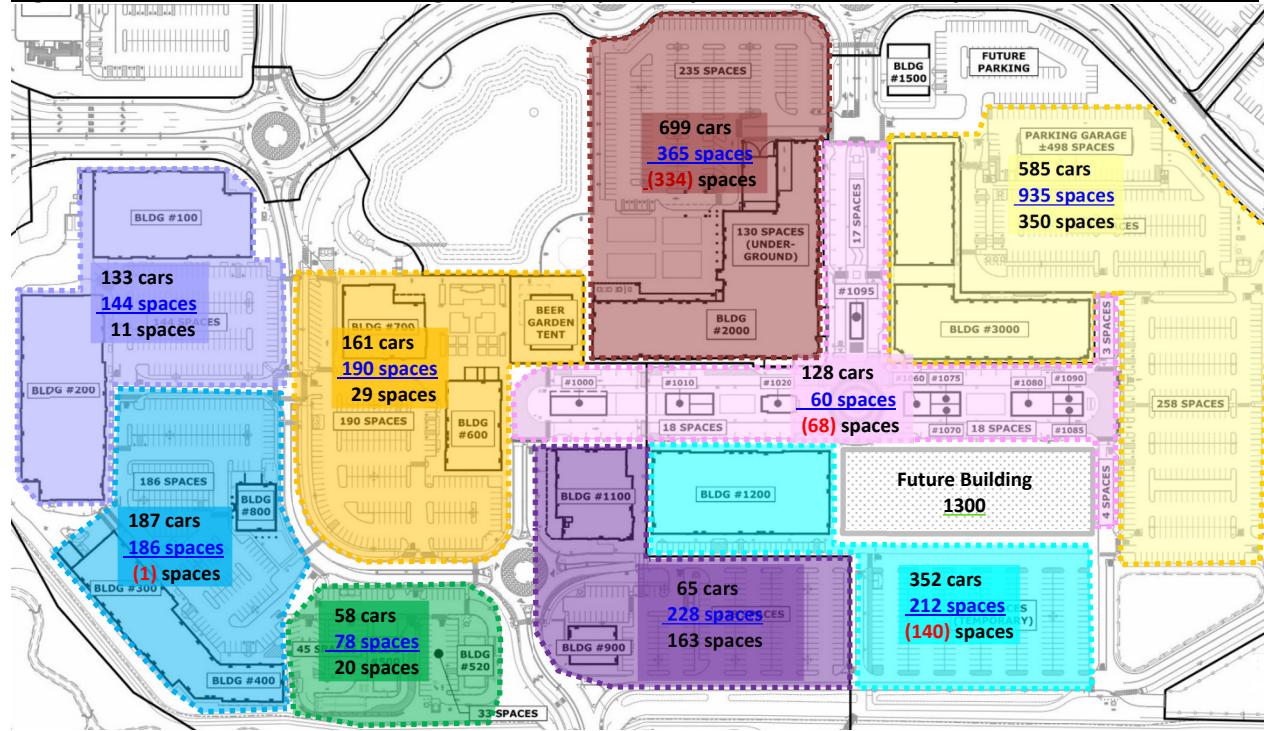
Table 13: Combined Development Program Peak Hour Demand Projections and Adequacy

