TECHNICAL MEMORANDUM

DATE: *Monday, July 23, 2018*

TO: *Chip Bowman – W.E. Bowman Construction*

CC: *Jake Elder – City of Hopewell*

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

PROJECT: *Francisco Landing Development* **PROJECT #:** *20-18148.00-3*

RE: *Shared Parking Analysis Report*

DEVELOPMENT PROGRAM

Working off the most recent development plan (dated 6/22/18), DESMAN developed a summary of the proposed development program. This program includes the following:

- Building E – A 3,643 square foot structure proposed as a Visitor's Center or other place of assembly.
- Building F – A 53,268 square foot residential building containing 54 rental residential units.
- Buildings G-1 and G-2 – Two buildings totaling roughly 74,529 square feet and containing grade-level commercial space of 6,181 square feet and 75 rental residential units.
- Building I – A 11,702 square foot commercial building.
- Building J - A 54,496 square foot residential building containing 50 rental residential units.

The program also includes 138 parking spaces spread across multiple surface lots planned within the body of the development, as well as use of 33 curbside spaces along Appomattox Street and roughly 100 spaces in the City-owned lot on the block bordered by East Cawson Street, Hopewell Street, Appomattox Street, and an interior alleyway.

The proposed phasing plan for the program would place development of Buildings E, G-1, G-2, and I in Phase 1, introduce Building J in Phase 2, and add Building F in Phase 3. The following analysis is presented to reflect this phasing.

This plan did NOT include land uses or parking associated with the abutting and existing commercial and institutional properties as shown in ***Figure 1***, next page. The impact of these buildings on the project will be evaluated in a separate study scheduled for execution later this year. For the purposes of this analysis, focus was limited to just those buildings within the boundaries of the proposed development.

Figure 1: Site Drawing and Segment Designations

SHARED USE BACKGROUND

At the request of W.E. Bowman Construction and the City of Hopewell, DESMAN prepared the following Shared Parking model specific 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.

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.

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: 2nd Edition**. Washington DC: *ULI-The Urban Land Institute* , 2005, p.11
	Employee	0.70	0.80	/ksf GLA	**Shared Parking: 2nd Edition**. Washington DC: *ULI-The Urban Land Institute* , 2005, p.11
Fine/Casual Dining	Customer	12.00	19.00	/ksf GLA	**Parking Generation: 4th Edition**. Washington DC: *ITE - Institute of Transportation Engineers* , 2010
	Employee	2.20	3.70	/ksf GLA	**Parking Generation: 4th Edition**. Washington DC: *ITE - Institute of Transportation Engineers* , 2010
Fast Casual Dining	Customer	15.00	17.00	/ksf GFA	**Parking Generation: 4th Edition**. Washington DC: *ITE - Institute of Transportation Engineers* , 2010
	Employee	2.40	3.40	/ksf GFA	**Parking Generation: 4th Edition**. Washington DC: *ITE - Institute of Transportation Engineers* , 2010
Café/Take Out	Customer	12.00	16.00	/ksf GLA	**Parking Generation: 4th Edition**. Washington DC: *ITE - Institute of Transportation Engineers* , 2010
	Employee	2.50	2.85	/ksf GLA	**Parking Generation: 4th Edition**. Washington DC: *ITE - Institute of Transportation Engineers* , 2010
Cinema	Customer	0.19	0.26	/seat	*DESMAN Inc (proprietary information from AMC, 2003-2009) and* **Shared Parking: 2nd Edition.**, *2005, p.11*
	Employee	0.01	0.01	/seat	*DESMAN Inc (proprietary information from AMC, 2003-2009) and* **Shared Parking: 2nd Edition.**, *2005, p.11*
Apartments	Studio/1BR	0.10	0.10	/unit	*DESMAN Inc. &* **Shared Parking: 2nd Edition**. Washington DC: ULI - Urban Land Institute, 2005, p.11
	Multi-BR	0.50	0.50	/unit	*DESMAN Inc. &* **Shared Parking: 2nd Edition**. Washington DC: ULI - Urban Land Institute, 2005, p.11
	Reserved	1.00	1.00	/unit	*DESMAN Inc. &* **Shared Parking: 2nd Edition**. Washington DC: ULI - Urban Land Institute, 2005, p.11
	Guest	0.05	0.05	/unit	*DESMAN Inc. &* **Shared Parking: 2nd Edition**. Washington DC: ULI - Urban Land Institute, 2005, p.11
General Office	Visitor	0.30	0.03	/ksf GFA	**Shared Parking: 2nd Edition.** Washington DC: ULI - Urban Land Institute, 2005, p.11
	Employee	3.50	0.35	/ksf GFA	**Shared Parking: 2nd Edition**. Washington DC: *ULI - Urban Land Institute* , 2005, p.11
Performing Arts Venue	Visitor	0.30	0.33	/seat	**Shared Parking: 2nd Edition**. Washington DC: *ULI - Urban Land Institute* , 2005, p.11
	Employee	0.07	0.07	/seat	**Shared Parking: 2nd Edition**. Washington DC: *ULI - Urban Land Institute* , 2005, p.11

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 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***, prior page.

It should be noted that DESMAN assumed each residential unit would be afforded on dedicated parking space within the planned supply; residents with additional vehicles as well as residential visitors would park in unreserved spaces on site or in adjacent areas. Based on experience with similar development and ULI recommendations, DESMAN calculated a composite demand for 1.15 spaces per unit for one-bedroom units and 1.55 spaces per unit for multiple-bedroom units.

