

Downtown Silver Spring Parking Study

Comprehensive Downtown Parking Supply and Demand Study Update

March 30, 2022 | Final Report

Prepared by:

Kimley»»Horn

Prepared for:



Contents

	Executive Summary.....	1
1	Introduction.....	3
2	Assessment of Existing Conditions	5
2.1	Parking Supply.....	5
2.1.1	Typical Parking Demand.....	6
2.1.2	Parking Surplus/Deficit by Block.....	10
2.2	Land Use Based Parking Demand Model.....	12
2.2.1	Methodology	15
2.2.2	Existing Parking Surplus and Deficit (Scenario A)	16
2.2.3	Existing Land Use-based Parking Summary	18
3	Assessment of Future Conditions.....	19
3.1	Existing Research on Post-Covid Transportation & Parking Forecasts.....	19
3.2	Future Development and Redevelopment Projects.....	20
3.3	Methodology.....	21
3.4	Future Parking Surplus and Deficit (Scenario B).....	21
3.4.1	Future Scenario Parking Demand Summary	23
3.5	Future With 50 Percent Vacancy Reduction Parking Surplus and Deficit (Scenario C).....	23
3.5.1	Future With 50 Percent Vacancy Reduction Scenario Parking Demand Summary	24
4	Conclusion.....	27
4.1	Findings.....	28
4.2	Recommendations.....	28

List of Figures

Figure 1: Silver Spring Study Area	4
Figure 2: Surveyed On- And Off-Street Public And Private Parking Spaces by Block	7
Figure 3: Peak Weekday Public and Private Available On- and Off-Street Surplus/Deficit by Block.....	11
Figure 4: Peak Saturday Public and Private Available On- and Off-Street Surplus/Deficit by Block.....	12
Figure 5: Existing Conditions Weekday Land-Use Based Parking Surplus and Deficits (Scenario A).....	17
Figure 6: Existing Conditions Saturday Land-Use Based Parking Surplus and Deficits (Scenario A).....	18
Figure 7: Proposed Development Map.....	21
Figure 8: Future Conditions Weekday Land-Use Based Parking Surplus and Deficits (Scenario B).....	22
Figure 9: Future Conditions Saturday Land-Use Based Parking Surplus and Deficits (Scenario B)	23
Figure 10: Future Conditions With 50 Percent Less Vacancy Weekday Land-Use Based Parking Surplus and Deficits (Scenario C).....	25
Figure 11: Future Conditions With 50 Percent Less Vacancy Saturday Land-Use Based Parking Surplus and Deficits (Scenario C).....	26

List of Tables

Table 1: Current Inventory of On- and Off-Street Public and Private Parking Spaces by block.....	5
Table 2: Surveyed On- And Off-Street Public And Private Parking Spaces by Block	6
Table 3: Total Occupancy by Block on Weekday.....	8
Table 4: Total Occupancy By block On Saturday	9
Table 5: Total Occupancy By block On Weekday	10
Table 6: Total Occupancy By block On Saturday	10
Table 7: Silver Spring Study Area Specific Weekday Parking Ratio Calibration	13
Table 8: Silver Spring Study Area Specific Saturday Parking Ratio Calibration	13
Table 9: Silver Spring Occupied Land Use Densities	14

Executive Summary

This report provides a general overview of parking habits in the Silver Spring study area and specifically responds to a planned expansion of the United Therapeutics’ Silver Spring research and production campus, located at 1040 Spring Street. The expansion will increase and diversify their land use density, increase their parking supply, and support higher employee numbers. The expansion plans include the take over and closure of the Spring Cameron Garage (Garage 2). This report identifies the existing and future potential future parking demand in the study area and the parking demand that is or would be specifically satisfied by Garage 2, calculates the resulting deficit in parking supply that occurs when Garage 2 is removed, and calculates the amount of replacement parking needed to offset the loss of Garage 2.

Existing parking occupancy findings show that the 1,139 parking spaces in Garage 2 experience peak occupancy of 38 percent on Thursday and 22 percent on Saturday, leaving 710 to 875 parking spaces regularly available for public use. By contrast, in the April 2019 PLD parking study 2019, peak occupancy for this garage was reported as 42 and 40 percent on Thursday and Saturday, respectively. This demonstrates that Covid-19 has had a pronounced impact on the current occupancy of Garage and the overall study area.

Three scenarios were evaluated using the calibrated land use-based parking ratios: existing land use (Scenario A), future land use (Scenario B), and future land use assuming 50 percent less vacancy (Scenario C). If Garage 2 were to remain in place, each scenario would demonstrate a surplus in public parking in the overall study area (of 1,916 in existing conditions, 485 spaces in the future, and of 42 spaces in the future assuming less vacancy). For Zone 3 specifically, where Garage 2 is located, there will be a small surplus (408 spaces) in public parking based on existing demand which then becomes a deficit of parking spaces in the future conditions (of 115 spaces in the future and of 254 spaces in the future assuming less vacancy).

Zone 3 surplus and deficits in parking (rounded to the nearest 50 spaces) without Garage 2 are shown in the Table below. These study area and Zone 3 parking deficits would put stress on the parking system. As such it is useful to identify and amount of replacement parking to offset the loss of Garage 2 while satisfy the anticipated demand. To right-size parking, an assumption was made that 25 to 35 percent of parking deficits in Zone 3 that were previous served by Garage 2 could be served by Garage 60 and Garage 61 in Zone 4. The remaining Zone 3 deficit represents the amount of replacement parking that would be needed.

Scenario Generated Parking Demand	Zone 3 Parking Supply Surplus/Deficit <i>without Garage 2 Supply</i>					
	Full Zone 3 Surplus/Deficit		With 25% of Zone 3 parking deficit absorbed by Zone 4		With 35% of Zone 3 parking deficit absorbed by Zone 4	
	Thursday	Saturday	Thursday	Saturday	Thursday	Saturday
2019 Desman Study* Occupancy Counts	-550	-300	-400	-250	-350	-200
2021 Current Study Occupancy Counts	-450	-350	-350	-250	-300	-200
Scenario A Land Use Existing Parking Demand	-550	-850	-400	-600	-350	-550
Scenario B Land Use Future Parking Demand	-750	-1,000	-550	-750	-500	-650
Scenario C Land Use Future Parking Demand	-750	-1,000	-550	-750	-500	-650

*It is noted that the values in the 2019 DESMAN Study row of the previous table are based on the reported data from that study. MCDOT staff previously identified an error in the data collection conducted during that study which led to an underreporting of occupied spaces. Accordingly which the DESMAN row in the table above reflects the findings of the 2019 study, they are not a useful metric to establish parking surplus and deficits without further correction.

It is noted that the current analysis suggests 750 to 1,000 parking spaces may be needed to satisfy future demands. Despite these values, MCDOT, is committed to managing parking as an overall system within the PLD rather than the needs of a specific garage. To that end, they will pursue strategies that encourage and incentivize people to park in Garage 60 and Garage 61, offsetting a large part of the demand that would have otherwise been satisfied by Garage 2. This reflects a commitment to not just replace parking at a one for one replacement, but to make better and more efficient use of space, funding, and public facilities by right sizing the parking need.

With this understanding and after review of the resulting parking deficits, Kimley-Horn recommends **550 to 750 replacement parking spaces** are needed to offset the removal of Garage 2. This range provides sufficient parking to immediately satisfy existing weekday parking demand without any parking demand being shifted to Zone 4. This range also demonstrates the County's commitment to strategically right-size and manage the future parking supply by pursuing strategies that will allow future Zone 3 parking deficits to be satisfied in our parking locations.

However, given that it will likely take some time for these shifts to occur or for other parking strategies to be implemented, the identified range assures that existing weekday Zone 3 parking can be satisfied entirely within Zone 3. This range would also satisfy future weekday scenarios where Silver Spring is denser and more occupied, though at that time a deliberate strategy to encourage more parking in Zone 4 (Garage 60 and Garage 61) will be necessary, particularly for Saturday parking deficits.

A detailed summary of the analysis and documentation of all assumptions can be found in the main text of the report.

1 Introduction

Kimley-Horn was retained by the Montgomery County Department of Transportation, Division of Parking Management, to conduct an analysis of parking supply and demand in a portion of the Silver Spring Parking Lot District (PLD). The study area for this parking supply and demand study, as illustrated in Figure 1, is bounded by Spring Street, South Noyes Drive, and Cedar Street to the northeast and northwest, Wayne Avenue to the east and southeast, and the MARC/Metro Line tracks to the southwest. The Division of Parking Management currently employs a block numbering system for the blocks located within the PLD. The same block numbering system was used in this study and is consistent with the most recent parking study prepared for the entire PLD (dated April 2019 by MCV Associates, Inc. and DESMAN).

This study provides a general overview of parking habits in the study area and specifically responds to planned changes in the operational footprint of United Therapeutics' Silver Spring research and production campus, located at 1040 Spring Street. United Therapeutics is planning a significant expansion in the study area, which will increase and diversify their land use density, increase their parking supply, and support higher employee numbers. The expansion plans will also impact existing commercial and residential properties that are adjacent to its current campus – including the take over and closure of the Spring Cameron Garage (Garage 2), a loss of 1,139 public parking spaces.

Given Montgomery County's traditional role and responsibility in managing much of the demand for parking in PLDs, it is of great interest to the County to how the loss of Garage 2's parking supply would impact the capability of the study area public parking supply to accommodate parking demand. Such an understanding could lead to revisions to the County's parking and Transportation Demand Management (TDM) strategies as well as the rightsizing of any off-street replacement parking to satisfy actual and anticipated parking demand. It should be noted that the future changes anticipated by United Therapeutics are also layered along with other known, proposed, and potential development to establish a comprehensive vision of future parking supply and demand.

Based on the understanding of background issues, the primary goals of this study were to determine the future parking surplus or deficit at a block, zone, and study area level in the scenario where the Spring Cameron Garage (Garage 2) is no longer available as a public parking location and to identify the amount of replacement parking needed to satisfy any parking deficits resulting from this scenario. Additional tasks that were completed include:

- Identify the influence of Covid-19 on on-street and off-street parking demand in the study area
- Develop a set of land-use based parking ratios that connect development densities (square footage, dwelling units, rooms, etc.) to observed and forecast parking demand
- Determine if there is an existing parking supply surplus or deficit at a block, zone, and study area level with respect to peak period parking demands
- Quantify future parking demand that reflects the continued influence of Covid-19, anticipated study area vacancy changes, and planned future development.
- Determine if there is a future parking supply surplus or deficit at a block, zone, and study area level with respect to forecast peak period parking demands

