ITEM 9 – ACTION
October 15, 2025

Visualize 2050 Finalization of Project Inputs for the
Air Quality Conformity Analysis

Action: TPB will consider adopting one of the following resolutions: Resolution R1-2026 includes the construction of the I-495 Southside Express Lanes project in Visualize 2050 and its air quality conformity analysis, and R2-2026 does not include the project.

Background: At this meeting, the TPB will finalize the regionally significant projects to be included in Visualize 2050 by taking action to include OR to defer VDOT's I-495 Southside Express Lanes (SEL) project in the Visualize 2050 Plan and air quality conformity analysis. Due to unresolved issues and the timing of project development, in June 2024, the Board requested two sets of conformity analysis be conducted, one with and another without the project, so the Visualize 2050 Plan could proceed on time. The results of the analyses were shared with the TPB at its July 16, 2025 meeting. The TPB will receive a brief recap of the process and status, members will then have an opportunity to speak or ask questions, and the TPB will then be asked to vote on whether to include the project in Visualize 2050 at this time or not.

MATERIALS

- Resolutions R1-2026 and R2-2026
- Attached VDOT response letters referenced in R1-2026
- Background memo with FAQs

National Capital Region
Transportation Planning Board

MEMORANDUM

TO: Transportation Planning Board

FROM: Cristina Finch, TPB Transportation Planner

SUBJECT: Visualize 2050: Finalization of Project Inputs for the Air Quality Conformity Analysis

DATE: October 9, 2025

In May 2024, the TPB approved all but one of the proposed regionally significant projects for inclusion in the air quality conformity analysis for Visualize 2050 – VDOT's I-95/I–495 Southside Express Lanes (I-495 SEL) project. Due to unresolved aspects of this proposed project, in June 2024, the Board requested two sets of conformity analysis be conducted, one without and another with the project. The results of the analyses were shared with the TPB at its July 16, 2025 meeting.

At the October 15, 2025 meeting, the TPB will receive a brief recap of the process and status from staff. The TPB is then scheduled to deliberate and consider two resolution options directing staff to finalize the Air Quality Conformity Analysis Report, the Draft Visualize 2050 Plan and the Draft FY 2026-2029 Transportation Improvement Program (TIP) documents with or without the I-495 SEL project and release the three documents for a 30-day public comment period so as to allow the TPB to consider approving the conformity analysis and adopting Visualize 2050 and FY 2026-2029 TIP at its December 17, 2025 meeting.

Included with this memorandum are a host of attachment to support your deliberations, these include:

- Attachment 1: Frequently Asked Questions: Visualize 2050 Air Quality Conformity and System Performance Assessment
- Attachment 2: Letters Received
    - April 30, 2024, letter from Mr. Stephen C. Brich, PE, Commissioner of Highways, Virginia Department of Transportation, to Ms. Christina Henderson, Chair, National Capital Region Transportation Planning Board
    - May 7, 2024, letter from Mr. Bill Cuttler, PE, Northern Virginia District Engineer, Virginia Department of Transportation, to Ms. Christina Henderson, Chair, National Capital Region Transportation Planning Board
    - May 31, 2024, letter from Mr. Thomas J. Webster, Executive Vice President, Washington Metropolitan Area Transit Authority, to Mr. Bill Cuttler, PE, Northern Virginia District Engineer, Virginia Department of Transportation
    - June 13, 2024, letter from Mr. Bill Cuttler, PE, Northern Virginia District Engineer, Virginia Department of Transportation, to Mr. Thomas J. Webster, Executive Vice President, Washington Metropolitan Area Transit Authority
    - June 13, 2024, letter from Mr. Stephen C. Brich, PE, Commissioner of Highways, Virginia Department of Transportation, to Mr. Floyd E. Holt, Deputy Chief Administrative Officer, Prince George's County, Maryland
    - October 6, 2025, letter from Maryland Senator Muse, Delegate Turner, Delegate Woods, and Delegate Valderrama to Acting Secretary Samantha Biddle, Maryland Department of Transportation

I-95/I–495 SOUTHSIDE EXPRESS LANES (SEL) PROJECT BACKGROUND

Since March 2022, VDOT has been conducting a study in coordination with the State of Maryland and other partners on the I-495 SEL project compliant with the National Environmental Policy Act (NEPA) process to potentially extend the express lanes system by approximately 11 miles from the Springfield Interchange (I-95/I-395/I-495) in Fairfax County, Virginia, across the Woodrow Wilson Memorial Bridge (WWMB), to the MD 210 interchange in Prince George's County, Maryland.

In April 2023, the Virginia Department of Rail and Public Transportation (DRPT) published its final report on the I-495 Southside Transit/TDM Study outlining recommendations for expansion of regional transit services within and beyond the I-495 SEL project corridor including connections to existing metro rail stations in Maryland, the District of Columbia, and Virginia.

After reviewing their projects in Visualize 2045 as part of the zero-based budgeting exercise, which included the I-495 SEL study, in December 2023, VDOT submitted the I-495 SEL project for construction in Visualize 2050. Following the March 2024 comment period on the regionally significant projects for the air quality analysis, which included the I-495 SEL project, Board members raised questions regarding the use of space on the WWMB for express lanes conflicting with a potential extension of Metrorail on the bridge and how that conversion to rail would take place in the future.

In April 2024, VDOT provided a letter stating that VDOT is fully supportive of future rail transit of the WWMB and is continuing to pursue rail preservation by advancing alternatives that can be pursued in the near term while including flexibility for the long term. At the following May 15, 2024 meeting, members continued to express concerns regarding the preservation of space on the WWMB for future rail transit as well as potential congestion of Maryland roadways, and clarification on how the I-495 SEL project would be developed and executed especially through a public private partnership.

In June 2024, VDOT provided a letter to the TPB stating its support of future rail transit over the WWMB and as such is continuing to pursue rail preservation by advancing alternatives that can be pursued in the near term while including flexibility for the long term and should the project proceed to procurement through a concessionaire agreement, it intends to continue the practice of the Commonwealth to incorporate on-going transit payments from express lane projects in Northern Virginia to enhance multimodal options in the respective corridor and VDOT commits to do so in this project. At its June 20, 2024, meeting, the Board adopted R13-2024 on the inclusion of a second analysis with the I-495 SEL project with the intention of approving only one of the two alternative regional air quality conformity analyses presented by staff at its July 16, 2025, meeting and summarized below.

SUMMARY OF AIR QUALITY CONFORMITY ANALYSIS RESULTS AND RESULTS OF MOBILE SOURCE EMISSIONS ANALYSIS FOR OTHER POLLUTANTS

Air Quality Conformity Analysis Results

As presented at the July 16, 2025, meeting, the air quality conformity analysis was performed twice, with and without the I-495 SEL project. Upon completing the analysis, it was noted that the total regional emissions for Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NO_x) calculated with and without the I-495 SEL project were identical. The overall impact of the I-495 SEL project on total emissions is minor in comparison to the entirety of emissions generated across the region. While

each individual project, including the I-495 SEL, impacts traffic patterns to some extent, individual projects tend to have minimal impact on various metrics, such as emissions, at the regional level, as they affect a limited number of over 20 million daily trips taken in the region. TPB staff have found that policies that impact everyone (e.g., vehicle electrification, telework, and pricing) tend to have the largest impact on emissions and other metrics.

Mobile Source Emissions Analysis for Other Pollutants Results
Due to the transportation sector's significant contribution to emissions, the TPB tracks various types of emissions that the region is not legally required to assess. The EPA's 2016 revocation of the 1997 fine particle ($PM_{2.5}$) NAAQS means the region no longer needs to demonstrate conformity for this pollutant. Nonetheless, staff have estimated $PM_{2.5}$ emissions for Visualize 2050 to continue to track emissions trends for the pollutant. $PM_{2.5}$ emissions are forecasted to decrease between 2025 and 2050 by 28%, and emissions with the I-495 SEL project are 0.1% lower than without it.

In 2010, the TPB started proactively estimating and reporting future greenhouse gas (GHG) mobile source emissions (expressed in carbon dioxide equivalents or CO_2e) in the regional transportation plan. GHG emissions are identical for both options, with and without the I-495 SEL project. The emission reductions in both $PM_{2.5}$ and GHGs between today and 2050 can be largely attributed to vehicle standards that reduce emissions and increase fuel efficiency.

ATTACHMENTS AND NEXT STEPS

Attachment 1 of this memorandum presents a staff developed frequently asked questions document providing responses to questions received throughout the last several months on the Visualize 2050 development process and particularly on the deliberations surrounding the I-495 SEL project. Questions range from details on the procedures and requirements of the metropolitan planning process, the relationship of TPB's regional policies and goals and relationship to the federal requirements of a fiscally constrained metropolitan transportation plan, as well as detailed technical explanations on the modelling tools used to support the air quality conformity analyses.

Attachment 2 of this memorandum document correspondences between Virginia Department of Transportation, the National Capital Region Transportation Planning Board, the Washington Metropolitan Area Transit Authority, and Prince George's County, Maryland, providing responses and clarifications to questions on the I-495 SEL project, VDOT's project planning and development process, and commitments to preserving capacity for future rail on the Woodrow Wilson Memorial Bridge.

