

Shared Parking Analysis

Lifetime Center, 300 Boylston Street

Newton, Massachusetts

Re: VAI File # 6467

Presented To:

Mark R. DiOrio, Esq.
General Counsel and Senior Vice President
The Bulfinch Companies, Inc.
250 First Avenue, Suite 200
Needham, Massachusetts 02494

From:

Mr. F. Giles Ham, P.E.
Ms. Jennifer Connors
Vanasse & Associates, Inc.

MEMORANDUM

TO: Mr. Mark R. DiOrio
The Bulfinch Companies, Inc
250 First Avenue, Suite 200
Needham, MA 02494

FROM: Mr. F. Giles Ham, P.E.
Ms. Jennifer Connors
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(978) 474-8800

DATE: May 17, 2017

RE: 6467

SUBJECT: Shared Parking
Newton, Massachusetts

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has conducted a Shared Parking Study to review parking for the mixed-use development at the Life Time Center (f/k/a Atrium Mall) in Newton, Massachusetts. The proposed mixed-use development, as currently planned, includes a 111,650 sf Health Club, 78,000 sf of Medical/Office Clinic, 79,546 sf of Medical Office and 12,000 sf of Office space. The parking supply is 1,045 spaces. This assessment summarizes the parking spaces required based upon land-use, size and time of day. The shared parking methodology is outlined in the Shared Parking Manual¹ prepared by the Urban Land Institute.

SHARED PARKING ANALYSIS

Shared parking is a method through which different land uses can share the same parking supply, and reduce the number of parking spaces that each individual land use would be required to provide. If land uses have different peak hours of parking demand, then they can share some of the same spaces. For each separate Land Use of Health Club, Medical/Office Clinic, Medical Office and Office, the parking demand for each hour of the day is estimated. The following summarizes how the daily parking demand was estimated for each land use:

Health Club – The Life Time Fitness Health Club consists of many land uses including fitness, office, childcare, restaurant and retail. The Life Time club is larger than a typical health club to accommodate these multiple uses. The City of Newton, in an April 11, 2017 memorandum, calculated the parking requirement based upon the individual uses within Life Time Fitness to be 607 parking spaces. This estimate is conservative as it does not account for multi-purpose trips, such as when a patron parks and enjoys many uses during a single visit, which reduces the actual demand. In order to provide an accurate depiction of parking demand, the Life Time Fitness Center in Framingham was monitored to estimate the actual daily parking demand for this combination of uses. It is important to note that while the City of Newton conservatively required 607 spaces, actual peak demand at the Life Time Fitness Framingham facility was 345 parked cars at 6:00 PM on a weekday and 429 vehicles at 11:00 AM on a Saturday.

¹Shared Parking Manual, Second Edition; Urban Land Institute; Washington D.C; 2005.

Medical/Office Clinic – Medical/Office Clinic provides outpatient and day surgical care in addition to lab facilities. This use is less patient intensive in comparison to a typical medical office. In order to estimate the daily parking demand for a medical/office clinic a similar use was monitored in Dedham, Massachusetts. A medical/office clinic is generally not open on weekends.

Medical Office – In order to estimate the daily parking demand at the Medical Office use, the City of Newton requirement of 5.0 spaces per 1,000 sf was utilized and the daily temporal distribution was estimated utilizing the shared parking methodology. On a typical day, the peak parking of 5.0 spaces per 1,000 sf will occur between 10:00 AM and 12:00 Noon and again between 2:00 and 3:00 PM, but the remainder of the day the parking demand for medical office use will be less.