It should also be noted that, due to not having committed tenants for commercial pads, DESMAN treated with commercial square footage associated with certain building as follows:

- Building E – The 3,643 square foot structure proposed as a Visitor's Center or other place of assembly was treated as office space, pending further definition of potential uses and/or tenants.
- Buildings G-1 and G-2 – The 6,181 square feet of grade-level commercial space was treated as a fast/causal restaurant, pending further definition of potential uses and/or tenants.
- Building I – The 11,702 square foot commercial building was treated as a retail store, pending further definition of potential uses and/or tenants.

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 [2016] American Community Survey (ACS) covering Hopewell, Virginia and administered by the US Census Bureau, reported that 82.9% of the local populace drove themselves to work in a personal vehicle; the remainder either carpooled (10.4%), rode transit (1.1%), worked from home (2.2%), walked (1.0%) or commuted by other means (2.4%). On the basis of these findings, DESMAN assumed that 96% of all employees associated with one of the land uses would drive themselves to work. DESMAN did not assume any modal adjustment associated with customers, visitors or residents of the project.

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 area employees and residents who might also patronize retail stores, restaurants, or other uses on-site without necessarily generating any additional trips or resulting parking demand. A summary of applied adjustments to base demand ratios are shown in ***Table 2***.

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	0.90	1.00	2.61	/ksf GLA
	Employee	0.70	0.96	1.00	1.00	0.67	/ksf GLA
Fine/Casual Dining	Customer	12.00	1.00	0.75	1.00	9.00	/ksf GLA
	Employee	2.20	0.96	1.00	1.00	2.10	/ksf GLA
Fast Casual Dining	Customer	15.00	1.00	0.70	1.00	10.50	/ksf GFA
	Employee	2.40	0.96	1.00	1.00	2.29	/ksf GFA
Café/Take Out	Customer	12.00	1.00	0.50	1.00	6.00	/ksf GLA
	Employee	2.50	0.96	1.00	1.00	2.39	/ksf GLA
Cinema	Customer	0.19	1.00	0.95	1.00	0.18	/seat
	Employee	0.01	0.96	1.00	1.00	0.01	/seat
Apartments	Studio/1BR	0.10	1.00	1.00	1.00	0.10	/unit
	Multi-BR	0.50	1.00	1.00	1.00	0.50	/unit
	Reserved	1.00	1.00	1.00	1.00	1.00	/unit
	Guest	0.05	1.00	1.00	1.00	0.05	/unit
General Office	Visitor	0.30	1.00	0.90	1.00	0.27	/ksf GFA
	Employee	3.50	0.96	1.00	1.00	3.34	/ksf GFA
Performing Arts Venue	Visitor	0.30	1.00	0.95	1.00	0.29	/seat
	Employee	0.07	0.96	1.00	1.00	0.07	/seat

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	0.85	1.00	2.47	/ksf GLA
	Employee	0.70	0.96	1.00	1.00	0.67	/ksf GLA
Fine/Casual Dining	Customer	12.00	1.00	0.70	1.00	8.40	/ksf GLA
	Employee	2.20	0.96	1.00	1.00	2.10	/ksf GLA
Fast Casual Dining	Customer	15.00	1.00	0.65	1.00	9.75	/ksf GFA
	Employee	2.40	0.96	1.00	1.00	2.29	/ksf GFA
Café/Take Out	Customer	12.00	1.00	0.45	1.00	5.40	/ksf GLA
	Employee	2.50	0.96	1.00	1.00	2.39	/ksf GLA
Cinema	Customer	0.19	1.00	0.95	1.00	0.18	/seat
	Employee	0.01	0.96	1.00	1.00	0.01	/seat
Apartments	Studio/1BR	0.10	1.00	1.00	1.00	0.10	/unit
	Multi-BR	0.50	1.00	1.00	1.00	0.50	/unit
	Reserved	1.00	1.00	1.00	1.00	1.00	/unit
	Guest	0.05	1.00	1.00	1.00	0.05	/unit
General Office	Visitor	0.30	1.00	0.85	1.00	0.26	/ksf GFA
	Employee	3.50	0.96	1.00	1.00	3.34	/ksf GFA
Performing Arts Venue	Visitor	0.30	1.00	0.95	1.00	0.29	/seat
	Employee	0.07	0.96	1.00	1.00	0.07	/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	0.80	1.00	2.56	/ksf GLA
	Employee	0.80	0.96	1.00	1.00	0.76	/ksf GLA
Fine/Casual Dining	Customer	19.00	1.00	0.65	1.00	12.35	/ksf GLA
	Employee	3.70	0.96	1.00	1.00	3.53	/ksf GLA
Fast Casual Dining	Customer	17.00	1.00	0.60	1.00	10.20	/ksf GFA
	Employee	3.40	0.96	1.00	1.00	3.25	/ksf GFA
Café/Take Out	Customer	16.00	1.00	0.40	1.00	6.40	/ksf GLA
	Employee	2.85	0.96	1.00	1.00	2.72	/ksf GLA
Cinema	Customer	0.26	1.00	0.95	1.00	0.25	/seat
	Employee	0.01	0.96	1.00	1.00	0.01	/seat
Apartments	Studio/1BR	0.10	1.00	1.00	1.00	0.10	/unit
	Multi-BR	0.50	1.00	1.00	1.00	0.50	/unit
	Reserved	1.00	1.00	1.00	1.00	1.00	/unit
	Guest	0.05	1.00	1.00	1.00	0.05	/unit
General Office	Visitor	0.03	1.00	0.80	1.00	0.02	/ksf GFA
	Employee	0.35	0.96	1.00	1.00	0.33	/ksf GFA
Performing Arts Venue	Visitor	0.33	1.00	0.95	1.00	0.31	/seat
	Employee	0.07	0.96	1.00	1.00	0.07	/seat

