



December 14, 2021

Summary Points

1. The TPB's Climate Change Mitigation Study shows that it will be impossible to meet 2030 and 2050 emissions reduction goals unless the most polluting projects are replaced with less polluting projects and supportive travel demand management programs (and updated assumptions for telework) and land use in the long-range transportation plan.
2. The I-495 & I-270 Managed Lanes project cannot be reconciled with the region's VMT and emissions reductions goals. The project is designed to manage congestion and supposedly accommodate traffic growth, not reduce VMT and emissions.
3. We urge the TPB to make decisions that are supported by data and research, and are guided by the TPB's goals for greenhouse gas reduction, equity, and public health and safety.
4. We therefore ask that the TPB remove the 495-270 toll lanes project from the long-range plan until a) there is resolution of issues with the MWCOC traffic model used in the project SDEIS to allow for accurate estimation of greenhouse gas emissions, and b) there has been adequate consideration of reasonable alternatives to toll lanes, including TDM/TSM and multimodal alternatives.

Dear Chair Allen and Members of the Transportation Planning Board,

We commend the growing commitment of the Transportation Planning Board (TPB) to consider climate change mitigation in its decision making. This issue is also on the table and being debated at the federal level, as evidenced by this Dec. 10 article, "[House bill would force states to cut transportation emissions, with 'consequences' for those that don't.](#)" The purpose of this comment letter is to draw to your attention the extent to which current plans by the Maryland Department of Transportation (MDOT) to increase highway capacity through the addition of new toll lanes would undermine the objectives of the Climate

Change Mitigation Study (CCMS)¹. We ask that you reconsider the decision to allow this unnecessary project to remain in the long-range transportation plan for the metropolitan Washington area.

The TPB's recently published CCMS shows that Northern Virginia and the greater DC region must reduce per capita vehicle miles traveled (VMT) by 15-20% from pre-pandemic levels by 2030 to meet the regional climate plan's reduction of greenhouse gases from on-road transportation. But per capita VMT under the current regional transportation plan would only go down 3 per cent per capita by 2045, not 15-20 per cent.

We note that the Vehicle Technology and Fuels Improvement VT.2 scenario of achieving 100% EV sales for light duty vehicles by 2030 (a rate that is higher than California's mandate that 100 percent of in-state sales of new passenger cars and trucks are zero-emission by 2035), while desirable, is unrealistic. Accordingly, only the combined scenarios² reduce VMT sufficiently to reach the target.

TPBs Long-Range Plan Task Force showed in 2017 that key climate change solutions modeled in the TPB Climate Change Mitigation Study (travel demand management, transit-oriented land use) would address congestion and improve job access more effectively than a vastly expanded regional toll lanes network relying on expanded highway capacity - even with new transit on the express lanes.

With regard to High-Occupancy Vehicle (HOV) and High-Occupancy Toll Lanes, the CCMS literature review (p. 61) states that:

When adding capacity instead of converting existing capacity, HOV lanes induce new vehicle travel in urbanized areas. Regional simulation modeling studies suggest that the additional VMT will at least partially offset any emissions benefits resulting from smoother traffic flow, and in many cases will completely offset the emissions benefits. These conclusions are also supported by

¹ Draft TPB Climate Change Mitigation Study Report, December 2021.
<https://www.mwcog.org/file.aspx?&A=H35oGh%2fxfp8o1sUyxIjYdCpBayZPsnI2GaDNsJsvYDw%3d>.

² Combined or COMBO scenarios include: Vehicle Technology and Fuels Improvement Scenario + Mode Shift Scenario + Transportation Systems Management & Operations Scenario. Given that VT.2 is unrealistic, successful COMBO strategies involve either MS.3 levels of per capita VMT reduction (20%) or hybrids of MS.2/MS.3 and VT.1/VT.2 scenarios to achieve the COG 2030 on-road GHG reductions. Thus, the range of VMT reduction needed is approximately 15-20%.

project-level analyses of emissions impacts of HOV and express lane additions reported in recent project environmental documents.

The well-established research literature on induced demand shows that large-scale highway expansion projects result in additional driving beyond that forecast in typical travel demand models. These projects make the built environment less friendly to walking, biking, and transit-oriented land use and make it harder to reduce VMT and emissions long term.

TPB studies are not the only ones saying highway expansion is not an optimal solution to traffic congestion. In August 2020, the Maryland Transportation Institute testified that a 5 percent increase in telework would reduce congestion by 32 to 58 percent.³

In 2020, MWCOG said:

While traffic volumes regionally recently have been about 20% below pre-pandemic levels, peak period speed data remain near free-flow. Traffic flow theory and longstanding empirical data have established that when demand exceeds capacity and traffic operations are in unstable or saturated conditions, a small reduction in demand results in a disproportionate improvement in speeds. As such, **strategies to marginally reduce single occupant vehicle (SOV) demand during peak demand via flexible work schedules, pricing or ridesharing (including express bus service) are effective ways to address peak period congestion, conserve energy and reduce emissions.**⁴ (*bolding added*)

This report was cited in the Supplemental Draft Environmental Impact Statement (SDEIS) for the I-495 & I-270 Managed Lane Study Appendix B at PDF p. 146.

