

## TECHNICAL MEMORANDUM

**DATE:** *Tuesday, August 07, 2018*

**TO:** *Ronald H. Williams, Jr. – City of Virginia Beach; Bruce Berlin – Venture Realty Group*

**CC:** *City of Virginia Beach; The Wave Development Team; John Judge - DESMAN*

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

**PROJECT:** *Virginia Beach Dome Redevelopment*      **PROJECT #:** *20-18126.00-3*

**RE:** *Shared Parking Analysis Report*

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### DEVELOPMENT PROGRAM

Working off the most recent development plan provided by the developer (Venture Realty Group), DESMAN developed a summary of the proposed development program. This program includes the following:

- 84,550 square feet of standard retail (e.g. Old Navy);
- 35,000 square feet of specialty grocery (e.g. Whole Foods);
- 35,300 square feet of fine/casual dining (e.g. Ruth Chris);
- 4,300 square feet of fast/casual dining (e.g. Sweetgreen);
- 4,300 square feet of café/take-out restaurant (e.g. Starbucks);
- 35,000 square feet of Museum/Interactive Entertainment (e.g. National Geographic);
- A 800-seat high-end Cineplex (e.g. IPic);
- 10,800 square feet of Lifestyle/Entertainment (e.g. Brooklyn Boulders);
- 15,000 square feet of Experiential Retail (e.g. Bridge);
- 426 residential units;
- 152,850 square feet of General Office;
- A 236,000 square foot Surf Park;
- A 3,500-seat Performing Arts Venue; and –
- 1,935 on-site parking spaces.

The proposed development program was five separate blocks. A listing of land use assumptions per the provided development program is included as an Appendix to this analysis. An image showing the program provided is included as **Figure 1** on the following page. It should be noted that there is a slight discrepancy between the parking supply totals listed on this illustration and those shown in the prior accounting. This exists because DESMAN did not include public on-street parking spaces as part of the planned parking supply to support the project.

Figure 1: Site Plan



## 130M SURF PARK GROUND FLOOR PLAN

THE WAVE DEVELOPMENT  
Virginia Beach, VA



## SHARED USE BACKGROUND

At the request of the City of Virginia Beach and Venture Realty Group, 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.

Shared Parking methodology is a statistical modeling approach that incorporates real-world data on how land uses actually behave and simulates how parking demand for each land use in a development waxes and wanes during the course of day and year. This methodology allows the planner to accurately determine the need for the development as an organic whole, rather than an assembly of disparate parts. 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. 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 mathematical 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. Where possible, these were used in the model developed to assess this project.

However, not all planned land uses had corresponding demand ratios published in a peer-reviewed publication. Where these ratios were not available, DESMAN applied the following methodology as follows:

- **Specialty Grocery:** Specialty Groceries such as Whole Foods, Trader Joes, Wegman, Publix, etc. rose in popularity in the early 2000's. While a fairly common tenant in high-end mixed-use projects, these land uses have yet to be subject of an extensive, peer-reviewed study endorsed by ULI, ITE, etc. Members of the DESMAN team performed a study of fourteen separate Specialty

Groceries in operation in the northeastern U.S. from 2003 to 2006 to establish the demand ratios and presence factors used in this model. This data has not been peer reviewed or published to date and is proprietary.

- **Museum/Interactive:** Typically, parking demand for museums and similar land uses is calculated against staffing estimates and projected daily visitor volumes. These statistics were unavailable for this project and none of the industry standard publications provided a recommended base demand ratio for this land use. Working with parking statistics compiled through prior studies executed for the Smithsonian Institution, the Boston Museum of Science, the New England Aquarium, and the Boston Children's Museum, DESMAN was able to identify peak demand periods for each institution from actual vehicle counts and compare those to the gross floor area for each institution to render base demand ratios. Following standard methodology, DESMAN adopted a ratio reflecting the 85<sup>th</sup> percentile of the range of ratios and subdivided these ratios according to employee population versus daily visitor volumes to determine the distribution within the base demand ratio between customers and employees.
- **High End Cinema:** For this land use, DESMAN used the standard base demand ratio recommended by the Urban Land Institute, modified slightly to reflect differences in demand and presence noted through longitudinal studies of ten 'luxury' cineplexes in the eastern U.S. conducted between 2003 and 2009. The data from these studies is proprietary to American Multi-Cinema, Inc. (AMC), but the demand ratios and presence factors calculated from this data belong to DESMAN, which applied them to this analysis.
- **Lifestyle/Entertainment:** Based on the developer's description of this land use, DESMAN determined that the most applicable demand ratio from existing literature was for a Health Club as defined and presented in the Urban Land Institute's **Shared Parking: 2nd Edition**. This decision was validated by discussions with managers for a chain of indoor climbing centers in New England<sup>1</sup>, as well as observations of parking demand accumulation during the course of a typical weekday and Saturday in May 2018. The management at these centers also provided proprietary staffing and membership statistics from calendar 2016 and 2017 which were used to develop hourly and seasonal presence factors.
- **Experiential Retail:** No parking or transportation resource has a base parking demand ratio associated with this land use, so DESMAN applied the highest range ratio recommended in **Shared Parking: 2<sup>nd</sup> Edition** for retail stores.
- **Apartments:** Based on conversations with the developer and the City, DESMAN assumed each residential unit would have one dedicated parking space. Based on these seem conversations, DESMAN assumed that demand for parking would average 1.0 space/unit for Studio apartments, 1.25 spaces/unit for One-Bedroom apartments, 2.0 spaces/unit for Two-Bedroom apartments, and 2.5 spaces/unit for Three-Bedroom apartments. Based on the mix of proposed units, this translated into an averaged ratio of 1.12 spaces/unit for Studio and One-Bedroom apartments, and 2.06 spaces/unit for apartments with multiple bedrooms. These factors were applied to the model as one reserved space per unit for all residential units, 0.12 spaces/unit (unreserved) for single-bed units, and 1.06 spaces/unit (unreserved) for multi-bed units, plus 0.05 spaces/unit for all units for guest parking (unreserved).

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<sup>1</sup> Name withheld per terms of Non-Disclosure Agreement and/or at the request of the company.

- **Surf Park:** This land use was the most challenging as it is not only without precedent within the parking industry, but does not exist in an observable form in the continental U.S. Given that there was no historical data to calculate a based parking demand ratio from, DESMAN used projected visitor statistics as provided by the developer to calculate an average based demand ratio for the land use. DESMAN then contacted subject matter experts to gain their insight and recommendations regarding both base demand ratios and presence factors including:
  - A publicly traded partnership<sup>2</sup> which owns and operates multiple amusement parks, outdoor water parks, indoor water parks, and hotels in the U.S. and Canada. The company provided some limited data regarding parking, staffing figures, and visitors volumes under a proprietary agreement to aid in estimating base parking demand and presence according to time of day and year.
  - A family-run waterpark located in New England<sup>3</sup>. The park has been in continuous operation for over 20 years under the same family and hosts roughly 100,000 visitors annually. This contributor provided some limited data regarding parking, staffing figures, and visitors volumes under a proprietary agreement to aid in estimating base parking demand and presence according to time of day and year.
  - Based in Cohoes, New York, Aquatic Development Group (ADG) is one of the leading wave generation and water park design/build firm in the United States. ADG did not provide any data for this study, but did provide counsel and insight on the water park industry as DESMAN was developing its model.
  - The World Waterpark Association (WWA), founded in 1982, is an international not-for-profit member-based trade association that serves waterparks, aquatic venues and spray parks of all shapes and sizes based on Overland Park, Kansas. The WWA is governed by a volunteer Board of Directors consisting of 14 waterpark owners, operators, suppliers and developers and has approximately 1,200 members. The WWA did not provide any data for this study, but did provide counsel and insight on the water park industry as DESMAN was developing its model.

DESMAN applied the base demand ratios, shown in **Table 1** on the next page to the proposed program.

Adjustments to base demand ratios were 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 [2016] American Community Survey (ACS) covering the City of Virginia Beach and administered by the US Census Bureau, reported that 81.9% of the local populace drive themselves to work in a personal vehicle; the remainder either carpooled (8.7%), rode transit (0.9%), worked from home (4.0%), walked (2.6%) or commuted by other means (1.9%). This is the basis for DESMAN's assumptions regarding mode adjustment (.82) specific to the project for employees.

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<sup>2</sup> Name withheld per terms of Non-Disclosure Agreement and/or at the request of the company.

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**Table 1: Base Parking Demand Ratios**

