DESMAN
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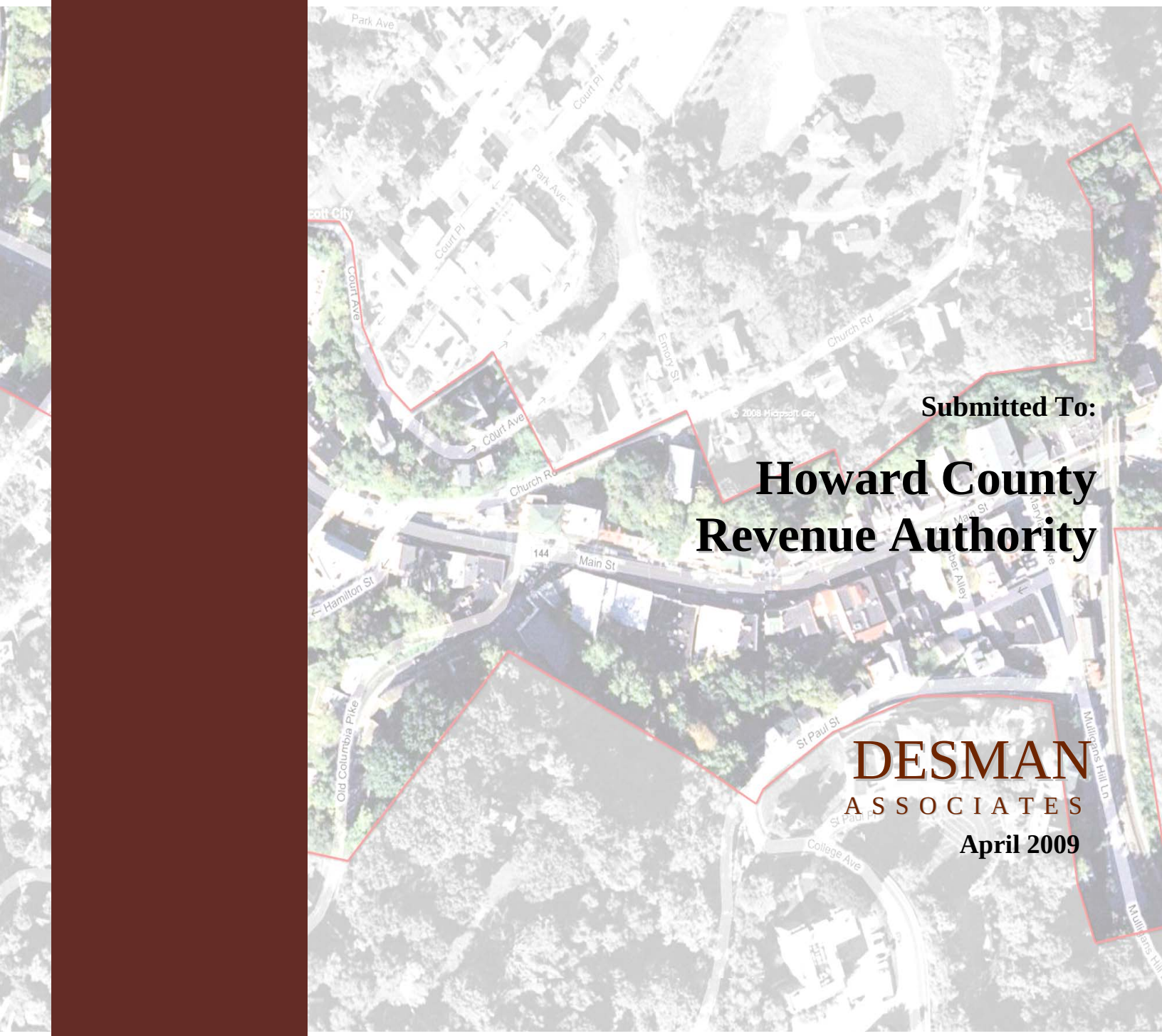
Final Report
Downtown Ellicott City Parking Study



Submitted To:

Howard County Revenue Authority

DESMAN
ASSOCIATES

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EXECUTIVE SUMMARY

DESMAN Associates has been retained by the Howard County Revenue Authority to assess current and future public parking supply and deficit conditions in Ellicott City, to prepare a preliminary evaluation of structured parking opportunities, and to provide recommendations regarding operations, management, and technology costs and benefits.

In order to address these issues, this report is divided into six sections; Introduction, Study Area Characteristics, Existing Parking Conditions, Future Parking Demand (Land Use Based Model), Structured Parking Opportunities, and Operational Assessment and Recommendations.

Assessment of Existing & Future Supply/Demand Conditions

System-wide there are 594 on- and off-street parking spaces in the downtown area. Of these spaces, 492 (83%) are off-street and 102 (17%) are on-street spaces. Almost 71% of the off-street parking inventory in the study area is dedicated to free parking. On-street parking is also free with a 2-hour time limit. Hourly parking occupancy surveys indicated that parking occupancy patterns for Friday differ from Saturday. On Friday, utilization peaked twice between 12:00 PM and 1:00 PM and once between 7:00 PM and 8:00 PM while there was no dominant peak period on Saturday. The overall parking system experiences its peak occupancy at 8 PM on Friday and 6 PM on Saturday. On Friday, during the peak hour, 80% of the on-street and 75% of the off-street publicly available parking spaces were occupied. On Saturday, the occupancy rate peaked at 72% for on-street and 76% for off-street publicly available spaces.

The Downtown study area has a practical surplus of 76 spaces on Friday and 83 spaces on Saturday. It should be noted that although the system-wide analysis identified a practical surplus, there is still a public perception of insufficient parking in Ellicott City. The reason for this disconnect is that the surplus spaces that are available may not be in the right location or may not be managed in the right way. For example, employees and residents may park their vehicles on-street in high demand areas consuming spaces that are typically attractive to short-term parkers.

In addition to public parking utilization, DESMAN also monitored the length of time each vehicle utilized a specific space throughout the day via a license plate survey. The analysis identified that on Friday 12% of parkers utilized off-street parking spaces for more than 6 hours. Although only 2 on-street spaces were utilized for more than 6 hours on Friday, as many as 20 employee and resident vehicles parked on-street but were “jockeyed” from space to space to avoid a citation. Overall, DESMAN concluded that on a Friday, approximately 147 employee and resident vehicles park within the study area, many of which park in the most convenient on-street and off-street locations.

It should be noted that although lot D is the most attractive lot to short-term parkers, it had the longest average duration of stay (2.9 hours). Of the 487 different vehicles that used Lot D, 63, or 12.4%, parked for six hours or longer. DESMAN concluded that the benefit to parking turnover would be significant if long-term parkers could be encouraged to park in more remote locations, namely lot F.

Future Parking Demand

DESMAN also examined future parking needs based on inherent land use potential and ran a “what if” analysis recommending the number of required parking spaces if a developer were to recreate Ellicott City exactly as it is today but as a new town center.

By applying parking demand factors to the density of various land uses, the existing weekday and weekend parking activity levels associated with those developments were estimated and modeled. In order to estimate future parking activity if Ellicott City were to be redeveloped in future, DESMAN layered demand ratios associated with a more suburban oriented town center onto potential densities of various land uses.

The surplus/deficit analysis of the future land use model revealed that if Ellicott City were to achieve some level of parking activity similar to today's in a new town center in the future, then a parking short-fall would be anticipated and some additional parking would be required. It is interesting to note that if the 198 spaces that currently exist in the Courthouse lots were to become more accessible and/or more attractive, then the parking deficit projected under the "what if" model could be absorbed.

Structured Parking Opportunities

As the analysis of future parking deficit did not indicate a parking shortfall in Ellicott City, DESMAN suggests that additional structured parking is not warranted at this time. Existing public parking facilities are strategically located within the downtown and have, at present, sufficient capacity to meet current and near-term need. However, the opportunity to expand the capacity of parking in downtown was evaluated. Based on functional concepts and FY 2009 construction cost figures, structured parking opportunities and limitations for three sites in the downtown were presented. It should be noted that issues regarding environmental and cultural hardships such as existing utilities or natural cisterns beneath sites, historic significance of surrounding blocks or negative visual impacts were not used to disallow sites from consideration. However, these factors could either significantly affect the total development cost or make a site competently unsuitable for development.

Lot F (Roger Carter Center Site) could potentially support 365 spaces at an estimated cost of $6.78 million, Lot D (The Post Office Lot) could potentially support 335 spaces at an estimated cost of $6.54 million and an additional level on Lot E (the Court Ave. Site) could potentially support 49 spaces at an estimated cost of $0.8 million.

Operational Assessments and Recommendations

DESMAN also studied the current financial and operational performance of parking in Ellicott City. Currently, Howard County's Department of Finance is responsible for the daily management of parking, parking enforcement and meter revenue collections are performed by a private-sector Firm, Serco Management Services, and maintenance is the responsibility of the County's Traffic Department.

FY 2008 revenues and expenses revealed an operating surplus of $45,378 which was transferred to the General Fund. However, if monies related to the issuance and collection of parking citations were to be removed from this pro forma, the parking program would run a deficit of $56,837.

Based on the existing operational and financial conditions of the parking system, and in order to increase the annual revenue associated with parking, DESMAN suggests the following changes in the parking program:

- *Conversion from timed parking to paid parking at the rate of $0.50/hour for off-street and $1.00/hour for on-street spaces*
- *Conversion to Pay-By-Space multi-space meter technology in lots*

- *Extend the hours of parking enforcement to Monday through Friday – 8:00 AM until 9:00 PM, weekends – 10:00 AM until 9:00 PM*
- *Prohibit "jockeying" of vehicles in two-hours spaces through the creation and enforcement of a parking zone*
- *Enter into a lease purchase agreement with the meter vendor*
- *Develop a lower cost employee and resident parking program at the rate of $30 per month for peripheral lots and $50 per month for core lots*
- *Maintain some free-parking operations in Lot A and in the Courthouse Lots*

The projected level of operating surplus exclusive of the revenue from parking violations is estimated to equal $66,150 during the first full year of operations and should be set aside by Howard County for the purpose of funding future parking improvements as they arise. It is recommended that any surplus parking revenues be transferred to the Howard County Revenue Authority and that the Revenue Authority create a parking enterprise fund for this purpose and this purpose alone.

In an effort to improve the communication of parking needs and operations, the Revenue Authority, County, and the commercial and residential representatives of Ellicott City should create an Parking Advisory Committee that meets once per month, discusses challenges, proposes and promotes parking policy changes/improvements, and develops directives upon which parking reserves may be effectively applied for the benefit of the downtown.

Some additional recommendations include:

- *Development of an ADA accommodation and enforcement program*
- *Creating an independent parking page on the city's website to clearly define the responsibility center of each agency involved in parking operations and that the preamble on the top of the page is eliminated - specifically as it relates to finding free on-street parking in the event you are lucky*
- *Operating a shuttle between the Courthouse lot, Lot A, and Downtown from 4 PM to 2 AM on Friday's and Saturdays.*
- *Retain funds for the expansion of multi-space meter technology to on-street areas*
- *Retain funds for the creation of a full-time shuttle program*

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1.0 INTRODUCTION

DESMAN Associates has been retained by the Howard County Revenue Authority (HCRA) to prepare a Parking Needs Assessment for Ellicott City. The goal of this study is to document the current demand for parking along the Main Street corridor and to examine the possible need and financial feasibility of developing a parking structure. Operational and management conditions and strategies will also be evaluated to determine if the existing parking assets are being utilized to the extent necessary to serve shoppers, residents, and employees of the various businesses in the downtown area.

The study of parking is truly a study of relationships between people, their destination, trip purpose and mode of travel. As such, the methodology used for this study examines these issues from four sources of information; available data, field surveys, stakeholder interviews, and general observations of parking conditions in the study area. To achieve the goals of the study, the project methodology has been designed to be completed in the following four phases.

- An Assessment of Existing Parking Supply and Demand
- An Assessment of Future Parking Supply and Demand
- An Evaluation of Structured Parking Opportunities
- An Evaluation of and Recommendations Regarding Parking Management

2.0 STUDY AREA

The downtown study area as illustrated in Exhibit A, is bounded by the Ellicott Mills Drive on the west and Westchester Avenue on the east and captures all of the office, retail, restaurant, residential, institutional (post office), and tourist (museum) land uses along Main Street. With a diverse offering of restaurants and retail stores, historic Ellicott City is an energetic area with a series of unique challenges in terms of existing and future parking needs.

In order to identify parts of the study area that experienced the most stress, and to evaluate the relationship between land use activity and parking activity, the study area was divided into four sections. The blocks within each section were assigned a number and a letter. Exhibit B illustrates the seven sections and block codes. This helps to specifically identify areas that are currently experiencing a surplus or deficit of parking spaces. For example, can parking facilities in the west of the study area be expected to satisfy parking needs in the east of the study area. Given Ellicott City's topography, where the considerable slope requires both an uphill and downhill walk to/from parking areas, an understanding of acceptable walking distances and the relative proximity of parking is important.

It must be noted that the Howard County Courthouse area was purposefully excluded for this analysis. Findings from the previous study and comments received from the HCRA and Main

Street stakeholders suggest that this area functions independently from the Main Street corridor. Parking activity that occurs at Courthouse lots is unrelated to Main Street and the parking activity in the Main Street corridor is unrelated to the Courthouse.