At this October 15, 2025, meeting, the TPB is scheduled to deliberate and consider two resolution options, R1-2026 and R2-2026, directing staff to finalize the air quality conformity analysis report, the Draft Visualize 2050 Plan and the Draft FY 2026-2029 Transportation Improvement Program (TIP) documents and release it for 30-days of public comments. At its November 19, 2025, meeting, the TPB will receive a presentation on the draft Visualize 2050 plan, FY 2026-2029 TIP, and Air Quality Conformity Analysis Report, and receive an interim summary of the comments. Then, at its December 17, 2025, meeting, the TPB will consider approving the conformity analysis and adopting Visualize 2050 and the FY 2026-2029 TIP.

ITEM 9 ATTACHMENT 1

FREQUENTLY ASKED QUESTIONS: VISUALIZE 2050

VISUALIZE 2050
National Capital Region Transportation Plan

Frequently Asked Questions: Visualize 2050

This FAQ includes the questions /comments received by staff related to the VDOT proposed I-495 Southside Express Lanes project and the technical analyses conducted by staff on the two alternative versions of Visualize 2050.

Question Topics

I-495 Southside Express Lanes (SEL) Project and Planning Process

1. Will the TPB at its October 15,2025, meeting be voting to approve all of the projects proposed for Visualize 2050?

   No. The TPB will be voting on just the proposal to include the I-495 Southside Express Lanes (SEL) in Visualize 2050 at this meeting. The TPB previously approved all the 150+ regionally significant projects proposed, except this project, at its May 15, 2024, meeting.

2. Will the TPB at its October 15, 2025, meeting be voting to adopt the Visualize 2050 plan?

   No. The action at the October 15 meeting is to select one of the two alternative versions of Visualize 2050 and the corresponding air quality conformity analysis, per resolution R13-2024, to advance to the public comment phase prior to adopting Visualize 2050 at its December 17, 2025, meeting.

3. If the TPB defers its action to include the I-495 Southside Express Lanes (SEL) project in Visualize 2050 at this time, can the project be brought back for inclusion in the plan in the future?

   Yes. The I-495 SEL project can be re-submitted by the sponsoring agency for inclusion in future plans or as an amendment to Visualize 2050.

4. Is the ability to bring back a project unique to this project/plan or is it a standard process?

   The TPB's planning process is continuous and provides regular amendments and updates to its metropolitan transportation plan. As such, any agency may propose new projects/changes to previously adopted projects for inclusion in the region's metropolitan transportation plan at any time, including projects previously proposed and not included in the plan.

5. What is the process for amending Visualize 2050 with a new project?

   The project sponsor will have to propose the project with acceptable supporting documentation for the board's consideration and public comment. At that point, TPB staff would evaluate the need to revise the air quality conformity (AQC) analysis and the financial plan. If it is deemed that the amendment would require a new AQC analysis, such an analysis would typically take six to nine months, plus a 30-day public comment period before adopting the amended plan.

6. If the I-495 SEL project is not included now, since the air quality conformity analysis has already been done including the I-495 SEL project, could the project be added to the plan in the future, without having to re-run the conformity analysis?

   Possibly. If the project is not included now and requested to be included later, TPB staff will need to evaluate if any other inputs to the conformity analysis would need to be updated to align with the timing of the new analysis. For example, there could be updates required associated with the version of the mobile emissions model (MOVES) or the regional travel demand forecasting model, as well as the land use forecast inputs (Cooperative Forecasts) or other technical

inputs. Additionally, if an amendment is conducted, it is possible that other project sponsors would take advantage of that opportunity to add or make changes to other projects.

7. What flexibility does the region have to modify the I-495 Southside Express Lanes (SEL) project if the project as proposed now is included in Visualize 2050? What level of design changes can occur after the TPB vote?

   While changes to projects included in the long-range plan can be proposed annually, the process and time for the TPB to consider and accept these changes depends on the nature of the change. For the I-495 SEL or any roadway project included in the region's air quality conformity analysis, changes to the project start/end limits, number of through lanes, project completion date, facility use policies (tolling and/or HOV threshold), or locations of direct access interchanges would likely prompt a new air quality conformity analysis, public comments and require about nine months.

   Changes to ancillary elements such as location or type of bicycle/pedestrian accommodation, additional roadway features and technical design criteria, toll revenue sharing agreements, and other elements not modeled in the conformity analysis would not require revising the air quality conformity analysis and can continue to evolve with project development.

8. The air quality conformity and system performance assessment analyses indicate marginal or no improvement in roadway traffic operations from the I-495 Southside Express Lanes (SEL) project, while VDOT contends measurable meaningful improvements. Please explain.

   The TPB's air quality conformity and system performance analysis metrics are summarized at the regional level, while VDOT's analysis metrics are at the project corridor level. The TPB's analyses are conducted for both a modeled area (6,800 sq. miles) and the TPB Planning Area (3,900 sq. miles), encompassing 23 jurisdictions. Regarding the Planning Area analysis, for the current year, there are over 13 million vehicle trips, and 122 million vehicle miles traveled on about 17,000 lane-miles of roadways over the entire 24-hour period of a typical weekday. The reported metrics, such as volumes, speeds, and delay, are averaged across this vast area and thousands of miles of roadway, which means that the impact of individual transportation projects is generally not very large at the regional level. TPB staff's July presentation noted those measures where the data presents appreciable differences.[1] Project-level modeling analysis, as conducted by VDOT as part of their work per National Environmental Policy Act (NEPA) regulations, can estimate changes in travel and traffic operations at a finer level, focusing on the project's corridor.

   Note, given the large scale of the metropolitan area and the magnitude of various indicators for the entirety of the TPB Planning Area (like 13 million daily vehicle trips, or 122 million vehicle miles traveled, etc.), a modest percent change in forecasted results could, nonetheless, indicate a meaningful impact for some residents of the region, particularly those traveling in the project's corridor. The results of current analyses are consistent with prior TPB staff studies.[2]

[1] Cristina Finch, Rob d'Abadie, and Sergio Ritacco, "Finalization of Project Inputs for Air Quality Conformity Analysis: Visualize 2050 & FY 2026-2029 TIP," https://www.mwcog.org/events/2025/7/2/tpb-technical-committee/.

[2] Srikanth, Kanti, and Stacy Cook. "A Summary of the TPB and COG Scenario Study Findings: Informing Planning for the Metropolitan Washington Region." Draft Report. National Capital Region Transportation Planning Board, Metropolitan Washington Council of Governments, November 3, 2022. https://www.mwcog.org/events/2022/11/4/tpb-technical-committee.

9. How do the changes in the emissions and performance metrics estimated for the I-495 SEL project, relative to today, compare with a Metrorail line serving this corridor (instead of express toll lanes)?

   Metrorail service along this corridor could be seen as an alternative to the express lanes being examined. Such an alternative analysis would typically be part of a fiscally unconstrained scenario analysis as opposed to the development of a metropolitan transportation plan, such as Visualize 2050. The TPB's air quality conformity analysis was fiscally constrained and based on projects proposed for inclusion in Visualize 2050 and, as such, the TPB does not have estimates of emissions impacts for a Metrorail service along this route.

10. Can you clarify the proposed lane configurations for the Build Scenario with the I-495 SEL project? Please clarify if any of the existing general purpose (local/non-tolled express lanes) lanes (in either direction of I-495) will be converted to HOT/Tolled Express lanes.

    The I-495 SEL project, as submitted by VDOT for inclusion in Visualize 2050, proposes to add two high-occupancy toll (HOT)/express lanes in each direction between the Springfield Interchange and MD 210 on which vehicles with three or more people travel toll-free, plus a new express bus transit route between the Branch Avenue Metro Station and Tysons Corner, to be operational in 2031.

    A presentation by VDOT to the TPB at its April 15, 2025, meeting, displayed a planning-level schematic of the lane configuration across the bridge for the two options that VDOT had examined. The schematic shows five general purpose lanes (the same as what exists today) plus two HOT/express lanes in each direction.3 Based on VDOT's presentation schematic, it appears that space from the existing shoulders on the bridge would be repurposed, and that no existing general-purpose lanes would be converted to HOT/express lanes.

11. What is the approximate width/number of lanes that will need to be converted to rail should transit be developed across the Woodrow Wilson Memorial Bridge (WWMB)?

    A presentation by VDOT to the TPB at its April 15, 2025, meeting, displayed a planning level schematic of the lane configuration across the bridge for a scenario with Metrorail operating across the bridge. The schematic shows five general purpose lanes plus one HOT/express lane in each direction implying that one of the HOT/express lanes would be needed, perhaps with some additional unused space, to accommodate Metrorail.[3]

12. The plan option that includes the I-495 SEL project does not account for emissions resulting from additional bottlenecks/idling cars on secondary and arterial roads during AM and PM peak periods. With the emissions resulting from congestion/backups on local arterial roads unknown at this point, could those additional emissions result in the region exceeding allowable emissions budgets?