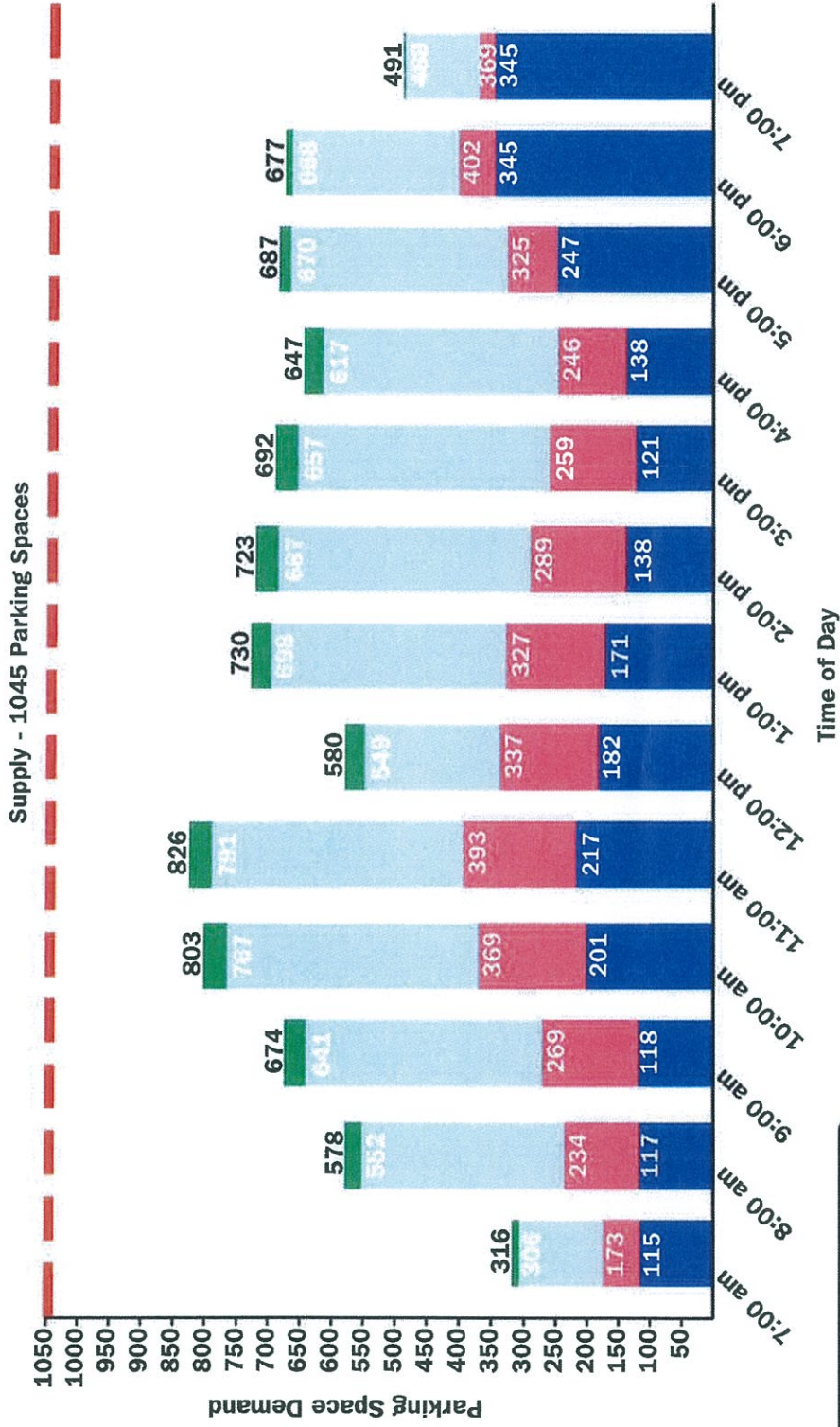
Office – Similarly, the City of Newton requirement of 3.0 spaces per 1,000 sf was utilized for office use and the daily temporal distribution was estimated utilizing the shared parking methodology. On a typical day, office parking will peak at 10:00 AM and again at 2:00 PM with the remainder of the day having a parking demand less than 3.0 spaces per 1,000 sf. On a Saturday parking demand is significantly less.

