

## SIERRA CLUB MARYLAND CHAPTER (FULL SUBMITTAL)

## Sierra Club Maryland Chapter

Please find the attached comments on the I-495 and I-270 Managed Lanes Study Draft Environmental Impact Statement/Draft Section 4(f) Evaluation and Joint Federal/State Application (JPA) for your review and consideration (USACE Application Number (NAB-2018-02152) and the MDE Tracking Numbers 20-NT-0114 / 202060649). Also attached is a list of attachments to the comments (the actual files will be sent separately) for your review and consideration. Please confirm receipt. The comments are submitted on behalf of the following Organizations:

Sierra Club Maryland Chapter  
350 Montgomery County, MD  
Audubon Naturalist Society  
Baltimore 350  
Baltimore Transit Equity Coalition  
Bikemore  
Breathe Free Montgomery  
Cedar Lane Unitarian Universalist Church Environmental Justice Ministry  
Central Maryland Transportation Alliance  
Chesapeake Bay Foundation  
Citizens Against Beltway Expansion  
Coalition for Smarter Growth  
DontWiden270.org  
DoTheMostGood Montgomery County  
Forest Estates Civic Association  
Forest Glen Citizens Association  
Friends of Moses Hall Consulting Party (Cabin John, MD)  
Friends of Quincy Watershed  
Friends of Sligo Creek  
Greenbelt Climate Action Network  
HoCo Climate Action (Howard County)  
Indian Spring Residents Opposed to Beltway Widening Group (ISROBWG)  
Indivisible Howard County  
Interfaith Power & Light (DC.MD.NoVA)  
League of Women Voters of Maryland  
Long Branch Civic Association  
Maryland Conservation Council  
Maryland Legislative Coalition  
Maryland PIRG  
College Park Mayor Patrick Wojahn  
Montgomery County Faith Alliance for Climate Solutions  
NAACP Maryland State Conference  
National Parks Conservation Association  
Neighbors of the Northwest Branch  
North Hills of Sligo Creek Civic Association  
Our Revolution Maryland  
Nova Citizens Association

Rock Creek Conservancy (the Conservancy is a signatory for the JPA comments (Section II.C.5 and II.C.6) only)  
Rock Creek Hills Citizens' Association  
Save Our Seminary at Forest Glen Inc.  
Sierra Club  
Takoma Park Mobilization  
The Climate Mobilization Montgomery County chapter  
The Ocean Foundation  
U.S. Public Interest Research Group (U.S. PIRG)  
Union of Concerned Scientists  
Unitarian Universalist Legislative Ministry of Maryland  
Virginia Parks Matter  
Washington Area Bicyclist Association  
West Montgomery County Citizens Association

Thank you,

November 6, 2020

*Submitted via email to: MLS-NEPA-P3@mdot.maryland.gov, LChoplin@mdot.maryland.gov, Jeanette.Mar@dot.gov, john.j.dinne@usace.army.mil, MDE.SHAprojects@maryland.gov*

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**Re: Comments on I-495 and I-270 Managed Lanes Study Draft Environmental Impact Statement/Draft Section 4(f) Evaluation and Joint Federal/State Application (JPA) (USACE Application Number (NAB-2018-02152) and the MDE Tracking Numbers 20-NT-0114 / 202060649)**

On behalf of the undersigned Organizations and their members and supporters, we submit the following comments in response to Notice of Availability of the I-495 & I-270 Managed Lanes Study Draft Environmental Impact Statement (DEIS) and Draft Section 4(f) Evaluation. 85 Fed. Reg. 41,583.

We oppose the addition of managed lanes to expand I-495 & I-270. The expansion would harm human health and the environment, destroy homes and parkland, and reduce property values. The expansion would also cost billions of dollars, likely to be borne by Maryland citizens, and provide benefits to a small minority of drivers who are wealthy enough to afford the high tolls or fortunate enough to have their toll payments reimbursed. The DEIS and Draft Section 4(f) Evaluation are woefully insufficient and do not provide the public or the deciding agencies with the opportunity to meaningfully review and consider the impacts of the proposed

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expansion. Additionally, the joint Clean Water Act § 404 permit application for the expansion should be denied because it fails to meet Clean Water Act requirements and is not in the public interest.

In light of such a basis (or lack thereof), no build alternative can be selected. The DEIS and procurement process should be stopped until an unbiased purpose and need statement has been articulated and received concurrence from cooperating agencies; a wider set of reasonable alternatives have been added and retained for detailed study; and a DEIS is prepared that appropriately presents the impacts of the proposed project and alternatives on the public and the environment.

Sincerely,

Sierra Club Maryland Chapter<sup>1</sup>

350 Montgomery County, MD

Audubon Naturalist Society

Baltimore 350

Baltimore Transit Equity Coalition

Bikemore

Breathe Free Montgomery

Cedar Lane Unitarian Universalist Church Environmental Justice Ministry

Central Maryland Transportation Alliance

Chesapeake Bay Foundation

<sup>1</sup> The Organizations would like to acknowledge Jill Grant & Associates, LLC, Norm Marshall (Smart Mobility Inc.), Will Cook (Cultural Heritage Partners, PLLC), John Zamurs (Zamurs and Associates, LLC), and Mark Stout (Mark L. Stout Consulting) for assisting the groups in drafting these comments. We would also like to thank the many volunteers who dedicated their time and expertise to these comments: Aileen Craig, The Nature Conservancy; Robin Clark Eilenberg, Maryland Staff Attorney, Chesapeake Bay Foundation; Lee Epstein, Director of Lands Program and Special Counsel, Chesapeake Bay Foundation; Janet Gallant, DontWiden270.org; Pamela Goddard and Kyle Hart, National Parks Conservation Association; Denisse Guitarra and Eliza Cava, Audubon Naturalist Society; Amanda Hungerford; Arthur Katz; Sarah Leshner; Rodolfo E. Pérez, P.E., Consulting Engineer; Klaus Philipsen, FAIA, President ArchPlan Inc.; Stewart Schwartz, Executive Director, Coalition for Smarter Growth; Ole Varmer, Sr., Fellow, The Ocean Foundation; B. Peter Yarrington, Freshwater Ecologist/Fisheries Biologist.



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Citizens Against Beltway Expansion

Coalition for Smarter Growth

DontWiden270.org

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Forest Glen Citizens Association

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Friends of Quincy Watershed

Friends of Sligo Creek

Greenbelt Climate Action Network

HoCo Climate Action (Howard County)

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Maryland Legislative Coalition

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The Climate Mobilization Montgomery County chapter

The Ocean Foundation

U.S. Public Interest Research Group (U.S. PIRG)

Union of Concerned Scientists

Unitarian Universalist Legislative Ministry of Maryland

Virginia Parks Matter

Washington Area Bicyclist Association

West Montgomery County Citizens Association

Woodside Forest Civic Association

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The draft environmental impact statement (DEIS) for the proposed I-495 and I-270 expansion (Project) violates the National Environmental Policy Act (NEPA) and is a disservice to the public because it presents incomplete and inadequate analyses.<sup>2</sup> Moreover, even the inadequate information presented in the DEIS shows that the Project will harm Maryland citizens and their environment and cannot be justified. **The Organizations oppose the build alternatives retained for detailed study in the DEIS (all for tolled highway expansion) and support the no build alternative.** The U.S. Department of Transportation (DOT) Federal Highway Administration (FHWA) and the Maryland Department of Transportation (MDOT) State Highway Administration (SHA) (together, Agencies) must not go forward with this flawed DEIS.

These comments identify the Organizations' key concerns regarding the DEIS, including but not limited to the following:

- The DEIS fails to adequately present the true costs of the Project. The DEIS presents an incomplete and vague estimate of capital costs and revenues and ignores significant financial costs the Project would impose on the state and its citizens, including a direct subsidy to a private developer, costs of relocation of utilities, decreases in property values, and financial risks associated with the Public Private Partnership (P3) Program.
- The DEIS improperly considers only one segment of the proposed I-495 and I-270 managed lane expansion P3 expansion Project, preventing meaningful evaluation of other viable, less costly, and less harmful alternatives to roadway expansion that would actually relieve congestion.
- The DEIS's purpose and need statement is unreasonably narrow and unlawfully restricts the range of alternatives considered to various permutations of managed lane highway expansions, all of which have nearly identical environmental impacts. As a result, the DEIS fails to consider other reasonable types of alternatives, such as multimodal alternatives.
- The DEIS fails to analyze the Project's water quality impacts, including how increased stormwater generated by the Project will affect receiving waterways. The DEIS fails to consider viable stormwater avoidance and mitigation options that would avoid or minimize adverse impacts on waterways, wetlands, floodplains, and other natural resources.
- The Joint Federal/State Application for a Clean Water Act (CWA) § 404 permit fails to meet CWA requirements and is not in the public interest.

<sup>2</sup> The Project consists of the segment covering 48 miles from I-495 from south of the George Washington Memorial Parkway in Fairfax County, Virginia, including improvements to the American Legion Bridge over the Potomac River, to west of MD 5, and along I-270 from I-495 to north of I-370.

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- The DEIS does not adequately analyze impacts on aquatic species, aquatic habitat, fisheries, state and federal rare, threatened, or endangered species, or forests.
- The DEIS does not sufficiently analyze how hazardous materials located along the highway corridors may be disturbed by the Project.
- The DEIS does not adequately analyze air emissions, including the increase the Project will cause in harmful particulate matter and greenhouse gas emissions. The limited and error-filled air quality analysis presented in the DEIS does not support the general statements in that document downplaying air quality impacts, and in fact shows the Project will impair the health of communities around the Project, including environmental justice communities.
- The DEIS's traffic modeling, which is central to the DEIS, is flawed and fails to acknowledge or address foreseeable impacts from the Project such as induced demand and greater congestion and backups on arterial roads connecting to the managed lanes. Few will benefit from the managed lanes but the majority will subsidize them.
- The DEIS fails to take the required hard look at environmental justice issues. It uses a flawed methodology and fails to perform any meaningful analysis of impacts, let alone disproportionate impacts, thereby precluding meaningful participation by environmental justice communities.
- The DEIS fails to adequately address the Project's effects on historic and cultural resources.
- The DEIS process itself was flawed. DEIS appendices were added after the DEIS was released, without notice to the public. The DEIS also relies on documents and data that the Agencies have unlawfully withheld from the public.

The DEIS appears designed to reach a pre-determined result—expand I-495 and I-270 with managed lanes—without meaningfully considering the Project's impacts or considering viable alternatives. The Agencies' consistent failure, in every section of the DEIS, to take the required hard look at the Project's impacts and their failure to provide the public with documents and data underlying the DEIS's conclusions prevent meaningful public comment and render the process unlawful.

The Agencies must use all available information to analyze less costly multimodal options to relieve congestion in the region, ones that do not cause such significant harm to human health and the environment, and they must provide the public with a true opportunity to review and comment on these options. At a minimum, the Agencies must not move forward with any of the fundamentally flawed build alternatives without a new purpose and need statement, additional new alternatives, and a new DEIS that addresses the failures identified in these comments. The new DEIS must align with the actual phasing of the Project and provide the public an opportunity to review and comment on the impacts that the Agencies glossed over, pushed off to later, inappropriately minimized, or altogether failed to evaluate.



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**I. The DEIS Does Not Sufficiently Analyze or Present the Costs of the Project or Its Impacts on Public and Private Property**

MDOT SHA and Governor Hogan have repeatedly promised that the P3 Program, adding toll lanes to 70 miles of I-495 and I-270, will not use Maryland taxpayer dollars or require the destruction and relocation of any homes.<sup>3</sup> The website for the Project says:

The overall P3 Program will be delivered at no net cost to the State, with no public Transportation Trust Fund contribution and with all debt non-recourse to the State. MDOT will ensure each P3 Agreement is implemented to meet this commitment.<sup>4</sup>

Further, the DEIS itself states:

The State of Maryland does not have the funds to construct improvements of this magnitude with an estimated cost of approximately \$8 to 10 Billion. Additionally, even with the tolls to pay back loans, the State does not have enough bonding capacity to take out loans to pay for the improvements.

DEIS, at ES-12; *see also id.* at ES-20, 1-14; 2-42; *id.*, App. P, at 7, 81, 160, 244 (“New bridges and smoother pavement will be provided for all users at no cost to the Transportation Trust Fund”).

<sup>3</sup> *See, e.g.,* Dominique Maria Bonessi, *Here’s Everything You Need To Know About The Capital Beltway Expansion*, WAMU88.5 (May 29, 2019), <https://wamu.org/story/19/05/29/heres-everything-you-need-to-know-about-the-capital-beltway-expansion/>; Mitti Hicks, *MDOT Officials on Widening I-270: “We’re Not Going to Take Your Home,”* Montgomery Community Media (Oct. 11, 2018), <https://www.mymcmedia.org/mdot-officials-on-widening-i-270-were-not-going-to-take-your-home/>; Kate Ryan, *Despite Skepticism, Hogan Says No Homes Will be Razed for I-270 Widening*, WTOPnews (Sept. 4, 2018), <https://wtop.com/maryland/2018/09/despite-skepticism-hogan-says-no-homes-will-be-razed-for-i-270-widening/>; Katherine Shaver, *Hogan’s Plan to Add Additional Toll Lanes Faces a Long, Tough Road Ahead*, Frederick News-Post (Oct. 22, 2017), [https://www.fredericknewspost.com/news/politics\\_and\\_government/transportation/hogan-s-plan-to-add-additional-toll-lanes-faces-a/article\\_596a73a6-8b97-5124-b731-ff2a847bed37.html](https://www.fredericknewspost.com/news/politics_and_government/transportation/hogan-s-plan-to-add-additional-toll-lanes-faces-a/article_596a73a6-8b97-5124-b731-ff2a847bed37.html) (“The state’s only expense, Rahn said, would come in hiring “the very best” lawyers and financial consultants to oversee its interests in what are typically highly complex deals. He said the private companies would be on the hook for paying off the construction debt, regardless of how much toll revenue materialized.”); Robert McCartney, et al., *Maryland Gov. Larry Hogan Proposes Widening the Beltway and I-270 to Include 4 Toll Lanes*, Washington Post (Sept. 21, 2017), [https://www.washingtonpost.com/local/trafficandcommuting/maryland-gov-hogan-announces-9b-traffic-relief-plan-for-beltway-other-major-highways/2017/09/21/c15c14a0-9ec8-11e7-9083-fbfdddf6804c2\\_story.html?noredirect=on&utm\\_term=.fc47aabe6d1d](https://www.washingtonpost.com/local/trafficandcommuting/maryland-gov-hogan-announces-9b-traffic-relief-plan-for-beltway-other-major-highways/2017/09/21/c15c14a0-9ec8-11e7-9083-fbfdddf6804c2_story.html?noredirect=on&utm_term=.fc47aabe6d1d).

<sup>4</sup> Updates, FAQs, <https://495-270-p3.com/updates/faqs/> (visited Oct. 8, 2020).

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Based on the promise of no taxpayer funding, together with claims that the state does not have the funds to pay for improvements, the Agencies eliminated alternatives that would have required public subsidy to deliver. *E.g.,* DEIS, at ES-9, *id.*, App. B, at 29-30.

However, the DEIS shows that each of the retained build alternatives would require the government to relocate 25-34 homes. DEIS, at ES-17. These build alternatives would also destroy hundreds of acres of parkland and historic properties, and would directly affect, even if not condemn, nearly 1,500 additional private properties, cratering their property value. *Id.* It appears MDOT and state taxpayers will be responsible for the full costs of these takings and other damages.

Based on its likely inaccurate cost estimates, the DEIS also estimates that the build alternatives might require a state subsidy to be paid to the developer ranging from \$482 million to more than \$1 billion depending on the construction price and interest rates. DEIS, at 2-48 to 2-50. This range is an underestimate of the true extent of the subsidy: in particular, it does not include an estimated \$1 to \$2 billion needed to fund the required relocation of water and sewer infrastructure<sup>5</sup> and other kinds of utility relocation (electricity, gas, internet and cable television);<sup>6</sup> compensation to unsuccessful bidders;<sup>7</sup> or the \$125 million already spent or

<sup>5</sup> Letter from Montgomery County Council to Gregory Slater (May 14, 2020), <https://static1.squarespace.com/static/5b72c6a8da02bc640472bf8c/t/5ec01b95ac35107c14b15b29/1589648277828/WSSC-MDOT-Letter.pdf>; Memorandum to Prince George’s County Council and Montgomery County Council re Agenda Item #1: Briefing: Possible Impacts of the I-270 and I-495 Road Widening P3 Project on WSSCWATER Infrastructure (March 12, 2020), [https://www.montgomerycountymd.gov/council/Resources/Files/agenda/cm/2020/20200312/20200312\\_TETIEE1-2.pdf](https://www.montgomerycountymd.gov/council/Resources/Files/agenda/cm/2020/20200312/20200312_TETIEE1-2.pdf); Dominique Maria Bonessi, *Water Bills In Maryland Could Nearly Triple Under Beltway And I-270 Expansion Plan*, WAMU (March 16, 2020), <https://wamu.org/story/20/03/16/water-bills-in-maryland-could-nearly-triple-under-beltway-and-i-270-expansion-plan/>; Bruce DePuyt, *Express Toll Lanes Could Raise Water Bills in Montgomery and Prince George’s*, Maryland Matters (March 13, 2020), <https://www.marylandmatters.org/2020/03/13/express-toll-lanes-could-raise-water-bills-in-montgomery-and-prince-georges/>.

<sup>6</sup> Bruce DePuyt, *Pipes, Cables Could Face Major Disruption by Plan to Widen Beltway and I-270*, WTOPnews (Oct. 28, 2020), <https://wtop.com/dc-transit/2020/10/pipes-cables-could-face-major-disruption-by-plan-to-widen-beltway-and-i-270/>; Bruce DePuyt, *Labyrinth of Pipelines and Cables Could Face Major Disruption by Highway Plan — And Who Would Foot the Bill?*, Maryland Matters (Oct. 28, 2020), <https://www.marylandmatters.org/2020/10/28/labyrinth-of-pipelines-and-cables-could-face-major-disruption-by-highway-plan-and-who-would-foot-the-bill/>.

<sup>7</sup> Board of Public Works Transcript, at 32 (June 5, 2019), <https://bpw.maryland.gov/MeetingDocs/2019-Jun-5-Transcript.pdf>.



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budgeted,<sup>8</sup> nor does it account for the cost of adequate environmental mitigation, promised transit, or long-lasting pandemic supply chain issues (which will likely increase costs). For example, it is estimated that the average customer would pay an extra \$2,250 per household over the next 20 years for the water and sewer relocations required by the Project, yet this is not disclosed or analyzed in the DEIS.<sup>9</sup>

Moreover, although it is not clear what risks MDOT, the State of Maryland, and Maryland taxpayers will be liable for, it is likely these could be significant. For example, one of the private entities that is on MDOT's shortlist for the P3 contract recommended, based on recent projects they participated in, that risks of encountering unknown pre-existing historical, environmental, or hazardous conditions, unforeseen geotechnical and soil conditions, the need for right of way acquisition, interface with utility owners, and many other risks be allocated to MDOT.<sup>10</sup> Transurban, another bidder, recently has been involved in a dispute in a P3 project in Australia that is likely to result in taxpayers being on the hook for an additional \$750 million due to contamination that should have been foreseen.<sup>11</sup> MDOT has created or intends to create a term sheet outlining risk allocations but has not publicly released that document.<sup>12</sup> MDOT's supplement to the Presolicitation Report for the P3 Program already provides for the state to pay for some risks, including some governmental approvals, certain unspecified events, some

<sup>8</sup> \$90 million plus \$35 million. Michael Laris, *Rejected Maryland Toll-Road Contract Goes to Different Bidder*, Washington Post (Dec. 19, 2018), [https://www.washingtonpost.com/local/trafficandcommuting/rejected-maryland-toll-road-contract-goes-to-different-bidder/2018/12/19/b6216b36-039d-11e9-b5df-5d3874f1ac36\\_story.html](https://www.washingtonpost.com/local/trafficandcommuting/rejected-maryland-toll-road-contract-goes-to-different-bidder/2018/12/19/b6216b36-039d-11e9-b5df-5d3874f1ac36_story.html); Danielle E. Gaines, *Reaction to Governor's Budget Proposal: Upbeat So Far*, Maryland Matters (Jan. 15, 2020), <https://www.marylandmatters.org/2020/01/15/reaction-to-governors-budget-proposal-upbeat-so-far/>.

<sup>9</sup> Bruce DePuyt, *Pipes, Cables Could Face Major Disruption by Plan to Widen Beltway and I-270*, WTOPnews (Oct. 28, 2020), <https://wtop.com/dc-transit/2020/10/pipes-cables-could-face-major-disruption-by-plan-to-widen-beltway-and-i-270/>.

<sup>10</sup> ACS Infrastructure Development, Response to Request for Information, at 4-6 [https://www.roads.maryland.gov/OC/ACS\\_Infrastructure\\_Development.pdf](https://www.roads.maryland.gov/OC/ACS_Infrastructure_Development.pdf).

<sup>11</sup> Kieran Rooney and Matt Johnston, *West Gate Tunnel's Toxic Soil Removal to Cost Victorian Taxpayers up to \$750m*, Herald Sun (Sept. 22, 2020), <https://www.heraldsun.com.au/news/west-gate-tunnels-toxic-soil-removal-to-cost-victorian-taxpayers-up-to-750m/news-story/99b1dbc85a1be0dffa6ee5e5b5e65457>.

<sup>12</sup> Maryland Transportation Authority and Maryland Department of Transportation, Request for Qualifications, § 3.4 (Feb. 7, 2020) [https://threeconsultinggroup.com/wp-content/uploads/2020/04/00-I-495\\_I-270\\_P3\\_Phase\\_1\\_RFQ-1.pdf](https://threeconsultinggroup.com/wp-content/uploads/2020/04/00-I-495_I-270_P3_Phase_1_RFQ-1.pdf).

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financial risks from interest rate assumptions, toll collection, enforcement, and leakage risk, as well as risks of termination or developer default.<sup>13</sup>

Because the allocation of risk can completely change the financial viability of the Project (particularly from MDOT's and the State of Maryland's point of view), and financial viability was used to screen alternatives and is a key part of the consideration of the alternatives in the DEIS, MDOT must publicly release its allocation of risk outline and utilize all available financial information in selecting and analyzing alternatives and their financial viability. These risks underscore the need for a new and complete evaluation of the Project's environmental impacts and the harms that would occur should the Agencies move forward with the current insufficient analysis. Who is going to bear these costs? Why are these costs not considered in the financial viability analysis? The Agencies must not move forward without providing an accurate analysis of the Project's financial viability that does not ignore significant expenses.

The DEIS also does not explain assumptions made regarding the cost of construction, which impacts the Project's financial viability and the public subsidy the state would pay the private company.

First, no itemized budget has ever been shared with the public, precluding meaningful review and comment. The DEIS does not disclose assumptions in the cost estimate. For example, the traffic analysis in the DEIS assumes fewer exits from the toll lanes than are now expected; does the cost estimate include the costs of the extra exit ramps that were added later in the process? What assumptions does the cost estimate make about exit and entrance ramp configurations where there will be separate ramps for general purpose lanes and the toll lanes? Does the cost estimate take into account the need to have spatial separation to avoid traffic conflicts such as backups from one ramp that block the other ramp?

Additionally, the DEIS states that the Agencies screened alternatives based on calculated construction costs using the MDOT State Highway Administration's (MDOT SHA's) 2017 Highway Construction Cost Estimating Manual as well as unit costs from the March 2018 and July 2019 Common Item Guides. DEIS, at 2-6; DEIS, App. B, at 148. However, the Agencies have not provided public access to these documents, despite the requirement in NEPA that they be publicly available. 40 C.F.R. § 1502.21 (2019); *id.* § 1501.12 (2020).<sup>14</sup> This lack of transparency precludes meaningful public comment.

<sup>13</sup> Supplement to the Presolicitation Report for the I-495 and I-270 P3 Program, at 2, 4-6 (Apr. 12, 2019), <https://495-270-p3.com/wp-content/uploads/2019/04/PSR-Supplement.pdf>.

<sup>14</sup> Since the DEIS was published, revised Council on Environmental Quality (CEQ) regulations implementing NEPA went into effect. *See* Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304 (July 16, 2020). These regulations are likely unlawful and already subject to four lawsuits. *See* Compl. for Declaratory and Injunctive Relief, California v. Council on Env't Quality, No. 3:20-cv-06057 (N.D. Cal. Aug. 28, 2020); Compl., Env't Just. Health All. v. Council on Env't Quality, No. 1:20-cv-06143 (S.D.N.Y. Aug. 6, 2020); Compl., Wild Va. v. Council on Env't Quality, No. 3:20-cv-



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Second, it appears that the capital cost estimate was calculated based on lane miles to be repaired<sup>15</sup> without considering the unique costs of this Project, including 1) expanding the highway, 2) building entrances and exits, 3) dealing with elevated lanes, 4) 170 bridges that would need to be re-built, and 5) any other specific infrastructure or mitigation costs necessary when adding two separated managed lanes in both directions.<sup>16</sup> It appears that the capital cost estimates assume 25% roadway rebuilding without explanation, but this assumption is not supported and makes no sense given Maryland Secretary of Transportation Pete Rahn's statement that "it needs to be reconstructed because we have mush underneath it and the system frankly has got to be taken right down to the dirt and brought back up."<sup>17</sup>

Third, the DEIS estimates capital costs for the build alternatives ranging from \$8.7 billion to \$10 billion. DEIS, at ES-17. However, these cost estimates, which were used to analyze financial viability for this Project—the 48-mile segment that the DEIS purports to address—are similar to those presented for the entire P3 Program, which includes two other segments purportedly excluded from the DEIS. *See* Supplemental PSR Report (stating that estimates indicate that the P3 Program, which covers more than 70 miles of highway, will require more

00045-NKM (W.D. Va. July 29, 2020); Compl. for Declaratory and Injunctive Relief, Alaska Cmty. Action on Toxics v. Council on Env't Quality, No. 3:20-cv-05199 (N.D. Cal. July 29, 2020). If the Agencies move forward with the NEPA process, they should comply with the old regulations, as well as DOT regulations, rather than applying new regulations retroactively. Acting based on regulations that are both unlawful in themselves and unlawfully applied would render the Agencies' actions also unlawful. Nevertheless, under either of CEQ's regulations, the DEIS is insufficient and unlawful. This letter cites to both regulations throughout these comments, using the year to differentiate between them: 2019 vs. 2020.

<sup>15</sup> Sean Emerson, *Hogan's Proposed Beltway Widening Project Could Require Taxpayer Funding and Exorbitant Tolls*, Greater Greater Washington (Dec. 1, 2017), <https://ggwash.org/view/65741/hogans-proposed-beltway-widening-project-could-require-taxpayer-funding-and-exorbitant-tolls> ("Rahn said the \$9 billion cost estimate for the three corridors was generated based on the approximate cost per lane mile of repairing parts of area Interstates (\$100 million per lane mile,) multiplied by the number of lane miles in the concept.").

<sup>16</sup> Maryland's Secretary of Transportation Pete Rahn previously explained that "the Washington Beltway that can no longer be expanded and it needs to be reconstructed because we have mush underneath it and the system frankly has got to be taken right down to the dirt and brought back up." Sean Slone, *Transportation Policy Academy 2015 – DC – Maryland Secretary of Transportation Pete Rahn*, The Council of State Governments (May 19, 2015), <https://web.archive.org/web/20200906121216/https://knowledgecenter.csg.org/kc/content/transportation-policy-academy-2015-%E2%80%93-dc-%E2%80%93-maryland-secretary-transportation-pete-rahn>.

<sup>17</sup> *Id.*

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than \$9 billion - \$11 billion in investment).<sup>18</sup> The Agencies must clarify the basis for their cost estimates and which segments of I-495 and I-270 they cover.

If the costs presented in the DEIS are only for this 48-mile segment, then MDOT has been misleading the public about the total 70-mile P3 Program's cost, which would be significantly higher than promised. *See* Larry Hogan, Office of the Governor, Press Release (Sept. 21, 2017), <https://www.roads.maryland.gov/OC/Traffic-Relief-Plan-Press-Release.pdf> (Governor Hogan Announces Widening of I-270, Capital Beltway (I-495), and Baltimore-Washington Parkway (MD 295) \$9 Billion Traffic Relief Plan, Largest Highway P3 in North America RFI Released Today) "With the total project estimated value at \$9 billion"). What will be the total cost of the entire 70-mile P3 Program?

Fourth, the DEIS states that the recommended range of contingency factors for capital cost estimates in the planning/concept development phase, which is the current phase of the Project, is 25 to 40%. DEIS, App. B, at 148. The DEIS states that the preliminary capital cost estimates include a 25% contingency. *Id.* However, the DEIS does not: 1) explain the source of this recommended range, nor 2) explain why the Agencies picked the low end of this range. It does not appear there is any justification for this decision. Adding to the confusion, the DEIS Appendix B says a more detailed assessment of financial viability, which was completed in November 2019 and updated in January 2020, used a 10% range between the high and low capital costs. DEIS, App. B, at 94. The DEIS does not explain why this range was used either. Such a low range is not justified until a project is near its final design phase, which the Project certainly has not reached; in fact, the DEIS tries to excuse much of its cursory environmental analysis by asserting the Project is only in an early planning stage. Therefore, it appears likely that the subsidy described in the DEIS on 2-48 through 2-50 in the high capital cost scenario will be significantly higher than the \$500 million to \$1 billion presented.