Exhibit A: Study Area Boundaries

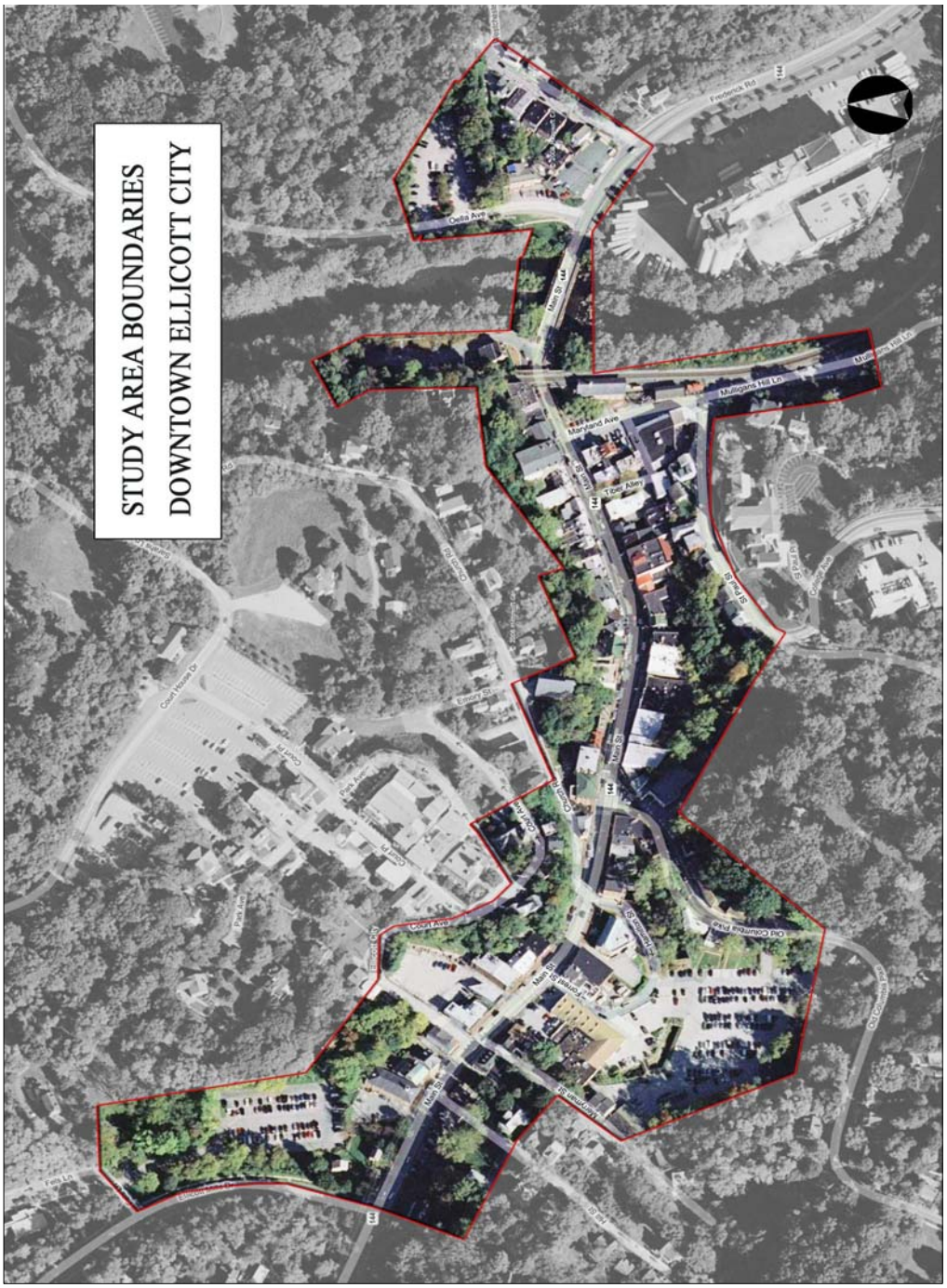
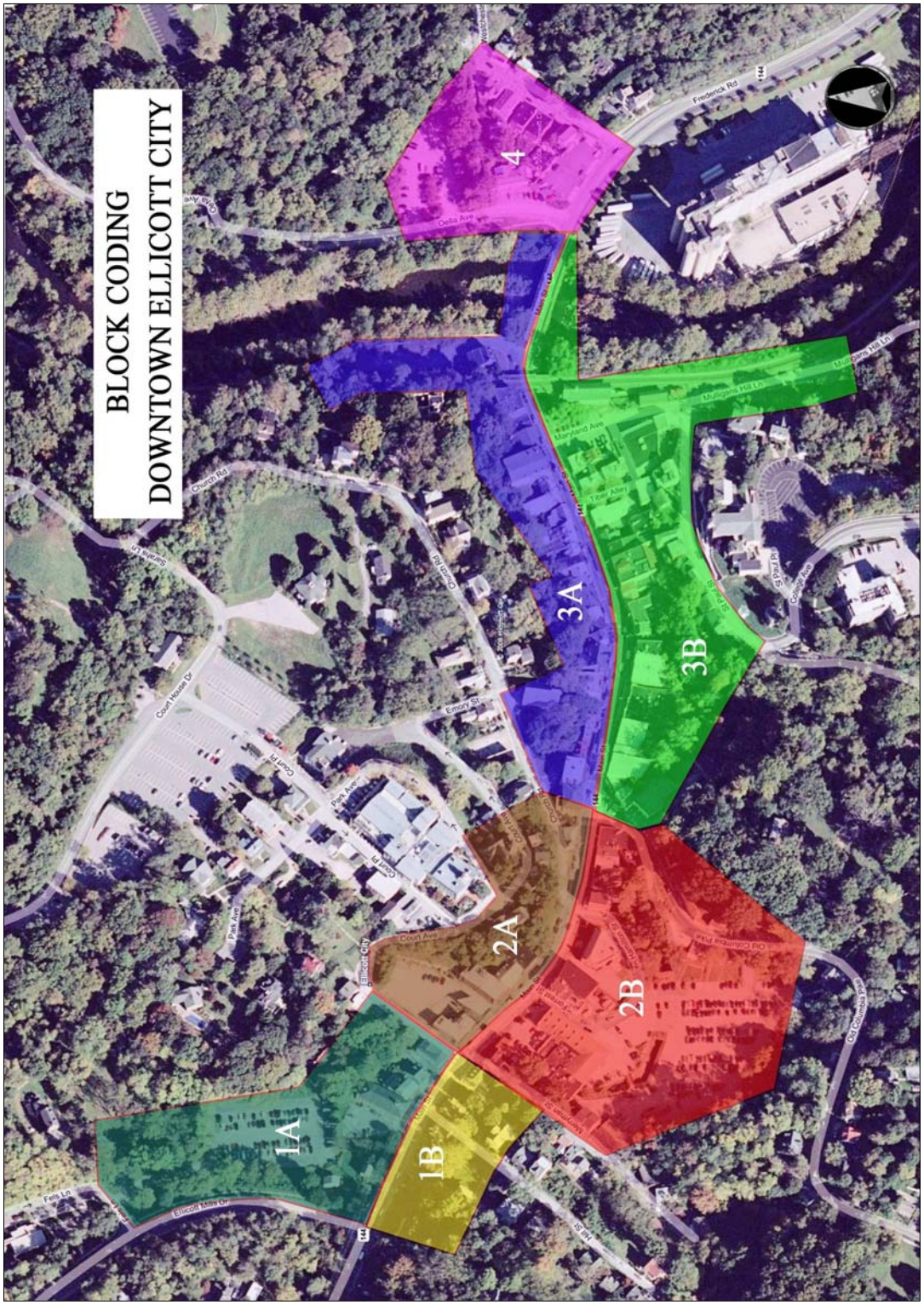


Exhibit B: Study Area Block Coding



3.0 EXISTING PARKING CONDITIONS

3.1 Parking Inventory

The parking inventory in Ellicott City includes County-operated parking lots that provide both metered and non-metered public parking for hourly and daily users as well as 2-hour free on-street parking. Off-street parking facilities include free public surface lots (Lot A, F and the rear of lot D) and public metered lots (Lot B, C and the front part of D). Exhibit C illustrates the location of all on-street and off-street parking within the study area.

There are 594 parking spaces in the study area of which approximately 102 are dedicated to on-street parking. On-street space counts are approximated as there are no delineating pavement markings. With nearly 83 (81%) spaces, Main Street contains the highest number of on-street spaces in downtown. There are also 19 free 2-hour spaces on Maryland Avenue. There are no on-street metered spaces within the study area.

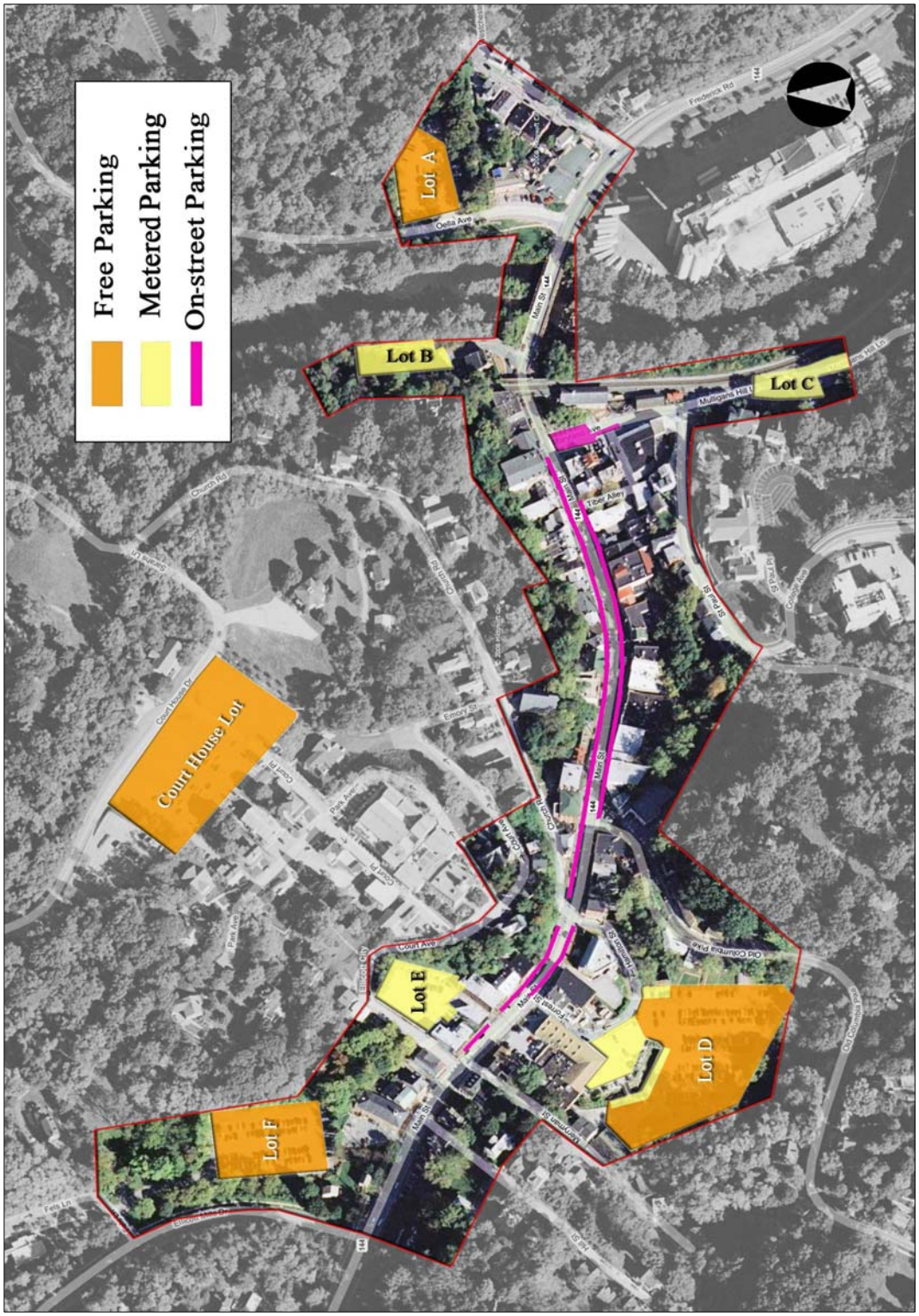
Of the 492 off-street parking spaces, 141 (29%) are metered and the rest (71%) are free parking with no time limitation. Out of 492 off-street parking, 95(19%) spaces are located within block group 1A in lot F, 28 (6%) in block group 2A in Lot E, 238 (48%) in block group 2B in lot D, 24 (5%) in block group 3A in lot B and 31 (6%) in block group 3B in lot C and 76 (16%) in block group 4 in lot A. It should be noted that block group 4 is located within the Baltimore County.

Although the Courthouse lots are not within the study area boundaries, input received during the stakeholder's interviews and observations gathered from the first field survey suggested that these lots might be of service during special events or as the demand for parking grows in the future. As such, occupancy surveys for this area were also conducted. If the 197 off-street Courthouse parking spaces were included in the total inventory, the number would increase to 791 spaces.

Table 1: Current Parking Inventory by Block by Type

Study Area	Type	Inventory
Block Group 1A	On Street	4
	Lot F	95
1A Subtotal		**99**
Block Group 2 A	On Street	13
	Lot E	28
2A Subtotal		**41**
Block Group 2 B	On Street	6
	Lot D	180
	Lot D-Metered	58
2B Subtotal		**244**
Block Group 3 A	On Street	38
	Lot B	24
3A Subtotal		**62**
Block Group 3 B	On St. on Maryland Ave.	19
	On street on Main	22
	Lot C	31
3B Subtotal		**72**
Block Group 4	Lot A	**76**
On Street		**102**
Off Street		**492**
Total Study Area		**594**

Exhibit C: Study Area Parking Locations by Type



3.2 Current Peak Parking Utilization

Parking occupancy surveys were conducted on Friday October 10th from 10 AM to 8 PM and Saturday October 11th from 12 PM to 10 PM to capture the parking typical weekday and weekend (Saturday) parking activity. These data collection periods were determined in consultation with the stakeholders and were selected to capture both peak hour utilization and the fluctuation of utilization.

Tables 2a and 2b with corresponding graphs A1 and A2 illustrate hourly occupancy numbers by block group on a weekday (Friday) and weekend (Saturday).

Parking occupancy patterns for Friday differs from Saturday. On Friday, there is an increase in occupancy between 12:00 PM and 1:00 PM and another increase between 7:00 PM and 8:00 PM. This can be attributed to the number of restaurants and retail establishments located along Main Street. On Saturday there were no dominant peak periods.

The system-wide peak utilization occurred at 8:00 PM on Friday where 459 (77%) out of 594 available spaces were occupied. On Saturday, utilization peaked at 6:00 PM where 452 (76%) spaces were occupied. The Courthouse lots reached its peak occupancy (81%) at 12:00 PM on Friday and is only 28% occupied during Main Street's system-wide peak at 8:00 PM on Friday.

Table 2a: Weekday (Friday) Parking Occupancy by Block

Study Area		Inventory	10AM	11AM	12AM	1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM
Block Group 1 A													
	On Street	4	0	1	3	2	2	3	3	4	4	4	3
	Lot F	95	55	55	56	64	55	43	49	41	58	76	80
1A Subtotal		**99**	**55**	**56**	**59**	**66**	**57**	**46**	**52**	**45**	**62**	**80**	**83**
Block Group 2 A													
	On Street	13	5	9	6	12	9	7	7	6	8	11	12
	Lot E	28	0	4	12	9	5	5	6	19	24	27	28
2A Subtotal		**41**	**5**	**13**	**18**	**21**	**14**	**12**	**13**	**25**	**32**	**38**	**40**
Block Group 2 B													
	On Street	6	2	4	3	1	1	1	1	1	2	4	3
	Lot D	180	115	126	141	165	160	134	124	118	117	124	130
	Lot D-Metered	58	1	2	4	10	8	7	6	6	4	43	45
2B Subtotal		**244**	**118**	**132**	**148**	**176**	**169**	**142**	**131**	**125**	**123**	**171**	**178**
Block Group 3 A													
	On Street	38	31	25	18	31	26	24	23	26	23	34	32
	Lot B	24	2	2	6	8	8	10	12	12	20	23	21
3A Subtotal		**62**	**33**	**27**	**24**	**39**	**34**	**34**	**35**	**38**	**43**	**57**	**53**
Block Group 3 B													
	On St. on Maryland Ave.	19	18	19	17	18	19	17	16	16	18	18	19
	On street on Main	22	8	11	12	9	13	12	13	11	13	10	10
	Lot C	31	1	8	10	26	24	15	7	9	17	25	28
3B Subtotal		**72**	**27**	**38**	**39**	**53**	**56**	**44**	**36**	**36**	**48**	**53**	**57**
Block Group 4													
	Lot A	76	29	31	46	61	49	42	45	51	60	55	48
Total Study Area		**594**	**267**	**297**	**334**	**416**	**379**	**320**	**312**	**320**	**368**	**454**	**459**
Total On Street		102	64	69	59	73	70	64	63	64	68	81	79
Total Off Street		492	203	228	275	343	309	256	249	256	300	373	380
Total		**594**	**267**	**297**	**334**	**416**	**379**	**320**	**312**	**320**	**368**	**454**	**459**