Based upon the above, the daily accumulation of parking demand for the proposed mixed-use development of Life Time Center consistent with the shared parking methodology is presented in Figures 1 and 2. As can be seen in Figure 1, at 11:00 AM on a weekday the parking space demand peaks at 826 occupied spaces. On a Saturday, the peak also occurs at 11:00 AM with a parking demand of 835 occupied spaces, as shown in Figure 2.

CONCLUSION

The Shared Parking Analysis allows for an estimation of the parking demand over the entire day and accounts for the fact that different land uses peak at different times of the day. The Life Time Center is a perfect example of this, as the fitness use parking demand peaks after 5:00 PM on a weekday and at 11:00 AM on a Saturday, while the other uses peak during the midday on a typical weekday and have less overall parking demand on a Saturday. As such, the actual peak demand is much less than the sum of the individual peak parking demands.

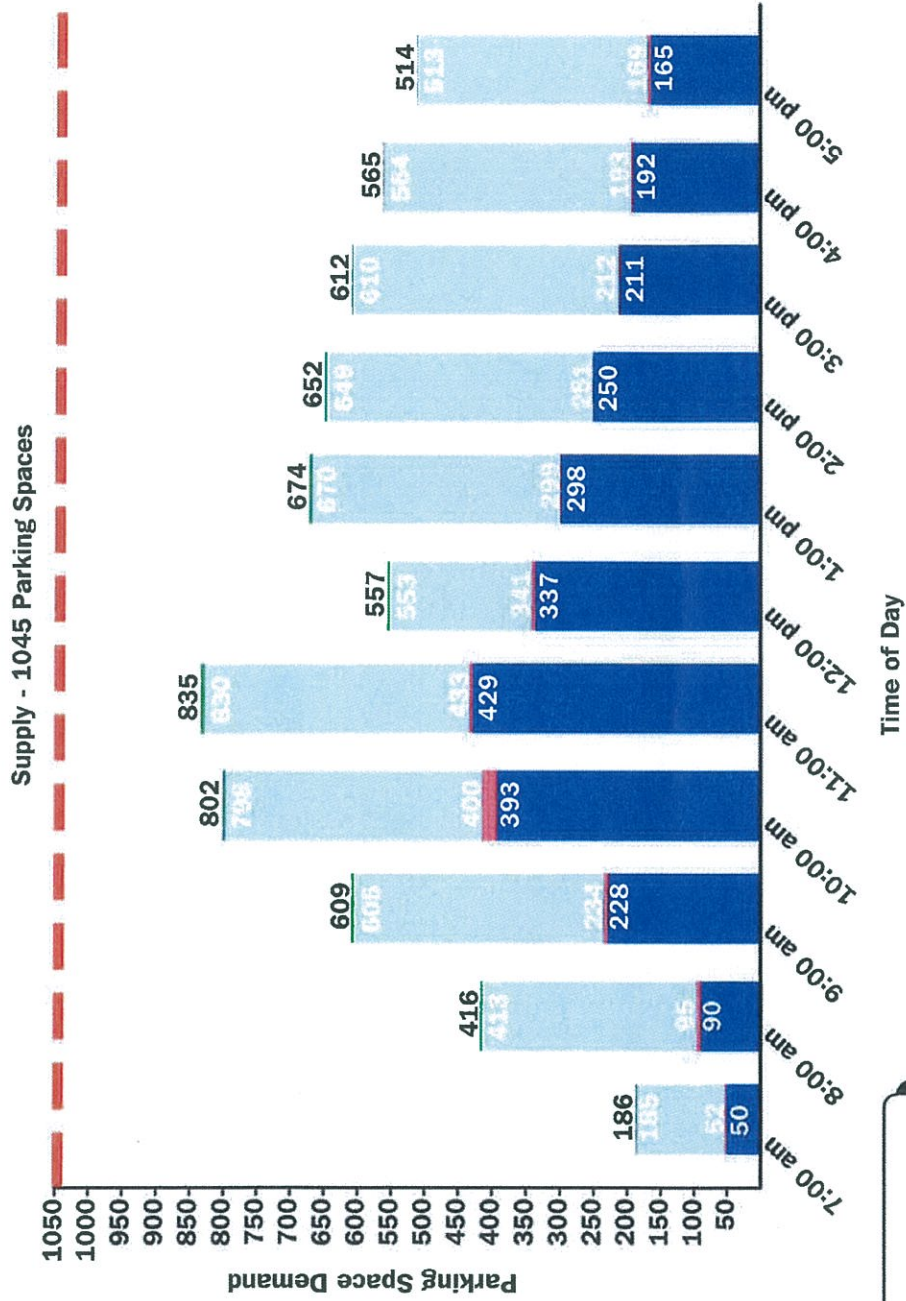
Based upon the Urban Land Institute shared parking methodology, observed parking demand counts for an actual Life Time Fitness Center in Framingham, and observed parking demand counts for a comparable medical/office clinic use in Dedham, the existing parking garage at Life Time Center, with a parking capacity of 1,045 spaces, has more than sufficient parking supply to satisfy the projected peak parking demands of 826 parking spaces during the weekday peak hour, and 835 parking spaces during the Saturday peak hour.