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	0.80	1.00	2.56	/ksf GLA
	Employee	0.80	0.96	1.00	1.00	0.76	/ksf GLA
Fine/Casual Dining	Customer	19.00	1.00	0.65	1.00	12.35	/ksf GLA
	Employee	3.70	0.96	1.00	1.00	3.53	/ksf GLA
Fast Casual Dining	Customer	17.00	1.00	0.60	1.00	10.20	/ksf GFA
	Employee	3.40	0.96	1.00	1.00	3.25	/ksf GFA
Café/Take Out	Customer	16.00	1.00	0.40	1.00	6.40	/ksf GLA
	Employee	2.85	0.96	1.00	1.00	2.72	/ksf GLA
Cinema	Customer	0.26	1.00	0.95	1.00	0.25	/seat
	Employee	0.01	0.96	1.00	1.00	0.01	/seat
Apartments	Studio/1BR	0.10	1.00	1.00	1.00	0.10	/unit
	Multi-BR	0.50	1.00	1.00	1.00	0.50	/unit
	Reserved	1.00	1.00	1.00	1.00	1.00	/unit
	Guest	0.05	1.00	1.00	1.00	0.05	/unit
General Office	Visitor	0.03	1.00	0.80	1.00	0.02	/ksf GFA
	Employee	0.35	0.96	1.00	1.00	0.33	/ksf GFA
Performing Arts Venue	Visitor	0.33	1.00	0.95	1.00	0.31	/seat
	Employee	0.07	0.96	1.00	1.00	0.07	/seat

Applied capture assumptions to this model, based on experience with similar projects, were as follows:

- *Retail*: DESMAN assumed that one in every 10 patrons (10%) during a weekday would be area employees or residents walking over to a store to shop and thereby not generating any new or additional parking demand. As the area residential population grew during the evenings and on weekends, it was anticipated that local workers and residents would make up a larger proportion of retail patrons increasing to 15% on weekday evenings and 20% on weekend days and evening.
- *Fast Casual Restaurants*: DESMAN assumed that three in every 10 patrons (30%) during a weekday lunch rush would be area employees or residents walking over to dine and thereby not generating any new or additional parking demand. As the area residential population grew during the evenings and on weekends, it was anticipated that local workers and residents would make up a

larger proportion of diners increasing to 35% on weekday evenings and 40% on weekend days and evening.

- *Office*: DESMAN assumed that one in every 10 visitors (10%) during a weekday would be area employees or residents walking over and thereby not generating any new or additional parking demand. As the area residential population grew during the evenings and on weekends, it was anticipated that local workers and residents would make up a larger proportion of visitors increasing to 15% on weekday evenings and 20% on weekend days and evening.

Adjustments were also made for other area land uses to be incorporated into the analysis at a later date.

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 11,702 square feet of retail has a peak parking demand equal to 39 parking spaces. 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 during the winter holidays and slowest in in the summer. Therefore, so is parking demand associated with a retail store.

Presence becomes a significant factor in a mixed-use environment like Francisco Landing because it allows different land uses to share the same parking supply. For example, if an office building is placed next to an apartment complex, summing the peak projected demand of each of the land uses would result in parking supply substantially larger than necessary, as the apartment complex 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 retail store. The assumption is that demand from apartments will peak in overnight, while demand for office space will peak on weekday mornings. 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 Francisco Landing and applied to the model. The majority of presence adjustments were taken from *ULI's Shared Parking: Second 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.