Graph A1: Weekday Parking Occupancy by Block Group

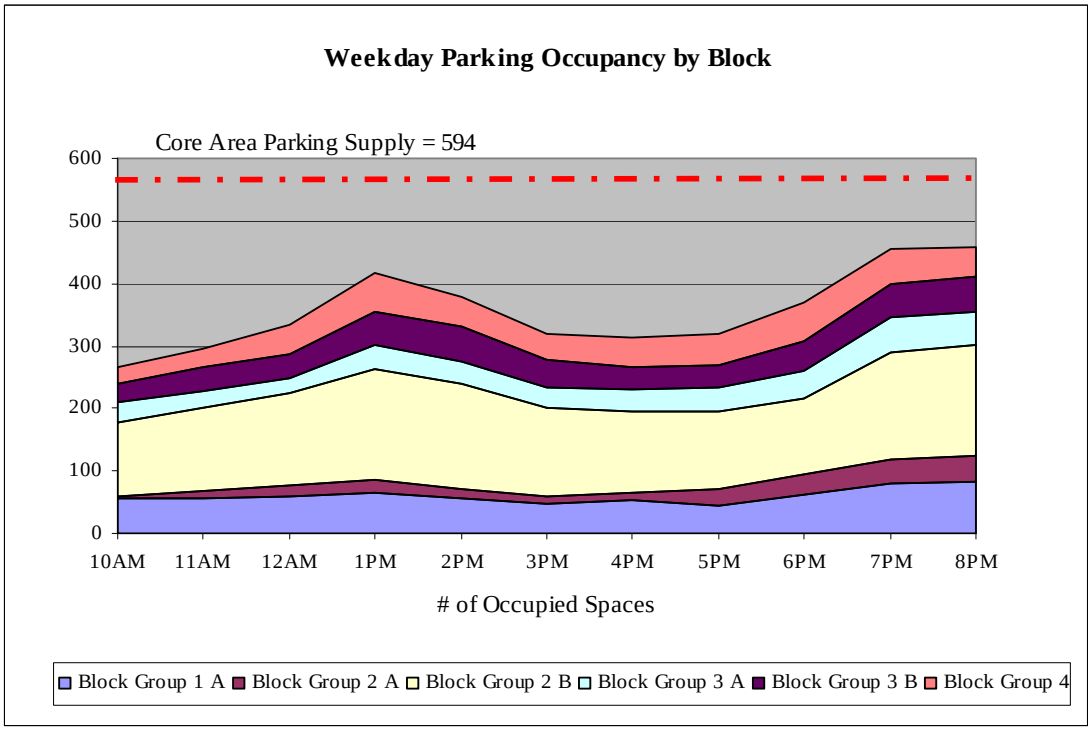
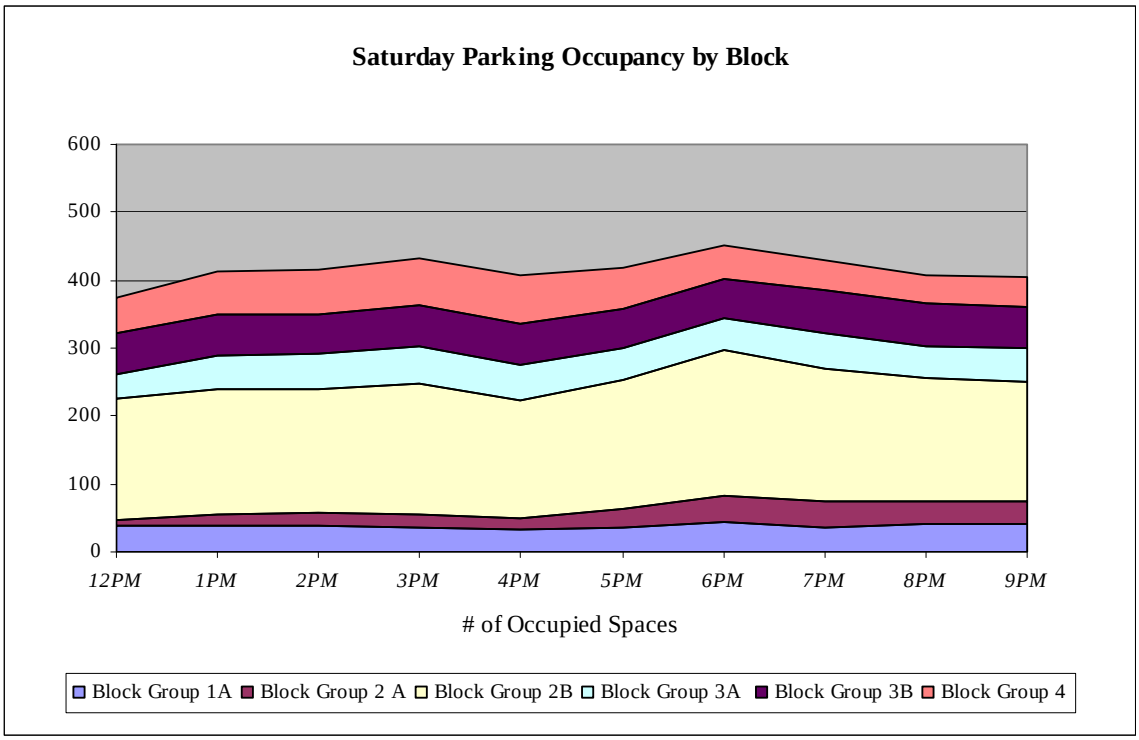


Table 2b: Weekend (Saturday) Parking Occupancy by Block

Study Area		Inventory	12AM	1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM
Block Group 1 A												
	On Street	4	2	1	3	3	1	2	3	4	4	3
	Lot F	95	37	38	36	34	33	35	41	33	36	37
1A Subtotal		**99**	**39**	**39**	**39**	**37**	**34**	**37**	**44**	**37**	**40**	**40**
Block Group 2 A												
	On Street	13	5	10	9	11	9	10	11	13	12	12
	Lot E	28	4	5	9	7	7	17	28	23	22	22
2A Subtotal		**41**	**9**	**15**	**18**	**18**	**16**	**27**	**39**	**36**	**34**	**34**
Block Grop 2 B												
	On Street	6	1	2	1	1	0	1	2	5	4	3
	Lot D	180	159	165	166	170	147	153	166	159	141	141
	Lot D-Metered	58	17	19	15	23	27	36	47	34	36	32
2B Subtotal		**244**	**177**	**186**	**182**	**194**	**174**	**190**	**215**	**198**	**181**	**176**
Block Group 3 A												
	On Street	38	29	27	28	31	30	28	28	28	26	27
	Lot B	24	8	23	23	24	21	19	18	24	23	23
3A Subtotal		**62**	**37**	**50**	**51**	**55**	**51**	**47**	**46**	**52**	**49**	**50**
Block Group 3 B												
	On St. on Maryland Ave.	19	19	18	18	17	18	17	17	18	18	18
	Onstreet on Main	22	12	11	11	10	14	13	13	15	14	14
	Lot C	31	29	31	29	31	29	28	29	28	30	29
3B Subtotal		**72**	**60**	**60**	**58**	**58**	**61**	**58**	**59**	**61**	**62**	**61**
Block Group 4												
	Lot A	76	53	63	66	71	71	58	49	46	42	44
Total Study Area		**594**	**375**	**413**	**414**	**433**	**407**	**417**	**452**	**430**	**408**	**405**
Total On Street		102	68	69	70	73	72	71	74	83	78	77
Total Off Street		492	307	344	344	360	335	346	378	347	330	328
Total		**594**	**375**	**413**	**414**	**433**	**407**	**417**	**452**	**430**	**408**	**405**

Graph A2: Weekend Parking Occupancy by Block Group



3.3 Practical Surplus/Deficit

Peak occupancy figures fail to illustrate the stress and frustration that drivers experience when trying to locate an available space. One measure of that stress is practical capacity which simply estimates the operational efficiency of a parking facility. As the occupancy levels within a parking facility or parking system reach a certain level, drivers who are searching for an available space will be required to search longer and farther. This increases the driver's frustration, the potential for vehicle/vehicle or vehicle/pedestrian conflicts and supports the perception of unavailable parking. This is particularly true for drivers who wish to remain parked for only a short period of time (shoppers, diners, infrequent visitors, etc.). The effective and efficient utilization and turnover of spaces is achieved when an operational surplus of between 5% and 10% is provided. For the purpose of this study, a practical capacity factor of 10% was used to analyze parking conditions in Ellicott City.

Tables 3a and 3b illustrate the peak period surplus/deficit conditions for each block group. These tables indicate that currently there is a practical surplus of 63 off-street parking spaces and 13 on-street spaces on Friday and a surplus of 65 off-street spaces and 18 on-street spaces on Saturday.

Exhibits D and E illustrate the surplus/deficit of parking by block group within the study area for each day. It is interesting to note that while block 1A/Lot F exhibits a 7 spaces surplus during the

peak period on Friday night that surplus increases to 46 spaces during the peak period on Saturday night. Conversely, block 2B/Lot D had a practical surplus of 41 spaces on Friday night but only a surplus of 4 spaces on Saturday night. Conversations with stakeholders suggest that the deviation in parking activity patterns between Lot F and Lot D is associated with Friday night events at the Rogers Carter Center which is adjacent to Lot F.

Presently, there is a system-wide surplus of 76 spaces on Friday and 83 spaces on Saturday. If the practical parking surplus of 123 spaces in the Courthouse lots on Friday night is included, the system-wide surplus would increase to 199 spaces. Similarly, if the practical parking surplus of 172 spaces on Saturday night at the Courthouse is included then the system-wide surplus would increase to 255 spaces.

Table 3a: Existing Weekday (Friday) Surplus/Deficit

Study Area		Inventory	Practical Capacity @ 90 %	Current Peak Utilization (8:00 PM)		Surplus/ Deficit
Block Group 1 A						
	On Street	4	4	3	75%	1
	Lot F	95	86	80	84%	6
1A Subtotal		**99**	**89**	**83**	**84%**	**7**
Block Group 2 A			0			0
	On Street	13	12	12	92%	0
	Lot E	28	25	28	100%	-3
2A Subtotal		**41**	**37**	**40**	**98%**	**-3**
Block Group 2 B			0			
	On Street	6	5	3	50%	2
	Lot D	180	162	130	72%	32
	Lot D-Metered	58	52	45	78%	7
2B Subtotal		**244**	**219**	**178**	**73%**	**41**
Block Group 3 A			0			
	On Street	38	34	32	84%	2
	Lot B	24	22	21	88%	1
3A Subtotal		**62**	**56**	**53**	**85%**	**3**
Block Group 3 B			0			
	On St. on Maryland Ave.	19	17	19	100%	-2
	On street on Main	22	20	10	45%	10
	Lot C	31	28	28	90%	0
3B Subtotal		**72**	**65**	**57**	**79%**	**8**
Block Group 4			0			
	Lot A	76	68	48	63%	**20**
Total Study Area		**594**	**535**	**459**	**77%**	**76**
On Street		102	92	79	77%	13
Off Street		492	443	380	77%	63
Total		**594**	**535**	**459**	**77%**	**76**

Exhibit D: Weekday (Friday) Surplus/Deficit

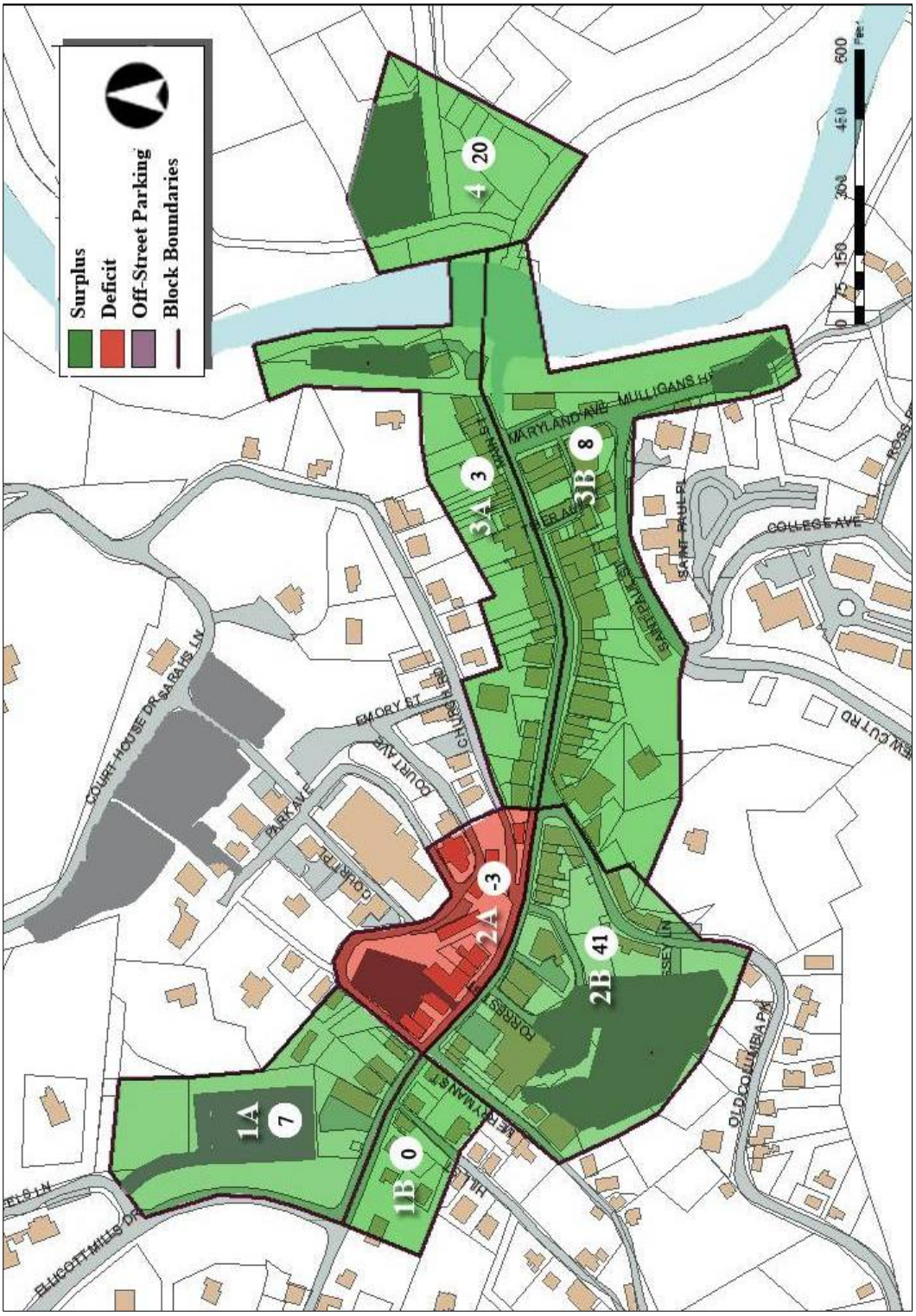
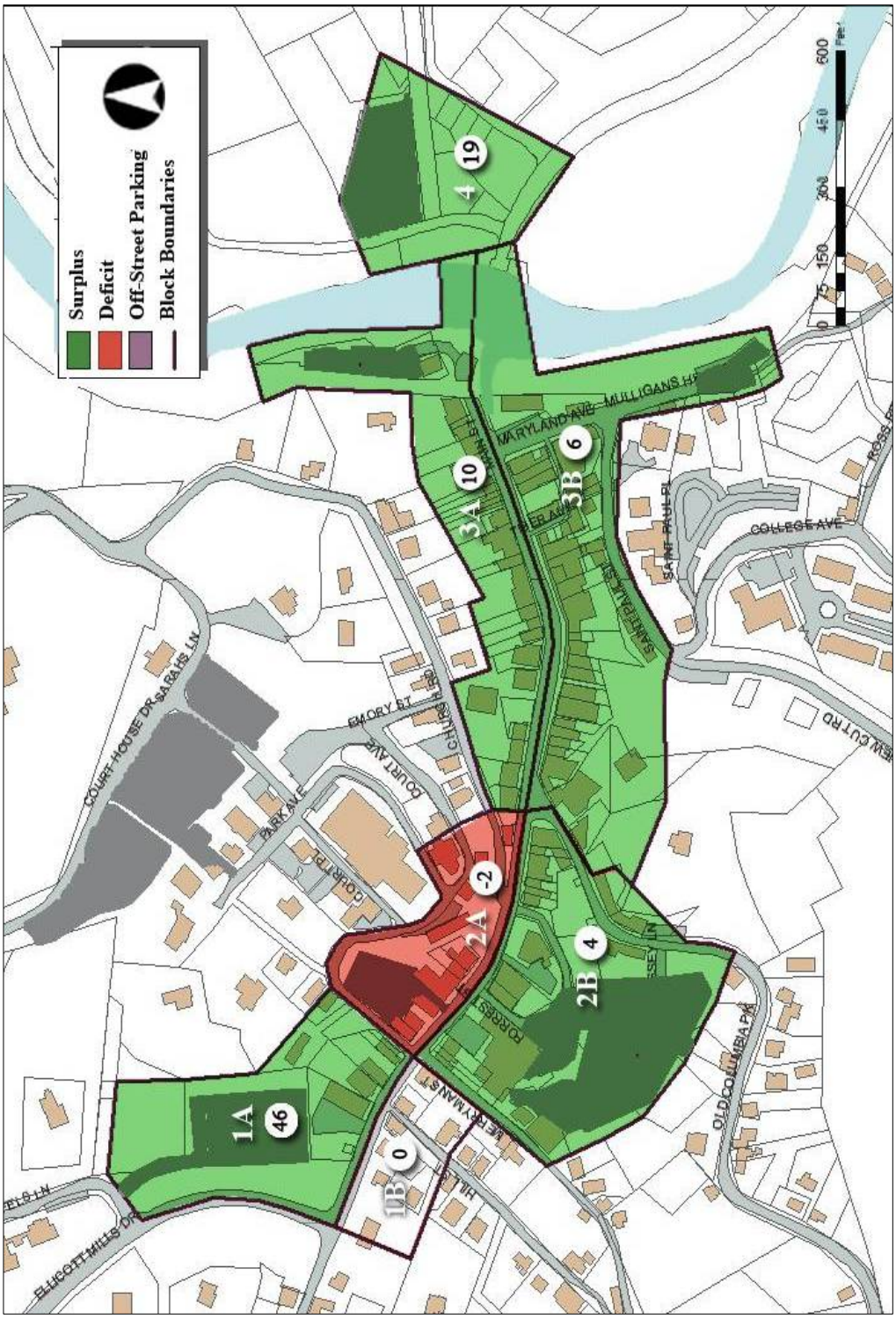


Table 3b: Existing Weekend (Saturday) Surplus/Deficit

Study Area		Inventory	Practical Capacity @ 90%	Current Peak Utilization (6:00 PM)		Surplus/ Deficit
Block Group 1 A						
	On Street	4	4	3	75%	1
	Lot F	95	86	41	43%	45
Subtotal		**99**	**90**	**44**	**44%**	**46**
Block Group 2 A						
	On Street	13	12	11	85%	1
	Lot E	28	25	28	100%	-3
Subtotal		**41**	**37**	**39**	**95%**	**-2**
Block Grop 2 B						
	On Street	6	5	2	33%	3
	Lot D	180	162	166	92%	-4
	Lot D-Metered	58	52	47	81%	5
Subtotal		**244**	**219**	**215**	**88%**	**4**
Block Group 3 A						
	On Street	38	34	28	74%	6
	Lot B	24	22	18	75%	4
Subtotal		**62**	**56**	**46**	**74%**	**10**
Block Group 3 B						
	On St. on Maryland Ave.	19	17	17	89%	0
	Onstreet on Main	22	20	13	59%	7
	Lot C	31	28	29	94%	-1
Subtotal		**72**	**65**	**59**	**82%**	**6**
Block Group 4						
	Lot A	76	68	49	64%	**19**
Total Study Area		**594**	**535**	**452**	**76%**	**83**
On Street		102	92	74	73%	18
Off Street		492	443	378	77%	65
Total		**594**	**535**	**452**	**76%**	**83**

Exhibit E: Weekend (Saturday) Surplus/Deficit



Whether the Courthouse lots are included or excluded from this analysis there does not appear to be a system-wide shortfall of parking spaces. With the exception of block 2A, there were surplus parking spaces in all other blocks during the peak period of use during both survey days. However, surveys of parking utilization do not reveal the true demand for parking. There may be individuals who would frequently visit Ellicott City's shops, restaurants, and taverns but are under the perception that parking is a problem. Additionally, given the type and frequency of parking activity that occurs, the surplus spaces may not be in the right location or may not be managed in the right way. For example, employees and residents who may be "storing" their vehicle on-street and in high demand areas may be consuming spaces that are typically attractive to short-term parkers. Given these possibilities, the study also examines the turnover and duration of stay of current parkers and the peak demand for parking presuming that the current parking supply is a limiting factor.