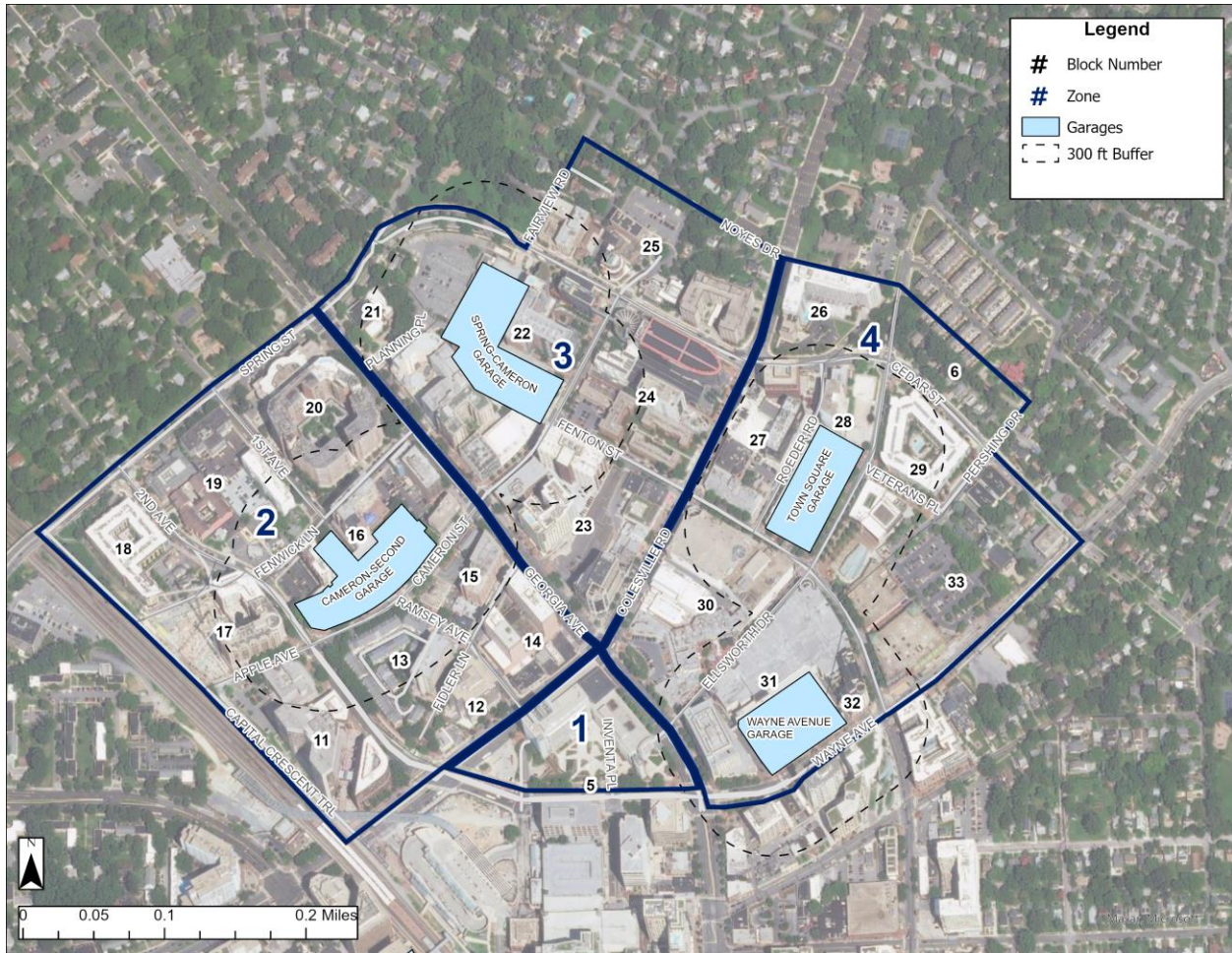


FIGURE 1: SILVER SPRING STUDY AREA

As shown in Figure 1, Georgia Avenue, Colesville Road, and Wayne Avenue serve as major traffic corridors that are not easily crossed by pedestrians and other active transportation users; as such, the availability of parking in one zone may not necessarily be satisfy the demand for parking generated by another zone if people cannot or are unwilling to have to park and then cross one of these major corridors.

Reflecting the impact these significant roadways have as barriers to foot traffic, the study area was segregated into four distinct parking zones.

- Zone 1 is bounded by Wayne Avenue, Colesville Road, and Georgia Avenue and contains no public off-street parking facilities
- Zone 2 is bounded by Georgia Avenue, Spring Street, Colesville Road, and the WMATA Metrorail tracks and contains Garage 7 (located in Block 16 with approximately 1,391 parking spaces)
- Zone 3 is bounded by Georgia Avenue, Spring Street, Colesville Road, and Noyes Drive and contains Garage 2 (located in Block 22 with approximately 1,139 parking spaces).
- Zone 4 is bounded by Georgia Avenue, Colesville Road, and Wayne Avenue and contains Garage 60 (located in Block 31 with 1,711 parking spaced) and Garage 61 (located in Block 28 with approximately 1,293 parking spaces)

2 Assessment of Existing Conditions

Phase I of the study included an analysis of the existing parking supply and demand during a typical weekday and a typical Saturday. Throughout this section and the entire report data and results will be presented at a block, zonal, and study area level. Zone 3 will be spotlighted throughout as it contains Garage 2 and is the parking zone most significantly impacted by United Therapeutics’ planned expansion.

2.1 Parking Supply

The public parking supply in this study area consists of parking spaces in County-owned and operated off-street facilities and managed on-street curbspace. Within the study area, there are a total of 502 on-street parking spaces and 5,534 parking spaces in County lots and garages. There are also approximately 17,979 parking spaces in privately owned/operated off-street garages and lots that directly serve specific users and land uses and are not generally accessible to the public. Table 1 provides a summary of spaces by type and block while Figure 2 illustrates their location.

TABLE 1: CURRENT INVENTORY OF ON- AND OFF-STREET PUBLIC AND PRIVATE PARKING SPACES BY BLOCK

Zone	Block	On-Street	Public Off-Street	Total Public	Total Private	Total Parking Supply
1	5	0	0	0	790	790
4	6	4	0	4	6	10
2	11	0	0	0	500	500
2	12	12	0	12	105	117
2	13	16	0	16	114	130
2	14	26	0	26	334	360
2	15	16	0	16	55	71
2	16	30	1,391	1,421	1,515	2,936
2	17	0	0	0	310	310
2	18	29	0	29	333	362
2	19	47	0	47	256	303
2	20	47	0	47	610	657
3	21	27	0	27	0	27
3	22	21	1,139	1160	2,170	3,330
3	23	33	0	33	673	706
3	24	35	0	35	298	333
3	25	24	0	24	332	356
4	26	6	0	6	237	243
4	27	19	0	19	1,688	1,707
4	28	33	1293	1326	555	1,881
4	29	53	0	53	150	203
4	30	6	0	6	2,625	2,631
4	31	5	1711	1716	3,630	5,346
4	32	0	0	0	450	450
4	33	13	0	13	243	256
Total		502	5,534	6,036	17,979	24,015
Percent of Public		8%	92%	100%	-	-
Percentage of Total		2%	23%	25%	75%	100%

There are 1,279 public parking spaces in Zone 3 (11 percent or 140 parking spaces are on-street and the remaining parking spaces are contained in Garage 2). Lot 2 is located in Zone 3 but is currently under construction. Lastly, there are 3,473 private parking spaces in Zone 3.

2.1.1 Typical Parking Demand

Kimley-Horn in partnership with Penn Parking staff conducted parking demand surveys in all County owned and managed parking facilities and curbside areas and in a few publicly accessible private facilities within the study area. This data was gathered on Thursday, September 16th, 2021 between 10:00 AM and 9:00 PM and Saturday, September 18th, 2021 between 11:00 AM and 10:00 PM, as approved by County staff. The purposes of this data collection effort were to establish the current “typical” parking demand (occupancy and utilization percentages) for the various facilities within the study area and to identify the peak periods of parking demand. The data was also used to develop land use-based parking demand ratios (as discussed in subsequent sections of this report).

The surveyed parking areas are shown in Table 2 and Figure 2.

TABLE 2: SURVEYED ON- AND OFF-STREET PUBLIC AND PRIVATE PARKING SPACES BY BLOCK

Zone	Block	On-Street Spaces	Off-Street Public Spaces	Total Public Spaces	Off-Street Private (Accessible)	Off-Street Private (Restricted)	Total
1	5	0	0	0	0	0	0
4	6	4	0	4	0	0	4
2	11	0	0	0	443	40	483
2	12	12	0	12	0	0	12
2	13	16	0	16	0	0	16
2	14	26	0	26	0	0	26
2	15	16	0	16	0	0	16
2	16	30	1,391	1,421	64	35	1,520
2	17	0	0	0	0	0	0
2	18	29	0	29	0	0	29
2	19	47	0	47	0	158	205
2	20	47	0	47	194	0	241
3	21	27	0	27	0	0	27
3	22	21	1,139	1,160	0	0	1,160
3	23	33	0	33	0	126	159
3	24	35	0	35	0	39	74
3	25	24	0	24	0	0	24
4	26	6	0	6	47	0	53
4	27	19	0	19	21	0	40
4	28	33	1,293	1,326	0	0	1,326
4	29	53	0	53	0	0	53
4	30	6	0	6	0	0	6
4	31	5	1,711	1,716	0	0	1,716
4	32	0	0	0	0	0	0
4	33	13	0	13	262	28	303
Total		502	5,534	6,036	1,031	426	7,493
Surveyed Percent of Total Supply		100%	100%	100%	6%	2%	31%

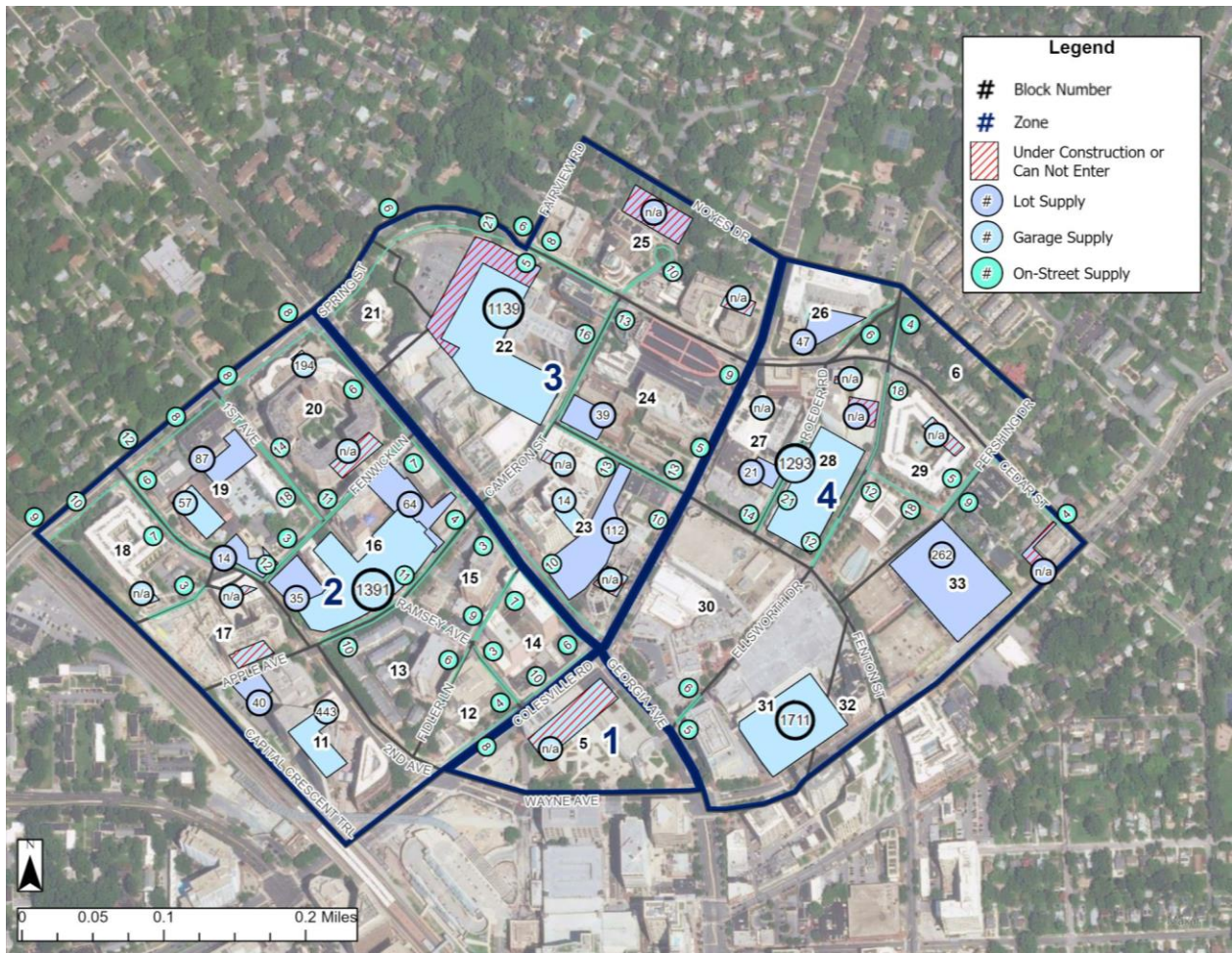


FIGURE 2: SURVEYED ON- AND OFF-STREET PUBLIC AND PRIVATE PARKING SPACES BY BLOCK

Table 3 summarizes the weekday parking demand survey results by block while Table 4 summarizes the results of the Saturday parking demand surveys. In the overall study area, the peak parking occupancy and utilization of the study area occurred during the 1:00 PM to 3:00 PM survey period on a typical observed weekday with a total of 2,917 (39 percent) parking spaces occupied and during the 8:00 PM to 10:00 PM period on a typical Saturday when 2,704 (36 percent) parking spaces were occupied.