Fifth, hidden in Appendix B, the DEIS states that in the preliminary capital cost estimates, "construction costs were adjusted to reflect assumed efficiencies in costs for major items such as asphalt pavement and structural materials." DEIS, App. B, at 148. The DEIS does not, however, explain what adjustments were made or the amount of the adjustments. Without this information, the public cannot meaningfully review and comment on the validity of these adjustments.

Sixth, despite multiple drastic changes in the project scope, the estimated capital cost of around \$9 billion dollars has remained surprisingly constant. Since it was first announced, the P3 Program has been separated into phases, expanded to include an agreement to rebuild and widen the American Legion Bridge, and amended to require billions in water pipe infrastructure

<sup>18</sup> *See also* Sean Emerson, *Hogan's Proposed Beltway Widening Project Could Require Taxpayer Funding and Exorbitant Tolls*, Greater Greater Washington (Dec. 1, 2017), <https://ggwash.org/view/65741/hogans-proposed-beltway-widening-project-could-require-taxpayer-funding-and-exorbitant-tolls> (stating \$9 billion cost estimate was for the three corridors).



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relocation.<sup>19</sup> The estimated capital cost, on the other hand, has not been adjusted to reflect these significant revisions.

Last, MDOT has repeatedly asserted as a reason for eliminating other alternatives that the state does not have the ability to finance any type of congestion relief. However, the ability to finance a congestion relief alternative depends on the cost of that alternative, which MDOT has not revealed. Moreover, after the breakdown in negotiations regarding the Purple Line P3, with the private party seeking to terminate the P3 agreement, MDOT's chief financial officer conceded that the state could issue new bonds and seek a low-interest federal loan to cover the over \$1 billion of project costs remaining.<sup>20</sup> A similar approach appears to have been rejected out of hand for the current Project, without explanation by MDOT.

How can the Agencies eliminate alternatives and analyze the retained alternatives for financial viability without having an accurate picture of the finances of the Project (the 48-mile segment at issue)? How can the public meaningfully comment on the Agencies' conclusions without an accurate picture of the Project's finances? The fact is that neither party can do so, meaning that the Agencies should not move forward with the Project without supplementing the DEIS and providing the public an opportunity to review and comment on the Project's financial viability. While MDOT-SHA wants the Project to proceed as a pre-development public-private-partnership, it must first disclose and analyze the Project's true monetary and environmental costs and allow the public to meaningfully review and comment on these costs before a final EIS is released. The Agencies certainly should not release a Record of Decision selecting a preferred alternative without understanding and analyzing these costs.

Relatedly, the DEIS cover page states that it was submitted not only by DOT FHWA but also by MDOT SHA, and page ES-2 states that both FHWA, as the lead Federal Agency, and MDOT SHA, as the Local Project Sponsor, have prepared the DEIS. MDOT SHA has stated that that there is no federal funding for the Project and that they have spent significant funds on planning for the Project, which they expect to be repaid through the P3 Program (if it goes forward). If a different option is chosen, such as the no build alternative or an alternative consisting of transportation demand management and public transit (which should have been analyzed), MDOT SHA might not be repaid their planning funds. MDOT SHA also has agreed to pay millions of dollars in application costs to the private bidders for the P3 if they are not

<sup>19</sup> Bruce DePuyt, *As Hogan's Highway-Widening Plan Changes, \$9 Billion Price Tag Does Not*, Maryland Matters (Sept. 1, 2020), <https://www.marylandmatters.org/2020/09/01/as-hogans-highway-widening-plan-changes-9-billion-price-tag-does-not/>.

<sup>20</sup> Bruce DePuyt, *Purple Line Will be Delayed as MDOT Seeks Management Solution*, WTOPnews (Sept. 23, 2020), <https://wtop.com/maryland/2020/09/purple-line-will-be-delayed-as-mdot-seeks-management-solution/>; Katherine Shave, *Maryland Would Have to Divert Money from Other Projects if Purple Line Builders Quit, State Transit Chief Tells Court*, Washington Post (Sept. 8, 2020), [https://www.washingtonpost.com/local/trafficandcommuting/maryland-would-have-to-divert-money-from-other-projects-if-purple-line-builders-quit-state-transit-chief-tells-court/2020/09/08/85dd149a-ee22-11ea-99a1-71343d03bc29\\_story.html](https://www.washingtonpost.com/local/trafficandcommuting/maryland-would-have-to-divert-money-from-other-projects-if-purple-line-builders-quit-state-transit-chief-tells-court/2020/09/08/85dd149a-ee22-11ea-99a1-71343d03bc29_story.html).

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chosen or the Project does not go forward.<sup>21</sup> MDOT therefore has violated NEPA's requirement that Agencies cannot commit resources prejudicing selection of alternatives before making a final decision. 40 C.F.R. §§ 1502.2(f); 1506.1 (2019). MDOT SHA has not disclosed how much it has already spent on the planning for the P3 Program nor how much it intends to spend going forward, but those amounts appear to be significant.<sup>22</sup> Moreover, MDOT SHA has not disclosed the financial interests of contractors that have assisted with the NEPA and P3 process, even though their participation likely creates a conflict of interest. MDOT must disclose its own financial interests and conflicts regarding the DEIS as well as those of the contractors, especially because they may have influenced the selection of alternatives. *See, e.g.*, 40 C.F.R. § 1506.5(c) (2019).

Additionally, if an appropriation will be required due to the likelihood of a substantial public subsidy, as discussed above, then the DEIS should have discussed the applicability of the Maryland Environmental Policy Act (MEPA), which requires state agencies to prepare an "environmental effects report" on "each proposed State action significantly affecting the quality of the environment." Md. Code Ann., Nat. Res. § 1-304(a). MEPA defines "proposed state action" to include "requests for legislative appropriations and other legislative actions." *Id.* § 1-301(d). Maryland's Guidelines for Implementation of the Maryland Environmental Policy Act, which are applicable to all state agencies, define "other legislative actions" as "requests by the unit of the Department [or other State agency] for proposed legislative acts and/or a change in existing acts or agency authority." Guidelines, IV.A.3 (June 28, 1974). Because MDOT has not been transparent about the finances of this Project, it is not clear if the Project will require a

<sup>21</sup> *See* MDOT and MDTA, Request for Qualifications, Phase 1 of the I-495 & I-270 P3 Program, at 27-28 (Feb. 7, 2020), ("MDOT intends to provide each Shortlisted Proposer who delivers a compliant Proposal and is not selected as the Selected Proposer with a reimbursement payment"); ACS Infrastructure Development, Response to Request for Information, at 12-13 [https://www.roads.maryland.gov/OC/ACS\\_Infrastructure\\_Development.pdf](https://www.roads.maryland.gov/OC/ACS_Infrastructure_Development.pdf) (one of the entities on the P3 shortlist responding to MDOT's question of how much the stipend for reimbursement should be as \$1,500,000 - \$2,000,000 after issuance of the final RFP and \$2,000,000 - \$3,000,000 after submission of proposal).

<sup>22</sup> MDOT-SHA has hired Ernst & Young LLP as a Financial Transaction and Market Advisor, CDM Smith as Traffic Revenue Consultants, as well as Ashurst and Venable as outside legal counsel, but has not disclosed the amounts of taxpayer dollars spent on these lawyers and consultants nor how they will be paid. MDOT-SHA, I-495 & I-270 P3 Program Industry Forum, at 27, [https://495-270-p3.com/wp-content/uploads/2018/12/Industry-Forum-PPP\\_2018-12-10\\_WEBUPLOADONLY.pdf](https://495-270-p3.com/wp-content/uploads/2018/12/Industry-Forum-PPP_2018-12-10_WEBUPLOADONLY.pdf); <https://495-270-p3.com/p3-information/industry-information/>; Katherine Shaver, *Hogan's Plan to Add Additional Toll Lanes Faces a Long, Tough Road Ahead*, Frederick News-Post (Oct. 22, 2017), [https://www.fredericknewspost.com/news/politics\\_and\\_government/transportation/hogan-s-plan-to-add-additional-toll-lanes-faces-a/article\\_596a73a6-8b97-5124-b731-ff2a847bed37.html](https://www.fredericknewspost.com/news/politics_and_government/transportation/hogan-s-plan-to-add-additional-toll-lanes-faces-a/article_596a73a6-8b97-5124-b731-ff2a847bed37.html) ("The state's only expense, Rahn said, would come in hiring "the very best" lawyers and financial consultants to oversee its interests in what are typically highly complex deals."). The DEIS's also lists sixty-six individuals representing seventeen private entities as preparers. DEIS, at 8-3.



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request for appropriations such that an environmental effects report must be prepared. However, it does appear that MDOT has already spent a significant amount of taxpayer funds on the Project, intends to spend significant additional taxpayer funds through a subsidy, and intends to transfer additional liability onto taxpayers for water, sewer, and other environmental impacts. Therefore, it appears likely that the Project will require legislative appropriations, other legislative actions, or both and so is subject to the MEPA's requirements.

Given the high costs likely to be borne by the State of Maryland and its citizens, contrary to the DEIS's stated purpose and need, the Project will strain Maryland's ability to pay for critical infrastructure needs. The American Society of Civil Engineers (ASCE) Report Card for Maryland's Infrastructure gave the state an overall C grade because its infrastructure is in "mediocre condition requiring attention."<sup>23</sup> The ASCE identified the following as among the state's most critical infrastructure challenges:

- Drinking Water: C. Aging drinking water infrastructure negatively affects the reliability of the water system. To safeguard reliable supply of potable water more funding is needed to pay \$9.3 billion in drinking water infrastructure over the next 20 years.
- Wastewater: C. Maryland continues to face significant wastewater challenges including reducing the sanitary sewer overflows, leakage from urban areas that have aging pipes, and quantity of inadequate or failing septic systems. From rehabilitation of aging collection systems to completion of treatment works, the projected wastewater infrastructure capital costs for the next 20 years will be on the order of \$10 billion.
- Stormwater: C. The Chesapeake Bay water quality has steadily declined over the last decades. In 2010, new limits on the pollutants that can enter the bay were set, but stormwater infrastructure costs to comply with these regulations are projected to be more than \$3 billion and will tax the already limited resources of local municipalities and the state.
- Transit: D. Maryland's transit system includes buses, MARC, Baltimore light rail and its share of the Metro subway. The system faces a \$2 billion budget shortfall to achieve both a state of good repair and on-time service performance across all its modes.
- Hazardous Dams: C. Dams are an essential part of Maryland's infrastructure to provide flood control, drinking water supply, agriculture irrigation, hydropower

<sup>23</sup> ASCE 2020 Report Card for Maryland's Infrastructure covers twelve categories: aviation, bridges, dams, drinking water, energy, ports, rail, roads, solid waste, stormwater, transit, and wastewater. ASCE graded the roads network C based on traffic congestion but, since approximately 80% of the roads network is in fair to very good condition, ASCE did not specify a funding gap to repair those conditions.

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and recreation. There are currently 539 dams in Maryland of which approximately 45% are high hazard and significant hazard dams that require repairs at a cost of \$218 million.

- Schools and Deficient Bridge Needs. The ASCE also estimates a \$615 million funding gap in school capital expenditures and that \$623 million are necessary to replace the structural deficient bridges in the state's inventory.

The total funding gap the ASCE reports for the previous listing of infrastructure priorities is \$25.76 billion. Launching a P3 venture to build the Project poses credible risks that a failed P3 might put the Project's financial burden back on the state and thereby divert a significant portion of funds that otherwise could be used to close the \$25.76 billion infrastructure funding gap. The Project will also push billions of its own costs onto the providers of this infrastructure. These concerns are compounded by the COVID-19 pandemic's substantial impact on travel, which has reduced gas tax revenue and vaporized billions of dollars necessary to maintain Maryland's infrastructure in a state of good repair.

## II. Problems with the NEPA Analysis

The DEIS fails to take the required hard look at the human health and environmental impacts of the Project. From the outset, MDOT had already determined that "a system of priced managed lanes . . . is the only means to provide congestion relief in the near term for the region."<sup>24</sup> To facilitate this pre-ordained conclusion, the Agencies repeatedly provide excuses in the DEIS for their cursory review by noting that many Project details remain unknown. The analysis presented in the DEIS therefore is lacking and is contrary to the purpose of NEPA. By failing to adequately study the available information, the DEIS prevents the public from understanding and commenting on the consequences of the Project. The DEIS also prevents the Agencies from reaching a decision on the Project that is based on a complete consideration of environmental impacts and that utilizes all practicable measures to avoid harms.

As explained throughout these comments, the Agencies should not move forward with a build alternative in the NEPA process but should work to identify a solution that will provide true congestion relief. Should the Agencies nevertheless decide to move forward with the Project, the agencies must start over and prepare a new DEIS that addresses the insufficient analyses of financial and environmental impacts discussed in these comments and provides the public with a meaningful opportunity to comment on these impacts. At a minimum, the Agencies must provide a supplemental EIS.

Additionally, DOT NEPA regulations and guidance state that the DOT should release a separate Final EIS (FEIS) and Record of Decision (ROD) and provide agencies and the public an opportunity to comment on the FEIS either if DOT did not identify the preferred alternative in the DEIS, 23 C.F.R. §771.123(e), or if there is a substantial degree of controversy regarding the

<sup>24</sup> Letter from Pete K. Rahn to Comptroller Peter Franchot, et al., at 2 (Dec. 11, 2018), [https://495-270-p3.com/wp-content/uploads/2018/12/PSR\\_Final\\_inc-Cover-Letter-1.pdf](https://495-270-p3.com/wp-content/uploads/2018/12/PSR_Final_inc-Cover-Letter-1.pdf).



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preferred alternative, DOT, Guidance on the Use of Combined Final Environmental Impact Statements/Records of Decision and Errata Sheets in National Environmental Policy Act Reviews, at 3. Both those factors are present here. Therefore, if FHWA eventually publishes a FEIS, it should issue the FEIS separately from and in advance of issuing a ROD in order to afford the public an opportunity to comment. Also the FEIS and ROD should not be combined because, regardless of what happens next, the public will need an opportunity to comment on the FEIS before the ROD is adopted.

**A. Segmentation Problems**

**1. The DEIS Unlawfully Considers the Impacts from Only a Segment of the Broader P3 Program to Add Managed Lanes to I-495 & I-270**

Agencies are required to consider connected actions in the same EIS. 40 C.F.R. § 1508.25(a)(1) (2019). This requirement prevents agencies from engaging in segmentation, that is, circumventing NEPA by not studying the cumulative impacts of a single project. “This rule against segmentation was developed to prevent the piecemeal environmental analysis of interrelated projects, which could give an inaccurate impression of overall environmental effects.” *N.C. All. for Transp. Reform v. DOT*, 151 F. Supp. 2d 661, 680 (M.D.N.C. 2001).

Under Council of Environmental Quality (CEQ) regulations, “cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts . . . should therefore be discussed in the same impact statement.” *Id.* § 1508.25(a)(2) (2019). Courts consider three factors to determine if separate project segments are in fact cumulative actions that, based on the CEQ regulations, should be discussed in the same impact statement: (1) whether they are part of a single project; (2) whether they were announced simultaneously; and (3) whether construction of both (or in the case of the Project all three) portions was reasonably foreseeable. *N.C. All. for Transp. Reform*, 151 F. Supp. 2d 661, 684-85 (citing *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214-15 (9th Cir. 1998)).

In addition, under DOT regulations, three criteria must be met by any transportation action reviewed under an individual EIS. First, the action being reviewed must “[c]onnect logical termini and be of sufficient length to address environmental matters on a broad scope.” 23 C.F.R. § 771.111(f)(1). Second, the action is required to “[h]ave independent utility or independent significance, *i.e.*, be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made.” *Id.* § 771.111(f)(2). Lastly, the action must not “restrict consideration of alternatives for other reasonably foreseeable transportation improvements.” *Id.* § 771.111(f)(3).

The DEIS unlawfully segments the P3 Program, which proposes to add managed lanes throughout I-495 and I-270 and analyzes only the 48-mile segment covered by the Project, violating both CEQ and FHWA regulations. The DEIS violates the CEQ regulations because the segment it addresses is part of a larger single project to expand I-495 and I-270; the three segments of the single project were announced simultaneously; and construction of all three segments is reasonably foreseeable, especially since MDOT-SHA is moving forward with contracting and construction planning on all three.

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The DEIS violates the FHWA regulations because the segment it addresses does not connect logical termini. For example, it would create bottlenecks and worsen traffic at its endpoints if it were the only segment constructed. The DEIS also fails to provide the public with documents the Agencies relied on to decide on the segment’s termini, precluding meaningful review, in violation of NEPA. *See infra* Section 2.P.4.d. The DEIS also violates the independent utility requirement because none of the three segments would “‘have taken place in the other’s absence.’” *Depts. of Wildlife v. N.C. Dept. of Transp.*, 762 F.3d 374, 395 (4th Cir. 2014) (quoting *Webster v. U.S. Dep’t of Agric.*, 685 F.3d 411, 426 (4th Cir. 2012)). In fact, because the Project segment does not match up with any of the phases in the P3 program, this segment cannot be funded without the other segments. Finally, by limiting the scope of the DEIS to a segment that is only part of the overall P3 Program, the DEIS restricts consideration of partial or full public transportation options (such as expanding the Maryland Area Regional Commuter line) that would be viable if evaluated based on the entire P3 Program. Going forward with this segmentation will also prevent similar public transit options from being considered when the other two segments go through the NEPA process.

Further, the impacts of widening Upper I-270 are purposely being ignored until a later date, while trying to get the first part of the larger project NEPA-approved and underway. Not addressing Upper I-270 issues in this DEIS precludes an adequate evaluation of Project’s direct impacts, indirect impacts, and cumulative effects and foreseeable project risks (such as the private developer not being willing to complete Upper I-270 with the political risks; Section 4(f) risks; and the fact that that portion would not meet the narrow purpose and need or be profitable without state subsidy).<sup>25</sup> Former Transportation Secretary Pete Rahn disclosed during an October 2019 interview that I-270 was divided into two phases because of issues with the Monocacy Battlefield:

the governor’s direction was that I-270 be our first phase. And he didn’t say 370 to the Beltway. He said 270. So we now have Phase 1A and 1B — 1B being north of 370. And what we’re having to deal with there is a uniqueness to I-270, particularly impacted by the Monocacy battlefield. That’s why 270 has been separated into two. We currently have [taken] the initial steps of the NEPA [National Environmental Policy Act] process for that section north. So we’re not ignoring it.<sup>26</sup>

Monocacy National Battlefield, which directly touches the current Upper I-270, is on the National Register of Historic Places. Any attempts at expanding that highway would create significant environmental and Section 4(f) impacts. Attempting to order to avoid analysis of a

<sup>25</sup> “From the very beginning, our statement of goal has been net zero cost to the state. The word ‘net’ is important here, because we know there are areas like 270 north that will have a cost that is going to exceed our projections for revenue generated by that section. That by itself would equal a subsidy or ‘gap funding.’” *A Transportation Q&A: Rahn Talks I-270, Partnerships, Growth and More*, Bethesda Magazine (Oct. 24, 2019), <https://bethesdamagazine.com/bethesda-beat/traffic/a-transportation-qa-rahn-talks-i-270-partnerships-growth-and-more/>.

<sup>26</sup> *Id.* (alterations in original).



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unique segment, with a historic National Battlefield, is not a valid reason to segment a proposal's NEPA review. End points may not be created simply to avoid proper analysis of environmental impacts.

No action on Lower I-270 should proceed without completing a NEPA-compliant evaluation of impacts arising from widening Upper I-270 and studying the cumulative impacts of this single project.

**2. The Agencies Should Have Performed a Programmatic EIS to Consider the Impacts of the Project within the Context of the P3 Program or the Greater Regional Plan**

In addition to the prohibition in NEPA against segmentation, NEPA requires that, if a "systematic program is likely to generate disparate yet related impacts," the Agencies must at least consider whether a Programmatic EIS (PEIS) is required and must articulate "a rational connection between the facts and the choice made." *Found. on Econ. Trends v. Heckler*, 756 F.2d 143, 160 (D.C. Cir. 1985) (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)). Whether a PEIS is required is based on: "(a) Could the [PEIS] be sufficiently forward looking to contribute to the [agency's] basic planning of the overall program? and, (b) Does the [agency] purport to 'segment' the overall program, thereby unreasonably constricting the scope of . . . environmental evaluation?" *Piedmont Envtl. Council v. F.E.R.C.*, 558 F.3d 304, 316 (4th Cir. 2009) (quoting *Nat'l Wildlife Fed'n v. Appalachian Reg'l Comm'n*, 677 F.2d 883, 888-89 (D.C. Cir. 1981)) (alterations in original). A PEIS should be prepared when federal actions are connected or cumulative, 40 C.F.R. § 1508.25(a)(1)-(2) (2019), or when actions are similar, and a single statement is the best vehicle for assessing environmental effects, *id.* § 1508.25(a)(3) (2019). For actions that are a series of interrelated proposals, courts look to whether cumulative systemic effects from different projects could be meaningfully evaluated together. The crucial issue is whether the multiple actions have a combined effect that could be overlooked if examined separately.

The Agencies' failure to perform a PEIS first for the region's Traffic Relief Plan and then for the P3 Program violates NEPA. The DEIS is limited in scope to a mere 48-mile segment of the P3 Program, which addresses I-495 and I-270 as well as the region's overall Traffic Relief Plan to reduce congestion through projects around the Washington, DC/Baltimore region, even though the DEIS recognizes the need for enhanced connectivity to other forms of transportation in the region and for improvement of a "major regional transportation network[] that supports the movement of passenger and freight travel within the National Capital Region." *See* MDOT, "Purpose and Need," <https://495-270-p3.com/environmental/purpose-and-need/>. Furthermore, the Notice of Intent to prepare this Project's EIS notes that "Express Toll Lanes on I-495 and I-270, as well as other corridors in the Baltimore Washington Region, [are] part of the 'Constrained Long-Range Plan'" to "ease the impact of congestion." 83 Fed. Reg. 11,812, 11,813 (March 16, 2018) (emphasis added). Given the Notice of Intent's recognition of a regionwide plan to ease traffic congestion and the subsequently planned improvements, through the Project, to lower I-495 and the portion of I-270 from I-370 to I-70, the Project must be seen as one of several "related enterprises associated within a single program and planned together," and therefore requires a PEIS. *Nat'l Wildlife Fed'n*, 677 F.2d at 887-88.

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The current DEIS segment is part of a "systematic program likely to generate disparate yet related impacts." Maryland's Traffic Relief Plan as well as the P3 Program are single programs comprised of multiple associated enterprises planned together with a singular purpose: relieving traffic congestion in the region surrounding Washington, DC. Subsequent traffic relief projects are already planned and may result in a need for further congestion-relief actions in the future. These subsequent actions would also require EISs and are an "interdependent part of a larger action" that share "mutual dependence with other actions requiring an EIS." *Piedmont Envtl. Council*, 558 F.3d at 317. Therefore, a PEIS is required.

The DEIS also improperly segments the currently studied Project in a way that unreasonably constricts the scope of environmental evaluation. Given the subsequent actions to be undertaken that are directly tied to the P3 Program and the Traffic Relief Plan, the limited scope of the DEIS prevents a complete environmental evaluation from taking place. The segmentation does not allow the evaluation of the larger P3 Program or the Traffic Relief Plan for the region; yet, the approval of this first segment will commit the Agencies to particular choices with regard to the subsequent segments. On the other hand, the cumulative effects of the entire Traffic Relief Plan, or at the very least of the P3 Program, have a combined effect that could and should be evaluated together.

Considering the regional scope of the Project, within the broader P3 Program and Traffic Relief Plan, at a minimum the Agencies were obligated to consider the need for a PEIS and explain why a PEIS was not performed. By not doing so, the Agencies have prevented the public from meaningful input into this decision.

**B. Problems with the Purpose and Need Statement and the Alternatives Considered in the DEIS**

**1. The Purpose and Need Statement is Unreasonably Narrow and Unlawfully Constrains the Range of Considered Alternatives**

Section 102 of NEPA requires a federal agency to include a detailed statement on the environmental impacts of the proposed action, any adverse environment effects which cannot be avoided should the proposal be implemented, and alternatives to the proposed action. 42 U.S.C. § 4332(C). In order to comply with Section 102, an EIS must "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives." 40 C.F.R. § 1502.13 (2019). The Purpose and Need Statement sets the parameters for the range of alternatives that the agency will consider in the EIS. *See Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195-96 (D.C. Cir. 1991). Agencies may not define a project's "objectives in unreasonably narrow terms." *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997). Further, a Purpose and Need Statement premised on false or inaccurate information fails to provide a basis for "informed evaluation or a reasoned decision," and therefore does not satisfy NEPA's requirements. *Sierra Club v. U.S. Army Corps of Eng'rs*, 701 F.2d 1011, 1030 (2d Cir. 1983).

A Purpose and Need Statement must allow an EIS to be more than a "foreordained formality," *Citizens Against Burlington*, 938 F.2d at 196. Though an agency must take an



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applicant’s objectives into account when developing the purpose and need statement, it is the agency’s duty to “defin[e] the objectives of an action.” *Colo. Env’t Coal. v. Dombeck*, 185 F.3d 1162, 1175 (10th Cir. 1999). An agency “may not circumvent the proscription” against defining its objectives in unreasonably narrow terms “by adopting private interests to draft a narrow purpose and need statement that excludes alternatives that fail to meet specific private objectives.” *Nat’l Parks Conservation Ass’n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1072 (9th Cir. 2010).

The DEIS states that its purpose is to “develop a travel demand management solution(s) that addresses congestion, improves trip reliability on I-495 and I-270 within [Project] limits and enhances existing and planned multimodal mobility and connectivity.” DEIS, at 1-4. The DEIS states that the needs being addressed are to: “Accommodate Existing Traffic and Long-Term Traffic Growth; Enhance Trip Reliability; Provide Additional Roadway Travel Choices; Improve Movement of Goods and Services; and Accommodate Homeland Security.” *Id.* In addition, the DEIS provides two goals: the use of alternative funding approaches for financial viability, and environmental responsibility. *Id.* at ES-6, 1-14.

This narrow purpose statement limits the possible alternatives to traffic management strategies and so eliminates any alternative that does not involve managed lanes and cannot attract highway toll concessionaires. *See* DEIS, App. B, at 94. Specifically, the DEIS states that traffic management strategies represent only “one option in the transportation ‘tool-kit’ that [has] been identified to address the growing congestion.” DEIS, at 1-7 (emphasis added). Further, the DEIS notes that “[m]anaged lanes are an option to provide users with a more reliable travel time for their trip” and “an option to provide drivers with a choice to pay for a less congested trip.” *Id.* at 1-9 (emphasis added).

As a result, the Agencies, guided by the narrow Purpose and Need Statement, gave detailed consideration to only the alternatives that included some form of traffic management. DEIS, at 2-24. The Notice of Intent to prepare the EIS states that “[m]anaged lanes are needed,” and “[a]dditional roadway management options are needed.”<sup>27</sup> Rather than being evaluated as an option among alternatives, the Project’s Federal Register notice says a P3 will be “pursued.”<sup>28</sup> This clearly indicates that this NEPA process was skewed toward the privately operated toll roads from the beginning; non-managed lane alternatives put forward in the DEIS were mere window dressing. Prior to reviewing alternatives or selecting a preferred alternative, the Agencies had already concluded that, “MDOT’s traditional funding sources would be unable to effectively finance, construct, operate, and maintain highway systems of this magnitude.”<sup>29</sup> By including “additional roadway travel choices” in the Purpose and Need Statement, DEIS, at 1-4, and restricting consideration to a limited category of alternatives, the Agencies foreclosed the

<sup>27</sup> Notice of Intent to Prepare Environmental Impact Statement, I-495 & I-270 Managed Lanes Study, 83 Fed. Reg. 11,812, 11,812 (March 16, 2018).

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

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possibility of meeting the broader project goals by other reasonable means, such as TSM/TDM, mass transit, or multimodal strategies. The Maryland-National Capital Parks and Planning Commission (M-NCPPC) and National Capital Planning Commission (NCPC), both Cooperating Agencies, have raised these issues with the Agencies throughout the NEPA process.<sup>30</sup> M-NCPPC’s non-concurrence on the Purpose and Need Statement and the ARDS, and NCPC’s abstention from concurring on the ARDS are noted in the DEIS, at 1-1, 2-2.<sup>31</sup> Montgomery County has also repeatedly raised the issue of the insufficiency of the purpose and need and limited alternatives.<sup>32</sup>

The narrowness of the Purpose and Need Statement can be traced to the nature of the Project. The DEIS “is the first element of the broader I-495 & I-270 Public-Private Partnership (P3) Program.” DEIS, at 1-1. The P3 Program, in turn, is itself the largest component of MDOT SHA’s broad Traffic Relief Plan.<sup>33</sup> Under the P3 Program, MDOT SHA is “seeking input from the private sector to design, build, finance, operate, and maintain improvements on both I-495 and I-270.”<sup>34</sup> Under the P3 model, a private company would build and manage the proposed Project in exchange for receiving the revenue from the managed lane tolls for a certain period of time. Because private investors rely on high profit margins to recoup their investments and make

<sup>30</sup> The One Federal Decision policy states that the FHWA, “should obtain a written concurrence from all cooperating agencies whose authorization is required for the project at three key milestones: 1) Purpose and Need, 2) Alternatives To Be Carried Forward for Evaluation, and 3) the Preferred Alternative.” Memorandum of Understanding Implementing One Federal Decision under Executive Order 13807 (April 9, 2018), <https://www.whitehouse.gov/wp-content/uploads/2018/04/MOU-One-Federal-Decision-m-18-13-Part-2-1.pdf>.

