National Capital Region
Transportation Planning Board

TPB Technical Committee
July 12, 2019
Item 3

June 30, 2019

Mr. Norman Whitaker
Transportation Planning Director
VDOT Northern Virginia District
4975 Alliance Dr.
Fairfax, VA 22030

Dear Mr. Whitaker:

I am writing to provide you our assessment of the potential impact of the updates to the I-495 NEXT project on the regional air quality conformity analysis of the TPB's Long Range Transportation Plan (Visualize 2045) and Transportation Improvement Program (FY 2019-2024 TIP). As you are aware VDOT has proposed changes to the I-495 NEXT project as part of the TPB's ongoing amendment to its Plan and update of its TIP. As part of this amendment and update, the TPB is working to revise its regional air quality conformity analysis. In your May 29, 2019 email you asked if the proposed updates to the I-495 project, by themselves (excluding all the other changes to the Plan and TIP) would be significant enough to change the results of the regional air quality conformity analysis of the Plan and TIP. Upon a detailed review of the updates to the I-495 NEXT project and based on the results of a targeted regional air quality conformity analysis (sensitivity test) we believe that the proposed changes to the I-495 NEXT project, by themselves, do not change the results of the air quality conformity determination for the approved Visualize 2045 Plan and FY2019-2024 TIP.

The I-495 NEXT project is part of the TPB's Plan and TIP and was included in the federally approved air quality conformity analysis. VDOT has proposed changes to the I-495 project which are shown in the attached schematic. The proposed changes extend the existing temporary peak-period north bound shoulder express lane to the George Washington Parkway and make the shoulder lane a permanent component of the express lanes, add a new ramp from the west-bound Dulles Toll Road to the north-bound express lanes, and add two slip ramps just south of the Dulles Toll Road interchange. In order to assess the magnitude of changes in mobile emissions estimates from these changes alone, we conducted a sensitivity test. The sensitivity test involved a new regional emissions analysis for just one year (not all of the years typically associated with a Plan and TIP update). We chose the year in which estimates of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) in the approved emissions analysis were closest to the mobile budgets- year 2025.

For the sensitivity test staff used the highway network from the approved conformity analysis and updated it to reflect the proposed changes to the I-495 NEXT project. No changes were made to any other input used in the currently approved air quality conformity analysis. A comparison of the year 2025 estimates of regional VOC and NOx emissions from the approved analysis to those with the proposed changes to I-495 NEXT project indicates that the results of the regional conformity determination would not be substantively impacted by the proposed change. Table 1 summarizes the results of the sensitivity analysis and comparison.

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Table 1. 2025 Regional Emissions Analysis: Sensitivity test

Analysis Scenario	NOx (Tons/day)	VOC (Tons/Day)
Visualize 2045 - Approved Conformity	42.321	34.188
Visualize 2045 – With Proposed Changes to I-495 NEXT	42.312	34.184
Difference (Absolute / Percent)	- 0.009 (0.0%)	- 0.004 (0.0%)
Tier 2 Motor Vehicle Emissions Budget (MVEB)	48.800	39.800
Visualize 2045 - Approved Conformity: MVEB Margin	6.479	5.612
Visualize 2045 – With Proposed Changes to I-495 NEXT: MVEB Margin	6.488	5.616

As with the Visualize 2045 conformity analysis, the emissions levels in the sensitivity test, reflecting the change to the I-495 NEXT project, are below the Tier 2 mobile budgets. As also may be observed, results from both analyses are very similar, with the proposed change to the I-495 NEXT project resulting in regional emissions decreasing by .009 tons/day of NOx and by .004 tons/day of VOC. Given the overall magnitude of total emissions this change is not considered substantive.

Since the analysis shows that the proposed changes to the project would (1) result in non-substantive amount of change in regional emissions; (2) result in decreased emissions; and (3) result in emissions that are within the mobile budgets for the 2025 forecast year, we believe it is reasonable to conclude that the pollutant levels for the other forecast years (2030, 2040, and 2045) would also be within the mobile budgets.

As part of interagency consultation, staff presented the VDOT request and proposed sensitivity test to the Metropolitan Washington Air Quality Committee Technical Advisory Committee (MWAQC TAC) and to the TPB Technical Committee at their respective monthly meetings in June, and plan to share this letter with the results of the sensitivity test to those groups at their next meetings.

As you are aware these changes will be included, along with other changes, in the upcoming air quality conformity analysis of the 2020 Amendment to the Visualize 2045 Plan and the FY2021-2024 TIP. We anticipate this new regional air quality conformity determination work to be completed by March 2020. In the interim should you have any questions on the above assessment please feel free to contact Jane Posey at jposey@mwcog.org or 202-962-3331.