[3] National Capital Region Transportation Planning Board (April 15, 2025). Agenda Item 8 - Presentation - Visualize 2050 - VDOT SEL Project Update (https://www.mwcog.org/file.aspx?&A=94h0xhr%2fLZoB1qmK3aGbH3q2VAeXC1cvvj3pej6Eojk%3d)

The travel demand modeling and emissions modeling conducted for Visualize 2050 with the I-495 SEL project is done using industry-standard methods and tools and can and does predict the impact of the new lanes on traffic demand and operations on other roadways. Additionally, the emissions estimated by the regional air quality conformity analysis for the option including the I-495 SEL project do account for changes in emissions attributable to the project. The analysis indicates that the ozone precursor emissions with the I-495 SEL project, including its impact on traffic operations on other roadways, will be below the currently approved motor vehicle emissions budgets. As noted in response to question #8, this was an expected outcome, as staff have historically found that single projects, even if large in scope, have a very modest impact on regional performance metrics, including emissions.

13. Regarding the finding of more congestion on the I-495 general purpose lanes near the boundaries of the project, what did the analysis indicate regarding back-ups beyond the project limits and for local/state roads in proximity to or connecting to the project at the interchanges?

    As noted in response to question #8, the TPB's modeling is conducted for an area of about 6,800 sq. miles, and the analysis results are presented for the TPB's planning area of about 3,900 sq. miles. Consequently, the TPB's presentation of expected traffic operations on the roadways and transitways is summarized at a high level. At this level of analysis, modeling results indicate some increased congestion might occur on the Capital Beltway's general-purpose lanes in the vicinity of the project's termini.

    VDOT's project planning modeling is, however, conducted at a much finer, project corridor level. Such models might contain additional roadways, smaller geographic areas to capture land use and roadway connections, and other features at a closer range. As such, for more detailed estimates on the effect on individual road segments, TPB staff would defer to VDOT's corridor-level NEPA analysis. VDOT presented such information as part of its April 15, 2025, briefing to the TPB (see footnote 4 on previous page).

14. Has the process used, and the metropolitan transportation plan document (Visualize 2050) being developed, accounted for the changes to federal regulations?

    TPB staff believes that the process used to develop this update to the TPB's metropolitan transportation plan faithfully adheres to the current federal regulations for Metropolitan Planning Organizations (FHWA 23 CFR 450 Subpart C & FTA's 49 CFR 613). Staff's work on the plan has been done in close coordination with and guidance from the representatives of the U.S. Department of Transportation (FHWA and FTA) and the state departments of transportation and state and regional transit agencies. This work does not include any analysis of Diversity, Equity, and Inclusion (DEI) policies, nor any current analysis of climate change which is not identified in the federal planning regulations noted above. Should there be any changes to the MPO regulations pertaining to development and/or content of the metropolitan transportation plan, the TPB will be able to initiate revisions or updates as needed.

Climate Change and Greenhouse Gas (GHG) Goals

15. Are the topics of climate change and greenhouse gas (GHG) emissions included in the plan?

    No. Climate change and GHG emissions are not discussed in Visualize 2050, consistent with USDOT advice to strictly adhere to federally required work activities. At this time, there are no federal requirements for MPOs, like the TPB, to undertake activities focused on climate change and/or greenhouse gases.

16. Why has the TPB not conducted an accountable analysis of proposed projects that was required by its 2021 resolution?

The development of Visualize 2050 has been guided by TPB Resolution R19-2021, which was adopted in June 2021 and follows the approach approved by the TPB and documented in the TPB's Technical Input Solicitation document released in February 2023. With more than 150 highway and transit projects in the TPB's plan, staff had noted the inability to perform a systemwide impact analysis for every project submitted for inclusion in Visualize 2050. The TPB had noted, and as documented in the Technical Input Solicitation document, the transportation agencies were to be informed by the results of the several scenario studies previously conducted by the TPB evaluating 100+ alternative combination of transportation improvement projects with other programs and policies intended to improve mobility, accessibility and reduce vehicle miles traveled (VMT).

17. Why has the region not met the voluntary 2030 and 2050 greenhouse gas (GHG) reduction goals, which are set at 50% of 2005 levels in 2030 and 80% of 2005 levels in 2050?

As presented to the TPB on July 16, 2025, on-road GHG emissions for Visualize 2050 are forecast to be 22 percent below 2005 levels in 2030 and 33 percent below 2005 levels in 2050, and although GHG emissions are projected to be lower in the future than today, the predicted GHG emissions do fall short of meeting the targets adopted by the TPB through R18-2022 in June 2022. Visualize 2050 was not expected to meet the TPB's on-road transportation sector GHG reduction goals. The GHG reduction goals that the TPB adopted could be considered aspirational, since the principal study on the subject, the TPB's Climate Change Mitigation Study (CCMS) of 2021, which studied over 30 GHG reduction scenarios for each analysis year (2030 and 2050), failed to find a pathway for Visualize 2050 to meet the 2030 GHG reduction goals. A couple of the studied/modeled scenarios did attain the 2050 goal, but that was mainly driven by the scenarios based on very ambitious vehicle electrification assumptions, some of which also included very aggressive mode shift and travel behavior (or VMT reduction) strategies, many of which would require legislation to be enacted.[4]

It should also be noted that under current federal guidance for metropolitan planning, the TPB is required to adhere to federally required work activities in adopting its long-range transportation plans and TIP, which does not include GHG reductions. The TPB is, however, federally required to determine if the emissions of Volatile Organic Compounds and Nitrogen Oxides from the plan conform to the federally approved levels for this region.

[4] The mode shift and travel behavior (MSTB) strategies analyzed in the CCMS include: All bus and rail transit fare free; Telework levels comparable to those recorded during the height of the COVID-19 pandemic shutdowns (40% of all telework eligible jobs); Alternative land use assumptions (locations for growth in jobs and housing selected independent of jurisdictional boundaries); All workplace parking in regional activity centers priced by 2030; All workplace parking priced by 2050; DC core cordon pricing -- $10 to enter the central business district (CBD); VMT fees of 5 cents per mile in 2030 and 10 cents per mile in 2050.

The vehicle electrification strategies that were modeled for the CCMS include, among others: 100% of new light-duty vehicle sales will be electric vehicles (EVs) in 2030; 50% of new medium/heavy-duty truck sales will be EVs in 2030, with 100% by 2040; 100% of buses on the road will be EVs by 2030; Biofuels/renewable diesel will make up 20% of diesel fuel use in 2030 and 30% in 2050.

18. Last year, TPB staff said that the shift from EPA MOVES3 to MOVES4 resulted in lower estimated greenhouse gas (GHG) emissions (about 20%) and other pollutants in the modeling forecast. Is that the case with these results?

    The trend in the recent releases of the U.S. EPA emissions models has been lower estimates of GHG emissions and some criteria pollutants in future-year estimates. It is important to note that MOVES3 had a short shelf-life and was never used by TPB staff for either an air quality conformity analysis or for estimating greenhouse gas emissions for TPB's recent plans (Visualize 2045 or Visualize 2050). Instead, the MOVES2014b model was used for Visualize 2045 and MOVES4 was used for Visualize 2050.

19. The past estimates of on-road 2005 and 2012 GHG emissions in the region are now 10-12% higher in Visualize 2050 than those used in Visualize 2045. Could you please explain this? Does this have to do with the new MOVES model?

    Yes. To ensure that comparisons of GHG emissions across different periods of time are consistent, staff updated the GHG emissions estimates for 2005 and 2012 that were developed using the MOVES2014B model with estimates from the MOVES4 model. According to our analysis and EPA's own analysis, the MOVES4 model typically shows higher GHG estimates for historical years and lower estimates for future years.

Equity

20. Is the topic of equity in the plan?

    No. Current federal guidance for metropolitan planning organizations, such as the TPB, is to strictly adhere to federally required planning activities. Metropolitan planning requirements no longer require MPOs to undertake the Environmental Justice analysis that was the basis for the past equity-related work activities of the TPB. The TPB's previous work on equity is still available for your viewing.

Induced Demand/Induced Travel

21. What is induced demand/induced travel? How well is it accounted for in the TPB's production-use, trip-based travel demand forecasting model (TDFM), called the Gen2/Ver. 2.4.6 Travel Model and the upcoming activity-based travel model (Gen3 Travel Model)?

    A U.S. EPA guidebook defines induced demand as "any increase in travel arising from improved travel conditions," whether travel conditions are improved by reducing travel times/costs or improving traveler safety/comfort.[5]

    When capacity is added to a highway network, traffic will be attracted to the road segment with added capacity, resulting in more traffic through that stretch of road. Here are the types of likely changes in travel behavior, subdivided into three timeframes, when road capacity is added:

    - Immediate: Route shift, mode shift, and re-scheduling of travel.
    - Near term: Change in trip destination, change in trip linking, and making new trips.

[5] Jack Faucett Associates, *Guidebook on Induced Travel Demand*, EPA-420-R-02-103 (U.S. Environmental Protection Agency, 2002), https://nepis.epa.gov/.

- Long term: Change of home location, change of work location, change of school location, purchase of new car, and land use development.

As found in past research by the TPB staff,[6] both the Gen2 (production-use) and Gen3 (developmental) travel models do account for many of the changes in travel behavior associated with induced demand. However, the Gen3 Model, as an activity-based model, will be able to account for more facets of induced demand than the Gen2 Model.