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	56%	57%	64%	63%	66%	67%	64%	69%	64%	66%	72%	100%	80%
	Employee	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	90%	100%	90%
Fine/Casual Dining	Customer	88%	87%	96%	93%	98%	96%	99%	100%	92%	94%	91%	99%	87%
	Employee	88%	87%	96%	93%	98%	96%	99%	100%	92%	94%	91%	99%	87%
Fast Casual Dining	Customer	86%	86%	95%	93%	98%	97%	99%	100%	93%	96%	92%	98%	90%
	Employee	86%	86%	95%	93%	98%	97%	99%	100%	93%	96%	92%	98%	90%
Café/Take Out	Customer	88%	88%	99%	94%	96%	95%	100%	100%	95%	98%	93%	97%	93%
	Employee	88%	88%	99%	94%	96%	95%	100%	100%	95%	98%	93%	97%	93%
Cineplex (weekdays)	Customer	27%	21%	20%	19%	27%	41%	55%	40%	15%	15%	25%	23%	100%
	Employee	50%	50%	50%	50%	50%	75%	75%	75%	50%	50%	50%	50%	100%
Cineplex (weekends)	Customer	71%	59%	67%	58%	71%	82%	92%	75%	51%	62%	78%	67%	100%
	Employee	80%	80%	80%	80%	80%	100%	100%	90%	80%	80%	80%	80%	100%
Apartments	Studio/1BR	100%	100%	100%	100%	100%	95%	90%	85%	95%	100%	95%	90%	85%
	Multi-BR	100%	100%	100%	100%	100%	95%	90%	85%	95%	100%	95%	90%	85%
	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Guest	100%	100%	100%	100%	100%	95%	90%	85%	95%	100%	95%	90%	85%
General Office	Visitor	100%	100%	95%	100%	100%	95%	90%	85%	95%	100%	100%	100%	80%
	Employee	100%	100%	95%	100%	100%	95%	90%	85%	95%	100%	100%	100%	80%
Performing Arts Venue	Visitor	75%	80%	85%	90%	95%	100%	100%	100%	95%	90%	85%	80%	50%
	Employee	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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	Customer	1%	5%	15%	35%	65%	85%	95%	100%	95%	90%	90%	95%	95%	95%	80%	50%	30%	10%	0%
(Typical)	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	95%	90%	75%	40%	15%	0%
Standard Retail	Customer	1%	5%	15%	30%	55%	75%	90%	100%	100%	100%	95%	85%	80%	75%	65%	50%	30%	10%	0%
(December)	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	95%	90%	75%	40%	15%	0%
Standard Retail	Customer	1%	5%	10%	20%	40%	65%	90%	100%	100%	100%	95%	85%	70%	55%	40%	25%	15%	5%	0%
(Holidays)	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	95%	90%	75%	40%	15%	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%
Cineplex	Customer	0%	0%	0%	0%	0%	0%	20%	45%	55%	55%	55%	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%
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%
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	Customer	1%	5%	10%	30%	50%	65%	80%	90%	100%	100%	95%	90%	80%	75%	65%	50%	35%	15%	0%
(Typical)	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	0%
Standard Retail	Customer	1%	5%	10%	35%	60%	70%	85%	95%	100%	100%	95%	90%	80%	75%	65%	50%	35%	15%	0%
(December)	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	0%
Standard Retail	Customer	1%	5%	10%	20%	40%	60%	80%	95%	100%	100%	95%	85%	70%	60%	50%	30%	20%	10%	0%
(Holidays)	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	0%
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%
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%
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%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	100%	80%	50%
General Office	Visitor	0%	0%	5%	25%	75%	100%	75%	50%	25%	10%	5%	0%	0%	0%	0%	0%	0%	0%	0%
	Employee	0%	5%	25%	75%	100%	100%	85%	70%	55%	40%	25%	10%	5%	0%	0%	0%	0%	0%	0%
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%

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.

PHASE 1 DEMAND AND ADEQUACY

The Phase 1 program includes the following:

- Building E – A 3,643 square foot structure proposed as a Visitor's Center or other place of assembly.
- Buildings G-1 and G-2 – Two buildings totaling roughly 74,529 square feet and containing grade-level commercial space of 6,181 square feet and 75 rental residential units.
- Building I – A 11,702 square foot commercial building.

The development program generates gross demand for up to 234 spaces on a weekday and 226 spaces on a weekend as shown in ***Table 6***.

Table 6: Phase 1 Projected Gross Demand

				WEEKDAYS			WEEKDAY EVENINGS			WEEKEND DAYS			WEEKEND EVENINGS		
Land Use	**User Group**	**Land Use Data**		**Project Ratio**		**Vehicles**	**Project Ratio**		**Vehicles**	**Project Ratio**		**Vehicles**	**Project Ratio**		**Vehicles**
Standard Retail	Customer	11,702	sf GLA	2.61	/ksf GLA	31	2.47	/ksf GLA	29	2.56	/ksf GLA	30	2.56	/ksf GLA	30
	Employee			0.67	/ksf GLA	8	0.67	/ksf GLA	8	0.76	/ksf GLA	9	0.76	/ksf GLA	9
Fine/Casual Dining	Customer		sf GLA	9.00	/ksf GLA	0	8.40	/ksf GLA	0	12.35	/ksf GLA	0	12.35	/ksf GLA	0
	Employee			2.10	/ksf GLA	0	2.10	/ksf GLA	0	3.53	/ksf GLA	0	3.53	/ksf GLA	0
Fast Casual Dining	Customer	6,181	sf GLA	10.50	/ksf GFA	65	9.75	/ksf GFA	60	10.20	/ksf GFA	63	10.20	/ksf GFA	63
	Employee			2.29	/ksf GFA	14	2.29	/ksf GFA	14	3.25	/ksf GFA	20	3.25	/ksf GFA	20
Café/Take Out	Customer		sf GLA	6.00	/ksf GLA	0	5.40	/ksf GLA	0	6.40	/ksf GLA	0	6.40	/ksf GLA	0
	Employee			2.39	/ksf GLA	0	2.39	/ksf GLA	0	2.72	/ksf GLA	0	2.72	/ksf GLA	0
Cinema	Customer		seats	0.18	/seat	0	0.18	/seat	0	0.25	/seat	0	0.25	/seat	0
	Employee			0.01	/seat	0	0.01	/seat	0	0.01	/seat	0	0.01	/seat	0
Apartments	Studio/1BR	34	units	0.10	/unit	3	0.10	/unit	3	0.10	/unit	3	0.10	/unit	3
	Multi-BR	41	units	0.50	/unit	21	0.50	/unit	21	0.50	/unit	21	0.50	/unit	21
	Reserved	75	units	1.00	/unit	75	1.00	/unit	75	1.00	/unit	75	1.00	/unit	75
	Guest	75	units	0.05	/unit	4	0.05	/unit	4	0.05	/unit	4	0.05	/unit	4
General Office	Visitor	3,643	sf GFA	0.27	/ksf GFA	1	0.26	/ksf GFA	1	0.02	/ksf GFA	0	0.02	/ksf GFA	0
	Employee			3.34	/ksf GFA	12	3.34	/ksf GFA	12	0.33	/ksf GFA	1	0.33	/ksf GFA	1
Performing Arts Venue	Visitor		sf GFA	0.29	/seat	0	0.29	/seat	0	0.31	/seat	0	0.31	/seat	0
	Employee			0.07	/seat	0	0.07	/seat	0	0.07	/seat	0	0.07	/seat	0
Subtotal Customers						*101*			*94*			*97*			*97*
Subtotal Employees						*34*			*34*			*30*			*30*
Subtotal Residents (Unreserved)						*24*			*24*			*24*			*24*
Subtotal Reserved						*75*			*75*			*75*			*75*
TOTAL						**234**			**227**			**226**			**226**

