MEMORANDUM

TO: Jeremy Souders - Montgomery County Government, DOT-Division of Parking Management

FROM: Michael Connor, Faye Dastgheib - DESMAN Associates

DATE: January 5th, 2011

RE: Garage 21 Parking Impact Study

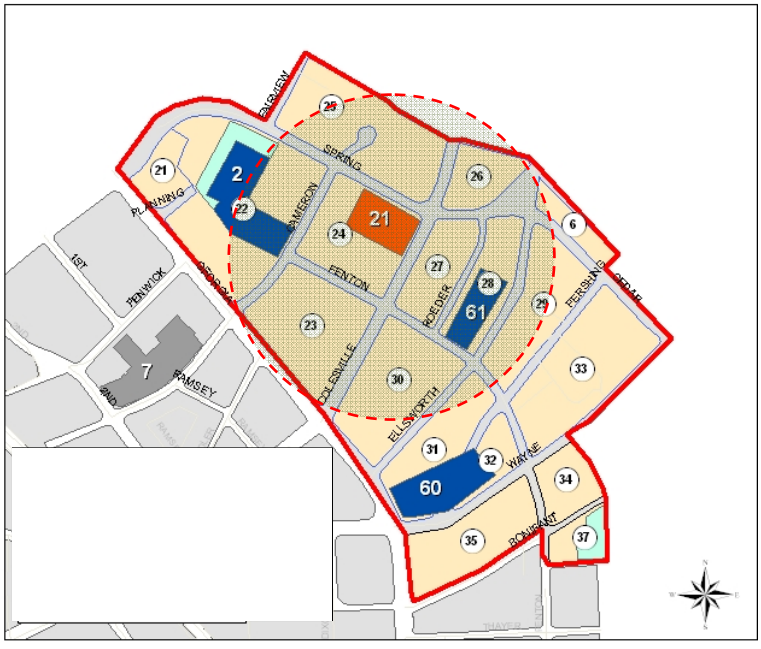
1.0 INTRODUCTION

DESMAN Associates was retained by the Montgomery County Department of Transportation to provide professional consulting services for the "Silver Spring Garage 21 Impact Study". It is our understanding that considerable capital is needed for renovation, repair and/or reconstruction of Garage 21, a 583 space parking facility located off Colesville Road in the Silver Spring Parking Lot District (PLD). Given this potential cost and the findings from the 2010 Silver Spring PLD Parking Demand Study which noted a system-wide public parking surplus, the County's Division of Parking Management directed DESMAN to revisit the Demand Study under the presumption that Garage 21 will be demolished for redevelopment purposes. The goal of this study is to document the impact of the demolition of Garage 21 and future development on parking in the PLD blocks which are located within an acceptable walking distance of Garage 21.

2.0 GARAGE 21 SUBAREA

Exhibit A illustrates the boundaries of the study area and the blocks located within the boundaries. The study area is defined as PLD Sectors III and IV which includes those blocks and parking facilities north of Georgia Avenue and Wayne Avenue that are within acceptable walking distance of Garage 21. For the purposes of this study, acceptable walking distance is defined as a 1,200 ft. radius around the main pedestrian entrance to Garage 21. Due to the proximity of Blocks 34, 35 and 37 to Garage 60 in sector IV, those blocks and any partial development within those blocks are also considered as a part of the analysis.

Exhibit A: Garage 21 Impact Study Area



DESMAN
ASSOCIATES

3.0 ASSESSMENT OF EXISTING CONDITIONS

3.1 Parking Supply

DESMAN revisited the parking supply figures in PLD Sectors III and IV documented in the May 2010 Parking Demand Study. Table 1 illustrates the total inventory of public spaces in the Garage 21 study area. The public parking supply in the study area consists of publicly available off-street and on-street spaces. There are 5,572 publicly available parking spaces in the study area of which 4,798 spaces (91%) are located within parking garages, 143 spaces (2%) are located within parking lots and 331(7%) spaces are on-street spaces. It should be noted that private parking spaces are not available to the general public and cannot be counted on to satisfy the parking needs of the general public. As such, this study will focus on assessing the existing and future conditions of only publicly-available spaces.