3.4 Turnover Rates

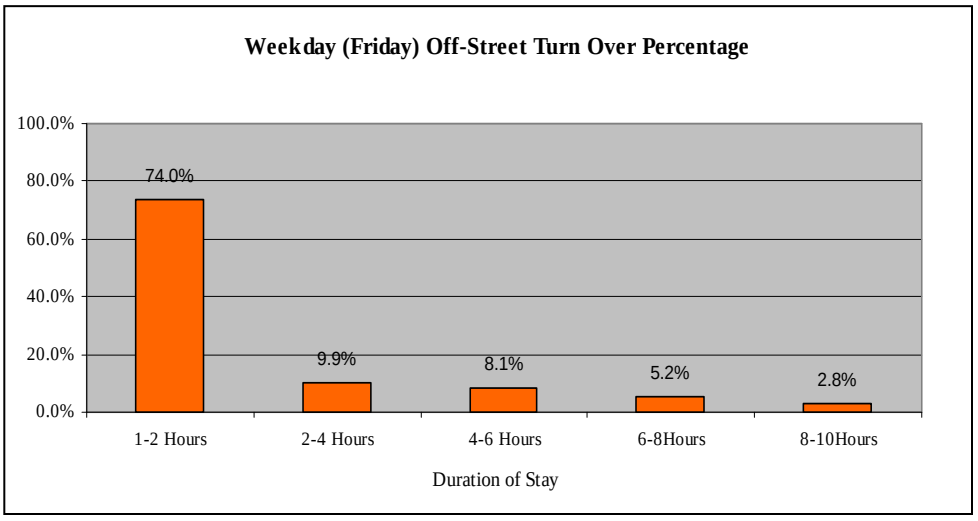
In addition to parking utilization surveys, DESMAN completed a license plate survey. The purpose of this exercise was to monitor the length of time each vehicle occupied a single parking space and determine how many different vehicles utilized a specific space throughout the day. Tables 4a and 4b summarize this data by block group as well as type of parking. Graphs B1, B2, C1 and C2 compare on-street turnover to off-street turnover for Friday and Saturday.

On Friday, 1,048 different vehicles utilized the 492 off-street spaces in the study area. That equates to a vehicle per space turnover ratio of 2.1 and an average duration of stay of 2.4 hours. Presuming that a vehicle parked for greater than six hours is an employee or resident vehicle then 127 of the 1,048 vehicles, or 12%, were long-term parkers. Surveys of on-street parking on Friday identified 411 vehicles parked in 102 spaces for a turnover ratio of 4.0 and a duration of stay of 1.2 hours. Only 2 of the 411 vehicles parked for six hours or longer. However, some of the stakeholders that were interviewed stated that as many as 35 employee and resident vehicles park on-street but "jockey" their vehicle from space to space to avoid a citation. While it was difficult to effectively track the movement of these vehicles during the course of the day, some 20 different vehicles were observed making just this maneuver. Therefore, It could be argued that there are 147 employee and resident vehicles that park within the study area and the many, if not most, park in the most convenient on-street and off-street locations.

Table 4a: Existing Weekday (Friday) Turnover Rate

Study Area		Inventory	1 Hour	2 Hours	3 Hours	4 Hours	5 Hours	6 Hours	7 Hours	8 Hours	9 Hours	10 Hours	Total Vehicle Utilization	Duration of Stay (Hours)	Turn Over
Block Group 1 A															
	On Street	4	4	2	1	2	0	0	0	0	0	0	9	2.1	2.3
	Lot F	95	97	49	6	13	2	10	18	3	2	2	202	2.6	2.1
1A Subtotal		**99**	**101**	**51**	**7**	**15**	**2**	**10**	**18**	**3**	**2**	**2**	**211**	**2.6**	**2.1**
Block Group 2 A															
	On Street	13	56	3	0	0	0	0	0	0	0	0	59	1.1	4.5
	Lot E	28	33	13	6	4	2	0	0	0	0	0	58	1.8	2.1
2A Subtotal		**41**	**89**	**16**	**6**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**117**	**1.4**	**2.9**
Block Group 2 B															
	On Street	6	18	0	0	0	0	0	0	0	0	0	18	1.0	3.0
	Lot D	180	149	103	25	28	27	27	14	5	4	13	395	2.9	2.2
	Lot D-Metered	58	68	4	1	0	1	0	0	0	0	0	74	1.1	1.3
3B Subtotal		**244**	**235**	**107**	**26**	**28**	**28**	**27**	**14**	**5**	**4**	**13**	**487**	**2.6**	**2.0**
Block Group 3 A															
	On Street	38	117	9	0	1	0	1	0	0	0	0	128	1.1	3.4
	Lot B	24	30	15	4	2	2	0	0	0	0	0	53	1.7	2.2
3A Subtotal		**62**	**147**	**24**	**4**	**3**	**2**	**1**	**0**	**0**	**0**	**0**	**181**	**1.3**	**2.9**
Block Group 3 B															
	On Street	41	181	11	2	0	2	0	0	1	0	0	197	1.2	4.8
	Lot C	31	79	9	3	0	1	0	2	0	0	0	94	1.3	3.0
3B Subtotal		**72**	**260**	**20**	**5**	**0**	**3**	**0**	**2**	**1**	**0**	**0**	**291**	**1.2**	**4.0**
Block Group 4															
	Lot A	76	102	24	4	8	7	6	6	7	4	4	172	**2.6**	**2.3**
Total Study Area		**594**	**934**	**242**	**52**	**58**	**44**	**44**	**40**	**16**	**10**	**19**	**1,459**	**2.1**	**2.5**
Total Off-Street		492	558	217	49	55	42	43	40	15	10	19	1,048	2.4	2.1
Total On-Street		102	376	25	3	3	2	1	0	1	0	0	411	1.2	4.0
Total		**594**	**934**	**242**	**52**	**58**	**44**	**44**	**40**	**16**	**10**	**19**	**1,459**	**2.1**	**2.5**

Graph B1: Weekday (Friday) Off-Street Parking Turnover



Graph B2: Weekday (Friday) On-Street Parking Turnover

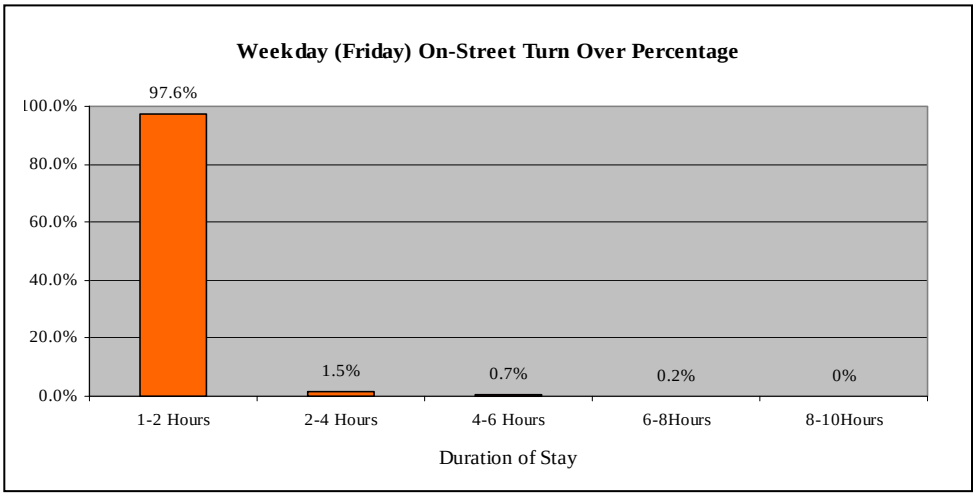


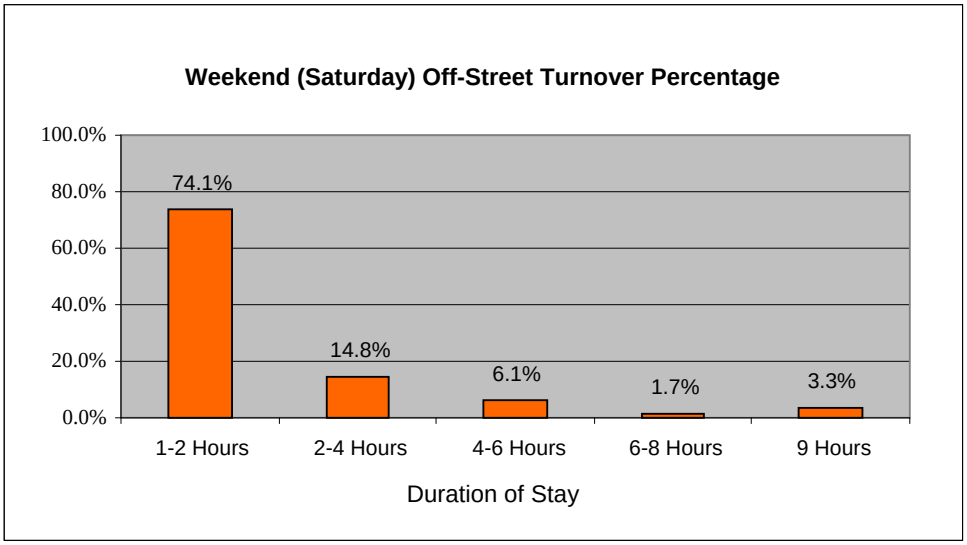
Table 4b: Existing Weekend (Saturday) Turn-over Rate

Study Area		Inventory	1 Hour	2 Hours	3 Hours	4 Hours	5 Hours	6 Hours	7 Hours	8 Hours	9 Hours	Total Vehicle Utilization	Duration of Stay (Hours)	Turn Over
Block Group 1 A														
	On Street	4	10	1	0	0	0	0	0	0	0	11	1.1	2.8
	Lot F	95	79	20	12	2	4	1	1	1	6	126	1.9	1.3
Subtotal		**99**	**89**	**21**	**12**	**2**	**4**	**1**	**1**	**1**	**6**	**137**	2.0	1.4
Block Group 2 A														
	On Street	13	45	12	1	0	0	0	0	0	0	58	1.2	4.5
	Lot E	28	39	5	8	1	1	0	1	0	1	56	1.8	2.0
Subtotal		**41**	**84**	**17**	**9**	**1**	**1**	**0**	**1**	**0**	**1**	**114**	1.5	2.8
Block Group 2 B														
	On Street	6	8	8	0	0	0	0	0	0	0	16	1.4	2.7
	Lot D	180	233	84	61	18	32	16	4	7	24	479	2.5	2.7
	Lot D-Metered	58	70	33	22	1	0	0	0	0	0	126	1.6	2.2
Subtotal		**244**	**311**	**125**	**83**	**19**	**32**	**16**	**4**	**7**	**24**	**621**	2.4	2.5
Block Group 3 A														
	On Street	38	163	9	7	1	0	0	0	0	0	180	1.1	4.7
	Lot B	24	68	24	4	2	0	2	0	0	0	100	1.7	4.2
Subtotal		**62**	**231**	**33**	**11**	**3**	**0**	**2**	**0**	**0**	**0**	**280**	1.3	4.5
Block Group 3 B														
	On Street	41	131	15	5	1	1	1	0	1	2	157	1.3	3.8
	Lot C	31	83	27	8	2	0	1	0	0	2	123	1.6	4.0
Subtotal		**72**	**214**	**42**	**13**	**3**	**1**	**2**	**0**	**1**	**4**	**280**	1.5	3.9
Block Group 4														
	Lot A	76	96	18	16	19	7	9	4	2	6	**177**	2.5	2.3
Total Study Area		**594**	**1025**	**256**	**144**	**47**	**45**	**30**	**10**	**11**	**41**	**1609**	**1.9**	**2.7**
Total Off-Street		492	668	211	131	45	44	29	10	10	39	1187	2.2	2.4
Total On-Street		102	357	45	13	2	1	1	0	1	2	422	1.3	4.1
Total		**594**	**1025**	**256**	**144**	**47**	**45**	**30**	**10**	**11**	**41**	**1609**	**1.9**	**2.7**

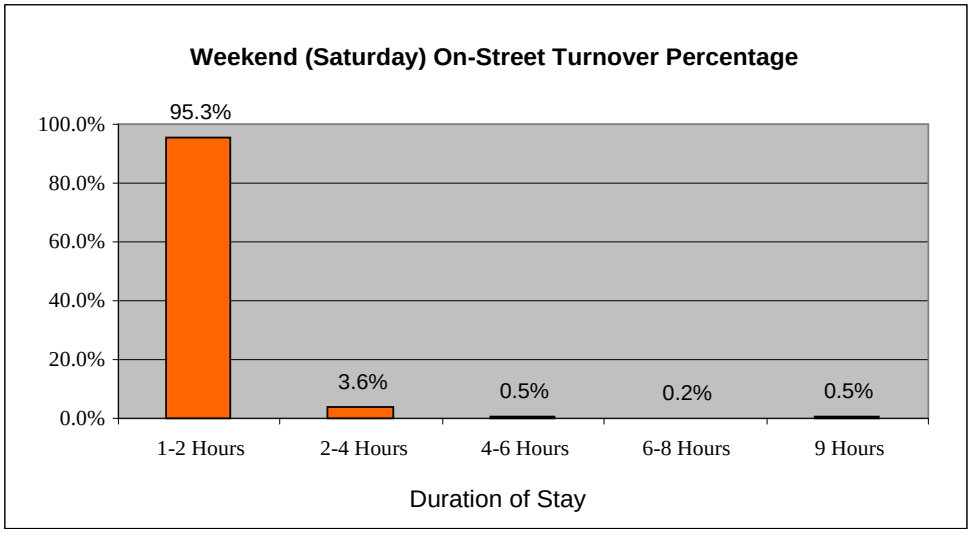
Saturday's turnover and duration data revealed similar findings. There were 1,187 different vehicles utilizing off-street spaces during the course of the day and generated a turnover rate of 2.4 vehicles/space and a duration of stay of 2.2 hours. The number and percentage of long-term parkers drop to 88 and 7.5% respectively. This is not surprising as office parking activity is typically much lower on a weekend. The on-street surveys noted 422 different vehicles, a turnover rate of 4.1, and a duration of stay of only 1.3 hours. While only four vehicles were surveyed parking 6 hours or longer the same 20 (+/-) jockey vehicles were observed. This analysis would suggest that approximately 100 long-term parkers exist on a Saturday.