Adjusting for presence, the projected peak hour demand is actually for 215 spaces for weekdays and 208 spaces on weekends, as shown in ***Table 7***, next page. Application of presence factors reduces gross projected demand for weekdays by 8% (from 234 to 215, a difference of 19 spaces) and 8% on weekends (from 226 to 208, a difference of 18 spaces) when compared to the projected peak hour demand.

Table 7: Phase 1 Peak Hour Demand Projections

WEEKDAYS

Land Use	User Group	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	Holidays 12:00 PM
Standard Retail	Customer	17	17	19	19	20	20	19	20	19	19	21	28	22
	Employee	6	6	6	6	6	6	6	6	6	6	7	8	7
Fine/Casual Dining	Customer	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
Fast Casual Dining	Customer	56	56	62	60	64	63	64	65	60	62	60	64	59
	Employee	12	12	13	13	14	14	14	14	13	13	13	14	13
Café/Take Out	Customer	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
Cinema	Customer	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
Apartments	Studio/1BR	2	2	2	2	2	2	2	2	2	2	2	2	2
	Multi-BR	14	14	14	14	14	13	12	12	13	14	13	12	12
	Reserved	75	75	75	75	75	75	75	75	75	75	75	75	75
	Guest	1	1	1	1	1	1	1	1	1	1	1	1	1
General Office	Visitor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	11	11	10	11	11	10	10	9	10	11	11	11	9
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
Subtotal Customers		*74*	*74*	*82*	*80*	*85*	*84*	*84*	*86*	*80*	*82*	*82*	*93*	*82*
Subtotal Employees		*29*	*29*	*29*	*30*	*31*	*30*	*30*	*29*	*29*	*30*	*31*	*33*	*29*
Subtotal Residents (Unreserved)		*16*	*16*	*16*	*16*	*16*	*15*	*14*	*14*	*15*	*16*	*15*	*14*	*14*
Subtotal Reserved		*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*
TOTAL		**194**	**194**	**202**	**201**	**207**	**204**	**203**	**204**	**199**	**203**	**203**	**215**	**200**
Planned Supply		**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**
Surplus/(Deficit)		**77**	**77**	**69**	**70**	**64**	**67**	**68**	**67**	**72**	**68**	**68**	**56**	**71**

PEAK DAY/HOUR =

WEEKENDS

Land Use	User Group	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	Holidays 12:00 PM
Standard Retail	Customer	13	14	15	15	16	16	15	17	15	16	17	26	19
	Employee	7	7	7	7	7	7	7	7	7	7	8	9	8
Fine/Casual Dining	Customer	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
Fast Casual Dining	Customer	54	54	60	59	62	61	62	63	59	60	58	62	57
	Employee	17	17	19	19	20	19	20	20	19	19	18	20	18
Café/Take Out	Customer	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
Cinema	Customer	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
Apartments	Studio/1BR	2	2	2	2	2	2	2	2	2	2	2	2	2
	Multi-BR	14	14	14	14	14	13	12	12	13	14	13	12	12
	Reserved	75	75	75	75	75	75	75	75	75	75	75	75	75
	Guest	1	1	1	1	1	1	1	1	1	1	1	1	1
General Office	Visitor	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
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
Subtotal Customers		*68*	*69*	*76*	*75*	*79*	*78*	*78*	*81*	*75*	*77*	*76*	*89*	*77*
Subtotal Employees		*25*	*25*	*27*	*27*	*28*	*27*	*28*	*28*	*27*	*27*	*27*	*30*	*27*
Subtotal Residents (Unreserved)		*16*	*16*	*16*	*16*	*16*	*15*	*14*	*14*	*15*	*16*	*15*	*14*	*14*
Subtotal Reserved		*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*	*75*
TOTAL		**184**	**185**	**194**	**193**	**198**	**195**	**195**	**198**	**192**	**195**	**193**	**208**	**193**
Planned Supply		**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**
Surplus/(Deficit)		**87**	**86**	**77**	**78**	**73**	**76**	**76**	**73**	**79**	**76**	**78**	**63**	**78**

PEAK DAY/HOUR =

Against a planned supply of 271 parking spaces - which includes 138 parking spaces spread across multiple surface lots planned within the body of the development, as well as use of 33 curbside spaces along Appomattox Street and roughly 100 spaces in the City-owned lot on the block bordered by East Cawson Street, Hopewell Street, Appomattox Street, and an interior alleyway – Phase 1 of the proposed development is projected to operate at a 56-space surplus under peak hour conditions on a weekday and a 63-space surplus under peak hour conditions on a weekend.

PHASE 2 DEMAND AND ADEQUACY

The Phase 2 program incorporates all the prior program elements and introduces Building J, a 54,496 square foot residential building containing 50 rental residential units. This Phase 2 development program

generates gross demand for up to 304 spaces on a weekday and 296 spaces on a weekend as shown in ***Table 8***.