³ Bruce DePuyt, Analysts: More Telework, Change in Habits Could Dramatically Ease Congestion, Maryland Matters (Aug. 14, 2020), <https://www.marylandmatters.org/2020/08/14/analysts-more-telework-change-in-habits-could-dramatically-ease-congestion/>.

⁴ TPB Systems Performance Planning Director to TPB Technical Committee on “Transportation Impacts of the COVID-19 Pandemic in the National Capital Region” (Sept. 3, 2020 Revised), <https://www.mwcog.org/file.aspx?&A=L6DA2phKUvK7mnM2rhoQQEFsr0EjNAhO%2Bkd7VxAtRU8%3D>.

Thus, MDOT itself appears to acknowledge that other measures would effectively address congestion. As for traffic systems management, MDOT predicts that its Innovative Congestion Management program on I-270, including restriping to add lanes at certain locations, ramp entrance and exit adjustments and ramp meters on I-270, will improve driving time by as much as 30 minutes between Frederick and I-495. It is therefore bizarre that MDOT nonetheless continues to push its project for adding additional toll lanes to I-270.

The I-495 & I-270 Managed Lanes project to widen and toll I-495 and I-270 simply cannot be reconciled with the region's VMT and emissions reductions goals. The project is designed to increase congestion and accommodate traffic growth not reduce it.

In order to be lucrative, the toll lanes have to do socially perverse things to artificially inflate demand during rush hours. The tolls will be set to maximize revenue not throughput. What the toll operators do to maximize revenue has been described as “jam and harvest” in the academic literature: the intentional setting of toll rates in order to jam the free lanes, forcing more drivers into the toll lanes where top fees can be harvested. Read about it in the Sierra Club et al. comments⁵ or as described in an academic paper:

A few hours before the peak arrival traffic is observed, the tolls go up to very high levels and effectively divert all arrivals into the unmanaged lanes. By diverting almost all arriving vehicles into the unmanaged lanes, the toll operator achieves two goals: he reserves capacity in the managed lanes for the peak hours and increases congestions in the unmanaged lanes. These two effects combine to increase the attractiveness of the managed lanes during the peak hours – which enables the operator to extract more revenue from arriving traffic just when the volume of arrivals is highest. We term this a jam and harvest approach. From Table 2 and Figure 9 we can see that this approach translates into substantial revenue improvements over the Myopic Policy. When the Time-of-Use Policy sets its tolls high, a minuscule amount of revenue is earned since almost all drivers choose the unmanaged lanes. By forgoing the revenue in this period of time, the

⁵ Sierra Club et al. SDEIS comments (1).pdf, Nov. 30, 2021, pp. 41-43, <https://www.sierraclub.org/sites/www.sierraclub.org/files/sce-authors/u18365/2021-11-30%20-%20Sierra%20Club%20et%20al.%20SDEIS%20comments%20%281%29.pdf>.

operator earns substantially more revenues when the jamming period ends and the harvest period begins.⁶

The toll lanes would increase congestion in the general purpose lanes in order to extract the most revenue possible for toll operators.

The toll lanes also create massive merge point congestion problems that significantly increase accident rates and traffic bottlenecks and delay, forcing more extensions to address safety issues and move the bottlenecks. Read about them in the paragraph below from the Virginia Department of Transportation (VDOT) report, I-495 Express Lanes Extension Project Detail-Level Project Screening Report:

Vehicle back up at the northern terminus of the existing Express Lanes into the general purpose lanes has created a northbound bottleneck, resulting in general purpose lane queues during peak hours which extend approximately 2.5 miles to the Route 7 interchange. Additionally, crashes due to this congestion and weaving movements of vehicles from the Express Lanes to the exit at the Georgetown Pike interchange have created safety issues in the Project area.⁷

Building toll lanes in Maryland to occupy highway right of way will only lock in car dependency and increase VMT and emissions. Toll lanes foreclose alternatives, particularly transit alternatives, and are contrary to the “transit first” policies adopted by jurisdictions in the project area.

On top of all that, the toll lane project will make us more vulnerable to climate-related hazard events, particularly storms and flooding, which are projected to continue increasing. We know we will be significantly more vulnerable than now because cumulative impacts of this project are conservatively estimated at well over 1,500 acres of tree canopy loss and hundreds of acres of new impervious surface. Trees are one of our main defenses and contributors to resiliency in the face of climate change. The massive forest canopy loss would

⁶ Caner Gocmen, Robert Phillips, and Garrett van Ryzin. Revenue Maximizing Dynamic Tolls for Managed Lanes: A Simulation Study, Columbia University Center for Pricing and Revenue Management, Working Paper Series No. 2015-01, 2015, p. 17, https://www8.gsb.columbia.edu/cprm/sites/cprm/files/TollPricingWorkingPaper_2015_01.pdf.