Land Use	User	Month: Hour:	WEEKDAYS												Holidays		
			January 12:00 PM	February 12:00 PM	March 12:00 PM	April 12:00 PM	May 12:00 PM	June 12:00 PM	July 12:00 PM	August 12:00 PM	September 12:00 PM	October 12:00 PM	November 12:00 PM	December 1:00 PM	December 1:00 PM	December 1:00 PM	
Standard Retail	Customer	255	264	298	290	311	311	303	316	285	294	329	455	387			
	Employee	79	81	90	88	93	93	91	95	87	89	98	114	108			
Specialty Grocery	Customer	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5
	Employee	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fine/Casual Dining	Customer (indoors)	79	78	86	84	80	75	79	69	73	79	87	90	86			
	Customer (outdoors)	0	0	0	0	14	20	27	23	20	14	0	0	0	0	0	0
Fast Casual Dining	Employee	23	23	26	25	26	25	25	26	24	25	24	25	25	20	20	20
	Customer (indoors)	344	344	380	372	316	260	188	232	288	392	360	342				
Customer (outdoors)	0	0	0	0	116	173	231	196	173	116	0	0	0	0	0	0	0
	Employee	106	104	120	114	120	115	114	118	109	113	110	114	90			
Café/Take Out	Customer (indoors)	148	148	166	158	144	119	91	99	113	129	161	163	168			
	Customer (outdoors)	0	0	0	0	31	47	62	53	47	31	0	0	0	0	0	0
Furniture/Furnishings	Employee	38	35	38	38	40	38	39	39	37	38	39	41	40			
	Customer	23	23	25	26	25	23	24	25	23	24	24	25	22			
Employee	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Seasonal Beer Garden	Customer	0	0	0	7	17	26	29	29	26	17	0	0	0	0	0	0
	Employee	0	0	0	2	5	7	8	8	7	5	0	0	0	0	0	0
Lifestyle/Fitness	Customer	77	74	66	54	50	50	50	54	62	66	66	90	86			
	Employee	7	7	6	5	5	5	5	5	6	6	6	7	6			
Residential, Suburban	1-Bedroom	84	84	84	84	84	84	79	79	84	84	84	80	80			
	2-Bedroom	88	88	88	88	88	88	83	83	88	88	88	84	84			
	3-Bedroom	17	17	17	17	17	17	16	16	17	17	17	16	16			
	Condominium	86	86	86	86	86	86	82	82	86	86	86	83	83			
	Guest	6	6	6	6	6	6	6	6	6	6	6	6	6			
General Office	Visitor	3	3	3	3	3	3	3	3	3	3	3	3	7			
	Employee	178	178	178	178	178	178	169	169	178	178	178	178	142			
Bank	Visitor	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	Employee	8	8	8	8	8	8	8	8	8	8	8	8	6			
Hotel	Visitor	71	80	89	89	80	80	89	89	67	67	67	45	89			
	Employee	19	21	21	21	21	21	21	21	21	21	21	19	19			
Banquet Facilities	Customer (indoors)	79	79	96	102	107	113	113	113	107	102	96	96	86			
	Customer (outdoors)	0	0	0	38	75	75	68	68	71	75	0	0	0			
	Employee	31	31	31	33	35	37	37	37	35	33	32	30				
<i>Subtotal Customers and Guests</i>		1,090	1,104	1,220	1,234	1,380	1,386	1,368	1,335	1,313	1,316	1,236	1,344	1,284			
<i>Subtotal Residents and Visitors</i>		281	281	281	281	281	281	266	266	281	281	281	269	269			
<i>Residential Adjustment</i>		171	171	171	171	171	171	186	186	171	171	171	183	183			
<i>Subtotal Employees</i>		492	491	521	515	534	530	520	529	517	521	520	541	464			
TOTAL		2,034	2,047	2,193	2,201	2,366	2,368	2,340	2,316	2,282	2,289	2,208	2,337	2,200			
Total Supply		2,398	2,398	2,398	2,398	2,398	2,398	2,398	2,398	2,398	2,398	2,398	2,398	2,398			
Surplus/(Deficit)		364	351	205	197	32	30	58	82	116	109	190	61	198			