Table 1: On & Off-Street Parking inventory

Parking Type	Inventory
Garage	4,798
Lot	143
On-street	331
Total	**5,272**

3.2 Weekday and Saturday Hourly Parking Utilization

DESMAN also revisited the weekday and Saturday hourly occupancy data for the study area from the 2010 Parking Demand Study. Tables 2a and 2b and Exhibits B1 and B2 illustrate the weekday and Saturday hourly utilization of publicly available on- and off-street parking in the study area. Similar to the 2010 Silver Spring Study, the peak utilization of public facilities in the Garage 21 study area occurs at 2 PM.

On the weekday, 2,693 (51%) of the 5,272 publicly available parking spaces were occupied. On Saturday, parking utilization peaked at 2:00 PM when 2,257 (42%) of the 5,272 publicly available parking spaces were occupied.

Table 2a: Weekday On- and Off-street Hourly Parking Occupancy

Parking Type	Inventory	10 AM	11 AM	12 AM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM
Garages	4,798	1,673	2,121	2,287	2,430	2,415	2,347	2,236	2,063	1,855
Lots	143	46	50	55	48	46	48	47	50	52
On-sreet	331	146	183	203	207	232	206	180	152	156
Total	**5,272**	**1,865**	**2,354**	**2,545**	**2,685**	**2,693**	**2,601**	**2,463**	**2,265**	**2,063**

Table 2b: Saturday On- and Off-street Hourly Parking Occupancy

Parking Type	Inventory	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM
Garages	4,798	1,766	1,940	1,937	1,927	1,943	1,844	1,775
Lots	143	76	79	82	100	106	110	109
On-street	331	230	238	217	195	187	174	153
Total	**5,272**	**2,072**	**2,257**	**2,236**	**2,222**	**2,236**	**2,128**	**2,037**

Exhibit B1: Weekday Hourly Parking Occupancy

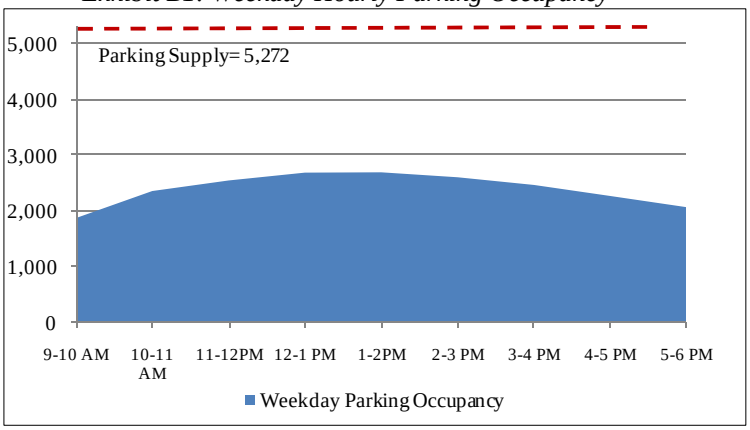
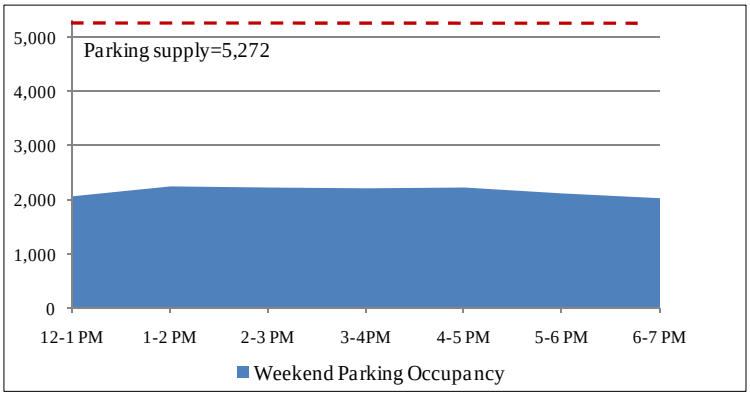


Exhibit B2: Saturday Hourly Parking Occupancy



3.3 Weekday and Saturday Peak Parking Surplus/Deficit

In order to accurately assess the stress on the parking system in relation to parking demand, the concept of practical capacity needs to be discussed. The level of utilization within a parking facility, block or study area may reach a level where potential parkers become frustrated when trying to locate an available space and therefore perceive the facility as full. This is particularly problematic for drivers who wish to remain parked only for a short period of time (shoppers, diners, etc). For the purpose of this study, a practical capacity factor of 90% was used to analyze the parking conditions in the Garage 21 study area. Using this factor, if a 100-space parking lot has 95 parked vehicles during the peak hour then a practical deficit of 5 spaces would exist.

