

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:

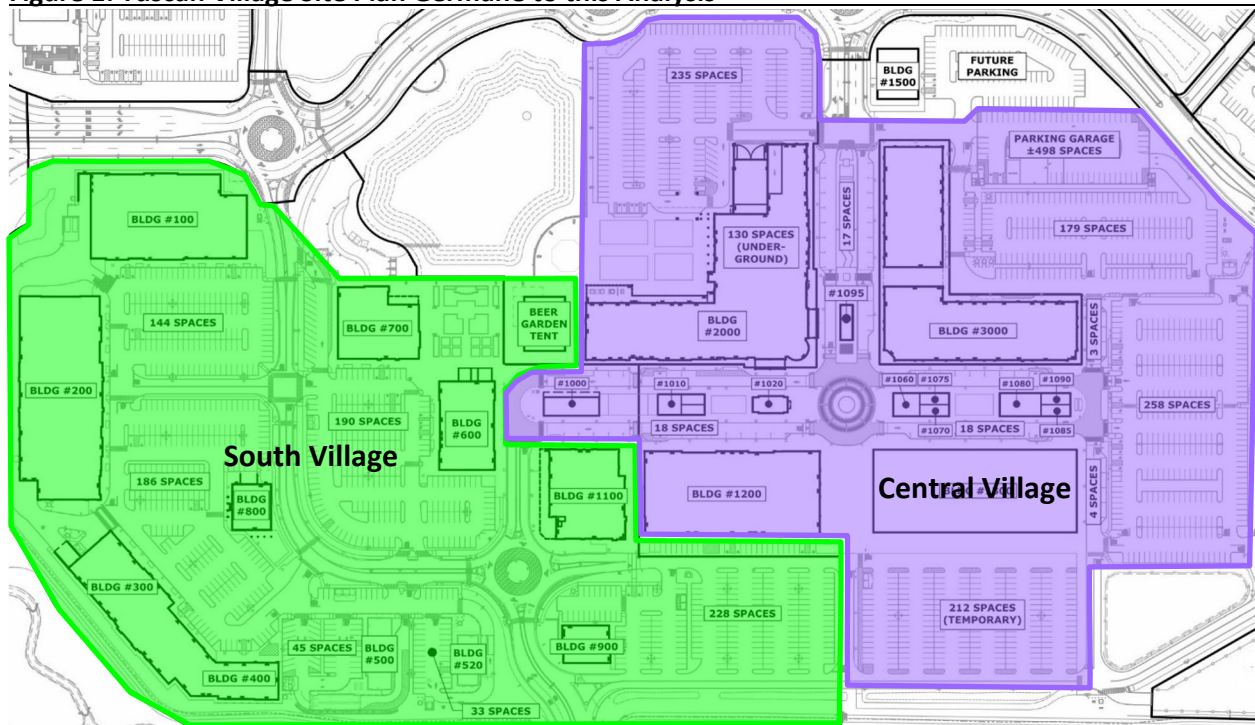
- 188,278 square feet (Gross Leasable Area¹) of soft goods retail;
- 2,494 square feet (Gross Leasable Area) of specialty grocery (e.g., Tuscan Market);
- 9,285 square feet (Gross Floor Area) of fine/casual dining equating to 198 indoor seats and 60 outdoor seats;
- 45,053 square feet (Gross Floor Area) 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 five shared lots, one underground garage, one above-grade parking structure, and 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 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
	Employee	0.09	0.10	/seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers, 2019, p.764-765
Furniture/Furnishings	Customer	0.77	1.42	/ksf GFA	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers, 2019, p.678-679
	Employee	0.07	0.16	/ksf GFA	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers, 2019, p.678-679
Seasonal Beer Garden	Customer	0.52	0.58	/seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers, 2019, p.717-718
	Employee	0.09	0.10	/seat	Parking Generation: 5th Edition . Washington DC: ITE - Institute of Transportation Engineers, 2019, p.717-718
Lifestyle/Fitness	Customer	6.60	5.50	/ksf GLA	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute, 2020, p.16
	Employee	0.40	0.25	/ksf GLA	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute, 2020, p.16
Active Entertainment	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])
	Employees	1.25	1.50	/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	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
	Guest	0.10	0.10	/unit	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute, 2020, p.16
General Office	Visitor	0.30	0.03	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI - The Urban Land Institute, 2020, p.16
	Employee	3.50	0.35	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI - The Urban Land Institute, 2020, p.16
Medical Office Building	Visitor	3.00	0.00	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute, 2020, p.16
	Employee	1.60	0.00	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute, 2020, p.16
Bank	Visitor	3.50	3.00	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI - The Urban Land Institute, 2020, p.15
	Employee	2.50	1.75	/ksf GFA	Shared Parking: 3rd Edition . Washington DC: ULI - The Urban Land Institute, 2020, p.16
Hotel	Visitor	1.00	1.00	/room	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute, 2020, p.16
	Employee	0.15	0.15	/room	Shared Parking: 3rd Edition . Washington DC: ULI - Urban Land Institute, 2020, p.16
Banquet Facilities	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 carpoolled (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)							
Land Use	User Group	Base Ratio	Modal Adj.	Capture Adj.	Local Adj.	Project Ratio	Unit
Standard Retail	Customer	2.90	1.00	0.85	0.98	2.42	/ksf GLA
	Employee	0.70	0.88	1.00	0.98	0.60	/ksf GLA
Specialty Grocery	Customer	3.50	1.00	0.85	0.98	2.92	/ksf GLA
	Employee	0.60	0.88	1.00	0.98	0.52	/ksf GLA
Fine/Casual Dining	Customer (indoors)	0.73	1.00	0.85	0.98	0.61	/indoor seat
	Customer (outdoors)	0.73	1.00	0.85	0.98	0.61	/outdoor seat
	Employee	0.13	0.88	1.00	0.98	0.11	/seat
Fast Casual Dining	Customer (indoors)	0.49	1.00	0.85	0.98	0.41	/indoor seat
	Customer (outdoors)	0.49	1.00	0.85	0.98	0.41	/outdoor seat
	Employee	0.09	0.88	1.00	0.98	0.08	/seat
Café/Take Out	Customer (indoors)	0.52	1.00	0.85	0.98	0.43	/indoor seat
	Customer (outdoors)	0.52	1.00	0.85	0.98	0.43	/outdoor seat
	Employee	0.09	0.88	1.00	0.98	0.08	/seat
Furniture/Furnishings	Customer	0.77	1.00	1.00	0.98	0.75	/ksf GFA
	Employee	0.07	0.88	1.00	0.98	0.06	/ksf GFA
Seasonal Beer Garden	Customer	0.52	1.00	0.95	0.98	0.48	/seat
	Employee	0.09	0.88	1.00	0.98	0.08	/seat
Lifestyle/Fitness	Customer	6.60	1.00	0.80	0.98	5.17	/ksf GLA
	Employee	0.40	0.88	1.00	0.98	0.34	/ksf GLA
Active Entertainment	Customer	5.50	1.00	0.85	0.98	4.58	/ksf GLA
	Employees	1.25	0.88	1.00	0.98	1.08	/ksf GLA
Residential, Suburban	1-Bedroom	0.90	1.00	1.00	0.98	0.88	/unit
	2-Bedroom	1.65	1.00	1.00	0.98	1.62	/unit
	3-Bedroom	2.50	1.00	1.00	0.98	2.45	/unit
	Condominium	1.85	1.00	1.00	0.98	1.81	/unit
	Guest	0.10	1.00	1.00	0.98	0.10	/unit
General Office	Visitor	0.30	1.00	1.00	0.98	0.29	/ksf GFA
	Employee	3.50	0.88	1.00	0.98	3.02	/ksf GFA
Medical Office Building	Visitor	3.00	1.00	1.00	0.98	2.94	/ksf GFA
	Employee	1.60	0.88	1.00	0.98	1.38	/ksf GFA
Bank	Visitor	3.50	1.00	0.95	0.98	3.26	/ksf GFA
	Employee	2.50	0.88	1.00	0.98	2.16	/ksf GFA
Hotel	Visitor	1.00	1.00	1.00	0.98	0.98	/room
	Employee	0.15	0.88	1.00	0.98	0.13	/room
Banquet Facilities	Customer (indoors)	0.54	1.00	0.75	0.98	0.40	/indoor seat
	Customer (outdoors)	0.54	1.00	0.75	0.98	0.40	/outdoor seat
	Employee	0.09	0.88	1.00	0.98	0.08	/seat