Off-street and on-street parking occupancy differed from block-to-block, based on the types of land uses found within each block. In the overall study area, during the peak periods, off-street spaces experienced utilizations of 2,602 (37 percent) on Thursday and of 2,310 (33 percent) on Saturday. In the overall study area, during the peak periods, on-street spaces experienced utilizations of 315 (63 percent) on Thursday and of 394 (78 percent) on Saturday. Specific data tables for on- and off-street facilities are provided in Table A-1 to Table A-16 of the Appendix.

TABLE 3: TOTAL OCCUPANCY BY BLOCK ON WEEKDAY

Zone	Block #	Demand Occupancy			
		10:00 AM - 12:00 PM	1:00 PM - 3:00 PM	4:00 PM - 6:00 PM	7:00 PM - 9:00 PM
1	5	0 n/a	0 n/a	0 n/a	0 n/a
4	6	2 50.0%	1 25.0%	1 25.0%	2 50.0%
2	11	152 31.5%	154 31.9%	101 20.9%	6 1.2%
2	12	10 83.3%	8 66.7%	1 8.3%	5 41.7%
2	13	14 87.5%	15 93.8%	12 75.0%	14 87.5%
2	14	18 69.2%	14 53.8%	11 42.3%	13 50.0%
2	15	13 81.3%	11 68.8%	11 68.8%	10 62.5%
2	16	114 7.5%	714 47.0%	616 40.5%	319 21.0%
2	17	0 n/a	0 n/a	0 n/a	0 n/a
2	18	15 51.7%	13 44.8%	18 62.1%	17 58.6%
2	19	78 38.0%	72 35.1%	64 31.2%	48 23.4%
2	20	80 33.2%	80 33.2%	72 29.9%	41 17.0%
3	21	6 22.2%	7 25.9%	8 29.6%	4 14.8%
3	22	444 38.3%	404 34.8%	323 27.8%	262 22.6%
3	23	76 47.8%	85 53.5%	62 39.0%	55 34.6%
3	24	62 83.8%	55 74.3%	50 67.6%	59 79.7%
3	25	16 66.7%	10 41.7%	7 29.2%	9 37.5%
4	26	26 49.1%	28 52.8%	19 35.8%	11 20.8%
4	27	20 50.0%	28 70.0%	28 70.0%	17 42.5%
4	28	430 32.4%	443 33.4%	431 32.5%	432 32.6%
4	29	17 32.1%	27 50.9%	12 22.6%	19 35.8%
4	30	4 66.7%	6 100.0%	5 83.3%	6 100.0%
4	31	4 0.2%	458 26.7%	418 24.4%	357 20.8%
4	32	0 n/a	0 n/a	0 n/a	0 n/a
4	33	216 71.3%	284 93.7%	185 61.1%	189 62.4%
Total		1,817 24%	2,917 39%	2,455 33%	1,895 25%

TABLE 4: TOTAL OCCUPANCY BY BLOCK ON SATURDAY

Zone	Block #	Demand Occupancy			
		10:00 AM - 12:00 PM	1:00 PM - 3:00 PM	4:00 PM - 6:00 PM	7:00 PM - 9:00 PM
1	5	0 n/a	0 n/a	0 n/a	0 n/a
4	6	4 100.0%	4 100.0%	4 100.0%	4 100.0%
2	11	1 0.2%	1 0.2%	1 0.2%	1 0.2%
2	12	5 41.7%	7 58.3%	9 75.0%	9 75.0%
2	13	13 81.3%	13 81.3%	16 100.0%	13 81.3%
2	14	18 69.2%	21 80.8%	16 61.5%	19 73.1%
2	15	14 87.5%	15 93.8%	14 87.5%	15 93.8%
2	16	432 28.4%	404 26.6%	448 29.5%	502 33.0%
2	17	0 n/a	0 n/a	0 n/a	0 n/a
2	18	19 65.5%	16 55.2%	14 48.3%	20 69.0%
2	19	55 26.8%	48 23.4%	43 21.0%	45 22.0%
2	20	44 18.3%	38 15.8%	37 15.4%	41 17.0%
3	21	5 18.5%	2 7.4%	2 7.4%	1 3.7%
3	22	217 18.7%	189 16.3%	173 14.9%	271 23.4%
3	23	57 35.8%	54 34.0%	64 40.3%	68 42.8%
3	24	63 85.1%	57 77.0%	58 78.4%	61 82.4%
3	25	19 79.2%	17 70.8%	15 62.5%	20 83.3%
4	26	6 11.3%	7 13.2%	6 11.3%	9 17.0%
4	27	21 52.5%	25 62.5%	21 52.5%	23 57.5%
4	28	620 46.8%	729 55.0%	723 54.5%	732 55.2%
4	29	24 45.3%	28 52.8%	29 54.7%	39 73.6%
4	30	5 83.3%	6 100.0%	6 100.0%	4 66.7%
4	31	534 31.1%	595 34.7%	590 34.4%	646 37.6%
4	32	0 n/a	0 n/a	0 n/a	0 n/a
4	33	275 90.8%	255 84.2%	260 85.8%	161 53.1%
Total		2,451 33%	2,531 34%	2,549 34%	2,704 36%

Table 5 and Table 6 show the parking demand and utilization in Montgomery County parking garages for Thursday and Saturday, respectively. Garage 2 in Zone 3 experiences peak occupancy of 38 percent on Thursday and 22 percent on Saturday. This leaves 710 to 875 parking spaces regularly available for public use. By contrast, in the April 2019 PLD parking study, peak occupancy for this garage was reported as 42 and 40 percent on Thursday and Saturday, respectively. This demonstrates that Covid-19 has had a pronounced impact on the occupancy of Garage 2 (in addition to the impacts on the overall study area).

TABLE 5: TOTAL OCCUPANCY BY BLOCK ON WEEKDAY

Zone	Block #	Demand Occupancy			
		10:00 AM - 12:00 PM	1:00 PM - 3:00 PM	4:00 PM - 6:00 PM	7:00 PM - 9:00 PM
2	16 (Garage 7)	n/a n/a	603 43.0	528 38.0	251 18.0%
3	22 (Garage 2)	429 38.0%	396 35.0%	310 27.0%	244 21.0%
4	28 (Garage 61)	411 32.0%	421 33.0%	404 31.0%	413 32.0%
4	31 (Garage 60)	n/a n/a	454 27.0%	414 24.0%	352 21.0%
Total		804 35%	1,874 34%	1,656 30%	1,260 32%

TABLE 6: TOTAL OCCUPANCY BY BLOCK ON SATURDAY

Zone	Block #	Demand Occupancy			
		10:00 AM - 12:00 PM	1:00 PM - 3:00 PM	4:00 PM - 6:00 PM	7:00 PM - 9:00 PM
2	16 (Garage 7)	360 26.0%	330 24.0	384 28.0	444 32.0%
3	22 (Garage 2)	204 18.0%	178 16.0%	155 14.0%	254 22.0%
4	28 (Garage 61)	592 46.0%	697 54.0%	690 53.0%	699 54.0%
4	31 (Garage 60)	531 31.0%	592 35.0%	587 34.0%	643 38.0%
Total		1,687 30%	1,797 32%	1,816 33%	2040 37%

2.1.2 Parking Surplus/Deficit by Block

To accurately assess the stress on the parking system in relation to parking demand, the concept of practical capacity needs to be discussed. The level of utilization within a facility, block or study area may reach a point where potential parkers become frustrated when trying to locate an available space and they perceive the facility as full. For the purposes of this study, a practical capacity factor of 90% was used to analyze the parking conditions in the study area. For example, if a one hundred space parking lot has ninety-five parked vehicles during the peak hour, then a practical deficit of five spaces would exist.

Table A-17 and Table A-18 of the Appendix illustrates the practical parking surpluses/deficits on a typical weekday and Saturday. On a typical Thursday, considering only those parking facilities that were publicly accessible, there is a practical surplus of 137 on-street spaces and 3,690 off-street spaces (3,827 total) in the study area. This means that 54 percent of spaces are available during peak weekday conditions. On a typical Saturday, there is a practical surplus of 58 on-street spaces and 3,982 off-street spaces (4,404 total) in the study area. This means that 74 percent of spaces are available during peak Saturday conditions. Specific to Zone 3, there is a parking surplus of 739 and 879 parking spaces for Thursday and Saturday, respectively.

Figure 3 and Figure 4 further illustrate the current surplus/deficit conditions by color coding based on the amount of surplus or deficit within each block. Green indicates that the block is experiencing a surplus of parking and red indicates that the block is experiencing a deficit of parking. The lighter shade of green represents blocks with a surplus of less than 50 spaces during the peak period and the darker shade represents blocks with 500 or more spaces available during the peak period. The lighter shade of red represents blocks with a deficit of less than 50 spaces during the peak period and the darker shade represents blocks with a deficit of 500 or more spaces during the peak period.

It is apparent that blocks with a county operated off-street facility have a surplus of publicly available parking. The blocks with the parking garages offer the largest surplus, especially on weekends as the parking garages in the study area go largely underutilized outside of normal weekday business hours. This is particularly heightened as the region continues to respond to the ongoing COVID-19 public health emergency, which has reduced the levels of non-essential travel, commuting, and parking.