Tables 3a and 3b illustrate the peak on- and off-street practical parking surplus/deficit conditions which exist on the weekday and Saturday, respectively. Overall, the numbers indicate that on a weekday, there is a system-wide practical surplus of 2,055 on- and off-street spaces. On Saturday, the Garage 21 impact study area experiences a practical surplus of 2,491 spaces.

Table 3a: Weekday Peak Practical Parking Surplus/Deficit

Parking Type	Inventory	Practical Capacity at 90%	Peak Occupancy at 2 PM	Peak Practical Surplus/Deficit
Garages	4,798	4,319	1,940	**2,379**
Lots	143	129	79	**50**
On-Street	331	300	238	**62**
Total	**5,272**	**4,748**	**2,257**	**2,491**

Table 3b: Saturday Peak Practical Parking Surplus/Deficit

Parking Type	Inventory	Practical Capacity at 90%	Peak Occupancy at 2 PM	Peak Practical Surplus/Deficit
Garages	4,798	4,319	2,415	**1,904**
Lots	143	129	46	**83**
On-Street	331	300	232	**68**
Total	**5,272**	**4,748**	**2,693**	**2,055**

4.0 ASSESSMENT OF FUTURE CONDITIONS

Parking demand associated with the absorption of current vacant land uses and the demand for the future development and redevelopment projects will have an impact on the future demand for and availability of parking within the study area. Therefore, in order to accurately estimate future parking needs, the analysis combines the parking demand associated with the absorption of vacant land uses as well as projected needs of all of the future developments.

Table 4 illustrates presently vacant office, retail and residential spaces. Based on the data provided by the CoStar Group in spring 2010, at present there is 335,882 square feet of vacant office space, 4,716 square feet of vacant retail space and three vacant residential units in the Garage 21 study area.

Table 5 presents future development information provided by the Planning Board of the Maryland – National Capital Park and Planning Commission (MNCPPC) and Exhibit C illustrates the location of such developments by block. The future development projects will add 630,759 square feet of new office, 18,001 square feet of new retail, 190 hotel rooms, 672 residential units and a live theater with 2,000 seats to the total inventory of land uses in the study area. The total inventory of parking in the study area will also be increased by 1,925 parking spaces when these developments are completed. Note that parking demand generated by the *8700 Georgia Ave*nue project will be satisfied by Garage 7 that is located adjacent to the development. As such DESMAN has excluded this development from the future analysis.

Table 4: Presently Vacant Office, Retail & Residential Space

Block Number	Office Sq. Ft	Retail Sq. Ft	Residential Unit
6	0	0	0
21	0	0	0
22	32,297	0	0
23	111,042	0	0
24	0	4,716	0
25	22,712	0	0
26	10,434	0	0
27	66,857	0	0
28	0	0	0
29	0	0	0
30	87,340	0	0
31	0	0	0
32	0	0	0
33	0	0	0
34	0	0	0
35	5,200	0	3
37	0	0	0
Total	**335,882**	**4,716**	**3**

Source: CoStar Data, spring 2010

Table 5: Known, Proposed & Potential Development Information

Block	Development Name	Office	Retail	Hotel (Rooms)	Residential (Units)	Theater (Seats)	Parking Inventory
22	8711 Georgia Ave Office Building	148,278	4,462	0	0	0	326
22	Cameron House	0	7,330	0	235	0	403
23	8621 Georgia Ave	182,072	6,209	0	0	0	290
23	Fillmore	220,000	0	190	0	2,000	574
29	Downtown Silver Spring	0	0	0	222	0	260
35	Bonifant Plaza	0	0	0	72	0	72
35	Silver Spring Library Phase 1	65,000	0	0	0	0	0
35	Silver Spring Library Phase 2	12,000	0	0	143	0	0
37	836 Bonifant Street	3,409	0	0	0	0	0
Total		**630,759**	**18,001**	**190**	**672**	**2,000**	**1,925**