WEEKDAYS							
EVENING (5:00 PM - 12:00 AM)							
Land Use	User Group	Base Ratio	Modal Adj.	Capture Adj.	Local Adj.	Project Ratio	Unit
Standard Retail	Customer	2.90	1.00	0.90	0.82	2.13	/ksf GLA
	Employee	0.70	0.88	1.00	0.82	0.50	/ksf GLA
Specialty Grocery	Customer	3.50	1.00	0.90	0.82	2.57	/ksf GLA
	Employee	0.60	0.88	1.00	0.82	0.43	/ksf GLA
Fine/Casual Dining	Customer (indoors)	0.73	1.00	0.90	0.82	0.54	/indoor seat
	Customer (outdoors)	0.73	1.00	0.90	0.82	0.54	/outdoor seat
	Employee	0.13	0.88	1.00	0.82	0.09	/seat
Fast Casual Dining	Customer (indoors)	0.49	1.00	0.90	0.82	0.36	/indoor seat
	Customer (outdoors)	0.49	1.00	0.90	0.82	0.36	/outdoor seat
	Employee	0.09	0.88	1.00	0.82	0.06	/seat
Café/Take Out	Customer (indoors)	0.52	1.00	0.90	0.82	0.38	/indoor seat
	Customer (outdoors)	0.52	1.00	0.90	0.82	0.38	/outdoor seat
	Employee	0.09	0.88	1.00	0.82	0.06	/seat
Furniture/Furnishings	Customer	0.77	1.00	1.00	0.82	0.63	/ksf GFA
	Employee	0.07	0.88	1.00	0.82	0.05	/ksf GFA
Seasonal Beer Garden	Customer	0.52	1.00	0.95	0.82	0.40	/seat
	Employee	0.09	0.88	1.00	0.82	0.06	/seat
Lifestyle/Fitness	Customer	6.60	1.00	0.95	0.82	5.11	/ksf GLA
	Employee	0.40	0.88	1.00	0.82	0.29	/ksf GLA
Active Entertainment	Customer	5.50	1.00	0.90	0.82	4.03	/ksf GLA
	Employees	1.25	0.88	1.00	0.82	0.90	/ksf GLA
Residential, Suburban	1-Bedroom	0.90	1.00	1.00	0.82	0.73	/unit
	2-Bedroom	1.65	1.00	1.00	0.82	1.34	/unit
	3-Bedroom	2.50	1.00	1.00	0.82	2.04	/unit
	Condominium	1.85	1.00	1.00	0.82	1.51	/unit
	Guest	0.10	1.00	1.00	0.82	0.08	/unit
General Office	Visitor	0.30	1.00	1.00	0.82	0.24	/ksf GFA
	Employee	3.50	0.88	1.00	0.82	2.51	/ksf GFA
Medical Office Building	Visitor	3.00	1.00	1.00	0.82	2.45	/ksf GFA
	Employee	1.60	0.88	1.00	0.82	1.15	/ksf GFA
Bank	Visitor	3.50	1.00	0.95	0.82	2.71	/ksf GFA
	Employee	2.50	0.88	1.00	0.82	1.79	/ksf GFA
Hotel	Visitor	1.00	1.00	1.00	0.82	0.82	/room
	Employee	0.15	0.88	1.00	0.82	0.11	/room
Banquet Facilities	Customer (indoors)	0.54	1.00	0.50	0.82	0.22	/indoor seat
	Customer (outdoors)	0.54	1.00	0.50	0.82	0.22	/outdoor seat
	Employee	0.09	0.88	1.00	0.82	0.06	/seat