Legend:

- Lifetime - 111,650 sf
- Medical Clinic - 78,000 sf
- Medical Office - 79,546 sf
- Office - 12,000 sf

Figure 1
Shared Parking Analysis
Typical Weekday



Legend:

- Lifetime - 111,650 sf
- Medical Clinic - 78,000 sf
- Medical Office - 79,546 sf
- Office - 12,000 sf

Figure 2

Shared Parking Analysis
Typical Saturday

VAI Vanasse & Associates, Inc.
Transportation Engineers & Planners

Calculation - Weekday

1- Lifetime	115	117	118	201	217	182	171	138	121	138	247	345	345
	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00

2- Medical Clinic

Medical Observed = (A)*(B)

Observed Value (B)	58	117	151	168	176	155	156	151	138	108	78	57	24
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3- Medical Office

Medical OF = (H)*(F) + (I)*(G)

Visitor (H)	133	318	371	358	398	212	371	398	398	371	345	266	119
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4- Office

Medical OF = (M)*(K) + (N)*(L)

Visitor (M)	10	26	33	36	35	31	31	36	35	31	17	9	3
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Medical Clinic	Area		Differ. %
	Old Area	New Area	
	66000 sf	78000 sf	1.18
Medical OFF	Space Per Unit Land Use		
	Visitor	(C)	3.33
	Staff	(D)	1.67
			5.00
Medical OFF - Area	(E) 79,546 k		
	Visitor/Staff x Space per Unit Land Use		
	Visitor	(F)	264,88818 (C)*(E)
	Staff	(G)	132,84182 (D)*(E)
Office	Space Per Unit Land Use		
	Visitor	(H)	0.2
	Staff	(I)	2.8
			3.00
Office	(J) 12 k		
	Medical OFF - Area		
	Visitor	(K)	2.4 (H)*(J)
	Staff	(L)	33.6 (I)*(J)

Graphic numbers

	Time of Day													
	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	
1- Lifetime	115	117	118	201	217	182	171	138	121	138	247	345	345	
2- Medical CI	173	234	269	369	393	337	327	289	259	246	325	402	369	
3- Medical Off	306	552	641	767	791	549	698	687	657	617	670	668	488	
4- Office	316	578	674	803	826	580	730	723	692	647	687	677	491	

Calculation - Saturday

1- Lifetime	50	90	228	393	429	337	298	250	211	192	165
	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00
	Time of Day										

2- Medical Clinic
Observed Value (B)

2	5	6	7	4	4	4	1	1	1	1	4
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Medical Observed = (A)(B)*