Table 8: Phase 2 Projected Gross Demand

				WEEKDAYS			WEEKDAY EVENINGS			WEEKEND DAYS			WEEKEND EVENINGS		
Land Use	**User Group**	**Land Use Data**		**Project Ratio**		**Vehicles**	**Project Ratio**		**Vehicles**	**Project Ratio**		**Vehicles**	**Project Ratio**		**Vehicles**
Standard Retail	Customer	11,702	sf GLA	2.61	/ksf GLA	31	2.47	/ksf GLA	29	2.56	/ksf GLA	30	2.56	/ksf GLA	30
	Employee			0.67	/ksf GLA	8	0.67	/ksf GLA	8	0.76	/ksf GLA	9	0.76	/ksf GLA	9
Fine/Casual Dining	Customer		sf GLA	9.00	/ksf GLA	0	8.40	/ksf GLA	0	12.35	/ksf GLA	0	12.35	/ksf GLA	0
	Employee			2.10	/ksf GLA	0	2.10	/ksf GLA	0	3.53	/ksf GLA	0	3.53	/ksf GLA	0
Fast Casual Dining	Customer	6,181	sf GLA	10.50	/ksf GFA	65	9.75	/ksf GFA	60	10.20	/ksf GFA	63	10.20	/ksf GFA	63
	Employee			2.29	/ksf GFA	14	2.29	/ksf GFA	14	3.25	/ksf GFA	20	3.25	/ksf GFA	20
Café/Take Out	Customer		sf GLA	6.00	/ksf GLA	0	5.40	/ksf GLA	0	6.40	/ksf GLA	0	6.40	/ksf GLA	0
	Employee			2.39	/ksf GLA	0	2.39	/ksf GLA	0	2.72	/ksf GLA	0	2.72	/ksf GLA	0
Cinema	Customer		seats	0.18	/seat	0	0.18	/seat	0	0.25	/seat	0	0.25	/seat	0
	Employee			0.01	/seat	0	0.01	/seat	0	0.01	/seat	0	0.01	/seat	0
Apartments	Studio/1BR	57	units	0.10	/unit	6	0.10	/unit	6	0.10	/unit	6	0.10	/unit	6
	Multi-BR	69	units	0.50	/unit	35	0.50	/unit	35	0.50	/unit	35	0.50	/unit	35
	Reserved	126	units	1.00	/unit	126	1.00	/unit	126	1.00	/unit	126	1.00	/unit	126
	Guest	126	units	0.05	/unit	6	0.05	/unit	6	0.05	/unit	6	0.05	/unit	6
General Office	Visitor	3,643	sf GFA	0.27	/ksf GFA	1	0.26	/ksf GFA	1	0.02	/ksf GFA	0	0.02	/ksf GFA	0
	Employee			3.34	/ksf GFA	12	3.34	/ksf GFA	12	0.33	/ksf GFA	1	0.33	/ksf GFA	1
Performing Arts Venue	Visitor		sf GFA	0.29	/seat	0	0.29	/seat	0	0.31	/seat	0	0.31	/seat	0
	Employee			0.07	/seat	0	0.07	/seat	0	0.07	/seat	0	0.07	/seat	0
Subtotal Customers						*103*			*96*			*99*			*99*
Subtotal Employees						*34*			*34*			*30*			*30*
Subtotal Residents (Unreserved)						*41*			*41*			*41*			*41*
Subtotal Reserved						*126*			*126*			*126*			*126*
TOTAL						**304**			**297**			**296**			**296**

Adjusting for presence, the projected peak hour demand is actually for 276 spaces for weekdays and 269 spaces on weekends, as shown in ***Table 9***, next page. Application of presence factors reduces gross projected demand for weekdays by 9% (from 304 to 276, a difference of 28 spaces) and 9% on weekends (from 296 to 269, a difference of 27 spaces) when compared to the projected peak hour demand.

Against a planned supply of 271 parking spaces, Phase 2 of the proposed development is projected to operate at a 5-space deficit under peak hour conditions on a weekday and a 2-space surplus under peak hour conditions on a weekend. The projected shortfall is limited to just two hours in early December, during the Christmas shopping season; during the majority of the year, the planned parking supply will be adequate to support the project.

Table 9: Phase 2 Peak Hour Demand Projections

		WEEKDAYS												
Land Use	User Group	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	Holidays 12:00 PM
Standard Retail	Customer	17	17	19	19	20	20	19	20	19	19	21	28	22
	Employee	6	6	6	6	6	6	6	6	6	6	7	8	7
Fine/Casual Dining	Customer	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
Fast Casual Dining	Customer	56	56	62	60	64	63	64	65	60	62	60	64	59
	Employee	12	12	13	13	14	14	14	14	13	13	13	14	13
Café/Take Out	Customer	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
Cinema	Customer	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
Apartments	Studio/1BR	4	4	4	4	4	4	4	3	4	4	4	4	3
	Multi-BR	23	23	23	23	23	22	20	19	22	23	22	20	19
	Reserved	126	126	126	126	126	126	126	126	126	126	126	126	126
	Guest	1	1	1	1	1	1	1	1	1	1	1	1	1
General Office	Visitor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	11	11	10	11	11	10	10	9	10	11	11	11	9
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
Subtotal Customers		*74*	*74*	*82*	*80*	*85*	*84*	*84*	*86*	*80*	*82*	*82*	*93*	*82*
Subtotal Employees		*29*	*29*	*29*	*30*	*31*	*30*	*30*	*29*	*29*	*30*	*31*	*33*	*29*
Subtotal Residents (Unreserved)		*27*	*27*	*27*	*27*	*27*	*26*	*24*	*22*	*26*	*27*	*26*	*24*	*22*
Subtotal Reserved		*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*
TOTAL		**256**	**256**	**264**	**263**	**269**	**266**	**264**	**263**	**261**	**265**	**265**	**276**	**259**
Planned Supply		**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**
Surplus/(Deficit)		**15**	**15**	**7**	**8**	**2**	**5**	**7**	**8**	**10**	**6**	**6**	**(5)**	**12**

