

Introduction

An analysis was conducted to determine the impact on an increase in mode split on parking demand in the Bethesda PLD. The MNCPPC has projected that the mode share split in the Bethesda PLD will increase from 38% to 55% (17% increase) in the next 20 years. This growth in mode split accounts for population growth. This means that less people would be driving and parking in the Bethesda PLD and instead using alternative modes of transportation.

Future Growth Scenarios

A Bethesda PLD Parking Demand Study (Bethesda Parking Study) was recently completed in September 2017 that determined the future parking demand in the Bethesda Overlay Zone with the total development growth projected in the Bethesda Downtown Plan. The Bethesda Downtown Plan allotted for a total of 32.4 million square feet of development, which is an increase of 8.8 million square feet from the current building space in the Bethesda Overlay Zone (23.6 million square feet).

The MNCPPC provided development information for pipeline projects, which included 4.6 million square feet of development. However, the remaining 4.2 million square feet of development is hypothetical and there are no definitive projects planned. As part of the Bethesda Parking Study, three development scenarios were analyzed to get a range of full-build conditions since there is no definitive plan for the 4.2 million square feet of growth. The methodology applied in defining the three development scenarios are discussed in the Bethesda Parking Study.

Table 1 shows the proposed breakdown of 4.2 million square feet of development space for the three development scenarios at full-build. The scenario with the largest amount of residential development (Scenario 1) is the least dependent on public parking since it is assumed that residential developments would support their parking needs with on-site private parking. It was also assumed that hotel would provide on-site private parking that would not be shared with the public. The scenario with the largest amount of office development (Scenario 2) would be the most dependent on public parking in the PLD since office projects would only support a percentage of demand.

Table 1: Three Development Scenarios at Full-Build

Land Use	Percentage Breakdown			Land Use Breakdown ¹		
	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
Residential ²	60%	37%	50%	1,839	1,134	1,533
Office	37%	60%	47%	1,554,000	2,520,000	1,974,000
Retail	1%	1%	1%	42,000	42,000	42,000
Restaurant	1%	1%	1%	42,000	42,000	42,000
Hotel	1%	1%	1%	42,000	42,000	42,000

¹ Breakdown of residential units and square footage for office, retail, restaurant, and hotel

² Assumed 1,370 sq. ft. per residential unit based on existing residential land use data in Bethesda

Future Parking Surplus/Deficit Analysis with Mode Split Scenarios

As part of the Bethesda Parking Study the existing and future parking demand was determined based on occupancy counts of all public and private parking facilities and on-streets areas in the PLD. Parking demand factors were developed based on existing utilization and building space per land use. Future parking demand was projected based on the calculated parking demand factors and future growth for a full-build condition. This analysis is detailed in the Bethesda PLD Parking Study.

Table 2 provides the results of the peak parking surplus/deficit at full-build with a growth in mode split to 45%, 50% and 55%. The change in parking demand for all existing and future land uses were analyzed. The peak parking demand is during a weekday afternoon. This analysis considers each of the three development scenarios in the Bethesda Parking Study. Hotel and residential developments were assumed to support their own parking needs and not provide public parking. Retail and restaurant developments would rely on existing public parking, and office developments would provide parking similar to office projects in the pipeline (i.e. 0.84 spaces per 1,000 square feet). The amount of public parking, both County and privately-owned, available during the peak weekday period was applied in assessing the full-build surplus/deficit parking conditions for each scenario.

The Bethesda Downtown Plan calls for using four County parking lots for public park space in Bethesda. This would include displacing County lots 25, 44, 24, and 10, which would equate to a loss of 489 parking spaces within the PLD. Further, the Bethesda Downtown Plan calls for bike lanes which would result in a loss of 130 on-street spaces within the PLD. This loss of parking from both the addition of park space and bike lanes was accounted for in the surplus/deficit parking analysis (**Table 2**).