Air Quality

22. What level of updated air quality modeling can occur regardless of whether changes are made to the project concept? Is it an option to modify some of the base assumptions in the air quality model?

The TPB is required to use a current U.S. Environmental Protection Agency (EPA) mobile emissions model, such as MOVES4 or MOVES5, to conduct the air quality conformity analysis of the Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP). The TPB staff used MOVES4, since that was the latest emissions model available when the analysis began. In general, the EPA MOVES model cannot be altered, including the adopted rules and regulations that are embedded in the model. Staff are only allowed to update region-specific inputs such as travel (VMT) and vehicle population, but these need to come from official sources, such as the TPB's regional travel demand model and the vehicle registration data.

Travel Models and Mobile Emissions Models

23. What rates of telecommuting are assumed?

The travel model reflects pre-pandemic levels of telecommuting. The TPB's production-use, regional travel demand model does not have telecommuting rates as an explicit input. Rather, telecommuting is implicitly reflected in the trip generation model rates and resulting travel volumes used to calibrate and validate the model. The model calibration is based on the TPB's 2007/2008 Household Travel Survey, which was the latest such survey when model calibration was conducted, with the model subsequently further validated to year-2018 conditions, using traffic counts and transit ridership from 2018.

24. What version of fuel economy standards and pace of electric vehicle adoption are assumed?

Assumptions related to vehicular emissions used in the regional air quality conformity analysis correspond to those included in the U.S. EPA's mobile emissions model, MOVES. The EPA's emissions model used in TPB's conformity analysis, MOVES4, incorporates the regulations listed in Table 1-2 (page 8) of the MOVES4 overview document.[7] Two of the regulations included in MOVES4 are 1) Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards (January 2023); and 2) Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards (December 2021).

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[6] Feng Xie, "Considerations of Induced Demand in the TPB Regional Travel Demand Models," Memorandum to Mark Moran, June 15, 2021.
[7] "Overview of EPA's Motor Vehicle Emission Simulator (MOVES4)," Office of Transportation and Air Quality, EPA-420-R-23-019, August 2023, publication (https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10186IV.pdf).

Increased adoption of electric vehicles is reflected in MOVES4 through a combination of user inputs/national defaults and emissions rates that are embedded in the model to achieve the emissions standards noted above. It is important to emphasize that the most aggressive vehicle electrification strategies, such as the Advanced Clean Cars II Rule, are not assumed in Visualize 2050.

25. Comment from the July 16, 2025, TPB meeting: "In the engineering profession, we have a saying, 'all models are wrong, but some are useful.' Unfortunately, due to flawed assumptions, TPB's modeling is both wrong and not useful. Here's why: TPB says the expressway will not cause appreciable increases in traffic or emissions, nor will it affect land use or mode choice. However, per USDOT's recent report, Improved Travel Demand Modeling,[8] these assumptions and findings are simply not realistic."

    The TPB's production-use, regional travel demand forecasting model (TDFM) – known as the Gen2/Ver. 2.4.6 Travel Model – is a state-of-the-practice, aggregate, trip-based travel model, sometimes called a "four-step" model. The Gen2 Travel Model uses an aggregate assignment of both transit person trips (transit assignment) and private motor vehicle trips (highway assignment). The Gen2 Travel Model was estimated and calibrated, using industry-standard practices, to year-2007/2008 conditions, specifically the 2007/2008 COG/TPB Household Travel Survey and various transit on-board surveys conducted in 2007 and 2008.[9] The Gen2 Model has been validated to observed traffic counts and/or transit boardings for the following years: 2010,[10] 2014,[11] and 2018.[12] The model is documented in a travel model user's guide,[13] which is updated whenever the model is updated. The travel model is used by most TPB member agencies in their project development work that is frequently reviewed and approved by federal transportation agencies (FHWA and the FTA).

    In comments made at the July 16, 2025, TPB meeting, the commenter states that the TPB TDFM makes use of "flawed assumptions." However, they did not specify which assumptions are flawed. However, based on the remainder of the commenter's statement, it appears that "flawed assumptions" may be referring to land use assumptions used in the modeling analysis. The land use assumptions/forecasts used in the TPB's modeling process, known as the Cooperative

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[8] *Improved Travel Demand Modeling*, with Gretchen Goldman et al., Climate Strategies That Work (U.S. Department of Transportation, 2024), https://www.transportation.gov/priorities/climate-and-sustainability/improved-travel-demand-modeling-climate-strategies-work-pdf.
[9] Ronald Milone et al., *Calibration Report for the TPB Travel Forecasting Model, Version 2.3, on the 3,722-Zone Area System*, Final Report (Metropolitan Washington Council of Governments, National Capital Region Transportation Planning Board, 2012), https://www.mwcog.org/transportation/data-and-tools/modeling/model-documentation/.
[10] Ronald Milone, "2010 Validation of the Version 2.3 Travel Demand Model," Memorandum to Files, June 30, 2013, https://www.mwcog.org/transportation/data-and-tools/modeling/model-documentation/.
[11] Meseret Seifu, "Year-2014 Validation of TPB Version 2.4 Travel Model," Memorandum to Feng Xie, October 29, 2020, https://www.mwcog.org/transportation/data-and-tools/modeling/model-documentation/.
[12] Meseret Seifu and Sanghyeon Ko, "Year-2018 Validation of TPB Version 2.4 Travel Model," Memorandum to Feng Xie, August 17, 2021, https://www.mwcog.org/transportation/data-and-tools/modeling/model-documentation/.
[13] Meseret Seifu et al., *User's Guide for the COG/TPB Gen2/Version 2.4.6 Travel Demand Forecasting Model* (Metropolitan Washington Council of Governments, National Capital Region Transportation Planning Board, 2023), https://www.mwcog.org/transportation/data-and-tools/modeling/model-documentation/.

Forecasts, are the official forecasts developed for the region by COG, working with local government staff. The process uses a regional econometric model that projects employment, population, and households for the metropolitan Washington region based on national economic trends and local economic and demographic factors. These "top down" forecasts are reconciled with local jurisdictional "bottom up" forecasts of land activities, to ensure that they are within 3% of each other. Previous assessment of these forecasts has shown the forecasts to closely track empirical data at regional levels. Although the COG land use forecasting process does not involve using a formal land use model, the land activity projections provided by TPB member jurisdictions' planning departments reflect the locally adopted comprehensive plans, which reflects the consideration of changes to the transportation infrastructure and land use activities.

Similarly, regarding mode choice, based on TPB staff's internal assessment of how well the travel model captures the effect of induced demand,[14] staff has found that our regional travel models do, in fact, capture the effects of a transportation project on mode choice. Nonetheless, as we have found in various studies over the years, although a transportation project can have a large impact on people traveling in the affected corridor, by contrast, at the regional level, a single transportation project is rarely able to make a significant impact on regional metrics, such as regional VMT, regional vehicle-hours of delay (VHD) or regional mode shares.

26. Comment from the July 16, 2025, TPB meeting: "In the report, USDOT instead recommends elasticity-based approaches to predict highway traffic impacts. Elasticity tools, like our own RMI Shift Calculator, clearly demonstrate that adding 41 urban lane-miles to the Washington Metro area will substantially increase local traffic, by 25,000 additional cars per year, per our own estimates, and hundreds of millions of additional VMT and emissions. In conclusion, TPB's assumptions go against USDOT's best practices and should be revisited."

Economists define "elasticity of demand" or, more formally, "elasticity of demand with respect to price" as the change in demand for a good or service in response to a change in the price of the good or service, usually represented as the ratio of these two metrics, expressed as percentages, e.g., the percent change in demand divided by the percent change in price. Similarly, in the transportation planning field, one is often interested in the elasticity of demand with respect to changes in the transportation supply/capacity. For example, if one increases lane-miles by 1%, what will be the resultant increase in VMT? An elasticity value of 1.0 means that VMT will increase proportionally with lane-miles. Since there can be short-run and long-run changes in travel behavior, transportation researchers often differentiate between short-run and long-run elasticities. As noted in a 2024 USDOT report (cited earlier, *Improved Travel Demand Modeling*):

> *Short-run elasticities capture induced VMT effects that occur immediately and within the first 1-3 years after a capacity expansion, such as substituting driving for other modes. Long-run elasticities capture a broader range of induced travel effects that occur after 3 to 10 years, including persistent short-run effects and changes in land use. (p. 15)*

Regarding short-run and long-run elasticities, the 2024 USDOT report notes,

> *In the U.S., short-run elasticity estimates range from 0.07-0.76, while longer-run elasticity estimates range from 0.26-1.06. Excluding studies that included*

[14] Feng Xie, "Considerations of Induced Demand in the TPB Regional Travel Demand Models," Memorandum to Mark Moran, June 15, 2021.