⁷ I-495-EXT Detail Level Project Screening Report, Nov. 24, 2014, https://www.p3virginia.org/wp-content/uploads/2016/02/I-495-EXT_Detail-Level-Project-Screening-Report_All_with-VDOT-Response-Letter.pdf.

amplify and accelerate the negative environmental and community impacts and risks that would come with so much new impervious surface. This means poorer air quality and water quality, increased heat island effect, increased surface water runoff and flooding.

With regard to the toll lanes, MDOT has failed to study reasonable alternatives advocated by the TPB, MWCOG, and Maryland Transportation Institute that would avoid or reduce harmful impacts of the four-toll-lane preferred alternative. Multimodal alternatives and TDM/TSM must be considered. Transportation demand management strategies, including flexible work schedules, express buses, and telework, and transportation systems management strategies, such as ramp meters, lane and ramp adjustments, and queue-jumper lanes giving buses and trucks preference at ramp meters, would have less harmful impacts than the preferred alternative. They must be studied to fulfill NEPA's requirement that reasonable alternatives that avoid or minimize adverse impacts be reviewed and made available for public scrutiny and engagement.

The traffic modeling in the I-495 & I-270 Managed Lanes Project SDEIS produced results that are erroneous and lacking in credibility.⁸ These results were produced by the current version of the MWCOG regional traffic model. Until the cause of this failure is identified, it is impossible to know whether it arises from a defect in the model or in MDOT's inputs to the model. Until the TPB identifies the cause of this failure, the model outputs cannot be relied on. The TPB must therefore urgently address this issue in order to ensure reliable estimates of greenhouse gas emissions are being made.

Gov. Hogan and MDOT's arm twisting to force the July re-vote to accept the toll lanes were empty threats.⁹ Yet they were believed and changed the overall vote of the Transportation Planning Board from one that recognized the project's role in exacerbating climate risks to one that blatantly ignored these risks.

⁸ Letter from MTOC, CABE, and DontWiden270 to Acting FWHA Administrator Stephanie Pollack, Oct. 18, 2021, <https://transitformaryland.org/sites/default/files/pollackletter.pdf>.

⁹ Bruce DePuyt, Korman Zings MDOT Secretary on Threatened Projects That Still Aren't Funded, Maryland Matters (Nov. 23, 2021), <https://www.marylandmatters.org/2021/11/23/korman-zings-mdot-secretary-on-threatened-projects-that-still-arent-funded/>.

This body should resist any attempts at coercion from the toll lane proponents, and instead make the decisions that are supported by the data and research, and are guided by its own goals for greenhouse gas reduction, equity, and public health and safety.

We ask you to study and re-consider the decision to allow this unnecessary project to remain in the long-range plan in light of its needless adverse impacts on climate, human health and safety, communities, historic places, and environment. This project is a steep slippery slope to toll lane extension after extension at the expense of the health and safety of a majority of Marylanders, taking from those with lower income to benefit the affluent. Giving up public land to ensure enormous ongoing benefits for a private Australia-based multinational.

Specifically, we ask that the TPB remove the Maryland toll lanes project from the long-range plan until

1. the TPB has reviewed what these monopolistic toll lane arrangements look like in Australia¹⁰
2. the source of MDOT's I-495 & I-270 SDEIS traffic modelling errors using the MWWCOG traffic model have been identified; this is needed to ensure reliability of estimates of greenhouse gas emissions, air quality, and environmental justice impacts of adding toll lanes
3. reasonable alternatives to the project, including TDM/TSM and multimodal alternatives have been fairly and adequately considered.

Respectfully,

Sierra Club Maryland Chapter

¹⁰ WestConnex: The Toll Road That Ate Sydney, Sydney Morning Herald (March 26, 2021), <https://www.smh.com.au/national/nsw/westconnex-the-toll-road-that-ate-sydney-20210323-p57d9y.html>; NRMA Calls for Toll Price Transparency, Riverine Herald (Oct. 25, 2021), <https://www.riverineherald.com.au/national/2021/10/25/5511055/nrma-calls-for-toll-price-transparency>; 'Cost Outweighs Benefit': Trucking Giant's Toll Message to Drivers, The Age (Sept. 28, 2021), <https://www.theage.com.au/national/nsw/cost-outweighs-benefit-trucking-giant-s-toll-message-to-drivers-20210928-p58vi1.html>; Job Security and Shoddy Deals for Transport Workers, Big Rigs (Nov. 25, 2021), <https://bigrigs.com.au/index.php/2021/11/25/job-security-and-shoddy-deals-for-transport-workers/#more-39374>; Transurban's Tentacles are Around 14m Aussie Wallets, Herald Sun, <https://www.heraldsun.com.au/business/terrymccrann/transurbans-tentacles-are-around-14m-aussie-wallets/news-story/b694aa66ff433f793f2531149961242f>; Sam Mostyn Says One Thing, Transurban Does Another, Financial Review (April 7, 2020), <https://www.afr.com/rear-window/sam-mostyn-says-one-thing-transurban-does-another-20200406-p54hj2>.