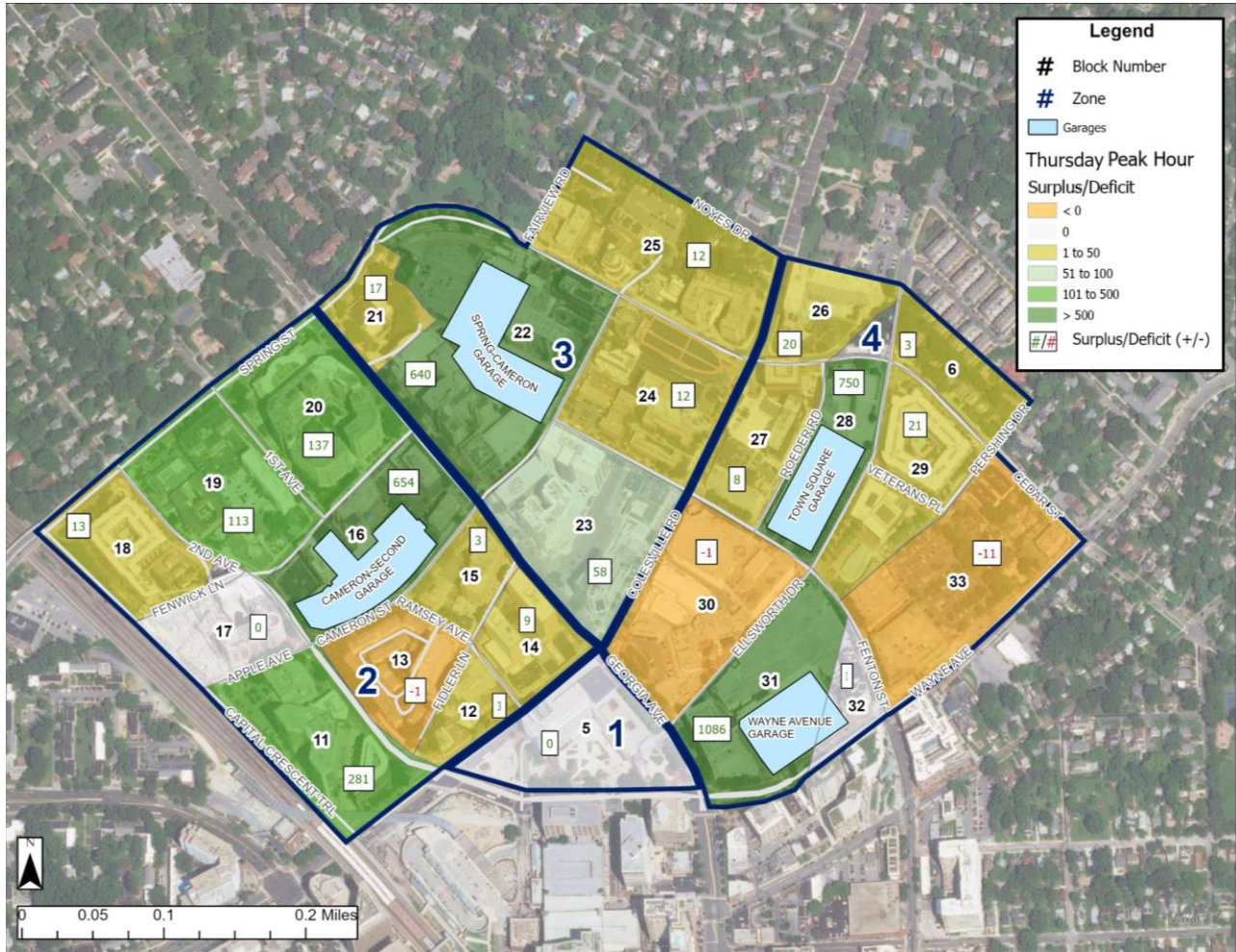


FIGURE 3: PEAK WEEKDAY PUBLIC AND PRIVATE AVAILABLE ON- AND OFF-STREET SURPLUS/DEFICIT BY BLOCK

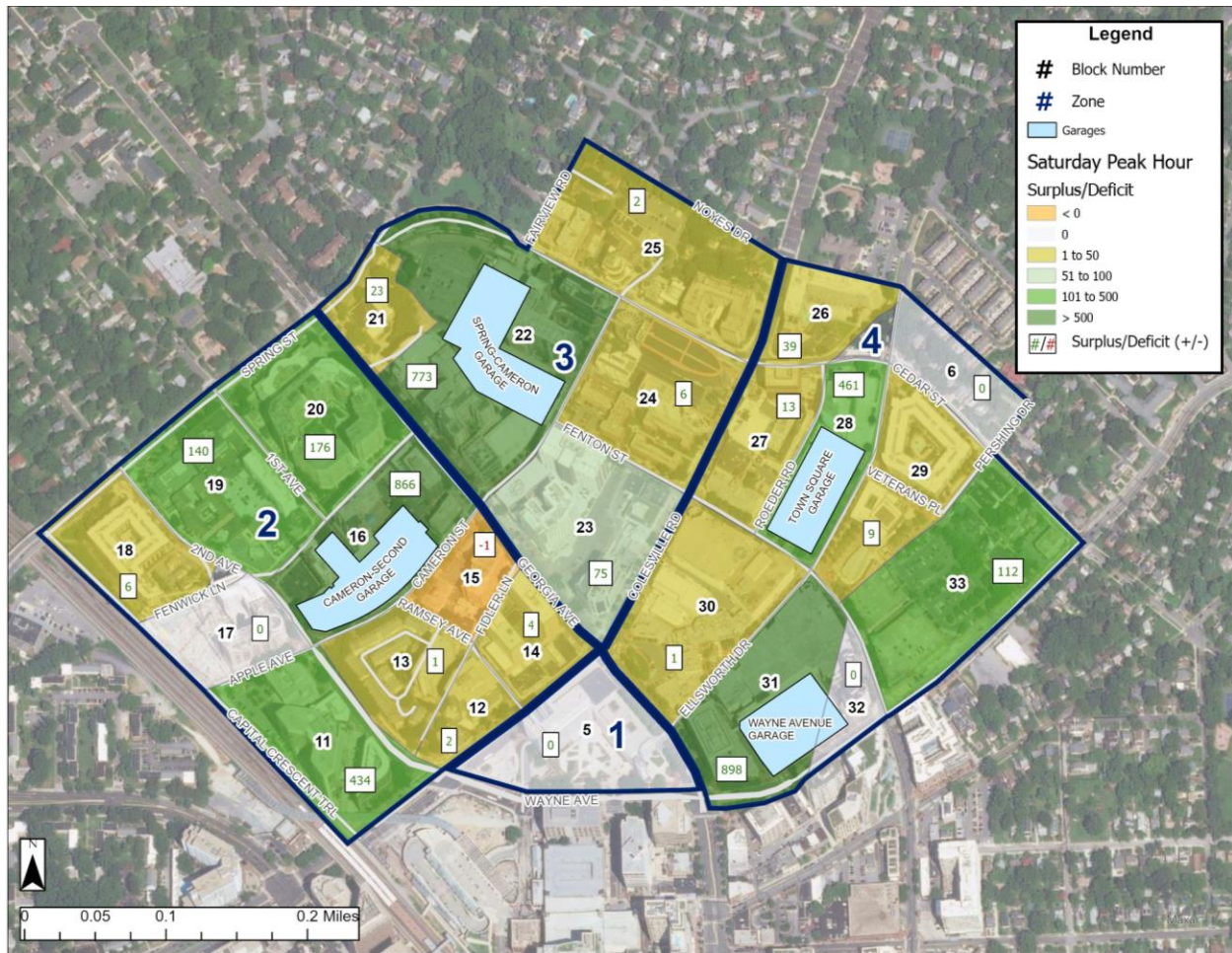


FIGURE 4: PEAK SATURDAY PUBLIC AND PRIVATE AVAILABLE ON- AND OFF-STREET SURPLUS/DEFICIT BY BLOCK

2.2 Land Use Based Parking Demand Model

The preceding analyses provided a snapshot of the study area parking demand based on a limited set of data. To assess the adequacy of the total amount of parking within the study area and related to the specific existing land uses, the concept of parking demand factors needs to be introduced.

Land use-based 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 (office, retail, residential, etc.), the weekday and weekend parking activity associated with those developments can be estimated. Kimley-Horn compiled and summarized the land use data for each block as provided by the County through its CoStar commercial real estate database.

Kimley-Horn summarized land uses as either office, commercial (including both retail and restaurants), live theatre, residential, hotel, and health club. It is recognized that there are many specific land use types within these general groupings, however the groupings allow for the development of parking ratios which reflect the mix of parking demand and travel behaviors that is satisfied within the study area.

Based on this summarization and the peak peaking observed for each block, Kimley-Horn developed, and calibrated land-use based parking ratios for a typical weekday and Saturday in Silver Spring. The calibrated

parking ratios are shown in Table 7 and Table 8. For example, for each occupied 1,000 SF of commercial space within the study area today, roughly 1.22 parking spaces would be needed during the typical weekday peak period to satisfy the parking demand generated by this land use.

These ratios, however, are below those currently published by the Urban Land Institute and the Institute of Transportation Engineers. This suggests that although the intensity of existing office, residential, retail, and restaurant land use activity in the Silver Spring study area is the same as what may be experienced in other town center environments, the proximity and ease of access to public transportation results in a lower parking demand ratio. These additional factors of auto use and internal capture or synergy, which considers patrons visiting multiple land uses, are considered to determine the appropriate ratio for parking needs in Silver Spring. The auto use and synergy factors originate from the April 2019 PLD study and have been used in this current report for consistency with past analyses. It is noted that the specific impacts of the Covid-19 public health emergency have contributed to the uniquely calibrated parking ratios shown below.

TABLE 7: SILVER SPRING STUDY AREA SPECIFIC WEEKDAY PARKING RATIO CALIBRATION

Land Use Category	Silver Spring Specific Weekday Parking Ratios					
	Unit	ITE or ULI Parking Ratio	Auto Use	Internal Capture / Synergy	Base Parking Ratio (April 2019)	Calibrated Parking Ratio (September 2021)
Retail	Per 1k	2.90	70%	40%	1.22	1.45
Restaurant	gsf	13.60	70%	40%	5.71	
Residential	Per dwelling unit	1.15	100%	0%	1.15	1.3
Hotel	Per room	1.0	90%	10%	.81	0.4
Office	Per 1k	2.60	65%	10%	1.52	1.2
Health Club	gsf	6.60	75%	5%	4.70	4.7
Live Theater	Per seat	0.38	65%	2%	.24	0.1

TABLE 8: SILVER SPRING STUDY AREA SPECIFIC SATURDAY PARKING RATIO CALIBRATION

Land Use Category	Silver Spring Specific Saturday Parking Ratios					
	Unit	ULI Parking Ratio	Auto Use	Internal Capture / Synergy	Base Parking Ratio (April 2019)	Calibrated Parking Ratio (September 2021)
Retail	Per 1k	3.20	90%	30%	2.02	2.95
Restaurant	gsf	14.30	85%	30%	8.51	
Residential	Per dwelling unit	1.30	90%	2%	1.15	1.3
Hotel	Per room	0.90	90%	15%	0.69	0.6
Office	Per 1k	0.26	40%	5%	0.10	0.11
Health Club	gsf	5.50	85%	5%	4.44	4.4
Live Theater	Per seat	0.38	95%	2%	.34	0.3

Table 9 illustrates the total occupied square footage of each land use category by block as provided by the County through its CoStar commercial real estate database. Note that this initial analysis focuses on occupied property (i.e. it excludes vacant uses as they do not generate any parking demand). For context, the study area has an office vacancy of 16.6 percent, a commercial vacancy of 4.1 percent, and a residential vacancy of 7.5 percent.

Further, because the current and future United Therapeutics land use and parking activity is of special interest to the County, those land uses have been specifically broken out from the office square footage and in turn do not have land-use based parking ratio (as discussed subsequently).