Land Use	User Group	Weekday	Weekend	Unit	Source
Standard Retail	Customer	2.90	3.20	/ksf GLA	<b>Shared Parking: 2nd Edition</b> . Washington DC: <i>ULI-The Urban Land Institute</i> , 2005, p.11
	Employee	0.70	0.80	/ksf GLA	<b>Shared Parking: 2nd Edition</b> . Washington DC: <i>ULI-The Urban Land Institute</i> , 2005, p.11
Specialty Grocery	Customer	3.50	3.70	/ksf GLA	DESMAN Inc. (proprietary information from 14 specialty grocer stores in New England, 2003-2006).
	Employee	0.60	0.50	/ksf GLA	DESMAN Inc. (proprietary information from 14 specialty grocer stores in New England, 2003-2006).
Fine/Casual Dining	Customer	12.00	19.00	/ksf GLA	<b>Parking Generation: 4th Edition</b> . Washington DC: <i>ITE - Institute of Transportation Engineers</i> , 2010
	Employee	2.20	3.70	/ksf GLA	<b>Parking Generation: 4th Edition</b> . Washington DC: <i>ITE - Institute of Transportation Engineers</i> , 2010
Fast Casual Dining	Customer	15.00	17.00	/ksf GFA	<b>Parking Generation: 4th Edition</b> . Washington DC: <i>ITE - Institute of Transportation Engineers</i> , 2010
	Employee	2.40	3.40	/ksf GFA	<b>Parking Generation: 4th Edition</b> . Washington DC: <i>ITE - Institute of Transportation Engineers</i> , 2010
Café/Take Out	Customer	12.00	16.00	/ksf GLA	<b>Parking Generation: 4th Edition</b> . Washington DC: <i>ITE - Institute of Transportation Engineers</i> , 2010
	Employee	2.50	2.85	/ksf GLA	<b>Parking Generation: 4th Edition</b> . Washington DC: <i>ITE - Institute of Transportation Engineers</i> , 2010
Museum/Interactive	Customer	3.68	3.19	/ksf GFA	DESMAN Inc. (proprietary information from operation studies of the Smithsonian, NEAQ, MoS, BCM).
	Employee	0.65	0.56	/ksf GFA	DESMAN Inc. (proprietary information from operation studies of the Smithsonian, NEAQ, MoS, BCM).
High End Cinema	Customer	0.19	0.26	/seat	DESMAN Inc (proprietary information from AMC, 2003-2009) and <b>Shared Parking: 2nd Edition</b> ., 2005, p.11
	Employee	0.01	0.01	/seat	DESMAN Inc (proprietary information from AMC, 2003-2009) and <b>Shared Parking: 2nd Edition</b> ., 2005, p.11
Lifestyle/Entertainment	Customer	6.60	5.50	/ksf GLA	<b>Shared Parking: 2nd Edition</b> . Washington DC: ULI - Urban Land Institute, 2005, p.11 and other contributors.
	Employee	0.40	0.25	/ksf GLA	<b>Shared Parking: 2nd Edition</b> . Washington DC: ULI - Urban Land Institute, 2005, p.11 and other contributors.
Experiential Retail	Customer	3.20	3.60	/ksf GLA	<b>Shared Parking: 2nd Edition</b> . Washington DC: <i>ULI-The Urban Land Institute</i> , 2005, p.11
	Employees	0.80	0.90	/ksf GLA	<b>Shared Parking: 2nd Edition</b> . Washington DC: <i>ULI-The Urban Land Institute</i> , 2005, p.11
Apartments	Studio/1BR	0.12	0.12	/unit	DESMAN Inc.
	Multi-BR	1.06	1.06	/unit	DESMAN Inc.
	Reserved	1.00	1.00	/unit	DESMAN Inc.
	Guest	0.05	0.05	/unit	DESMAN Inc.
General Office	Visitor	0.30	0.03	/ksf GFA	<b>Shared Parking: 2nd Edition</b> . Washington DC: ULI - Urban Land Institute, 2005, p.11
	Employee	3.50	0.35	/ksf GFA	<b>Shared Parking: 2nd Edition</b> . Washington DC: <i>ULI - Urban Land Institute</i> , 2005, p.11
Surf Park	Visitor	1.25	1.33	/ksf GFA	DESMAN Inc. (per ADG, WWA and other contributors)
	Employee	0.05	0.08	/ksf GFA	DESMAN Inc. (per ADG, WWA and other contributors)
Performing Arts Venue	Visitor	0.30	0.33	/seat	<b>Shared Parking: 2nd Edition</b> . Washington DC: <i>ULI - Urban Land Institute</i> , 2005, p.11
	Employee	0.07	0.07	/seat	<b>Shared Parking: 2nd Edition</b> . Washington DC: <i>ULI - Urban Land Institute</i> , 2005, p.11

The 2016 American Community Survey for Virginia Beach also notes that 4% of households reported owning no vehicle, so DESMAN assumed a .96 factor for the unreserved parking demand ratios associated with single (.12 spaces/unit) and multiple (1.06 spaces/unit) bedroom apartments.

In the absence of definitive documentation regarding mode choice by customers, visitors and other discretionary users, DESMAN applied assumption based on experience with similar projects and settings and conversations with the City of Virginia Beach and the developer. These assumptions were as follows:

- Roughly 5% of shoppers, diners, cinema patrons, lifestyle/entertainment customers, office visitors, and performing arts event attendees would come to the project by means other than a single-occupant vehicle. These assumptions were vetted and validated relative to local experience by the City of Virginia Beach and the developer.
- Roughly one in four (25%) museum visitors would come by means other than a single-occupant vehicle, most commonly a group van, school or charter bus. This assumption was vetted and validated relative to local experience by the City of Virginia Beach and the developer.
- Roughly one in three (24%) surf park customers would come by means other than a single-occupant vehicle, most commonly a group van, school or charter bus. This assumption was vetted and validated relative to local experience by the City of Virginia Beach and the developer.

*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 going for 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, in essence “double counting” him. Capture adjustments can result in significant reductions in base demand ratios – depending on land use – as a substantial percentage of the patrons to a particular business can be coming from inside the project,

thereby not generating any additional parking demand. 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 residents who might also patronize retail stores, restaurants, entertainment venues, or attractions on-site without necessarily generating any additional trips or resulting parking demand.

Applied capture assumptions to this model were as follows:

- *Retail*: One in four (25%) retail patrons would be captive within the project or immediate surrounding area on weekdays, weekday evenings, weekends and weekend evenings, walking to the project rather than generating an additional vehicle's worth of demand.
- *Grocery*: One in three (33%) grocery shoppers would be captive within the project or immediate surrounding area on weekdays, weekday evenings, weekends and weekend evenings, walking to the project rather than generating an additional vehicle's worth of demand.
- *Fine/Casual Restaurants*: One in every two (50%) of Fine/Casual diners would be captive within the project or immediate surrounding area on weekdays for lunch service, walking to the project rather than generating an additional vehicle's worth of demand. This capture rate is projected to decline during the course of the day and on evenings, when a greater share of patronage will drive to the destination from outlying areas, so DESMAN applied larger adjustments to weekday dinner service (.55), weekend lunch service (.65), and weekend dinner service (.67).
- *Fast Casual Restaurants*: One in every two (50%) of Fast Casual diners would be captive within the project or immediate surrounding area on weekdays for lunch service, walking to the project rather than generating an additional vehicle's worth of demand. This capture rate is projected to decline during the course of the day and on evenings, when a greater share of patronage will drive to the destination from outlying areas, so DESMAN applied larger adjustments to weekday dinner service (.60), weekend lunch service (.75), and weekend dinner service (.80).
- *Café/Take-Out Restaurants*: Two in every three (67%) of Café/Take-Out Restaurant customers would be captive within the project or immediate surrounding area on weekdays for lunch service, walking to the project rather than generating an additional vehicle's worth of demand. This capture rate is projected to decline during the course of the day and on evenings, when a greater share of patronage will drive to the destination from outlying areas, so DESMAN applied larger adjustments to weekday dinner service (.40), weekend lunch service (.55), and weekend dinner service (.60).
- *Museum/Interactive*: DESMAN assumed that roughly 20% of museum visitors would be tourists staying in hotels in the surrounding area who would elect to leave their vehicle at the hotel and walk to the site, thereby not generating demand associated with this land use during their visit.
- *Cineplex*: One in four (25%) movie goers would be captive within the project or immediate surrounding area on weekdays, weekday evenings, weekends and weekend evenings, walking to the project rather than generating an additional vehicle's worth of demand.
- *Lifestyle/Entertainment*: One in four (25%) patrons would be captive within the project or immediate surrounding area on weekdays, weekday evenings, weekends and weekend evenings, walking to the project rather than generating an additional vehicle's worth of demand.

- *Surf Park*: DESMAN anticipates this land use will be a major regional, and possibly national, draw to the project; a ‘destination’ feature that individuals will plan a trip to Virginia Beach around, due to its uniqueness. This assumption was affirmed by conversations with ADG and the WWA, which indicate similar observations with comparable developments. As a result, DESMAN assumed a significant portion of the patronage will be staying at area hotels and walking or ride-sharing (i.e. taxi, Uber, Lyft, shuttle, etc.) to the project. On weekdays, DESMAN assumed roughly one-third (34%) of patrons would be captive in the area, resulting in an applied factor of .66. On weekday evenings and weekends, the percentage of captive users was expected to increase to 50%.
- *Performing Arts Venue*: DESMAN anticipates this land use will also be a major regional, and possibly national, draw to the project; a ‘destination’ feature that individuals will plan a trip to Virginia Beach around, depending on the artists performing. This assumption was based on work performed in similar locations with comparable element. As a result, DESMAN assumed a significant portion of the patronage will be staying at area hotels and walking or ride-sharing (i.e. taxi, Uber, Lyft, shuttle, etc.) to the project. DESMAN assumed roughly one-half (50%) of patrons would be captive in the area, resulting in an applied factor of .50. In addition, and based on conversations with the developer, DESMAN assumed that roughly 40% of the venue’s employees would be area residents who would walk, bike, take transit, or catch a ride to the project or park off-site during performance.

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

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 a 35,000 square feet of specialty grocery has a peak parking demand equal to 95-96 parking spaces. However, this demand is influenced by the hours of operation. At 3:00 AM, the grocery store is unlikely to project any parking demand at all. Additionally, parking demand is influenced by the time of year. Traditionally, grocery stores are busiest during the winter holidays and slowest in in the summer, when more people eat out. Therefore, so is parking demand associated with the grocery store.

Presence becomes a significant factor in a mixed-use environment like The Wave because it allows different land uses to share the same parking supply. For example, the office component planned within the project will exert the greatest demand on weekdays mornings outside traditional holiday and vacation periods, when most employees are present. Inversely, the Performing Arts Venue will have the highest attendance during summer evenings, when the office is largely empty. This interplay of complimentary land use allows the development of a parking supply which can serve both populations congruently.

Variations for time of day and time of year for weekends (Saturdays) were also calculated for The Wave and applied to the model. The majority of presence adjustments were taken from **ULI’s Shared Parking: 2<sup>nd</sup> Edition**, except where otherwise noted. 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.



