



SWBID d. Kimley»Horn | DC

# M Street SE Non-Automotive Mobility Planning Project

**Existing Conditions Summary Briefing  
Document**

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*FINAL DRAFT – May 2021*

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# Traffic Volume Estimation Methodology

The following methodology was followed to develop estimated 2021 peak hour traffic volumes at these four intersections:

1. Identify the AM and PM peak 15-minute period of traffic volumes in the 2016 traffic data for M Street SE and South Capitol Street (7:45–8:00 AM and 4:30–4:45 PM)
2. Collect 15-minute traffic data (vehicular and pedestrian movements) during the above intervals along M Street SE at South Capitol Street, Half Street SE, First Street SE, and New Jersey Avenue SE (data collected Tuesday, March 9, 2021)
  - a. Scale the 2021 15-minute volumes to an hourly equivalent volume based upon the intersection peak hour factor calculated from the 2016 data at M Street SE and South Capitol Street
3. Calculate the growth in traffic volumes along M Street SE:
  - a. Calculate growth rate based on the eastbound and westbound through volumes at South Capitol Street considering 2016 and 2021 traffic data
  - b. Calculate growth rate based on 2016 and 2018 daily traffic volume data from Open Data GIS DC *2016 Traffic Volumes* and *2018 Traffic Volumes* data sets. Apply growth rate to 2016 eastbound and westbound hourly through volumes at South Capitol Street to develop 2021 hourly through volumes
4. Calculate 2021 Estimated traffic volumes along M Street SE:
  - a. Using the higher of the two hourly volumes for eastbound and westbound through movements (i.e., step 2a or step 3b above), balance through volume along M Street SE to the east through New Jersey Avenue SE with consideration for volume “sinks” like parking garages or alleys.<sup>1</sup> Volume “sinks” in the AM and “gains” in the PM are calculated considering garage occupancy, volume and mode shift trends in the District
  - b. Retain 2021 mainline turning volumes and side street approach volumes at M Street SE and First Street SE and M Street SE and New Jersey Avenue SE as developed in step 2a above. Side street approach volumes at M Street SE and Half Street SE are adjusted to 2013 traffic data, the most recent non-COVID counts, due to the current closure on the southern approach of the intersection

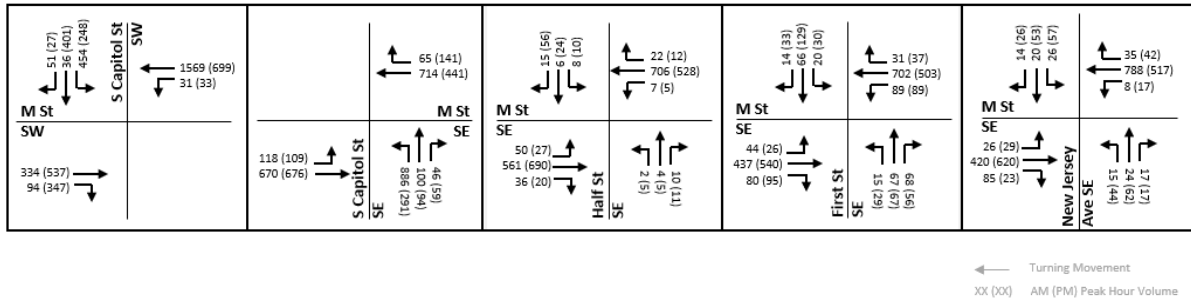
Considering the above methodology, the following summarizes the outcome of developing estimated 2021 peak hour traffic volumes. Figure 1 summarizes the peak hour turning volumes extracted from the Synchro files provided by DDOT for the AM and PM peak hours. Note that volumes at South Capitol Street reflect 2016 data and the remaining three intersections reflect 2013 data. Based upon a review of 2016 traffic management center (TMC) data against the Synchro files, it appears minor adjustments to

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<sup>1</sup> *Parkopedia.com, LAZ Parking Limited LLC, 2021*

turning volumes were made by DDOT during previous retiming efforts. When comparing 2016 and 2021 data, the source TMC data was considered, not the Synchro files.

Figure 1: Turning Movement Volumes Provided by DDOT, South Capitol Street to New Jersey Avenue SE



Error! Reference source not found. reflects the 2021 hourly turning volumes collected by Kimley-Horn of DC on March 9, 2021, considering steps 1 and 2 of the methodology above. After comparing 2016 and 2021 through volumes on M Street SE at South Capitol Street (step 3a), it was determined that there was negative growth in the range of 10 to 20 percent per year during that five-year period, which is a total reduction of as much as 75%. The same was true for turning movements to and from M Street SE. Similar reductions to M Street SE through volumes were observed at Half Street SE, First Street SE, and New Jersey Avenue SE; however, turning volumes to and from M Street SE at these three intersections were generally observed to be higher than the source 2013 Synchro volumes provided by DDOT.

Figure 2: Field-Collected 2021 Hourly Turning Movement Volumes, South Capitol Street to New Jersey Avenue SE