WEEKENDS							
DAYTIME (6:00 AM - 4:59 PM)							
Land Use	User Group	Base Ratio	Modal Adj.	Capture Adj.	Local Adj.	Project Ratio	Unit
Standard Retail	Customer	3.20	1.00	0.95	0.95	2.89	/ksf GLA
	Employee	0.80	0.88	1.00	0.95	0.67	/ksf GLA
Specialty Grocery	Customer	3.70	1.00	0.95	0.95	3.34	/ksf GLA
	Employee	0.50	0.88	1.00	0.95	0.42	/ksf GLA
Fine/Casual Dining	Customer (indoors)	0.54	1.00	0.95	0.95	0.49	/indoor seat
	Customer (outdoors)	0.54	1.00	0.95	0.95	0.49	/outdoor seat
	Employee	0.09	0.88	1.00	0.95	0.08	/seat
Fast Casual Dining	Customer (indoors)	0.47	1.00	0.95	0.95	0.42	/indoor seat
	Customer (outdoors)	0.47	1.00	0.95	0.95	0.42	/outdoor seat
	Employee	0.08	0.88	1.00	0.95	0.07	/seat
Café/Take Out	Customer (indoors)	0.58	1.00	0.95	0.95	0.52	/indoor seat
	Customer (outdoors)	0.58	1.00	0.95	0.95	0.52	/outdoor seat
	Employee	0.10	0.88	1.00	0.95	0.08	/seat
Furniture/Furnishings	Customer	1.42	1.00	1.00	0.95	1.35	/ksf GFA
	Employee	0.16	0.88	1.00	0.95	0.13	/ksf GFA
Seasonal Beer Garden	Customer	0.58	1.00	0.95	0.95	0.52	/seat
	Employee	0.10	0.88	1.00	0.95	0.08	/seat
Lifestyle/Fitness	Customer	5.50	1.00	0.95	0.95	4.96	/ksf GLA
	Employee	0.25	0.88	1.00	0.95	0.21	/ksf GLA
Active Entertainment	Customer	6.00	1.00	0.95	0.95	5.42	/ksf GLA
	Employees	1.50	0.88	1.00	0.95	1.25	/ksf GLA
Residential, Suburban	1-Bedroom	0.90	1.00	1.00	0.95	0.86	/unit
	2-Bedroom	1.65	1.00	1.00	0.95	1.57	/unit
	3-Bedroom	2.50	1.00	1.00	0.95	2.38	/unit
	Condominium	1.85	1.00	1.00	0.95	1.76	/unit
	Guest	0.10	1.00	1.00	0.95	0.10	/unit
General Office	Visitor	0.03	1.00	1.00	0.95	0.03	/ksf GFA
	Employee	0.35	0.88	1.00	0.95	0.29	/ksf GFA
Medical Office Building	Visitor	0.00	1.00	1.00	0.95	0.00	/ksf GFA
	Employee	0.00	0.88	1.00	0.95	0.00	/ksf GFA
Bank	Visitor	3.00	1.00	0.95	0.95	2.71	/ksf GFA
	Employee	1.75	0.88	1.00	0.95	1.46	/ksf GFA
Hotel	Visitor	1.00	1.00	1.00	0.95	0.95	/room
	Employee	0.15	0.88	1.00	0.95	0.13	/room
Banquet Facilities	Customer (indoors)	0.73	1.00	0.50	0.95	0.35	/indoor seat
	Customer (outdoors)	0.73	1.00	0.50	0.95	0.35	/outdoor seat
	Employee	0.13	0.88	1.00	0.95	0.11	/seat

WEEKENDS							
EVENING (5:00 PM - 12:00 AM)							
Land Use	User Group	Base Ratio	Modal Adj.	Capture Adj.	Local Adj.	Project Ratio	Unit
Standard Retail	Customer	3.20	1.00	0.95	0.75	2.28	/ksf GLA
	Employee	0.80	0.88	1.00	0.75	0.53	/ksf GLA
Specialty Grocery	Customer	3.70	1.00	0.95	0.75	2.64	/ksf GLA
	Employee	0.50	0.88	1.00	0.75	0.33	/ksf GLA
Fine/Casual Dining	Customer (indoors)	0.54	1.00	0.95	0.75	0.38	/indoor seat
	Customer (outdoors)	0.54	1.00	0.95	0.75	0.38	/outdoor seat
	Employee	0.09	0.88	1.00	0.75	0.06	/seat
Fast Casual Dining	Customer (indoors)	0.47	1.00	0.95	0.75	0.33	/indoor seat
	Customer (outdoors)	0.47	1.00	0.95	0.75	0.33	/outdoor seat
	Employee	0.08	0.88	1.00	0.75	0.05	/seat
Café/Take Out	Customer (indoors)	0.58	1.00	0.95	0.75	0.41	/indoor seat
	Customer (outdoors)	0.58	1.00	0.95	0.75	0.41	/outdoor seat
	Employee	0.10	0.88	1.00	0.75	0.07	/seat
Furniture/Furnishings	Customer	1.42	1.00	1.00	0.75	1.07	/ksf GFA
	Employee	0.16	0.88	1.00	0.75	0.11	/ksf GFA
Seasonal Beer Garden	Customer	0.58	1.00	0.95	0.75	0.41	/seat
	Employee	0.10	0.88	1.00	0.75	0.07	/seat
Lifestyle/Fitness	Customer	5.50	1.00	0.95	0.75	3.92	/ksf GLA
	Employee	0.25	0.88	1.00	0.75	0.17	/ksf GLA
Active Entertainment	Customer	6.00	1.00	0.95	0.75	4.28	/ksf GLA
	Employees	1.50	0.88	1.00	0.75	0.99	/ksf GLA
Residential, Suburban	1-Bedroom	0.90	1.00	1.00	0.75	0.68	/unit
	2-Bedroom	1.65	1.00	1.00	0.75	1.24	/unit
	3-Bedroom	2.50	1.00	1.00	0.75	1.88	/unit
	Condominium	1.85	1.00	1.00	0.75	1.39	/unit
	Guest	0.10	1.00	1.00	0.75	0.08	/unit
General Office	Visitor	0.03	1.00	1.00	0.75	0.02	/ksf GFA
	Employee	0.35	0.88	1.00	0.75	0.23	/ksf GFA
Medical Office Building	Visitor	0.00	1.00	1.00	0.75	0.00	/ksf GFA
	Employee	0.00	0.88	1.00	0.75	0.00	/ksf GFA
Bank	Visitor	3.00	1.00	0.95	0.75	2.14	/ksf GFA
	Employee	1.75	0.88	1.00	0.75	1.16	/ksf GFA
Hotel	Visitor	1.00	1.00	1.00	0.75	0.75	/room

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%	95%	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%	80%	1
	Employee	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	80%	1
Medical Office Building	Visitor	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	80%	1
	Employee	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	80%	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%	80%	1
Hotel	Visitor	80%	90%	100%	100%	90%	90%	100%	100%	75%	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%	85%	75%	45%	15%	5%	0%
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%	90%	75%	75%	100%	100%	100%	100%	100%	85%	35%	5%
Fast Casual Dining	Customer (indoors)	25%	50%	60%	75%	85%	90%	100%	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%	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%
	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%	20%
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%	20%	0%
Active Entertainment	Customer	0%	0%	0%	0%	0%	5%	10%	15%	20%	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%	40%	60%	100%	100%	100%	100%	80%	50%
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%	0%
	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%	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%
	Employee	10%	30%	100%	100%	100%	100%	100%	100%	100%	100%	70%	70%	40%	20%	20%	20%	10%	5%	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, 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.