Land Use	User	Month: Hour:	WEEKENDS												Holidays		
			January 12:00 PM	February 12:00 PM	March 12:00 PM	April 12:00 PM	May 12:00 PM	June 12:00 PM	July 12:00 PM	August 12:00 PM	September 12:00 PM	October 12:00 PM	November 12:00 PM	December 1:00 PM	December 1:00 PM	December 1:00 PM	
Standard Retail	Customer	305	315	357	346	372	372	362	377	341	351	393	408	370			
	Employee	87	89	100	97	103	103	101	105	96	98	108	126	120			
Specialty Grocery	Customer	7	7	7	7	7	7	6	6	6	7	7	8	8			
	Employee	1	1	1	1	1	1	1	1	1	1	1	1	1			
Fine/Casual Dining	Customer (indoors)	42	42	46	45	43	40	42	37	39	42	47	48	46			
	Customer (outdoors)	0	0	0	0	7	11	15	12	11	7	0	0	0			
Employee	13	12	14	14	14	14	14	14	13	13	13	14	11				
	Customer (indoors)	358	358	395	387	329	270	196	241	300	408	416	395				
Customer (outdoors)	0	0	0	0	78	117	157	133	117	78	0	0	0	0			
	Employee	92	90	104	99	104	100	99	102	95	98	96	99	78			
Café/Take Out	Customer (indoors)	179	179	201	191	175	144	110	120	136	156	195	197	203			
	Customer (outdoors)	0	0	0	0	38	56	75	64	56	38	0	0	0			
Furniture/Furnishings	Customer	40	40	43	46	45	41	42	44	41	42	43	44	39			
	Employee	4	4	5	5	5	5	5	5	5	5	5	5	4			
Seasonal Beer Garden	Customer	0	0	0	13	32	47	53	53	47	32	0	0	0			
	Employee	0	0	0	3	8	12	14	14	12	8	0	0	0			
Lifestyle/Fitness	Customer	62	59	53	43	40	40	40	43	50	53	53	62	59			
	Employee	3	3	2	2	2	2	2	2	2	2	2	3	2			
Residential, Suburban	1-Bedroom	78	78	78	78	78	78	74	74	78	78	78	78	78			
	2-Bedroom	81	81	81	81	81	81	77	77	81	81	81	81	81			
	3-Bedroom	16	16	16	16	16	16	15	15	16	16	16	16	16			
	Condominium	80	80	80	80	80	80	76	76	80	80	80	80	80			
	Guest	6	6	6	6	6	6	6	6	6	6	6	6	6			
General Office	Visitor	2	2	2	2	2	2	2	2	2	2	2	2	1			
	Employee	18	18	18	18	18	18	17	17	18	18	18	18	14			
Bank	Visitor	8	8	8	8	8	8	8	8	8	8	8	8	8			
	Employee	5	5	5	5	5	5	5	5	5	5	5	5	4			
Hotel	Visitor	69	78	86	86	78	78	86	86	65	65	65	63	86			
	Employee	12	14	14	14	14	14	14	14	14	14	14	14	12			
Banquet Facilities	Customer (indoors)	69	69	84	89	94	99	99	99	94	89	84	89	79			
	Customer (outdoors)	0	0	0	33	66	66	59	59	62	66	0	0	0			
	Employee	44	44	46	49	51	51	51	51	49	46	46	46	44			
<i>Subtotal Customers and Guests</i>		1,147	1,163	1,288	1,302	1,420	1,404	1,358	1,345								

In terms of distribution of demand across the site, this is illustrated on the following page in **Figure 6**.

Figure 6: Combined Phase 1 Parking Adequacy by Facility (Peak Hour Weekday)



As the figure above indicates, shortfalls associated with Building 1200 can be fully absorbed in the excess capacity of the lot serving Buildings 900 and 1100. Employees, hotel guests and event attendees can be directed to park and/or have their vehicles stored in the above-grade garage and surface lots adjacent to Building 3000. Employees in the 1,000 Buildings located in the town square will need to park in the temporary lot where Building 1300 will eventually sit and/or the lot adjacent to Building 3000 (where Building 4000 will be eventually located).

Finally, it should be noted that these peak hour projections assume full capacity event in both the indoor Banquet Center and the outdoor Great Lawn. If simultaneous (or no) events are not occurring, shortfalls on individual parcels will be lesser than projected and the total surplus of parking availability will increase.