3- Medical Office

133	318	371	398	398	212	371	398	398	371	345
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Medical OF = (H)(F) + (I)*(G)*

Visitor (H)	0.3	0.4	0.3	1	1	0.9	1	1	1	0.9
Staff (I)	0.4	0.6	1	1	1	1	1	1	1	1

The same Weekdays

4- Office

1	3	4	4	5	4	4	3	2	1	0
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Medical OF = (M)(K) + (N)*(L)*

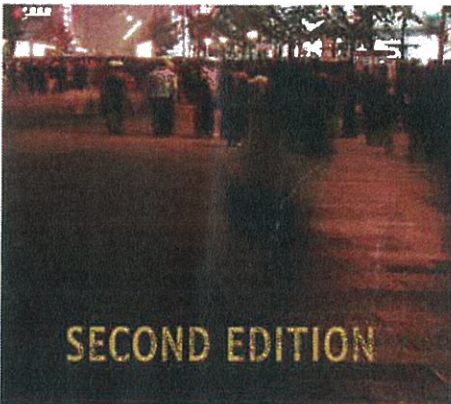
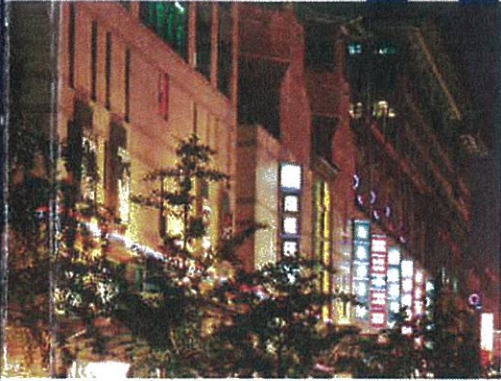
Visitor (M)	0.2	0.6	0.6	0.9	1	0.9	0.8	0.6	0.4	0.1
Staff (N)	0.2	0.5	0.8	0.9	1	0.9	0.8	0.6	0.4	0.1

Graphic numbers

	Time of Day										
	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00
1- Lifetime	50	90	228	393	429	337	298	250	211	192	165
2- Medical Cli	52	95	234	400	433	341	299	251	212	193	169
3- Medical Ofc	185	413	605	798	830	553	670	649	610	564	513
4- Office	186	416	609	802	835	557	674	652	612	565	514

Medical Clinic.	Area		Differ. %
	Old Area	New Area	
	66000	78000	1.18
	Space Per Unit Land Use		
	Visitor	(C)	3.33
	Staff	(D)	1.67
			5.00
Medical OFF	Medical OFF - Area		
	(E)	79,546 k	
	Visitor/Staff x Space per Unit Land Use		
	Visitor	(F)	264,88818 (C)*(E)
	Staff	(G)	132,84182 (D)*(E)
	Space Per Unit Land Use		
	Visitor	(H)	0.03
	Staff	(I)	0.35
			0.38
Office	Medical OFF - Area		
	(J)	12 k	
	Visitor/Staff x Space per Unit Land Use		
	Visitor	(K)	0.36 (H)*(J)
	Staff	(L)	4.2 (I)*(J)