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%
	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%
	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%	95%	85%	70%	60%	50%	30%	20%	10%	0%
	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%
	Employee	10%	20%	40%	60%	80%	100%	100%	100%	95%	85%	75%	75%	75%	65%	50%	40%	20%	10%	5%
Fine/Casual Dining	Customer (indoors)	0%	0%	0%	0%	0%	15%	50%	55%	45%	45%	45%	60%	90%	95%	100%	90%	90%	90%	50%
	Customer (outdoors)	0%	0%	0%	0%	0%	5%	50%	55%	35%	25%	35%	50%	90%	100%	85%	60%	50%	40%	20%
	Employee	0%	20%	30%	60%	75%	75%	75%	75%	75%	75%	75%	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%
	Customer (outdoors)	0%	0%	10%	20%	50%	55%	65%	45%	35%	20%	35%	50%	80%	100%	90%	70%	50%	30%	10%
	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%
	Customer (outdoors)	5%	10%	20%	30%	55%	85%	100%	100%	90%	60%	55%	60%	85%	80%	50%	30%	20%	10%	5%
	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%
	Employee	25%	50%	75%	85%	100%	100%	100%	100%	100%	100%	100%	100%	75%	60%	50%	40%	30%	20%	10%
Seasonal Beer Garden	Customer	0%	0%	0%	0%	0%	25%	50%	75%	60%	55%	65%	85%	95%	100%	100%	100%	50%	25%	0%
	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%
	Employee	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	75%	100%	100%	75%	50%	20%	20%	20%	0%
Active Entertainment	Customer	0%	0%	0%	0%	15%	20%	35%	40%	45%	55%	60%	75%	95%	100%	100%	95%	95%	75%	25%
	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%
	2-Bedroom	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
	3-Bedroom	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
	Condominium	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
	Guest	0%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	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%
	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%
	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%
	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%
	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%
	Customer (outdoors)	0%	0%	0%	0%	25%	50%	95%	90%	80%	85%	90%	95%	100%	100%	95%	80%	60%	30%	15%
	Employee	0%	0%	0%	0%	25%	50%	95%	90%	80%	70%	50%	85%	90%	95%	100%	95%	80%	70%	60%

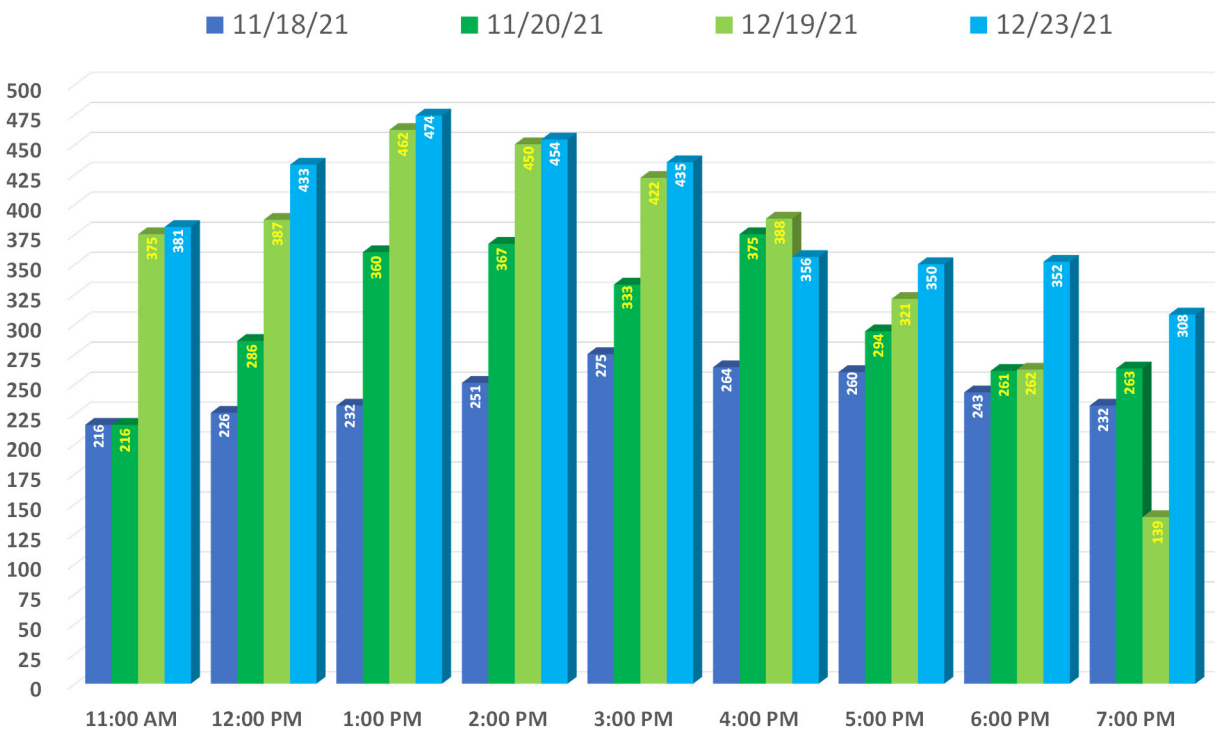
Notes:

- Sourced from *ULI's Shared Parking: 3rd Edition*, 2020, pg. 21
- Sourced from 2004-2007 sales records and time cards at 14 Trader Joes and Whole Foods in MA and RI.
- Sourced from sales records and time cards at 3 Jordan's Furniture locations in MA & NH, 2014-2015.
- 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].
- Sourced from banquet sales bookings and time cards from five Hyatt facilities in FL, 2012-2013.
- Sourced from observed splits between indoor and outdoor seating at 14 Boston-area locations observed during July 2008.
- 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.