**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 Ratio	Modal Adj.	Capture Adj.	Local Adj.	Project Ratio	Unit	Land Use	User Group	Base Ratio	Modal Adj.	Capture Adj.	Local Adj.	Project Ratio	Unit
Standard Retail	Customer	2.90	0.95	0.75	1.00	2.07	/ksf GLA	Standard Retail	Customer	2.90	0.95	0.75	1.00	2.07	/ksf GLA
	Employee	0.70	0.82	1.00	1.00	0.57	/ksf GLA		Employee	0.70	0.82	1.00	1.00	0.57	/ksf GLA
Specialty Grocery	Customer	3.50	0.95	0.67	1.00	2.23	/ksf GLA	Specialty Grocery	Customer	3.50	0.95	0.67	1.00	2.23	/ksf GLA
	Employee	0.60	0.82	1.00	1.00	0.49	/ksf GLA		Employee	0.60	0.82	1.00	1.00	0.49	/ksf GLA
Fine/Casual Dining	Customer	12.00	0.95	0.50	1.00	5.70	/ksf GLA	Fine/Casual Dining	Customer	12.00	0.95	0.55	1.00	6.27	/ksf GLA
	Employee	2.20	0.82	1.00	1.00	1.80	/ksf GLA		Employee	2.20	0.82	1.00	1.00	1.80	/ksf GLA
Fast Casual Dining	Customer	15.00	0.95	0.50	1.00	7.13	/ksf GFA	Fast Casual Dining	Customer	15.00	0.95	0.60	1.00	8.55	/ksf GFA
	Employee	2.40	0.82	1.00	1.00	1.97	/ksf GFA		Employee	2.40	0.82	1.00	1.00	1.97	/ksf GFA
Café/Take Out	Customer	12.00	0.95	0.33	1.00	3.76	/ksf GFA	Café/Take Out	Customer	12.00	0.95	0.40	1.00	4.56	/ksf GFA
	Employee	2.50	0.82	1.00	1.00	2.05	/ksf GFA		Employee	2.50	0.82	1.00	1.00	2.05	/ksf GFA
Museum/Interactive	Customer	3.68	0.75	0.80	1.00	2.21	/ksf GFA	Museum/Interactive	Customer	3.68	0.75	0.80	1.00	2.21	/ksf GFA
	Employee	0.65	0.82	1.00	1.00	0.53	/ksf GFA		Employee	0.65	0.82	1.00	1.00	0.53	/ksf GFA
High End Cinema	Customer	0.19	0.95	0.75	1.00	0.14	/seat	High End Cinema	Customer	0.19	0.95	0.75	1.00	0.14	/seat
	Employee	0.01	0.82	1.00	1.00	0.01	/seat		Employee	0.01	0.82	1.00	1.00	0.01	/seat
Lifestyle/Entertainment	Customer	6.60	0.95	0.75	1.00	4.70	/ksf GLA	Lifestyle/Entertainment	Customer	6.60	0.95	0.75	1.00	4.70	/ksf GLA
	Employee	0.40	0.82	1.00	1.00	0.33	/ksf GLA		Employee	0.40	0.82	1.00	1.00	0.33	/ksf GLA
Experiential Retail	Customer	3.20	0.95	0.75	1.00	2.28	/ksf GLA	Experiential Retail	Customer	3.20	0.95	0.75	1.00	2.28	/ksf GLA
	Employees	0.80	0.82	1.00	1.00	0.66	/ksf GLA		Employees	0.80	0.82	1.00	1.00	0.66	/ksf GLA
Apartments	Studio/1BR	0.12	0.96	1.00	1.00	0.12	/unit	Apartments	Studio/1BR	0.12	0.96	1.00	1.00	0.12	/unit
	Multi-BR	1.06	0.96	1.00	1.00	1.02	/unit		Multi-BR	1.06	0.96	1.00	1.00	1.02	/unit
	Reserved	1.00	1.00	1.00	1.00	1.00	/unit		Reserved	1.00	1.00	1.00	1.00	1.00	/unit
	Guest	0.05	0.95	1.00	1.00	0.05	/unit		Guest	0.05	0.95	1.00	1.00	0.05	/unit
General Office	Visitor	0.30	0.95	1.00	1.00	0.29	/ksf GFA	General Office	Visitor	0.30	0.95	1.00	1.00	0.29	/ksf GFA
	Employee	3.50	0.82	1.00	1.00	2.87	/ksf GFA		Employee	3.50	0.82	1.00	1.00	2.87	/ksf GFA
Surf Park	Visitor	1.25	0.66	0.66	1.00	0.54	/ksf GFA	Surf Park	Visitor	1.25	0.66	0.50	1.00	0.41	/ksf GFA
	Employee	0.05	0.82	1.00	1.00	0.04	/ksf GFA		Employee	0.05	0.82	1.00	1.00	0.04	/ksf GFA
Performing Arts Venue	Visitor	0.30	0.95	0.50	1.00	0.14	/seat	Performing Arts Venue	Visitor	0.30	0.95	0.50	1.00	0.14	/seat
	Employee	0.07	0.82	0.60	1.00	0.03	/seat		Employee	0.07	0.82	0.60	1.00	0.03	/seat

WEEKENDS															
DAYTIME (6:00 AM - 4:59 PM)						EVENING (5:00 PM - 12:00 AM)									
Land Use	User Group	Base Ratio	Modal Adj.	Capture Adj.	Local Adj.	Project Ratio	Unit	Land Use	User Group	Base Ratio	Modal Adj.	Capture Adj.	Local Adj.	Project Ratio	Unit
Standard Retail	Customer	3.20	0.95	0.75	1.00	2.28	/ksf GLA	Standard Retail	Customer	3.20	0.95	0.75	1.00	2.28	/ksf GLA
	Employee	0.80	0.82	1.00	1.00	0.66	/ksf GLA		Employee	0.80	0.82	1.00	1.00	0.66	/ksf GLA
Specialty Grocery	Customer	3.70	0.95	0.67	1.00	2.36	/ksf GLA	Specialty Grocery	Customer	3.70	0.95	0.67	1.00	2.36	/ksf GLA
	Employee	0.50	0.82	1.00	1.00	0.41	/ksf GLA		Employee	0.50	0.82	1.00	1.00	0.41	/ksf GLA
Fine/Casual Dining	Customer	19.00	0.95	0.65	1.00	11.73	/ksf GLA	Fine/Casual Dining	Customer	19.00	0.95	0.67	1.00	12.09	/ksf GLA
	Employee	3.70	0.82	1.00	1.00	3.03	/ksf GLA		Employee	3.70	0.82	1.00	1.00	3.03	/ksf GLA
Fast Casual Dining	Customer	17.00	0.95	0.75	1.00	12.11	/ksf GFA	Fast Casual Dining	Customer	17.00	0.95	0.80	1.00	12.92	/ksf GFA
	Employee	3.40	0.82	1.00	1.00	2.78	/ksf GFA		Employee	3.40	0.82	1.00	1.00	2.78	/ksf GFA
Café/Take Out	Customer	16.00	0.95	0.55	1.00	8.36	/ksf GLA	Café/Take Out	Customer	16.00	0.95	0.60	1.00	9.12	/ksf GLA
	Employee	2.85	0.82	1.00	1.00	2.33	/ksf GLA		Employee	2.85	0.82	1.00	1.00	2.33	/ksf GLA
Museum/Interactive	Customer	3.19	0.75	0.80	1.00	1.91	/ksf GFA	Museum/Interactive	Customer	3.19	0.75	0.80	1.00	1.91	/ksf GFA
	Employee	0.56	0.82	1.00	1.00	0.46	/ksf GFA		Employee	0.56	0.82	1.00	1.00	0.46	/ksf GFA
High End Cinema	Customer	0.26	0.95	0.75	1.00	0.19	/seat	High End Cinema	Customer	0.26	0.95	0.75	1.00	0.19	/seat
	Employee	0.01	0.82	1.00	1.00	0.01	/seat		Employee	0.01	0.82	1.00	1.00	0.01	/seat
Lifestyle/Entertainment	Customer	5.50	0.95	0.75	1.00	3.92	/ksf GLA	Lifestyle/Entertainment	Customer	5.50	0.95	0.75	1.00	3.92	/ksf GLA
	Employee	0.25	0.82	1.00	1.00	0.20	/ksf GLA		Employee	0.25	0.82	1.00	1.00	0.20	/ksf GLA
Experiential Retail	Customer	3.60	0.95	0.75	1.00	2.57	/ksf GLA	Experiential Retail	Customer	3.60	0.95	0.75	1.00	2.57	/ksf GLA
	Employees	0.90	0.82	1.00	1.00	0.74	/ksf GLA		Employees	0.90	0.82	1.00	1.00	0.74	/ksf GLA
Apartments	Studio/1BR	0.12	0.96	1.00	1.00	0.12	/unit	Apartments	Studio/1BR	0.12	0.96	1.00	1.00	0.12	/unit
	Multi-BR	1.06	0.96	1.00	1.00	1.02	/unit		Multi-BR	1.06	0.96	1.00	1.00	1.02	/unit
	Reserved	1.00	1.00	1.00	1.00	1.00	/unit		Reserved	1.00	1.00	1.00	1.00	1.00	/unit
	Guest	0.05	0.95	1.00	1.00	0.05	/unit		Guest	0.05	0.95	1.00	1.00	0.05	/unit
General Office	Visitor	0.03	0.95	1.00	1.00	0.03	/ksf GFA	General Office	Visitor	0.03	0.95	1.00	1.00	0.03	/ksf GFA
	Employee	0.35	0.82	1.00	1.00	0.29	/ksf GFA		Employee	0.35	0.82	1.00	1.00	0.29	/ksf GFA
Surf Park	Visitor	1.33	0.66	0.50	1.00	0.44	/ksf GFA	Surf Park	Visitor	1.33	0.66	0.50	1.00	0.44	/ksf GFA
	Employee	0.08	0.82	1.00	1.00	0.06	/ksf GFA		Employee	0.08	0.82	1.00	1.00	0.06	/ksf GFA
Performing Arts Venue	Visitor	0.33	0.95	0.50	1.00	0.16	/seat	Performing Arts Venue	Visitor	0.33	0.95	0.50	1.00	0.16	/seat
	Employee	0.07	0.82	0.60	1.00	0.03	/seat		Employee	0.07	0.82	0.60	1.00	0.03	/seat