On-street parking activity on the surveyed Friday and Saturday was vibrant as the average duration of stay was less than the posted two hours limit and the 4 vehicle per space turnover ratio is desirable in a retail/restaurant environment. However, those on-street ratios would have been better if the 20 or so long-term parkers were encouraged to park in off-street facilities. In theory, and presuming a 12-hour period of parking activity (as is the case in Ellicott City) and an average duration of stay of 1.5 hours, the 102 on-street spaces that currently exist could serve as many as 816 different parkers (102 spaces times 12 hours divided by 1.5 hours). Based on the surveys only 411 (Friday) and 422 (Saturday) different vehicles were observed. In short, the on-street program is functioning but not to the level possible.

Graph C1: Weekend (Saturday) Off-Street Parking Turnover



Graph C2: Weekend (Saturday) On-Street Parking Turnover



Overall, the duration of stay and turnover ratio for off-street parking appears appropriate given the mixture of long-term and short-term (metered) spaces. However, some criticism of Lot D is required. Lot D is the largest and most centrally located off-street facility in the study area. Therefore, it would appear attractive to short-term parking activity. The surveys noted that Lot D had the longest average duration of stay (2.9 hours). Of the 487 different vehicles that used Lot D, 63, or 12.4%, parked for six hours or longer. If Lot D is attractive to short-term parkers then long-term parkers could be encouraged to park in more remote locations. The benefit to parking turnover would be significant. If 50 long-term parkers were relocated to Lot F to the west or Lot A to the east, and presuming an average short-term duration of 2 hours, then those 50 vacated spaces could serve 300 different vehicles during the course of a day (50 spaces times 12 hours divided by 2 hours).

4.0 FUTURE PARKING DEMAND (LAND USE BASED MODELLING)

4.1 Existing Land Use Based Ratios

This section of the report examines future parking needs based on inherent land use potential. This is simply a "what if" analysis recommending the number of required parking spaces if a developer were to recreate Ellicott City exactly as it is today but as a new town center.

In order to accurately model peak parking demand associated with potential future uses, the concept of parking demand factors needs to be introduced. Land use parking demand factors or ratios are per-unit measures of peak hour parking generation. By applying these factors to the

density of various land uses, the weekday and weekend parking activity associated with those developments can be estimated. Table 5 shows the estimated existing land use area in Ellicott City today by block group and Table 6 shows the peak parking demand factors that are believed to be relevant and accurate. For example, for each occupied 1,000 sq.ft. of restaurant space in Ellicott City today roughly 7 parking spaces would be needed during the typical peak period. These ratios are below those currently published by the Urban Land Institute and the Institute of Transportation Engineers and suggest that the intensity of existing office, residential, retail, and restaurant land use activity in Ellicott City is less than what may be experienced in other town center environments.

The parking demand ratios in Table 6 were then adjusted over the course of a typical weekday and Saturday to better reflect the "ebb and flow" of parking activity in Ellicott City (see Exhibits D1 and D2). The parking needs associated with different activities fluctuate throughout the day and different activities generate different types of parkers with various expectations (convenience, hours of use, duration of stay, parking rates, etc.). For example, the arrival and departure patterns of vehicles generated by an office building are greatest at 10 AM when most employees are at work and visitors typically begin arriving. Conversely, the arrival and departure patterns generated by a restaurant activity reflect when people are normally out for lunch or dinner. The question then becomes, "what would the peak hour and hourly parking demand patterns look like if Ellicott City were to conform to some standard suburban town center mode?"

Table 5: Estimated Existing Land Use by Area by Block Group (1) (2)

	Retail	Restaurant	Residential	Office	Museum
Block Group 1A	5,200	0	840	1,920	0
Block Group 1B	2,000	2,040	8,430	8,250	0
Block Group 2A	8,800	4,500	7,860	11,970	0
Block Group 2B	16,800	6,200	0	19,700	0
Block Group 3A	58,000	4,200	11,010	13,340	0
Block Group 3B	52,000	10,800	35,740	16,560	4,970
Block Group 4	1,040	13,800	0	0	0
Total	**143,840**	**41,540**	**63,880**	**71,740**	**4,970**

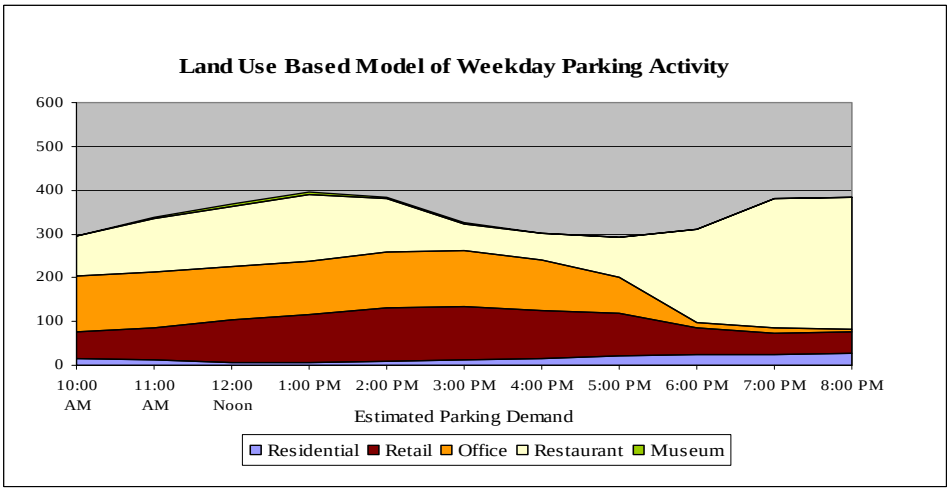
(1)Retail, Restaurant & Office volumes are reduced by 20% to reflect presumed vacancy
(2)The numbers for each category are taken from the information on the SDAT, Howard County Department of Economic Development and DESMAN's field observations

Table 6: Existing Weekday (Friday) & Weekend (Saturday) Parking Rations

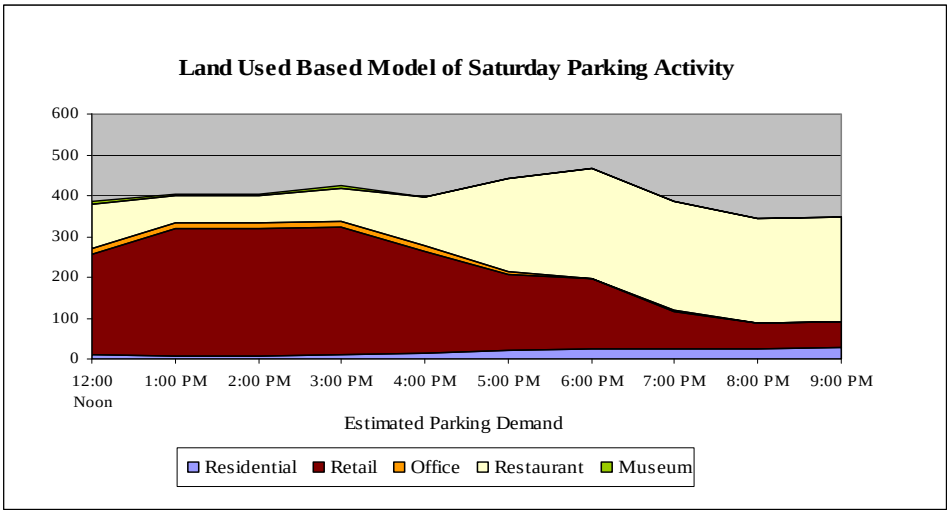
Land Use Category	Weekday Existing Peak Demand Ratio *	Weekend Existing Peak Demand Ratio *
Residential	0.6	0.6
Retail	0.84	2.16
Office	1.8	0.21
Sit-down Restaurant	7.3	6.5
Museum	1.4	1.4

* Vehicles per 1,000 sq. ft. GFA

Graph D1: Existing Land Use Based Model of Weekday (Friday) Parking Activity



Graph D2: Existing Land Use Based Model of Weekend (Saturday) Parking Activity



4.2 Estimate of Surplus/Deficit by Land Use Activity

Table 7 illustrates the potential future peak demand ratios for the various land use activities associated with the more suburban oriented town center model. The factors below will be used to model future surplus/deficit contains under the "what if" scenario. Tables 8a and 8b illustrate the estimated weekday and weekend parking demand by block group. Under this analysis the overall system-wide demand peaks at 613 spaces on a weekday and 685 spaces on a weekend. Note that

block groups 3a and 3b generate the most demand. Graphs E1 and E2 illustrate the future parking activity based on potential land uses if the Ellicott City were to redevelop in future.

Tables 9a and 9b show the surplus and deficit numbers for Friday and Saturday under this "what if" scenario. Exhibits F and G illustrate the system-wide practical surplus/deficit by block group. The system-wide deficit equates to 78 spaces on a Friday and 150 spaces on a Saturday.

Table 7: Potential Future Weekday (Friday) & Weekend (Saturday) Parking Ratios

Land Use Category	Weekday Potential Future Peak Demand Ratio *	Weekend Potential Future Peak Demand Ratio *
Residential	1	1
Retail	2.5	3
Office	2.5	0.3
Sit-down Restaurant	10	10
Museum	2	2

* Vehicles per 1,000 sq. ft. GFA

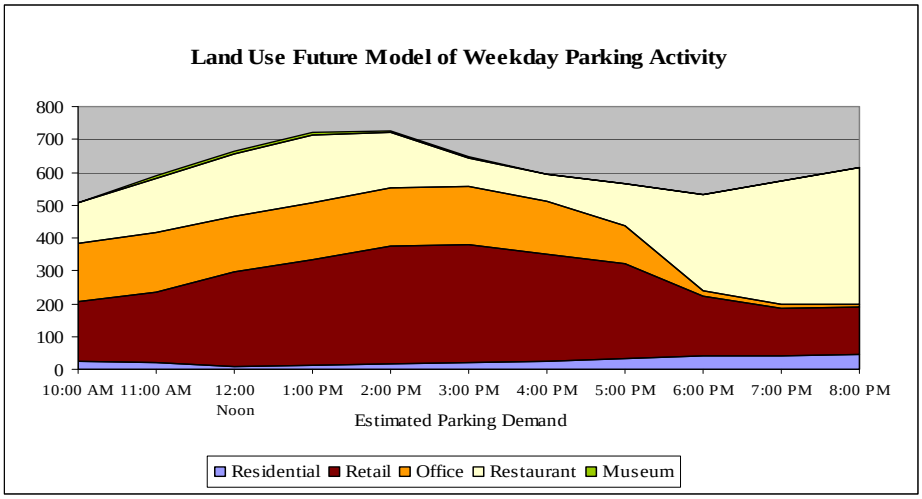
Table 8a: Estimated Weekday Future Land Use by Block Group by Area

	Retail	Restaurant	Residential	Office	Museum	Total Demand
Block Group 1A	5	0	1	0	0	**6**
Block Group 1B	2	20	6	1	0	**29**
Block Group 2A	9	45	6	1	0	**61**
Block Group 2B	17	62	0	2	0	**81**
Block Group 3A	58	42	8	2	0	**109**
Block Group 3B	52	108	25	2	0	**187**
Block Group 4	1	138	0	0	0	**139**
Total	**144**	**415**	**45**	**9**	**0**	**613**

Table 8b: Estimated Weekend Future Land Use by Block Group by Area

	Retail	Restaurant	Residential	Office	Museum	Total Demand
Block Group 1A	9	0	1	0	0	**9**
Block Group 1B	3	20	5	0	0	**29**
Block Group 2A	15	44	5	1	0	**64**
Block Group 2B	28	60	0	1	0	**89**
Block Group 3A	96	41	7	1	0	**144**
Block Group 3B	86	105	22	1	0	**214**
Block Group 4	2	134	0	0	0	**136**
Total	**237**	**403**	**40**	**4**	**0**	**685**

Graph E1: Future Land Use Based Model of Weekday (Friday) Parking Activity



Graph E2: Future Land Use Based Model of Weekend (Saturday) Parking Activity

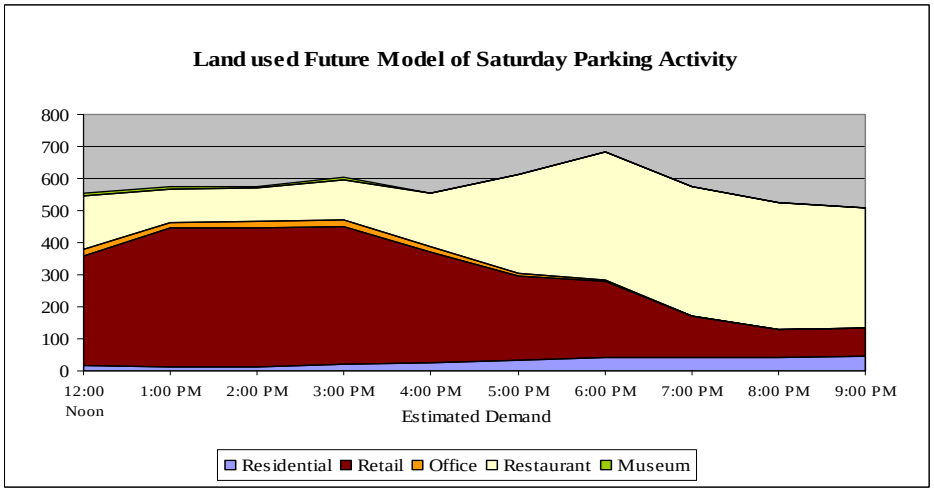


Table 9a: Friday Peak Demand & Practical Surplus/Deficit Based on Land Use Potential Supply and Demand by Block Group

	Supply	Practical Capacity	Total Estimated Demand	Practical Surplus/ Deficit
Block Group 1A	99	89	6	83
Block Group 1B	0	0	29	-29
Block Group 2A	41	37	61	-24
Block Group 2B	244	220	81	138
Block Group 3A	62	56	109	-54
Block Group 3B	72	65	187	-122
Block Group 4	76	68	139	-71
Total	**594**	**535**	**613**	**-78**