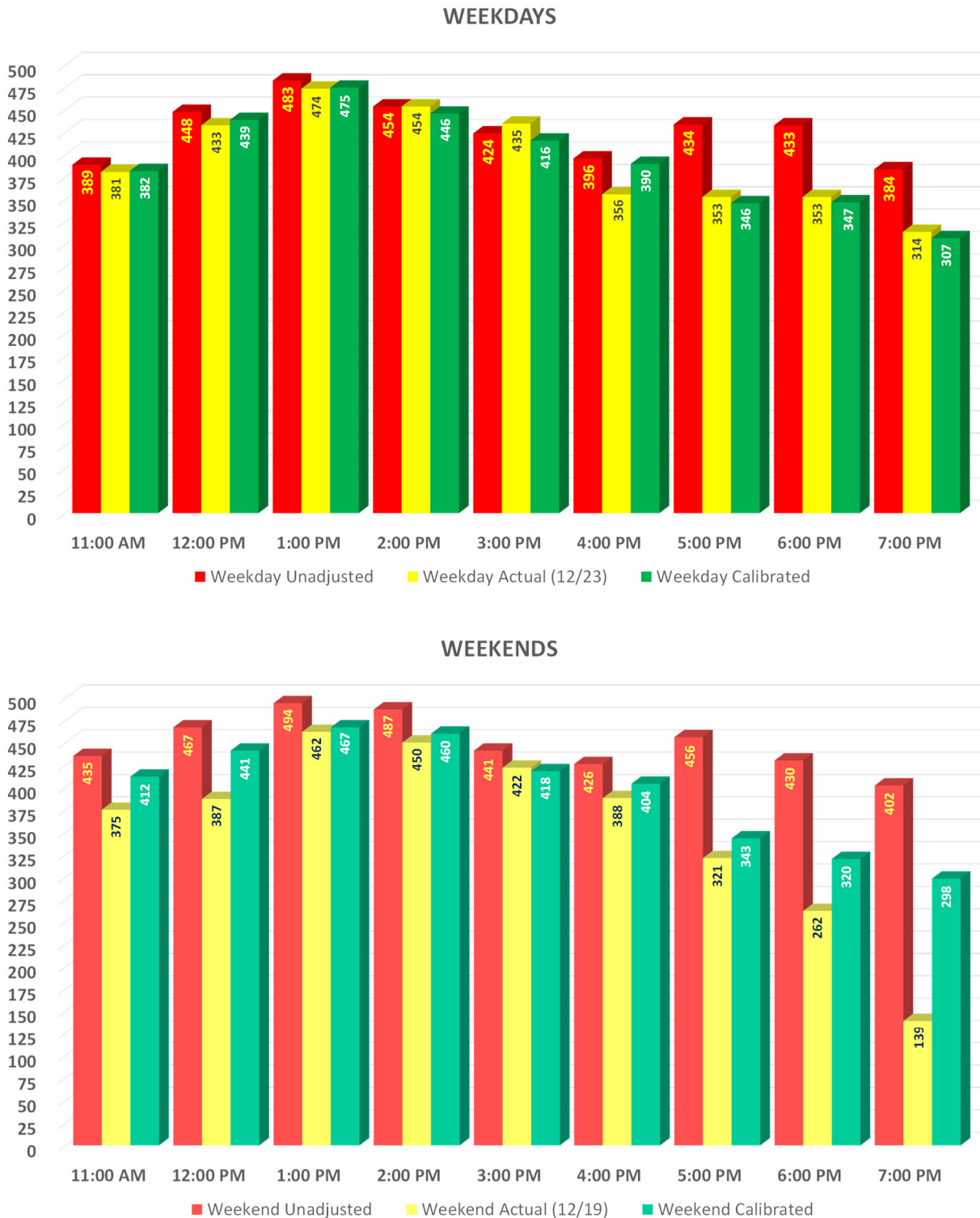
In contrast, comparison of model outputs using the December land use program to actual observed conditions on a December weekday indicate the model was forecasting results that were, on average, 9% higher than actual conditions, but the difference between peak hour projections and actual conditions at 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

	Standard Retail	Specialty Grocery	Fast/Casual Dining			Café/Take-Out Dining			Furniture/ Furnishings	Seasonal Beer Garden		Fitness	Bank	Common Area Space	Parking
Buildings	(sf GLA)	(sf GLA)	(indr sts)	(otdr sts)	(sf GFA)	(indr sts)	(otdr sts)	(sf GFA)	(sf GLA)	(seats)	(sf GFA)	(sf GLA)	(sf GFA)	(sf GFA)	(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
Subtotal Customers and Guests				804		717		900		711
Subtotal Residents and Visitors				0		0		0		0
Subtotal Employees				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												Holidays
			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	December 1:00 PM	
Standard Retail	Customer		157	162	184	178	192	192	186	194	176	181	202	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
	Employee		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	59	80	82	78
	Customer (outdoors)		0	0	0	0	35	52	70	59	52	35	0	0	0
	Employee		31	30	35	33	35	34	33	34	32	33	32	33	26
Café/Take Out	Customer (indoors)		64	64	72	69	63	52	39	43	49	56	70	71	73
	Customer (outdoors)		0	0	0	0	9	13	17	14	13	9	0	0	0
	Employee		15	14	15	15	16	15	15	15	14	15	15	16	16
Furniture/Furnishings	Customer		16	16	17	18	17	16	16	17	16	16	17	17	15
	Employee		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
	Employee		0	0	0	3	7	10	11	11	10	7	0	0	0
Lifestyle/Fitness	Customer		90	86	77	63	59	59	59	63	72	77	77	90	86
	Employee		7	7	6	5	5	5	5	5	6	6	6	7	6
Bank	Visitor		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
Subtotal Customers and Guests			408	409	439	428	483	496	489	491	485	476	457	537	489
Subtotal Residents and Visitors			0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Employees			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
Surplus/(Deficit)			308	308	268	280	215	201	209	204	218	227	248	156	217

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 12:00 PM	
Standard Retail	Customer		178	184	208	202	218	218	211	221	199	205	230	239	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
	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
	Customer (outdoors)		0	0	0	0	32	47	63	54	47	32	0	0	0
	Employee		26	26	30	29	30	29	29	29	27	28	28	29	23
Café/Take Out	Customer (indoors)		77	77	87	83	76	62	48	52	59	68	84	85	88
	Customer (outdoors)		0	0	0	0	11	16	21	18	16	11	0	0	0
	Employee		16	14	16	16	16	16	16	16	15	16	16	17	17
Furniture/Furnishings	Customer		28	28	30	32	31	29	29	31	29	29	30	31	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
	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
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
Subtotal Customers and Guests			441	444	482	475	529	535	523	530	516	513	504	527	496
Subtotal Residents and Visitors			0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Employees			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