**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%	90%	95%	95%	95%	80%	50%	30%	10%	0%
	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	95%	90%	75%	40%	15%	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%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	95%	90%	75%	40%	15%	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%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	95%	90%	75%	40%	15%	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	0%	0%	0%	0%	15%	40%	75%	75%	65%	40%	50%	75%	95%	100%	100%	100%	95%	75%	25%
	Employee	0%	20%	50%	75%	90%	90%	90%	90%	90%	75%	75%	100%	100%	100%	100%	100%	100%	85%	35%
Fast Casual Dining	Customer	25%	50%	60%	75%	85%	90%	100%	90%	50%	45%	45%	75%	80%	80%	80%	60%	55%	50%	25%
	Employee	50%	75%	90%	90%	100%	100%	100%	100%	100%	75%	75%	95%	95%	95%	95%	80%	65%	65%	35%
Café/Take Out	Customer	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%
Museum/Interactive	Customer	0%	0%	0%	0%	27%	59%	87%	100%	92%	87%	79%	66%	41%	29%	17%	3%	0%	0%	0%
	Employee	0%	10%	20%	45%	66%	90%	100%	100%	100%	90%	80%	65%	33%	20%	10%	5%	0%	0%	0%
Cineplex	Customer	0%	0%	0%	0%	0%	0%	20%	45%	55%	55%	60%	60%	60%	80%	100%	100%	80%	65%	40%
	Employee	0%	0%	0%	0%	0%	0%	50%	60%	60%	75%	75%	100%	100%	100%	100%	100%	100%	70%	50%
Lifestyle/Entertainment	Customer	15%	25%	35%	40%	60%	80%	90%	85%	75%	60%	50%	60%	75%	90%	100%	90%	70%	50%	20%
	Employee	20%	30%	40%	60%	80%	100%	100%	100%	90%	75%	75%	80%	100%	100%	100%	100%	80%	60%	40%
Experiential Retail	Customer	1%	5%	10%	20%	40%	65%	90%	100%	100%	100%	95%	85%	70%	55%	40%	25%	15%	5%	0%
	Employees	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	95%	90%	75%	40%	15%	0%
Apartments	Studio/1BR	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
	Multi-BR	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	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%	100%	45%	15%	5%	0%	0%	0%	0%	0%	0%	0%
	Employee	3%	30%	75%	95%	100%	100%	90%	90%	100%	100%	90%	50%	25%	10%	7%	3%	1%	0%	0%
Surf Park	Visitor	0%	0%	25%	50%	75%	90%	100%	100%	100%	90%	75%	60%	50%	40%	30%	10%	0%	0%	0%
	Employee	15%	30%	60%	75%	90%	100%	100%	100%	100%	100%	90%	80%	70%	60%	50%	40%	30%	15%	5%
Performing Arts Venue	Visitor	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	10%	50%	70%	90%	100%	100%	100%	80%	50%
	Employee	0%	0%	5%	5%	5%	5%	5%	5%	10%	20%	40%	60%	80%	100%	100%	100%	100%	90%	80%

**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%	10%	30%	50%	65%	80%	90%	100%	100%	95%	90%	80%	75%	65%	50%	35%	15%	0%	
	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	0%	
Standard Retail (December)	Customer	1%	5%	10%	35%	60%	70%	85%	95%	100%	100%	95%	90%	80%	75%	65%	50%	35%	15%	0%	
	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	0%	
Standard Retail (Holidays)	Customer	1%	5%	10%	20%	40%	60%	80%	95%	100%	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%	100%	95%	85%	75%	75%	65%	50%	40%	20%	10%	5%	
Fine/Casual Dining	Customer	0%	0%	0%	0%	0%	15%	50%	55%	45%	45%	45%	60%	90%	95%	100%	90%	90%	90%	50%	
	Employee	0%	20%	30%	60%	75%	75%	75%	75%	75%	75%	75%	100%	100%	100%	100%	100%	100%	85%	50%	
Fast Casual Dining	Customer	10%	25%	45%	70%	90%	90%	100%	85%	65%	40%	45%	60%	70%	70%	65%	30%	25%	15%	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	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%	
Museum/Interactive	Customer	0%	0%	27%	59%	87%	100%	92%	87%	79%	66%	41%	29%	17%	3%	0%	0%	0%	0%	0%	
	Employee	10%	20%	45%	66%	90%	100%	100%	100%	90%	80%	65%	33%	20%	10%	5%	0%	0%	0%	0%	
Cineplex	Customer	0%	0%	0%	0%	0%	0%	35%	60%	75%	80%	80%	80%	70%	80%	100%	100%	100%	85%	70%	
	Employee	0%	0%	0%	0%	0%	0%	50%	60%	60%	75%	75%	100%	100%	100%	100%	100%	100%	70%	50%	
Lifestyle/Entertainment	Customer	15%	25%	35%	40%	60%	80%	90%	85%	75%	60%	50%	60%	75%	90%	100%	90%	70%	50%	20%	
	Employee	20%	30%	40%	60%	80%	100%	100%	100%	90%	75%	75%	75%	80%	100%	100%	100%	80%	60%	40%	
Experiential Retail	Customer	1%	5%	10%	20%	40%	65%	90%	100%	100%	100%	95%	85%	70%	55%	40%	25%	15%	5%	0%	
	Employees	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	95%	90%	75%	40%	15%	0%	
Apartments	Studio/1BR	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%	
	Multi-BR	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%	
	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
General Office	Guest	0%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	100%	80%	50%	
	Visitor	0%	0%	5%	25%	75%	100%	100%	85%	70%	55%	40%	25%	10%	5%	0%	0%	0%	0%	0%	
Surf Park	Employee	0%	5%	25%	75%	100%	100%	85%	70%	55%	40%	25%	10%	5%	0%	0%	0%	0%	0%	0%	
	Visitor	0%	0%	25%	50%	75%	90%	100%	100%	100%	90%	75%	60%	50%	40%	30%	10%	0%	0%	0%	
Performing Arts Venue	Employee	15%	30%	60%	75%	90%	100%	100%	100%	100%	100%	90%	80%	70%	60%	50%	40%	30%	15%	5%	
	Visitor	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	10%	50%	70%	90%	100%	100%	100%	80%	50%	
	Employee	0%	0%	5%	5%	5%	5%	5%	5%	10%	20%	40%	60%	80%	100%	100%	100%	100%	90%	80%	

### 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.

### GROSS DEMAND

The development program generates gross demand for up to 2,811 spaces on a weekday and 2,775 spaces on a weekend as shown in **Table 6**.

**Table 6: 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	84,550 sf GLA	2.07 /ksf GLA	175	2.07 /ksf GLA	175	2.28 /ksf GLA	193	2.28 /ksf GLA	193
	Employee		0.57 /ksf GLA	48	0.57 /ksf GLA	48	0.66 /ksf GLA	55	0.66 /ksf GLA	55
Specialty Grocery	Customer	35,000 sf GLA	2.23 /ksf GLA	78	2.23 /ksf GLA	78	2.36 /ksf GLA	82	2.36 /ksf GLA	82
	Employee		0.49 /ksf GLA	17	0.49 /ksf GLA	17	0.41 /ksf GLA	14	0.41 /ksf GLA	14
Fine/Casual Dining	Customer	35,300 sf GLA	5.70 /ksf GLA	201	6.27 /ksf GLA	221	11.73 /ksf GLA	414	12.09 /ksf GLA	427
	Employee		1.80 /ksf GLA	64	1.80 /ksf GLA	64	3.03 /ksf GLA	107	3.03 /ksf GLA	107
Fast Casual Dining	Customer	4,300 sf GLA	7.13 /ksf GFA	31	8.55 /ksf GFA	37	12.11 /ksf GFA	52	12.92 /ksf GFA	56
	Employee		1.97 /ksf GFA	8	1.97 /ksf GFA	8	2.78 /ksf GFA	12	2.78 /ksf GFA	12
Café/Take Out	Customer	4,300 sf GLA	3.76 /ksf GLA	16	4.56 /ksf GLA	20	8.36 /ksf GLA	36	9.12 /ksf GLA	39
	Employee		2.05 /ksf GLA	9	2.05 /ksf GLA	9	2.33 /ksf GLA	10	2.33 /ksf GLA	10
Museum/Interactive	Customer	35,000 sf GLA	2.21 /ksf GFA	77	2.21 /ksf GFA	77	1.91 /ksf GFA	67	1.91 /ksf GFA	67
	Employee		0.53 /ksf GFA	19	0.53 /ksf GFA	19	0.46 /ksf GFA	16	0.46 /ksf GFA	16
High End Cinema	Customer	800 seats	0.14 /seat	108	0.14 /seat	108	0.19 /seat	148	0.19 /seat	148
	Employee		0.01 /seat	7	0.01 /seat	7	0.01 /seat	7	0.01 /seat	7
Lifestyle/Entertainment	Customer	10,800 sf GLA	4.70 /ksf GLA	51	4.70 /ksf GLA	51	3.92 /ksf GLA	42	3.92 /ksf GLA	42
	Employee		0.33 /ksf GLA	4	0.33 /ksf GLA	4	0.20 /ksf GLA	2	0.20 /ksf GLA	2
Experiential Retail	Customer	15,000 sf GLA	2.28 /ksf GLA	34	2.28 /ksf GLA	34	2.57 /ksf GLA	38	2.57 /ksf GLA	38
	Employee		0.66 /ksf GLA	10	0.66 /ksf GLA	10	0.74 /ksf GLA	11	0.74 /ksf GLA	11
Apartments	Studio/1BR	294 units	0.12 /unit	34	0.12 /unit	34	0.12 /unit	34	0.12 /unit	34
	Multi-BR	132 units	1.02 /unit	134	1.02 /unit	134	1.02 /unit	134	1.02 /unit	134
	Reserved	426 units	1.00 /unit	426	1.00 /unit	426	1.00 /unit	426	1.00 /unit	426
	Guest	426 units	0.05 /unit	20	0.05 /unit	20	0.05 /unit	20	0.05 /unit	20
General Office	Visitor	152,850 sf GFA	0.29 /ksf GFA	44	0.29 /ksf GFA	44	0.03 /ksf GFA	4	0.03 /ksf GFA	4
	Employee		2.87 /ksf GFA	438	2.87 /ksf GFA	438	0.29 /ksf GFA	44	0.29 /ksf GFA	44
Surf Park	Visitor	236,000 sf GFA	0.54 /ksf GFA	129	0.41 /ksf GFA	97	0.44 /ksf GFA	104	0.44 /ksf GFA	104
	Employee		0.04 /ksf GFA	10	0.04 /ksf GFA	10	0.06 /ksf GFA	14	0.06 /ksf GFA	14
Performing Arts Venue	Visitor	3,500 sf GFA	0.14 /seat	499	0.14 /seat	499	0.16 /seat	549	0.16 /seat	549
	Employee		0.03 /seat	120	0.03 /seat	120	0.03 /seat	120	0.03 /seat	120
<i>Subtotal Customers</i>				1,463		1,461		1,749		1,769
<i>Subtotal Employees</i>				754		754		412		412
<i>Subtotal Residents (Unreserved)</i>				168		168		168		168
<i>Subtotal Reserved</i>				426		426		426		426
<b>TOTAL</b>				<b>2,811</b>		<b>2,809</b>		<b>2,755</b>		<b>2,775</b>

### PEAK HOUR DEMAND

The preceding projections of gross demand assume that the Performing Arts Venue (PAV) will be hosting an event which will fill all 3,500 planned seats. The proposed PAV is expected to exert significant demand during a performance, but the frequency of these performances and attendance at each performance is expected to vary throughout the year. Under a worst-case scenario, the venue could account for as many as 619 parking spaces during a sold-out performance on a weekday and 669 spaces on a weekend, as shown in Table 6, above. However, not every performance is anticipated to be sold out and the timing

and frequency of performance, as well as the attendance associated with each one, has not be determined to date.