<sup>31</sup> M-NCPPC non-concurrences are explained in more detail in the following documents. Planning Department letter to MDOT-SHA P3 Director, I-495 and I-270 Managed Lanes Study Purpose and Need Statement M-NCCCP Comments (Oct. 18, 2018), [https://montgomeryplanningboard.org/wp-content/uploads/2018/10/I-495-and-I-270-Managed-Lanes-Study-Purpose-and-Need-Statement-M-NCPPC-Comments\\_web.pdf](https://montgomeryplanningboard.org/wp-content/uploads/2018/10/I-495-and-I-270-Managed-Lanes-Study-Purpose-and-Need-Statement-M-NCPPC-Comments_web.pdf); M-NCPPC Reaffirms Non-Concurrence Vote on the Revised Alternatives for the Interstates 495 and 270 Managed Lanes Study on November 20 (Nov 20, 2020), <https://montgomeryplanning.org/m-ncppc-reaffirms-non-concurrence-vote-on-the-revised-alternatives-for-the-interstates-495-and-270-managed-lanes-study-on-november-20/>.

<sup>32</sup> I-495 & I-270 Managed Lanes Study Purpose: Briefing (Sept. 11, 2018), at 60, 66, 80, 90, [https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2018/180911/20180911\\_3.pdf](https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2018/180911/20180911_3.pdf).

<sup>33</sup> MDOT SHA, Maryland Traffic Relief Plan, <https://www.roads.maryland.gov/mdotsha/pages/index.aspx?PageId=581>.

<sup>34</sup> *Id.*



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a profit, traffic management strategies like managed toll lanes are common in P3 projects.<sup>35</sup> The DEIS claims that the state lacks the funding resources to “effectively finance, construct, operate, and maintain highway improvements of the magnitude that are needed to address roadway congestion and enhance trip reliability in these study corridors,” and therefore any such options considered in the study must use “a P3 in order to design, build, finance, operate, and maintain the proposed infrastructure improvements.” DEIS, at 1-14. By limiting the Purpose and Need Statement to travel demand management solutions that are financially profitable to a private sector investor the Agencies unlawfully adopted the private interests of potential P3 investors and excluded alternatives that did not meet their specific private objectives. The purpose and need must be rewritten to allow for a legitimate search for solutions to congestion in the Maryland side of the Greater Washington Region. The Agencies should then consider a diverse range of alternatives, as is discussed in more detail in Section II.B.3.

## 2. The Project Purpose and Need Is Based on Inaccurate Traffic and Financial Assumptions

NEPA requires that an EIS contain high-quality information and accurate analysis. See 40 C.F.R. § 1500.1(b) (2019). If an agency relies on incomplete data, or if data relevant to the proposed project is unavailable, the EIS must disclose this shortcoming. See *Lands Council v. Powell*, 395 F.3d 1019, 1032 (9th Cir. 2005) (Forest Service violated NEPA by relying on data that it knew had shortcomings but did not disclose those shortcomings until its decision was challenged). Further, the use of inaccurate data to support the need for a proposed project is a violation of NEPA. See *N.C. All. for Transp. Reform v. DOT*, 151 F. Supp. 2d 661, 688 (M.D.N.C. 2001) (DOT violated NEPA by premising the need for a transportation project on overstated traffic projection estimates).

The Agencies state that one need for the Project is to “Accommodate Existing Traffic and Long-Term Traffic Growth.” DEIS, at 1-4. The DEIS bases this need on the existing traffic and growth projection data found in the *2018 Maryland State Highway Mobility Report*. *Id.* at 1-6. However, this data does not incorporate the impact of COVID-19 on existing and future traffic patterns. Since March of 2020, traffic patterns have changed significantly in response to COVID-19; schools and businesses across America have closed and travel patterns have been upended. Due to the closures, many Americans who are working are doing so remotely from home, and there are predictions of large exoduses from urban centers that could change city populations for years to come.<sup>36</sup> In addition, because of long-term school closures and a lack of childcare resources, many employees of businesses that have reopened their offices are likely to continue

<sup>35</sup> See Public-Private Partnership Concessions for Highway Projects: A Primer, at 13 (2010), [https://www.fhwa.dot.gov/ipd/pdfs/p3/p3\\_concession\\_primer.pdf](https://www.fhwa.dot.gov/ipd/pdfs/p3/p3_concession_primer.pdf) (“From the private perspective, large projects provide sufficient profit potential to merit the substantial investment required to participate in a procurement process.”).

<sup>36</sup> Pete Bigelow, *Transportation’s Moving Target: Wave of Relocations Prompted by COVID-19*, Automotive News (October 8, 2020), <https://www.autonews.com/mobility-report-newsletter/transportations-moving-target-wave-relocations-prompted-covid-19>.

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working remotely for the foreseeable future. The country is also facing record unemployment rates, which may be forcing many to stay home or travel less.<sup>37</sup> As a result, the nation’s roadways—including I-495 and I-270—are less-traveled.

The Agencies already have data on how COVID-19 has affected traffic patterns in the region, and can look at recent data from Virginia managed lanes to see how COVID-19 has changed their travel patterns and managed lane use. The Agencies must go back and reevaluate the Purpose and Need Statement (as well as the DEIS analyses) based on this data.

Even if a COVID-19 vaccine is available in the coming months, many businesses have made decisions to continue having employees work remotely or provide more flexibility to work from home part-time or on occasion. In the event that a vaccine is not quickly available and more businesses decide to have some employees return to offices, safety and health concerns are predicted to relegate the vast majority of the commuters to their own vehicles, putting a stop to carpooling that reduced rush hour traffic in the past.

Overall, the impact of COVID-19 on traffic patterns is unclear. As some projections suggest, COVID-19 may result in lasting reductions in rush hour traffic, especially for non-freight travel.<sup>38</sup> However, health precautions may result in more cars being on the road. In either event, the Agencies must consider the possible eventualities and their implications for the Project. If the long-term impact is less traffic, there may be no need for the Project and going forward with a P3 for managed lanes would amount to a financial boondoggle. If, on the other hand, there is substantially more traffic than projected in the *2018 Maryland State Highway Mobility Report*, the Project may be insufficient and a wasted investment in permanent infrastructure. The Agencies must consider both possibilities, analyze the ways in which COVID-19 may impact future traffic patterns, and evaluate whether the stated need for the Project is still appropriate.

Additionally, the stated need does not take into account changes in traffic from the construction or stopping of construction of the Purple Line and the Innovative Congestion Management Project along the I-270 corridor. The Purple Line has not been completed and that project is in fact in difficulty, as discussed in more detail in Section I, but the DEIS relies on its

<sup>37</sup> Carmen Reinicke, *Fewer Than Half of Working Americans Will Have a Paycheck in May as Devastating Coronavirus Layoffs Persist, Economist Says*, Business Insider (April 24, 2020), <https://www.businessinsider.com/layoffs-coronavirus-less-than-half-american-workers-paycheck-wage-may-2020-4>.

<sup>38</sup> Bob Pishue, *Traffic Speeds Continue Falling Across the Country, But Still Up vs Pre-COVID*, INRIX (Aug. 4, 2020), <https://inrix.com/blog/2020/08/us-speeds/> (“Despite the growth in the AM commute in most cities, however, traffic congestion has yet to return in a significant way in the morning. Seattle, Boston and Washington DC, for example, show no change in [increased] travel speeds from a month ago”).



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completion in order to eliminate other transit options. This reliance is misplaced and should not be factored into the need for this Project.

The financial assumptions that underlie the Project’s purpose and need are also inaccurate. The DEIS bases the financial viability requirement on the assumption that Maryland cannot fund large-scale infrastructure projects without utilizing a P3 model and that the Project will cost taxpayers no money if delivered through such a model. As is discussed in more detail in Section I of this document, the DEIS makes unsupported claims that managed toll lanes provided through a P3 private concessionaire “provide[s] needed large-scale improvements decades earlier than would otherwise be realized using traditional funding.” DEIS, at 1-14. The ability for a P3 to deliver this type of project earlier or for less cost to the state flies in the face of Maryland’s recent experience with the Purple Line and other states’ P3 experiences. MDOT SHA repeatedly made similar claims when defending its decision to deliver the Purple Line through a P3, which it claimed could achieve “up to 20 percent in cost savings for the project over its life and allow MTA to deliver the project without adding significant organizational and internal cost responsibilities to the agency.”<sup>39</sup> However, these claims have proven unfounded as the P3 concessionaire that was contracted to deliver the Purple Line has walked away from the project after more than three years of project delays<sup>40</sup> and “nearly \$800 million in cost overruns.”<sup>41</sup>

The DEIS also claims that “the State’s traditional funding sources, including the Maryland Transportation Trust Fund, are unable to effectively finance, construct, operate, and maintain highway improvements of the magnitude that are needed to address roadway congestion and enhance trip reliability in these study corridors, due to the fiscal constraints of the program and the state-wide transportation needs.” DEIS, at 1-14. However, as discussed in more detail in Section I, these claims are not supported by the information in the DEIS and are counter to statements made by MDOT-SHA indicating that the state can indeed issue new bonds backed by transit revenue streams, like tolls or transit fares, and can seek low-interest federal loans similar to those which concessionaires have access to. *Supra* note 20.

The financial assumptions underlying the purpose and need statement are also faulty because they rely on toll lane revenue projections that do not take into account the impact of COVID-19. The financial viability of toll lanes looks even more uncertain now that toll revenues have plummeted throughout the country, spurring the toll road association to ask Congress for a

<sup>39</sup> Purple Line FEIS, Record of Decision, Att. C, at 136, <https://www.purplelinemd.com/component/jdownloads/send/20-record-of-decision/81-attachment-c-feis-comments-and-responses>.

<sup>40</sup> Briana Adhukusuma, *State Figuring Out Who Will Take Over Purple Line Project*, Bethesda Magazine (Sept. 15, 2020), <https://bethesdamagazine.com/bethesda-beat/transportation/state-figuring-out-who-will-take-over-purple-line-project/>.

<sup>41</sup> Bruce DePuyt, *Purple Line Will be Delayed as MDOT Seeks Management Solution*, WTOP (Sept. 23, 2020), <https://wtop.com/maryland/2020/09/purple-line-will-be-delayed-as-mdot-seeks-management-solution/>.

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\$9.2 billion COVID-19 relief package to assist the toll industry with staying afloat.<sup>42</sup> Additionally, in April, 2020 the I-95 Express Lanes, a managed-lane project, saw its credit rating “downgraded due to its high vulnerability to congestion levels.”<sup>43</sup> In sum, the financial assumptions underlying the financial viability criteria for the Project come nowhere near being the high-quality information or support for the accurate analysis required by NEPA, and instead are fatally flawed. *See* 40 C.F.R. § 1500.1(b) (2019).

### 3. The Agencies Failed to Consider All Reasonable Alternatives, Making the Alternatives Analysis Inadequate

The alternatives analysis is the “heart” of an EIS. 40 C.F.R. § 1502.14 (2019). NEPA requires that an agency “[r]igorously explore and objectively evaluate *all* reasonable alternatives” to the proposed action. 40 C.F.R. § 1502.14(a) (2019) (emphasis added). An agency must consider a range of alternatives “sufficient to permit a reasoned choice among the options.” *Wyoming v. U.S. Dep’t of Agric.*, 661 F.3d 1209, 1243 (10th Cir. 2011) (quoting *Ass’n Working for Aurora’s Residential Env’t v. Colo. Dep’t of Transp.*, 153 F.3d 1122, 1130 (10th Cir. 1998)); *see also* *Sierra Club v. Watkins*, 808 F. Supp. 852, 872 (D.D.C. 1991) (agency is required to “consider a range of alternatives that covers the full spectrum of possibilities”). The DEIS, however, fails to consider many reasonable alternatives to the Project, examples of which are discussed below, and is therefore inadequate. *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985) (“[T]he existence of a viable but unexamined alternative renders an environmental impact statement inadequate.”).

#### a. The Agencies Did Not Consider Multimodal Alternatives in the Alternatives Analysis

With the input of state, federal, and local regulatory agencies, the Agencies identified a preliminary range of alternatives based on previous transportation studies in the region and proposed engineering improvements. DEIS, at 2-7. In addition to the no build alternative, alternatives included adding general purpose lanes, High-Occupancy (HOV) lanes, priced managed lanes, transportation systems/demand management, contraflow lanes, and reversible lanes. DEIS, at 2-8. In all, FHWA’s preliminary range included 20 alternatives and variations, the vast majority of which involved adding lanes:

<sup>42</sup> Ed Blazina, *Toll Road Association: Federal Money is Route to Recovery*, Pittsburgh Post-Gazette (May 25, 2020), <https://www.post-gazette.com/news/transportation/2020/05/25/Toll-road-association-Federal-money-now-will-help-it-be-part-of-recovery-effort-tomorrow/stories/202005230019>.

<sup>43</sup> Trevor d’Olier-Lees and Dhaval Shah, *North America’s P3 Toll Roads to Avoid Permanent Traffic Reduction, After lockdowns Led to Financial Duress, S&P Global Ratings’ See an Uncertain Road to Recovery*, Infrastructure Investor (July 6, 2020), <https://www.infrastructureinvestor.com/north-americas-p3-toll-roads-to-avoid-permanent-traffic-reduction/>.



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- Alternative 1: No Build
- Alternative 2: Transportation Systems Management/Transportation Demand Management (TSM/TDM)
- Alternative 3: Add one GP Lane in each direction on I-495 and I-270
- Alternative 4: Add one HOV lane in each direction on I-495 and retain existing HOV lane in each direction on I-270
- Alternative 5: Add one priced managed lane in each direction on I-495 and convert one existing HOV lane in each direction to a priced managed lane on I-270
- Alternative 6: Add two GP lanes in each direction on I-495 and I-270
- Alternative 7: Add two HOV lanes in each direction on I-495 and retain one existing HOV lane and add one HOV lane in each direction on I-270
- Alternative 8: Add two priced managed lanes in each direction on I-495 and add one priced managed lane in each direction and retain one existing HOV lane in each direction on I-270
- Alternative 9: Add two priced managed lanes in each direction on I-495 and convert one existing HOV lane to a priced managed lane and add one priced managed lane in each direction on I-270
- Alternative 10: Add two priced managed lanes in each direction on I-495 and on I-270 and retain one existing HOV lane in each direction on I-270 only
- Alternative 11: Physically separate traffic using C-D lanes, adding two GP lanes in each direction on I-495
- Alternative 12A: Convert existing GP lane on I-495 to contraflow lane during peak periods
- Alternative 12B: Convert existing HOV lane on I-270 to contraflow lane during peak periods
- Alternative 13A: Add two priced managed reversible lanes on I-495
- Alternative 13B: Convert existing HOV lanes to two priced managed reversible lanes on I-270
- Alternative 13C: Add two priced managed reversible lanes and retain one existing HOV lane in each direction on I-270
- Alternative 14A: Heavy Rail transit
- Alternative 14B: Light Rail transit
- Alternative 14C: Fixed guideway Bus Rapid Transit (BRT)10 off alignment of existing roadway
- Alternative 15: Add one dedicated bus lane on I-495 and I-270

DEIS, at 2-8 to 2-9.

These preliminary alternatives were assessed using six criteria related to the Purpose and Need Statement: Engineering Considerations, Homeland Security, Movement of Goods and Services, Multimodal Connectivity, Financial Viability, and Environmental. DEIS, at 2-3 to 2-7. Based on these factors, Alternatives 1, 5, 8, 9, 10, 13B, and 13C—all involving priced managed lanes (other than the no build alternative)—were given further consideration. DEIS, at 2-10.

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Each of the 20 preliminary alternatives was dedicated to a single project with one mode of transportation, that is, either fully transit or fully highway. However, as the Agencies admitted in the DEIS, the I-495 and I-270 congestion problem is “so great that no single highway or transit improvement will provide significant relief to the long-term demand.” DEIS, at 2-13. In order to consider the “full spectrum of possibilities” required by NEPA, therefore, the Agencies must consider multimodal alternatives that combine both transit and highway improvements. And there are reasonable alternatives for managing congestion that consist of mixed transit and highway actions that went ignored.

To sidestep the obvious availability of multimodal alternatives, FHWA reiterated MDOT’s claim that the proposed Purple Line light rail project is the “transit portion” of the proposed project. *See generally* DEIS, at 2-14, 2-15. However, simply referencing the Purple Line does not satisfy NEPA requirements as it does not analyze the option and it ignores the myriad other transit options that alone or in conjunction with a highway action could relieve traffic congestion. Additionally, as of the date of these comments, the Purple Line remains tied up in disputes. Further, eliminating transit and other non-highway expansion alternatives early in the NEPA analysis prevents the Agencies from choosing a mixture of different alternatives in the record of decision. At a minimum the Agencies should consider alternatives that include TSM/TDM, mass transit options, multimodal options, and the MD 200 Diversion alternative as put forward by county leaders (not the version reviewed by the Agencies). Mobility plans should also tie in holistically to land use and economic development planning, which the Project does not do. Additionally, FHWA must consider combinations of alternatives, such as the SMART alternative developed below, *see infra* Section II.B.3.g.

**b. None of the Alternatives Retained for Detailed Study Incorporated Transit Crossing Woodrow Wilson Bridge or the American Legion Bridge**

The stated goal of a project “necessarily dictates the range of ‘reasonable alternatives’” considered in the EIS. *Westlands Water Dist. v. U.S. Dept. of Interior*, 376 F.3d 853, 865 (9th Cir. 2004) (quoting *City of Carmel-By-The-Sea*, 123 F.3d at 1155). FHWA included “multimodal connectivity” as a need of the DEIS. DEIS, at 2-5. Woodrow Wilson Bridge is vital to that multimodal connectivity. At significant cost to the State of Maryland, the bridge was designed and built to accommodate rail traffic. However, the DEIS does not analyze, or even discuss, how any of the alternatives will ensure that rail traffic will cross the Woodrow Wilson Bridge.

It is essential that the new American Legion Bridge accommodate rail traffic, as was done for the Woodrow Wilson Bridge. But none of the build alternatives accommodate rail, and therefore the Project fails to meet the stated purpose of enhancing existing and planned multimodal mobility and connectivity.

The Capital Beltway/Purple Line Study of 2002 developed six rail alternatives, including two alternatives across the Potomac River. The alternatives analysis for the DEIS should have evaluated all six of these alternatives, identified those to be carried forward as alternatives retained for detailed study, and explained why each alternative not carried forward was not



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selected.<sup>44</sup> While the DEIS cites the Purple Line as a transit alternative in the I-495 corridor, in fact, only 38% of the Purple Line as recommended in the 2002 report is under construction. The DEIS provides no evaluation of completing the other 62% of the Purple Line and no explanation for why this alternative was not evaluated. MDOT should have considered the developed rail alternative and explained specifically why each was dropped from further study in similar detail to the 17 rejected alignment modifications discussed on pages 1-11 to 1-17 in the Purple Line DEIS Definition of Alternatives Technical Report.<sup>45</sup>

c. The Agencies Improperly Eliminated Alternatives that Could Meet Some Purposes of the Project

NEPA does not mandate that an EIS consider any specific project alternatives. At the same time, however, it does not allow an agency to eliminate alternatives “merely because they do not offer a complete solution” to the purpose and need of the proposed project. *Nat. Res. Def. Council v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972).

The Agencies eliminated non-managed lane alternatives because those alternatives did not meet one or two specific aspects of the purpose and need of the Project, even though the Agencies admitted that those alternatives met other aspects (and even though the alternatives selected also did not meet all aspects). In particular, the Agencies eliminated alternatives because they were not based on the type of P3 program that MDOT SHA wanted and would not bring in revenue, and therefore the Agencies found they were not financially viable. For example, the Agencies found that alternative 2, the TSM/TDM alternative, “would improve the operations of the existing transportation system.” DEIS, at 2-11. This finding is consistent with a recent study by the National Capital Region Transportation Planning Board that found transportation demand management offered the most traffic reductions.<sup>46</sup> But at least in part due to considering this alternative only as a stand-alone option, the Agencies dropped it from further consideration,

<sup>44</sup> SHA, MTA, Rummel, Klepper, & Kahl, and Parsons Brinckerhoff. Capital Beltway/Purple Line Study Initial Findings & Recommendations Draft, 2002, at S-12, Figure S-8. [https://495-270-p3.com/wp-content/uploads/2019/07/Capital Beltway Purple Line Study 2002.pdf](https://495-270-p3.com/wp-content/uploads/2019/07/Capital_Beltway_Purple_Line_Study_2002.pdf). This report is cited on page 5 of Appendix A of the DEIS.

<sup>45</sup> Purple Line Alternatives Analysis/Draft Environmental Impact Statement, 2008. See the Definition of Alternatives Technical Report. <https://purplelinemd.com/index.php/12yahuscc9z11835j#aa-deis-technical-reports>.

<sup>46</sup> National Capital Region Transportation Planning Board, *An Assessment of Regional Initiatives for the National Capital Region, Technical Report on Phase II of the TPB Long-Range Plan Task Force*, at xi, ix, 61 (Dec. 2017), <https://www.mwecog.org/file.aspx?D=fvBRBNQUuDN48QEXRe3bNHLp8ytrsSEVcg%2fTMPPrzu7g%3d&A=NYyETN4WuxQWWyImU6a2FRzM83OmR9W9kAJRDxObZ6I%3d>; David Alpert, *The Best Way to Improve Transportation in Our Region is...*, Greater Greater Washington (Nov. 16, 2017), <https://ggwash.org/view/65596/the-best-way-improve-transportation-our-region-tpb-study>.

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citing its failure to address long-term traffic growth and the fact that it would not provide a revenue source. *Id.*

Additionally, the Agencies dropped alternatives 3 and 6 (adding one or two general-purpose lanes), because they would not provide a revenue source and there would be no ability to manage long-term demand and ensure that the highways (with one or two additional general lanes) would not exceed their projected capacity. *Id.* at 2-11 to 2-12. But this determination means that under the retained managed lane build alternatives, there would also be no ability to manage long-term demand and ensure the general-purpose lanes would not exceed capacity. In fact, with one or two fewer general-purpose lanes, capacity would be exceeded sooner. In the managed lane build alternatives, those who cannot afford or opt not to pay the tolls, or freight traffic which generally will not pay the tolls, will be left as badly or even worse off than they would be under alternatives 3 and 5. Yet, the Agencies did not include any discussion of this concern in the DEIS.

The Agencies also eliminated transit-only alternatives. Those include heavy rail, light rail, bus rapid transit, and dedicated bus-only managed lanes. The Agencies claimed that those alternatives would not address existing and long-term traffic growth in the study corridors or improve trip reliability. DEIS, at 2-13 to 2-17. But their statement is unexplained and unsupported; if done correctly, including by combining them with highway options as discussed in subsection (a) above, transit options could significantly reduce traffic in the region and improve trip reliability, even more so than managed lanes. The Agencies also dropped those alternatives from consideration because they would not provide an additional roadway travel choice. *Id.* However, transit alternatives do provide additional roadway travel choices, and further, to the extent the Agencies are in effect requiring an alternative to include new car-driving choices, such a requirement would be unreasonably narrow.

It appears the main reason for eliminating the transit-only alternatives was concern about their financial viability, particularly the lack of a revenue stream that would enable a P3 to construct the alternative at no cost to the state. This reasoning is faulty. Public transit options do provide a revenue stream. Public transit options can be implemented using a P3 (see the Purple Line project). MDOT has recently conceded that it could finance a significant public transit project. See *supra* note 20.

Significantly, the Agencies did not equally apply the financial viability screening criteria to the managed lane build alternatives. As discussed above, the managed lane alternatives will likely require a direct subsidy to the builder of \$500 million to \$1 billion or more, will require billions of dollars in funds to relocate water infrastructure (burdening Maryland ratepayers), and will transfer significant risks to the state. See *supra* Section I. These risks are magnified by the COVID-19 pandemic and the changes to toll use that have led to a significant decrease in toll revenue.<sup>47</sup> The lack of transparency regarding these costs throughout the alternatives

<sup>47</sup> Maryland Transportation Authority, which runs the state’s eight toll facilities, announced a gloomy financial forecast through 2026, citing a \$422 million reduction in toll revenue. Luz Lazo, *People are Driving Less and Skipping the Toll Roads, Leaving Less Money for Local Projects*, Washington Post (July 4, 2020),



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development and the DEIS makes it impossible for either the Agencies or the public to understand or meaningfully consider the extent to which the managed lane build alternatives may not be financially viable. Additionally, the DEIS shows that the managed lane build alternatives cannot be completed while meeting the goal of environmental responsibility, yet the Agencies did not examine this in any detail or remove the alternatives that failed to meet this goal, as discussed more fully in Section II.B.3.d.

d. The Agencies Did Not Use Environmental Impact as a Differentiator Between Preliminary Alternatives

The DEIS acknowledges that the preliminary range of alternatives “could have a varying degree of potential environmental impacts” but states that the Agencies screened out all options that did not meet “the transportation purpose and need,” and so “the consideration of the potential for varying degrees of environmental impacts was not a differentiator in whether the alternative should be retained or dismissed.” DEIS, App. B, at 94. The objective of NEPA is to rigorously explore all reasonable alternatives in light of their environmental impacts. By not considering and comparing the environmental impacts of the preliminary range of alternatives, the Agencies failed to identify whether any of these preliminary alternatives may have had less environmental impact than the screened alternatives. This is particularly problematic because, as the DEIS acknowledges, “The overall difference in environmental impacts between the Screened Alternatives was not significant.” DEIS, App. B, at 95. The Agencies improperly screened out any alternatives that may have had less impact and improperly narrowed the alternatives to be studied in detail in the DEIS to those which have almost identical environmental impacts. This approach directly conflicts with the objectives of NEPA and is a fundamental flaw in the DEIS.

[https://www.washingtonpost.com/local/trafficandcommuting/people-are-driving-less-and-skipping-the-toll-roads-leaving-less-money-for-local-projects/2020/07/04/76e15ef2-ba0f-11ea-8cf5-9e1b8d7f84c6\\_story.html](https://www.washingtonpost.com/local/trafficandcommuting/people-are-driving-less-and-skipping-the-toll-roads-leaving-less-money-for-local-projects/2020/07/04/76e15ef2-ba0f-11ea-8cf5-9e1b8d7f84c6_story.html). Virginia Department of Transportation’s 66 Express Lanes “yielded \$238,000 in toll revenue in May, down 90 percent from May 2019 when the tolls generated \$2.5 million” and the Dulles Toll Road had a year-to-date revenue drop of 33 percent, or \$26.8 million. *Id.*; see also Jack Moore, *DC-Area Toll Revenue Plunges 90% Amid Coronavirus Pandemic*, WTOPnews (Aug. 12, 2020), <https://wtop.com/dc-transit/2020/08/dc-area-toll-revenue-plunges-90-amid-coronavirus-pandemic/> (toll revenue generated by the 495 Express Lanes in Virginia fell to just \$3 million in April, May and June, down by 88% compared to the same time period last year); *Editorial: Commuting Habits Have Changed During COVID-19. What’s the Future?*, Richmond Times-Dispatch (Oct. 12, 2020), [https://richmond.com/opinion/editorial/editorial-commuting-habits-have-changed-during-covid-19-what-s-the-future/article\\_6534fb67-2aa2-53d9-8f0a-4568afadeb3f.html](https://richmond.com/opinion/editorial/editorial-commuting-habits-have-changed-during-covid-19-what-s-the-future/article_6534fb67-2aa2-53d9-8f0a-4568afadeb3f.html).

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e. The DEIS Failed to Analyze a True Intercounty Connector/Maryland 200 Diversion Alternative to the Top Side of the Beltway That Would Avoid Expansion in Sensitive Areas and Property Relocations

The DEIS presents an MD Diversion Alternative Analysis but it improperly adds managed lanes to I-95 to the model, which reduces that alternative’s environmental and traffic benefits. The addition of these managed lanes is not necessary to evaluate the MD 200 Diversion Alternative and the Agencies must analyze the Diversion without this addition. The MD 200 Diversion Alternative should be studied in more detail with various modeling assumptions, including analyses with and without the I-95 segment.