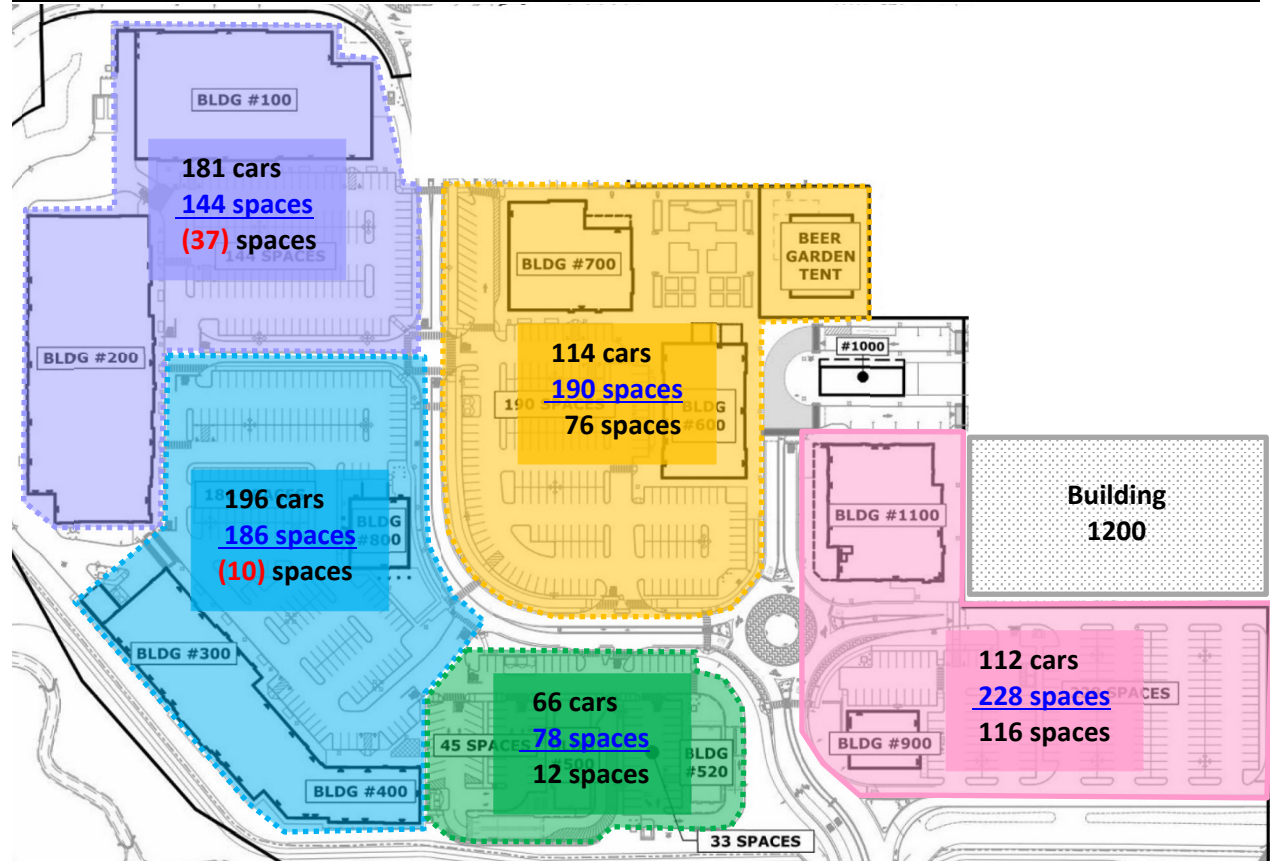
PEAK HOUR =

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

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				290	189	14,738	13	8	930					70		165	300	200
3000	27,071	198	60	9,285	178	56	8,000					140	80	10					
Subtotal	78,277	198	60	9,285	759	339	35,806	219	104	9,978	11,565	140	80	10	70	69,341	165	300	200

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	Project Ratio	Vehicles	Project Ratio	Vehicles	Project Ratio	Vehicles
Standard Retail	Customer	78,277	sf GLA	2.42	/ksf GLA	189	2.13	/ksf GLA	167	2.89	/ksf GLA
	Employee			0.60	/ksf GLA	47	0.50	/ksf GLA	39	0.67	/ksf GLA
Fine/Casual Dining	Customer (indoors)	198	indoor seats	0.61	/indoor seat	120	0.54	/indoor seat	106	0.49	/indoor seat
	Customer (outdoors)	60	outdoor seats	0.61	/outdoor seat	36	0.54	/outdoor seat	32	0.49	/outdoor seat
	Employee			0.11	/seat	29	0.09	/seat	24	0.08	/seat
Fast Casual Dining	Customer (indoors)	759	indoor seats	0.41	/indoor seat	310	0.36	/indoor seat	273	0.42	/indoor seat
	Customer (outdoors)	339	outdoor seats	0.41	/outdoor seat	138	0.36	/outdoor seat	122	0.42	/outdoor seat
	Employee			0.08	/seat	85	0.06	/seat	71	0.07	/seat
Café/Take Out	Customer (indoors)	219	indoor seats	0.43	/indoor seat	95	0.38	/indoor seat	84	0.52	/indoor seat
	Customer (outdoors)	104	outdoor seats	0.43	/outdoor seat	45	0.38	/outdoor seat	40	0.52	/outdoor seat
	Employee			0.08	/seat	25	0.06	/seat	21	0.08	/seat
Furniture/Furnishings	Customer	11,565	sf GLA	0.75	/ksf GFA	9	0.63	/ksf GFA	7	1.35	/ksf GFA
	Employee			0.06	/ksf GFA	1	0.05	/ksf GFA	1	0.13	/ksf GFA
Residential, Suburban	1-Bedroom	140	units	0.88	/unit	123	0.73	/unit	103	0.86	/unit
	2-Bedroom	80	units	1.62	/unit	129	1.34	/unit	108	1.57	/unit
	3-Bedroom	10	units	2.45	/unit	25	2.04	/unit	20	2.38	/unit
	Condominium	70	units	1.81	/unit	127	1.51	/unit	106	1.76	/unit
	Guest	300	units	0.10	/unit	29	0.08	/unit	24	0.10	/unit
General Office	Visitor	69,341	sf GFA	0.29	/ksf GFA	20	0.24	/ksf GFA	17	0.03	/ksf GFA
	Employee			3.02	/ksf GFA	209	2.51	/ksf GFA	174	0.29	/ksf GFA
Hotel	Visitor	165	room	0.98	/room	162	0.82	/room	134	0.95	/room
	Employee			0.13	/room	21	0.11	/room	18	0.13	/room
Banquet Facilities	Customer (indoors)	300	sf GFA	0.40	/ksf GFA	119	0.22	/ksf GFA	66	0.35	/ksf GFA
	Customer (outdoors)	200		0.40	/ksf GFA	79	0.22	/ksf GFA	44	0.35	/ksf GFA
	Employee	500		0.08	/ksf GFA	39	0.06	/ksf GFA	32	0.11	/ksf GFA
Subtotal Customers and Guests						1,322		1,092		1,334	
Subtotal Residents and Visitors						433		361		421	
Subtotal Employees						456		380		268	
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