Sincerely,

Kanathur Srikanth
Director, Department of Transportation Planning
Metropolitan Washington Council of Governments

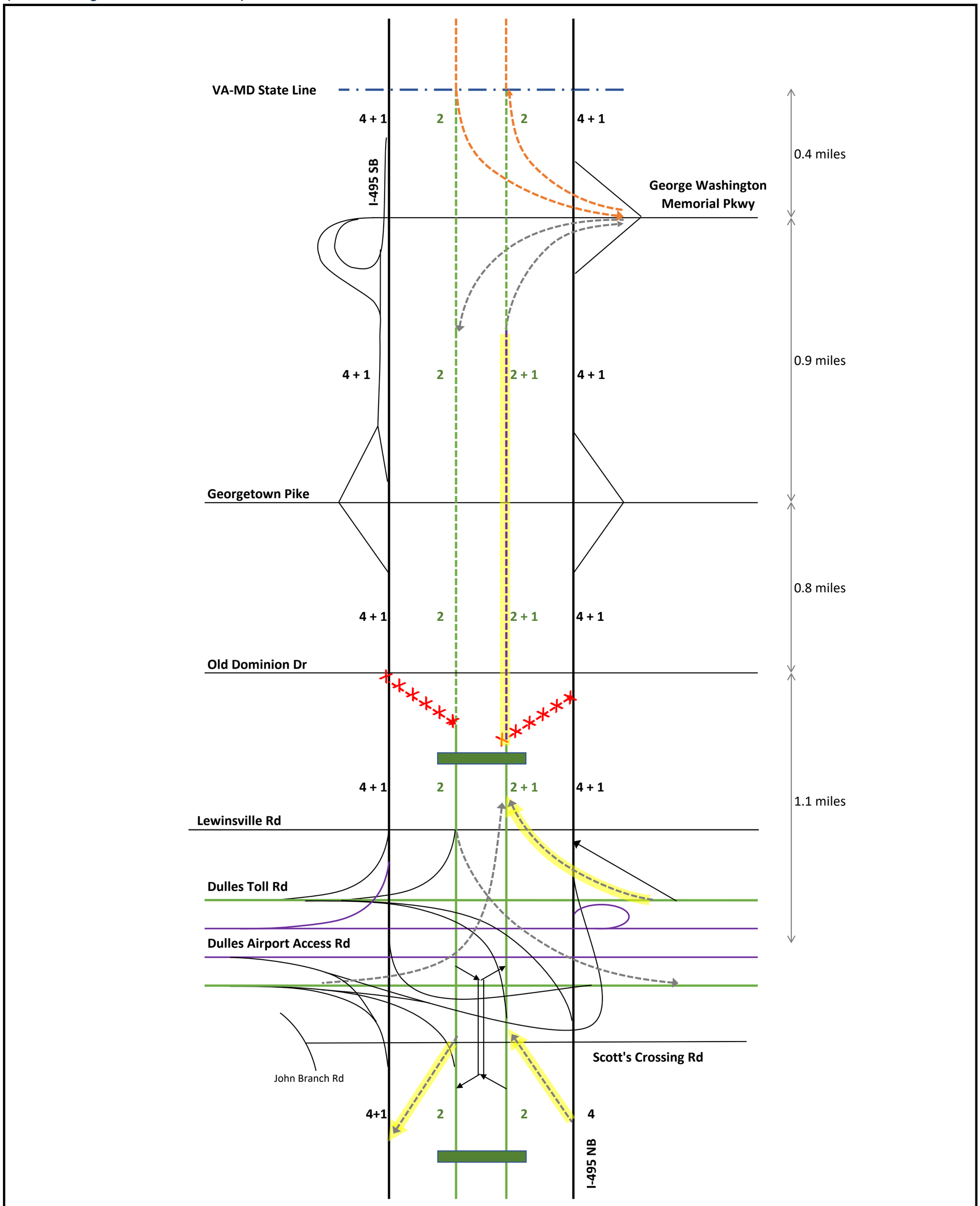
Attachment

I-495 Express Lanes Extension

Project Configuration: Virginia I-495 Northern Extension Express Lanes Project (with Maryland Express Toll Lanes) - 2045 5/23/2019

NEW RAMPS PROPOSED

(Scenario being studied in NEPA and IJR)



Legend

VDOT Elements Currently in CLRP

- General Purpose Lane
- Cross Roads / Ramps
- Existing HOT/Toll Lanes
- Dulles Access Rd
- Proposed HOT Lanes
- Existing HOT Ramps / Terminals to be Removed

VDOT Elements Not Currently in CLRP

- Proposed HOT Lane Ramps to be added to CLRP
- Proposed Part time / Peak Period HOT shoulder to be added to CLRP

Maryland Elements Currently in CLRP

- Proposed Exp Lanes to/from MD

- VA-MD State Line
- Distance
- 4 General Purpose Lanes
- 2 Express Lanes
- Existing Toll Gantry

N

Diagram is not to scale