PEAK DAY/HOUR =

		WEEKENDS												
Land Use	User Group	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	Holidays 12:00 PM
Standard Retail	Customer	13	14	15	15	16	16	15	17	15	16	17	26	19
	Employee	7	7	7	7	7	7	7	7	7	7	8	9	8
Fine/Casual Dining	Customer	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
Fast Casual Dining	Customer	54	54	60	59	62	61	62	63	59	60	58	62	57
	Employee	17	17	19	19	20	19	20	20	19	19	18	20	18
Café/Take Out	Customer	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
Cinema	Customer	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
Apartments	Studio/1BR	4	4	4	4	4	4	4	3	4	4	4	4	3
	Multi-BR	23	23	23	23	23	22	20	19	22	23	22	20	19
	Reserved	126	126	126	126	126	126	126	126	126	126	126	126	126
	Guest	1	1	1	1	1	1	1	1	1	1	1	1	1
General Office	Visitor	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
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
Subtotal Customers		*68*	*69*	*76*	*75*	*79*	*78*	*78*	*81*	*75*	*77*	*76*	*89*	*77*
Subtotal Employees		*25*	*25*	*27*	*27*	*28*	*27*	*28*	*28*	*27*	*27*	*27*	*30*	*27*
Subtotal Residents (Unreserved)		*27*	*27*	*27*	*27*	*27*	*26*	*24*	*22*	*26*	*27*	*26*	*24*	*22*
Subtotal Reserved		*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*
TOTAL		**246**	**247**	**256**	**255**	**260**	**257**	**256**	**257**	**254**	**257**	**255**	**269**	**252**
Planned Supply		**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**
Surplus/(Deficit)		**25**	**24**	**15**	**16**	**11**	**14**	**15**	**14**	**17**	**14**	**16**	**2**	**19**

PEAK DAY/HOUR =

PHASE 3 DEMAND AND ADEQUACY

The Phase 3 program incorporates all the prior program elements and introduces Building F, a 53,268 square foot residential building containing 54 rental residential units. This Phase 3 development program generates gross demand for up to 376 spaces on a weekday and 268 spaces on a weekend as shown in ***Table 10***, next page.

Table 10: Phase 3 Projected Gross Demand

				WEEKDAYS			WEEKDAY EVENINGS			WEEKEND DAYS			WEEKEND EVENINGS		
Land Use	**User Group**	**Land Use Data**		**Project Ratio**		**Vehicles**	**Project Ratio**		**Vehicles**	**Project Ratio**		**Vehicles**	**Project Ratio**		**Vehicles**
Standard Retail	Customer	11,702	sf GLA	2.61	/ksf GLA	31	2.47	/ksf GLA	29	2.56	/ksf GLA	30	2.56	/ksf GLA	30
	Employee			0.67	/ksf GLA	8	0.67	/ksf GLA	8	0.76	/ksf GLA	9	0.76	/ksf GLA	9
Fine/Casual Dining	Customer		sf GLA	9.00	/ksf GLA	0	8.40	/ksf GLA	0	12.35	/ksf GLA	0	12.35	/ksf GLA	0
	Employee			2.10	/ksf GLA	0	2.10	/ksf GLA	0	3.53	/ksf GLA	0	3.53	/ksf GLA	0
Fast Casual Dining	Customer	6,181	sf GLA	10.50	/ksf GFA	65	9.75	/ksf GFA	60	10.20	/ksf GFA	63	10.20	/ksf GFA	63
	Employee			2.29	/ksf GFA	14	2.29	/ksf GFA	14	3.25	/ksf GFA	20	3.25	/ksf GFA	20
Café/Take Out	Customer		sf GLA	6.00	/ksf GLA	0	5.40	/ksf GLA	0	6.40	/ksf GLA	0	6.40	/ksf GLA	0
	Employee			2.39	/ksf GLA	0	2.39	/ksf GLA	0	2.72	/ksf GLA	0	2.72	/ksf GLA	0
Cinema	Customer		seats	0.18	/seat	0	0.18	/seat	0	0.25	/seat	0	0.25	/seat	0
	Employee			0.01	/seat	0	0.01	/seat	0	0.01	/seat	0	0.01	/seat	0
Apartments	Studio/1BR	81	units	0.10	/unit	8	0.10	/unit	8	0.10	/unit	8	0.10	/unit	8
	Multi-BR	98	units	0.50	/unit	49	0.50	/unit	49	0.50	/unit	49	0.50	/unit	49
	Reserved	179	units	1.00	/unit	179	1.00	/unit	179	1.00	/unit	179	1.00	/unit	179
	Guest	179	units	0.05	/unit	9	0.05	/unit	9	0.05	/unit	9	0.05	/unit	9
General Office	Visitor	3,643	sf GFA	0.27	/ksf GFA	1	0.26	/ksf GFA	1	0.02	/ksf GFA	0	0.02	/ksf GFA	0
	Employee			3.34	/ksf GFA	12	3.34	/ksf GFA	12	0.33	/ksf GFA	1	0.33	/ksf GFA	1
Performing Arts Venue	Visitor		sf GFA	0.29	/seat	0	0.29	/seat	0	0.31	/seat	0	0.31	/seat	0
	Employee			0.07	/seat	0	0.07	/seat	0	0.07	/seat	0	0.07	/seat	0
Subtotal Customers						*106*			*99*			*102*			*102*
Subtotal Employees						*34*			*34*			*30*			*30*
Subtotal Residents (Unreserved)						*57*			*57*			*57*			*57*
Subtotal Reserved						*179*			*179*			*179*			*179*
TOTAL						**376**			**369**			**368**			**368**