		WEEKDAYS													
Land Use	User	Month:	January	February	March	April	May	June	July	August	September	October	November	December	Holidays
		Hour:	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	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
	Employee		23	23	26	25	26	25	25	26	24	25	24	25	20
	Customer (indoors)		267	267	295	288	245	202	146	146	180	223	304	310	295
Fast Casual Dining	Customer (outdoors)		0	0	0	0	69	104	138	117	104	69	0	0	0
	Employee		75	74	85	81	85	82	81	83	77	80	78	81	64
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	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
	1-Bedroom		84	84	84	84	84	84	79	79	84	84	84	84	84
Residential, Suburban	2-Bedroom		88	88	88	88	88	88	83	83	88	88	88	88	88
	3-Bedroom		17	17	17	17	17	17	16	16	17	17	17	17	17
	Condominium		86	86	86	86	86	86	82	82	86	86	86	86	86
	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	2
	Employee		178	178	178	178	178	178	169	169	178	178	178	178	142
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	37	35	33	33	31
Subtotal Customers and Guests			696	708	795	821	915	909	892	861	849	857	792	820	809
Subtotal Residents and Visitors			281	281	281	281	281	281	266	266	281	281	281	281	281
Residential Adjustment			171	171	171	171	171	171	186	186	171	171	171	171	171
Subtotal Employees			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)

		WEEKENDS													
Land Use	User	Month:	January	February	March	April	May	June	July	August	September	October	November	December	Holidays
		Hour:	12:00 PM	12:00 PM	12:00 PM		12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	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
	Employee		13	12	14	14	14	14	14	14	13	13	13	14	11
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
	Employee		64	64	73	69	73	70	69	72	66	69	67	69	55
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
	Employee		25	23	25	25	26	25	26	26	24	25	26	27	26
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	80	76	76	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	43	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	51	49	46	46	44
Subtotal Customers and Guests			706	719	806	826	892	872	833	817	809	831	806	806	805
Subtotal Residents and Visitors			255	255	255	255	255	255	242	242	255	255	255	255	255
Residential Adjustment			191	191	191	191	191	191	204	204	191	191	191	191	191
Subtotal Employees			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