SHARED PARKING



SECOND EDITION

Table 2-5

Recommended Time-of-Day Factors for Weekdays

Land Use	User	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.	Midnight	Source	
Shopping Center—Typical	Customer	1%	5%	15%	35%	65%	85%	95%	100%	95%	90%	95%	95%	95%	80%	50%	30%	10%	—	1	
	Customer	1%	5%	15%	30%	55%	75%	90%	100%	100%	100%	95%	85%	75%	65%	50%	30%	10%	—	1	
	Customer	1%	5%	10%	20%	40%	65%	90%	100%	100%	100%	100%	95%	70%	55%	40%	15%	5%	—	1	
Late December	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	90%	75%	40%	15%	—	2	
	Customer	—	—	—	—	15%	40%	75%	75%	65%	40%	50%	75%	100%	100%	100%	95%	25%	—	2	
Family Restaurant	Employee	25%	50%	60%	75%	85%	90%	90%	90%	90%	75%	100%	100%	100%	100%	100%	100%	85%	35%	2	
	Customer	50%	75%	90%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	25%	2	
Fast Food	Customer	5%	10%	20%	30%	55%	85%	100%	100%	100%	100%	100%	100%	100%	95%	80%	65%	65%	35%	2	
	Employee	15%	20%	30%	40%	75%	100%	100%	100%	95%	60%	55%	80%	100%	100%	100%	100%	30%	20%	3	
Nightclub	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	25%	50%	75%	100%	100%	2	
	Employee	—	—	—	5%	5%	5%	10%	10%	10%	20%	45%	70%	100%	100%	100%	100%	100%	100%	2	
Cineplex—Typical	Customer	—	—	—	—	—	—	20%	45%	55%	55%	60%	75%	100%	100%	100%	100%	100%	100%	2	
	Customer	—	—	—	—	—	—	35%	60%	75%	80%	80%	100%	100%	100%	100%	80%	65%	40%	2.6	
Late December	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	70%	80%	100%	85%	70%	2.6	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
Performing Arts Theater	Customer	—	—	—	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	25%	100%	100%	—	—	2	
	Employee	—	10%	10%	20%	20%	20%	30%	30%	30%	30%	30%	30%	30%	100%	100%	100%	100%	100%	2	
No mallines	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
Arena	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
Stadium	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
8 p.m. start	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
Health Club	Customer	70%	40%	40%	70%	70%	80%	60%	70%	70%	70%	70%	70%	70%	90%	80%	70%	35%	10%	2.4	
	Employee	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	50%	50%	20%	20%	20%	2.4	
Convention Center	Visitor	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	5%	30%	35%	35%	100%	100%	100%	100%	100%	100%	100%	100%	100%	20%	20%	20%	5%	—	2	
Hotel—Business	Guest	95%	90%	80%	70%	60%	60%	55%	55%	60%	60%	60%	60%	60%	75%	80%	85%	95%	100%	5	
	Employee	95%	95%	90%	80%	70%	70%	65%	65%	70%	70%	70%	70%	70%	85%	90%	95%	100%	100%	2	
Hotel—Leisure	Guest	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
Restaurant/Lounge	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	5.3	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
Conference/Barquet	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
Convention	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	5%	30%	30%	30%	90%	100%	100%	100%	100%	100%	100%	100%	100%	20%	20%	20%	20%	20%	2	
Residential	Guest	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
Residential	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
	Resident	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	70%	70%	70%	98%	98%	98%	100%	100%	2	
Office	Visitor	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	3%	30%	75%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	20%	20%	20%	20%	20%	2	
Medical/Dental Office	Visitor	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	2	
Bank	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	3	
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	100%	100%	100%	100%	100%	3	

Sources:
 1. Confidential data provided by shopping center managers
 2. Developed by team members
 3. Parking Generation, 3rd ed.
 4. John W. Doreth, "Parking Requirements for Health Clubs," The Parking Professional, April 2004
 5. Gerald Saltman, "How Much is Enough? Urban Land, How Much is Enough? Urban Land, Harris Ruck & Associates for the Peterson Companies, 2001."