Adjusting for presence, the projected peak hour demand is actually for 340 spaces for weekdays and 333 spaces on weekends, as shown in ***Table 11***, next page. Application of presence factors reduces gross projected demand for weekdays by 10% (from 376 to 340, a difference of 36 spaces) and 10% on weekends (from 368 to 333, a difference of 35 spaces) when compared to the projected peak hour demand.

Against a planned supply of 271 parking spaces, Phase 3 of the proposed development is projected to operate at a 69-space deficit under peak hour conditions on a weekday and a 62-space deficit under peak hour conditions on a weekend. These project shortfalls are pervasive, impacting the project on weekdays and weekends from early in the morning until late in the evening during all twelve months of the year.

It is DESMAN's finding that the developer will need to introduce additional parking supply to the project prior to starting construction on Building F to ensure there is adequate capacity to support this last phase of development.

Table 11: Phase 3 Peak Hour Demand Projections

WEEKDAYS

Land Use	User Group	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	Holidays 12:00 PM
Standard Retail	Customer	17	17	19	19	20	20	19	20	19	19	21	28	22
	Employee	6	6	6	6	6	6	6	6	6	6	7	8	7
Fine/Casual Dining	Customer	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
Fast Casual Dining	Customer	56	56	62	60	64	63	64	65	60	62	60	64	59
	Employee	12	12	13	13	14	14	14	14	13	13	13	14	13
Café/Take Out	Customer	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
Cinema	Customer	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
Apartments	Studio/1BR	5	5	5	5	5	5	5	4	5	5	5	5	4
	Multi-BR	32	32	32	32	32	30	29	27	30	32	30	29	27
	Reserved	179	179	179	179	179	179	179	179	179	179	179	179	179
	Guest	2	2	2	2	2	2	2	2	2	2	2	2	2
General Office	Visitor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	11	11	10	11	11	10	10	9	10	11	11	11	9
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
Subtotal Customers		*75*	*75*	*83*	*81*	*86*	*85*	*85*	*87*	*81*	*83*	*83*	*94*	*83*
Subtotal Employees		*29*	*29*	*29*	*30*	*31*	*30*	*30*	*29*	*29*	*30*	*31*	*33*	*29*
Subtotal Residents (Unreserved)		*37*	*37*	*37*	*37*	*37*	*35*	*34*	*31*	*35*	*37*	*35*	*34*	*31*
Subtotal Reserved		*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*
TOTAL		**320**	**320**	**328**	**327**	**333**	**329**	**328**	**326**	**324**	**329**	**328**	**340**	**322**
Planned Supply		**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**
Surplus/(Deficit)		**(49)**	**(49)**	**(57)**	**(56)**	**(62)**	**(58)**	**(57)**	**(55)**	**(53)**	**(58)**	**(57)**	**(69)**	**(51)**

PEAK DAY/HOUR =

WEEKENDS

Land Use	User Group	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	Holidays 12:00 PM
Standard Retail	Customer	13	13	14	14	15	15	15	17	14	15	16	26	19
	Employee	6	6	6	6	6	6	7	7	6	6	6	9	8
Fine/Casual Dining	Customer	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
Fast Casual Dining	Customer	38	38	42	41	43	43	62	63	41	42	41	62	57
	Employee	16	16	18	18	19	18	20	20	18	18	17	20	18
Café/Take Out	Customer	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
Cinema	Customer	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
Apartments	Studio/1BR	8	8	8	8	8	7	5	4	7	8	7	5	4
	Multi-BR	48	48	48	48	48	45	29	27	45	48	45	29	27
	Reserved	179	179	179	179	179	179	179	179	179	179	179	179	179
	Guest	9	9	9	9	9	9	2	2	9	9	9	2	2
General Office	Visitor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Employee	0	0	0	0	0	0	1	1	0	0	0	1	1
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
Subtotal Customers		*60*	*60*	*65*	*64*	*67*	*67*	*79*	*82*	*64*	*66*	*66*	*90*	*78*
Subtotal Employees		*22*	*22*	*24*	*24*	*25*	*24*	*28*	*28*	*24*	*24*	*23*	*30*	*27*
Subtotal Residents (Unreserved)		*56*	*56*	*56*	*56*	*56*	*52*	*34*	*31*	*52*	*56*	*52*	*34*	*31*
Subtotal Reserved		*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*	*179*
TOTAL		**317**	**317**	**324**	**323**	**327**	**322**	**320**	**320**	**319**	**325**	**320**	**333**	**315**
Planned Supply		**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**	**271**
Surplus/(Deficit)		**(46)**	**(46)**	**(53)**	**(52)**	**(56)**	**(51)**	**(49)**	**(49)**	**(48)**	**(54)**	**(49)**	**(62)**	**(44)**

PEAK DAY/HOUR =