For the purposes of this analysis, DESMAN evaluated demand under two separate conditions: a day when no event was occurring at the Performing Arts Center (e.g. non-event) and a day when an event filling all 3,500 seats was occurring (e.g. event).

#### *NON-EVENT DAY DEMAND*

Adjusting for presence, the projected peak hour demand for the project on a non-event day is for 1,795 spaces during the peak weekday and 1,607 spaces on weekends, as shown in **Table 7**, next page.

Peak hour for a non-event weekday is projected to occur at 2:00 PM in December. Gross weekday demand, exclusive of the PAV, is projected to be for 2,192 parking spaces. Application of presence factors reduces this gross demand for weekdays by 18% (from 2,192 to 1,795, a difference of 397 spaces).

Peak hour for a non-event weekend day is projected to occur at 7:00 PM in December. Gross weekend demand, exclusive of the PAV, is projected to be for 2,106 parking spaces. Application of presence factors reduces this gross demand for weekend by 24% (from 2,106 to 1,607, a difference of 499 spaces).

#### *EVENT DAY DEMAND*

Adjusting for presence, the projected peak hour demand for the project on the day of a sold-out event is for 1,945 spaces during the peak weekday and 2,232 spaces on weekends, as shown in **Table 8**, following page.

Peak hour for an event weekday is projected to occur at 7:00 PM in July. Gross weekday demand, with the sold-out event, is projected to be for 2,809 parking spaces. Application of presence factors reduces this gross demand for weekdays by 31% (from 2,809 to 1,945, a difference of 864 spaces).

Peak hour for an event weekend day is projected to occur at 8:00 PM in July. Gross weekend demand, with the sold-out event, is projected to be for 2,775 parking spaces. Application of presence factors reduces this gross demand for weekend by 20% (from 2,775 to 2,232, a difference of 543 spaces).

**Table 7: Peak Hour Non-Event Day Demand Projections**

		WEEKDAYS												Holidays
Land Use	User Group	January 2:00 PM	February 2:00 PM	March 2:00 PM	April 2:00 PM	May 2:00 PM	June 2:00 PM	July 2:00 PM	August 2:00 PM	September 2:00 PM	October 2:00 PM	November 2:00 PM	December 2:00 PM	2:00 PM
Standard Retail	Customer	93	95	106	105	110	112	107	115	106	110	120	175	140
	Employee	38	38	38	38	38	38	38	38	38	38	43	48	43
Specialty Grocery	Customer	47	44	47	47	49	47	44	42	44	42	44	47	49
	Employee	16	16	16	16	16	15	15	15	15	15	16	16	16
Fine/Casual Dining	Customer	115	114	125	122	128	125	129	131	120	123	119	129	114
	Employee	51	50	55	54	56	55	57	58	53	54	52	57	50
Fast Casual Dining	Customer	13	13	15	14	15	15	15	16	14	15	14	15	14
	Employee	7	7	8	7	8	8	8	8	7	8	7	8	7
Café/Take Out	Customer	13	13	14	14	14	14	14	14	14	14	13	14	13
	Employee	8	8	8	8	8	8	9	9	8	8	8	8	8
Museum/Interactive	Customer	62	62	67	61	65	67	69	71	64	62	57	60	64
	Employee	17	17	18	16	17	18	18	19	17	17	15	16	17
High End Cinema	Customer	16	12	12	11	16	24	33	24	9	9	15	14	59
	Employee	2	2	2	2	2	3	3	3	2	2	2	2	4
Lifestyle/Entertainment	Customer	38	36	34	33	29	29	29	27	31	33	34	36	36
	Employee	4	4	3	3	3	3	3	3	3	3	3	4	4
Experiential Retail	Customer	19	19	22	21	23	23	22	23	22	22	24	34	27
	Employees	8	8	8	8	8	8	8	8	8	8	9	10	9
Apartments	Studio/1BR	24	24	24	24	24	23	21	20	23	24	23	21	20
	Multi-BR	94	94	94	94	94	89	84	80	89	94	89	84	80
	Reserved	426	426	426	426	426	426	426	426	426	426	426	426	426
	Guest	4	4	4	4	4	4	4	3	4	4	4	4	3
General Office	Visitor	44	44	42	44	44	42	40	37	42	44	44	44	35
	Employee	438	438	416	438	438	416	394	372	416	438	438	438	350
Surf Park	Visitor	65	77	90	103	116	129	129	129	116	103	90	77	65
	Employee	7	8	8	9	10	10	10	10	9	9	8	8	7
Performing Arts Venue	Visitor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal Customers</b>		<b>529</b>	<b>533</b>	<b>578</b>	<b>579</b>	<b>613</b>	<b>631</b>	<b>635</b>	<b>632</b>	<b>586</b>	<b>581</b>	<b>578</b>	<b>649</b>	<b>619</b>
<b>Subtotal Employees</b>		<b>596</b>	<b>596</b>	<b>580</b>	<b>599</b>	<b>604</b>	<b>582</b>	<b>563</b>	<b>543</b>	<b>576</b>	<b>600</b>	<b>601</b>	<b>615</b>	<b>515</b>
<b>Subtotal Residents (Unreserved)</b>		<b>118</b>	<b>118</b>	<b>118</b>	<b>118</b>	<b>118</b>	<b>112</b>	<b>105</b>	<b>100</b>	<b>112</b>	<b>118</b>	<b>112</b>	<b>105</b>	<b>100</b>
<b>Subtotal Reserved</b>		<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>
<b>TOTAL</b>		<b>1,669</b>	<b>1,673</b>	<b>1,702</b>	<b>1,722</b>	<b>1,761</b>	<b>1,751</b>	<b>1,729</b>	<b>1,701</b>	<b>1,700</b>	<b>1,725</b>	<b>1,717</b>	<b>1,795</b>	<b>1,660</b>

<b>Planned Supply</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>
<b>Surplus/(Deficit)</b>	<b>266</b>	<b>262</b>	<b>233</b>	<b>213</b>	<b>174</b>	<b>184</b>	<b>206</b>	<b>234</b>	<b>235</b>	<b>210</b>	<b>218</b>	<b>140</b>	<b>275</b>	

PEAK DAY/HOUR =

		WEEKENDS												Holidays
Land Use	User Group	January 7:00 PM	February 7:00 PM	March 7:00 PM	April 7:00 PM	May 7:00 PM	June 7:00 PM	July 7:00 PM	August 7:00 PM	September 7:00 PM	October 7:00 PM	November 7:00 PM	December 7:00 PM	7:00 PM
Standard Retail	Customer	81	83	93	91	96	98	93	100	92	96	104	145	108
	Employee	35	35	35	35	35	35	35	35	35	35	40	44	42
Specialty Grocery	Customer	34	32	34	34	36	34	32	31	32	31	32	34	48
	Employee	9	9	9	9	9	9	8	8	9	9	9	9	11
Fine/Casual Dining	Customer	357	353	389	377	398	389	402	406	373	381	369	402	334
	Employee	94	93	103	100	105	103	106	107	98	101	97	106	93
Fast Casual Dining	Customer	34	34	37	36	38	38	39	39	36	38	36	38	35
	Employee	10	10	11	11	11	11	11	11	11	11	10	11	10
Café/Take Out	Customer	27	27	31	29	30	30	31	31	30	31	29	30	31
	Employee	8	8	9	8	9	9	9	9	9	9	8	9	8
Museum/Interactive	Customer	2	2	2	2	2	2	2	2	2	2	2	2	10
	Employee	1	1	2	1	1	2	2	2	1	1	1	1	3
High End Cinema	Customer	84	70	79	69	84	97	109	89	60	73	92	79	104
	Employee	6	6	6	6	6	7	7	6	6	6	6	6	7
Lifestyle/Entertainment	Customer	38	36	34	32	28	28	28	26	30	32	34	36	30
	Employee	2	2	2	2	2	2	2	2	2	2	2	2	2
Experiential Retail	Customer	12	12	13	13	14	14	13	14	13	14	15	21	21
	Employees	8	8	8	8	8	8	8	8	8	8	9	10	9
Apartments	Studio/1BR	33	33	33	33	33	31	30	28	31	33	31	30	26
	Multi-BR	130	130	130	130	130	123	117	110	123	130	123	117	103
	Reserved	426	426	426	426	426	426	426	426	426	426	426	426	426
	Guest	20	20	20	20	20	19	18	17	19	20	19	18	10
General Office	Visitor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	0	0	0	0	0	0	0	0	0	0	0	0	2
Surf Park	Visitor	21	25	29	33	37	42	42	42	37	33	29	25	26
	Employee	6	6	7	7	8	8	8	8	8	7	7	6	7
Performing Arts Venue	Visitor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal Customers</b>		<b>710</b>	<b>694</b>	<b>761</b>	<b>736</b>	<b>783</b>	<b>791</b>	<b>809</b>	<b>797</b>	<b>724</b>	<b>751</b>	<b>761</b>	<b>830</b>	<b>757</b>
<b>Subtotal Employees</b>		<b>179</b>	<b>178</b>	<b>192</b>	<b>187</b>	<b>194</b>	<b>194</b>	<b>196</b>	<b>196</b>	<b>187</b>	<b>189</b>	<b>189</b>	<b>204</b>	<b>194</b>
<b>Subtotal Residents (Unreserved)</b>		<b>163</b>	<b>163</b>	<b>163</b>	<b>163</b>	<b>163</b>	<b>154</b>	<b>147</b>	<b>138</b>	<b>154</b>	<b>163</b>	<b>154</b>	<b>147</b>	<b>129</b>
<b>Subtotal Reserved</b>		<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>
<b>TOTAL</b>		<b>1,478</b>	<b>1,461</b>	<b>1,542</b>	<b>1,512</b>	<b>1,566</b>	<b>1,565</b>	<b>1,578</b>	<b>1,557</b>	<b>1,491</b>	<b>1,529</b>	<b>1,530</b>	<b>1,607</b>	<b>1,506</b>