Furthermore, the Agencies failed to consider a variety of assumptions that would incentivize the MD 200/I-270 route over traveling on I-495/I-95, for example, the use of operational changes such as restructuring the tolling systems and speed limits currently in place and adding more dynamic signage. Without the I-95 managed lane segment there is a reduction in environmental impact, which results in a greater benefit coming from the MD 200 Alternative. The analysis provided by MDOT SHA fails to demonstrate that the MD 200 Diversion is not a reasonable alternative under NEPA or a reasonable avoidance technique under Section 4(f).

f. The DEIS Failed to Consider Rail Transportation as a Reasonable Alternative to Additional Highway Lanes

The DEIS fails to consider rail transportation, and specifically the Maryland Area Regional Commuter (MARC) Brunswick Line, as a reasonable alternative to further highway expansion. Instead, the DEIS states that the MARC Brunswick Line would not improve trip reliability along I-495 or the I-270 corridor based solely on cursory citations from the 2007 MARC Growth Plan, which extends until 2035, rather than considering the 2018 MARC Cornerstone Plan for 2045 that better fits the 2040 planning horizon of the DEIS.<sup>48</sup> The MARC Cornerstone Plan outlines \$1.34 billion in capital investments for the Brunswick Line (more than twice the investments in the 2007 plan), including over \$700 million for additional mainline track segments designated as critical path items because these are essential to realize the line’s full potential to support the I-270 corridor.<sup>49</sup> The Cornerstone Plan notes that the major impediment to improve passenger service and reach the Brunswick Line’s ridership targets is that CSX, not MARC, owns the right of way and the priority for CSX is moving freight, not passengers.<sup>50</sup>

<sup>48</sup> Maryland Department of Transportation Maryland Transit Administration, MARC Cornerstone Plan, [https://s3.amazonaws.com/mta-website-staging/mta-website-staging/files/Transit%20Projects/Cornerstone/MCP\\_MARC.pdf](https://s3.amazonaws.com/mta-website-staging/mta-website-staging/files/Transit%20Projects/Cornerstone/MCP_MARC.pdf).

<sup>49</sup> *Id.* at 59.

<sup>50</sup> *Id.* at 12.



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This impediment has notoriously plagued the line during peak travel hours, restrained the daily number of operable trains and schedules, and underscores the urgency for the additional mainline tracks to enable MARC to operate more fluidly. CSX will allow MARC to increase the number and frequency of trains only when the MDOT implements the installation of additional tracks. Unfortunately, the ball has been in MDOT's court for over a decade.

The DEIS says nothing about the ridership gains to be realized by 2035 with additional tracks for the Brunswick Line. For example, if the planned segments had been added by 2020, the line would have a daily seating capacity of 19,400 passengers. Instead, the line's daily ridership has remained flat, hovering just above 7,000 passengers because MDOT has not delivered these critical path items.

The DEIS is supposed to examine ways to improve trip reliability along I-270 and address a net traffic growth<sup>51</sup> of 36,400 non-truck vehicles by 2040. However, the DEIS says nothing about how many of those vehicle drivers could turn into MARC passengers if the critical Brunswick Line improvements were implemented over the 23 years it takes to reach that traffic estimate. The DEIS therefore does not provide taxpayers with a transparent examination of the obstacles and untapped potential for a rail line that carries 95% of commuting trips, offers 70% of its passengers easy driving access to stations, and has over 1.3 million jobs located within a 30-minute walk or transit trip to the stations.

If the last segment of additional mainline track is installed by 2040, the Brunswick Line daily seating capacity would be 26,400 passengers, which is 19,000 more than the daily passengers recorded in 2017. This growth in passenger capacity is equivalent to over half the traffic growth forecast for I-270 and provides ample margin to accommodate the share of future drivers who could gravitate towards more convenient rail service if MDOT funds and implements the line improvements.

The DEIS estimates that the toll lanes alternatives that the DEIS promotes, when compared to the no build alternative, will only save up to 4 minutes in peak travel time (25% trip reduction) and only in the I-270 Southbound direction; none of the toll lanes alternatives saves time when traveling in the I-270 Northbound direction.<sup>52</sup> These meager toll lane results, when compared to the potential of the Brunswick Line if properly funded, make the Agencies' refusal to study non-highway alternatives fatally flawed.

To provide all taxpayers with a comprehensive transportation network that truly supports mobility and enhances equal opportunity for economic prosperity, the Agencies must rigorously

<sup>51</sup> The DEIS Traffic Analysis Technical Report, Figure 3-1: Annual Average Daily Traffic (AADT) along Study Roadways, projects a traffic growth for I-270 of 40,000 vehicles from 2017 to 2040. The DEIS also says that 9% of this traffic are trucks which leaves 36,400 non-truck vehicles as the potential market for alternative travel modes.

<sup>52</sup> DEIS, Traffic Analysis Technical Report, Tables 5-5 and 5-6 (Corridor Travel Time Summary (minutes) AM and PM Peak Periods).

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and transparently examine all alternatives leveraging the knowledge gained from the work by the Transportation Planning Board and Montgomery County planners.

g. The Agencies Must Consider a System Management/Accessibility/Rapid Transit (SMART) Alternative

#### i Deficiency of the Alternatives Analysis

The Alternatives Analysis proceeds from a badly flawed Purpose and Need Statement, which appears to be "precooked" to favor a toll-financed highway widening scheme. The Purpose element states as follows:

The Purpose of the Study is to develop a travel demand solution(s) that addresses congestion, improves trip reliability on I-495 and I-270 within the study limits and enhances existing and planned multimodal mobility and connectivity.<sup>53</sup>

The flaws in this statement include the use of the word "congestion" instead of "mobility" or "accessibility" (which we will return to later), the focus on two facilities rather than two corridors, and the absence of broader concerns, such as climate change and social and economic equity. The Needs element adds to the trouble.

The Purpose and Need Statement identifies "Accommodate Existing Traffic and Long-Term Traffic Growth" as a primary need.<sup>54</sup> The discussion muddles the concept of congestion (delay) with increased traffic (vehicle miles traveled, or VMT). However, as we demonstrate, these are different phenomena.<sup>55</sup> The proposed roadway widening (the build alternatives) will accommodate more automobile traffic (more VMT) but will not (after a few years) reduce delay. Increasing VMT is an accelerant to climate change (greenhouse gas emissions) and is harmful to broad social and environmental goals, including equitable access to housing and jobs. Increased VMT should be considered a negative outcome, not a need.

The Purpose and Need Statement lists the statement "Incorporate Alternative Funding Sources to Achieve Financial Viability" under "Other Goals and Objectives," but it is in fact a

<sup>53</sup> DEIS, 1-4.

<sup>54</sup> DEIS, 1-4.

<sup>55</sup> M-NCPPC has made similar observations: "The Purpose and Need does not clearly articulate the problem, as congestion is merely a symptom. Specifically, we are looking for analysis of the regional travel patterns that contribute to the congestion now experienced on I-495 and I-270, what type of congestion is occurring and whether it is link or merge and weaving capacity, where is the congestion occurring, and how frequently it occurs." M-NCPPC, *Briefing and Discussion for October 2018 Full Commission Meeting I-495 & I-270 Managed Lanes Study* (Oct. 11, 2018), [https://montgomeryplanningboard.org/wp-content/uploads/2018/10/Briefing\\_and\\_discussion\\_for\\_October\\_Full\\_Commission\\_Meeting.pdf](https://montgomeryplanningboard.org/wp-content/uploads/2018/10/Briefing_and_discussion_for_October_Full_Commission_Meeting.pdf).



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main driver of the DEIS.<sup>56</sup> Alternative funding is not a transportation need; it is an implementation strategy. And in this case, the failure of the Purple Line P3 scheme casts a long shadow on the “financial viability” of this implementation strategy.

These two elements of the Purpose and Need Statement—traffic growth and tolling—are then used as the main criteria for vetting the alternatives. If an alternative does not widen the highway and does not include toll revenue, it fails the Purpose and Need!

The Alternatives Analysis dismisses all alternatives to a managed lane expansion rather summarily. The DEIS starts with 20 alternatives, including the required “no build” option (which in practice it is never selected), one TSM/TDM option, five very sketchily described transit options, and 14 highway options.<sup>57</sup>

The TSM/TDM option is dismissed because it would not prevent congestion from returning to current levels by 2040 (even though the preferred option would not prevent that either!).<sup>58</sup> However, the 2004/2005 Capital Beltway Study, cited in the DEIS as a framework study for the Project, states that MDOT SHA believed the TSM/TDM alternative should be “carried forward and incorporated into all build alternates.”<sup>59</sup> The elements of the TSM/TDM alternative will be discussed at greater length under the Transportation Systems Management and Operations (TSMO) section of our proposed Robust Alternative below.

The five transit options are also quickly dismissed: “Transit alone would not meet this Study’s Purpose and Need to address the existing and long-term traffic growth in the study corridors.”<sup>60</sup> Interestingly, the writers of the DEIS support this conclusion with a quotation from a 2002 MDOT study: “Congestion on the Beltway itself as well as demand on the other transportation facilities is so great that no single highway or transit improvement will provide significant relief to the long-term demand.”<sup>61</sup>

<sup>56</sup> DEIS, 1-14.

<sup>57</sup> DEIS, 2-8 – 2-9.

<sup>58</sup> DEIS, 2-11.

<sup>59</sup> MDOT SHA, Capital Beltway Study Public Display Boards (May 6, 2004), [https://web.archive.org/web/20170202174503/http://apps.roads.maryland.gov/WebProjectLifeCycle/AW518\\_11/HTDOCS/Documents/Informational\\_Public\\_Workshop/AW518%20Display%20Boards.FINAL.5-6-04a.pdf](https://web.archive.org/web/20170202174503/http://apps.roads.maryland.gov/WebProjectLifeCycle/AW518_11/HTDOCS/Documents/Informational_Public_Workshop/AW518%20Display%20Boards.FINAL.5-6-04a.pdf).

<sup>60</sup> DEIS, 2-13.

<sup>61</sup> DEIS, 2-13.

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For the present purpose it is not necessary to review all the highway alternatives. It is enough to say that the whole exercise leads inexorably to a toll-financed highway widening as the preferred alternative.

## ii A Robust Alternative

Since the alternatives to a toll-financed highway widening were poorly drawn and cavalierly dismissed in the DEIS Alternatives Analysis, what would a genuine alternative look like?

First, a reworded Purpose statement should be advanced:

The Purpose of the Study is to develop infrastructure and policy solutions that will improve accessibility and mobility in the Northwest and Beltway corridors while reducing vehicle miles traveled, supporting sustainable land use and economic development, and promoting social, environmental, and economic equity.<sup>62</sup>

The Robust Alternative presented below attempts to address this restated Purpose, and includes a set of infrastructure and policy initiatives that, working together, should advance this goal more efficiently than the toll-financed highway widening scheme and without its huge negative environmental impacts.

For discussion purposes, these comments call this alternative the SMART Alternative, an acronym for System Management/Accessibility/Rapid Transit, the three elements of the program.

### Transit

We address the transit element of the SMART alternative first. Residents of the Northwest (I-270) corridor—and to a lesser extent the Beltway corridor—already have access to a better transit system than most suburban Americans. The next challenge is to develop the existing pieces, along with some new elements, to form a network of transit options that will enable these residents to use transit to move about their towns and their region for their daily needs.

The Rapid Transit element of the SMART Alternative is a set of transit improvements that will provide the high capacity, high frequency, high quality element of the transit network. These include, for the Northwest corridor, the Metro Red Line, the Brunswick MARC Line, and the Montgomery County Bus Rapid Transit (BRT) lines.

<sup>62</sup> This broader Purpose and Need reflects the broader objectives used in some past Maryland studies. For example, the 2004/2005 Capital Beltway Study purpose and need included objectives like: improve regional mobility; provide enhanced safety; maximize travel operational efficiencies; provide cost-effective transportation infrastructure; and support the area’s economic growth and the environment. Capital Beltway Study Public Display Boards, *see supra*, note 59.



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#### Brunswick MARC Line

The most underutilized public transportation asset in the Northwest corridor is the MARC Brunswick commuter rail line. The Brunswick Line runs roughly parallel to I-270 and the Red Line through Montgomery County and has the potential—with appropriate infrastructure improvements and institutional realignment—to become a high-capacity, high-quality regional rail line.

The Brunswick Line runs for a total of 88 route miles<sup>63</sup>, extending from Union Station in Washington DC to Brunswick MD, with some trains going on to Martinsburg WV and some going on a branch line to Frederick MD. It runs adjacent to the Metro Red Line in central Montgomery County between the White Flint Metro station and the northwestern terminus of the Red Line at Shady Grove, with an interchange station at Rockville. South of White Flint, the Brunswick Line takes an easterly route to Union Station through Silver Spring, while the Red Line follows a more westerly alignment through Bethesda.

The Brunswick Line currently (pre-pandemic) runs 9 morning peak-hour trains eastbound toward Union Station and 9 evening peak-hour trains westbound, with one midday westbound train and no trains on weekends. This limited service generates only some 6,000 or so daily riders.<sup>64</sup>

The service and capacity on the Brunswick Line *can* be dramatically expanded. The Maryland Transit Administration (MTA) developed a plan for upgrading all three MARC lines in its 2007 MARC Growth and Investment Plan. That plan called for increasing seating capacity on the line from 7,000 to 26,000,<sup>65</sup> with frequent peak-hour service, and increasing off-peak and weekend service. The plan sketched out a set of incremental capital improvements needed to make this growth possible, centered on adding a third track through much of Montgomery County, but also including new rail cars and improved station facilities.<sup>66</sup> The total capital cost of these upgrades was estimated at \$531 million with an additional \$18 million in annual operations and maintenance costs.<sup>67</sup>

The Growth and Investment Plan schedule for the Brunswick Line improvements would have extended to 2035, but even that distant date has been removed from MTA documents,

<sup>63</sup> *Maryland Statewide Rail Plan*, April 2015, 4-27.

<sup>64</sup> *Maryland Statewide Rail Plan*, April 2015, 4-27.

<sup>65</sup> *MARC Growth and Investment Plan*, 2007, 29.

<sup>66</sup> *MARC GIP*, 23-26.

<sup>67</sup> *MARC GIP*, 30-31.

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which currently show no commitment to those improvements.<sup>68</sup> In fact, these improvements—and more—can and should be made much more quickly. A planning document by the advocacy group Action Committee for Transit provides a more richly detailed “feasibility study” than MTA’s outline.<sup>69</sup>

What kind of difference can a high-quality, high-capacity regional rail line provide? For reference, the Caltrain commuter rail line south of San Francisco, already a major carrier of passengers, is planning to upgrade from typical commuter service to frequent all-day service. Their business plan projects that ridership will increase from 65,000 per day to 180,000 per day, which is equivalent, according to their press office, to adding 5 ½ lanes to the adjacent freeway.<sup>70</sup>

The Growth and Investment Plan identifies one key impediment to improving the Brunswick Line that must be addressed: the line is owned and operated by the freight railroad CSX. As the plan notes, MARC must “negotiate” time slots with CSX.<sup>71</sup> Although adding a third track on the mainline (and a second track to Frederick) should provide ample capacity for both passenger and freight rail operations, there is no guarantee that that will happen. Experience in other rail corridors suggests that when a freight railroad owns and operates trackage (including dispatching trains in real time), passenger traffic always has a lower priority than freight. It is unrealistic to shut down freight traffic on the Brunswick Line (mainly known as the Metropolitan Subdivision in CSX parlance). CSX identifies this line as an element of its National Gateway system, which includes improving rail routes to permit “double-stacking” of containers moving mainly Chinese manufactured goods from the Port of Baltimore to Midwest destinations. Although a more northerly route (the old B&O Mainline) travels a shorter distance to the port, that route is constrained by tunnels and is limited to a single track for double-stack trains. Therefore, freight must be part of the equation on the Brunswick Line.

To resolve this problem, we strongly recommend that the Brunswick Line be taken into public ownership. This would probably require an act of Congress, as CSX would be expected to aggressively resist this change. Ownership and operation of the line should pass to Maryland

<sup>68</sup> Alex Holt, *Is MARC’s Newest Plan to Improve Service a Step Backwards?*, Greater Greater Washington (Dec. 3, 2019), <https://ggwash.org/view/74948/is-marc-train-rail-new-cornerstone-plan-a-step-backwards>.

<sup>69</sup> Action Committee for Transit, *MARC Brunswick/Frederick Line Improvement Proposal*, (Nov. 2016), [http://actfortransit.org/archives/reports\\_and\\_other/MARCImprovementProposal.pdf](http://actfortransit.org/archives/reports_and_other/MARCImprovementProposal.pdf).

<sup>70</sup> Erin Baldassari, *Caltrain has an Ambitious Plan to Run BART-Like Service. Here’s What it Will Mean for Bay Area Traffic*, The Mercury News (July 22, 2019), <https://www.mercurynews.com/2019/07/22/caltrain-has-an-ambitious-plan-to-run-bart-like-service-heres-what-it-will-mean-for-bay-area-traffic/>.

<sup>71</sup> *MARC GIP*, 10.



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DOT—or Amtrak—which would guarantee that passenger traffic has priority while preserving freight movements.

#### Metro Red Line

The Red Line is the core transit spine of the Northwest Corridor, running from Union Station in Washington to Shady Grove, with eight stations along the corridor in Montgomery County (and another branch via Silver Spring to Glenmont). WMATA, the transit agency, has recently expanded capacity on the outer portion of the line by eliminating the “Grosvenor turnaround.”<sup>72</sup> Planning should be undertaken for a possible Red Line extension to Germantown, as proposed by transit advocates,<sup>73</sup> and more Transit Oriented Development opportunities.

#### Bus Rapid Transit

A planned network of Bus Rapid Transit (BRT) routes in Montgomery County will provide another layer of high-quality public transportation in the Northwest Corridor.

As defined by the Federal Transit Administration:

Bus Rapid Transit (BRT) is a high-quality bus-based transit system that delivers fast and efficient service that may include dedicated lanes, busways, traffic signal priority, off-board fare collection, elevated platforms and enhanced stations....Because BRT contains features similar to a light rail or subway system, it is often considered more reliable, convenient and faster than regular bus services.<sup>74</sup>

Montgomery County has adopted a transit plan outlining 10 county BRT lines plus one MDOT line, the Corridor Cities Transitway, although that line was defunded last year.<sup>75</sup> The first county line, the US 29 “Flash” between Silver Spring Transit Center and Burtonsville, began operations

<sup>72</sup> Stephen Repetski, *Metro Reasons: More Trains Bring More Riders to the Red Line*, Greater Washington (July 25, 2019), <https://ggwash.org/view/73123/metro-reasons-more-trains-bring-more-riders-to-metros-red-line>.

<sup>73</sup> Montgomery County Advocates for Better Transportation, *A Transit Vision for the I-270 Corridor*, [http://actfortransit.org/I-270\\_corridor.html](http://actfortransit.org/I-270_corridor.html).

<sup>74</sup> Federal Transit Administration, *Bus Rapid Transit*, (Dec. 9, 2015), <https://www.transit.dot.gov/research-innovation/bus-rapid-transit>.

<sup>75</sup> Montgomery County Planning Department, *Countywide Transit Corridors Functional Master Plan*, (Dec. 2013), [http://www.montgomeryplanning.org/transportation/highways/documents/countywide\\_transit\\_corridors\\_plan\\_2013-12.pdf](http://www.montgomeryplanning.org/transportation/highways/documents/countywide_transit_corridors_plan_2013-12.pdf).

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on October 14, 2020.<sup>76</sup> Although this line is not likely to have an effect on either the Northwest or Beltway corridors, it will provide operating experience and real travel data that will inform future projects.

Three projects would directly benefit mobility in the Northwest corridor: MD 355, the Corridor Cities Transitway, and Veirs Mill Road.

The MD 355 Flash BRT<sup>77</sup> is one of the first three BRT routes to be implemented by the county. It would traverse MD 355 from the Bethesda Metro to Clarksburg, partially on separate lanes and partially in mixed traffic (with the exact alignment to be determined). The southern half of the line would run parallel to the Metro Red Line, with a likely interchange at the Rockville Metro with the Red Line and MARC and presumably at other Metro stations as well. The entire route north of the Beltway would parallel I-270 and would provide an alternative travel option for people to gain access both to activity centers along MD 355 and to higher speed transit (MARC and Red Line) without using a car. The line will provide service to existing<sup>78</sup> and planned developments along the corridor.<sup>79</sup>

The Corridor Cities Transitway,<sup>80</sup> if it is re-funded, would also improve mobility in the Northwest corridor, tying together a number of residential and employment centers at 16 stations on a somewhat circuitous 15-mile route between Shady Grove Metro and the COMSAT site near Clarksburg. Although not suited for long-distance travel, the alignment could provide relief for I-270 through its direct access to these centers. Initially planned as a light rail route, then reconfigured for BRT, the project was defunded by MDOT in 2019 as part of a general retreat from transit. The project should be revisited as part of the overall BRT plan.

<sup>76</sup> Press Release, *Montgomery County's Department of Transportation Launches 'Flash,' Maryland's First Bus Service of its Kind, in Ceremonies Led by County Executive Elrich and Council President Katz*, Montgomery County Government (Oct. 14, 2020), [https://www2.montgomerycountymd.gov/mcgportalapps/Press\\_Detail.aspx?Item\\_ID=26954](https://www2.montgomerycountymd.gov/mcgportalapps/Press_Detail.aspx?Item_ID=26954).

<sup>77</sup> See Montgomery County Department of Transportation, *MD355 Bus Rapid Transit*, <https://www.montgomerycountymd.gov/dot-dte/projects/MD355BRT/> and , Montgomery County Department of Transportation, *MD 355 BRT Corridor Planning Study Phase 2 (Draft)*, (June 2019), <https://montgomeryplanningboard.org/wp-content/uploads/2019/06/Attachment-A-DRAFT-MD-355-BRT-Corridor-Summary-Report.pdf>.

<sup>78</sup> <https://www.rockvillemd.gov/DocumentCenter/View/21729/Rockville-2040-Open-House-Poster---Transportation?bidId=>

<sup>79</sup> MD 355 BRT Corridor Planning Study, 78.

<sup>80</sup> See Montgomery Planning, *Corridor Cities Transitway*, <https://montgomeryplanning.org/planning/transportation/transit-planning/corridor-cities-transitway/>.



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The third BRT route providing support for the Northwest corridor will traverse Veirs Mill Road for seven miles between Rockville and Wheaton Metro stations.<sup>81</sup>

#### Beltway corridor

The Capital Beltway (I-495), which was designed for Interstate highway connectivity, has few transit alternatives. The most important one is the Purple Line, which if it is completed will connect several radial Metro lines and important activity centers (Bethesda, Silver Spring, College Park, etc.).<sup>82</sup>

#### Transportation Systems Management and Operations (TSMO)

The second element of our proposed SMART alternative is System Management. This is a broad term for a set of strategies that highway agencies use to improve the operation and reliability of a roadway without adding additional through-traffic lanes. Examples include “smart” (computerized) traffic signals, variable message signs, and online and telephone traveler information. The DEIS discusses—but then dismisses—this idea under Alternative 2: TSM/TDM (transportation system management/transportation demand management). The DEIS states that “these types of solutions optimize the existing system” but rejects them because they “do not support long-term traffic growth.” It notes that some TSM/TDM are already being implemented on I-270 under the Innovative Congestion Management project, but states that although there are near-term benefits, modeling predicts that traffic will “return to existing levels of congestion by 2040.” (As discussed elsewhere, congestion should be expected to return to current levels by then even with a major capacity increase.) The DEIS does state that some elements of the TSM/TDM alternative will be kept in the Project. DEIS, at 2-11.

Although we have used the labels “system management” and “TSM/TDM” for this category of transportation strategies, the current technical term is Transportation Systems Management and Operations (TSMO), defined in federal law as an integrated set of “strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system.”<sup>83</sup>

MDOT is no stranger to TSMO techniques. The DEIS, as noted above, references TSMO strategies already implemented on I-270, with more to come. In fact, MDOT is one of the national leaders in this field. The agency has adopted a TSMO strategic plan that chronicles its

<sup>81</sup> Montgomery County Department of Transportation, *Viers Mill Road Bus Rapid Transit*, <https://www.montgomerycountymd.gov/dot-dte/projects/VeirsMillBRT/>.

<sup>82</sup> Coalition for Smarter Growth, *Purple Line*, <https://www.smartergrowth.net/maryland/purple-line/>.

<sup>83</sup> MAP-21, Pub. L. 112-141, 126 Stat. 405, 422, § 1103(a)(30)(A).

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experience and sets out a full set of goals, objectives, and strategies for expanding and implementing TSMO activities in the state.<sup>84</sup>

Interestingly, the TSMO Strategic Plan takes a decidedly more positive view than the DEIS does of TSMO as an alternative to capacity increases:

When comparing TSMO improvements to capacity improvements, the return on investment and benefit cost analysis usually justifies the operational improvement. This is particularly evident when investigating the travel time reliability on severely congested roadways. Monetizing the improvements by selecting indicators such as value of time, value of travel time reliability, and fuel costs allows for direct comparisons. MDOT SHA monitors some of these costs through their annual mobility reporting process. The net cost and time savings outcomes favor TSMO from a traveler’s perspective. Additionally, projects adding capacity often have huge environmental impacts, which delay project development as well as construction.<sup>85</sup>

Or, in summary form:

Compared to capacity expansion, TSMO strategies:

- Address all sources of congestion, recurring and non-recurring
- Are inexpensive and cost-effective
- Take little or no extra right-of-way
- Can be deployed in months rather than years<sup>86</sup>

MDOT has recently adopted an implementation plan for the next generation of TSMO projects.<sup>87</sup> The Northwest corridor is included as “System 12” in the plan. System 12 includes the TSMO work currently being implemented on I-270 and references the proposed widening

<sup>84</sup> MDOT SHA, *TSMO: Maryland Transportation Systems Management & Operations: Strategic Plan*, (Oct. 2018), [https://www.roads.maryland.gov/OPPEN/2018\\_MDOT\\_TSMO\\_Strategic\\_Plan.pdf](https://www.roads.maryland.gov/OPPEN/2018_MDOT_TSMO_Strategic_Plan.pdf).

<sup>85</sup> TSMO Strategic Plan, 12.

<sup>86</sup> TSMO Strategic Plan, 27.

<sup>87</sup> MDOT SHA, *TSMO Master Plan*, (July 2020), [https://roads.maryland.gov/OPPEN/TSMO\\_Master\\_Plan.pdf](https://roads.maryland.gov/OPPEN/TSMO_Master_Plan.pdf).



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project. Also included is a major installation of TSMO elements on MD 355, including closed circuit TV, “smart” traffic signals, and fiber optic links.<sup>88</sup>

The Beltway corridor is not included in the TSMO master plan, and this is a corridor where TSMO planning and implementation should have the highest priority.

#### Accessibility

The third leg of the SMART alternative is Accessibility; this is the transportation and land use piece of the puzzle. Transportation planners have long realized that building pieces of infrastructure without linking that work to land use planning can cause more problems than it solves. Fortunately, today both transportation planners and land use planners are generally well aware of the need to work together. One sign of their awareness is the choice often made today to focus on improving “accessibility”—the ability of people to easily gain access to desired destinations—rather than “mobility”—the business of moving vehicles through space.

Land use patterns have a major impact on travel behavior. A 2017 report prepared by the Washington, DC-area Metropolitan Planning Organization compared 10 transportation infrastructure and policy initiatives, ranging from a Regional Express Travel Network to Transit Rail Extensions to Optimize Regional Land Use Balance, on a variety of measurements.<sup>89</sup> The Transit Rail Extensions to Optimize Regional Land Use Balance (which included East/West population shifts as well as densification) scored second in Reduction of Daily Vehicle Hours of Delay and tied for first in both Reduction of Vehicle Miles Traveled and Average Best Travel Times to Intercity Hubs (major airports and train stations.)<sup>90</sup>

A new report from the Brookings Institution explores this topic in depth, especially focusing on the importance of proximity to key services.<sup>91</sup> The key takeaways:

- People travel over 7 miles on average for every trip they take, but these distances vary widely across different metro areas and neighborhoods;

<sup>88</sup> TSMO Master Plan, 56-58.

<sup>89</sup> National Capital Region Transportation Planning Board, An Assessment of Regional Initiatives for the National Capital Region, (Dec. 2017), <https://www.mwcog.org/file.aspx?D=fyBRBNQUuDN48QEXRc3bNHLp8ytrsSEVcg%2fTMPrzu7g%3d&A=NYyETN4WuxQWWyImU6a2FRzM83OmR9W9kAJRDxObZ6l%3d>.

<sup>90</sup> *Id.* at xi; Transportation Planning Board, “Long-Range Plan Task Force: Draft Analysis Results,” 15 November 2017.

<sup>91</sup> Adie Tomer, Joseph Kane, and Jennifer S. Vey, *Connecting People and Places: Exploring New Measures of Travel Behavior*, Brookings Institution (Oct. 2020), <https://www.brookings.edu/wp-content/uploads/2020/10/Corridors-of-Demand.pdf>.

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- Human-scale neighborhood designs lead to shorter distance trips;
- People traveling in automobile-oriented neighborhoods face longer trips overall, regardless of the trip’s purpose;
- Trip distances vary by income and race, reflecting patterns of racial and economic segregation;
- Transportation policy should use pricing and performance measurement to more actively support human-scaled neighborhoods;
- Land use policies should promote growth in neighborhoods that support proximity and spatial equity; and
- America must electrify its vehicle fleet in order to mitigate climate change while new policies and practices are being developed.<sup>92</sup>

Of particular importance for our purposes is the adoption by state and local agencies of integrated land use and transportation plans and policies that will maximize the benefit and utility of transportation investments. Sadly, the State of Maryland has in recent years retreated from its earlier role as a national leader in Smart Growth planning, but other jurisdictions have continued to do valuable transportation and land use planning.

