Reston Parkway 4-lanes vs. 6-lanes from New Dominion Parkway to Baron Cameron Avenue (all signals optimized)

Task

- Evaluate Reston Parkway from New Dominion Parkway to Baron Cameron Avenue to determine if 4 lanes or 6 lanes are needed to accommodate the future vehicle traffic associated with Scenario G (new land use proposed for Reston Master Plan), and the increase in background traffic associated with growth in the region.
- Considerations:
    - The Comprehensive Plan shows this section of Reston Parkway to be widened to 6 through lanes.
    - The transportation study submitted to VDOT assumed 6 lanes on this section of Reston Parkway as shown on the current Comprehensive Plan.
    - Currently, Reston Parkway is more vehicle oriented than multimodal oriented.
    - Reston Parkway can be difficult to cross on foot or by bike.
    - Widening Reston Parkway further can create a barrier for pedestrians, bicyclist, and transit users (need to be able to cross the road) between the Wiehle-Reston East Metro station area and the Reston Town Center Metro station area.

Analysis Input Factors/Assumptions

- Evaluate this section of road for a future horizon year (2030).
- Assumed the Scenario G land use.
- Assumed the transportation network associated with the Scenario G land use scenario, which included the crossings of the Dulles Toll Road (three overpasses and one underpass).
    - The crossing with the greatest impact on Reston Parkway that was assumed to be constructed was the Town Center Parkway underpass.
- An additional eastbound through lane on New Dominion Parkway at Reston Parkway was included in the analysis as this was an assumed improvement from the transportation study that was submitted to VDOT.

Analysis

- Reston Parkway as a 4-lane road:
    - Baron Cameron Avenue and Reston Parkway intersection operates better than New Dominion Parkway and Reston Parkway.
    - The controlling intersection is New Dominion Parkway and Reston Parkway.
    - New Dominion Parkway and Reston Parkway intersection has a LOS E in the AM peak hour.

        - New Dominion Parkway and Temporary Road have failing movements around 120 seconds of delay.
        - Southbound lefts and Northbound lefts on Reston Parkway are failing. The Northbound left is the worst of all the movements at 160 seconds of delay.
    - New Dominion Parkway and Reston Parkway has a LOS E in the PM peak hour.
        - Southbound left (99 seconds of delay) and northbound through (90 seconds of delay) are the only movements that operate at LOS F.
        - Northbound through queue is 600 feet, which will spill back into the next intersection, which is Stratford House Place (opposite Market Street). There is only a right-in and right-out at the intersection so spill back into this intersection may be acceptable. The next intersection is Bluemont Way. The distance between New Dominion and Bluemont Way is 950 feet.
    - The queuing on Reston Parkway heading south indicates that three through lanes are needed. This is what exists today. Without the third through lane queues in the AM peak hour would extend 300 feet past the Bowman Towne Drive intersection.
    - Baron Cameron Avenue and Reston Parkway has LOS E in the AM and PM peak hour. The left turns are the problem. In the AM and PM peak hour all left turn movements fail.
- Reston Parkway as a 6-lane road:
    - The Baron Cameron Avenue/Reston Parkway intersection operates better than New Dominion Parkway/Reston Parkway intersection.
    - The Controlling intersection is New Dominion Parkway and Reston Parkway.
    - New Dominion Parkway has a LOS E in the AM peak hour.
        - New Dominion Parkway eastbound through and Temporary Road westbound left are LOS F with 130-135 seconds of delay.
        - Southbound left and southbound through are the worst movements on Reston Parkway at 110 and 100 seconds of delay, respectively.
    - New Dominion Parkway has a border line LOS E/F in the PM peak hour.
        - Mainly due to three movements: westbound left (220 seconds of delay), southbound left (270 seconds of delay), and northbound through (95 seconds of delay).
        - Queue lengths indicate that northbound and southbound through movements can be handled with the existing lane configurations and accepting spill back into the Stratford House Place intersection.
    - Baron Cameron Avenue and Reston Parkway has a LOS E in the AM and PM peak hours. The left turns are the problem in the AM and PM peak hours with failing LOS at all these movements.

Findings

- This analysis assumed the extension of Town Center Parkway (tunnel) under the Dulles Toll Road and connecting to Sunrise Valley Drive. The tunnel is heavily used. Without the tunnel the traffic distribution would likely split equally between Fairfax County Parkway and Reston Parkway. This means approximately 600 vehicles in the AM and 750 vehicles in the PM would get pushed Reston Parkway. As a 4-lane facility, Reston Parkway would not be able to handle this increase in vehicle traffic.
- At the Reston Parkway and New Dominion Parkway intersection, the change in through volume between a 4-lane Reston Parkway and 6-lane Reston Parkway is minimal. The biggest difference is southbound in the PM peak hour. There are approximately 300 more vehicles heading south with a 6-lane Reston Parkway than a 4-lane Reston Parkway. However, southbound, in the evening, is not the major movement (northbound is the major movement) and thus a reduction in capacity can still handle the vehicles estimated to be on a 4-lane Reston Parkway.
- The northbound and southbound through volumes on Reston Parkway at Baron Cameron Avenue are the highest in the PM peak hour and do not indicate a need for an additional through lane.
- The queuing on Reston Parkway heading south indicates that three through lanes are needed. This is what exists today. Without the third through lane queues in the AM peak hour would extend 300 feet past the Bowman Towne Drive intersection. Therefore, the third through lane on Reston Parkway southbound heading towards New Dominion Parkway is needed to handle the vehicle queuing.
- Reston Parkway, as a 4-lane road, can handle the forecasted number of vehicles from New Dominion Parkway to Baron Cameron Avenue but tweaks would be needed for the signals and some turn bays may need to be lengthened. Additionally, this also assumes that the Town Center Parkway tunnel is also built.