<b>Planned Supply</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>
<b>Surplus/(Deficit)</b>	<b>457</b>	<b>474</b>	<b>393</b>	<b>423</b>	<b>369</b>	<b>370</b>	<b>357</b>	<b>378</b>	<b>444</b>	<b>406</b>	<b>405</b>	<b>328</b>	<b>429</b>	

PEAK DAY/HOUR =

**Table 8: Peak Hour Event Day Demand Projections**

Land Use	User Group	WEEKDAYS												
		January 7:00 PM	February 7:00 PM	March 7:00 PM	April 7:00 PM	May 7:00 PM	June 7:00 PM	July 7:00 PM	August 7:00 PM	September 7:00 PM	October 7:00 PM	November 7:00 PM	December 7:00 PM	Holidays 7:00 PM
Standard Retail	Customer	93	95	106	105	110	112	107	115	106	110	120	131	77
	Employee	36	36	36	36	36	36	36	36	36	36	41	46	41
Specialty Grocery	Customer	70	66	70	70	73	70	66	62	66	62	66	70	73
	Employee	14	14	14	14	14	14	13	13	14	14	14	14	14
Fine/Casual Dining	Customer	194	192	212	206	217	212	219	221	203	208	201	219	192
	Employee	56	56	61	60	63	61	63	64	59	60	58	63	56
Fast Casual Dining	Customer	25	25	28	28	29	29	29	30	28	28	27	29	27
	Employee	7	7	7	7	7	7	8	8	7	7	7	7	7
Café/Take Out	Customer	14	14	16	15	15	15	16	16	15	16	15	16	15
	Employee	7	7	8	8	8	8	8	8	8	8	8	8	8
Museum/Interactive	Customer	19	19	21	19	21	21	22	22	20	19	18	19	20
	Employee	3	3	4	3	3	4	4	4	3	3	3	3	3
High End Cinema	Customer	23	18	17	16	23	35	48	35	13	13	22	20	86
	Employee	4	4	4	4	4	5	5	5	4	4	4	4	7
Lifestyle/Entertainment	Customer	46	44	41	39	34	34	34	32	37	39	41	44	44
	Employee	4	4	4	3	3	3	3	3	4	4	4	4	4
Experiential Retail	Customer	11	11	12	12	12	13	12	13	12	12	13	19	15
	Employees	8	8	8	8	8	8	8	8	8	8	9	10	9
Apartments	Studio/1BR	33	33	33	33	33	31	30	28	31	33	31	30	28
	Multi-BR	130	130	130	130	130	123	117	110	123	130	123	117	110
	Reserved	426	426	426	426	426	426	426	426	426	426	426	426	426
	Guest	20	20	20	20	20	19	18	17	19	20	19	18	17
General Office	Visitor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	44	44	42	44	44	42	39	37	42	44	44	44	35
Surf Park	Visitor	19	23	27	31	35	39	39	39	35	31	27	23	19
	Employee	4	5	5	5	6	6	6	6	5	5	5	5	4
Performing Arts Venue	Visitor	337	359	382	404	427	449	449	449	427	404	382	359	337
	Employee	120	120	120	120	120	120	120	120	120	120	120	120	120
<b>Subtotal Customers</b>		<b>871</b>	<b>886</b>	<b>952</b>	<b>965</b>	<b>1,016</b>	<b>1,048</b>	<b>1,059</b>	<b>1,051</b>	<b>981</b>	<b>962</b>	<b>951</b>	<b>967</b>	<b>922</b>
<b>Subtotal Employees</b>		<b>307</b>	<b>308</b>	<b>313</b>	<b>312</b>	<b>316</b>	<b>314</b>	<b>313</b>	<b>312</b>	<b>310</b>	<b>313</b>	<b>317</b>	<b>328</b>	<b>308</b>
<b>Subtotal Residents (Unreserved)</b>		<b>163</b>	<b>163</b>	<b>163</b>	<b>163</b>	<b>163</b>	<b>154</b>	<b>147</b>	<b>138</b>	<b>154</b>	<b>163</b>	<b>154</b>	<b>147</b>	<b>138</b>
<b>Subtotal Reserved</b>		<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>
<b>TOTAL</b>		<b>1,767</b>	<b>1,783</b>	<b>1,854</b>	<b>1,866</b>	<b>1,921</b>	<b>1,942</b>	<b>1,945</b>	<b>1,927</b>	<b>1,871</b>	<b>1,864</b>	<b>1,848</b>	<b>1,868</b>	<b>1,794</b>

<b>Planned Supply</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>
<b>Surplus/(Deficit)</b>	<b>168</b>	<b>152</b>	<b>81</b>	<b>69</b>	<b>14</b>	<b>(7)</b>	<b>(10)</b>	<b>8</b>	<b>64</b>	<b>71</b>	<b>87</b>	<b>67</b>	<b>141</b>	<b>141</b>

PEAK DAY/HOUR =

Land Use	User Group	WEEKENDS												
		January 8:00 PM	February 8:00 PM	March 8:00 PM	April 8:00 PM	May 8:00 PM	June 8:00 PM	July 8:00 PM	August 8:00 PM	September 8:00 PM	October 8:00 PM	November 8:00 PM	December 8:00 PM	Holidays 8:00 PM
Standard Retail	Customer	70	72	80	79	83	85	81	87	80	83	90	125	77
	Employee	33	33	33	33	33	33	33	33	33	33	37	41	37
Specialty Grocery	Customer	16	15	16	16	17	16	15	15	15	15	15	16	17
	Employee	7	7	7	7	7	7	6	6	7	7	7	7	7
Fine/Casual Dining	Customer	376	371	410	397	418	410	423	427	393	401	389	423	371
	Employee	94	93	103	100	105	103	106	107	98	101	97	106	93
Fast Casual Dining	Customer	31	31	35	34	36	35	36	36	34	35	33	36	33
	Employee	10	10	11	11	11	11	11	11	11	11	10	11	10
Café/Take Out	Customer	17	17	19	18	19	19	20	20	19	19	18	19	18
	Employee	5	5	6	6	6	6	6	6	6	6	6	6	6
Museum/Interactive	Customer	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	1	1	1	1	1	1	1	1	1	1	1	1	1
High End Cinema	Customer	105	87	99	86	105	121	136	111	75	92	115	99	148
	Employee	6	6	6	6	6	7	7	6	6	6	6	6	7
Lifestyle/Entertainment	Customer	42	40	38	36	32	32	32	29	34	36	38	40	40
	Employee	2	2	2	2	2	2	2	2	2	2	2	2	2
Experiential Retail	Customer	9	9	10	10	10	10	10	10	10	10	11	15	12
	Employees	8	8	8	8	8	8	8	8	8	8	9	10	9
Apartments	Studio/1BR	33	33	33	33	33	32	30	28	32	33	32	30	28
	Multi-BR	131	131	131	131	131	125	118	112	125	131	125	118	112
	Reserved	426	426	426	426	426	426	426	426	426	426	426	426	426
	Guest	20	20	20	20	20	19	18	17	19	20	19	18	17
General Office	Visitor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	0	0	0	0	0	0	0	0	0	0	0	0	0
Surf Park	Visitor	16	19	22	25	28	31	31	31	28	25	22	19	16
	Employee	5	5	6	6	7	7	7	7	6	6	6	5	5
Performing Arts Venue	Visitor	412	439	467	494	522	549	549	549	522	494	467	439	412
	Employee	120	120	120	120	120	120	120	120	120	120	120	120	120
<b>Subtotal Customers</b>		<b>1,114</b>	<b>1,120</b>	<b>1,216</b>	<b>1,215</b>	<b>1,290</b>	<b>1,327</b>	<b>1,351</b>	<b>1,332</b>	<b>1,229</b>	<b>1,230</b>	<b>1,217</b>	<b>1,249</b>	<b>1,161</b>
<b>Subtotal Employees</b>		<b>291</b>	<b>290</b>	<b>303</b>	<b>300</b>	<b>306</b>	<b>305</b>	<b>307</b>	<b>307</b>	<b>298</b>	<b>301</b>	<b>301</b>	<b>315</b>	<b>297</b>
<b>Subtotal Residents (Unreserved)</b>		<b>164</b>	<b>164</b>	<b>164</b>	<b>164</b>	<b>164</b>	<b>157</b>	<b>148</b>	<b>140</b>	<b>157</b>	<b>164</b>	<b>157</b>	<b>148</b>	<b>140</b>
<b>Subtotal Reserved</b>		<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>	<b>426</b>
<b>TOTAL</b>		<b>1,995</b>	<b>2,000</b>	<b>2,109</b>	<b>2,105</b>	<b>2,186</b>	<b>2,215</b>	<b>2,232</b>	<b>2,205</b>	<b>2,110</b>	<b>2,121</b>	<b>2,101</b>	<b>2,138</b>	<b>2,024</b>

<b>Planned Supply</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>	<b>1,935</b>
<b>Surplus/(Deficit)</b>	<b>(60)</b>	<b>(65)</b>	<b>(174)</b>	<b>(170)</b>	<b>(251)</b>	<b>(280)</b>	<b>(297)</b>	<b>(270)</b>	<b>(175)</b>	<b>(186)</b>	<b>(166)</b>	<b>(203)</b>	<b>(89)</b>	<b>(89)</b>