Montgomery County, known as a pioneer in good regional planning, has published a new draft master plan, *Thrive Montgomery 2050*, which aggressively addresses the challenges of our times and lays out a set of principles that are congruent with the SMART alternative.<sup>93</sup> The “Trends and Challenges” section includes several pertinent points, including:

- We are not producing enough housing in accessible locations to meet our needs;
- We need to stop planning for cars and emphasize transit, walking and biking;
- Declining trends in public health and well-being indicate a growing need for a healthier more active lifestyle; and
- Climate change threatens all aspects of life.<sup>94</sup>

<sup>92</sup> Tomer, 4-5.

<sup>93</sup> *Thrive Montgomery 2050, Public Hearing Draft Plan*, Montgomery Planning (Oct. 2020), <https://montgomeryplanning.org/wp-content/uploads/2020/10/Public-Hearing-Draft-Plan-Thrive-Montgomery-2050-final-10-5.pdf>.

<sup>94</sup> *Thrive Montgomery*, 19-24.



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The “major themes” of the plan are:

- Complete Communities through compact form of development and urbanism;
- Corridors are the place for new growth;
- Start planning for people instead of planning for cars;
- Eradicate greenhouse gas emissions;
- Evolution of single-family neighborhoods near transit;
- Racial justice and equity;
- Great design and the importance of place; and
- Regional solutions and strategies.<sup>95</sup>

*Thrive Montgomery* goes on to catalog a comprehensive list of goals, policies, and actions that will advance these themes.<sup>96</sup> This plan is a solid foundation for the SMART alternative in Montgomery County and runs completely counter to the direction taken by the Project.

More localized planning efforts also support the SMART alternative. For example, Montgomery County has adopted a neighborhood plan for the Veirs Mill corridor, a largely single-family home area with a planned Bus Rapid Transit line referred to earlier in these comments. The plan “seeks to improve connectivity between transit and community uses and facilities, enhance safety for all users of Veirs Mill Road, support the existing residential scale and character, and introduce limited redevelopment opportunities to strengthen the existing neighborhood centers and identity.”<sup>97</sup> This is a good example of how linking transportation and land use planning can improve mobility, accessibility, and quality of life for residents in a variety of settings.

Much farther out on the Northwest corridor, Frederick County is developing a plan for a sprawling, auto-oriented zone south of the city of Frederick. The plan includes moving toward mixed-use development, interconnectivity of roads and streets, form-based codes, and transit-oriented development at the Monocacy MARC station.<sup>98</sup>

<sup>95</sup> *Thrive Montgomery*, 37-45.

<sup>96</sup> *Thrive Montgomery*, 54-56.

<sup>97</sup> Veirs Mill Corridor Master Plan, at 2 (April 2019), <https://montgomeryplanning.org/wp-content/uploads/2020/01/Veirs-Mill-Corridor-Master-Plan-Approved-and-Adopted-WEB.pdf>.

<sup>98</sup> The South Frederick Corridors Plan: Briefing Book, September 2020, 59-63.

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The Beltway corridor is so far-ranging that land use policies must be adopted at a local scale to have a beneficial effect. We also must recognize that the pandemic has led to a significant increase in working from home, some portion of which may be long-lasting,<sup>99</sup> supporting what some have called the “great localization.”<sup>100</sup>

**C. The DEIS Does Not Adequately Address the Water Quality Impacts from the Project**

**1. The DEIS Fails to Examine How Increased Stormwater Will Affect Receiving Waterways**

Under NEPA the Agencies must “carefully consider[] detailed information concerning significant environmental impacts” and make the public aware of those environmental effects before a proposed action is chosen. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989); *see also Theodore Roosevelt Conservation P’ship v. Salazar*, 616 F.3d 497, 503 (D.C. Cir. 2010). Among other things, the Agencies must provide detailed information on how polluted stormwater from the Project will affect receiving waterways.

The Clean Water Act (CWA) prohibits discharges of pollutants to waters of the United States without a permit. 33 U.S.C. §§ 1311, 1342. The Agencies state that they will meet all required permitting for stormwater runoff but fail to address how increased stormwater runoff and the associated increase in pollutant loads to receiving waterways will meet established effluent limitations. *See id.* § 1362(11) (defining an effluent limitation as “any restriction established by a State or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance”). The type, quantity, and contents of the discharge determine the limitations the permit must impose on the discharger and should be carefully considered in the DEIS.

Stormwater collects pollutants on its way to stormwater management facilities and eventually into municipal separate storm sewer systems and receiving waterways. These discharges can negatively impact the chemical, physical, and biological conditions of waterways. It is well-recognized that stormwater can degrade water quality, particularly in urban settings, yet the DEIS fails to take a hard look at how the large increases in stormwater from the build

<sup>99</sup> Jonathan Captriel, *D.C.-Area Employers are Open to the Idea of More Permanent Teleworking. That Could Help Traffic*, Washington Business Journal (Sept. 16, 2020), <https://www.bizjournals.com/washington/news/2020/09/16/teleworking-survey-mwcog.html>.

<sup>100</sup> Mitch Shaw, *Transportation Officials Anticipating ‘Great Localization’ After COVID-19*, Standard-Examiner (Sept. 16, 2020), [https://www.standard.net/news/transportation/transportation-officials-anticipating-great-localization-after-covid-19/article\\_40589d81-3d3e-59ff-8885-be3df6c83b78.html](https://www.standard.net/news/transportation/transportation-officials-anticipating-great-localization-after-covid-19/article_40589d81-3d3e-59ff-8885-be3df6c83b78.html).



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alternatives will impact water quality.<sup>101</sup> The Maryland Department of the Environment has itself stated that “[i]t becomes fairly easy for all organizations, individuals, and government agencies to agree that urban stormwater is a problem that must be addressed.” MDE, Response to Formal Comments for Montgomery County NPDES Permit (2009).

Fifteen Maryland watersheds (MDNR 12-digit) and two Virginia watersheds will be affected by the build alternatives. *See* DEIS, App. L, pp. 45, 47 (Table 2.4-7). (Maryland: Potomac River – Rock Run, Cabin John Creek, Rock Creek, Sligo Creek, Anacostia River – Northwest Branch, Paint Branch, Little Paint Branch, Northeast Branch, Bald Hill Branch, Upper Beaverdam Creek, Patuxent River Western Branch – Upper Southwest Branch, Patuxent River Western Branch – Lower Southwest Branch, Upper Henson Creek, Watts Branch, and Muddy Branch. Virginia: Scotts Run, Dead Run). All impacted Maryland and Virginia watersheds except Scotts Run are already impaired by one or more pollutant for one or more designated use, meaning that the waterways in these watersheds currently do not meet water quality standards. DEIS, App. L, at 47, 48; *see* 33 U.S.C. § 1313. DEIS, App. L, at 55. The build alternatives would increase impervious surface areas and the numbers of vehicles traveling the Beltway and I-270, thereby increasing stormwater runoff and pollutant loads. The build alternatives would add between 49.4 and 108.4 acres of impervious surface in the Cabin John Creek, Northeast Branch, and Upper Beaverdam watersheds, and between 0-13.9 acres in Northwest Branch, Little Paint Branch, Muddy Branch, Watts Branch, and Bald Hill Branch watersheds. DEIS, at 4-91. The DEIS lists assessments of these watersheds’ water quality in Table 4-28 (Summary of Watershed Quality Index Narrative Score Results) and the majority are classified as poor or very poor in Indices of Biological Integrity (IBI) scores. DEIS, at 4-106. For example, the Upper Beaverdam is classified as “Very Poor-Fair” in benthic invertebrate IBI scores and “Very Poor-Fair” in fish IBI scores. The increase in impervious surface cover in a watershed with an already low IBI score, such as Upper Beaverdam, will further degrade stream conditions. Stormwater impacts will be one of the largest environmental impacts of this Project and yet the DEIS fails to specify how new stormwater loads will impact the water quality of receiving waterways.

a. The DEIS Fails to Identify Stormwater Volume and Pollutant Loads

DEIS Section 2.7.2 provides an overview of applicable federal, state, and local stormwater and water quality requirements that the selected alternative will need to meet under the Clean Water Act, Maryland Stormwater Management Act, and Montgomery County and Prince George’s County stormwater management requirements. It identifies how much impervious surface would be added by the build alternatives (Table 2-5) and how many major culvert crossings may be built, DEIS, at 2-37 to 2-39, but doesn’t discuss Fairfax County

<sup>101</sup> *See, e.g.,* National Academies of Science, Committee on Reducing Stormwater Discharge Contributions to Water Pollution, *Urban Stormwater Management in the United States* (2009), <https://www.nap.edu/read/12465/chapter/1>; *see also* Hallie Miller, *Report Faults Maryland for Failings in Chesapeake Bay Pollution*, Washington Post (Aug. 18, 2020), [https://www.washingtonpost.com/local/report-faults-maryland-for-failings-in-chesapeake-bay-pollution/2020/08/18/8c4421f2-e193-11ea-b69b-64f7b0477ed4\\_story.html](https://www.washingtonpost.com/local/report-faults-maryland-for-failings-in-chesapeake-bay-pollution/2020/08/18/8c4421f2-e193-11ea-b69b-64f7b0477ed4_story.html).

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stormwater management (SWM) requirements. Importantly, the DEIS fails to provide an estimate of stormwater volumes or pollutant loads by alternative. DEIS, at 2-39. Instead, the Agencies punt this analysis until after the NEPA process is concluded. DEIS, at 2-39 (“A detailed SWM analysis will be performed for the Selected Alternative during final design to determine required and provided stormwater management volumes.”). It appears the Agencies may have already conducted some volume calculations given that this information is needed to estimate the location and type of stormwater facilities needed along the proposed new highway lanes, DEIS, at 2-37 to 2-38, but this information is not included in the DEIS.

b. The DEIS Fails to Take a “Hard Look” at How Increased Stormwater Will Affect Receiving Waterways

The impacts of stormwater on receiving waterways is discussed only superficially in the DEIS. The DEIS mentions that “[a]n evaluation of potential water quality loss and major culvert crossings was also conducted” and that “SWM water quality requirements and treatment . . . will improve current conditions.” DEIS, at 2-37. It is hard to imagine, however, how increased stormwater will improve current conditions. Even if it were to do so, there are no data presented regarding water quality loss or improvement, only tables and estimates of the amount of impervious surface to be added and conclusory statements indicating that stormwater will negatively impact receiving waterways.

The DEIS also fails to model how anticipated increases of stormwater volumes will impact water chemistry. For example, DEIS § 4.13.3 states:

All Build Alternatives would affect surface waters, surface water quality, and watershed characteristics in the corridor study boundary due to direct and indirect impacts to ephemeral, intermittent, and perennial stream channels and increases in impervious surface in their watersheds. The impacts to jurisdictional surface waters by classification are summarized in Table 4-20 of this chapter. The impacts to jurisdictional surface waters by MDNR 12-digit and USGS HUC8 watersheds are provided in the Natural Resources Technical Report (Appendix L, Section 2.3).

DEIS, at 4-89; *see also id.* at 4-90 to 4-91. However, those references do not discuss the likely impacts to water quality in any detail. Table 4-20 provides information on the total square footage and acres of wetlands and waterways that would be disturbed by each alternative but provides no information on impact to water chemistry. The flaws in Appendix L, which also is referenced, are discussed further below.

Similarly, DEIS § 4.13.3 states:

In addition to tree removal, stormwater discharges also have the potential to increase surface water temperatures in nearby waterways. The effect of the temperature change depends on stream size, existing temperature regime, the volume and temperature of stream baseflow, and the degree of shading. Thermal effects from decreased shading and stormwater discharge are of particular concern



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for Use III and IV stream networks, such as Paint Branch and Northwest Branch, as they support aquatic biota less tolerant of warmwater conditions.

DEIS, at 4-90. Yet the DEIS fails to quantify the likely temperature changes or to discuss their likely impacts on the affected waterways. *See also* discussion at DEIS, at 4-90 to 4-91 (providing general descriptions of the effects of chlorides, organic pollutants, and sediments on water quality, but neglecting to specify or otherwise analyze their effects in the context of the Project, except to say that they “increase in impervious areas”).

The DEIS identifies where the most and least impervious areas would be added, but still does not analyze the impacts and refers to the same flawed Appendix L that is discussed below:

All Build Alternatives would add the most impervious surface to the Cabin John Creek, Northeast Branch, and Upper Beaverdam MD 12-digit watersheds, with between 49.4 and 108.4 acres added. The least additional impervious surface would be added to Northwest Branch, Little Paint Branch, Muddy Branch, Watts Branch, and Bald Hill Branch watersheds, with between 0 and 13.9 acres added. The only Tier II watershed that would experience an increase in impervious surface is the Beaverdam Creek – Northeast Branch watershed, with an increase of less than 0.1 acres. Refer to the *Natural Resources Technical Report* (Appendix L, Section 2.3) for a discussion of jurisdictional surface water impacts and Table 4-29 for additional impervious surface by Build Alternative.

*Id.* at 4-91. Table 4-29 simply provides the amount of impervious surface to be added to each of the seventeen impacted watersheds.

The DEIS also fails to provide any details on the mitigation measures that would be required, other than to say:

Water quality would be protected by implementing strict erosion and sediment control plans with BMPs [best management practices] appropriate to protect water quality during construction activities. Post-construction stormwater management and compliance with total maximum daily loads (TMDLs) will be accounted for in the stormwater design and water quality monitoring to comply with required permits.

*Id.*

Appendix L, Section 2.3, identifies existing water quality conditions for the watersheds and the most common contaminants found in highway stormwater before making the following conclusory statement:

There would be no effect on surface waters and watershed characteristics from the No Build Alternative. However, all Screened Alternatives would affect surface waters and watershed characteristics in the corridor study boundary due to direct and indirect impacts to ephemeral, intermittent, and perennial stream channels.

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Impacts to jurisdictional surface waters are discussed in Section 2.3.3 and the impacts to jurisdictional surface waters by MDNR 12-digit watershed are included in Table 2.3-8. Watersheds would also be impacted by increasing impervious surface area. SWM controls will be included in the final design to reduce velocity of runoff flow and negative impact to water quality. Section 2.4.3.C includes more information regarding environmental effects to water quality. Additional information regarding SWM assumptions are discussed in Section 2.7.3 of the DEIS. Note that although the corridor study boundary intersects the Piscataway Creek Tier II watershed, no features were identified and therefore no impacts would occur within this watershed.

DEIS, App. L, at 78.

Appendix L, Section 2.3.3 makes no reference to stormwater impacts. Table 2.3-8 merely provides the total area of wetlands and waterways that will be disturbed. Appendix L, Section 2.4.3 simply restates information provided in Section 4.13.3 of the main DEIS document.

In Appendix L, Section 2.3, the Agencies provide thirty-three pages of data and discussion showing the existing chemical and physical conditions of each impacted watershed, DEIS, App. L, at 45-78, but fail to provide any analysis of the effect that the most common contaminants found in highway stormwater runoff would have on water quality in these watersheds. *Id.* at 78; § 2.4.3(A), (C). In fact, the only time the effects of stormwater are ever mentioned in the summary of watershed existing conditions is in a small section discussing Sligo Creek that states, “direct effects of runoff would likely affect water quality.” DEIS, App. L, at 66. There is no information cited to support how the Agencies arrived at this conclusion or to what extent Sligo Creek would be impacted. There is no discussion of stormwater in the existing conditions sections for the other sixteen watersheds.

The Agencies must identify how building new highway lanes and reconstructing existing lanes, which are the only build alternatives being considered, will increase stormwater flow and pollutant loads. DOT should model the anticipated stormwater runoff to identify and characterize the quantity and quality of runoff, including identifying estimated total volumes, peak discharge, and velocity. This discussion should include an itemized calculation of stormwater from each drainage area for each proposed alternative and models showing how this stormwater would impact the ability of the receiving waterway to meet existing effluent limitations. The analysis should also consider how the lack of proposed onsite treatment and the water quality trading credits relied upon by the Agencies to meet stormwater permitting requirements will impact local waterways.

More comments on the proposed use of water quality trading are provided in Section II.C.4. of this document. There are models readily available to the Agencies that would allow them to provide meaningful information about the risk of adverse effects of runoff on receiving waterways, which could then be used to inform a determination of the degree and nature of the impact, the need for mitigation measures, and the potential effectiveness of such management measure for reducing these risks. *See for example*, Storm Water Management Model (SWMM), EPA, <https://www.epa.gov/water-research/storm-water-management-model-swmm>. The DEIS



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must contain a stormwater impact analysis and provide the public with an opportunity to comment on these Project impacts.

## 2. The Analysis of Stormwater Management Needs is Incomplete and Lacks Supporting Data

The Agencies must evaluate all relevant data and “articulate a satisfactory explanation” for the conclusions reached in the EIS. *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). The Agencies fail to explain and provide sufficient data in the DEIS to support the stormwater management needs identified in the DEIS. The Agencies must provide an explanation for the findings in Table 2-5 as to the number of lanes that will need to be reconstructed. Additionally, the DEIS fails to consider impacts to smaller culverts.

### a. The DEIS Provides Insufficient Data to Support its Impervious Surface Area Calculations and the Selection of Stormwater Management Facilities That is Proposed

Section 2.7.2 identifies the types of stormwater management to be used to manage the large quantities of stormwater that will be produced by all build alternatives. DEIS, at 2-37 to 2-39. The DEIS identifies the type of stormwater facilities (quantity ponds, Environmental Site Design (ESD) ponds, swales, quantity vaults, and water quality vaults) and water culverts to be used and their proposed locations based on the amount of impervious surface area calculated for each build alternative. DEIS, at 2-38; Table 2-5. However, no photos, maps, or data are provided to support the calculated impervious areas presented in Table 2-5. *Id.*<sup>102</sup> A footnote to Table 2-5 states that, “Offsite requirements are based on the engineering design as of January 2020.” This design should have been included in the DEIS, but it was not.

The DEIS proposes new stormwater facilities to be built along the study corridor to accommodate stormwater runoff but fails to consider impacts to existing stormwater management facilities. DEIS, at 2-38; *see* DEIS, App. D, EnvMapping\_web\_part1 to EnvMapping\_web\_part4. The DEIS does not provide information on existing stormwater management facilities. Due to this lack of information it is unclear how the construction of new facilities will impact existing facilities proposed at the same site. It appears that some newly proposed facilities would be built on top of or overlapping existing stormwater management facilities. For example, Map 99 in Appendix D, Environmental Mapping, proposes three new facilities within the traffic loops where I-270 meets Democracy Boulevard. There are already seven existing facilities located at the same location as the proposed facilities (numbers 150657 through 150060). *See* MDOT SHA NPDES SWM FAC mapping tool, available at

<sup>102</sup> Table 2-5 provides the acres of impervious area for each build alternative broken down by: Required Quantity surface area (acres); Provided Quantity surface area (acres); Required ESD surface area (acres); Provided ESD surface area (acres); and Impervious Area Requiring Offsite Treatment (acres).

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<https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=d588b42cc24f4ef48235a86259da3270>.

The DEIS also fails to describe or account for how existing stormwater runoff will be managed if and when existing facilities are removed or replaced new facilities. Moreover, in situations where new facilities replace old facilities, the DEIS should explain how they will be built with sufficient capacity to address all existing and new stormwater runoff. There are several publicly available resources the Agencies can use to identify existing facilities along the study corridor.<sup>103</sup> The Agencies established the limits of disturbance (LOD) by estimating the areas around the build alternatives that will be impacted by “construction, construction access, staging, materials storage, grading, clearing, erosion and sediment control, landscaping, drainage, stormwater management, noise barrier replacement/construction, and related activities.” DEIS, at 2-40. The LOD for each alternative should be cross-referenced with the appropriate local map and loss of treatment and storage should be accounted for in the planning and design of stormwater management facilities. Proposed stormwater management facilities are shown on the DEIS Environmental Resource Maps, but the maps fail to show the drainage areas to the facilities. *See* DEIS, App. D, EnvMapping\_web\_part1 to EnvMapping\_web\_part4. These maps also fail to show where facilities will connect into existing drainages networks. All drainage areas and areas used to connect facilities to existing drainage networks need to be included within the LOD. It is unclear whether the LOD currently includes these areas given that they are not included on any of the DEIS maps. Without maps showing the drainage areas and any other data used to calculate the impervious surface areas provided in Table 2-5 and identify connection points to existing drainage infrastructure, the public is foreclosed from reviewing and commenting on the sufficiency of the proposed stormwater management facilities.

<sup>103</sup> MDOT SHA NPDES SWMFAC:

<https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=d588b42cc24f4ef48235a86259da3270>.

Prince George’s County Clean Water Map:

<https://www.arcgis.com/apps/webappviewer/index.html?id=dc168a43d3554905b4e4d6e61799025f>.

Montgomery County (map at bottom of page):

<https://www.montgomerycountymd.gov/water/stormwater/maintenance.html>.

Fairfax County:

<https://www.fairfaxcounty.gov/GeoApps/Jade/Index.html?configBase=https://www.fairfaxcounty.gov/GeoApps/Geocortex/Essentials/REST/sites/Jade/viewers/Jade/virtualdirectory/Resources/Config/Default>.



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**b. No Information is Provided to Support the Percentage of Existing Lanes to be Reconstructed**

The amount and type of stormwater management required under the Maryland Stormwater Management Act of 2007 is dictated in part by the amount of impervious surface area created and reconstructed. Md. Code Ann., Env’t §§ 4-201.1, 4-203 (2014). Specifically, if the percentage of lanes that need to be reconstructed exceeds 40%, “all existing impervious areas located within a project’s LOD are required for management.” Maryland Stormwater Design Manual, Chapter 5, p. 5-117. To calculate the amount of new and reconstructed impervious surface, the Agencies “assum[ed] all shoulders and 25 percent of the existing lanes would need to be reconstructed.” DEIS, at 2-37. The Agencies calculated this percentage by conducting “field investigat[i]ons to determine existing conditions.” *Id.* However, no information is provided to support the conclusion that only 25% of existing impervious surface will be reconstructed, leaving the public unable to review and comment on this finding. In fact, there appears to be little basis for arriving at the 25% figure, particularly in light of a statement by former Maryland Secretary of Transportation Pete Rahn that “the Washington Beltway [] can no longer be expanded and it needs to be reconstructed because we have mush underneath it and the system frankly has got to be taken right down to the dirt and brought back up.”<sup>104</sup> The Agencies must provide sufficient information to support their conclusion, including field logs, maps, photos, or other information used to calculate this important number.

Regardless of the percentage of reconstructed impervious surface,<sup>105</sup> the Organizations encourage the Agencies to account for and provide for treatment of all stormwater from existing lanes given that much of this polluted water is currently untreated.<sup>106</sup> Additionally, the DEIS assumes that culverts that need to be replaced to accommodate increased stormwater volumes will be installed using trenchless construction techniques that will not disturb the existing road. Although this would be an ideal outcome, there is no information presented in the DEIS to suggest all culverts can be replaced using trenchless technology and the Organizations urge the Agencies to consider that at least some percentage of replaced culverts may require road reconstruction.

<sup>104</sup> Sean Slone, *Transportation Policy Academy 2015 – DC – Maryland Secretary of Transportation Pete Rahn*, The Council of State Governments (May 19, 2015), <https://web.archive.org/web/20200906121216/https://knowledgecenter.csg.org/kc/content/transportation-policy-academy-2015-%E2%80%93-dc-%E2%80%93-maryland-secretary-transportation-pete-rahn>.

<sup>106</sup> The MDOT SHA NPDES SWMFAC shows that much of the existing highway does not have stormwater management facilities. MDOT SHA NPDES SWM FAC mapping tool, available at <https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=d588b42cc24f4ef48235a86259da3270>.

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**c. Impacts to Culverts Smaller Than 36 Inches Must be Considered**

DEIS Section 2.7.2.c examines how major culverts, defined as culverts 36 inches in diameter or greater, will be impacted by the increase of stormwater flow and proposes that some culverts will need to be replaced by larger culverts. DEIS, at 2-38. However, no consideration is given to smaller culverts. Adding impervious surface area will have more significant detrimental impact on smaller channels with smaller drainage areas given that the percentage of impervious surface area added will be higher for these channels. As is the case for the issues discussed above, the DEIS fails to identify exactly which culverts would need to be replaced with larger ones and where these culverts are located. A list of the culverts to be replaced should be provided along with the data used to identify these culverts. The proposed new culverts should be included on the Environmental Resource Maps, DEIS, App. D, EnvMapping\_web\_part1 to EnvMapping\_web\_part4.

**3. The DEIS Fails to Account for MS4 Permitting Requirements**

The DEIS does not discuss how the stormwater management proposed for Scotts Run and Dead Run will comply with the Virginia Stormwater Management Act and the Fairfax County stormwater management ordinance. These laws control the Virginia Stormwater Management Program and Municipal Separate Storm Sewer System (MS4) permitting requirements, Va. Code Ann. § 62.1-44.15:24, *et seq.*; 9 Va. Admin. Code §§ 25-870 *et seq.*; Code of the County of Fairfax, Virginia § 124-1-1 *et seq.* The DEIS is also silent on how the build alternatives may impact MDOT SHA’s ability to meet existing National Pollutant Discharge Elimination System (NPDES) MS4 permit requirements, including MDOT SHA’s obligation to restore 20% of impervious highway surfaces that have no other treatment in order to reduce stormwater runoff. National Pollutant Discharge Elimination System, Municipal Separate Stormwater Sewer System Discharge Permit for Maryland State Highway Administration (SHA), No. 11-DP-3313 (MD0068276) (Oct. 9, 2015) (requiring restoration of “20% of MDOT SHA’s impervious area (i.e., the ISR requirement),” as well as the development of “restoration plans to meet stormwater WLAs to address Chesapeake Bay and local water quality impacts.”).

**4. The DEIS Fails to Consider Viable Stormwater Avoidance and Mitigation Options**

The DEIS fails to sufficiently consider stormwater avoidance and mitigation options that would avoid or minimize stormwater impacts. Instead, the Agencies claim that impacts to waterways will be sufficiently addressed through the permitting process that will occur after the NEPA process is complete. The permitting process will not, however, fulfill the Agencies’ obligations under NEPA to fully evaluate alternatives; the Agencies must consider viable stormwater avoidance and mitigation options to allow for the proper consideration of the build options and other available alternative that would have less impact.

The DEIS fails to consider areas immediately surrounding the build alternatives, but outside the LOD, for possible stormwater management. The DEIS explains that “[t]he design for on-site SWM, including ponds and large facilities along the roadside and within interchanges, was developed to a concept level of detail and was included within the LOD.” DEIS, App. L, at



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32. This statement effectively means that any amount of stormwater that cannot be managed and treated by a stormwater management facility within the LOD will not be addressed onsite.

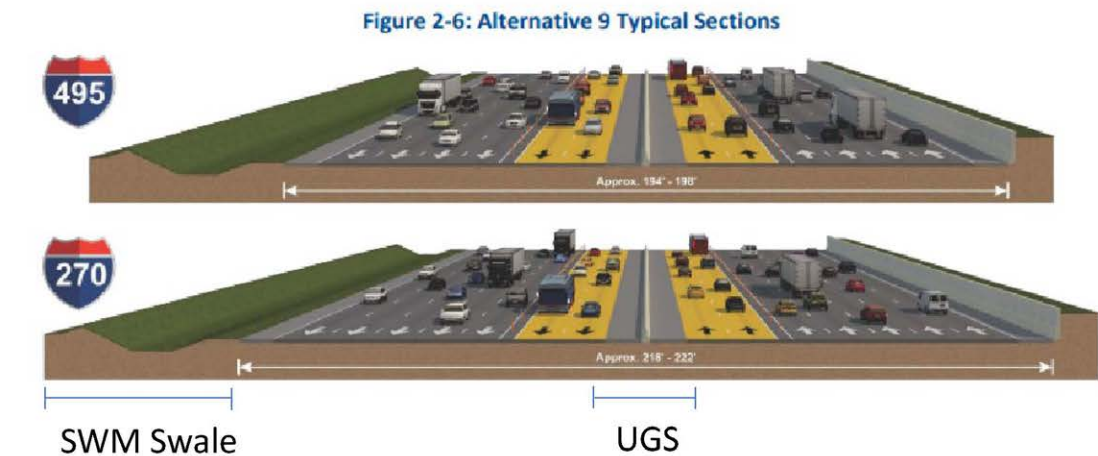
Furthermore, the impacted waterways already classified as less than high quality are impaired primarily because of degradation caused by lack of stormwater management and environmental treatment from existing runoff from I-495, as well as inadequate and inconsistent maintenance of the current outfalls.<sup>107</sup> MDOT SHA is responsible for this existing degradation, and should not be allowed to use the degradation it caused to suggest that less mitigation is needed. These impacted waterways should be treated in the same way as the high-quality resources are treated. The highly urbanized nature of the Rock Creek area must be accounted for and the extremely high value ecosystem functions of these resources must be appropriately mitigated.