Exhibit F: Weekday Potential Land Use Based Surplus/Deficit

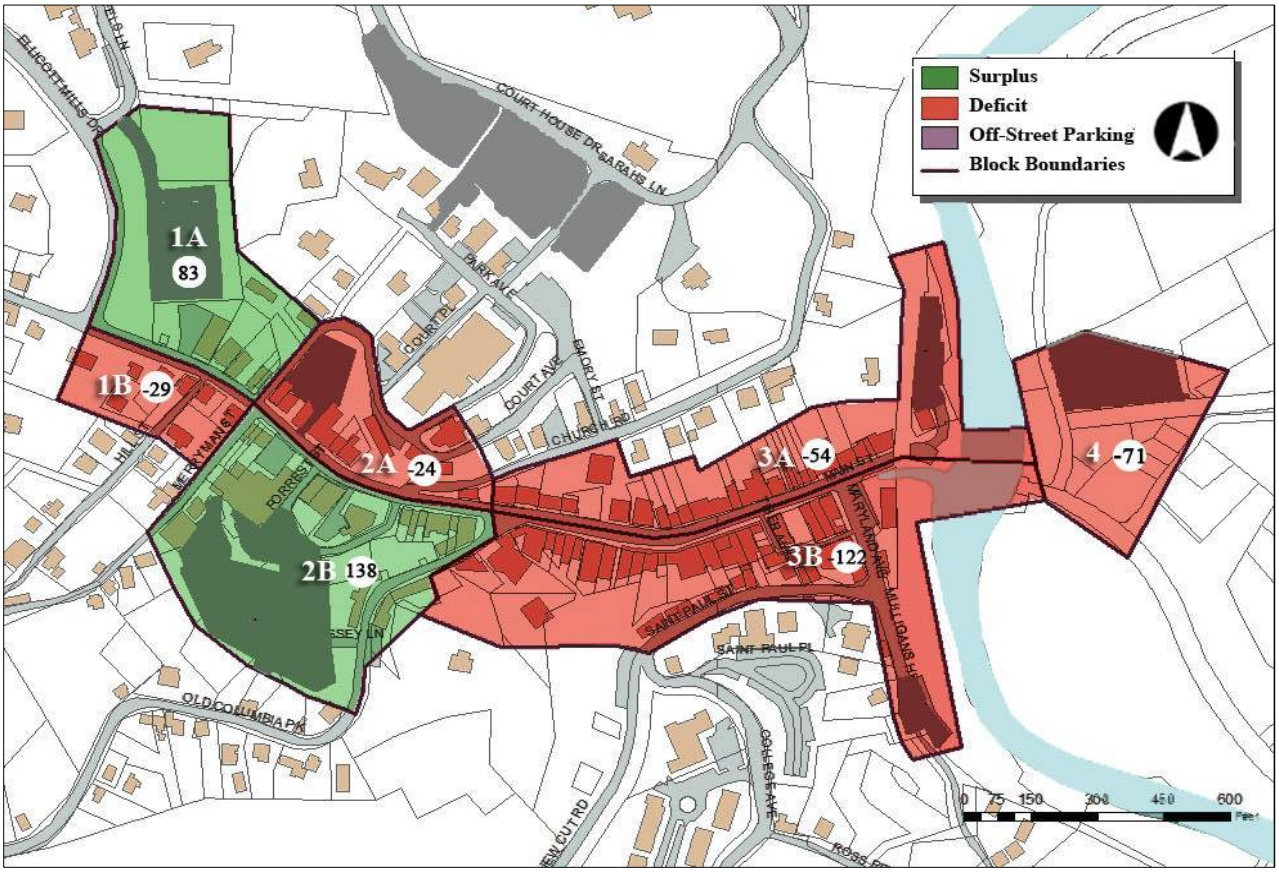
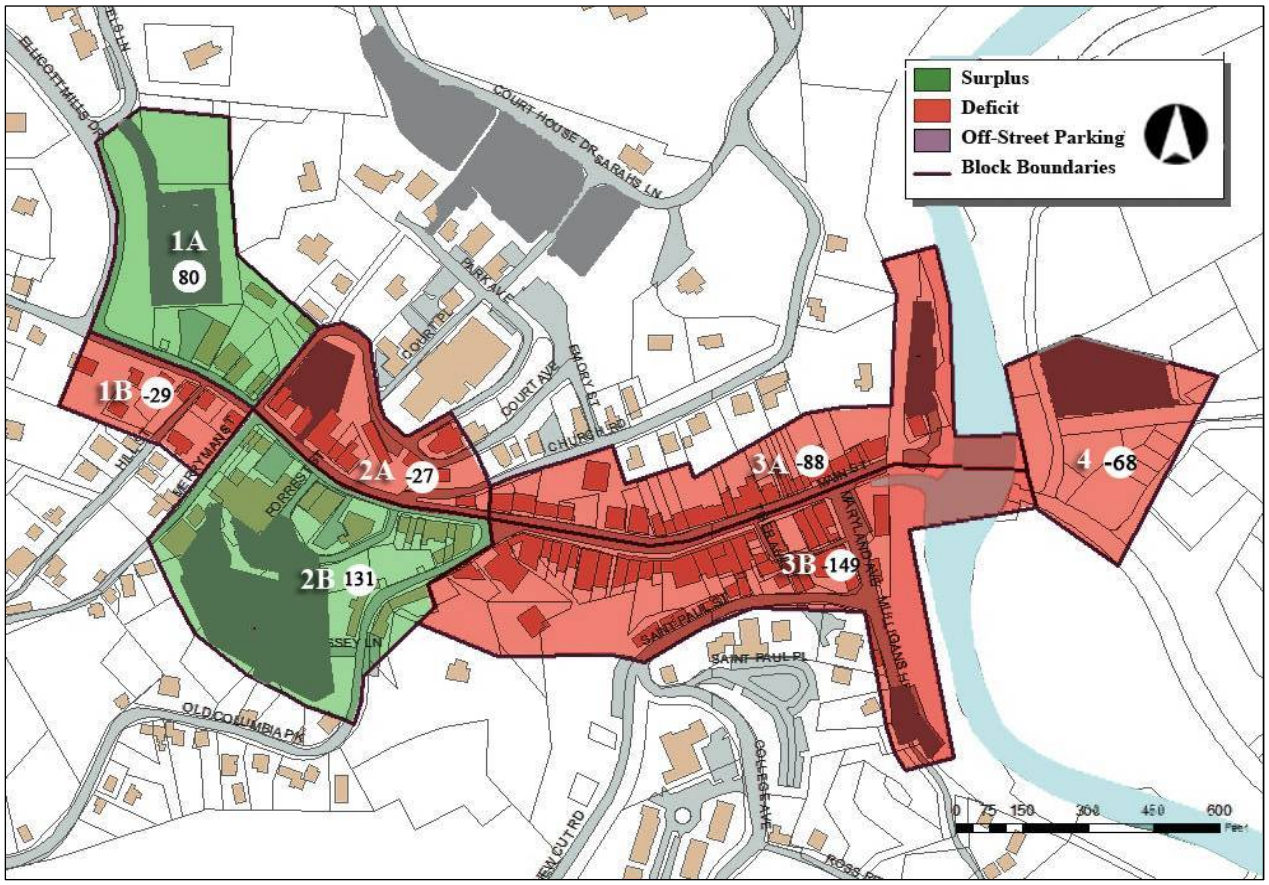


Table 9b: Saturday Peak Demand & Practical Surplus/Deficit Based on Land Use Potential Supply and Demand by Block Group

	Supply	Practical Capacity	Total Estimated Demand	Practical Surplus/ Deficit
Block Group 1A	99	89	9	80
Block Group 1B	0	0	29	-29
Block Group 2A	41	37	64	-27
Block Group 2B	244	220	89	131
Block Group 3A	62	56	144	-88
Block Group 3B	72	65	214	-149
Block Group 4	76	68	136	-68
Total	**594**	**535**	**685**	**-150**

Exhibit G: Weekend Potential Land Use Based Surplus/Deficit



If Ellicott City were to achieve some level of parking activity similar to today's new town centers in the future then a parking short-fall would be anticipated and some additional parking would be required. This "what if" analysis would suggest that a 150 to 200 space parking structure be developed in the southern end of the study area (blocks 3A, 3B, and 4). However, this "what if" deficit projection ignores the fact that 198 spaces currently exist in the Courthouse lots. Field surveys noted that there may have been some use of these spaces by "Main Street" patrons on Friday night. Stakeholders noted that these lots were utilized previously when parking activity was higher than today. If these spaces were to become more accessible and/or more attractive then the parking deficit projected under the "what if" model could be absorbed.

While DESMAN will examine the opportunity of developing structured parking in Ellicott City, the stronger recommendation would revolve around parking operations and management strategies to make existing lots, including Courthouse lots, more effective and acceptable.

5.0 STRUCTURED PARKING OPPORTUNITIES

The analysis of parking supply and demand suggests that a parking structure is not warranted at this time even when considering seasonality and the long-range potential of the area. However, the analysis did note that the greatest supply of parking which is in the western half of the study area (see Blocks 1A and 2B) may be too distant to the greatest concentration of parking demand in the eastern half (see Blocks 3A and 3A) to be considered convenient. Therefore, though structured parking isn't required from a system-wide supply and demand perspective, this section of the report includes some consideration/evaluation of structured parking opportunities from a convenience perspective. The report evaluates the parking potential associated with structured parking development sites and includes parking layouts, design efficiency, space capacity, construction/development cost, and cost per net spaces gained. Additionally, given the character of Ellicott City and the impact that structured parking would have the evaluation includes comments from members of the Howard County Historic District Commission.

A number of sites were reviewed with downtown stakeholders and the Revenue Authority that could support structured parking. Initially, the evaluation focused on only those publicly owned surface parking lots that could support a parking structure, namely, Lot D, F, and E. However, as these sites are located in the western section, without some type of shuttle or trolley service they would do little to meet the demand for parking in the eastern end. Therefore, some consideration was given to the public lots to the east and to the Catholic Church lot south of St.Paul Street and College Avenue. In the case of public lots B and C, their dimensions are insufficient to support structured parking. Lot A, which is across the bridge in Baltimore County, has a dimension that could support structured parking but apart from building a pedestrian bridge across Patapsco Creek, parkers would be required to cross the Rte 40/Patapsco Creek bridge. That is not a desirable option given the volume and speed of vehicular traffic on Rte 40. St. Paul's parking lot could support a modest structure but only if additional private property was acquired. Land acquisition and design/construction costs could prove prohibitive particularly given the modest net gain of spaces that would be achieved, i.e., new structured parking less existing spaces that would be displaced.

To understand the design parameters of structure parking, some background is required. Parking structures have rather demanding functional requirements and require significant developable footprints. Parking stalls are 18 ft. long and 9 ft. wide, typical two-way drive isles (90-degree parking) are 24 ft. wide, and, therefore, the standard parking bay must equal 60 ft. (18+18+24). In order to circulate up and down, two drive isles are required. Therefore, the typical garage should be 124 ft. wide (including 4' for parapet walls and columns). Similarly, the length of the structure must be sufficient to permit the parking ramp to climb the required distance to the next parking level while not exceeding a 5-6% slope. For example, a garage which requires a 10 ft. floor to floor ramping system (single helix) with a 5% slope would require 200 ft. of sloping floor plus another 27 to 45 ft. on each end for vehicular circulation on each end (depending on one-way vs. two-way traffic) for a total of 248 to 290 ft. Thus, the desirable footprint is 124 ft. by 248-290 ft. These design standards can be reduced depending on the type of traffic flow (one-way), the angle of parking (less than 90 degrees), and the type of ramping system (single or double helix) employed. Unfortunately, such modifications reduce the design efficiency and increase the per space construction costs. Design efficiency is best defined by the number of square feet required to provide a single parking stall. For example, an optimally designed parking structure should require fewer than 320 sq.ft. per space.

For each of the selected sites/properties the site boundaries and dimensions, and roadway directional flow were identified. Once the boundaries were defined, typical level structured parking layouts for each site were created; identifying vehicle entry/exit points, drive aisles, directional traffic flow, and internal ramping. All construction cost figures presented here represent FY 2009 dollars and are meant for comparative purposes. It should be noted that the issue of environmental hardships/conditions was not used to disallow sites from consideration as lots F and D were included in the analysis. This analysis does not include costs associated with resolving special environmental conditions, namely existing utilities or natural cistern beneath sites, which could increase the total development costs significantly.

5.1 Lot F – Roger Carter Center

Based on the concept presented here (see Exhibit H1 and H2) as many as 365 parking spaces on grade plus three supported levels can be provided on this site. The topography and dimension of the site permits an efficient design and minimizes the impact on massing associated with such a large structure. Note that 95 existing publicly available surface parking spaces would be displaced due to construction and the net new parking count would be 270 spaces. Using FY 2009 dollars, $50 per square foot construction cost, the 113,000 square feet structure is estimated to cost $5.65 million or $15,480 per spaces. The $50 figure is based on a rather high end level of façade treatment and architectural fenestration. However, this cost does not include design fees, permitting, cost contingencies, or other soft costs. Such soft costs could increase the design and development costs by roughly 20% to $6.78 million, or $18,580 per space. Taking into consideration the displacement of existing public parking the net new construction costs would equal $25,100 per space gained.

Exhibit H1 and H2
Lot F – Roger Carter Center Site

5.2 Lot D – Post Office Lot

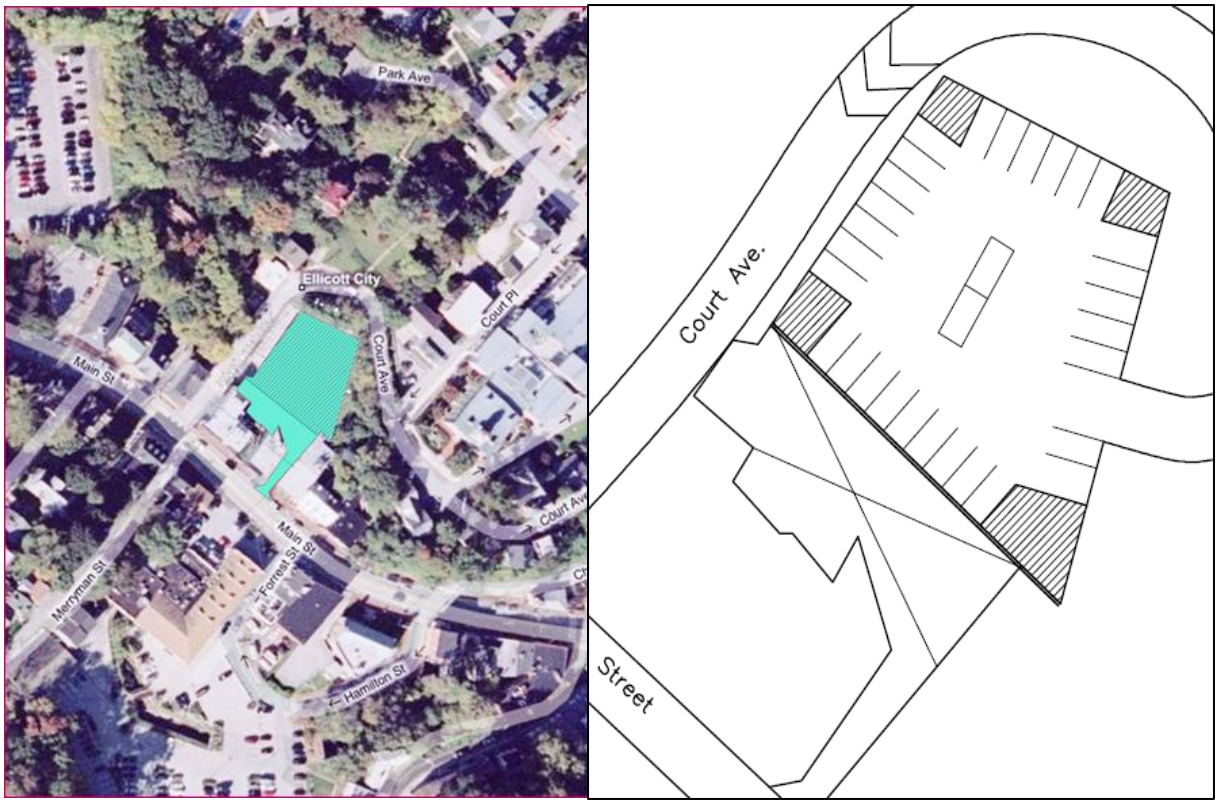
This concept, illustrated on Exhibits I1 and I2, has the potential to support a parking structure with a dimension of 124 ft. by 290 ft. This dimension is based on the provision of a 20 ft. setback from all surrounding property but is still sufficient to promote efficient design and vehicular ingress and egress. Assuming grade plus three supported levels, this site could accommodate a parking structure with as many as 335 spaces. Unfortunately, the structure would displace the vast majority of existing surface parking spaces. It is estimated that some 80 existing surface spaces could remain though it might be desirable to replace that with landscaping or other pedestrian amenities. For purposes of this analysis it will be assumed that 158 spaces (238-80) will be lost to construction and a net gain of 177 spaces could be achieved. Note that these parking layouts maximize the space count and do not consider the effect on capacity and efficiency created by ground floor retail space which could be desirable along the structure's north and east face. Based on the $50 per square foot construction cost, the 109,000 sq.ft. parking structure would cost $5.45 million. With soft costs the total project cost would be an estimated $6.54 million ($19,500 per space or $36,950 per space gained).

Exhibit I1 and I2
Lot D – Post Office Site

5.3 Lot E – Court Avenue Site

The Lot E – Court Avenue concept, illustrated on Exhibits J1 and J2, is unique as the dimension of the site is insufficient for a traditional structured parking/ramp design but its topography presents an opportunity to create additional levels of parking without the need for an interior ramp system. This site could accommodate the total of 49 parking spaces. The structure would simply function as a "table top" above the existing 28 space lot. As many as 29 spaces can be developed on the roof level while 8 of the existing grade level spaces would be lost to the structural system (i.e., the "legs" of the parking table). Entry/exit to the roof level would occur off Court Avenue. Entrance to the grade level would remain unchanged. Total development costs including design fees and other soft costs are estimated at $800,000 ($27,600 per spaces or $38,000 per space gained).

Exhibit J1 and J2
Lot E – Court Avenue Site



5.4 Howard County Historic District Commission Comments

Given the potentially negative visual/cultural impact that structured parking could have if developed, some comments from Howard County Historic District Commission members were informally garnered. The following paraphrases some input that was received.