TABLE 9: SILVER SPRING OCCUPIED LAND USE DENSITIES

Zone	Block #	Land Use Type and Density/Units					
		Office (gsf)	Commercial (gsf)	Residential (units)	Theater (seats)	Hotel (rooms)	United Therapeutics (gsf)
1	5	555,346	0	0	0	0	0
4	6	3,956	0	0	0	0	0
2	11	543,903	0	0	0	0	0
2	12	136,946	3,840	0	0	0	0
2	13	0	2,553	147	0	0	0
2	14	19,000	13,521	331	0	0	0
2	15	140,000	30,450	0	0	0	0
2	16	133,270	9,660	306	0	0	0
2	17	0	0	865	0	0	0
2	18	6,250	0	282	0	0	0
2	19	137,166	0	105	0	0	0
2	20	79,881	16,848	891	0	0	0
3	21	0	0	0	0	0	0
3	22	308,589	48,422	457	0	229	101,692
3	23	388,829	33,697	406	2,000	0	0
3	24	0	0	125	0	239	50,000
3	25	97,716	0	264	0	0	72,794
4	26	16,390	0	253	0	0	0
4	27	251,188	1,551	0	0	541	0
4	28	67,170	0	94	0	0	0
4	29	0	0	212	0	0	0
4	30	87,340	399,032	0	0	0	0
4	31	0	425,030	0	0	0	0
4	32	176,107	0	0	0	221	0
4	33	61,577	85,491	0	0	0	0
Total		3,210,624	1,070,095	4,738	2,000	1,230	224,486

There are 3,210,624 square feet of occupied office space within the study area (excluding United Therapeutics). Considering a parking ratio of 1.2, the office land use generates a demand for 3,854 parking spaces during a weekday peak period at 1:00 PM based on the total amount of square feet. The peak demand generated by 4,738 residential dwelling units at 1:00 PM on the weekday was calculated at 6,161 spaces, using an adjusted ratio of 1.3 spaces per unit. It is noted that during the Covid-19 public health emergency there is a higher than typical remote work trend. This results in a residential parking demand ratio that is higher and an office parking demand ratio that is lower than previous analysis years.

2.2.1 Methodology

The methodology to determine parking surplus or deficit by block, zone, and total study area is as follows:

- Multiply the parking ratios in Table 8 and Table 9 by the land use densities in Table 10 to result in preliminary land use-based parking demand
- Remove the parking supply associated with Garage 2
- Compare the calculated land-use based parking demand to effective parking supply (total parking supply without Garage 2 multiplied by 0.90) to result in preliminary parking surpluses and deficits.
- Develop public and private components of parking demand based on table below:

Assumed Amount of Parking Demand satisfied by Public Versus Private facilities						
Supply	Office	Commercial	Residential	Theater	Hotel	Health Club
Public	0.25	0.6	0.1	1	0.1	0
Private	0.75	0.4	0.9	0	0.9	1

- At a Zonal level, compare the private parking demand to the private parking supply. If there is a deficit in private parking supply, convert 85 percent of that deficit to be additional public parking demand (i.e., it is assumed that 85 percent of unmet private parking demand will become public parking demand and 15 percent will be met by other means [TDM, transit, rideshare, etc.])
- Compare the adjusted public demand to the effective public supply to result in adjusted public parking surplus/deficits
- Using the assumption that Garage 60 and Garage 61 can attract 25 to 35 percent of any parking deficit in Zone 3, calculate the final remaining deficit in Zone 3. This represents the amount of replacement parking needed to offset the loss of Garage 2.

It is noted that United Therapeutics parking supply and demand is excluded from the preceding methodology. United Therapeutics conducted its own analysis of existing parking supply and employee-based parking demand for its facilities and found a peak parking demand of 113 spaces that are accommodated within its total supply of 199 parking spaces. The parking surplus of 86 spaces is not available for public use and is thus not considered in the analysis.

Three land use scenarios were developed to demonstrate the impacts of the removal of Garage 2: existing conditions (Scenario A), future conditions including planned development in the study area (Scenario B), and future conditions including planned development and reduced study area vacancy rates (Scenario C). The future conditions scenarios are described in Chapter 3 of this report. Two parking model spreadsheets have been prepared as supplemental attachments to this report, documenting the parking demand, surplus, and deficits of each of the three scenarios. One spreadsheet considered the situation where Garage 2 remains in the parking supply and other spreadsheet considers the situation where Garage 2 is removed

from the parking supply. For the remainder of this report, however, only the results where Garage 2 is removed are specifically detailed.

2.2.2 Existing Parking Surplus and Deficit (Scenario A)

Overall, considering both private and public parking demand, there is a weekday parking demand of 12,259 parking spaces and a Saturday demand of 11,009 parking spaces in the study area. Without Garage 2, this represents a study area surplus of 8,328 and 9,578 parking spaces during the weekday and Saturday, respectively. 80 and 88 percent of this surplus is in private parking facilities (for weekday and Saturday, respectively) and cannot be relied upon to satisfy public parking demand.

At the Zonal level, on a weekday, there is a surplus of 45 spaces in Zone 1, of 162 parking spaces in Zone 3, and 8,305 spaces in Zone 4. Zone 2 has a deficit of 184 spaces. At the Zonal level, on a Saturday, there is a surplus of 650 spaces in Zone 1, 1,006 spaces in Zone 2, 413 spaces in Zone 3, and 7,509 spaces in Zone 4.

Considering only public parking demand and supply within the study area, there is an adjusted public surplus of 1,674 spaces on a weekday and 1,135 spaces on a Saturday. Zone 3 is operating at a deficit of 566 spaces on a weekday and deficit of 832 spaces on Saturday. If Garage 60 and Garage 61 in Zone 4 can attract 25 to 35 percent of the Zone 3 parking deficit, the amount of replacement parking needed to satisfy the remaining Zone 3 parking deficit is 368 to 424 parking spaces on a weekday and 541 to 624 parking spaces on Saturday.

Figure 5 and Figure 6 illustrate the total land use-based parking surplus/deficit by block for each daily demand scenario and conform to the color code scheme introduced earlier in this report. Zonal callouts reflect both the total and the adjusted public demand and supply surplus/deficits.

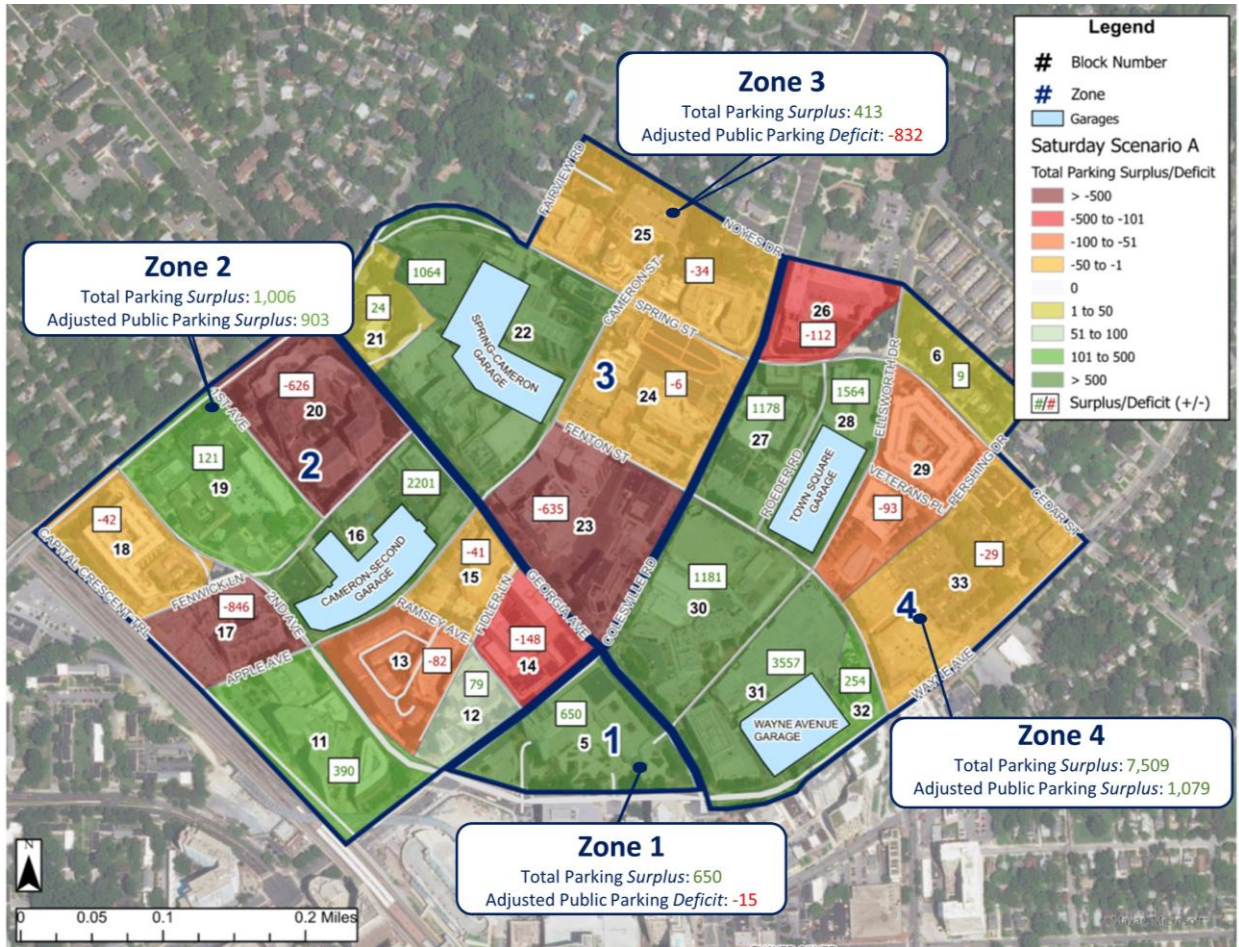


FIGURE 5: EXISTING CONDITIONS WEEKDAY LAND-USE BASED PARKING SURPLUS AND DEFICITS (SCENARIO A)