> *local roads, which tend to have the lowest VMT density of all road types and provide the least per-mile improvement in travel speed or access, the range of elasticities shrinks to 0.23-0.76 (short-run) and 0.77-1.06 (long-run). (p. 15)*

If we presume that the range of long-run elasticities shown in the USDOT report (0.77 to 1.06) apply to the Washington, D.C. region: the predicted, long-run percent change in VMT resulting from all of the roadway projects in Visualize 2050 would be between 0.77 x 3% (= 2.31%) and 1.06 x 3% (= 3.18%). According to the TPB's system performance analysis, the forecast change in VMT between the 2050 No Build and the 2050 that includes all highway and transit projects in the plan is 1.58%.

Similarly, the I-495 SEL project is expected to result in an increase of 41 lane-miles, which represents a 1% increase in freeway lane miles[15] or a 0.23% increase in total lane miles regionally. Thus, at the regional level, this would mean that the predicted, long-run percent change in VMT due to the SEL would be between 0.77 x 0.23% (= 0.18%) and 1.06 x 0.23% (= 0.24%). According to the TPB's system performance analysis, the forecast change in VMT from the I-495 SEL project in 2050 is 0.26%.

Finally, the 2024 USDOT report discusses the concept of elasticity and describes the difference between short-run and long-run elasticity, but based on our review of the report, it does not say that MPOs need to be using elasticity-based models. In fact, the opposite might be true for MPOs located in non-attainment areas.

As background, there are different types of travel models being discussed here: 1) elasticity-based sketch models; and 2) network-based travel demand forecasting models. The RMI Shift Calculator is an example of the first type. The TPB TDFM is an example of the second type. According to the air quality conformity (AQC) regulations,[16] for urban areas conducting an air quality conformity analysis, "estimates of regional transportation-related emissions used to support conformity determinations must be made at a minimum using network-based travel models according to procedures and methods that are available and in practice and supported by current and available documentation." (p. 34). Thus, a sketch planning model will not suffice for the air quality conformity analysis that TPB must conduct since the region is a non-attainment area for ground level ozone.

In conclusion, TPB staff disagree with the assertion that "TPB's assumptions go against USDOT's best practices and should be revisited." As noted earlier, TPB's TDFM is a state-of-the-practice, aggregate, trip-based TDFM that has been reviewed by several consulting firms over the years, and which is appropriate for the types of modeling analyses that must be conducted by the TPB staff. Nonetheless, TPB staff are always willing to hear about and try out new modeling tools that seem promising and relevant to our work.

[15] Finch et al., "Finalization of Project Inputs for Air Quality Conformity Analysis: Visualize 2050 & FY 2026-2029 TIP," Presentation to the Transportation Planning Board, July 16, 2025.
[16] *Transportation Conformity Regulations as of April 2012*, EPA-420-B-12-013 (U.S. Environmental Protection Agency, 2012), https://www.fhwa.dot.gov/environment/air_quality/conformity/laws_and_regs/rule.cfm.

ITEM 9 ATTACHMENT 2

LETTERS RECEIVED

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.
Commissioner

1401 East Broad Street
Richmond, Virginia 23219

April 30, 2024

The Honorable Christina Henderson, Chair
National Capital Region Transportation Planning Board
Metropolitan Washington Council of Governments
777 North Capitol Street, N.E., Suite 300
Washington, DC 20002-4201

RE: I-495 Southside Express Lanes Study

Dear Chair Henderson:

The Virginia Department of Transportation (VDOT) continues to value the partnership with the Transportation Planning Board (TPB) as we collectively seek to update the Visualize 2050 Constrained Long Range Plan (CLRP). The efforts and collaboration amongst TPB and its member states, jurisdictions, legislative representatives, and regional authorities is critical to the support of regionally significant projects. As you are aware, project submissions for Visualize 2050 by VDOT include the I-495 Southside Express Lanes project. This critical project seeks to develop a multimodal solution with a goal of moving the most people as efficiently as possible through this congested segment of the Capital Beltway. The project presents the opportunity to create and expand transit connections within the region while also providing congestion relief and increased travel reliability. The project is consistent with the TPB's adopted goals for the development of Visualize 2050, specifically through its objective to reduce travel times for transit services and the free use of the express lanes network by these services and other high occupancy vehicles.

Over the last several months, we have heard concerns regarding the preservation of space on the Woodrow Wilson Memorial Bridge (WWMB) for future rail transit. The National Environmental Policy Act (NEPA) study completed in 2000 delineated the inside lanes of the bridge for future rail transit and its ensuing Record of Decision memorialized this requirement. I am writing to clearly state that VDOT is fully supportive of future rail transit over the WWMB and as such is continuing to pursue rail preservation by advancing alternatives that can be pursued in the near term while including flexibility for the long term, are cost effective, and can be built largely within the footprint of the existing corridor. The concepts under NEPA review incorporate rail preservation either through retaining existing, unoccupied space or by incorporating a commitment to convert necessary space to rail transit in the future when Washington Metropolitan Area Transit Authority (WMATA) and the region are positioned to implement service across the WWMB. Incorporating this commitment as part of the NEPA process and its ultimate federal approval means this requirement is legally enforceable. VDOT's adherence to this requirement will not result in costs for WMATA to convert the space when they are ready to implement service. Further, VDOT has stated, and I reiterate, that terms within any future contract or concessionaire agreement would similarly incorporate a requirement for conversion to rail transit in the future consistent with the preferred alternative approved through the NEPA process. This means a future agreement would make clear the need for the concessionaire to vacate the space necessary to operate heavy rail.

Regarding transit investments, it has been the practice of the Commonwealth to incorporate on-going transit payments from express lane projects in Northern Virginia to enhance multimodal options in the respective corridor. It is VDOT's intent to continue the advocacy for our established practice with this project. However, since this project is still at preliminary stages, we are not able to identify the amount nor the nature of funding for transit investments in the corridor at this time. To underscore the Commonwealth's commitment to this approach, it is worth noting that since 2017 VDOT alone and in conjunction with our express lane partners have provided $156 million to the Commuter Choice Program which has been used to fund park and ride lots, bus purchases, shared use paths, and transit stations.

In closing, we understand the importance of future rail transit on the Woodrow Wilson Bridge and are committed to ensuring the space will be available. I hope you will continue to support the Commonwealth's efforts to solve the region's most challenging congestion in the near term while also retaining the flexibility necessary to adjust our problem-solving approaches in the future.
Sincerely,

Stephen C. Brich, P.E.
Commissioner of Highways

C: The Honorable W. Sheppard Miller, III, Secretary of Transportation
Mr. Kanti Srikanth, TPB, Executive Director
Ms. Cathy McGhee, P.E., VDOT, Chief Deputy Commissioner
Ms. Angel Deem, VDOT, Chief of Policy
Mr. Bill Cuttler, P.E., VDOT-NoVA, District Engineer
Ms. Maria Sinner, P.E., VDOT-NoVA, ADA Planning and Investment

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.
Commissioner

1401 East Broad Street
Richmond, Virginia 23219

May 7, 2024

The Honorable Christina Henderson, Chair
National Capital Region Transportation Planning Board
Metropolitan Washington Council of Governments
777 North Capitol Street, N.E., Suite 300
Washington, DC 20002-4201

RE: VDOT Response to Prince George's County Questions on I-495 SEL Project

Dear Chair Henderson,

At the April 17th TPB Board Meeting, VDOT received four questions from Prince George's County on the Commonwealth's submission of the I-495 Southside Express Lanes (SEL) project for Visualize2050. As requested, this letter is a response to the following questions asked by fellow TPB member, Victor Weissburg, Prince George's County at the meeting.

Q1. Has a timeline on implementing the bus plan from the DRPT Study with phasing connected to milestones and funding been established?

A1. The DPRT study was completed in April 2023. The study identified near-, mid- and long-term recommendations. Next steps in advancing the study included identifying potential funding sources and securing funding. For more information reference the following link. https://drpt.virginia.gov/studies-and-reports/i-495-southside-transit-tdm-study/

Q2. How will a transfer to rail from HOT when that project is advanced be executed, especially given the nature of long term P3 contracts?

A2. During the procurement and events leading up to the execution of an agreement, the private operator will be fully aware of the future rail expansion plans. Specific language can be included in a comprehensive agreement (CA) regarding preservation of future rail and failure to adhere to the requirements of the comprehensive agreement by the private operator could result in breach of contract and default. An example of such language was included in the Transform 66, Outside the Beltway CA regarding expansion of the Orange Line.

> **Section 12.05 Alternative Facilities**
> (b) Orange Line Expansion. The opening of the Orange Line for operations within the I-66 Corridor encompassing the Express Lanes within the 10 years following the Agreement Year in which the Project Completion Date occurs will be considered an Alternative Facility.

The Honorable Christina Henderson
May 7, 2024

Exhibit B-1
Preservation of a minimum of 42-foot median for future transit use as graphically depicted in the RFP Conceptual Plans

Q3. We need a clearer and stronger understanding of how travel from locations east of MD 210 will not be significantly adversely impacted?

A3. Preliminary traffic analysis for the project is underway. A detailed traffic analysis will be completed as the NEPA study progresses. Travel westbound into Virginia would have access to Express Lanes or the same number of general-purpose lanes as exist today. This would provide enhanced travel choice and travel time reliability, both in single occupancy vehicles, carpools, or bus transit.