PEAK DAY/HOUR =

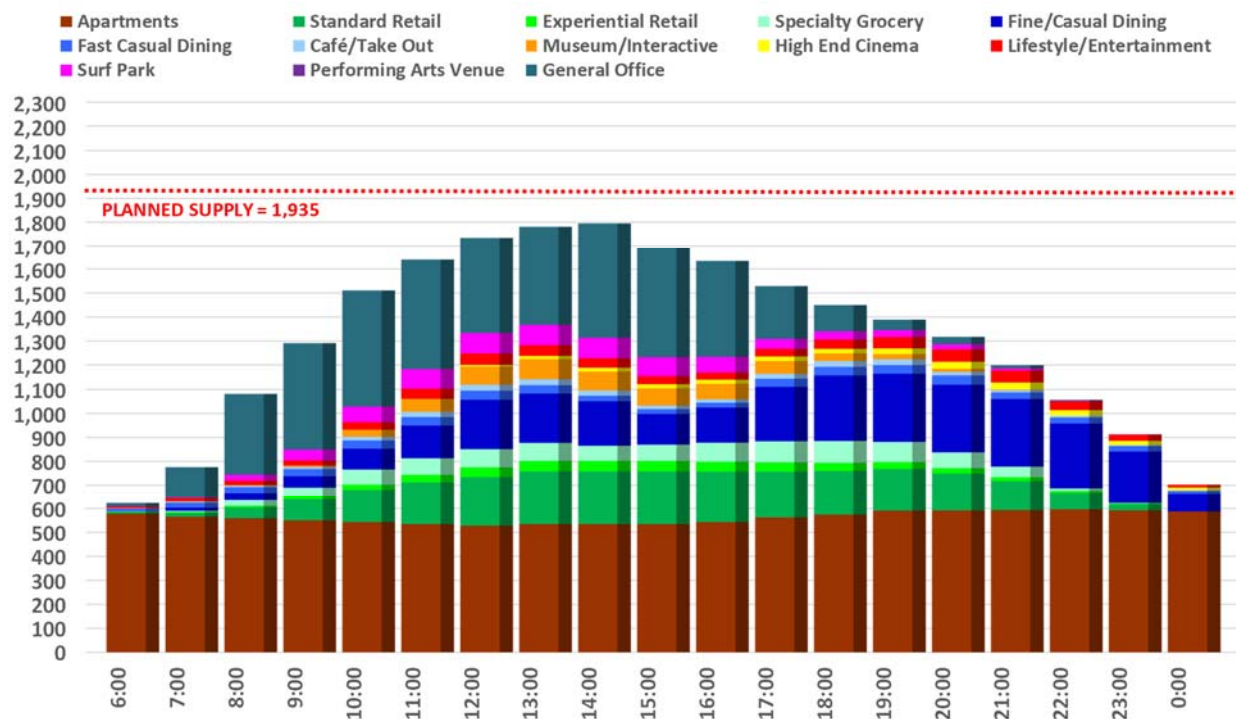


**PARKING SUPPLY ADEQUACY**

Under non-event day conditions, the planned on-site parking supply of 1,935 spaces is more than adequate to meet peak hour conditions on weekdays and weekends.

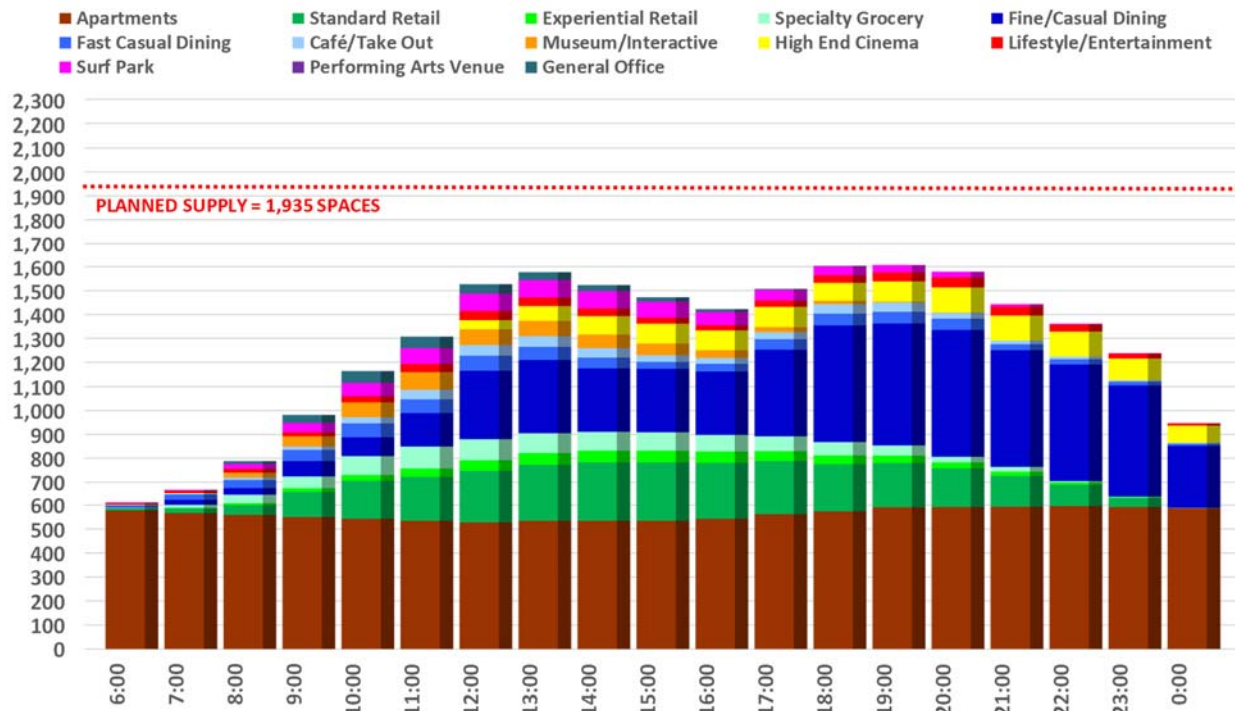
On weekdays, with a peak hour projected demand for 1,795 spaces at 2:00 PM in December, there are still 140 spaces available in the planned supply. This is shown in Table 7 on the preceding pages and illustrated in **Figure 2**, below.

**Figure 2: Peak Non-Event Weekday (December) Demand Projections**



On weekends, with a peak hour projected demand for 1,607 spaces at 7:00 PM in December, there are still 328 spaces available in the planned supply. This is shown in Table 7 on the preceding pages and illustrated in **Figure 3**, next page.

**Figure 3: Peak Non-Event Weekend (December) Demand Projections**



On event days, the on-site parking supply will need to be supplemented to meet peak hour demands. This is not an unusual condition for a mixed-use project including a Performing Arts Venue in an urban setting. With the exception of major sporting venues, it is unusual to find a municipality or developer who plans their parking supply to completely encompass all the needs of the project, inclusive of parking demand driven by performances, as it is extremely expensive to provide infrastructure which will not be fully utilized on a consistent basis. Rather, the on-site supply is typically designed to accommodate non-event peak hour conditions and some portion of event-driven need, which is what has occurred in this instance.

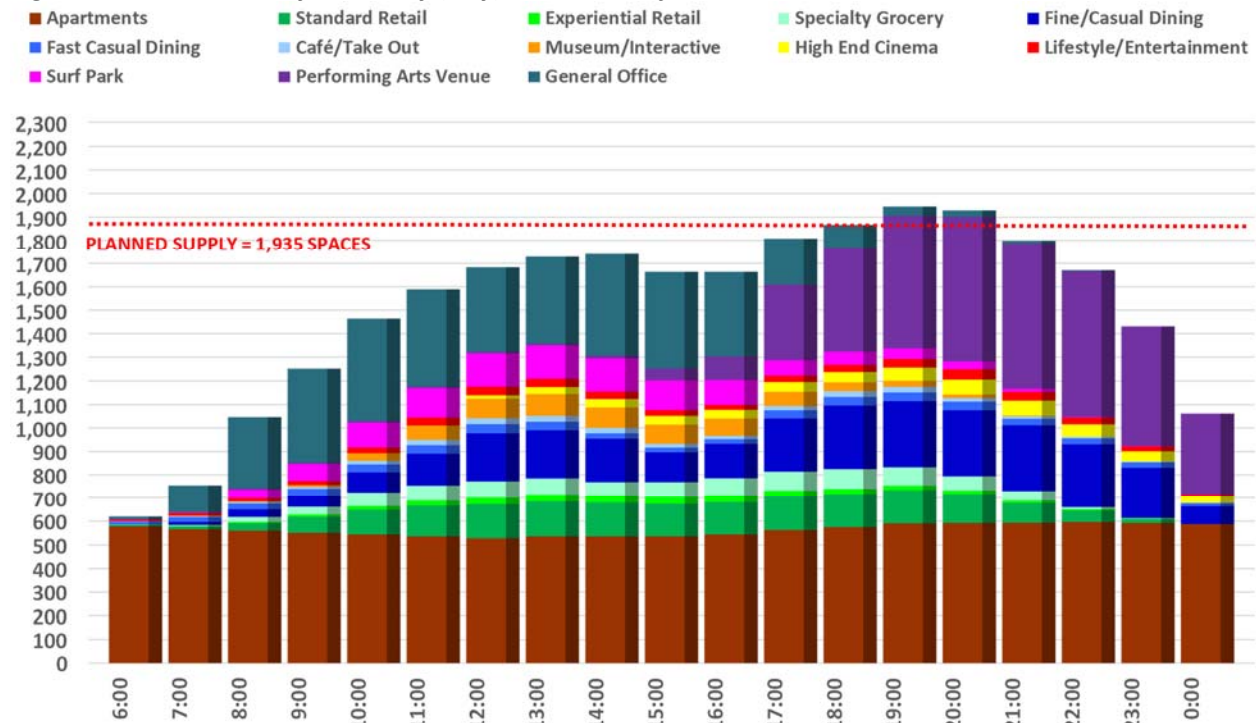
On weekdays when a sold-out event occurs, the peak hour demand will exceed the on-site planned supply (1,935 spaces) by a small amount. Projections of peak hour (7:00 PM) parking demand on the busiest weekday of the year (in July) are for 1,945 spaces, creating a 10-vehicle overflow on the night of a sold-out event, as illustrated in **Figure 4** on the following page. As Table 8, on the previous page shows, these conditions are project to only occur in June and July; at the peak weekday hour during other months of the year there are between 8 and 168 spaces available at the busiest hour.

This projected shortfall is contingent upon an event occupying 3,500 seats or more in the Performing Arts Venue on a weekday evening in the summer. If the event fills just 3,000 seats, parking surpluses are projected for the peak hour.