The Agencies propose to address a large amount of stormwater from the Project through the use of compensatory stormwater management, i.e., treating stormwater in another area instead of treating the stormwater created by the Project (also known as water quality trading). The Agencies base this proposal on a finding that there is not enough land available along the study corridor to hold and treat all stormwater projected by the selected alternatives. DEIS, at 2-37. The DEIS explains the need for offsite treatment as follows: “[d]ue to the large amount of impervious area requiring treatment for each build alternative and existing site constraints, ESD could not be met for the build alternatives within the study area.” DEIS, at 2-38. For example, alternative 10 (add two priced managed lanes in each direction on I-495 and on I-270 and retain one existing HOV lane in each direction on I-270 only) would require 434 acres of offsite treatment, *id.*, meaning that the stormwater from 434 acres of impervious surface (a volume that is not disclosed in the DEIS, as discussed above) will go untreated if alternative 10 is selected. The Agencies do not indicate how they plan to meet Fairfax County’s requirement that water quantity requirements be met on-site. Also, Fairfax County only allows for water quality requirements to be met by off-site credits or other off-site compliance options for up to 25% of water quality pollutant reductions. Code of the County of Fairfax, Virginia § 124-4-4 to 124-4-5.

The DEIS fails to analyze whether underground storage or stormwater swales could be used to manage stormwater. For example, the build alternatives could utilize more space within the right of way for stormwater treatment, and proposed drainage swales could be designed as stormwater management swales. Underground storage could also be built into the shoulders/medians where there is less regular traffic. See the revised alternative image below for an example:

<sup>107</sup> Carol S. Rubin, Memo to M-NCPPC, Comments to DEIS and Joint Permit Application, at 5 (Oct. 19, 2020) <https://www.mncppc.org/DocumentCenter/View/15750/102120-Commission-Meeting-Staff-Report-DEIS-and-JPA-comments-ARGDSB>.

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The Agencies propose using a project-specific Water Quality Bank that will utilize water quality trading credits to meet the requirement to make up for the lack of onsite treatment for any build alternative selected. The DEIS states that this bank will be “developed through a variety of means including but not limited to the transfer of excess water quality credits from other MDOT programs (e.g. the TMDL program).” DEIS, at 2-38. The DEIS fails to provide information regarding where these offsite treatment credits would come from or whether there are sufficient credits available within the local watershed. Furthermore, it is unclear how many credits will be coming from the MDOT SHA banking program or if MDOT SHA currently has sufficient credits available within its program to meet the credit needs of this proposed project. MDOT SHA already struggles to meet its requirements under its NPDES MS4 permit and it is unclear how the Agency intends to obtain sufficient credits to meet the proposed project stormwater permitting requirements. Will credits be obtained from within the local 8-digit watershed? Will the credits come from an MDOT SHA or private stream restoration project or some other credit source? Where would the credits come from if MDOT SHA’s NPDES MS4 permit is not reissued? Without knowing where the credits will come from it is impossible for the Agencies to determine whether the proposed build alternatives will cause violations of the Clean Water Act, 33 U.S.C. §§ 1311, 1342. The Agencies must provide this information during the NEPA process and the public should be afforded the opportunity to comment on this new information.

##### 5. The Corps Should Deny the Joint Permit Application for a Clean Water Act § 404 Permit Because It Fails to Meet Clean Water Act Requirements and Is Not in the Public Interest

The Agencies have submitted a Joint Federal/State Application (JPA) for alterations to waterways and wetlands, including for discharges of dredged and fill material into waters of the



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United States. DEIS, JPA, Part 1. CWA § 404 permits are required for such discharges, 33 U.S.C. § 323.3, and the U.S. Army Corps of Engineers (Corps) and MDE must conduct their review of § 404 permit applications in accordance with EPA § 404(b)(1) Guidelines, 40 C.F.R. Part 230; the Corps’ implementing regulations, 33 C.F.R. Part 325, Appendix B; and the Maryland Department of the Environment’s wetland regulations, Md. Code Regs. §§ 26.17.01.01 *et. seq.*; Md. Code Regs. §§ 26.23.01.01 *et. seq.* Maryland also has its own mitigation ratios that must be used depending on the type of wetland impacted and the type of mitigation approved. Md. Code Regs. §§ 26.23.04.03, 26.24.05.01.

a. The JPA Fails to Meet CWA § 404(b)(1) Requirements

The Corps should deny the JPA for a Section 404 permit because the permit application fails to meet CWA § 404(b)(1) requirements. First, the JPA must be denied because there is “a practicable alternative to the proposed discharge which could have less adverse impact on the aquatic ecosystem.” 40 C.F.R. § 230.10(a). The DEIS fails to consider the alternatives in sufficient detail to satisfy this requirement. Furthermore, CWA § 404(b)(1) creates a presumption that a practicable alternative to the build alternatives is available because the proposed build alternatives would negatively impact wetlands, which are considered a “special aquatic site.” 40 C.F.R. § 230.10(d); *id.* § 230.41. It appears that the alternatives analysis in the DEIS is being used to support the JPA application, however, the Corps is required to conduct their own independent analysis of alternatives, which should include any alternatives not examined in the DEIS which might have fewer adverse impacts. Any additional alternatives considered by the Corps must be included in the DEIS because the CWA § 404 permit process is running concurrently with the NEPA process. In any event, the Organizations suggest that the Corps consider the alternatives discussed in Section II.B.3 of this document to determine if these alternatives would have fewer adverse impacts on the aquatic ecosystem. These practicable alternatives were not considered in the DEIS and “could be reasonably obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity” but not cause as much harm to wetlands and waterways. 40 C.F.R. § 230.10(a)(2). Second, pursuant to 40 C.F.R. § 230.10(b), the Corps must deny the permit unless it finds that the proposed discharges would not violate state water quality standards or toxic effluent standards under CWA § 307, 33 U.S.C. § 1317(a)(1), or jeopardize the existence of endangered or threatened species, including all species listed in the DEIS Natural Resources Technical Report, Appendix N, Agency Correspondence. Potential violations of water quality standards are discussed in more detail in Section II.C.1 and Section II.C.2. of this document.

The Corps must adhere to the Endangered Species Act (ESA) requirements discussed in Section II.F. of this comment document and must deny the CWA § 404 permit requested for the Project if the proposed discharges will jeopardizes the existence of any endangered or threatened species or if it could result in a likelihood of the destruction or adverse modification of formally designated critical habitat. 40 C.F.R. § 230.10(b). The DEIS fails entirely to identify how the Project or the proposed compensatory mitigation plan will impact endangered species or habitat (aquatic and otherwise). The DEIS fails to even specify which species reside in the various waterways and other areas that may be affected by the Project. Despite the lack of detail in the JPA, a careful review of the JPA application, read together with the relevant DEIS documents,

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suggests sensitive species could be affected by the Project and the proposed compensatory mitigation plans, but the application fails to take these impacts into consideration.

The draft compensatory mitigation plan, DEIS, JPA, Part 13, at 32, states that a preliminary review of the U.S. Fish & Wildlife Service (FWS) online database to identify potential rare, threatened, or endangered species on record for mitigation sites was conducted, but no consultation with FWS or NFWF was conducted. The Agencies must consult with FWS and National Marine Fisheries Service (NMFS) to determine what species may be present at the mitigation sites and determine if a biological opinion is needed. *See also* DEIS, JPA, Part 18, at 38 (“DNR [Maryland Department of Natural Resources] noted that fish passage will be a concern and should be considered . . . [GreenVest] stated that the proposed restoration approach would consider fish passage”); DEIS, JPA, Part 18, at 60 (“it was noted that the site is within a Sensitive Species Project Review Area”). The failure to examine what species are on proposed mitigation sites, or how their habitat might be disrupted, is particularly concerning given that wetland mitigation areas are deemed “not acceptable” by Maryland if they have been “identified as important habitat for rare, threatened and endangered plants or wildlife.”<sup>108</sup> The JPA should be rejected given its failure to specify, for each mitigation site, which species are present, and how the Project may affect those species and their habitat.

Third, pursuant to 40 C.F.R. § 230.10(c), the Corps should deny the JPA because the discharges are likely to contribute to significant degradation of water quality. The additional discharges proposed under the JPA will contribute cumulatively to significant degradation of wetlands, life stages of aquatic life and other water-dependent wildlife, aquatic ecosystem diversity, and aesthetic value of the impacted wetlands and waterways.

Fourth, pursuant to 40 C.F.R. § 230.10(d), the JPA must be denied because the Agencies have failed to take sufficient steps to minimize harm to protected waters, which include wetlands that serve as habitat to plants and animals, 40 C.F.R. § 230.3. Adverse impacts may be minimized by the selection of the discharge location, treating or limiting the material to be discharged, controlling the material after it has been discharged and the method of dispersion, utilizing technology to reduce impacts, and avoiding interference with animals and their habitat. *See* 40 C.F.R. Subpart H.

b. Issuing a CWA § 404 Permit Would Not be in the Public Interest

Even if the JPA for a Section 404 permit meets EPA’s Section 404(b)(1) guidelines, the Corps should deny the permit because the proposed build alternatives are not in the public interest. The Corps must conduct a public interest review to evaluate “the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest.” 33 C.F.R. § 320.4(a). During this review the Corps must give equal weight to all comments from local municipalities, in addition to those from state and federal agencies and any

<sup>108</sup> Maryland Nontidal Wetland Mitigation Guidance, Second Edition, at 74 (2011), <https://mde.maryland.gov/programs/Water/WetlandsandWaterways/AboutWetlands/Documents/www.mde.state.md.us/assets/document/wetlandswaterways/MITGUIDEfeb72011.pdf>.



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expert analyses provided. 33 C.F.R. § 320.4(a)(3). This review should reflect that “wetlands constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest.” 33 C.F.R. § 320.4(b).

Furthermore, because this Project is at least partially funded by federal and state agencies, the Corps “shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.” Exec. Order No. 11,990, 42 Fed. Reg. 26,961 (May 24, 1977). The Corps’ regulations at 33 C.F.R. § 320.4(b)(5) also require the Corps to consider Maryland’s wetland protection laws, including the state’s goal to achieve “no net overall loss in nontidal wetland acreage and function, and to strive for a net resource gain in nontidal wetlands.” Md. Code Regs. 26.23.04.03. The public interest review must also consider information provided through the consultation process required with the FWS, NMFS, and DNR. Additionally, the Corps is required to avoid authorizing floodplain development whenever practicable alternatives exist outside the floodplain because they “possess significant natural values and carry out numerous functions important to the public interest.” 33 C.F.R. § 320.4(l).

The JPA and DEIS fail to provide information on the status of the public interest analysis. However, given that the Corps has included a Draft Compensatory Mitigation Plan and this plan “presents the approach to compensatory mitigation for the unavoidable impacts from the Build Alternatives and includes Phase I Mitigation Design Plans for permittee-responsible mitigation,” it can be assumed that the Corps has made some determination regarding whether the Project would be in the public interest. The Organizations request the Corps to provide the public with its public interest determination and any information not already included in the DEIS that it relied upon to support its determination. Without this information, and the additional information requested throughout this comment document, the Organizations and the public are unable to fully assess and comment on the Corps’ public interest determination. The information that has been provided in the DEIS and JPA fails to show that the relative extent of the public and private need for the Project will outweigh the Project’s negative impact on air and water quality, aesthetics, wetlands, historic properties, fish and wildlife, the floodplain, scenic values, recreation, and private property.

Should the Corps decide to approve the permit, it must include special conditions that: (a) “identify the party responsible for providing the compensatory mitigation;” (b) “incorporate, by reference, the final mitigation plan approved by the district engineer;” (c) “state the objectives, performance standards, and monitoring required for the compensatory mitigation project, unless they are provided in the approved final mitigation plan; and (d) “describe any required financial assurances or long-term management provisions for the compensatory mitigation project, unless they are specified in the approved final mitigation plan.” 33 C.F.R. § 332.3(k). Additionally, the Organizations request that the permit require monitoring for a period sufficient to ensure that the affected streams and ecosystems return to a self-stable state and the mitigation is meeting all performance standards, and also request that the Corp not waive any monitoring. 33 C.F.R. § 332.6 (“The mitigation plan must provide for a monitoring period that is sufficient to demonstrate that the compensatory mitigation project has met performance standards, but not less than five years. A longer monitoring period must be required for aquatic resources with slow

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development rates (e.g., forested wetlands, bogs).”). The DEIS states that, following construction, the public mitigation sites will be placed in MDOT SHA’s monitoring program and will be monitored separately by the private remediation site providers for up to ten years. DEIS, App. N, at 30-31. However, stream and wetland ecosystems, once disturbed, including by restoration, may take up to 20 years to return to a self-stable state.

c. The DEIS Fails to Provide Information Regarding the Status of the CWA § 401 Certification Process

The DEIS also fails to indicate the status of the state water quality certifications that are required before any CWA § 404 permit is authorized, unless the certification is waived. 33 U.S.C. § 1341(a)(1); 40 C.F.R. Part 121. The DEIS simply indicates that a Section 401 Water Quality Certificate is required from both Maryland and Virginia. DEIS, at 4-78. The Organizations ask for an update on the status of the certification process.

**6. The Draft Compensatory Mitigation Plan is Incomplete, and the Final Plan Should be Made Available to the Public Prior to Issuing any Permit**

Pursuant to the Corps’ regulations, a comprehensive compensatory mitigation plan must include the following information: clear objectives, a description of legal arrangements and instruments to be used to ensure long-term protection of the mitigation sites, baseline information, identification of credits, mitigation work plan, maintenance plan, detailed performance standards, monitoring requirements, long-term management plan, an adaptive management plan, and financial assurance. 33 C.F.R. § 332.4. The Organizations request the final compensatory mitigation plan be made available to the public prior to issuing any permit and that the public be afforded the opportunity to comment on the final plan.

The JPA currently provides proposed impact plates, tables, wetland delineation information, and a partial draft compensatory mitigation plan (including Phase I Design Plans). DEIS, JPA, Part 1 – Part 21. However, the draft compensatory mitigation plan does not provide detailed information on the proposed maintenance plan, performance standards, mitigation work plan, monitoring requirements, long-term management plan, adaptive management plan, or financial assurances but states that these issues will be addressed during the development of the Phase II Mitigation Design Plans. DEIS, JPA, Part 13, at 29-31. Additionally, the DEIS does not appear to take existing watershed planning into account, although the document refers to county master plans to justify the need for expanded highways. The Organizations urge the Corps to take a watershed approach to compensatory mitigation, as recommended by the relevant guidance.<sup>109</sup>

<sup>109</sup> The 2000 in-lieu fee guidance embraces the watershed approach for in-lieu fee mechanisms, stating, “[l]ocal watershed planning efforts, as a general matter, identify wetland and other aquatic resources that have been degraded and usually have established a prioritization list of



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Although the JPA provides a brief summary of Project objectives it fails to provide sufficient details as to how lost wetland and stream functionality will be replaced by the proposed compensatory mitigation. *See* DEIS, JPA, Part 13, at 30. This omission is of particular concern given that most of the Phase I proposed sites are far away from the proposed build alternatives and will not abate localized wetland and stream functionality degradation. *See* DEIS, JPA, Part 18, Figure J-1, at 69. Furthermore, the objectives fail to provide concrete information as to what success will look like at the proposed sites because there are no performance standards provided. *See* DEIS, JPA, Part 13, at 30. The JPA simply states, “[p]erformance standards for all of the wetland mitigation sites will be in accordance with the Performance Standards and Monitoring Protocol for Permittee-Responsible Nontidal Wetland Mitigation Sites in Maryland, April 20, 2018.” *Id.* The Organizations urge the Agencies to use mitigation banks rather than permittee-responsible mitigation or in-lieu fee programs. Although the stated goal for the mitigation package is “to improve upon the ecological functions in these watersheds with a focus on the impaired conditions and needs,” and the mitigation sites are to be selected in part on their “potential for watershed improvements,” proximity to the impaired areas, and “replacement of lost functions and values,” DEIS, App. N, at 4, 9, 20, in practice more weight appears to have been given to construction feasibility and mitigation credits tied to theoretical functional uplift. Ultimately, the sites selected were those evaluated with the simplest index: acreage, for wetland credit, and its analog, linear feet for streams. These measurements do not allow for a true assessment of the value of the exchange of the wetland or stream lost to highway construction for one or another alternative proposed mitigation site, unlike a function-based system.

In addition to the traditional search for mitigation sites on public lands, “MDOT SHA issued a Request for Proposals (RFP) for full delivery services to provide permittee-responsible stream and wetland mitigation credits on private lands,” DEIS, App. N, at 23. Likely because of the limited methods used for selecting potential mitigation sites, no attempt was made to find mitigation sites within the impacted 12-digit subwatersheds. The mitigation plan does not attempt to assess the overall impact on ecosystem function of each subwatershed beyond a catalog of the additional impervious surface by watershed of each build alternative, nor is there a description in any of the proposed mitigation sites of how they will contribute to the 8-digit watersheds (the smaller and more localized watersheds) in which they are situated. A few of the proposed sites are paired, usually a stream with adjacent wetland. The DEIS occasionally

restoration needs. In-lieu fee mitigation projects should be planned and developed to address the specific resource needs of a particular watershed.” 65 Fed. Reg. 66,914-17 (Nov. 7, 2000).

The 1995 mitigation banking guidance encourages a watershed-based approach as the overall goal of a mitigation bank: “The overall goal of a mitigation bank is to provide economically efficient and flexible mitigation opportunities, while fully compensating for wetland and other aquatic resource losses in a manner that contributes to the long-term ecological functioning of the watershed within which the bank is to be located. The goal will include the need to replace essential aquatic functions that are anticipated to be lost through authorized activities within the bank’s service area. In some cases, banks may also be used to address other resource objectives that have been identified in a watershed management plan or other resource assessment.” 60 Fed. Reg. 58,605-14 (Nov. 28, 1995).

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discusses how the function of a proposed mitigation site might be improved upon by being connected with individual waterway reaches above or below the site, but more often than not it appears that most sites will not be connected to individual waterway reaches. But there seems to be no effort to analyze the contribution of mitigation at the specified site to improved function of the whole watershed, nor an explanation of how function lost to the Project will be compensated by these mitigations. Instead, in a series of tables analyzing each of the 40-odd sites examined as possible mitigation sites, the criteria seem to be focused on the potential for uplift (functional and ecological) of that site taken as a stand-alone unit, and consequently the credit that might accrue after proposed mitigation measures are applied to transform the site. Instead of this approach, the Organizations recommend the Corps take a function-based approach when assessing impacts and mitigation credits.<sup>110</sup>

Another issue of concern is the selection of private sites from the responses to the RFP. The largest of such sites is the Konterra mitigation project, which proposes over 27,000 linear feet of stream and 30 acres of wetland mitigation. This site is described as containing “former sand/gravel borrow pits, which later served as a depository for washings from excavated materials. The cells are comprised of poor quality, monotypic wetlands,” DEIS, App. N, Agency Meeting Minutes. It is unclear whether a wetland can even be engineered from the shale clay at this site. Instead of this site, the Organizations support the proposed site in Rock Creek (MPO0032),<sup>111</sup> particularly as it is in the watershed where the [Rock Creek Conservancy recently did a conservation landscaping](#) project. Rock Creek Conservancy also supports

<sup>110</sup> A number of function-based frameworks have been proposed and are available for use: The Wetland Evaluation Technique (WET) (Adamus, 1987) cited in Richard Reppert, Wetlands Mitigation Banking Demonstration Study July 1992 US Army Corp of Engineers, IWR Report 92-WMB-1;

Maryland Department of the Environment, *Performance Standards and Monitoring Protocol For Permittee- Responsible Nontidal Wetland Mitigation Sites*, (April 20, 2018); Richard Starr, Will Harman and Sandra Davis, *Final Draft Function-Based Rapid Stream Assessment Methodology*, Habitat Restoration Division Chesapeake Bay Field Office U.S. Fish and Wildlife Service CAFE – S15 – 06 (May 2015);

EPA Office of Wetlands, Oceans, and Watersheds, *A Function-Based Framework for Stream Assessment and Restoration Projects*. US Environmental Protection Agency, EPA 843-K-12-006 (May 2012);

Margaret A. Palmer, Kelly L. Hondula, and Benjamin J. Koch, *Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals*, *Annu. Rev. Ecol. Evol. Syst.*, 45:247–69 (2014).

<sup>111</sup> Although many of Rock Creek’s tributaries and the main stem are in poor to fair condition. This should not exclude them from consideration; expectations should just be managed accordingly.



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restoration sites MO 00029,<sup>112</sup> MO 00034,<sup>113</sup> and WSS150159.<sup>114</sup> The Conservancy generally recommends coupling stream restoration projects with upland stormwater management, because if there is not a reduction in stormwater flows to restored streams they are vulnerable to degradation in the future.

The Organizations also support the restoration of the mainstem of Portal Branch, particularly if paired with green streets installations within the watershed (as most of its impairment is due to stormwater that flows from nearby outfalls). Most of the watershed that feeds (and damages) Portal Branch is in Montgomery County. Deerprint Run, a small stream off Daniel Road near Beach Drive, is inundated with sediment and is a good candidate for restoration given that the removal of sediments and the addition of regenerative stormwater conveyances would allow for the reestablishment of amphibian habitat in what is an existing wetland. Finally, the Organizations encourage the Agencies to review the Potomac River Tunnel project currently under development by DC Water under the C&O Canal and parts of Rock Creek Park, as this project offers a model for adding stormwater storage relatively unobtrusively and without significant disruption aboveground.

Although the DEIS discusses potential remedial sites, there does not appear to be any examination of records that would indicate whether hazardous waste may be located at or near the proposed mitigation sites.<sup>115</sup> There is only the most tangential reference to the indirect impact of the expanded highways on the proposed mitigation sites and the rest of the ecosystem, namely that there will be an increase in impervious surface. The Agencies should examine whether the proposed remedial sites have hazardous substances in soil or groundwater that would require additional expenditures to remediate. This issue is of particular concern at sites within or near industrial areas.

The JPA does not include sufficient information to determine the soundness of the proposed mitigation plan. This information must be completed by the Corps, 33 C.F.R. § 332.4(c), and should be provided to the public given the large amount of wetlands and streams that will be lost under each of the proposed build alternatives, the amount of controversy surrounding the overall Project, and Maryland's goal of "no net overall loss in nontidal wetland acreage and function, and to strive for a net resource gain in nontidal wetlands," Md. Code Regs. 26.23.04.03. Furthermore, this information will improve the chances that the proposed mitigation projects, to be conducted on both private and public lands, will actually meet the mitigation objectives. The Organizations request that the Corps provide actual copies of the Phase II

<sup>112</sup> This site was eliminated because of a culvert in need of repair. The culvert should be included in the project. While potential for ecological uplift may be somewhat limited, removal of current and reduction of sediments would be a benefit from a stormwater perspective.

<sup>113</sup> Access constraints should be further explored before eliminating.

<sup>114</sup> Being high in the landscape should not be an immediate disqualifier; it may simply call for different techniques.

<sup>115</sup> See discussion of further issues related to hazardous substances in Section II.G.

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Mitigation Design Plans, mitigation work plan, performance standards, monitoring requirements, long-term management and adaptive management plan, and financial assurances documents, rather than just summaries of these documents.

## 7. The DEIS Fails to Consider Alternatives That Would Avoid or Minimize Adverse Impacts to Waterways, Wetlands, Floodplains, and Other Natural Resources

### a. All Build Alternatives Have Similar Impacts

The impacts to wetlands and waterways summarized in Table 4-20 indicate that all of the build alternatives that were considered have similar, if not identical, impacts.

Table 4-20: Summary of Impacts to USACE/MDE Wetlands and Waterways Corridor-wide

Type	Classification	ALT 5 <sup>1</sup>		ALT 8 & Alt 9 <sup>2</sup>		ALT 9M		ALT 10		ALT 13B		ALT 13C	
		AC	SF	AC	SF	AC	SF	AC	SF	AC	SF	AC	SF
Wetlands	PEM	3.7	162,549	3.9	167,750	3.9	167,750	4.0	173,615	3.8	167,589	4.0	172,983
	PFO	10.7	464,917	11.4	497,307	11.2	486,114	11.5	499,176	11.4	496,280	11.4	498,158
	PSS	1.0	45,524	1.1	46,802	1.1	46,802	1.1	46,802	1.1	46,802	1.1	46,802
	Total	15.4	672,990	16.3	711,859	16.1	700,412	16.5	719,593	16.3	710,671	16.5	717,943
Waterways		LF	SF	LF	SF	LF	SF	LF	SF	LF	SF	LF	SF
	Ephemeral	10,829	46,016	11,167	47,293	11,135	47,168	11,199	47,556	11,167	47,293	11,196	47,539
	Intermittent	64,252	368,373	65,354	373,447	64,980	371,577	65,580	375,839	65,287	372,841	65,445	374,323
	Perennial	78,621	1,401,275	79,401	1,424,712	79,114	1,418,147	80,205	1,432,736	79,368	1,424,335	79,991	1,429,246
	POW <sup>3</sup>	N/A	64,134	N/A	64,134	N/A	64,134	N/A	64,134	N/A	64,134	NA	64,134
	Total	153,702	1,879,798	155,922	1,909,586	155,229	1,901,026	156,984	1,920,265	155,822	1,908,603	156,632	1,915,242

DEIS, at 4-81.

This conclusion is confirmed in the JPA:

In Maryland, DEIS Build Alternative impacts range from **16.08 to 16.52 acres of wetlands, and 151,880 to 153,635 linear feet of streams. Each alternative would permanently impact 1.48 acres of Palustrine Open Waters (POWs).** These impacts occur in the following three federal HUC-8 watersheds: Middle Potomac-Anacostia Occoquan, Middle Potomac-Catoctin, and Patuxent. **In Virginia, each DEIS Build Alternative would impact a total of 0.05 acres of wetland and 3,349 linear feet of streams in the Middle Potomac-Catoctin watershed.**

DEIS, JPA, Part 13, at 4 (emphasis added).



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Table 3-12 provides a list of direct impacts to surface waters, wetlands, and 100-year floodplain, by acreage.

**Table 3-12: Natural Resources Direct Impacts**

Alternative	5	8	9	10	13B	13C
Surface Water (linear feet)	149,800	152,000	152,000	152,900	151,900	152,600
Wetlands (acres)	15	16	16	16	16	16
100-Year Floodplain (acres)	114	120	120	120	120	120
Unique and Sensitive Areas (acres)	395	408	408	411	407	409
Targeted Ecological Areas	75	77	77	77	77	77
Green Infrastructure Hubs	42	45	45	46	44	44
Green Infrastructure Corridors	279	286	286	288	286	287
Rare Threatened and Endangered Species Habitat (acres)	177	183	183	183	183	183
FIDS (acres)	25	28	28	28	28	28
Forest Canopy (acres)	1,434	1,497	1,497	1,515	1,489	1,503

DEIS, App. O, at 56. Other than alternative 5, which the Agencies excluded from further consideration, all the alternatives have almost identical impacts on all of the natural resources listed.

There is virtually no difference in impacts on Maryland wetlands and streams regardless of which alternative is selected, and no difference at all in impacts to Palustrine Open Waters and Virginia wetlands and streams. The DEIS fails to consider any alternatives, other than the no build alternative, that might have fewer adverse environmental impacts. The NEPA process is intended to provide “a full and fair discussion of [the project’s] significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.” 40 C.F.R. § 1502.1. None of the alternatives considered would avoid or minimize adverse impacts. Furthermore, the DEIS fails to demonstrate that there is no practicable alternative with less extensive impacts to wetlands and waterways than the proposed highway expansion alternatives.

**b. The DEIS Fails to Study or Mitigate Indirect Impacts**

The DEIS does not contain any examination of indirect impacts from the build alternatives, let alone consider ways to mitigate those impacts. First, the Agencies’ analysis of downstream impacts from stormwater is conclusory and incomplete. The only information provided on this issue is a conclusion that some indirect downstream impacts will occur, but they would be:

minimized through the development and application of approved erosion and sediment control plans and stormwater-related best management practices (BMPs). In addition, coordination with state and local agencies overseeing water resources in the ICE Analysis Area will continue throughout the study to determine appropriate mitigation for impacts.

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DEIS, at 4-154, 4-156 (Table 4-41).

Second, the DEIS is silent on the impact that climate change and the associated increase of heavy rain events will have on future volumes of stormwater. It is well-accepted that climate change can significantly increase stormwater. EPA has said that “climate changes, such as the amount, timing, and intensity of rain events, in combination with land development, can significantly affect the amount of stormwater runoff that needs to be managed.”<sup>116</sup> MDE has stated that:

More intense rainfall resulting from the combined effects of global climate change and localized factors, for example, the influence of the urban canopy on rainfall, is likely to increase peak flooding in urban environments. Continued increase in impervious surfaces attendant with development would exacerbate this problem. Aquatic ecosystems will likely be degraded by more flashy runoff and increased temperatures. Intensified rainfall events and warmer surfaces (roads, roofs, etc.) would result in rapid increases in stream temperatures, limiting habitat suitability for native fishes and other organisms. Higher peak flows and degraded streams would also transmit more nutrients and sediments to the Chesapeake Bay and its tidal tributaries, contributing to water quality impairment in the estuaries.<sup>117</sup>

The DEIS must consider how anticipated increases of stormwater will impact receiving waterways, and must incorporate this information into the stormwater volume and impact modeling conducted by the Agencies to determine the impact of the build alternatives on receiving waterways. Areas of the Beltway already flood during heavy rain,<sup>118</sup> making it paramount that the analysis conducted for any added lanes should incorporate anticipated increases of stormwater in the cumulative impacts analysis.