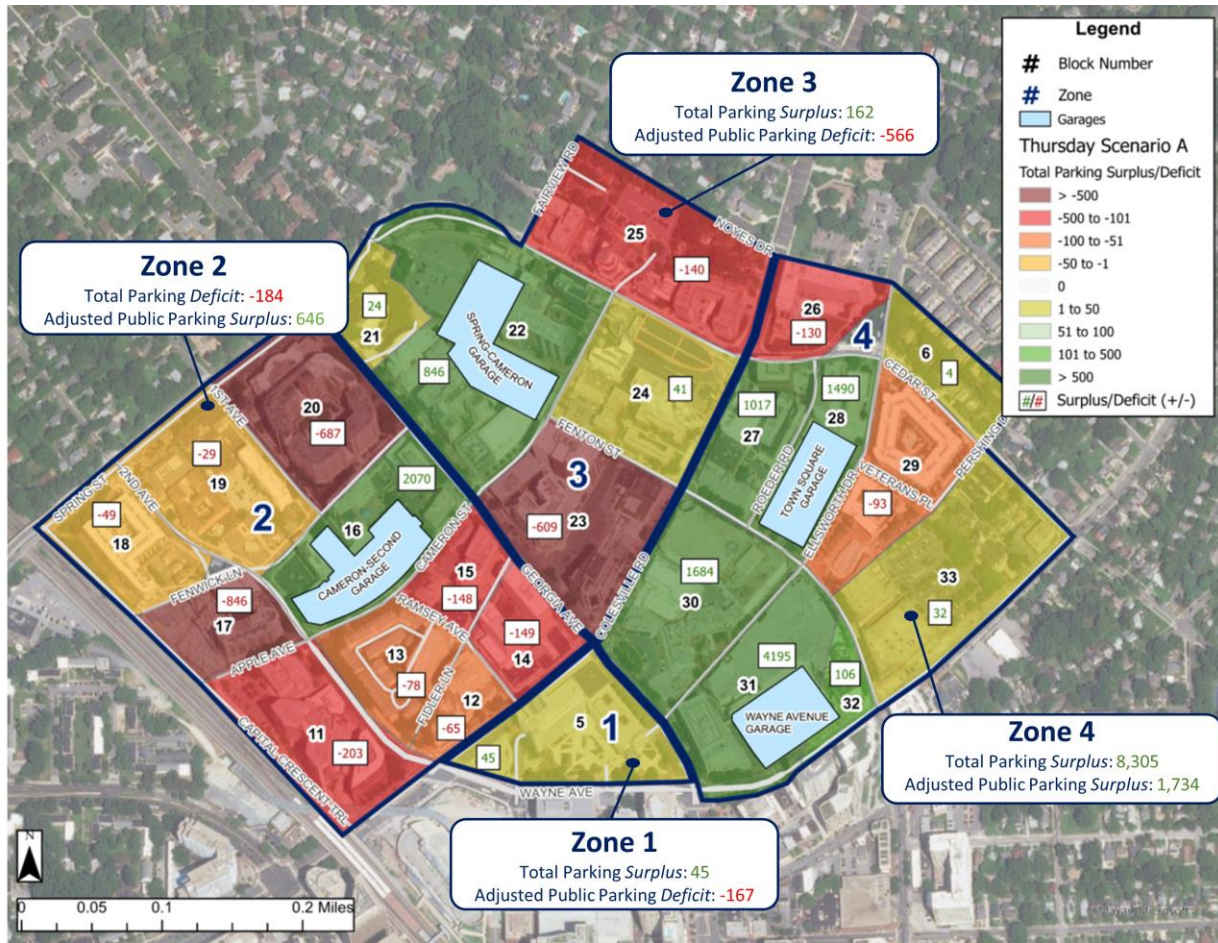


FIGURE 6: EXISTING CONDITIONS SATURDAY LAND-USE BASED PARKING SURPLUS AND DEFICITS (SCENARIO A)

2.2.3 Existing Land Use-based Parking Summary

The analysis of existing conditions demonstrates that there is a significant study area parking surplus, however much of it is locked away in private parking facilities. This results in public parking deficits in Zone 2 and Zone 4 during the weekday. It is unlikely that the 1,647-space public parking surplus (contained entirely in Zone 2 and Zone 4) would be able to satisfy the demand for parking in the other Zones. As stated previously, the significant study area roads can act as a barrier to foot traffic and the typical behavior and desire for study area visitors is to be able to park as closely as possible to their end destination. Given the scenario where Garage 2 is removed from the parking supply, there will be a need to replace 368 to 624 parking spaces to satisfy existing parking demands.

3 Assessment of Future Conditions

The assessment of future conditions considers the continuing impacts of Covid-19, the densification of Silver Spring as more development comes online, and the potential reduction of study area vacancies. Each of the factors impacts the amount of parking demand generated in the study area.

3.1 Existing Research on Post-Covid Transportation & Parking Forecasts

It is apparent that the ongoing Covid-19 public health emergency has affected travel and parking behavior across the nation, region, and County. Some anecdotal parking observations are provided below.

- Spothero.com reported in 2020 that the parking industry saw parking volumes in many areas fall by up to 97%, resulting in job losses and furloughs for 50% of the industry's workforce. Commuter lots had a 50% to 70% reduction in use, while visitor lots saw up to a 95% drop from the same time the previous year.¹
- With the increase in demand for take-out food, municipalities are converting curbside space to free, short-term parking for restaurant take-out. It is anticipated that the increase in curbside pick-up will continue after quarantine. It is important to think about curb management, access to the curb, and being flexible with the curb. [The industry] will need to consider how curb management is performed and how we can support local businesses in the long run.³
- "Telecommuting could also become the new normal for a lot of businesses, which could cause a disruption in the long-term demand and revenue for public parking. Transit ridership was already seeing a decrease in activity from rideshare services, but now people are going to be concerned about using transit and being in condensed areas with groups of people. A potential reduction in transit ridership will hurt funding of planned improvements and transit services. People will look for alternative transportation modes including driving, which could increase parking demand in some communities.²
- Starting in March 2020 the transportation impact of COVID-19 lockdowns was significant, as most activity was largely curtailed to slow the spread of the virus. Vehicle travel in the U.S. by April 2020 was 40 percent lower than in April 2019, but by October 2020 had rebounded to nine percent lower than October 2019. By March 2021, vehicle travel in the U.S. had returned to just three percent below the level of travel in March 2019 (the most recent March not impacted by the COVID-19 pandemic).³
- March 2021 survey by PricewaterhouseCoopers found that 83 percent of employers and 71 percent of employees found remote work had been a success. Moving forward, 68 percent of employers said that they think having employees in the office three days a week is needed to maintain a strong culture, while 54 percent of employees said they wanted to continue to work from home post-COVID-19.³

Two trends are apparent: Daytime peak travel and parking activity is lower as employers are offering remote and alternate work schedules. Daily traffic levels have rebounded, somewhat, while peak period

¹ <https://www.naiop.org/en/Research-and-Publications/Magazine/2021/Spring-2021/Business-Trends/COVID-19-Creates-a-Downshift-in-Parking-Demand>

² <https://www.kimley-horn.com/curbing-covid19-parking-impact/>

³ https://tripnet.org/wp-content/uploads/2021/05/TRIP_COVID_19_Transportation_Impact_Report_May_2021.pdf

trips are still lower than pre-Covid-19 conditions; trips are being spread out over more hours than the traditional peak periods of travel. Both factors influence the observed and anticipated parking within the Silver Spring study area. For the purposes of this analysis, the calibrated parking demand ratios are carried forward and applied to the future land uses assuming that the current parking scenarios represent a new normal of increase work from home, flexible schedules, and on-demand food delivery.

3.2 Future Development and Redevelopment Projects

Field surveys of parking utilization cannot by themselves determine if or when Silver Spring has an overabundance of parking spaces. The need for parking is generated by occupied and vibrant commercial, institutional, and residential buildings and without an understanding of land use activity an analysis of parking need is incomplete.

Future development and redevelopment projects will have an impact on the demand for and availability of parking. To quantify possible future changes in the supply of and demand for parking, Montgomery County staff provided information regarding known, proposed and/or potential developments within the Silver Spring study area. The information provided included the location, size, and proposed uses of the projects as well as the number of available parking spaces within each development as shown below:

- Guardian Building (location 2): Convert an existing office building into a mixed-use project consisting of 142,083 SF of residential (up to 176 dwelling units) and 7,827 SF of non-residential uses. Proposal includes providing no parking spaces on-site.
- 8600 Georgia Avenue (Location 5): Demolish an existing gas station and improve site with a 173-room hotel and 4,206 SF of retail uses. Providing up to 28 parking spaces.
- 8787 Georgia Avenue (Location 6): Demolish existing government office & parking lot and improve site with up to 413,821 SF of residential (up to 400 dwelling units) and 32,000 SF of non-residential retail uses. Providing 426 parking spaces.
- United Therapeutics 1000 Spring Street (Location 7) Proposing renovation of first floor of building to replace 11,000 SF of office and retail with daycare facility use. No changes to parking.
- Elizabeth Square (Location 8) Addition to existing property including 436 new dwelling units, up to 5,451 of non-residential uses and 137,148 SF of publicly owned or operated facilities including 120,058 SF for a regional recreation and aquatic center. Proposing up to 469 parking spaces.
- United Therapeutics Project 242T (Location 9). Site is currently improved with two office buildings and a surface parking lot. Proposal calls for demolishing the two buildings and improving with a 65,000 SF medical/scientific manufacturing and production facility. Overall parking on the site will be reduced from 88 to 47 spaces.
- An additional project for a new Housing Opportunities Commission Headquarters office building of up to 82,220 SF located at the southeast corner of the Second Avenue/Fenwick Lane intersection. The site is currently improved with a private surface parking lot. No parking is proposed to be provided on-site.

The sites are mapped in Figure 7.



FIGURE 7: PROPOSED DEVELOPMENT MAP

3.3 Methodology

To create a conservative estimate of future parking needs, the analysis assumes all future developments will be fully occupied. Only the net increases in densities were added to the analysis and any land uses (and their associated parking) to be redeveloped were removed. This will allow Montgomery County to plan for any additions or alterations to the parking supply or changes to its parking management program necessary to accommodate a maximum higher than anticipated parking demand. All other steps to the methodology outside of the additional of future land use and associate parking supply are consistent with the steps outlined for existing conditions. The future development of United Therapeutics land uses was excluded from this analysis because of the assumption that any additional density and parking demand by United Therapeutics land uses would be satisfied entirely by United Therapeutics existing and future parking supply. With the future developments slated to provide 847 parking spaces to accompany developments, there will be a total of 16,943 private parking spaces in the study area and total of 21,351 parking spaces inclusive of public and private spaces (but excluding United Therapeutics parking supply).

3.4 Future Parking Surplus and Deficit (Scenario B)

Under this scenario, adding the proposed future uses to the existing current uses, the future parking demand is estimated to be 14,997 on Thursday and 13,330 on Saturday. Without Garage 2 in the parking supply, this reduces the study area parking surplus to be 6,354 parking spaces on Thursday and 8,021 on

Saturday. 79 and 89 percent of the surplus is in private parking facilities and cannot be relied upon to satisfy public parking demand.

At the Zonal level, on a weekday, there is a surplus of 45 spaces in Zone 1 and 8,052 spaces in Zone 4. Zone 2 has a deficit of 1,160 spaces and Zone 3 has a deficit of 583 spaces. At the Zonal level, on a Saturday, there is a surplus of 650 spaces in Zone 1, 112 spaces in Zone 2, and 7,486 spaces in Zone 4. Zone 3 has a deficit of 227 spaces.

Considering only public parking demand and supply, within the study area there is an adjusted public surplus of 1,317 spaces on a weekday and a surplus 883 spaces on a Saturday. Zone 3 is operating at a deficit of 736 spaces on a weekday and deficit of 992 spaces on Saturday.

If Garage 60 and Garage 61 in Zone 4 can attract 25 to 35 percent of the Zone 3 parking deficit, the amount of replacement parking needed to satisfy the remaining Zone 3 parking deficit is 478 to 552 parking spaces on a weekday and 645 to 744 parking spaces on Saturday.

Figure 8 and Figure 9 illustrate the rounded land use-based parking surplus/deficit by block and zone for each daily demand scenario and conform to the color code scheme introduced earlier in this report. Zonal callouts reflect both the total and the adjusted public demand and supply surplus/deficits.