Given the scale, massing, and topography of the study area, big, rectangular, multi-level grey concrete parking garages are completely unsuitable for any of the three lots that were considered. Therefore, the type of building material used for the parking structure and the level of façade treatment and fenestration would have to be significant and supportive of the adjacent historic buildings. Furthermore, any parking structure would have to be screened to the extent possible so as to blend and melt into the background. Lot F is somewhat screened from Main Street by buildings and the topography of the area. However, the fire house, log cabin, and tiny stone building, which are important structures, could easily be overwhelmed by the sheer mass of a parking structure. Lot E is nearly invisible to Main Street but it is surrounded by restaurants, offices, residences, and the Courthouse. It is the smallest of the lots and anything very large

could overwhelm the scale of the adjacent buildings. The stone retaining wall in Lot E is very representative of Ellicott City. Lot D is the largest and most convenient location to Main Street. Surrounding the current parking lot is an eclectic mix of homes, retail, restaurants, and converted commercial buildings. Many of the buildings around that parking lot have undergone much renovation in the past several years. There is room for a large parking facility in that lot; however, anything large in the lot would just devour the buildings on the perimeter.

6.0 OPERATIONAL ASSESSMENT & RECOMMENDATIONS

6.1 Current Operational Conditions

Off-Street Operations

Off-street parking is a mix of free and paid metered parking. Paid parking is managed through the use of single space parking meters. Off-street parking is designed to serve long-term users such as employees and visitors requiring more than two hours of parking.

The current rate structure for off-street parking lots found within the study area is as follows:

LOT A - free
LOT B - $0.50 per hour
LOT C - $0.50 per hour
LOT D - $0.25 per hour/free
LOT E - $0.25 per hour
LOT F - $0.50 per hour
Court House Lot - free

Based on off-street parking rates in nearby areas illustrated in Table 10, Ellicott City off-street rates are comparatively low.

Table 10: Comparative Off-Street Rates

Ellicott City	$.25-$.50
Bethesda	$0.75
Frederick	$1.00
Rockville	$1.00
Silver Spring	$0.75
Bel Air	$0.50
College Park	$0.75
Pikesville	Free
Towson	$1.00
Annapolis	$1.25

On-Street Parking Operations

A properly designed on-street municipal parking system allows for 2 hours or less of parking in commercial and retail areas. This time limit allows shoppers to park and conduct business in an expeditious manner and provides for a more rapid turnover of these valuable spaces. In areas where restaurant use is predominant, on-street parking usually has 2 hour time limits assigned to allow sufficient time for a leisurely meal. As is the case in Ellicott City, all on-street parking (Main Street) is managed through the use of posted time limits without the use of parking meters. Long-term parking meters, meters over 2 hours in duration, and free parking areas are located in surface parking lots in the downtown area.

On-street parking is the most desirable parking alternative in any municipality as these spaces normally provide the most convenient parking location. On-street spaces are also limited in number based on traffic flow and street design/configuration. Parking rates, not unlike other types of user fees, should follow the laws of supply and demand. Much like paying a premium for a limited number of seats in the front rows of a performing arts center or major sports arena, users expect a premium price attached to more convenient and desirable on-street curbside parking.

Based on this philosophy, parking industry standards dictate that more desirable and convenient on-street parking should be priced significantly higher than less convenient off-street alternatives. When compared to other local communities (see Table 11), on-street parking in Ellicott City is on the lowest end of the comparison chart based on its current on-street parking management approach of providing free parking on-street.

Table 11: Comparative On-Street Rates

Ellicott City	FREE
Bethesda	$0.75
Frederick	$1.00
Rockville	$1.00
Silver Spring	$0.75
Bel Air	$0.50
College Park	$0.75
Catonsville	$0.25
Pikesville	$0.25
Towson	$1.00
Annapolis	$1.00

Current Fines and Fees

Parking enforcement is the foundation of any municipal parking program. Proper levels of parking enforcement lead to the desired turnover rates of on-street parking spaces and compel long-term parkers to utilize off-street facilities. Proper enforcement levels also ensure that

loading zones and life safety issues such as fire zones are not violated. In addition to proper parking enforcement levels, properly structured parking fines provide a financial disincentive to park illegally. The current overtime parking fine in Ellicott City is relatively low compared to other local communities (see Table 12). A citation issued for an overtime parking violation, which is the most common violation in most municipalities, is presently $25.00.

Table 12: Comparative Citation Fees

Ellicott City	$25
Bethesda	$40
Frederick	$10
Rockville	$40
Silver Spring	$40
Bel Air	$15
College Park	$35
Catonsville	$22
Pikesville	$22
Towson	$22
Annapolis	$20

Monthly/Employee/Resident Parking

The success of any downtown area often results in the misuse of on-street curbside parking by residents, merchants, vendors and their employees. Service workers find it more convenient to park as close as possible to their location of employment even if it requires them to move their vehicle as per the posted time limits for on-street parking. Residents, business owners and employees often monopolize on-street parking as they arrive downtown before peak demand periods. This is especially true in Ellicott City as parking enforcement efforts do not begin until 10:00 AM, which is well after employees begin to arrive downtown. As a result, employees who may have parked in areas designed for visitors before 10:00 AM are not required by regulation to move their vehicle until noon to avoid a citation. This provides the public with the perception that there is insufficient parking in the area and results in additional traffic congestion due to potential visitors hunting for on-street spaces.

Presently, there is no employee or resident parking program that promotes the use of lesser-used off-street facilities by these user groups. Residents and employees are willing to try their luck by often neglecting to comply with posted time limits for parking on-street and risk receiving a parking citation.

Management/Supervision

The Howard County Department of Finance is responsible for the daily management of parking in Ellicott City. To conduct the day to day operation of parking, Howard County utilizes a mix of labor resources. Parking enforcement responsibilities are assigned to a private-sector firm. Serco Management Services supplies staffing required to patrol on-street and off-street and issues the appropriate parking citations in Ellicott City. One full-time employee is responsible for parking enforcement duties from 10:00 AM until 6:00 PM, Monday through Friday. In addition to this full-time staff member there are two part-time employees responsible for enforcement during weekend hours. Serco Management maintains a small office that serves as a place for the enforcement staff to gather and store their equipment, which is located at the Orientation Center off of Main Street.

Presently, the parking enforcement officers (PEO) have the ability to void a ticket if the ticket is deemed to be written in error. This is achieved by the PEO filling out a void form that is forwarded to Howard County who maintains the final authority to void the citation. This includes handicapped parking citations if the user presents the proper credentials after the citation is issued.

Parking meter collection duties are also assigned to Serco. Serco personnel retrieve revenues from the parking meters on a scheduled basis and download revenue reports from each meter to reconcile collection amounts. Collected coin is brought directly to the bank, counted and deposited. Deposit reports are forwarded from the bank to Howard County Finance Department for reconciliation with the revenue reports generated by the parking meters.

Parking maintenance duties are the responsibility of Howard County Traffic Department. Malfunctioning meters, reported by parking enforcement staff or the public, are also the responsibility of this agency.

Parking Meter Technology

Presently, Howard County is utilizing single space electronic meters to manage its off-street parking program.

Electronic parking meters change the way meter repairs and maintenance is performed. They require periodic battery changes (annual in most cases) and instead of repairing mechanical parts, meter maintenance is performed by merely replacing modular plug and play parts kept in inventory. As is the case with Howard County, many users of electronic parking meters enter into service contracts whereby defective inserts are routinely picked up and exchanged for repaired ones. Unlike mechanical parking meters, the electronic parking meter's internal clocks are highly accurate and are not likely to incorrectly display time.

Parking Revenue & Expenses

Table 13 summarizes the overall financial performance of the parking program in Ellicott City for fiscal year 2008 based on its current operational approach. The parking operation in Ellicott City operates with a modest financial surplus, which is returned to the General Fund of Howard County. However, parking revenues alone do not support the expenses associated with the management and operation of this program. If monies related to the issuance and collection of parking citations were to be removed from this pro forma, the parking program would run in a deficit of $56,837. This is an important delineation as the funding of public parking systems, where feasible, should not be dependent on revenues from parking violations.

Table 13: Ellicott City Current Parking Program Pro forma

Expenses		
Serco Management Services	$81,555.00	
Maintenance Contracts	$1,630.00	
Misc. Office Supplies	$2,636.95	
Finance/Cashier/Traffic Salaries	$29,856.29	
Highways Traffic Expenses	$4,000.00	
Total Expenses		$119,678.24
Revenues		
Parking Citations (Serco Management)	$112,170.00	
Late, Non-Sufficient Fund, & Flagging Fees	$32,055.41	
Less: Voids & Uncollectable	($42,009.94)	
Subtotal: Citation Net Revenue	$102,215.47	
Meter Proceeds	$62,841.07	
Total Revenues		$165,056.54
Operating Profit or Loss		**$45,378.30**

Regionally, costs associated with managing a paid surface parking operation averages from $150 to $250 per space. This includes all costs associated with managing a paid parking program such as parking enforcement, striping, meter maintenance, snow removal and meter collections. In analyzing the cost to administer Ellicott City's parking program, it appears that the cost to manage the parking system's total 594 parking spaces equates to approximately $201 per space.

6.2 Operational Recommendations

On-Street Parking Operations

In an effort to ensure turnover of these most convenient spaces and to encourage long-term users to utilize off-street facilities, it is recommended that all 102 on-street parking spaces be converted from timed parking to paid parking assessed at $1.00 per hour. Multi-space meters are not recommended for on-street use in this application as limited sidewalk dimensions in Ellicott City limit the management of these spaces to single space meters. The estimated cost to convert Main

Street from timed parking to a paid parking program is identified on Table 14. Note that this cost estimate assumes that existing off-street meters would be relocated to on-street use.

Table 14: On-Street Meter Conversion Budget Estimate

Meters*	$ None
Poles/Installation	$10,000
Signage	$ 2,500
Restriping/Curb Painting	$ 2,500
	$15,000

** assumes reuse of off-street meters available due to conversion to multi-space technology off-street*

Off-Street Operations

Recently, multi-space parking meters have become increasingly popular. These devices come in two varieties Pay-By-Space and Pay-And-Display. Multi-space parking meters have some distinct advantages. Primarily, they provide a full audit trail of all transactions. In some more sophisticated installations, multi-space parking meters can even send messages to a host computer that performs diagnostics of each device and displays its financial and paper supply status. Depending on the location of the parking spaces that are intended to be covered, multi-space parking meters can replace between 10 and 20 traditional single space parking meters and accept cash, coins, tokens and smart card for payment. They are also more aesthetically appealing since fewer units are required.

Pay-By-Space – In an off-street application, each Pay-By-Space parking meter can service an average of 10-50 numbered parking spaces although this number is adjustable based on specific facility design and need. Therefore, each parking space requires a sign, either painted on the pavement or posted, identifying the space number. To render payment, the parking patron must remember the number of the parking space in which they parked. Once the space number is entered, the next step is to determine the length of stay and deposit or insert cash, coins, tokens or smart cards for payment. Pay-By-Space may be the best choice for off-street applications in Ellicott City as it does not require the user to return to the vehicle to display the receipt on the vehicle's dashboard. Enforcement is performed by receiving a printout from each Pay-By-Space parking meter and issuing a citation to each vehicle that occupies an unpaid parking space.

Pay-And-Display, like its Pay-By-Space counterpart, can also service between 10 - 50 numbered parking spaces although this number is adjustable based on specific facility design and need. The primary difference is that Pay-And-Display parking meters require fewer signs and no sign in front of each parking space. The payment process requires the patron to select the duration of time and render payment by depositing or inserting cash, coins, tokens or smart card for payment. After a receipt is issued that boldly displays the expiration time and date, it is the patron's responsibility to display the receipt on the dashboard of the vehicle for viewing by the enforcement officer.

After considering the parking meter options presented herein, it is recommended that all off-street parking lots and spaces within each facility, with the exception of the Courthouse Lot and Lot A, be converted to Pay-By-Space multi-space meter technology. It is also recommended that all units be supplied with an illuminated shelter to allow users to interact with the machine more easily during periods of inclement weather. In all but Lot D, only one multi-space meter is required. However, due to the size of Lot D, three meters are recommended for this location. The following is the estimated cost to complete this conversion.

LOT A - None
LOT B - $25,000 (1 multi-space meter with illuminated shelter)
LOT C - $25,000 (1 multi-space meter with illuminated shelter)
LOT D - $75,000 (3 multi-space meters with illuminated shelters)
LOT E - $25,000 (1 multi-space meter with illuminated shelter)
LOT F - $25,000 (1 multi-space meter with illuminated shelter)
Courthouse Lot - None

Based on these estimates, full conversion at all off-street facilities totals an estimated $175,000. To lessen the impact of this capital cost, Howard County may want to investigate the possibility of entering into a lease purchase agreement with the meter vendor. This will allow Howard County to make several lower annual lease payments versus a large, one-time capital expenditure. Single space parking meters removed from the off-street facilities as a result of this conversion can be reprogrammed and used on-street.

A sample list of manufacturers servicing the Howard County and Ellicott City area include:

Cale Meters - Baltimore Facility
1100 Wicomico St. G140
Baltimore, MD 21230
Phone: 443-562-5249

Digital Payment Technologies
4105 Grandview Highway
Burnaby
BC Canada V5C 6B4
Phone: 888.687.6822.

Parkeon
40 Twosome Dr
Suite 7
Moorestown, NJ 08057
Phone: 856.235.7801

It should be noted that the multi-space recommendation to off-street parking management can be applied to Ellicott City's on-street parking system as well. This could further unify the on-street and off-street parking management program and generate additional information for future refinement to on-street policy. However, given the cost of this equipment it is recommended that the existing single-space meters be relocated. As the parking program matures both in management efficiency and cost effectiveness, the County, Revenue Authority, or a private sector operator could phase in these multi-space devices.

Parking Rates and Fines

As illustrated previously on Table 13, the parking operation in Ellicott City operates with a modest financial surplus. However, if parking citations revenue were to decrease, the parking program would run into a deficit. As monies collected from the issuance of parking citations can

vary greatly from year to year, it is recommended that parking rates be adjusted in an effort to achieve the goal of establishing a parking operation that is fully funded through user fees alone.

Based on current market conditions found in other comparable municipalities in the region and to achieve the goals of promoting readily available curbside parking, it is recommended that Ellicott City parking rates and citation fees in the study area be adjusted as follows: off-street metered parking, $0.50/hour, on-street metered parking, $1.00/hour, monthly permit, $30 to 55/mo. Depending on location, parking citation $40. Note that the first citation that an individual receives is simply a warning. Using existing handheld enforcement technology parking enforcement personnel will be able to differential between a first-time offender and a repeat offender.

The parking rate and fine program should also include more elements related to customer service. For example, a first-time offender will be offered a warning and a map to more appropriate long-term parking locations. Multi-space meter devices should include merchant validations for future visits to the downtown. Pricing alternatives could offer 1-hour of free parking in off-street facilities. Those strategies that soften the impact associated with change should be implemented in parallel with parking management and hardware improvements.

Monthly/Employee/Resident Parking

In an effort to reduce the use of valuable municipal parking inventory by individuals that live and work within the study area, the development of lower cost employee and resident parking should be created. Lesser-used surface parking lots located on the fringe of the downtown area should be designated to serve this purpose and aggressively marketed to these groups of users. Signage indicating this use should be installed so that these spaces are available to the intended users during the course of various shifts during business and evening hours.

The concept of this program is to provide a percentage of long-term parking at surface lot locations for residents and employees. It is strongly recommended that employee parking occur in the areas of least demand and pricing strategies should be developed to encourage this concept. The recommended cost of this program is $50 per month for core lots (Lot D and E) and $30 for more peripheral lots. Finally, given the negative impact that parking rate increases may have, it is recommended that some free parking for both short-term and long-term individuals be made available in Lot A and the Courthouse lots. The attractiveness of these more remote parking facilities would increase with the introduction of a shuttle program.

As it is noted that a small number of Ellicott City residents have no dedicated parking spaces and are dependent on the public lots, particularly Lot D, those individuals should be permitted to obtain a resident permit for a specifically designated lot for a modest annual fee depending on the number of residents requesting permits and the number of additional vehicles they wish to register. The map on Exhibit K illustrates the recommended employee/resident parking areas.