**c. The Limit of Disturbance Delineation is Inaccurate**

The DEIS incorrectly defines the area that will be disturbed by the proposed expansion by too narrowly delineating the LOD and fails to account for all impacts to streams and

<sup>116</sup> EPA, *Stormwater Management In Response To Climate Change Impacts: Lessons From The Chesapeake Bay And Great Lakes Regions (Final Report)*, EPA/600/R-15/087F (Mar. 2016), at 1, [https://cfpub.epa.gov/si/si\\_public\\_file\\_download.cfm?p\\_download\\_id=536300&Lab=NCEA](https://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=536300&Lab=NCEA).

<sup>117</sup> MDE, University of Maryland, *Maryland Department of Natural Resources, Comprehensive Assessment of Climate Change Impacts in Maryland, Chapter Two* (July 2018), at 2, [https://mde.state.md.us/programs/Air/ClimateChange/Documents/FINAL-Chapt%20%20Impacts\\_web.pdf](https://mde.state.md.us/programs/Air/ClimateChange/Documents/FINAL-Chapt%20%20Impacts_web.pdf).

<sup>118</sup> Jason Samenow and David Streit, *Torrential Rain Triggers Widespread Flooding in D.C. Area, Inundating Roads, Stranding Motorists, Up to 6 Inches of Rain Fell*, Washington Post (Sept. 10, 2020), <https://www.washingtonpost.com/weather/2020/09/10/dc-area-forecast-tropical-downpours-today-could-produce-areas-flooding/>.



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wetlands. The current LOD is based on standard roadway sections and modeling and fails to include all actual impacts. This approach minimizes the appearance of impacts and artificially limits the scope of impacts analyzed. The LOD does not adequately address likely environmental impacts to natural resources, including impacts to receiving waterways, as some of these impacts occur outside the artificially narrowed LOD.

Detailed field review demonstrates that the current LOD does not comprehensively reflect expectations of environmental impact and what would be needed to restore and mitigate after the Project. The LOD needs adjustments in many locations, often to allow for stable outfall transitions, stormwater management, or rehabilitation of impacted assets. Both the locations and the choice between direct access ramps or slip lanes appear to be based entirely on geographic impact without consideration of the relationship to existing and future origin-destination patterns, planned land use, economic development considerations including major facility planning, social equity, safe and efficient access to transit facilities, or effect on local traffic patterns.

As indicated earlier, the private concessionaire, not the state, will be responsible for the design and engineering of the highway improvements. Therefore, the access decisions presented within the LOD are based on the Agencies' preliminary planning and design without adequate consideration of local planning and needs, and with minimal, if any, engineering and constructability analyses. Moreover, the Agencies have created the LOD without the detailed analysis that the private concessionaire will apply during the design phase, particularly based on the economics of the project.

An example is provided by the LOD adjustments that were made to Rock Creek SVU2. The road edge along Rock Creek near Cedar Drive has been designed with a retaining wall in an attempt to avoid impacting Rock Creek. See DEIS, APP. D, EnvMapping\_web\_part2, Map 67. The LOD does not account for impacts to Rock Creek that would likely occur in-stream because the LOD stops at the bank. Installation of the retaining wall proposed for this location would impact the stream, including increasing instability to the streambank and the stream bed. Moreover, for the stream to have long term stability along the retaining wall (and not undermine the wall), in-stream stabilization measures will be necessary, which are not accounted for in the DEIS because the stream is not included within the LOD. The LOD needs to include all impacted areas and should also include potentially impacted areas given that the LOD may need to be revised once design details are available, which will occur after the completion of the NEPA process.

d. The DEIS Fails to Sufficiently Analyze the Impact to Floodplains and Increase in Flood Risks

The DEIS states that, "[t]he full [indirect and cumulative effects] Analysis Area contains approximately ... 6,700 acres of FEMA's 100-year floodplains." DEIS, at 148. Yet, despite this enormous impact to floodplains, the Agencies have decided, "[f]loodplain analysis will be conducted at a later stage of design." DEIS, at 4-95. The DEIS fails to analyze how the build alternatives would increase flood risks by changing the hydraulic function and elevation of floodplains. There is consensus that impervious surface increases flooding and models exist that would allow the Agencies to estimate the causal effects of impervious surface on flood

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magnitude.<sup>119</sup> The Agencies must conduct a floodplain impact analysis that looks at direct and cumulative effects in the DEIS and the public must be afforded the opportunity to comment on the Agencies' findings.

**D. The DEIS Lacks Information Supporting the Decision Not to Require a Permit for Construction at the American Legion Bridge**

The DEIS states that the U.S. Coast Guard (USCG) will not be requiring a bridge permit for the proposed construction at the American Legion Bridge, despite the fact that such construction would usually require a permit under 33 C.F.R. § 115.01. The Agencies do not explain, but simply state that "the USCG stated that a bridge permit would not be required under Section 10 [of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403)] for the American Legion Bridge" and cite to Appendix N of the Natural Resources Technical Report (Appendix L). DEIS, at 4-79. We were unable to locate this letter in the appendix. If this letter is included somewhere else within the DEIS documents, please indicate where it is located. If it is not included in the DEIS, the Organizations request that the Agencies make this letter and any other information supporting the bridge permit determination available to the public and provide the public with an opportunity to comment on this information.

**E. The DEIS Fails to Adequately Identify and Analyze Impacts on Aquatic Species, Aquatic Habitat, and Fisheries**

The Project would impact approximately 152,000 linear feet of waterways, and yet the DEIS fails to provide a detailed description and analysis of the impacts of the Project on aquatic biotic resources. Instead the DEIS provides only a "watershed quality index" that includes a brief narrative description ("good," "poor," "very poor") of existing aquatic conditions for habitat, benthic invertebrates, and fish but provides no analysis of direct or indirect effects on aquatic biotic resources. See DEIS, at 4-106. The DEIS Natural Resources Technical Report (NRTR), see DEIS, App. L, is referenced several times as containing further information regarding impacts to aquatic resources, but this appendix also fails to indicate how aquatic habitat, benthic invertebrates, or fish will be impacted by the build alternatives. Appendix L simply provides additional information on the current conditions of aquatic habitat, fish populations, and benthic macroinvertebrates, DEIS, App. L, at 113 to 146. The analysis of impacts in the NRTR is limited to one conclusory statement:

<sup>119</sup> Erica Gies, *Expanding Paved Areas Has an Outsize Effect on Urban Flooding*, Scientific American (May 15, 2020) ("[E]very time a city expands roads, sidewalks or parking lots by one percentage point, the annual flood magnitude in nearby waterways increases by 3.3 percent."), <https://www.scientificamerican.com/article/expanding-paved-areas-has-an-outsize-effect-on-urban-flooding1/>; Annalise G. Blum, Paul J. Ferraro, Stacey A. Archfield, Karen R. Ryberg, *Causal Effect of Impervious Cover on Annual Flood Magnitude for the United States*, Geophysical Research Letters, Vol. 47, Issue 5, e2019GL086480 (Feb. 13, 2020), <https://doi.org/10.1029/2019GL086480>.



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all Screened Alternatives have the potential to affect aquatic biota in the corridor study boundary due to direct and indirect impacts to perennial and intermittent stream channels. Stream channel impacts associated with the Screened Alternatives range from 153,702 to 156,984 LF and wetland impacts range from 15.4 to 16.5 acres. Impacts are provided in more detail in Section 2.3.3 and in Table 2.9-58 and Table 2.9-59 below.”

DEIS, App. L, at 146.

The citations referenced in the above excerpt from the DEIS provide no further analysis, but rather present summaries of the amount of impervious surface, in feet and acres, that would be added under the build alternatives. The linear feet and acres of impervious surface to be added by the build alternatives tells the Agencies and the public nothing about how the build alternatives would impact aquatic biota.

Given the complete lack of information on impacts, it is no surprise that the DEIS also fails to provide any information on how the Agencies plan to mitigate potential impacts to aquatic biota. Section 4.18.4 of the DEIS states that MDOT SHA will continue to coordinate with regulatory agencies and resource managers to identify sensitive aquatic resources and determine potential avoidance and minimization as Project designs are refined, DEIS, at 4-109, but these issues must first be addressed in the DEIS in order for the environmental impacts of the Project to be considered. There is general information on aquatic resources and mitigation in several DEIS appendices, but none of this information provides any analysis of impacts to the existing aquatic biota. *See* DEIS, NRTR, App. N, Agency Correspondence; DEIS, App. M, AMR; DEIS, NRTR, App. M; DEIS, App. N, Compensatory Mitigation Plan, App. A – M. The DEIS must be supplemented with sufficient data to analyze direct and indirect effects on biotic aquatic resources and provide a detailed description of proposed mitigation of those impacts.

The delineated parameters of the Corridor Study Boundary define the area in which data on existing environmental conditions were gathered: 300 feet on either side of the centerline of I-495 and I-270. DEIS, at 4-2. This area is too limited to fully evaluate the direct effects of the Project on aquatic biota in streams and wetlands and is certainly too restricted to evaluate indirect downstream effects. For direct effects, the study boundary needs to be expanded to include all waterways and wetlands that would receive stormwater from or otherwise be impacted by construction of the Project. For indirect effects, the analysis should consider all cumulative and secondary effects on aquatic ecosystems, including those downstream from the waters that are directly impacted.

Separately, the Organizations request that the Agencies reference in the body of the DEIS the aquatic biota maps that currently are buried in appendices. *See, e.g.*, DEIS, NRTR, App. B, Natural Resources Inventory Mapbook Part1 to Part 4; *See also*, NRTR, App. K, Aquatic Biota and Surface Water Sampling Monitoring Map. Although this information does not help the public determine the potential impacts of the Project on aquatic biotic resources, it at least provides information on the location of these resources.

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**F. The DEIS Fails to Adequately Identify and Analyze Impacts on Federal and State Rare, Threatened, or Endangered Species and Habitats**

The Endangered Species Act establishes a process for identifying and protecting plant and animal species that are “threatened” or “endangered.” 16 U.S.C. §§ 1533-1544. Section 7 of the ESA requires federal agencies to consult with the FWS and National Marine Fisheries Service to make sure that any proposed federal agency action is “not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [the species’ critical] habitat . . . .” 16 U.S.C. § 1536(a)(2). If FWS or NMFS advises the agency that the proposed action area includes neither a listed species nor its critical habitat, then there is no need for further consultation. 50 C.F.R. § 402.12(d)(1). However, if the agency determines that the action is likely to adversely affect a listed species or its critical habitat, then the agency must engage in formal consultation, which requires the agency to prepare a “biological assessment” of the action and requires FWS or NMFS to issue a “biological opinion” as to whether the action is likely to “jeopardize the continued existence of any listed species or destroy or adversely modify” critical habitat. 50 C.F.R. § 402.14(h).

In addition, the agencies may need to reopen the consultation process when “new information reveals effects of the action that may affect listed species or critical habitat.” 50 C.F.R. § 402.16(b). If the biological opinion finds jeopardy of species or destruction or adverse modification of critical habitat, the FWS or NMFS must suggest “reasonable and prudent alternatives” to the proposed activity that would not violate the ESA. 16 U.S.C. § 1536(b)(4). The agencies would have to agree to a reasonable and prudent alternative approved by FWS or NMFS and receive an incidental take statement from FWS or NMFS before the proposed action can move forward. *Id.*

The Maryland Nongame Endangered Species Conservation Act regulates activities in a similar fashion but applies to impacts on plants and wildlife, including their habitats, listed on the Maryland Threatened and Endangered Species list. Md. Code Ann., Nat. Res., § 10-2A-01 to 10-2A-09. The Maryland Threatened and Endangered Species list is more expansive than the federal list and also requires protections for animals that are deemed in “Need of Conservation.” In Virginia, federally listed threatened and endangered wildlife species are protected under the Virginia Endangered Species Act of 1972, Va. Code Ann., § 29.1-563 to 29.1-570, and Virginia’s listed threatened and endangered plant and insect species are protected under the Endangered Plant and Insect Species Act of 1979. Va. Code Ann., § 3.2-1000 to 3.2-1011). The Virginia Threatened and Endangered Species list also is more expansive than the federal list.

**1. The DEIS Fails to Adequately Identify Impacts on the Northern Long-Eared Bat and Indiana Bat**

Two federally listed bat species, the Northern Long-Eared Bat and Indiana Bat, have been identified by FWS as potentially being impacted by the build alternatives. DEIS, at 4-111. Therefore, a formal ESA § 7 consultation must take place, requiring FHWA to perform biological assessments and FWS to issue biological opinions pursuant to 50 C.F.R. § 402.14(h). The DEIS states that field studies will be conducted to identify whether the bats are using habitat that may be impacted by the build alternatives. DEIS, at 4-111. It appears that no biological



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opinion has been issued yet, given that none is referenced in the DEIS. Moreover, the field studies FWS directed FHWA to conduct have not yet been performed. DEIS, at 4-111. The biological assessments along with the FWS determinations as to whether the build alternatives will cause “jeopardy or adverse modification” must be completed prior to the conclusion of the NEPA process. Furthermore, if FWS determines that the species may be jeopardized, destroyed or adversely modified, then the Project must incorporate the alternative actions suggested by FWS.

**2. The DEIS Fails to Adequately Identify Maryland Aquatic Species and Fails to Account for Impacts to Maryland and Virginia Species**

The DEIS does not identify Maryland special-status aquatic species that may be present in waterways within the corridor study boundary area or areas that may be affected downstream. Some fish species and aquatic invertebrate species possibly occurring in the project area are identified in Appendix N of DEIS Appendix L (NRTR: Agency Correspondence), however, it is unclear whether this appendix provides the complete list of Maryland aquatic rare, threatened, or endangered species. Importantly, there are a number of state rare, threatened or endangered species identified in close proximity to the Project, including freshwater mussels, several wet meadow plants and a rare crayfish. Several of the State-listed species are sensitive to changes in hydrology, sedimentation, and temperature. The wetlands review that the Agencies conducted relied solely on the National Wetlands Inventory, an out-of-date resource that underrepresents forested wetlands. An extensive on-the-ground wetland survey should be conducted along the Project route with specific attention to wetlands that could, if disturbed, result in changes to hydrology, temperature or sedimentation. This information should be provided in the main DEIS document.

The DEIS also fails to provide any information on how the Agencies plan to avoid, and if necessary, mitigate any harm to Maryland or Virginia rare, threatened, or endangered species. *See* DEIS, at 4-109 to 4-112. All proposed mitigation measures should be included in NEPA documents to provide the public with information regarding how the Agencies plan to avoid illegal takings of these species during any proposed construction and operation of the build alternatives.

**G. The DEIS Does Not Sufficiently Evaluate Hazardous Materials**

The DEIS does not adequately assess hazardous materials along the highway corridors. It identifies hazardous waste sites but does not consider the specific hazardous substances that may be present nor their site distribution. At a minimum, water and soil sampling for hazardous substances of concern should be conducted at the 65 High Priority sites identified in the DEIS. A discovery of additional hazardous materials after the EIS is completed may cause expensive delays in the Project, with any required cleanup likely to be paid for with taxpayer funds rather than by the private sector. But the DEIS nevertheless postpones investigation of this issue until after a decision on the alternatives is made.

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The DEIS states:

At the time of this assessment, the anticipated depths of subsurface disturbance for areas with known or potential hazardous waste or contaminants is uncertain and additional design modifications may avoid many, if not all, of the identified sites of concern and PECs [Potential Environmental Concerns]. If, following the selection of a preferred alternative, proposed construction could impact an identified or potentially hazardous waste or contaminated site, the Final EIS would address and resolve issues associated with the site(s), identified by the Study Team, raised by the public and responsible government agencies.

DEIS, App. K, at 13. First, it is unclear what the Agencies propose to do once a preferred alternative is selected. Would the selection change if it would impact contaminated sites? This question argues for performing a more thorough investigation of hazardous materials in the first place and presenting the information in the DEIS, which also would allow the public to review and comment on the issue.

According to the DEIS, the hazardous materials investigation was based on a one-quarter mile buffer from the limits of disturbance. DEIS, at 4-2, 4-72. The DEIS also explains that the build alternatives would result in similar limits of disturbance. *Id.* at 4-23. Therefore, as explained in the DEIS, the number of sites of concern for hazardous materials is the same for all the build alternatives. *Id.* at 4-73. Whether proposed construction could impact a potentially hazardous waste or contaminated site should have been evaluated before releasing the DEIS; the Agencies must not move forward with this Project before performing and releasing this evaluation.

It appears that there has been no soil or groundwater sampling or reporting of hazardous substances and that there will not be any until construction starts. Nor does there appear to be any system proposed to monitor for hazardous substances during construction, after soil disturbance occurs due to the construction or severe weather events.

Appendix K states that the Agencies evaluated potential sites of concern within a one-quarter mile buffer of each of the screened alternatives using a methodology comparable to the 2005 Initial Site Assessment for the Capital Beltway Study (MDOT SHA, 2005). DEIS, App. K, at 10. Appendix K further states that “Seven criteria were used to rank the sites of concerns based on the general ranking methodology used in the Draft December 2005 Initial Site Assessment Capital Beltway Study.” *Id.* at 11. However, the Agencies have refused to provide the referenced Capital Beltway Study, precluding meaningful review of this methodology. *See infra* Section II.P.4.a. The Agencies must not move forward with the NEPA process until this information is made publicly available.

The Sites of Concern Priority Maps included in Appendix K show 22 very large pink areas, within and spreading out from the Limit of Disturbance, representing Listed Site/Unknowns, that is, very large areas where the presence or absence of hazardous waste is unknown. There does not seem to be any plan for investigating potential hazards in these areas before construction begins.



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Appendix Q of the DEIS (Conceptual Mitigation Report) says that hazardous waste sites identified as High Priority in that appendix, mapped in bright red, with “the potential for contaminant mobilization within or adjacent to the LODs of the Build Alternatives,” and which include “gasoline stations, businesses operating at former gasoline stations, auto repair facilities, dry cleaning facilities, former dry cleaning facilities, government facilities, landfills, and the Joint Base Andrews Air Force Base National Priorities List site . . . may require additional investigation to determine the extent and location of existing contaminants and whether or not these contaminants would impact construction activities. These sites have a high potential for contaminant mobilization.” DEIS, App. Q, at 37. Appendix Q also confirms that, for the 22 sites in pink on the Sites of Concern Priority Maps, a “review of detailed site documentation for properties within and in vicinity of the final LODs would occur in future design phases of the Study, when property access is obtained to characterize contaminant distributions, and/or their potential for mobilization during construction activities.” *Id.* In other words, the DEIS postpones this analysis, as noted above, leaving taxpayers to bear the liability for risks from unknown hazardous materials. *See supra* Section I.

The 83 sites identified in Appendix Q as Moderate/High Priority and the 34 sites identified as Moderate Priority “could include: underground storage tanks containing materials other than gasoline, jet fuel, kerosene fuel, waste oil or solvents, surface dumps with empty drums, unidentifiable mounds [sic] aboveground storage tanks with surface stains, suspected Polychlorinated Biphenyl containing transformers, stressed vegetation, and hazardous materials storage sites. These sites may or may not require additional evaluation and characterization based on the needs of the final design and construction in the area.” DEIS, App. Q, at 37. Again, the DEIS postpones this analysis and allows for future surprises.

Appendix Q states:

Because the study corridors have been used for vehicular traffic since [the Beltway’s and I-270’s] construction in the 1950s, it’s reasonable to assume that the highway has been the scene of several vehicle accidents, break-downs, and other automotive issues – due to both its daily use and its required maintenance activities. These would have resulted in numerous releases of fuel and other petroleum oils – including leaded gasoline before its gradual phase-out in the late 1970s. Since the locations of these releases **and their subsequent subsurface transport** are poorly documented, this hazardous material concern would need to be considered a non-point source pollution concern affecting the entire corridor. Pollutants of concern would be diesel-range and gasoline-range petroleum products, and hazardous metals. This concern would be most pronounced within the urbanized areas and other sections of high vehicle use along the corridor. Since this contaminant risk cannot be quantified or used in addressing areas of greater or lesser priority, this concern was not evaluated as part of this assessment. However, it is recommended that this non-point source pollution concern should be addressed in any PSI [Preliminary Site Investigation] conducted within the investigation area, **with the possibility that contingency plans for contaminated soils would need to be initiated.**

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DEIS, App. Q, at 38 (emphasis added). In other words, the whole corridor is likely contaminated from vehicle accidents, including major fluid spills, such as the tank truck that flipped on the Maryland side of the American Legion Bridge on March 28, 2019, releasing a substantial quantity of fuel.<sup>120</sup> But the Agencies do not evaluate this contamination at all in the DEIS, despite their obligation under NEPA to take a hard look at all the environmental impacts in the DEIS.

Appendix Q further states:

**Following the evaluation of additional information, subsurface sampling would be conducted for those properties needing additional soil and/or groundwater analysis beyond the information documented in detailed regulatory records.** The PSIs would implement a tiered approach to any additional investigation based on the risk of contaminant mobilization, distance from the alignment, and likelihood of impact due to environmental factors such as depth to groundwater and construction requirements (refer to **DEIS Chapter 4, Section 4.23.2** and *Hazardous Materials Technical Report (DEIS Appendix K)* for additional details).

DEIS, App. Q, at 38 (first emphasis added). Similarly, Appendix K recommends that Preliminary Site Investigations (PSIs) be conducted prior to construction by MDOT SHA. DEIS, App. K, at 26. The DEIS explains that after conducting PSIs, the “developer would be required to use best management practices to minimize the release of any hazardous materials during construction.” DEIS, at 4-158. Again, these are issues that should be investigated and addressed now, rather than after decisions are made. Because the build alternatives have the same LODs and the hazardous materials investigation was based on a one-quarter mile buffer from the LODs, there does not appear to be any difference between the build alternatives that would justify waiting for the selection.

Relatedly, the DEIS explains:

Site owners of many of the identified properties may have undertaken additional site characterization studies and/or remediation pursuant to various state and federal regulatory programs, including UST, RCRA, CERCLA, and VCP requirements. Prior to designing the PSI, coordination should be made with MDE, VDEQ and USEPA to obtain additional information on the identified properties in order to further assess potential impacts anticipated during project construction and develop the scope for additional investigation.

DEIS, App. K, at 26. This statement suggests that information may already exist characterizing and addressing some of the hazardous materials issues likely to arise from the build alternatives.

<sup>120</sup> Jennifer Ortiz and Reem Nadeem, *Traffic Terrors: After 13-Hour Shutdown, Lanes Reopen on Inner Loop at American Legion Bridge*, WTOPnews (Mar. 29, 2019), <https://wtop.com/local/2019/03/lanes-reopen-on-inner-loop-on-american-legion-bridge/>.



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It appears, however, that the Agencies did not attempt to obtain it, or even find out which of the identified properties have undertaken additional site characterization or remediation. The DEIS should not ignore this important data.

The DEIS also seems to rely on an assumption that only point sources of hazardous wastes within a quarter mile of the LOD need be considered. This is a faulty assumption for two reasons. First, the LOD is inaccurately reported and far too small for the actual proposed build alternatives. *See supra* Section II.C.7.c. Second, no reason is provided for the quarter mile cut off. There is virtually no attention paid (there are a few exceptions) to potential plumes of hazardous waste extending beyond the LOD, either as they exist now or as they might be disturbed by construction (highway or otherwise) or by the torrential rain events the region is experiencing more and more often with climate change; for example, there was a 6" plus rain event on Sept. 10, 2020, centered on Hyattsville but also reaching close to the existing Beltway near New Hampshire Ave.<sup>121</sup> Even pollutants not particularly soluble in water can migrate through soils during such events. The decision to only analyze within a quarter mile of the LOD is without justification.

Furthermore, there does not seem to be any analysis of hazardous wastes in areas proposed for mitigating wetland and watershed loss, nor any proposal to proactively analyze these areas for such wastes. While many of these proposed sites are in rural or relatively undeveloped areas, agricultural practices in the past included the use of long-lasting toxic chemicals such as arsenic. If these sites are disturbed by land-moving equipment in the process of (re)constructing stream channels and wetlands, toxic chemicals can be mobilized and moved into ground and surface water.

The DEIS also improperly ignores PFAS contamination. Andrews Naval Air Force Base on I-495 is on the National Priorities List and is known to have contaminated soil, sediment, surface water and groundwater with petroleum and hazardous chemicals, including PFAS. DEIS, App. E to App. K, at PDF pg. 28-29.<sup>122</sup> The DEIS makes no further mention of PFAS contamination at Andrews Air Force Base or other sites. On February 14, 2019, EPA published

<sup>121</sup> Jason Samenow and David Streit, *Torrential Rain Triggers Widespread Flooding in D.C. Area, Inundating Roads, Stranding Motorists, Up to 6 Inches of Rain Fell*, Washington Post (Sept. 10, 2020), <https://www.washingtonpost.com/weather/2020/09/10/dc-area-forecast-tropical-downpours-today-could-produce-areas-flooding/>.

<sup>122</sup> *See also* Letter from Lee Currey to Community Water Systems, et al., PFAS (Dec. 18, 2019), [https://mde.maryland.gov/programs/Water/water\\_supply/Documents/PFAS-MDE\\_memo\\_to\\_CommunityAndNCNT\\_PWS2019-12-18\\_final.pdf](https://mde.maryland.gov/programs/Water/water_supply/Documents/PFAS-MDE_memo_to_CommunityAndNCNT_PWS2019-12-18_final.pdf); Pat Elder, *Report Shows 15 Military Bases in Maryland Contaminated With PFAS, Civilian Exposure*, <https://www.civilianexposure.org/report-shows-15-military-bases-in-maryland-contaminated-with-pfas/>.

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the PFAS Action Plan.<sup>123</sup> On February 20, 2020, the EPA issued preliminary determinations to regulate PFOA and PFAS in drinking water and also issued a supplemental proposal regulating new uses of PFAS as requiring review under TSCA.<sup>124</sup> Currently, there are multiple legislative proposals in Congress to address the challenges associated with PFAS. There is no justification for ignoring this problem in the DEIS. Any site with PFAS should be identified and mitigation proposed for work in that area. PFAS discovered after the EIS process is completed are likely to cause delays and to be mitigated with taxpayer funds rather than being paid by or negotiated with the private sector. This concern is borne out by a P3 project in Australia (the West Gate Tunnel), involving one of the P3 bidders here, Transurban, which was recently delayed, with the builders trying to walk away, based on \$1 billion cost overruns and claims that the extent of PFAS contamination discovered during construction was an unforeseeable force majeure event, despite warnings of the contamination early on.<sup>125</sup> The omission from the DEIS of any analysis of PFAS contamination appears to invite the exact same problems of substantial delay and cost overruns.

#### H. The DEIS Does Not Adequately Analyze Air Emissions

The Federal Highway Administration has a webpage devoted to transportation and public health ([https://www.fhwa.dot.gov/planning/health\\_in\\_transportation/](https://www.fhwa.dot.gov/planning/health_in_transportation/)). It promises that "USDOT is committed to promoting better consideration of health outcomes in transportation." Among other objectives, the webpage indicates that the Agency is focused on improving air quality. In conjunction with the Centers for Disease Control, it developed a Transportation Health Tool (<https://www.transportation.gov/mission/health/transportation-health-tool-background>).

<sup>123</sup> U.S. Env'tl. Prot. Agency, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan*, EPA 823R18004 (Feb. 2019), [https://www.epa.gov/sites/production/files/2019-02/documents/pfas\\_action\\_plan\\_021319\\_508compliant\\_1.pdf](https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf).

<sup>124</sup> Press Release, U.S. Env'tl. Prot. Agency, *EPA Announces Proposed Decision to Regulate PFOA and PFOS in Drinking Water* (Feb. 20, 2020), <https://www.epa.gov/newsreleases/epa-announces-proposed-decision-regulate-pfoa-and-pfos-drinking-water>.

<sup>125</sup> Timna Jacks and Clay Lucas, *Transurban Asked to Rip Up West Gate Tunnel Contract, Court Documents Allege*, The Age (June 9, 2020), <https://www.theage.com.au/national/victoria/transurban-launches-legal-action-against-west-gate-tunnel-s-builders-20200609-p550on.html>; Timna Jacks, *Transurban Warned on PFAS Before West Gate Tunnel Contracts Signed*, The Age (Jan. 31, 2020), <https://www.theage.com.au/national/victoria/transurban-warned-on-pfas-before-west-gate-tunnel-contracts-signed-20200131-p53wna.html>; Richard Willingham, *West Gate Tunnel Builders Seek to Terminate Contract Over Contaminated Soil, Transurban Tells ASX*, ABC News (Jan. 29, 2020), <https://www.abc.net.au/news/2020-01-29/west-gate-tunnel-builders-seek-to-terminate-contract-over-pfas/11909402>; Richard Willingham, *West Gate Tunnel Workers Laid Off After Delays Caused by PFAS Contamination*, ABC News (Jan. 22, 2020), <https://www.abc.net.au/news/2020-01-23/west-gate-tunnel-workers-laid-off-contamination/11891456>.



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The Agency fails to meet this commitment in its consideration of potential air quality impacts from this extensive Project. To better address the air quality and related public health impacts, the air quality analysis must correct errors, add analysis and assessment of the additional items (as indicated) and perform a complete re-analysis of the Project to more accurately and completely assess and describe to the public and decisionmakers the potential negative air quality impacts of the Project.