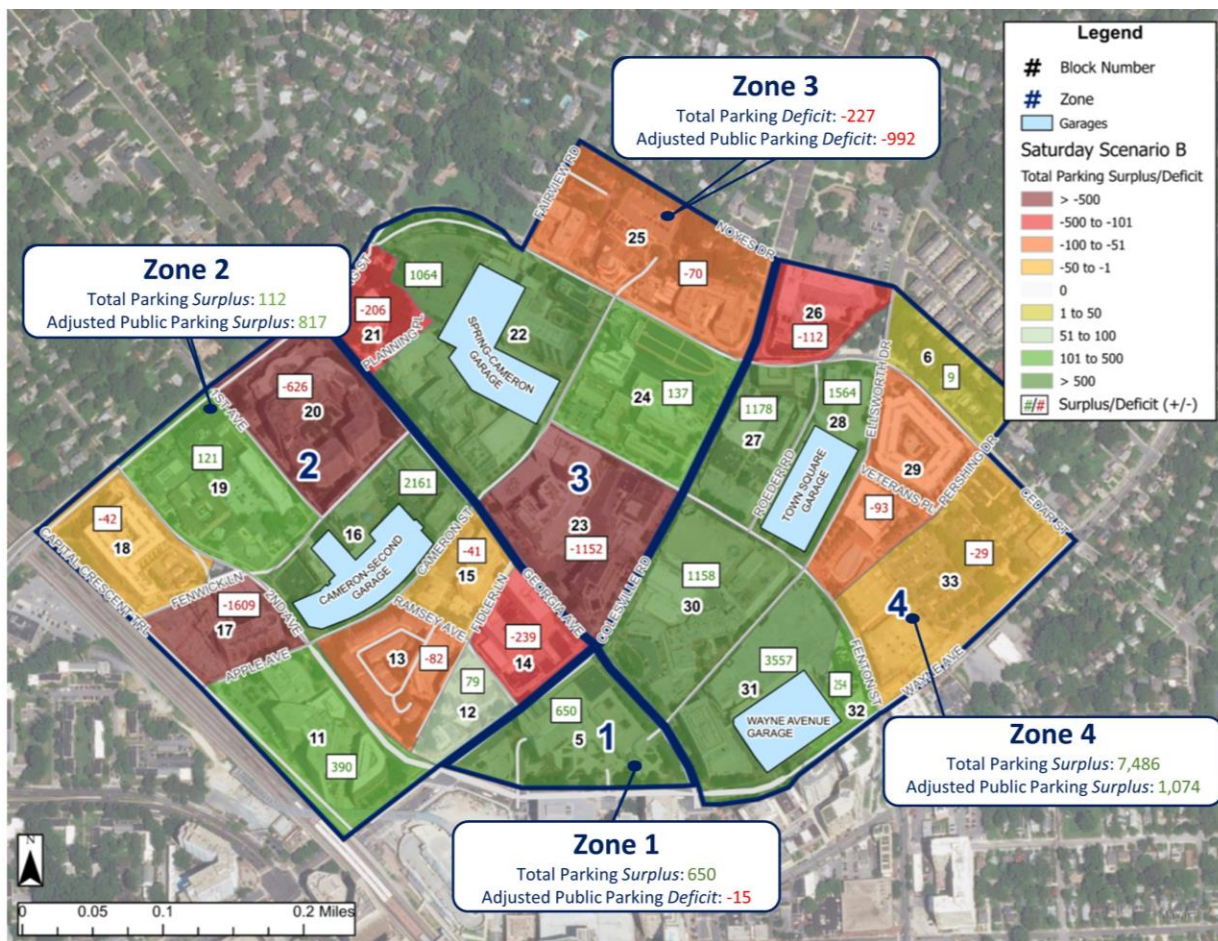


FIGURE 8: FUTURE CONDITIONS WEEKDAY LAND-USE BASED PARKING SURPLUS AND DEFICITS (SCENARIO B)

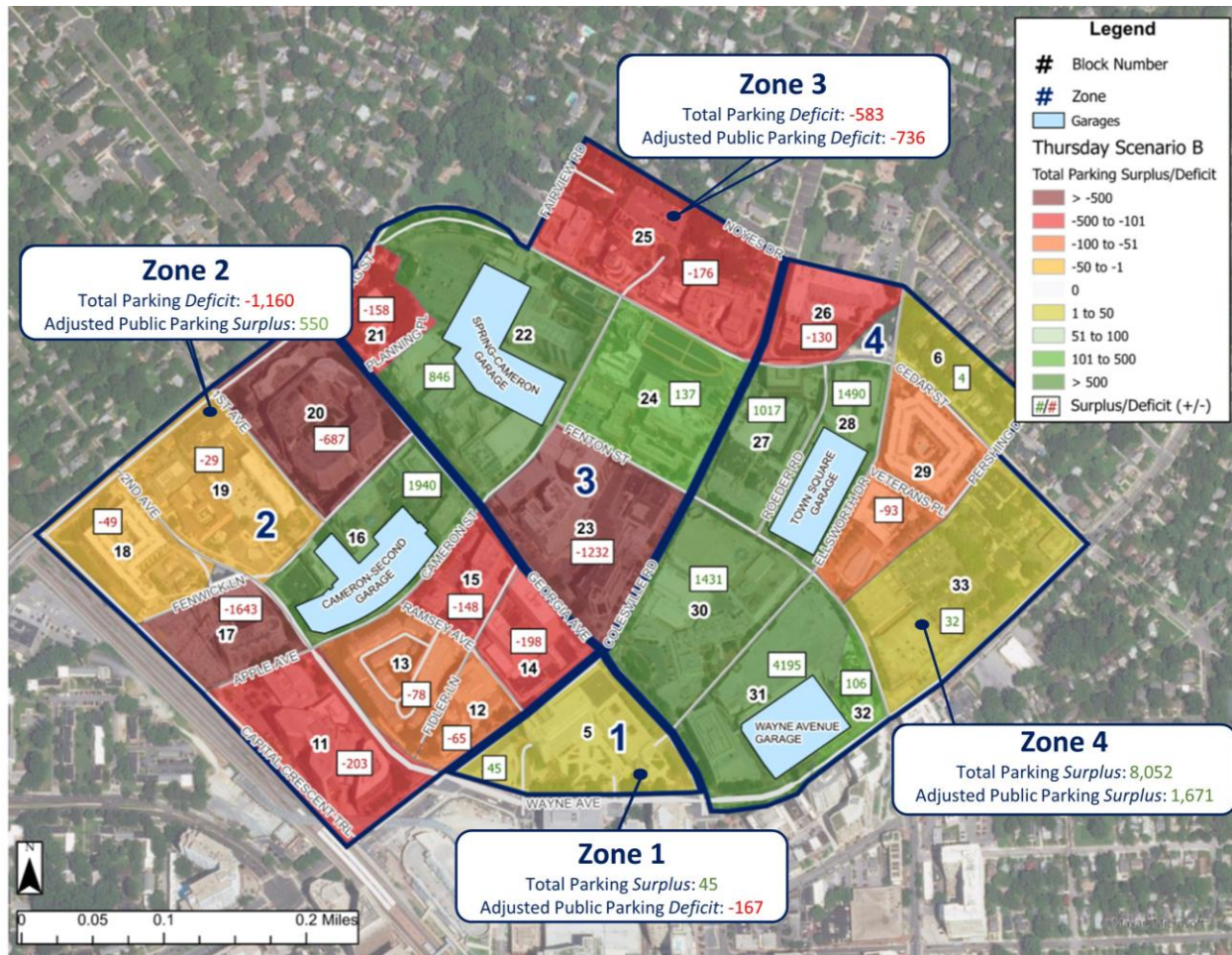


FIGURE 9: FUTURE CONDITIONS SATURDAY LAND-USE BASED PARKING SURPLUS AND DEFICITS (SCENARIO B)

3.4.1 Future Scenario Parking Demand Summary

This analysis suggests that even in a future scenario with additional development activity, the overall study area would still experience a surplus of parking. However, the most of that parking surplus would be contained within private parking facilities. Given the scenario where Garage 2 is removed from the public parking supply, there will be a surplus of 883 to 1,317 public parking spaces in the overall study area, but a deficit of 736 to 992 parking spaces in Zone 3. This results in a need to replace 478 to 744 parking spaces to satisfy future public parking demands from Zone 3 (with the assumption that parking surpluses in Zone 4 can be used to satisfy a portion of the parking demand).

3.5 Future With 50 Percent Vacancy Reduction Parking Surplus and Deficit (Scenario C)

According to the Co-Star database, 43,372 square feet of commercial space is vacant, 531,808 square feet of office space is vacant, and 353 residential units are vacant. A scenario was developed to determine the amount of replacement parking that would be needed if 50 percent of this study area vacancy could be reduced and converted to occupied uses (in addition to the future developments discussed in the previous section). This is a conservative analysis that will allow Montgomery County to better understand

replacement parking needs given a higher level of economic activity in the Silver Spring study area (either as a direct result of reduced vacancies or because of a return to pre-Covid-19 travel and parking behaviors).

Under this scenario, adding the proposed future uses to the existing current uses less 50 percent of the current vacancy, the future parking demand is estimated to be 15,567 on Thursday and 13,643 on Saturday. Without Garage 2, this reduces the study area parking surplus to be 5,784 parking spaces on Thursday and 7,708 parking spaces on Saturday.

Like baseline future conditions, 78 and 89 percent of the surplus is in private parking facilities and cannot be relied upon to satisfy public parking demand.

At the Zonal level, on a weekday, there is a surplus of 45 spaces in Zone 1 and 7,942 spaces in Zone 4. Zone 2 has a deficit of 1,472 spaces and Zone 3 has a deficit of 731 spaces. At the Zonal level, on a Saturday, there is a surplus of 650 spaces in Zone 1 and 7,416 spaces in Zone 4. Zone 2 has a deficit of 51 spaces and Zone 3 has a deficit of 307 spaces.

Considering only public parking demand and supply, within the study area there is an adjusted public surplus of 1,196 spaces on a weekday and 815 spaces on a Saturday. Zone 3 is operating at a deficit of 766 spaces on a weekday and deficit of 1,007 spaces on Saturday.

If Garage 60 and Garage 61 in Zone 4 can attract 25 to 35 percent of the Zone 3 parking deficit, the amount of replacement parking needed to satisfy the remaining Zone 3 parking deficit is 498 to 574 parking spaces on a weekday and 655 to 755 parking spaces on Saturday.

Figure 10 and Figure 11 illustrate the rounded land use-based parking surplus/deficit by block and zone for each daily demand scenario and conform to the color code scheme introduced earlier in this report.

3.5.1 Future With 50 Percent Vacancy Reduction Scenario Parking Demand Summary

This analysis suggests even in a future scenario with additional development activity and 50 percent less vacancy, the study area would experience a surplus of parking. However, the most of that parking surplus would be contained within private parking facilities. Given the scenario where Garage 2 is removed from the parking supply, there will be a surplus of public parking of 815 to 1,196 spaces in the overall study area, but a deficit of 766 to 1,007 public parking spaces in Zone 3. This results in a need to replace 498 to 755 parking spaces to satisfy future parking demands from Zone 3 (with the assumption that parking surpluses in Zone 4 can be used to satisfy a portion of the parking demand). It is noted that this is a conservative future scenario that assumes a significant reduction in the study area vacancy rate and/or a return to pre-Covid travel conditions.