Source: Montgomery County Planning Department, Research and Technology Center

Exhibit C: Location of Known, Proposed & Potential Development Activity

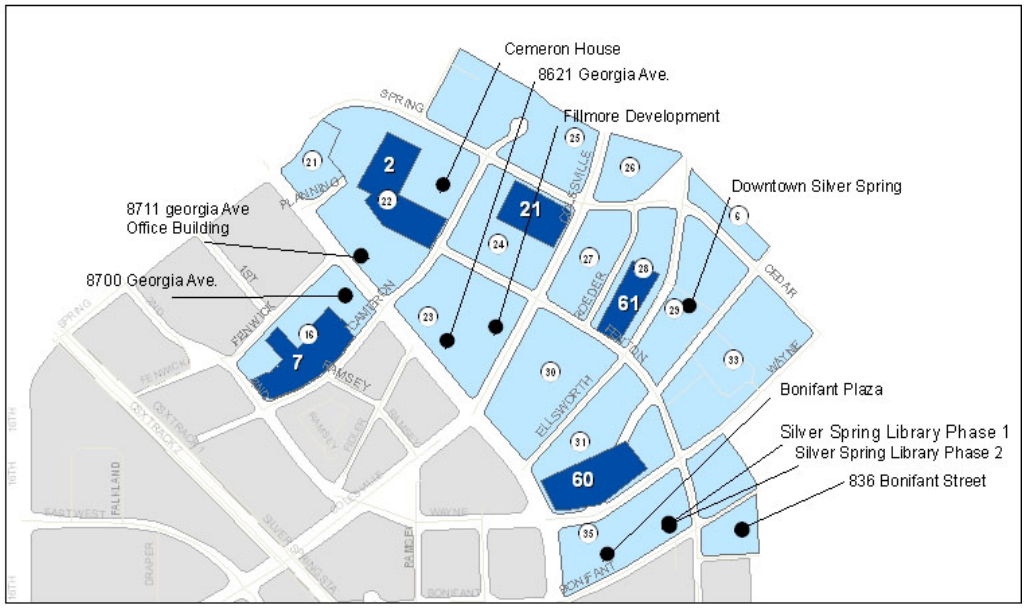


Table 6 illustrates the peak weekday and Saturday parking demand ratios taken from the 2010 Silver Spring Parking Study. To calculate total future parking demand in the study area, the peak weekday and Saturday parking demand ratios found in Table 6 were applied to the figures in Tables 4 and 5. For example, 335,882 sq.ft of vacant office would generate an additional demand for 672 spaces on a weekday (335,882 x 2 per 1000 sq ft) and 7 spaces on a Saturday (335,882 sq.ft x 0.02 per 1000 sq ft).

Table 6: Auto-Dependent vs. Recommended Weekday 2 PM & Saturday 2 PM Demand Ratios

Land Use Category	Peak Hour Demand Ratio			
	Weekday		Saturday	
	Auto-Dependent ULI [1]	Recommended [2]	Auto-Dependent ULI [1]	Recommended [2]
Retail	3.5	1.1	4.0	1.3
Hotel	1.25	0.4	1.2	0.4
Office	3.8	2	0.4	0.02
Theater (Per Seat)	3.7	0.05	0.4	0.05
Residential (Per Dwelling)	1.5	0.8	1.5	0.8
Restaurant/Lounge	10	1.2	10.0	2
Church	0.0	0	0.0	0
Institutional	1.2	0.6	1.2	0.6
Light Industrial	0.4	0.4	0.4	0.4

(1) Base Ratios were derived from ULI "Shared Parking"(2nd Edition) and ITE "Parking Generation" (3rd Edition)

(2) Recommended ratios are based on assessment of existing conditions in Silver Spring per the February 2010 Study and include peak hour adjustements (2 PM for both weekday and Saturday), shared use, and synergy between existing land uses in Silver Spring.

Tables 7a and 7b present the block-by-block peak weekday and Saturday demand associated with the absorption of current vacant land uses. These tables suggest that, at present, when all vacancies are filled, there will be an additional demand for 679 parking spaces on the weekday and 12 parking spaces on Saturday within the study area.