The operation of this program would require the issuance of a numbered parking decal or hangtag that the user would be required to display in their front windshield so that a parking enforcement

officer can verify the user and the validity of the vehicle to park in a space designed for this purpose. Valid and invalid permit numbers can be downloaded into the handheld ticket issuance system so that citations can be issued to users who have not paid for the month or are parked illegally.

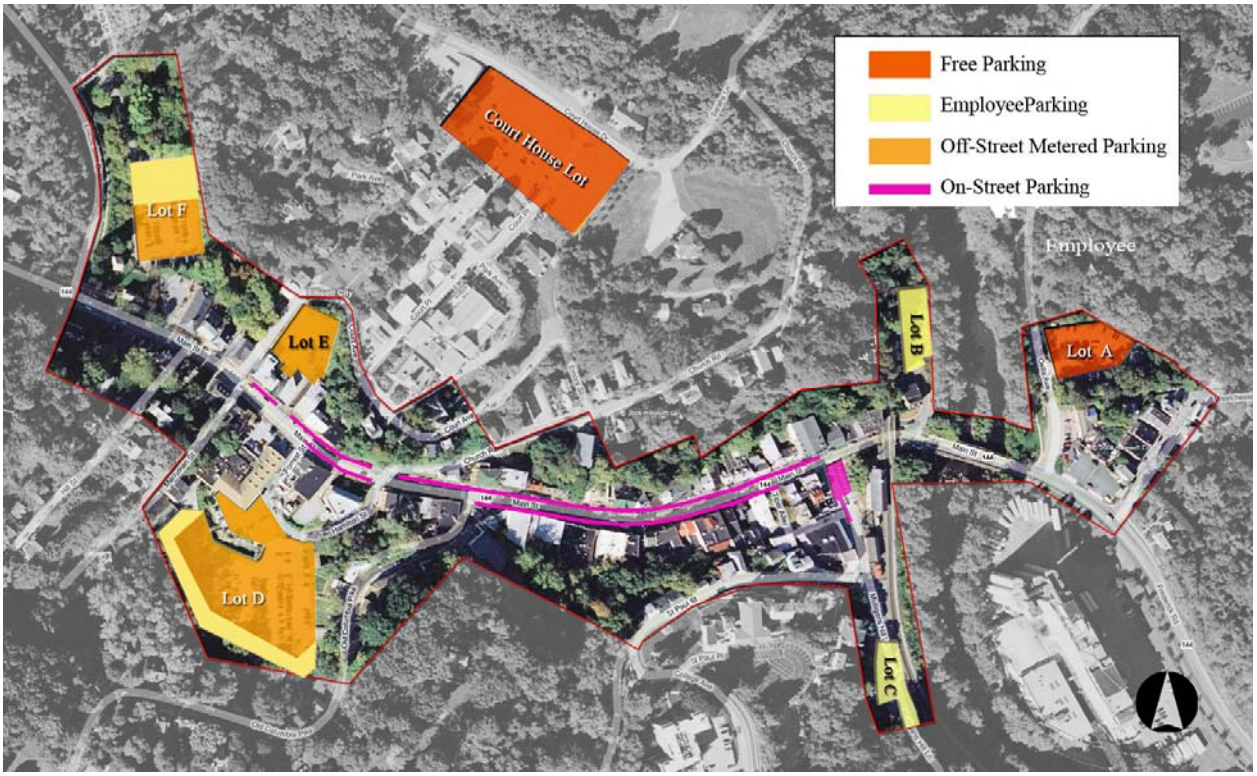
Sample Employee/Resident Parking Decal/Hangtag

Rear View Mirror Hangtag

Windshield Decal

Issuance of this permit would require that the user fill out a form that also identifies the rules and regulations of this program. To obtain a form, a user would be required to either visit the Howard County Finance Department to obtain the permit and pay the appropriate first month's fee or this form could be available online for payment and the decal or hangtag could be sent to the employee. To obtain a permit, proof should be provided that the user is indeed a resident or employee of the downtown area. This can be accomplished by simply providing a drivers license, recent utility bill, a recent pay stub, timecard or business card for a local business. A sample of such a form is included in the Appendix of this report.

Exhibit K – Resident and Employee Parking Areas



Management/Supervision

Based on the size of the parking operation in Ellicott City and the revenues currently generated from this operation, no change in the general management structure is recommended. Presently, on a stand alone basis, revenues generated by the parking program cannot support a larger management structure.

It is, however, recommended that Howard County administers the newly created employee and resident parking program. It is recommended that Howard County administers this program versus the private-sector management firm as this approach allows for continuity in the program should Howard County change its management firm for any reason. It is also strongly recommended that the ability of a PEO officer to void an issued citation be limited to a ticket they themselves may have written in error (i.e. wrong license plate, wrong meter number, etc.). The voiding of any other ticket (i.e. handicapped, etc.) should only occur through a sworn court officer and not a contract employee. Voided tickets should be tracked very closely by Howard County and excessive voiding should be brought to the attention of Serco Management immediately for corrective action. Although the overall condition of the lots is good, restriping of all off-street and on-street spaces is required. Clearly marked spaces assist the public in adhering to posted regulations.

Hours of Meter Operation & Enforcement

With the current level of nightlife found in the study area, demand for parking extends well into the evening hours. This increase in parking demand has surpassed the current posted metered parking hours in the study area, which is currently posted as 10:00 AM until 6:00 PM.

Based on limited on-street inventory, demand for off-street parking options remains high during evening hours since an on-street parking space is almost impossible to obtain. It is also assumed that a good number of vehicles found at on-street locations before and after current posted parking enforcement hours belong to employees of local businesses.

To keep the economic growth in the area consistent, it will be just as important to provide convenient on-street parking spaces during evening hours as it is during normal business hours. In addition to evening hours, Saturday demand for parking is also at a constant level that provides Howard County the opportunity to realize additional revenues through extended enforcement hours.

As parking meters are primarily designed to provide the desired turnover of parking spaces, the need to turnover these spaces on Saturday and Sunday is as important as during the week and weekday evening hours especially since a great deal of spaces are utilized by visitors to the downtown area.

Based on the growing demand for parking during weekday evenings, specifically Thursday and Friday, and on the demand for parking on weekends, as well as the need to keep employees from

using on-street spaces and the conversion of on-street parking to a paid metered program, it is recommended that Ellicott City extend the hours of parking enforcement as follows:

- Monday through Friday – 8:00 AM until 9:00 PM
- Saturday & Sunday – 10:00 AM until 9:00 PM

The change in operational hours and the conversion of on-street parking to a paid program will discourage employees and residents in the study area from monopolizing on-street spaces during these periods and provide the public the perception of easily accessible parking.

As the contract with Serco management expires in June, it is recommended that the extended hours of enforcement and the need for an additional enforcement officer to assist with enforcement efforts due to the conversion to a paid on-street meter program be made as a part of any new Request for Proposal document solicited for the purpose of continuing privatized services.

In addition to extending the hours of operation and enforcement, parking policy must be changed to permit the enforcement of two-hour restrictions under the definition of a parking zone. At present, a vehicle could remain parked on Main Street throughout the day by simply moving their vehicle from one 2-hour space to another. This "jockeying" of vehicles was noted during the weekday and Saturday field surveys and dramatically reduces the efficiency of on-street spaces. To prevent employee's from parking in an on-street space for two hours and moving to a different on-street space every two hours thereafter, the County should adopt an ordinance that prevents this type of activity. If a vehicle is found to be parked in a two-hour space within the Ellicott City zone again during the course of an enforcement day it is issued a warning and then a citation.

6.3 Projected Operational Pro Forma

Based on the recommendations provided for parking program changes off-street and an increase in hours of operation and conversion to a paid parking program on-street, Table 15 illustrates the projected level of expenses and revenues associated with these changes.

Table 15: Estimated Operational Pro forma FY 2010

Expenses		
Management Services	$155,000.00	
Maintenance Contracts	$15,000.00	
Misc. Office Supplies	$5,750.00	
Finance/Cashier/Traffic Salaries	$32,000.00	
Highways Traffic Expenses	$7,500.00	
Total Expenses		$215,250.00
Revenues		
Parking Citations (Management)	$112,170.00	
Late, Non-Sufficient Fund, & Flagging Fees	$32,000.00	
Less: Voids & Uncollectable	($42,000.00)	
Subtotal: Citation Net Revenue	$102,170.00	
Meter & Permit Proceeds	$281,400.00	
Total Revenues		$383,570.00
Operating Profit or Loss		**$168,320.00**
Operating Profit Less Net Citation Revenue		***$66,150.00***

This pro forma estimate does not account for capital costs such as multi-space meter lease or purchase and related installation costs. This budget estimate does account for monthly parking costs associated with the administration of this program or the extension of parking enforcement hours and added staff related to an increase in metered spaces. It is important to note that citation revenue remains constant and may decrease with improvements made to the parking program through increased compliance with program policies. As such, the operating profit less the net citation revenue has also been calculated.

Parking meter revenue projections include newly realized on-street parking revenues, extension of operational hours and the institution of a monthly parking program. Parking meter revenue for FY2010 is estimated as follows:

Off-Street Parking:
492 spaces * 40% occupancy * $1.50 (*avg. stay 3 hrs*) * 1.5 turnover * 360 days = $159,408

On-Street Parking:
102 spaces * 70% occupancy * $1.00 *(avg. stay 1 hr.)* * 4.0 turnover * 360 days = $102,816

Monthly Parking:
20 users * $50 per month * 12 months = $12,000
20 users * $30 per month * 12 months = $7,200

Net parking revenues generated by the parking program in Ellicott City should be set aside by Howard County for the purpose of funding future parking improvements as they arise. Presently, no parking revenues are pledged for this purpose and as a result recommended improvements to the parking program will have to be funded as a capital expense. As Ellicott City flourishes and the need for future parking and shuttle improvements arises, including the possibility of constructing a structured parking facility, the cost of this improvement would normally be passed on to Howard County residents. However, by setting aside net revenues each year for future needs, improvements will be partially, if not wholly, funded through user fees.

For this reason, it is recommended that any surplus parking revenues be transferred to the Howard County Revenue Authority and that the Revenue Authority creates a special fund for this purpose and this purpose alone. It is recommended that the County and Revenue Authority immediately begin discussion regarding the creation of an Ellicott City parking enterprise fund. Naturally, that discussion must include some provision by Howard County to support the parking enterprise fund should revenues not meet annual operating costs.

6.4 Additional Recommendations

Disabled Parking

As with any well-intended program, abuse of the Americans with Disabilities Act (ADA) system has taken place. This is particularly true in Ellicott City and its on-street parking program.

Subjective evidence suggests that between three and five vehicles with ADA placards park all day on Main Street, an area where the current enforced duration is two hours and the recommendation identified the introduction of two-hour metered parking. Therefore, it is presumed that current abuses include relatives of disabled persons illegally using the credentials issued to use convenient disabled spaces or to avoid paying the prevailing parking fees.

Unfortunately, there is no unified approach to address these issues. Different states and municipalities have enacted different methods of controlling this abuse. Several years ago, the State of Florida placed a sunset on all issued disabled credentials and required individuals to reapply for new credentials with updated physician documentation. This action has been somewhat successful as it has helped eliminate some of the disabled credentials obtained fraudulently. Use by family members other than the actual person the disabled credential was originally issued to still occurs. The State of Florida has set their "Handicapped Parking" violation at $250.00 to discourage this and other types of misuse.

The City of Huntsville, Alabama took an aggressive approach to enforcing disabled parking regulations by developing an "Advisory Commission for Handicapped Enforcement" (ACHE). This ten member committee is made up of one member from the City Council, the Parking Director, Parking Division Manager, Parking Inspection Manager, and five members of the community who are disabled or represent the interests of a disabled group. This committee serves in an advisory role and reports problems and concerns to the City's Parking Agency for action. ACHE responsibilities include reporting citizen's complaints regarding abuse of existing disabled spaces as well as reporting non conformity with ADA regulations/requirements by private-sector businesses in the City. This approach is more tactful since the monitoring of the use and supply of these needed spaces is conducted by persons who qualify for these spaces as well. The City of Miami Beach also takes a similar approach and maintains its own citizen's action committee with the same basic responsibilities.

The State of Maryland, like those communities identified above, maintains legislation that allows parking enforcement personnel to verify the validity of handicapped parking credentials of any user that utilizes a properly designated disabled parking stall. Under State of Maryland Transportation Statute §13-6161. (g) (ii), "Any other person authorized by a political subdivision to enforce this section, while acting within the scope of this authority."

By power of this statute, parking enforcement officers who observe the potential misuse of a disabled parking permit may request supporting documentation supplied by the State of Maryland for this purpose. Users who do not have supporting documentation or are not transporting the individual to whom the placard is issued can be written a citation for illegal handicapped parking. If a user of handicapped parking maintains the proper credentials, they are entitled to utilize the same space on a daily basis without fear of a citation.

It is recommended that Ellicott City stakeholders, including representatives from its handicapped community, work with Howard County and parking enforcement personnel in the development of an ADA accommodation and enforcement program. The prevailing parking rates for metered and permit parking should be respected by individuals with disabilities, i.e., no free parking.

However, accommodations for off-street parking should designate the most convenient metered and permit spaces in those lots for handicapped spaces. The program would also identify appropriate procedures in the administration of ADA regulations, including periodic/pre-scheduled requests by the enforcement officers of ADA credentials.

Seasonal Shuttle Operation

A shuttle system currently operates during Christmas week to shuttle employees from the Courthouse Lot to the downtown area. This shuttle system is designed to add inventory to and free up parking in the core area of Ellicott City. This is a creative and relatively low cost approach to adding inventory by utilizing spaces along the periphery of the Ellicott City business district.

As parking demand increases in the business district and occupancy levels increase, it may become necessary to operate this facility for greater periods than just Christmas week. If parking demand in the business district dictates increased levels of utilization in this area, operational periods may have to be extended to manage periods of greater demand until such time as a shuttle system can no longer meet demand. As opposed to the Christmas program which is targeted to shoppers and other visitors, this expanded program would be designed to accommodate employee parking activity. The demand analysis suggests that parking demand peaks during weekday and weekend evenings and is associated with restaurant and bar activity. Therefore, an employee shuttle program to/from a Courthouse intercept lot would need to be funded and would operate presumably on Friday and Saturday nights from 4 PM to 2 AM. Additionally, a full-service shuttle program that operates 16-hours per day, 7-days per week to/from the Courthouse lots and Lot A in Baltimore County could become viable. This service could provide more convenient access to free parking areas for employees and visitors. The cost of either a limited or full-service shuttle program is considerable as the hourly operating cost can range between $50 to $100 per hour depending on public vs. private operations. To offset the cost of this program, net revenues set aside for parking improvements can help fund the program. To entice users to utilize this system, it may require the advertisement of free parking and/or increasing parking rates off-street to provide greater disparity in cost between the Courthouse Lot and business district off-street facilities.

Parking Information and Ellicott City's Website

Today, more and more visitors to any business district begin their trip by first visiting the city's respective website to research parking options and parking rates. The level of attention put into one's website usually correlates to the attention the parking program receives.

In reviewing the online parking information related to Ellicott City, a website was found that provides basic information to the potential visitor. Although the hours of enforcement and parking rates are illustrated, it is difficult to maneuver through the site as it is tied to historic and economic development information.

For this reason, it is recommended that the parking page be recreated to clearly define the responsibility center of each agency involved in parking operations and that the preamble on the top of the page be eliminated - specifically as it relates to finding free on-street parking in the event you are lucky. Although all the pertinent information can be found on this page, it is difficult to maneuver through to quickly find what you are looking for. For this reason, an independent website should be developed for parking that contains links to other sites of interest related to Ellicott City. This page should be created with the involvement of the private-sector management firm, Howard County and Ellicott City business representatives.

Improve communication amongst the Police Department and Revenue Authority

Comments from residents and stakeholders indicated that currently there is not enough communication between the community, enforcement officers and the Finance and Police Departments in terms of awareness of existing codes and ordinances. In order to reach a better level of communication and to resolve problems and concerns regarding parking in downtown, a Parking Advisory Committee (PAC) made up of residents, stakeholders, the Police and Finance Departments, and Serco Management Services should be developed. The PAC should meet with the Howard County Revenue Authority once a month and report problems and concerns that may require action. The Revenue Authority, acting as the executor of the Ellicott City's parking enterprise fund, would then work with the stakeholders and County to research, procure, and otherwise implement shared recommendations.