Q4. What are the benefits to Prince George's County of having HOT lanes on this portion of the Beltway? We have not heard those fully articulated.

A4. The project benefits are the following:

- The express lanes in Northern Virginia are achieving the Commonwealth's primary goal of moving more people through a very busy, and unpredictable region, while providing improved travel reliability and enhanced transit options in a cost-effective manner.
- The 495 Southside Study is evaluating expansion of express lane to provide system continuity, additional travel choices, reduction of congestion, improvement in travel reliability and safety along with evaluating consistency with local and regional plans.
- While the express lanes provide a reliable option for single-occupant vehicles, they also encourage and benefit buses and carpools, by providing toll-free access to the express lanes, and the benefit of a faster and more reliable trip.
- The project will also benefit travelers in the "free" or general-purpose lane as a result of trips diverted to the express lanes.
- The project is anticipated to provide benefits consistent with other express lane projects in the region.
    - On the 495/395/95 Express Lanes, there are approximately 11,000 carpool (HOV-3+) trips daily. In the last year, 48% of total trips were carpools. On 66 Express Inside and Outside the Beltway approximately 7,550 and 7,330 daily trips respectively were carpools.
    - The 495/395/95 carries approximately 1,200 bus trips each weekday and the 66 Express Lanes Outside the Beltway carries an average of 1,400 bus trips each weekday further reducing congestion in the general-purpose lanes on these interstates.
    - Express lane projects have also supported transit investments such as through the Commuter Choice Program. Since 2017, this program has received $156 million which has funded 42 buses, 29 bus service improvements, 14 new express bus routes, 6 commuter incentive programs, 4 rail station enhancements, 3 park and ride lots, and 1 BRT line.

Thank you for providing us an opportunity to respond to Mr. Weissburg's questions. Representatives from VDOT will be available to follow-up as needed with any additional concerns expressed from any TPB member regarding the submission of any of the Commonwealth's projects for Visualize2050.

Sincerely,

for Nicholas J. Roper

Bill Cuttler, P.E.
Northern Virginia District Engineer

The Honorable Christina Henderson
May 7, 2024

Cc: Ms. Maria Sinner, P.E., VDOT-NoVA
Ms. Michelle Shropshire, P.E., DBIA, VDOT-NoVA
Mr. Amir Shahpar, P.E., VDOT-NoVA
Mr. Kanti Srikanth, National Capital Region Transportation Planning Board
Mr. Victor Weissberg, Prince George's County

May 31, 2024

Mr. Bill Cuttler, P.E.
Northern Virginia District Engineer, VDOT
4975 Alliance Drive
Fairfax, VA 22030

Dear Mr. Cuttler:

I am writing regarding VDOT's interest in including the I-495 Southside Express Lanes Study (I-495 SEL) as a funded project[1] in the National Capital Region Transportation Planning Board's (TPB) Constrained Long Range Transportation Plan prior to selecting a locally preferred alternative. The Washington Metropolitan Area Transit Authority (Metro) has the following questions about the proposed near-term bus service and the future opportunity for high-capacity transit, including bus rapid transit, light rail, or Metrorail, across the Woodrow Wilson Bridge.

The 2000 Wilson Bridge Record of Decision documented the need to preserve the center through lanes for future transit use, including rail transit, which resulted in the center bridge spans being built to accommodate that possibility. As noted previously, Metro strongly supports transit investments in the I-495 corridor, including near term bus service and preserving right-of-way for future high-capacity transit along I-495 and across the Woodrow Wilson Bridge. To meet the region's adopted climate mitigation goals of 50 percent greenhouse gas emission reductions below 2005 levels by 2030 and 80 percent reduction by 2050, a future I-495 SEL project must incorporate robust transit and manage congestion.

Providing answers to the questions below will assist Metro and our regional partners to better understand the Virginia Department of Transportation's (VDOT) and a potential future concessionaire's ability to provide transit in the near-term and preserve the region's future high-capacity transit options. This information will enable a more thorough consideration for the project's inclusion in the Long-Range Transportation Plan. Key open issues include how bus service will be integrated into the project and questions about rail transit preservation and future conversion.

Washington Metropolitan Area Transit Authority

300 7th Street, SW
Washington, DC 20024
202-962-1234

wmata.com

A District of Columbia, Maryland and Virginia Transit Partnership

[1] Projects included in TPB's long range plan must have reasonable expectation of funding.

Future Rail Transit Right-of-way Preservation

1. Based on the potential future Metrorail concept alignment and typical section documentation provided to VDOT in February 2024,[2] please provide documentation that details that sufficient space will exist within the I-495 SEL Beltway corridor to accommodate future rail transit, including access onto the Beltway and across the Woodrow Wilson Bridge.
2. Please describe in detail how VDOT believes future construction and operation of a rail line (light rail or Metrorail) would occur once the current alternative concepts of one or two Express Lanes in each direction are constructed and operational.
3. Please provide the near-term commitments VDOT will make prior to final Commonwealth Transportation Board approval of a I-495 SEL project to ensure future rail transit can be constructed efficiently with no additional cost burden to a future rail project.
4. Is the future conversion of Express Lanes to rail transit use contingent on agreement by a concessionaire in a future solicitation? Can VDOT commit to making this term non-negotiable?
5. If an Express Lane concessionaire is selected to build and operate a future I-495 SEL project, would the concessionaire also be required to provide temporary access to enable adjacent construction of a future rail transit project? Would there be any cost (to the entity requesting access) or penalty (to VDOT in terms of reduced revenue or concessionaire payment or otherwise) for such construction access to be granted?
6. Please provide a construction cost estimate for the conversion of the two I-495 SEL Express Lanes (one in each direction) from operating highway travel lanes to a fully available rail transit right-of-way for future rail construction (not the rail construction itself). Please describe what is included in those costs, and which organization (between VDOT and Metro) would be responsible for which costs.
7. Please provide examples of where a successful conversion from managed highway lanes to rail transit has been completed, including the interplay with a concessionaire.

Near-Term Bus Service

8. How does VDOT plan to integrate bus service into the I-495 SEL Project? At what point in the project development process will bus service planning

[2] This potential future Metrorail concept is aligned with Metro's Blue, Orange, Silver Study.

and decision-making begin? When does VDOT expect that bus service funded by the project would begin?

9. Please provide documentation, assumptions, and analysis from the Virginia Department of Rail and Public Transportation study that was completed in 2023 that recommended four new bus routes and estimated 8,000 daily riders.
10. Assuming buses are integrated into the future I-495 SEL project, would the concessionaire be required to directly fund the full operational cost of new Metrobus service between Virginia and Maryland? Would existing service be eligible for funding? What would the start and end of such an agreement be? Please provide confirmation that no transit provider will be required to pay to use the Express Lanes.
11. Will the I-495 SEL alternative study concepts include Express Lane access points at Telegraph Road and I-295 in Maryland? Current and future Metrobus service – notably the current NH2 and future P94 route[3] – would benefit from direct Express Lane access including to National Harbor.

We look forward to further discussions about how the region can provide near-term and long-term opportunities for transit within the I-495 SEL study area. If you have any questions regarding the study or this memo, please contact Jonathan Parker at jhparker@wmata.com and (202) 962-1040.

Sincerely,

Thomas J. Webster
Executive Vice President and
Chief Planning and Performance Officer

cc: Randy Clarke, General Manager & Chief Executive Officer, Metro
WMATA Board of Directors
Kanti Srikanth, TPB Executive Director
Christina Henderson, TPB Chair
Jennifer DeBruhl, Director, DRPT
Allison H. Davis, SVP, Planning and Sustainability, Metro

[3] Based on Metro's Proposed 2025 Better Bus Network.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.
Commissioner

1401 East Broad Street
Richmond, Virginia 23219

June 13, 2024

Mr. Thomas J. Webster
Executive Vice President and Chief Planning Officer
Washington Metropolitan Area Transit Authority
300 7th Street, SW
Washington, DC 20024

Dear Mr. Webster:

On behalf of the Virginia Department of Transportation (VDOT), thank you for your letter on May 31, 2023, regarding the I-495 Southside Express Lanes Study (495 Southside Study). We greatly value our continued partnership with the Washington Metropolitan Area Transit Authority (WMATA) regarding the 495 Southside Study, which began when the Study was initiated in 2022.

VDOT continues to lead a robust agency coordination effort to ensure key regional partners such as WMATA are informed and have many opportunities to provide input on the 495 Southside Study. This coordination with agency and regional partners involved establishing a Stakeholder Technical Advisory Group (STAG). To date, three STAG meetings have been held, in which WMATA staff attended and provided input. VDOT also invited WMATA to participate with other stakeholders and agencies in our monthly agency meetings, referred to as NEPA Day, which provide additional opportunities to engage on the 495 Southside Study. VDOT has presented the 495 Southside Study eighteen (18) times at NEPA Day and WMATA has participated in several of these meetings.

Following our 495 Southside Study public information meetings held in fall 2023, WMATA provided written comments (dated October 10, 2023) responding to the information presented at the meeting. VDOT is appreciative of those comments, as they provided needed information and offered support for the alternatives under consideration, noting the need for these alternatives to support transit options across the WWMB including buses in the shorter term and rail transit in the longer term.