Table 7a: Peak Weekday (2 PM) Parking Demand Generated by Absorption of Vacant Space

Block Number	Office Sq. Ft	Retail Sq. Ft	Residential Unit	Total
6	0	0	0	0
21	0	0	0	0
22	65	0	0	65
23	222	0	0	222
24	0	5	0	5
25	45	0	0	45
26	21	0	0	21
27	134	0	0	134
28	0	0	0	0
29	0	0	0	0
30	175	0	0	175
31	0	0	0	0
32	0	0	0	0
33	0	0	0	0
34	0	0	0	0
35	10	0	2	13
37	0	0	0	0
Total	**672**	**5**	**2**	**679**

Table 7b: Peak Saturday (2 PM) Parking Demand Generated by Absorption of Vacant Space

Block Number	Office Sq. Ft	Retail Sq. Ft	Residential Unit	Total
6	0	0	0	0
21	0	0	0	0
22	1	0	0	1
23	2	0	0	2
24	0	4	0	4
25	0	0	0	0
26	0	0	0	0
27	1	0	0	1
28	0	0	0	0
29	0	0	0	0
30	2	0	0	2
31	0	0	0	0
32	0	0	0	0
33	0	0	0	0
34	0	0	0	0
35	0	0	2	2
37	0	0	0	0
Total	**7**	**4**	**2**	**12**

Tables 8a and 8b present the block-by-block peak weekday and Saturday parking demand generated by future development activities. The proposed future parking supply associated with some future development projects will not be able to meet the total future demand for parking. For instance, the development plan for 8621 Georgia Avenue calls for 261 parking spaces to be built while the total land use based parking demand for this project equates to 371 spaces. Therefore, the unmet demand for this project would be 110 spaces (371 spaces minus 261 spaces). The total unmet weekday and Saturday parking demand generated by future development projects is anticipated to be 493 and 116 spaces, respectively.

Table 8a: Peak Weekday (2 PM) Unmet Demand Generated by New Development

Block	Development Name	Office	Retail	Hotel (Rooms)	Residential (Units)	Theater (Seats)	Total Demand	Parking Practical Capacity (1)	Unmet Development Demand (2)
22	8711 Georgia Ave Office Building	297	5	0	0	0	301	293	8
22	Cameron House	0	8	0	188	0	196	363	----
23	8621 Georgia Ave	364	7	0	0	0	371	261	110
23	Fillmore	440	0	76	0	100	616	517	99
29	Downtown Silver Spring	0	0	0	178	0	178	234	----
35	Bonifant Plaza	0	0	0	58	0	58	65	----
35	Silver Spring Library Phase 1	130	0	0	0	0	130	0	130
35	Silver Spring Library Phase 2	24	0	0	114	0	138	0	138
37	836 Bonifant Street	7	0	0	0	0	7	0	7
Total		**1,262**	**20**	**76**	**538**	**100**	**1,995**	**1,733**	**493**

(1) Practical capacity equals actual supply multiplied by 90%.
(2) It is presumed that developments that provide a surplus of parking will not share that surplus with other developers, i.e., private parking.

Table 8b: Peak Saturday (2 PM) Unmet Demand Generated by New Development

Block	Development Name	Office	Retail	Hotel (Rooms)	Residential (Units)	Theater (Seats)	Total Demand	Parking Practical Capacity (1)	Unmet Development Demand (2)
22	8711 Georgia Ave Office Building	3	6	0	0	0	9	293	----
22	Cameron House	0	10	0	188	0	198	363	----
23	8621 Georgia Ave	4	8	0	0	0	12	261	----
23	Fillmore	4	0	76	0	100	180	517	----
29	Downtown Silver Spring	0	0	0	178	0	178	234	----
35	Bonifant Plaza	0	0	0	58	0	58	65	----
35	Silver Spring Library Phase 1	1	0	0	0	0	1	0	1
35	Silver Spring Library Phase 2	0	0	0	114	0	115	0	115
37	836 Bonifant Street	0	0	0	0	0	0	0	0
Total		**13**	**23**	**76**	**538**	**100**	**750**	**1,733**	**116**

(1) Practical capacity equals actual supply multiplied by 90%.
(2) It is presumed that developments that provide a surplus of parking will not share that surplus with other developers, i.e., private parking.