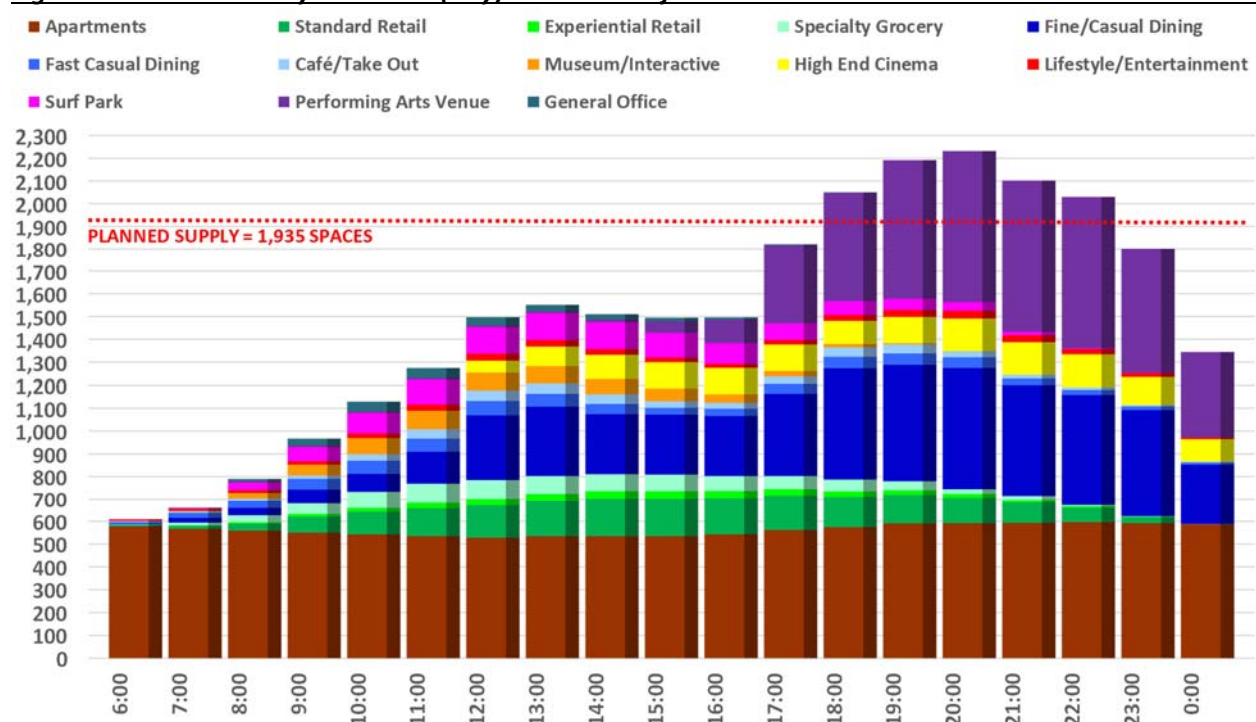
On weekends, when there is a sold-out event, the overflow is anticipated to be more pronounced. Under these conditions, DESMAN projects that the development could require as many as 297 spaces above and beyond the on-site planned supply (1,935 spaces) at the peak hour, as shown in Table 8 on the preceding pages and illustrated in **Figure 5** on the following page.

This projected shortfall is contingent upon an event occupying the full capacity (3,500 seats) of the PAV; an event filling more than 1,925 seats or less can be accommodated within the planned parking supply on site.

**Figure 4: Peak Event Day Weekday (July) Demand Projections**



**Figure 3: Peak Event Day Weekend (July) Demand Projections**



## CONCLUSIONS

The project possesses an adequate on-site parking supply to accommodate all uses at the peak hour under non-event conditions, as well as weekday events with attendance to fill 3,000 seats or less and weekend events with attendance to fill 1,925 seats or less. On those occasions where attendance exceeds these thresholds, there may be spillover from the project into adjacent areas.

As noted in prior sections, some spillover during sold-out events is not a unique condition to urban mixed-use projects which include a Performing Arts Venue. Spillover caused by high attendance events is typically addressed through a parking management plan, rather than building an oversized parking supply which will add considerable cost to the project for little added benefit outside those limited dates when these events occur.

Commonly, event-driven parking demand is accommodated through a combination of on-site supply and an aggressive parking management program which may:

- Relocate some captive, regular users (such as employees or residents) to other parking facilities in the vicinity either through direct assignment or price incentives;
- Direct event attendees to other parking facilities in the vicinity either through direct assignment or price incentives;
- Direct either regular users or event attendees to off-site parking facilities through direct assignment and provide shuttle services to move these users between satellite parking facilities and the venue;
- Temporarily increase on-site parking capacity through valet- or assisted-parking initiatives;
- Augment the event parking supply through the execution of shared use agreements with adjacent property owners holding parking facilities with available capacity.;
- Reduce parking demand by sponsoring programs which promote use of alternative modes of transportation. This can include the provision of free or subsidized passes to ride local transit, take a taxi and/or shuttle, and/or use a ride-sharing service like Uber or Lyft.

A program documenting which of these incentives, or others, will be employed; how they will be conveyed to the target audience; and the anticipated impact/benefit of each action is commonly required by the agency tasked with reviewing and approving the project. The management plan, which includes details of about how, when and under what conditions each initiative will be executed and how they will be communicated to their intended audience (i.e. website, email, direct mail, radio, social media, etc.), is commonly filed as part of the General Conditions of Approval in many instances.

DESMAN believes that this project is completely feasible as planned, if such a plan is included in the final design. There are multiple resources in the area that could be employed to address occasional event-driven spillover from the project. For example, in addition to the on-site supply planned for the project, there are roughly 70 curbside parking spaces on the block faces making up the outer perimeter of the project which may be available to accommodate event-driven overflow. The "Preliminary Traffic Impact Study and Parking Assessment" completed by Kimley Horn for the proposed Virginia Beach Arena in January 2015 indicates there will be roughly 600 parking spaces in commercial parking lots located on the blocks adjacent to the development when construction is complete that will also be available to capture

spillover from major events and roughly 900 additional spaces within a 3-block walking distance of the project site.

Finally, the City is moving forward with an automated vehicle shuttle pilot program with goal of providing east-west transit service between the Convention Center and Sports Center in the 19th Street Corridor to/from The Wave mixed-use development. The shuttle would provide connectivity to the satellite parking supply surrounding the Convention and Sports Center as well as the Oceanfront Transportation Center, currently on Arctic Avenue between 19th/20th Streets. This new program will be proposed in fiscal year 2019-2020 to implement the automated vehicle shuttle including program components; vehicle procurement; regulatory approvals; infrastructure support; and on-going management and maintenance.

#### **OTHER COMMON CONDITIONS OF APPROVAL**

Shared Parking studies, like the preceding, are commonly used as part of the application process for waivers against location zoning requirements. The underlying assumption behind accepting a shared parking study to justify a waiver is that the results of the study are a reasonable reflection of actual future use and therefore the proposed parking supply will be appropriate to support the project, even if it is smaller than what local zoning might require.

This assumption is supported in part by the core Shared Parking methodology, which employs base parking demand ratios, developed through empirical observation of existing land uses, that reflect the 85<sup>th</sup> percentile of conditions (e.g. case studies) used to develop those ratios. As with traffic engineering, the 85<sup>th</sup> percentile is adopted as a reasonably conservative design standard that will result in a parking system adequately sized to support the development's needs under all but the most extraordinary conditions, which may never occur or only occur very intermittently. This same methodology also uses a mix of field observations and actual operating records for various land uses to project variations in demand according to time of day or time of year; again founding the projections in real-world conditions.

It is not unusual for a community to accept the results of a shared parking study as justification for a waiver, but structure the waiver or special permit to require additional conditions of the developer should the analysis understate the true parking need for the project. Common conditions imposed on similar projects permitted in other communities include:

- A requirement for the developer to execute periodic 'after studies' which capture actual parking conditions on the project site at various benchmarks and compare observed actual occupancy at various phases of development to projected demand per the shared parking model prepared for the project.
- A requirement that the developer create and be prepared to execute a shuttle program for conveying employees and visitors between the project site and nearby transit hubs and/or off-site parking facilities, should the project's observed parking occupancy exceed a prescribed threshold.
- A requirement that the developer create and be prepared to execute a satellite parking program for employees during periods of peak demand, such as the Christmas holidays. This measure shifts parking demand off the project site and to an available facility some distance from the project, creating additional capacity in the planned parking system when needed.

- A requirement that the developer prepare and execute shared parking agreements with abutting properties to enhance the on-site parking supply when needed. This measure shifts parking demand off the project site and to an adjacent facility, creating additional capacity in the planned parking system when needed.
- A requirement that the developer fund and/or administer a Transportation Demand Management (TDM) program for project tenants and their guests focused on promoting alternate modes of transportation to mitigate parking demand on the site. TDM initiatives might include subsidized transit passes; rideshare or ride matching programs; carsharing services; bicycle improvements such as racks, showers and lockers on-site; and other actions or features intended to promote less travel to the site in a single-occupant personal vehicle.
- A requirement that the developer be prepared to execute an on-site valet parking program during periods of peak demand, such as the Christmas holidays. This measure allows more vehicles to be parked on-site than there is striped capacity.

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**Appendix A: Assumed Development Program**

Sgmt	Tenant	Standard Retail	Specialty Grocery	Fine /Casual Dining	Fast/Casual Dining	Café/ Take-Out	Museum/ Interactive	High End Cinema	Lifestyle/ Entertainment	Experiential Retail	Residential Studio/Single	Mutli-BDR	General Office	Surf Park	Performing Arts Venue	Parking (spaces)
North West Block	Grocery Store		35,000													
	Tanzy			9,300												
	Retail 1	7,300														
	Retail 2	7,300														
	Retail 3			8,000												
	Retail 4	3,600														
	Retail 5	4,600														
	Retail 6					4,300										
	IPIC							800								
	National Geographic							35,000								
Apartments										120	54					
Parking															666	
North Block	Retail 1				4,300											
	Retail 2	7,300														
	Retail 3	4,800														
	Retail 4	4,800														
	Retail 5	5,100														
	Retail 6	5,600														
	Retail 7	8,000		8,000												
	Bridge (Experiential Retail)									15,000						
	Brooklyn Boulders								10,800							
Retail 8	16,500															
Apartments										174	78					
Parking															554	
Church Block	Retail 1	6,800														
	Office												150,000			
	Parking															715
Surf Block	Surf Lagoon/Lounge Area													200,000		
	Surf Shop/Operations	2,850											2,850			
	2nd Floor Surf Deck/Venue													16,000		
	Vibe Park													20,000		
Parking															0	
South Block	Entertainment Venue														3,500	
	Roof Bar			10,000												
	Parking															0
<b>SubTotal</b>		<b>84,550</b>	<b>35,000</b>	<b>35,300</b>	<b>4,300</b>	<b>4,300</b>	<b>35,000</b>	<b>800</b>	<b>10,800</b>	<b>15,000</b>	<b>294</b>	<b>132</b>	<b>152,850</b>	<b>236,000</b>	<b>3,500</b>	<b>1,935</b>