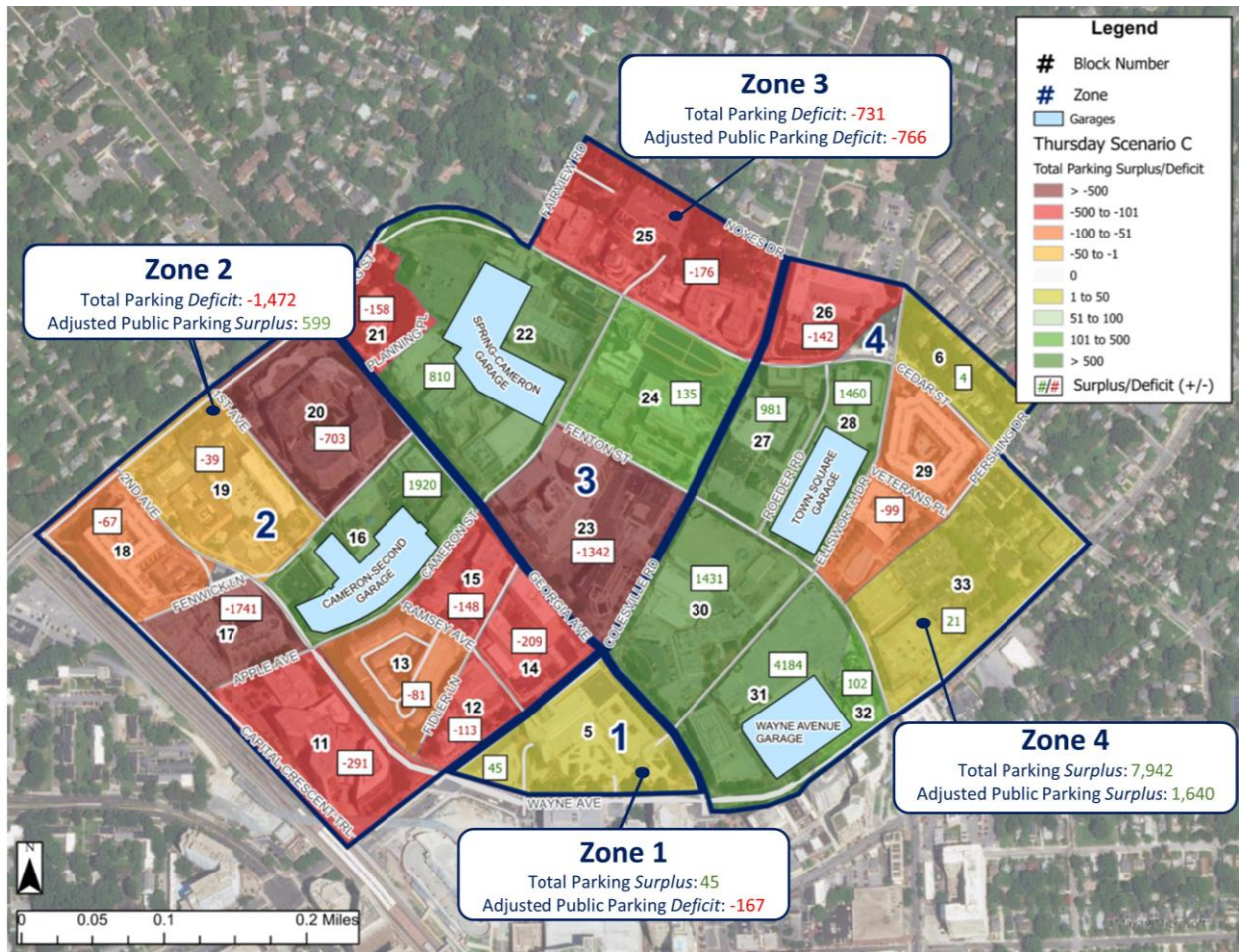


FIGURE 10: FUTURE CONDITIONS WITH 50 PERCENT LESS VACANCY WEEKDAY LAND-USE BASED PARKING SURPLUS AND DEFICITS (SCENARIO C)

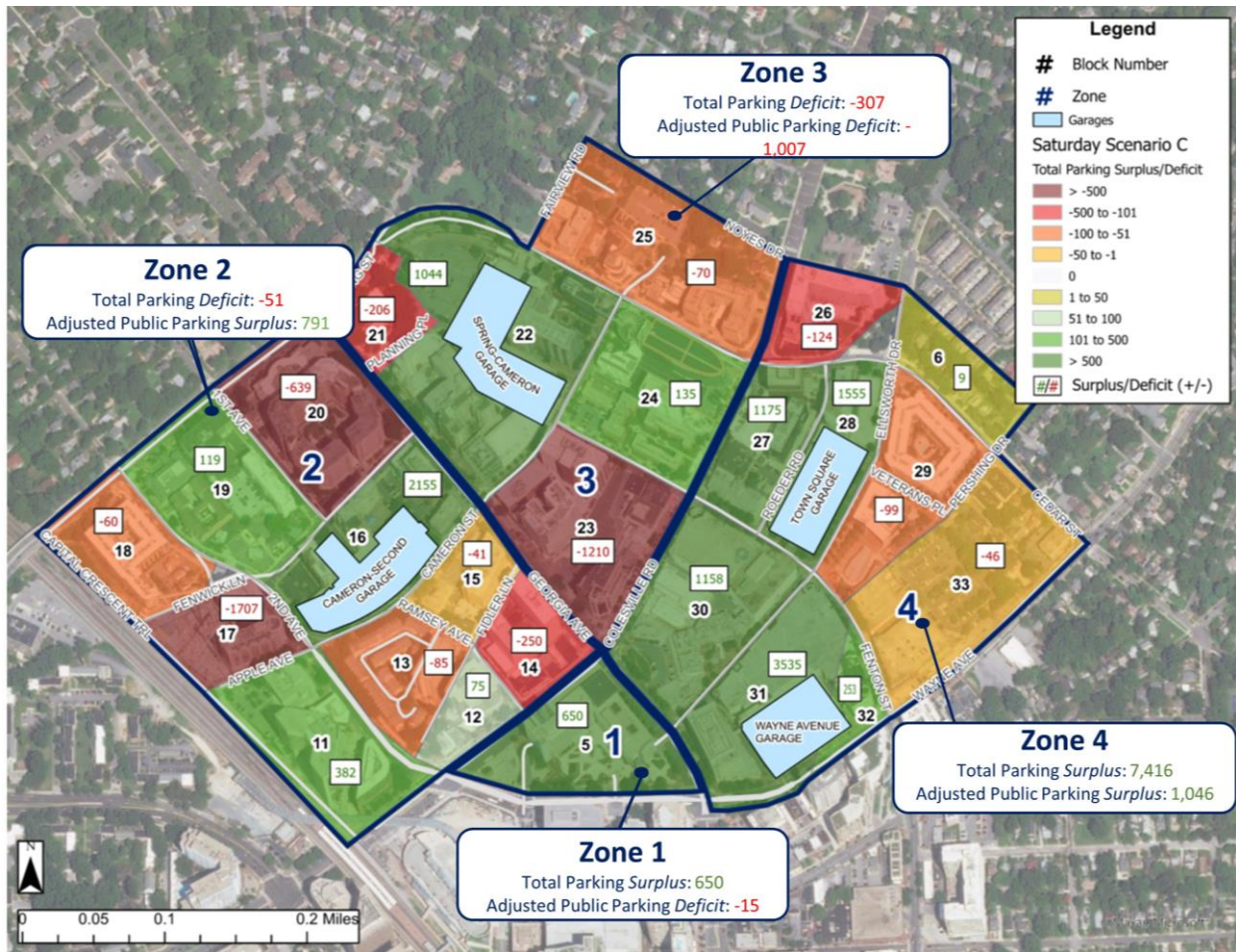


FIGURE 11: FUTURE CONDITIONS WITH 50 PERCENT LESS VACANCY SATURDAY LAND-USE BASED PARKING SURPLUS AND DEFICITS (SCENARIO C)

4 Conclusion

This study evaluated the existing and future parking demand in downtown Silver Spring. The existing parking demand is still under the influence of the Covid-19 public health emergency. This influence has resulted in less overall parking demand as employers continue to offer remote work options and the community has generally reduced the amount of non-essential trips.

This study provides a general overview of parking habits in the study area and specifically responds to planned changes in the operational footprint of United Therapeutics' Silver Spring research and production campus. United Therapeutics is planning a significant expansion in the study area which will increase and diversify their land use density, increase their parking supply, and support higher employee numbers. The expansion plans will also impact existing commercial and residential properties that are adjacent to its current campus— including the take over and closure of the Spring Cameron Garage (Garage 2), a loss of 1,139 public parking spaces.

Given Montgomery County's traditional role and responsibility in managing much of the demand for parking in PLDs, the primary goals of this study were to determine the future parking surplus or deficit at a block, zone, and study area level in the scenario where the Spring Cameron Garage (Garage 2) is no longer available as a public parking location and to identify the amount of replacement parking to right-size the parking supply and satisfy any parking deficits resulting from this scenario.

4.1 Findings

Data collected in September 2021 suggests that the study area garages were only occupied at 35 to 37 percent, leaving approximately 3,500 parking spaces available for use. Within Garage 2 specifically, the data suggests there are 710 to 875 parking spaces regularly available for public use. This surplus of parking in the study area and in Garage 2 specifically suggests that the amount of parking spaces in the study area could be reduced and still serve existing parking demands.

Parking supply is often determined in relation to the land uses that parking facilities serve; land use-based parking ratios were developed and calibrated to represent the amount of parking typically needed to satisfy occupied and economically healthy office, commercial, and residential land uses in Silver Spring. The parking ratios were calibrated using the September 2021 data and as such represent anticipated parking needs in the new normal of Covid-19 travel conditions.

Three scenarios were evaluated using the calibrated land use-based parking ratios: existing land use (Scenario A), future land use (Scenario B), and future land use assuming 50 percent less vacancy (Scenario C). If Garage 2 were to remain, each scenario would demonstrate a weekday surplus in public parking in the overall study area during the peak period (of 1,968 in existing conditions, of 890 spaces in the future, and of 555 spaces in the future assuming less vacancy). For Zone 3, where Garage 2 is located, there would be a small weekday surplus (460 spaces) in public parking based on existing demand which then becomes a deficit of parking spaces in the future conditions (of 289 spaces in the future and of 259 spaces in the future assuming less vacancy).

The above findings were performed assuming the 1,139 spaces in Garage 2 were still in place. The expansion plans for United Therapeutics will include the takeover of the block that contains Garage 2. This will ultimately remove the Garage 2 parking supply impacting the study area and Zone 3 specific parking

surpluses and deficits. Under the assumption that Garage 2 is no longer available, there will be a weekday surplus (943 spaces) in the overall study area public parking based on existing demand which then reduces in future conditions (to a deficit of 136 spaces in the future and a deficit of 470 spaces in the future assuming less vacancy). For Zone 3 specifically, where Garage 2 is located, each scenario demonstrates that there will be a deficit in public parking during the peak period (during the weekday: of 566 spaces in existing conditions, of 736 spaces in the future, and of 766 spaces in the future assuming less vacancy; during a Saturday: of 832 spaces in existing conditions, of 992 spaces in the future, and of 1,007 spaces in the future assuming less vacancy).

The study area and Zone 3 parking deficits would put stress on the Silver Spring parking system. As such, it is useful to identify an amount of replacement parking to offset the loss of Garage 2 and satisfy the anticipated demand. To right-size parking, an assumption was made that 25 to 35 percent of parking deficits in Zone 3 that were previously served by Garage 2 could be served by Garage 60 and/or Garage 61 in Zone 4. The remaining Zone 3 deficit represents the amount of replacement parking that would be needed. This replacement amount ranges from 450 spaces (based only on existing 2021 counts) up to 1,007 spaces (based on land use parking ratios and assuming no capability of Garage 60 and Garage 61 to absorb portions of the parking deficit).

4.2 Recommendations

After review of the resulting parking deficits, Kimley-Horn recommends **550 to 750 replacement parking spaces** are needed to offset the removal of Garage 2. This range provides sufficient parking to immediately satisfy existing weekday parking demand without any parking demand being shifted to Zone 4. It is noted that this range also demonstrates the County's commitment to strategically right-size and manage the future parking supply by pursuing strategies that will allow future Zone 3 parking deficits to be satisfied in our parking locations.

However, given that it will likely take some time for these shifts to occur or for other parking strategies to be implemented, the identified range assures that existing weekday Zone 3 parking can be satisfied entirely within Zone 3. This range would also satisfy future scenarios (Scenario B and Scenario C) where Silver Spring is denser and more occupied, though at that time a deliberate strategy to encourage a gradual shift in parking towards Zone 4 (Garage 60 and Garage 61) or additional TDM strategies to reduce the dependence on personal vehicles will be necessary.