In order to create an accurate estimate of future parking needs, the final analysis combines the unmet development parking demand (Tables 8a and 8b) with the estimated parking demand associated with the absorption of presently-vacant land uses (Tables 7a and 7b). Tables 9a and 9b illustrate the weekday and Saturday surplus and deficit associated with each block once vacancies are filled, all development/ redevelopment projects are completed, and Garage 21 is demolished. It should be noted that while the inventory of Garage 21 was eliminated from the total inventory in Block 24, the surveyed peak parking utilization of that facility was not.

Under this scenario the total weekday demand for parking equates to 3,865 spaces *(current weekday demand of 2,693 spaces +absorption based demand of 679 + development based demand of 493 spaces)*. Considering the current practical capacity of 4,222 spaces, this would result in a weekday practical surplus of 357 parking spaces. Similarly, on Saturday, the study area would experience a demand for 2,385 spaces (*current weekend demand of 2,257 spaces + absorption based demand of 12 spaces + development based demand of 116 spaces)* resulting in a practical surplus of 1,837 spaces.

Table 9a: Peak Weekday (2 PM) Future Parking Surplus or Deficit by Block without Garage 21

Block Number	Adjusted Parking Inventory (1)	Practical Capacity at 90%	Current Weekday Utilization	Absorption Based Demand	Development Based Demand	Future Surplus or Deficit
	Col.A	*Col.B=A*0.9*	*Col.C*	*Col.D*	*Col. E*	*Col.B-C-D-E)*
6	9	8	6	0	0	2
21	9	8	3	0	0	5
22	1,455	1,310	684	65	8	553
23	33	30	23	222	209	-424
24 (1)	33	30	316	5	0	-291
25	30	27	23	45	0	-41
26	6	5	6	21	0	-22
27	15	14	14	134	0	-134
28	1,278	1,150	553	0	0	597
29	9	8	7	0	0	1
30	5	5	0	174	0	-169
31	1,667	1,500	985	0	0	515
32	0	0	0	0	0	0
33	34	31	28	0	0	3
34	5	5	2	0	0	3
35	27	24	14	13	268	-271
37	74	67	29	0	7	31
Total	**4,689**	**4,222**	**2,693**	**679**	**493**	**357**

(1) While the inventory of Garage 21 (in Block 24) was eliminated, the surveyed peak utilization in that facility was not.

Table 9b: Peak Saturday (2 PM) Future Parking Surplus or Deficit by Block without Garage 21

Block Number	Adjusted Parking Inventory (1)	Practical Capacity at 90%	Current Saturday Utilization	Absorption Based Demand	Development Based Demand	Future Surplus or Deficit
	Col.A	*Col.B=A*0.9*	*Col.C*	*Col.D*	*Col. E*	*Col.B-C-D-E)*
6	9	8	5	0	0	3
21	9	8	0	0	0	8
22	1,455	1,310	193	1	0	1,116
23	33	30	26	2	0	2
24 (1)	33	30	184	4	0	-158
25	30	27	14	0	0	13
26	6	5	6	0	0	-1
27	15	14	12	1	0	1
28	1,278	1,150	721	0	0	429
29	9	8	9	0	0	-1
30	5	5	0	2	0	3
31	1,667	1,500	958	0	0	542
32	0	0	0	0	0	0
33	34	31	30	0	0	1
34	5	5	4	0	0	1
35	27	24	27	2	116	-121
37	74	67	68	0	0	-1
Total	**4,689**	**4,222**	**2,257**	**12**	**116**	**1,837**

(1) While the inventory of Garage 21 (in Block 24) was eliminated, the surveyed peak utilization in that facility was not.

5.0 SUMMARY

The goal of this analysis was to determine if the Garage 21 subarea would experience a deficit of parking spaces if Garage 21 were to be demolished. At present, and based on the May 2010 Silver Spring Parking Study, there is a practical surplus of 2,491 spaces during the 2 PM weekday peak period and a practical surplus of 2,055 during the 2 PM peak period on a Saturday. Based on information provided by Montgomery County and Maryland-National Capital Park and Planning Commission, it is estimates that peak parking demand will increase by 1,172 parking spaces on a weekday and 128 parking spaces on a Saturday once vacancies are filled and new development projects are completed. With the presumed loss of Garage 21's parking capacity (583 spaces), and the resulting subarea practical capacity of 4,222 publicly available spaces, it would appear that there will still be a surplus of 357 spaces during the weekday peak and 1,837 spaces during the Saturday peak.