Table 2.6 Recommended Time-of-Day Factors for Weekends

Land Use	User	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.	Midnight	Source
Shopping Center—Typical	Customer	5%	10%	30%	50%	65%	80%	90%	100%	100%	100%	95%	90%	80%	75%	65%	50%	35%	15%	—	1
	Peak December	5%	10%	35%	60%	70%	85%	95%	100%	100%	100%	95%	90%	80%	75%	65%	50%	35%	15%	—	1
Late December	Customer	5%	10%	20%	40%	60%	80%	95%	100%	100%	100%	95%	90%	70%	60%	50%	30%	20%	10%	—	1
	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	—	2
Fine/Casual Dining	Customer	—	—	—	—	—	15%	50%	55%	45%	45%	45%	60%	90%	95%	100%	100%	100%	90%	50%	2
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Family Restaurant	Customer	10%	25%	45%	70%	90%	95%	100%	85%	65%	40%	45%	60%	70%	70%	65%	30%	25%	15%	10%	2
	Employee	50%	75%	90%	100%	100%	100%	100%	100%	100%	100%	75%	95%	95%	95%	80%	65%	65%	55%	35%	2
Fast Food	Customer	5%	10%	20%	30%	55%	85%	100%	100%	90%	60%	60%	55%	60%	85%	80%	50%	30%	20%	10%	5
	Employee	15%	20%	30%	40%	75%	100%	100%	100%	95%	70%	70%	60%	70%	90%	90%	40%	30%	20%	20%	2
Nightclub	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Complex—Typical	Employee	—	—	—	5%	5%	5%	5%	10%	10%	10%	20%	45%	70%	100%	100%	100%	100%	100%	100%	2
	Customer	—	—	—	—	—	—	—	20%	45%	55%	55%	60%	60%	80%	100%	100%	100%	80%	50%	2.6
Late December	Customer	—	—	—	—	—	—	—	35%	60%	75%	80%	80%	70%	80%	100%	100%	100%	85%	70%	2.6
	Employee	—	—	—	—	—	—	—	50%	60%	60%	75%	75%	100%	100%	100%	100%	100%	70%	50%	2
Performing Arts Theater	Customer	—	—	—	1%	1%	1%	1%	17%	67%	67%	67%	1%	1%	25%	100%	100%	100%	—	—	2
	With matinee	10%	10%	20%	20%	30%	30%	30%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	30%	5%	2
Arena (two shows)	Customer	—	—	—	1%	1%	1%	1%	25%	95%	95%	95%	80%	80%	100%	100%	100%	100%	—	—	2
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Stadium (1 p.m. start; see weekday for evening game)	Customer	—	—	—	1%	5%	5%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Health Club	Customer	—	5%	10%	20%	30%	30%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
	Employee	80%	45%	35%	50%	35%	50%	50%	30%	25%	50%	50%	50%	50%	50%	50%	50%	20%	20%	20%	2.4
Convention Center	Employee	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	2.4
	Visitor	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Hotel—Business	Employee	5%	30%	33%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
	Guest	95%	90%	80%	70%	60%	60%	55%	55%	60%	60%	60%	70%	75%	80%	85%	95%	95%	100%	100%	5
Hotel—Leisure	Employee	95%	95%	90%	80%	70%	65%	65%	70%	70%	70%	75%	80%	85%	90%	90%	95%	95%	100%	100%	2
	Guest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Restaurant/Lounge	Customer	—	10%	30%	10%	10%	5%	100%	100%	33%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	5
	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
Conference/Barquet	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	Employee	5%	30%	90%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
Residential	Guest	—	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	5
	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	5
Residential	Resident	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
	Visitor	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Office	Employee	—	20%	60%	80%	90%	100%	100%	80%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	2
	Visitor	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Medical/Dental Office	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	Visitor	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Bank	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
ASSURE WEENAY	Employee	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	Customer	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2

Source:
 1 Confidential data provided by shopping center managers.
 2 Developed by team members (Washington, DC: Institute of Transportation Engineers, 2004).
 3 Parking Generation, 3rd ed. (Washington, DC: Institute of Transportation Engineers, 2004).
 4 John W. Drenth, "Parking Requirements for Health Clubs," The Parking Professional, April 2004.
 5 Gerald Salzman, "Hotel Parking How Much is Enough?" Urban Link, Fall 2003.
 6 Parking study coordinated by Patton Harris Trust & Associates for the Peterson Companies, 2001.