In the May 31, 2024, letter several specific questions were raised regarding the 495 Southside Study. Responses that will provide clarity to the study, our processes, and commitments moving forward are included below.

1. **Based on the potential future Metrorail concept alignment and typical section**

documentation provided to VDOT in February 2024, please provide documentation that details that sufficient space will exist within the I-495 SEL Beltway corridor to accommodate future rail transit, including access onto the Beltway and across the Woodrow Wilson Bridge.

The existing WWMB is 52'wide in the local lanes (outer span), and 52' wide in the through lanes section (inner span) in each direction. A typical section across the bridge that includes one, new express lane and barrier-separated rail transit in each direction can be accommodated within this available space through utilization of the existing 18' inside shoulder in the through section. Discussions of space needs for rail transit in November and December 2023, along with WMATA's February 2, 2024, correspondence to VDOT confirmed the adequacy of the 18' rail typical section assumption. Based on the width of the through lanes section on the WWMB, there is enough room to provide two Express Lanes in the near-term, or to accommodate one Express Lane and space for rail transit in the long-term. The difference would be a shift of one through lane into the local lanes section.

2. **Please describe in detail how VDOT believes future construction and operation of a rail line (light rail or Metrorail) would occur once the current alternative concepts of one or two Express Lanes in each direction are constructed and operational.**

While construction and operations details will be evaluated later in the project development process, common practices employed within confined work areas and complex construction activities include temporary reductions to lane and shoulder widths to accommodate work areas, temporary lane closures, and reduction of speed limits. Additionally, there may be opportunities to shift lanes between the local and through sections (barrier separated) on the WWMB, subject to final engineering details, along with means and methods of construction.

3. **Please provide near-term commitments VDOT will make prior to final Commonwealth Transportation Board approval of a I-495 SEL project to ensure future rail transit can be constructed efficiently with no additional cost burden to a future rail project?**

Please see Commissioner Brich's correspondence to TPB members dated April 30, 2024, for an outline of VDOT's commitments to rail preservation on the WWMB. This letter makes clear that the alternatives under construction in the ongoing NEPA process incorporate rail preservation, therefore, selection of a preferred alternative by the Commonwealth Transportation Board will be one that provides the opportunity for future rail transit. Further, the letter states regarding the federal approval of the preferred alternative, "VDOT's adherence to this requirement will not result in costs for WMATA to convert the space when they are ready to implement service."

4. **Is the future conversion of Express Lanes to rail transit use contingent on agreement by a concessionaire in a future solicitation? Can VDOT commit to making this term non-negotiable?**

As stated in the April 30, 2024, letter, the concepts included in the 495 Southside Study incorporate rail preservation either through retaining existing, unoccupied space or by incorporating a commitment to convert necessary space to rail transit in the future when

WMATA and the region are positioned to implement service across the WWMB. Terms within any future contract or concessionaire agreement would incorporate a requirement for conversion to rail transit in the future consistent with the recommended, preferred alternative approved through the NEPA process. The future procurement process and resulting agreement would make clear the need for the concessionaire to vacate the space necessary to operate heavy rail. As such, a separate solicitation for the conversion will not be required.

5. **If an Express Lanes concessionaire is selected to build and operate a future I-495 SEL project, would the concessionaire also be required to provide temporary access to enable adjacent construction of a future rail project? Would there be any cost (to the entity requesting access) or penalty (to VDOT in terms of reduced revenue or concessionaire payment or otherwise) for such construction access to be granted?**

A comprehensive agreement with a concessionaire could include provisions to coordinate construction activities with the rail contractor. The efforts associated with this coordination along with vacating the space for rail will be the subject of future negotiations between the Commonwealth and a potential concessionaire. As we have stated, VDOT is fully supportive of future rail transit over the WWMB at such time WMATA and the region are positioned to implement service.

6. **Please provide a construction cost estimate for the conversion of the two I-495 SEL Express Lanes (one in each direction) from operating highway travel lanes to a fully available rail transit right-of-way for future rail construction (not the rail construction itself). Please describe what is included in those costs, and which organization (between VDOT and Metro) would be responsible for which costs.**

Construction cost estimates are not available. Detailed engineering and the associated cost estimating will follow the NEPA study as part of VDOT's project development process. As stated in the April 30, 2024, letter to TPB members from Commissioner Brich, "VDOT's adherence to this requirement will not result in costs for WMATA to convert the space when they are ready to implement service."

7. **Please provide examples of where a successful conversion from managed highway lanes to rail transit has been completed, including the interplay with a concessionaire.**

The Department is not aware of a managed lane highway project that was converted to transit. VDOT's Transform 66 is an example of a managed lanes project that successfully includes provisions for transit, BRT and the Orange Line, from the beginning. More specifically, the Orange Line is listed as an Alternative Facility in the contract, which states that only the opening of the Orange Line within 10 years from project completion of the Transform 66 project would constitute a compensation event.

8. **How does VDOT plan to integrate bus service into the I-495 SEL Project? At what point in the project development processes will bus service planning and decision making begin? When does VDOT expect that bus service funded by the project would begin?**

It has been the practice of the Commonwealth to incorporate on-going transit payments from express lanes projects in Northern Virginia to enhance multimodal options in the respective corridor. The Virginia Department of Rail and Public Transportation (DRPT) completed the I-495 Southside Transit/Transportation Demand Management Study in April 2023 for the purpose of identifying a range of multimodal solutions in the corridor to inform VDOT's NEPA study. Should the I-495 Southside Express Lanes project advance under a concessionaire agreement, as currently anticipated, it could provide a dedicated source of revenue to implement the types of investments identified in the DRPT study which include express and local bus routes, as well as commuter assistance programs and technology enhancements.

9. **Please provide documentation, assumptions, and analysis from the Virginia Department of Rail and Public Transportation study that was completed in 2023 that recommended four new bus routes and estimated 8,000 daily riders.**

For reference, the DPRT study can be found at the following link: https://drpt.virginia.gov/studies-and-reports/i-495-southside-transit-tdm-study/. Specific sections in the study that describe the assumptions and methodology for the transit recommendations are on pages 88-149, with pages 134-136 summarizing the data for the refined transit recommendations. Additionally, within the study, eight new bus routes are recommended in the refined transit recommendations that are estimated to generate 7,875 daily riders by 2045. Appendix E also provides information on each new bus route. If there are additional questions regarding the DPRT study, a direct contact with DPRT can be provided.

10. **Assuming buses are integrated into the future I-495 SEL project, would the concessionaire be required to directly fund the full operational cost of new Metrobus service between Virginia and Maryland? Would existing service be eligible for funding? What would the start and end of such an agreement be? Please provide confirmation that no transit provider will be required to pay to use the Express Lanes.**

Multimodal solutions, including bus service and transit funding, have been a focal point of negotiations for al concessionaire-operated facilities in Northern Virginia. Since 2017, the Commuter Choice program has received $156 million, which has funded 42 buses, 29 bus service improvements, 14 new express bus routes, 6 commuter incentive programs, 4 rail station enhancements, 3 park and ride lots, and 1 BRT line. VDOT intends to continue our established practice to incorporate on-going transit payments for the I-495 SEL project. Since this project is still in the study phase, VDOT is not able to identify the amount nor the nature of funding for transit investments in the corridor at this time. The tolling policy for the I-495 SEL project will

be consistent with the existing express lanes in Northern Virginia, which include free use by buses and vehicles carrying 3 or more travelers.

11. **Will the I-495 SEL alternative study concepts include Express Lane access points at Telegraph Road and I-295 in Maryland? Current and future Metrobus service- notably the current NH2 and future P94 route- would benefit from direct Express Lane access including to National Harbor.**

Both build alternatives under consideration in the 495 Southside Study assume access at the I-295 interchange. These build alternatives also assume access just East of the Springfield Interchange for entering and exiting the Express Lanes, at the interchanges of Van Dorn Street, US Route 1, MD 210, and just east of MD 210 for entering and exiting the Express Lanes. Key consideration for access is based on spacing, geometry, and potential impacts. Access was reviewed for the Telegraph Road interchange and dismissed from further consideration due to its close proximity to Route 1, existing complex CD roads through the interchange, existing flyover ramps/bridge piers, adjacent development and limited right of way.

We look forward to a continued partnership as the 495 Southside Study advances. I hope WMATA will support our efforts to bring near-term solutions to solve the region's complex transportation challenges while maintaining a long-term goal of accommodation of rail transit.

Sincerely,

Bill Cuttler, P.E.
Northern Virginia District Engineer

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219-2000

Stephen C. Brich, P.E.
COMMISSIONER

June 13, 2024

Mr. Floyd E. Holt
Deputy Chief Administrative Officer
Prince George's County, Maryland
1301 McCormick Drive
Largo, MD 20774

Dear Mr. Holt:

Thank you again for our recent discussion and Prince George's County's continued engagement with the Virginia Department of Transportation (VDOT) team working on the Commonwealth's project submissions for the Visualize 2050 Constrained Long Range Plan (CLRP) update. As we discussed and I reiterated on a call with your team on June 7, 2024, the I-495 Southside Express Lanes Project is a regionally significant project intended to address the remaining segment of interstate along the Capital Beltway in Virginia without an Express Lanes component. Inclusion of an Express Lanes component along this critical segment from the Springfield Interchange across the Woodrow Wilson Memorial Bridge (WWMB) to MD 210 in Prince George's County provides a generational opportunity to deliver near-term congestion relief to Virginia and Maryland commuters, create and expand transit connections in the region, and increase travel reliability throughout the National Capital Region.