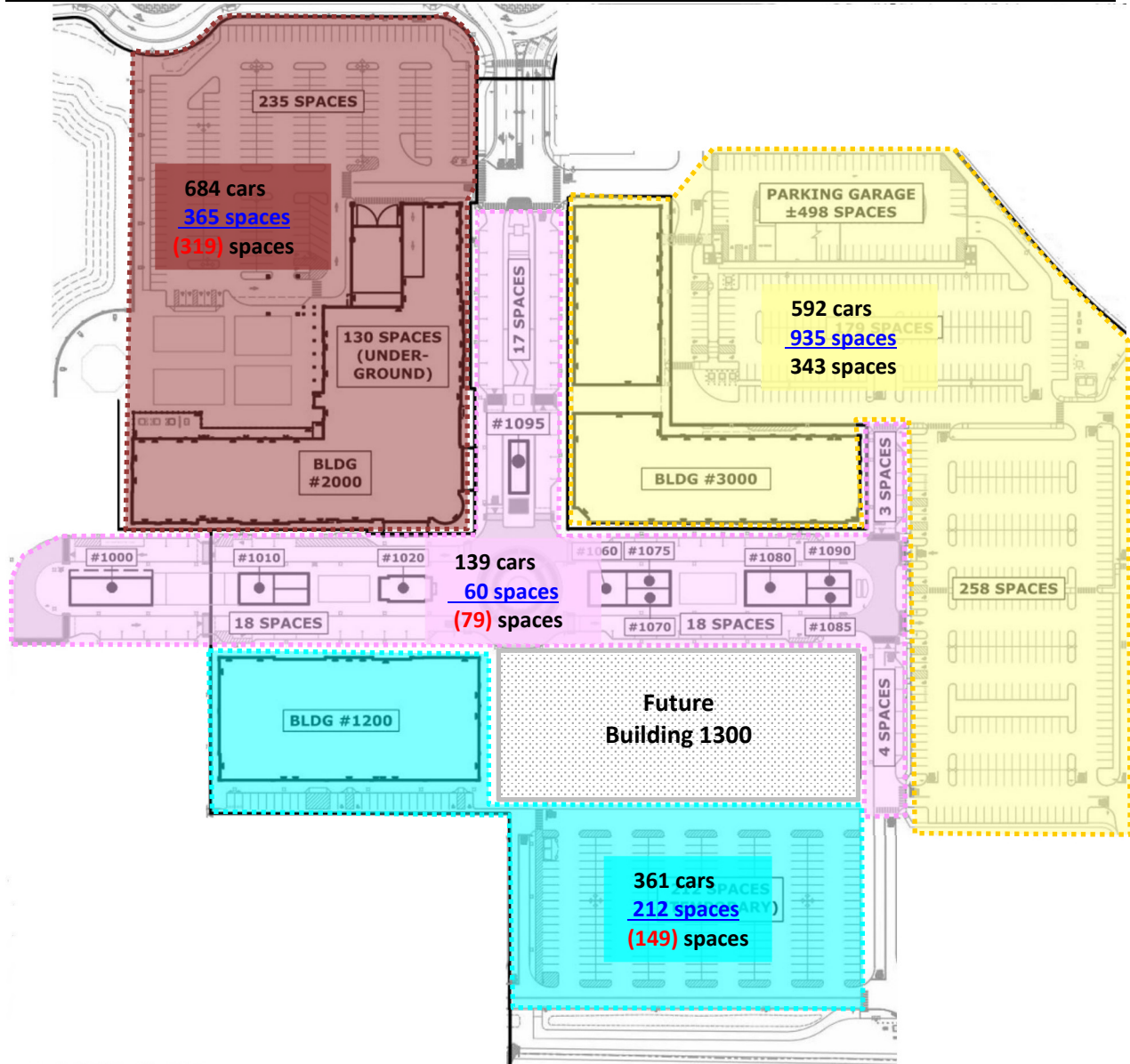
PEAK HOUR =

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	Project Ratio	Vehicles	Project Ratio	Vehicles	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
Fast Casual Dining	Employee		0.11 /seat	29	0.09 /seat	24	0.08 /seat	19	0.06 /seat	15
	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
Café/Take Out	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
Furniture/Furnishings	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
Seasonal Beer Garden	Employee		0.08 /seat	41	0.06 /seat	34	0.08 /seat	44	0.07 /seat	35
	Customer	38,015 sf GLA	0.75 /ksf GFA	29	0.63 /ksf GFA	24	1.35 /ksf GFA	51	1.07 /ksf GFA	40
Lifestyle/Fitness	Employee		0.06 /ksf GFA	2	0.05 /ksf GFA	2	0.13 /ksf GFA	5	0.11 /ksf GFA	4
	Customer	200 seats	0.48 /seat	97	0.40 /seat	81	0.52 /seat	105	0.41 /seat	83
Active Entertainment	Employee		0.08 /seat	16	0.06 /seat	13	0.08 /seat	17	0.07 /seat	13
	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
Residential, Suburban	Employee		0.34 /ksf GLA	9	0.29 /ksf GLA	7	0.21 /ksf GLA	5	0.17 /ksf GLA	4
	Customer	0 sf GLA	4.58 /ksf GLA	0	4.03 /ksf GLA	0	5.42 /ksf GLA	0	4.28 /ksf GLA	0
General Office	Employees		1.08 /ksf GLA	0	0.90 /ksf GLA	0	1.25 /ksf GLA	0	0.99 /ksf GLA	0
	1-Bedroom	140 units	0.88 /unit	123	0.73 /unit	103	0.86 /unit	120	0.68 /unit	95
Medical Office Building	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
Bank	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
Hotel	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
Banquet Facilities	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
Subtotal Customers and Guests	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
Subtotal Residents and Visitors	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
Subtotal Employees	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
TOTAL	Employee	500 sf GFA	0.08 /ksf GFA	39	0.06 /ksf GFA	32	0.11 /ksf GFA	54	0.09 /ksf GFA	43
Subtotal Customers and Guests				2,125		1,808		2,233		1,718
Subtotal Residents and Visitors				433		361		421		333
Subtotal Employees				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

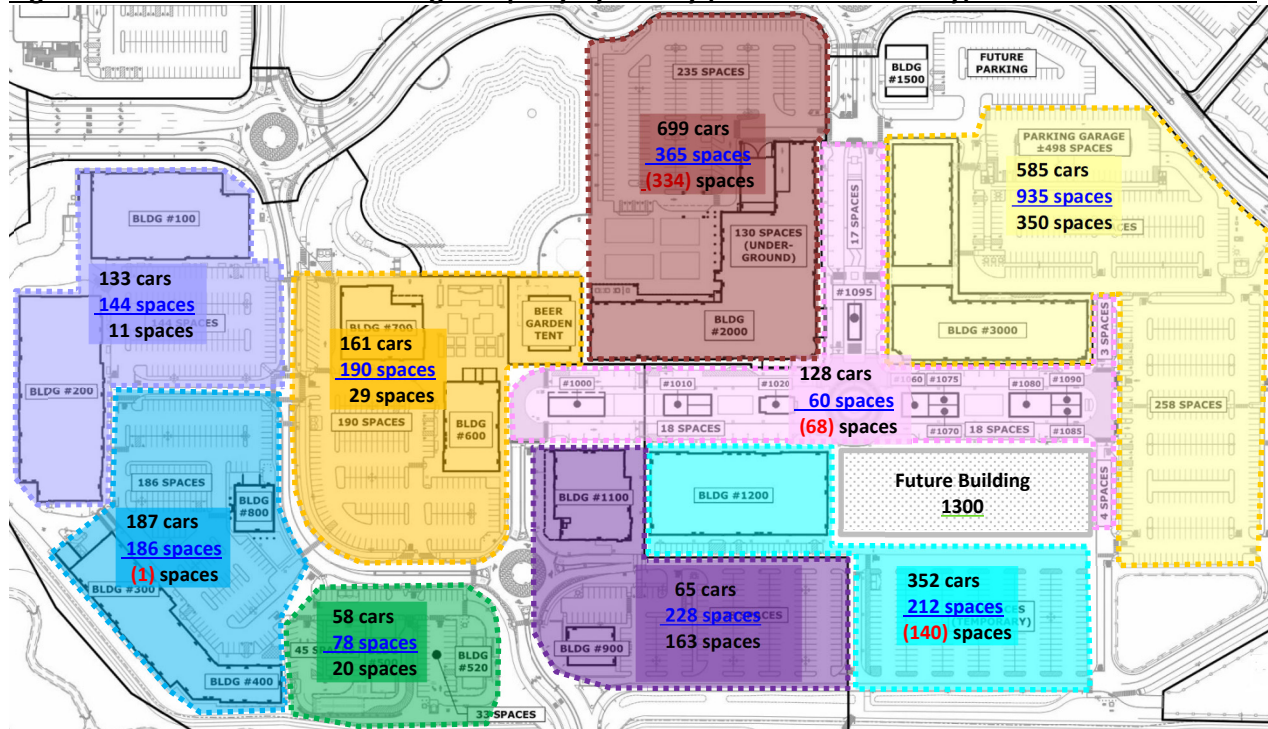
Land Use	User	Month: Hour:	WEEKDAYS												Holidays 1:00 PM
			January 12:00 PM	February 12:00 PM	March 12:00 PM	April 12:00 PM	May 12:00 PM	June 12:00 PM	July 12:00 PM	August 12:00 PM	September 12:00 PM	October 12:00 PM	November 12:00 PM	December 1:00 PM	
Standard Retail	Customer		255	264	298	290	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
	Employee		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
	Employee		23	23	26	25	26	25	25	26	24	25	24	25	20
Fast Casual Dining	Customer (indoors)		344	344	380	372	316	260	188	188	232	288	392	360	342
	Customer (outdoors)		0	0	0	0	116	173	231	196	173	116	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
	Employee		38	35	38	38	40	38	39	39	37	38	39	41	40
Furniture/Furnishings	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
Seasonal Beer Garden	Customer		0	0	0	7	17	26	29	29	26	17	0	0	0
	Employee		0	0	0	2	5	7	8	8	7	5	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	9	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
	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	37	35	33	32	30
Subtotal Customers and Guests			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
Subtotal Residents and Visitors			281	281	281	281	281	281	266	266	281	281	281	269	269
Residential Adjustment			171	171	171	171	171	171	186	186	171	171	171	183	183
Subtotal Employees			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 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		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
Fast Casual Dining	Customer (indoors)		358	358	395	387	329	270	196	196	241	300	408	416	395
	Customer (outdoors)		0	0	0	0	78	117	157	133	117	78	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
	Employee		40	37	41	40	43	41	42	42	40	41	42	44	43
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	43	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	51	49	46	46	44
Subtotal Customers and Guests			1,147	1,163	1,288	1,302	1,420	1,404	1,358	1,345	1,322	1,342	1,311	1,331	1,300
Subtotal Residents and Visitors			255	255	255	255	255	255	242	242	255	255	255	255	255
Residential Adjustment			191	191	191	191	191	191	204	204	191	191	191	191	191
Subtotal Employees			319	317	348	344	366	366	365	372	352	352	350	373	333
TOTAL			1,912	1,926	2,082	2,092	2,232	2,216	2,169	2,163	2,120	2,140	2,107	2,150	2,079
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)			486	472	316	306	166	182	229	235	278	258	291	248	319

PEAK HOUR =

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.