It was determined that there would be a projected surplus for all three scenarios within the PLD when considering all public parking in the Bethesda PLD, both County and non-County owned. The projected surplus ranges between 617 and 3,101 spaces depending on the mode split (i.e. 45%, 50%, and 55%) and development scenario. With a mode split of 55% there is a projected surplus of 2,662 spaces or 3,101 spaces, depending on the development scenario.

The last row of **Table 2** shows the parking deficit if only the County-owned public parking was relied upon to support future pipeline and full-build development in the Bethesda PLD. A substantial deficit of parking (i.e. between approximately 1,000 and 2,500 spaces) is projected for each scenario when not considering privately-owned public parking facilities.

With a growth in the use of alternative modes of transportation over the next 20 years, there is the potential for a substantial surplus in parking depending on the development scenario. The surplus of parking is also dependent on the supply of privately-owned public parking. If only the County-owned public parking is considered there is a projected deficit even with 55% mode split.

The greater the amount of office space developed the greater the dependence on public parking, which places a greater strain on the parking system. However, if more residential buildings are developed there is less of a parking deficit, since it is assumed residential buildings will provide on-site parking and not rely on public parking in the PLD. Also, the Bethesda PLD is strongly dependent on privately-owned public parking facilities to support future development, as the deficit of parking projected increases substantially when the privately-owned public parking is not considered available to support future parking demand.

Table 2: Bethesda PLD Peak Parking Surplus/Deficit Analysis with an Increase in Mode Split

Land Use	38% Mode Split (Existing)			45% Mode Split			50% Mode Split			55% Mode Split		
	Future Parking Surplus/Deficit ³			Future Parking Surplus/Deficit ³			Future Parking Surplus/Deficit ³			Future Parking Surplus/Deficit ³		
	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
Residential ²	0	0	0	0	0	0	0	0	0	0	0	0
Office	(1,117)	(1,812)	(1,419)	(947)	(1,537)	(1,204)	(826)	(1,341)	(1,050)	(705)	(1,144)	(896)
Retail	(39)	(39)	(39)	(36)	(36)	(36)	(34)	(34)	(34)	(32)	(32)	(32)
Restaurant	(212)	(212)	(212)	(197)	(197)	(197)	(187)	(187)	(187)	(176)	(176)	(176)
Hotel	0	0	0	0	0	0	0	0	0	0	0	0
Totals	(1,368)	(2,063)	(1,670)	(1,181)	(1,770)	(1,437)	(1,047)	(1,561)	(1,271)	(913)	(1,352)	(1,104)
Loss of Parking Spaces to Parks	(489)	(489)	(489)	(489)	(489)	(489)	(489)	(489)	(489)	(489)	(489)	(489)
Loss of On-Street Parking	(130)	(130)	(130)	(130)	(130)	(130)	(130)	(130)	(130)	(130)	(130)	(130)
Projected Public Parking Surplus with Existing and Pipeline Projects ⁴	1,867	1,867	1,867	3,006	3,006	3,006	3,820	3,820	3,820	4,634	4,634	4,634
Full-Build Parking Surplus/Deficit with All Public Parking Considered	(120)	(815)	(422)	1,206	617	950	2,154	1,640	1,930	3,101	2,662	2,911
Projected County Parking Deficit with Existing and Pipeline Projects ⁵	(685)	(685)	(685)	(90)	(90)	(90)	334	334	334	759	759	759
Full-Build Parking Deficit with County Owned Public Parking Considered	(2,672)	(3,367)	(2,974)	(1,890)	(2,480)	(2,146)	(1,332)	(1,846)	(1,555)	(773)	(1,212)	(964)

¹ Projected peak weekday parking demand per land use for 4.2 million square feet of development

² Assumed residential and hotel would support own demand, office would provide parking similar to proposed developments in pipeline, and retail/restaurant would not provide parking

³ Assumes that residential and hotel parking would be private and not support other parkers

⁴ Future surplus of parking in Bethesda PLD among all publicly available parking, which does not include restricted parking

⁵ Parking deficit if only County owned public parking facilities support Pipeline projects