In 2021, the I-495 Southside Express Lanes study area was identified in the Commonwealth Transportation Board's adopted I-95 Corridor Improvement Plan as an area for additional study. As a result, the study was included in VDOT's Six Year Improvement Program and the National Capital Region's Visualize 2045 CLRP and VDOT is underway with the NEPA analysis to identify a preferred alternative for the corridor. The upcoming action by the Transportation Planning Board (TPB) to include the project in the air quality conformity analysis is a critical next step that is a requirement of the NEPA process. For purposes of this air quality analysis the project is proposed as the addition of two Express Lanes to represent the maximum cross section with potentially the highest impact on air quality. The preferred alternative approved through the NEPA process may or may not match this assumption. Modeling this maximum cross section, or worst-case scenario, ensures the air quality analysis does not underestimate mobile source emissions.

Importantly, the NEPA process cannot conclude and VDOT cannot receive NEPA approval from the Federal Highway Administration until the project has been included for construction in the CLRP and its approved air quality conformity analysis. VDOT's timeline for the advancement of this critical project is linked to this requirement and any delay of its inclusion in the CLRP will result in a delay of over two years, further delaying the delivery of tangible benefits to the region. In addition to the time delay, a decision to not include the project now will result in the Commonwealth expending additional resources to update analyses that inform the NEPA study to ensure its validity upon its inclusion in the CLRP. In response to the suggestion that the I-495 Southside Express Lanes project is not ready for inclusion in the CLRP, I would point out that it is both appropriate and acceptable for projects included in a CLRP update to have either not begun NEPA or to have the NEPA analysis underway. The projects approved by the TPB in May 2024 evidence this.

As the Commonwealth advances the NEPA study, potential project benefits specifically for needs identified for Prince George's County, along with traffic analysis and resource impacts will be vetted with environmental agencies, the public and key stakeholders. As we advance, we are confident the project will demonstrate a considerable opportunity to unlock congestion and increase transit investments in the corridor. The project provides a foundation to establish robust transit ridership that will serve as a customer base for the future extension of Metrorail across the WWMB. The Virginia Department of Rail and Public Transportation (DRPT) completed the I-495 Southside Transit/Transportation Demand Management Study in April 2023 for the purpose of identifying a range of multimodal solutions in the corridor to inform VDOT's NEPA study. As you are aware, the only transit service between Virginia and Maryland across the WWMB is the Metrobus NH2 route connecting Alexandria and National Harbor, however the current levels of congestion across the bridge result in little to no travel time savings for this service. The DRPT study recommendations include investments for transit service across the bridge such as express bus routes from Prince George's County to Tysons. Should the I-495 Southside Express Lanes project advance under a concessionaire agreement as currently anticipated it could provide a dedicated source of revenue for such investments as well as a dedicated route for buses to take increasing their reliability and ridership. The long-standing practice of the Commonwealth to incorporate on-going transit payments from express lanes projects to enhance multimodal options in the respective corridor clearly demonstrates the importance the Commonwealth places on reliable and robust transit investments. The I-495 Southside Express Lanes project presents the opportunity to deliver on enhanced multimodal options in this critical corridor.

Let me assure you again that VDOT is fully committed to preserving capacity for future rail on the WWMB and has only advanced alternatives that meet this requirement. VDOT is also fully committed to continue pursuing transit investment opportunities as part of our Express Lanes program. These assurances underscore our demonstrated intent to work collaboratively to solve the region's transportation challenges. Simply stated, the Commonwealth cannot and will not advance this project to implementation without the support of Prince George's County and the region. Further delay is not in the best interest of the citizens and visitors that travel the I-495 corridor. The time to act is now.

I trust the clarifications provided here along with the April 30, 2024, letter provided to TPB Chair Henderson (attached here for your reference) address the questions and concerns of Prince George's County and I ask for your support for the inclusion of the I-495 Southside Express Lanes project in the Air Quality Conformity Analysis project inputs for Visualize 2050.

Sincerely,

Stephen C. Brich, P.E.
Commissioner of Highways

C: Ms. Oluseyi Olugbenie, Deputy Director, Public Works & Transportation, Prince George's County, Maryland
Mr. Eric Olson, County Council, Prince George's County, Maryland
Ms. Christina Henderson, Chair, National Capital Region Transportation Planning Board
Mr. Kanti Srikanth, Executive Director, Transportation Planning Board
Mr. Jeffrey C. McKay, Chairman, Fairfax County Board of Supervisors
Ms. Cathy McGhee, P.E., VDOT Chief Deputy Commissioner
Mr. Bill Cuttler, P.E., VDOT Northern Virginia District Engineer
Ms. Angel Deem, VDOT Chief of Policy

C. Anthony Muse
Legislative District 26
Prince George's County

Committees
Judicial Proceedings
Vice Chair, Executive Nominations
Rules

Miller Senate Office Building
11 Bladen Street, Room 422
Annapolis, Maryland 21401
410-841-3092
800-492-7122 *Ext.* 3092
Anthony.Muse@senate.state.md.us

THE SENATE OF MARYLAND
ANNAPOLIS, MARYLAND 21401

October 6, 2025

Acting Secretary Samantha Biddle
Maryland Department of Transportation
7201 Corporate Center Drive
Hanover, MD 21076

Dear Secretary Biddle,

We, the elected representatives of Maryland's District 26—Senator C. Anthony Muse, Delegate Veronica Turner, Delegate Jamila Woods, and Delegate Kris Valderrama—write to express our strong opposition to the Virginia Department of Transportation's (VDOT) proposal to extend Express Lanes along the I-495 Southside corridor. While presented as a mobility enhancement, the proposal raises serious equity, environmental, and transit planning concerns that would disproportionately impact the residents of southern Prince George's County.

Our constituents already shoulder the burdens of longstanding transportation and infrastructure disparities. This project would funnel high-speed traffic directly onto Maryland roadways, especially MD-210 (Indian Head Highway), one of the most dangerous corridors in the region. Known tragically as "The Highway of Death," this roadway already experiences severe safety challenges. Adding new bottlenecks and congestion, as MDOT's own studies have shown, will only increase crashes and place lives further at risk.

We are equally concerned about the lack of meaningful community engagement. At a May 17, 2025 Town Hall hosted by Delegate Jamila Woods, more than 200 constituents gathered and voiced overwhelming opposition to the proposed toll lanes. Outside of this forum, District 26 residents have had little to no real opportunity to weigh in on a multi-state infrastructure decision that directly affects their daily lives.

The proposal also undermines long-standing regional commitments to extend Metrorail across the Woodrow Wilson Bridge. The 2000 Federal Record of Decision explicitly preserved lanes for future transit use—not private tolling. Converting these lanes to toll lanes would require costly redesigns and legal changes, effectively locking the region out of Metrorail or Bus Rapid Transit expansion. This represents an irreversible setback

to multimodal connectivity and denies our residents the transit solutions they were promised and still need.

Furthermore, VDOT's study dismisses viable transit-first alternatives—such as dedicated Bus Rapid Transit, HOV-only lanes, Blue Line extension, or travel demand management—by narrowly defining the project's purpose as "extending the Express Lanes system." This predetermined outcome ignores broader regional transportation priorities and equity goals.

The proposal also moves forward without a complete Environmental Impact Statement (EIS) or comprehensive analysis of climate, air quality, and noise impacts. It unfairly shifts costs onto low- and moderate-income commuters—many of whom live in Southern Prince George's and Charles counties—while offering them no meaningful benefit in return.

On behalf of the residents of District 26, we urge MDOT, VDOT, the Commonwealth Transportation Board, and the National Capital Region Transportation Planning Board (TPB) to reject one-sided infrastructure planning that displaces traffic, endangers lives, and undermines transit expansion. Specifically, we call on VDOT and MDOT to:

- **Preserve the transit right-of-way on the Woodrow Wilson Bridge** for Metrorail or Bus Rapid Transit, as originally intended, and engage WMATA in evaluating long-term multimodal solutions.
- **Conduct a full traffic impact study** on Maryland corridors, including MD-210, I-295, and U.S. Route 1, to assess true impacts.
- **Release all memoranda of understanding and cross-jurisdictional agreements** related to this project to ensure transparency and accountability.

The future of regional transportation must be guided by equity, sustainability, and safety—not projects that shift burdens onto our communities. We stand ready to work with you and our regional partners to advance solutions that strengthen, rather than sacrifice, the well-being of southern Prince George's County residents.

Thank you for your attention to this critical matter.

Respectfully,

C. Anthony Muse

Senator C. Anthony Muse

Delegate Veronica Turner

Delegate Veronica Turner

Delegate Jamila Woods

Delegate Kriselda Valderrama

The District 26 Team
Prince George's County