**1. The DEIS Does Not Perform Sufficient Emissions and Health Analyses for Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>) or Nitrogen Dioxide (NO<sub>2</sub>)**

The DEIS only contains a microscale (or hot spot) analysis for carbon monoxide (CO). Based on scale and scope, this Project should have a hot-spot analysis performed for both species of particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) and for nitrogen dioxide (NO<sub>2</sub>). These three pollutants are transportation-related pollutants for which there are short-term National Ambient Air Quality Standards (NAAQS). The fact that there are short-term NAAQS for these pollutants indicates that ambient concentrations can fluctuate significantly in the short term and that even short-term exposures can have negative health effects.

In establishing the NAAQS for the particulate matter species, USEPA reviewed health studies and found that particulate pollution exposure can lead to many problems, including:

- premature death in people with heart or lung disease
- nonfatal heart attacks
- irregular heartbeat
- aggravated asthma
- decreased lung function
- increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

Similarly for NO<sub>2</sub>, USEPA found that breathing air with a high concentration of NO<sub>2</sub> can irritate airways in the human respiratory system which can aggravate respiratory diseases, particularly asthma, evidenced by respiratory symptoms (such as coughing, wheezing or difficulty breathing) and leading to hospital admissions and visits to emergency rooms.

Although these pollutants all have serious negative health impacts, some are more dangerous to the public than others. McCubbin and Delucchi examined the health effects (morbidity, hospitalizations, and mortality) of various pollutants.<sup>126</sup> They found that CO, the

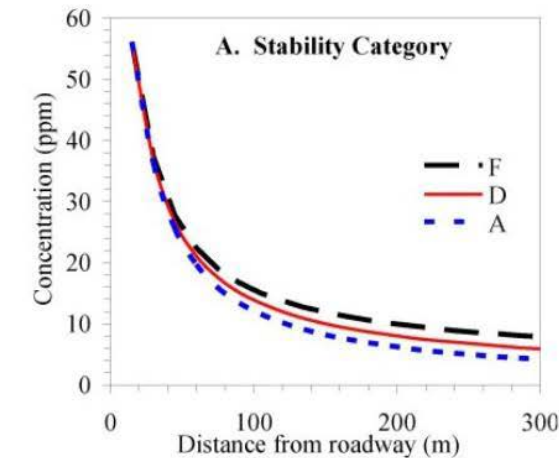
<sup>126</sup> D. R. McCubbin and M. A. Delucchi, *The Health Costs of Motor Vehicle Related Air Pollution*, Journal of Transport Economics and Policy 33, 253–286 (Sept. 1999).

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pollutant analyzed in the DEIS, has the fewest impact of the three on public health (although it is still of importance). They found that NO<sub>2</sub> has about 1.3 times more negative effects on public health than CO. Of most concern was particulate matter, where they found: “The most striking results are the large damages caused by ambient particulate matter (PM), and the large contribution of motor vehicles to ambient particulate levels.” The authors calculated that PM exposure is about 50 times more damaging to public health than CO.

Appendix I of the DEIS states that the Project area is in attainment of the NAAQS for these three pollutants (NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>) and therefore a consideration of these pollutants is not necessary to meet the requirements of the transportation conformity regulations (40 C.F.R. Parts 51 and 93). Even if that is correct, there is nothing preventing the Project sponsors from considering these pollutants for the purposes of NEPA, to completely and thoroughly assess the impacts of the Project, and to fully inform the affected residents of, and visitors to, the area. In particular, NEPA requires the analysis of all environmental impacts, direct, indirect, and cumulative; the DEIS should take a hard look at the air impacts of the Project, including impacts that are caused by future segments of the P3 Program and associated land use changes.

Importantly, the attainment status of the overall area for PM<sub>10</sub>, PM<sub>2.5</sub> and NO<sub>2</sub> is not representative of the air quality and the potential health outcomes in the more immediate area surrounding the Project. The pollutants at issue are microscale pollutants, meaning that their concentration can change greatly over short distances, as shown in the figure below.



From “Prediction and analysis of near-road concentrations using a reduced-form emission/dispersion model”; Batterman, Zhang and Kononowech; *Environmental Health*; June 2010



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The concentration of these pollutants can vary substantially at only a few meters' distance. As a result, people in the houses, buildings, playgrounds, and on the sidewalks nearest the Project roadways will experience the greatest health impacts. The emission loading from additional vehicles traveling on the roadways due to this Project would serve to exacerbate existing pollutant concentrations. Despite the area's attainment status for some criteria pollutants, the actual concentrations of these microscale pollutants in the Project area and along its roadways are not known.

The attainment or non-attainment status of an area is determined by monitoring of ambient air quality at various locations that meet siting and equipment criteria promulgated by USEPA. None of these monitoring sites are in the Project area or even close to the Project area. Figures 2-1 through 2-3 of Appendix I show the locations of the nearest monitors for some of these pollutants. These monitors are located at substantial distances from the Project area and therefore do not represent air quality in the Project area nor at individual intersections or analysis sites in the Project area. The above figure shows how the concentration of an air pollutant, and thus its health impact, can taper off within less than 100 meters, yet the nearest ambient monitor for PM<sub>2.5</sub> and PM<sub>10</sub> is approximately 3.1 miles (almost 5,000 meters) from the Project area (Monitor 240330030 in Maryland) and the nearest monitor for NO<sub>2</sub> is approximately 2.0 miles (over 3,000 meters) from the Project area (Monitor 110010050 in the District of Columbia).

In addition, the Project area's attainment status for PM<sub>2.5</sub> is tenuous. Table 2-4 of Appendix I indicates that Monitor 110010051, located in the District of Columbia, has measured a weighted arithmetic mean concentration of PM<sub>2.5</sub> of 10.2 ug/m<sup>3</sup>. This is very close to the NAAQS annual standard of PM<sub>2.5</sub> of 12 ug/m<sup>3</sup>. Thus, even a small incremental contribution from this project could cause air quality in the Project area to exceed the health-based NAAQS for PM<sub>2.5</sub>.

The air quality analysis for this Project must include a localized, hot-spot analysis for PM<sub>10</sub>, PM<sub>2.5</sub> and NO<sub>2</sub>, not just for CO. This localized analysis is necessary to inform the public, and in particular residents and visitors to the area, of the potential negative health effects associated with the Project which, as discussed above, stem more from PM and NO<sub>2</sub> than from CO. The current PM and NO<sub>2</sub> air quality monitoring sites do not provide useful information, for the reason explained above. Also, the near violation of the PM<sub>2.5</sub> NAAQS strongly suggests that any incremental addition of PM<sub>2.5</sub> pollution due to the Project could cause the entire region to be declared unhealthful for PM<sub>2.5</sub>.

a. Fine Particulate Matter Conformity

Clean Air Act (CAA) Section 176(c), 42 U.S.C. § 7506(c), requires that federally approved highway and transit activities be consistent with ("conform to") the purpose of the State Implementation Plan (SIP). "Conformity to the purpose of the SIP" means that transportation activities will not cause or contribute to new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS or any interim milestones. *Id.*

The DEIS states that "The Air Quality Analysis Study Area (i.e., Montgomery County, Prince George's County, and Fairfax County) is in an attainment area for fine particulate matter

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(PM<sub>2.5</sub>), and therefore transportation conformity requirements pertaining to PM<sub>2.5</sub> do not apply for this Project and no further analysis of PM<sub>2.5</sub> emissions were evaluated per FHWA guidance." DEIS at 4-59 (footnotes omitted). The DEIS also states:

For background, the EPA issued a final rule (81 FR 58010), effective October 24, 2016, on "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements" that stated, in part: "Additionally, in this document the EPA is revoking the 1997 primary annual standard for areas designated as attainment for that standard because the EPA revised the primary annual standard in 2012." (See: <https://www.gpo.gov/fdsys/pkg/FR-2016-08-24/pdf/2016-18768.pdf>). Accordingly, Fairfax County is no longer designated as maintenance for PM<sub>2.5</sub>, and the associated USEPA regulatory requirements for conformity for PM<sub>2.5</sub> are eliminated for northern Virginia.

MDOT is correct in its plain reading that the Final Rule implementing the 2012 PM<sub>2.5</sub> NAAQS revoked the 1997 primary annual standard for areas designated attainment for that standard, the Washington, DC-MD-VA area had indeed been re-designated as maintenance for the 1997 PM<sub>2.5</sub> NAAQS,<sup>127</sup> and the Washington, DC-MD-VA area is in attainment of the 2012 PM<sub>2.5</sub> NAAQS. However, EPA cannot revoke conformity requirements for so-called "orphan areas," or areas that were designated nonattainment or maintenance for the now-revoked NAAQS. Thus, this Project will need to demonstrate conformity against the PM<sub>2.5</sub> maintenance plan, including with the PM<sub>2.5</sub> transportation conformity budgets, for the Washington, DC-MD-VA area, and the Agencies must analyze PM<sub>2.5</sub> emissions.

The 2016 Rule explained that areas that have been redesignated to attainment for the 1997 NAAQS "will be required to implement their approved maintenance plan for the 1997 primary annual PM<sub>2.5</sub> NAAQS and their PSD program. The approved maintenance plan can only be revised if the revision meets the requirements of CAA section 110(l) and, if applicable, CAA section 193." 81 Fed. Reg. at 58,142.

CAA § 193 prohibits modification of a control requirement in effect or required to be adopted as of November 15, 1990 (the date of enactment of the 1990 CAA Amendments), unless such a modification would ensure equivalent or greater emissions reductions. CAA § 172(e), which addresses relaxations of the NAAQS, requires protections for areas that have not attained the NAAQS prior to a relaxation by requiring controls that are at least as stringent as the controls applicable in nonattainment areas prior to any such relaxation.

When revoking the 1997 NAAQS, EPA explained that "Continued attainment of the 1997 primary annual PM<sub>2.5</sub> NAAQS in areas that have been redesignated to attainment for that NAAQS will be ensured through the ongoing implementation of the approved maintenance plan

<sup>127</sup> Approval and Promulgation of Air Quality Implementation Plans; District of Columbia, Maryland, and Virginia; Approval of the Redesignation Requests and Maintenance Plan of the Washington, DC-MD-VA Nonattainment Area for the 1997 Annual Fine Particulate Matter Standard, 79 Fed. Reg. 60,081 (Oct. 6, 2014).



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that applies in these areas. These areas are required to implement their approved CAA section 175A maintenance plan for the 1997 primary annual PM<sub>2.5</sub> NAAQS.” 81 Fed. Reg. at 58,143.

The United States Court of Appeals for the District of Columbia Circuit issued a decision in *South Coast Air Quality Management District v. E.P.A. (South Coast II)*, 882 F.3d 1138 (D.C. Cir. 2018), making this obligation clear. This case involved a challenge to EPA’s final rule for implementing the 2008 Ozone NAAQS, the 2008 Ozone NAAQS Implementation Rule. The court vacated portions of EPA’s 2008 Ozone NAAQS SIP Requirements Rule, in particular those providing that EPA could revoke conformity requirements for areas that were attaining the 2008 Ozone NAAQS but were in maintenance (or nonattainment) for the revoked 1997 Ozone NAAQS. The court explained that conformity requirements are “controls” subject to the CAA’s anti-backsliding provisions. *Id.* at 1149. The court further explained that CAA anti-backsliding requirements apply to both maintenance and nonattainment orphan areas: “Even after revocation of the 1997 NAAQS, an orphan maintenance area is ‘an area that *was* designated as a nonattainment area but that *was* later redesignated . . . as an attainment area.’” *Id.* at 1155. The court concluded that “the revocation of the 1997 NAAQS does not waive the unambiguous mandate that conformity requirements apply to orphan maintenance areas.” *Id.* This is true regardless of whether the more recent NAAQS is more stringent.

Requirements for conformity do not differ from pollutant to pollutant, but instead are all governed under CAA § 176(c), 42 U.S.C. § 7506(c). The situation of the Washington, DC-MD-VA being an “orphan maintenance area” is therefore covered by *South Coast II* and conformity must be completed for this Project with regards to PM<sub>2.5</sub> under the 1997 NAAQS.

b. The DEIS Must Include a PM<sub>2.5</sub> Hot-Spot Analysis and an Analysis of PM<sub>2.5</sub> Health Impacts

In addition to the required conformity determination, the Organizations request that the Agencies perform a PM<sub>2.5</sub> modeling analysis to analyze the impact of emissions from the Project both on NAAQS compliance and on the public health.

First, the Agencies must perform a PM<sub>2.5</sub> hot-spot analysis based on the project being constructed in an orphan maintenance area (in addition to the reasons provided in Section II.H.1); as explained directly above, the area is still subject to controls due to the CAA’s anti-backsliding provisions. Moreover, the DEIS ignores other times a hot-spot analysis is required, for example: “New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;” and “Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.” 40 C.F.R. § 93.123(b)(1)(i), (ii). The DEIS states that the Project will accommodate increased movement of freight trucks. *See, e.g.*, DEIS, at 4-161. The Organizations therefore believe the proposed Project requires a hot-spot analysis. Or, regardless of CAA requirements, such an analysis should be done to truly take a hard look at the Project’s environmental and human health impacts.

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Second, the EIS requirement serves two important functions: “It ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decision making process and the implementation of that decision.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). The EIS is one of NEPA’s action-forcing procedures to ensure that agencies take a hard look at the environmental consequences of proposed actions. *Id.* at 350.

It is scientifically established that increased PM<sub>2.5</sub> concentrations at levels below the current primary annual NAAQS (12 µg/m<sup>3</sup>) cause human health harms (such as respiratory, cardiovascular, nervous system, cancer, and mortality). The DEIS must not ignore these health impacts based on claims of purported conformity.

EPA itself has recognized this link:

- Evidence continues to support a linear, no-threshold concentration—response relationship, but with less certainty in the shape of the curve at lower concentrations (i.e., below about 8 µg/m<sup>3</sup>). Integrated Science Assessment for Particulate Matter (ISA), EPA/600/R-19/188, at ES-23 (Dec. 2019).
- Recent studies that focus on the shape of the C-R [concentration-response] curve expand upon the health effects evaluated in previous reviews and continue to provide evidence of a linear, no-threshold relationship between both short- and long-term PM<sub>2.5</sub> exposure and several respiratory and cardiovascular effects, and mortality. *Id.* at 1-48.
- For long-term PM<sub>2.5</sub> exposure, most of the evidence on the shape of the C-R curve comes from studies of mortality with some initial recent evidence from studies of respiratory and cardiovascular effects, as well as lung cancer mortality and incidence. Epidemiologic studies of long-term PM<sub>2.5</sub> exposure and mortality used a variety of statistical approaches and cutpoint analyses, which support a linear, no-threshold relationship for total (nonaccidental) mortality, especially at lower ambient PM<sub>2.5</sub> concentrations, with confidence in some studies in the range of 5–8µg/m<sup>3</sup>. Additionally, there is initial evidence indicating that the slope of the C-R curve may be steeper (supralinear) at lower concentrations for cardiovascular mortality. Evaluation of the C-R relationship is more limited for respiratory and cardiovascular effects, but overall initial assessments support a linear relationship, specifically at long-term PM<sub>2.5</sub> concentrations ranging from 10–12 and 5–10µg/m<sup>3</sup>, respectively. *Id.* at ES-19.

*See also* ISA at ES-9 to ES-17. The Independent Particulate Matter Review Panel, made up of former members of the EPA Clean Air Scientific Advisory Committee Particulate Matter Review Panel, recently explained:



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We concluded that the current PM<sub>2.5</sub> standards are insufficient to protect public health, on the basis of a review of the scientific evidence from epidemiologic studies, toxicologic studies in animals, and controlled human exposure studies; this evidence is consistent within each discipline and coherent among the multiple disciplines in supporting a causal, biologically plausible relationship between ambient concentrations well below the current PM<sub>2.5</sub> standards and adverse health effects, including premature death.<sup>128</sup>

It is also scientifically certain that short-term exposure to PM<sub>2.5</sub> concentrations causes human health harms. EPA explains, “A large body of scientific evidence spanning many decades clearly demonstrates there are health effects attributed to both short-and long-term PM exposure, with the strongest evidence for a relationship between some health effects and PM<sub>2.5</sub>.” ISA at ES-22. EPA further explains that short-term exposure to PM<sub>2.5</sub> causes cardiovascular effects and mortality and is likely to cause respiratory effects. *Id.* at 1-20. A recent comprehensive study examining over 13 years of hospital admissions records for Medicare beneficiaries found:

For the rarely studied diseases, each 1 µg/m<sup>3</sup> increase in short term PM<sub>2.5</sub> was associated with an annual increase of 2050 hospital admissions (95% confidence interval 1914 to 2187 admissions), 12 216 days in hospital (11 358 to 13 075), US\$31m (£24m, €28m; \$29m to \$34m) in inpatient and post-acute care costs, and \$2.5bn (\$2.0bn to \$2.9bn) in value of statistical life. For diseases with a previously known association, each 1 µg/m<sup>3</sup> increase in short term exposure to PM<sub>2.5</sub> was associated with an annual increase of 3642 hospital admissions (3434 to 3851), 20098 days in hospital (18 950 to 21 247), \$69m (\$65m to \$73m) in inpatient and post-acute care costs, and \$4.1bn (\$3.5bn to \$4.7bn) in value of statistical life.<sup>129</sup>

The Organizations ask: Do the Agencies believe that there are no human health harms from PM<sub>2.5</sub> below the current primary annual NAAQS of 12 µg/m<sup>3</sup>? If so, what is the basis for this belief? If not, why are the Agencies performing no analysis of the human health impact from PM<sub>2.5</sub> emissions caused by the proposed alternatives? There is no valid justification for not considering and analyzing these well-documented impacts.

<sup>128</sup> Independent Particulate Matter Review Panel, *The Need for a Tighter Particulate-Matter Air-Quality Standard*, N. Engl. J. Med. 383;7 (Aug. 13, 2020); *see also* Advice from the Independent Particulate Matter Review Panel (formerly EPA CASAC Particulate Matter Review Panel) on EPA’s Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft –September 2019); Docket ID No. EPA–HQ–OAR–2015–0072 (Oct. 22, 2019).

<sup>129</sup> Yanguang Wei, et al., *Short Term Exposure to Fine Particulate Matter and Hospital Admission Risks and Costs in the Medicare Population: Time Stratified, Case Crossover Study*, BMJ. 2019; 367: 16258 (Nov. 27, 2019), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6880251/>.

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Moreover, the DEIS fails to consider PM<sub>2.5</sub> concentrations at monitors close to the Beltway, I-270, or other nearby highways. A 2015 study using PM<sub>2.5</sub> monitoring at 150 meters (approximately 500 feet) from the Beltway in Largo, Maryland found that roadway traffic contributes 12 to 17% of the total PM<sub>2.5</sub> concentration.<sup>130</sup> The near road monitor consistently showed higher concentrations than Maryland’s other, non-near-road monitors. Sadly, the estimated annual PM<sub>2.5</sub> concentration for the full years of the study was 13.0 µg/m<sup>3</sup>, which is above the current standard of 12 µg/m<sup>3</sup>. Further concerning, the data showed fifteen days during the monitoring period when the concentration exceeded 35 µg/m<sup>3</sup>, with the highest 24-hour concentrations each year between 39.9 and 41.4 µg/m<sup>3</sup>, and an hour when the concentration rose as high as 255 µg/m<sup>3</sup>. These concentrations are at levels scientifically accepted to cause adverse health effects, including premature death. And that is without the additional construction and cars that the Project would create.

For whatever reason, MDOT did not continue monitoring near the Beltway and the DEIS does not even mention this study. But the study shows that were the Agencies to measure concentrations near the Beltway today, the concentrations would likely exceed or be close to exceeding the NAAQS. And the added PM<sub>2.5</sub> emissions from the Project, due to construction and increased vehicle miles traveled (which were not analyzed in the DEIS), would likely cause a near road monitor to exceed the NAAQS while also certainly causing negative health outcomes.

Unfortunately, Maryland does not currently operate any near road PM<sub>2.5</sub> monitors in the Washington, DC-MD-VA area, despite that area having over 2.5 million people. *See* 40 C.F.R. § 58.10(a)(8)(i), Appendix D § 4.7.1(b)(2) (requiring operational near-road PM<sub>2.5</sub> monitors in areas having over 2.5 million people by January 1, 2015). Washington, DC has one, along the Anacostia Freeway, which has different attributes from the Beltway and I-270, and the monitor has only one year of valid measurements (2019). That monitor and other non-near-road monitors also show elevated annual PM<sub>2.5</sub> concentrations,<sup>131</sup> which even if they do not violate the NAAQS are well above values that are known to cause harm. At these levels, small increases are proven to cause additional harms, yet the DEIS does not even consider these harms. The Agencies must analyze the impacts the Project, and its PM<sub>2.5</sub> emissions, will have on the public.

A study based on a road-widening project in London explained that there is clear evidence that new or expanded roads rapidly fill with either displaced or induced traffic, offsetting any short-term gains in eased traffic flows. More importantly, that study found:

PM<sub>10</sub> increased during the construction period up to 15µgm<sup>-3</sup> during working hours compared to concentrations before the road works. . . . After the completion of the

<sup>130</sup> Helen Ginzburg, et al., *Monitoring Study of the Near-Road PM<sub>2.5</sub> Concentrations in Maryland*, Journal of the Air & Waste Management Association Volume 65, 2015 - Issue 9 (Aug. 14, 2015), <https://www.tandfonline.com/doi/full/10.1080/10962247.2015.1056887>.

<sup>131</sup> *See* Design Values 2019, Fine Particle Annual (PM<sub>2.5</sub>) Standard, <https://epa.maps.arcgis.com/apps/MapSeries/index.html?appid=bc6f3a961ea14013afb2e0d0e450b0d1>.



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widening there was an increase in all pollutants from the road during rush hour: 2–4 $\mu\text{g m}^{-3}$  for  $\text{PM}_{10}$ ; 1  $\mu\text{g m}^{-3}$  for  $\text{PM}_{2.5}$ ; 40 and 8  $\mu\text{g m}^{-3}$  for  $\text{NO}_x$  and  $\text{NO}_2$ , respectively.<sup>132</sup>

Another study found that “Annual average incremental  $\text{PM}_{2.5}$  from major roadways ranged from 0.1 to 2.0  $\mu\text{g/m}^3$ .”<sup>133</sup>

A recent report found that highway vehicles are responsible for up to 0.55  $\mu\text{g/m}^3$  of ambient  $\text{PM}_{2.5}$  in Virginia, with some of those emissions coming from bordering states such as Maryland.<sup>134</sup> The report summarized the measurable transportation-attributable health burden in Virginia, including a mean estimate of 190 premature deaths and \$1.6 billion in social welfare costs. Moreover, this burden was found to disproportionately impact socially vulnerable communities.

Converting the pollutant increases from the proposed added lanes into harms using a concentration response curve shows the Project will harm the public, increase hospitalizations and cause premature deaths. A 2018 meta-analysis found “a 1 $\mu\text{g/m}^3$  increase in  $\text{PM}_{2.5}$  was associated with a 1.29% increase in all-age all-cause mortality (95% CI [Confidence Interval] 1.09-1.50) at a mean exposure of 10  $\mu\text{g/m}^3$ , which decreased to 1.03% (95% CI 0.97-1.11) at a mean exposure of 15.7  $\mu\text{g/m}^3$  (the mean level across all studies), and to 0.82% (95% CI-0.52-1.12) at 30  $\mu\text{g/m}^3$ .”<sup>135</sup> The study found the “increase was larger for cardiopulmonary, cardiovascular and elderly mortality with 1.92% (95% CI 1.59–2.25), 1.46% (95% CI 1.25–1.67) and 1.61% (95% CI 1.35–1.85), respectively at a mean exposure of 10  $\mu\text{g/m}^3$ , but smaller for

<sup>132</sup> Anna Font, et al., *Degradation in Urban Air Quality From Construction Activity and Increased Traffic Arising From a Road Widening Scheme*, Science of the Total Environment 497–498, at 123–132 (Aug. 14, 2014), <https://reader.elsevier.com/reader/sd/pii/S0048969714010900?token=A5B950B19982401FAD8BBACE5551B265662AD2645B417D342D369CEB6274AEF922E10C9C7494A18362653D794DCBF24A>.

<sup>133</sup> Anondo Mukherjee, et al., *Influence of Roadway Emissions on Near-Road  $\text{PM}_{2.5}$ : Monitoring Data Analysis and Implications*, Transportation Research Part D: Transport and Environment Volume 86, 102442 (July 2, 2020), <https://www.sciencedirect.com/science/article/pii/S1361920920306295>.

<sup>134</sup> *An Assessment of the Health Burden of Ambient  $\text{PM}_{2.5}$  Concentrations in Virginia*, Industrial Economics, Inc. prepared for the Energy Foundation and Virginia Clinicians for Climate Action, at 8-10 (Oct. 28, 2020), [https://cee8204b-70a4-447f-9567-a8b385f8bd93.filesusr.com/ugd/b42d13\\_16d1da1c63e84d328db4239aea371617.pdf](https://cee8204b-70a4-447f-9567-a8b385f8bd93.filesusr.com/ugd/b42d13_16d1da1c63e84d328db4239aea371617.pdf).

<sup>135</sup> Alina Vodonos, Yara Abu Awad, and Joel Schwartz, *The Concentration-Response Between Long-Term  $\text{PM}_{2.5}$  Exposure and Mortality: A Meta-Regression Approach*, Environmental Research 166, 677–689, at 679 (Aug. 1, 2018), <http://www.scientificintegrityinstitute.org/ERMAPM25JS080118.pdf>.

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respiratory and lung cancer deaths with 1.13% (95% CI 0.85–1.41) and 1.22% (95% CI 0.87–1.39), respectively.”<sup>136</sup> “Moreover, geographical locations with higher percent of  $\text{PM}_{2.5}$  sourced from traffic was significantly associated with higher estimates with a 2.05% increase in mortality rate (95% CI 1.89–2.81) per  $\mu\text{g/m}^3$ .”<sup>137</sup> The study concluded:

Assuming that the space time models have higher effect estimates because of smaller exposure error, the best estimated all-cause mortality effect size at 10  $\mu\text{g/m}^3$  would be 1.61% (95% CI 1.18–2.04). In addition, our meta-regression restricted to studies with mean concentrations below 10  $\mu\text{g/m}^3$  was significant with a 2.4% increase per 1  $\mu\text{g/m}^3$ , 95% (95% CI 0.8–4.0).<sup>138</sup>

The Agencies could use well-supported concentration-response curves such as this to estimate the mortality impacts of increased  $\text{PM}_{2.5}$  emissions from the build alternatives. With millions of people living in Montgomery and Prince George’s County, even a 1  $\mu\text{g/m}^3$  increase in  $\text{PM}_{2.5}$  concentrations caused by the build alternatives compared to the no build alternative would lead to thousands of premature deaths, thousands more hospitalizations, and billions in lost social welfare costs. Real lives will be harmed by even small increases in  $\text{PM}_{2.5}$  concentrations. To comply with NEPA and make a decision on the project with an understanding of its impacts, the Organizations request that the Agencies conduct  $\text{PM}_{2.5}$  monitoring near the Beltway and I-270, analyze the current concentrations and increases that would be caused by the build alternatives, and study the health impacts of the build alternatives. NEPA requires that FHWA consider reasonable alternatives that will reduce emissions and pollutant exposures; it is not reasonable or legally permissible under NEPA for the Agencies not to use the best science available to estimate the impact of the build alternatives’ emissions on concentrations of  $\text{PM}_{2.5}$  and the corresponding health impacts that would result.

## 2. The DEIS’s Air Quality Analysis Missed Parking Lots

The air quality analysis that is reported in Appendix I missed an important source of emissions which should be included in the air quality studies. The CO analysis and the required analysis for  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$  and  $\text{NO}_2$  (as described above) must include emissions from the operation of vehicles in nearby major parking lots (greater than 100 spaces).

The importance of parking lots as a source of indirect motor vehicle pollution has been well known for many years and has been the subject of regulation and permitting across the nation. See, e.g., Oregon Department of Environmental Air Quality, Rule 340-254-0060, [https://oregon.public.law/rules/oar\\_340-254-0060](https://oregon.public.law/rules/oar_340-254-0060); North Carolina Department of Environment and Natural Resources, Guidelines for Evaluating the Air Quality Impacts of Transportation Facilities, <https://www.buncombecounty.org/common/WncAir/forms/tf-guide.pdf>; Broward

<sup>136</sup> *Id.* at 684.

<sup>137</sup> *Id.*

<sup>138</sup> *Id.*



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County, Florida, Broward County Parking Facility License.  
[https://library.municode.com/fl/broward\\_county/codes/code\\_of\\_ordinances](https://library.municode.com/fl/broward_county/codes/code_of_ordinances). Studies have found that levels of air pollution are higher (more unhealthful) in the vicinity of parking lots. Baltrenas, Kaziukoniene, and Kvasauskas discovered that nitrogen oxide (including NO<sub>2</sub>) levels were up to 1.9 times greater than accepted levels and CO levels also exceeded acceptable levels.<sup>139</sup> (They did not look at PM<sub>10</sub> and PM<sub>2.5</sub>.) Similarly, Steinberga and Kleperis found elevated levels of CO (up to 35% higher), nitrogen oxides (including NO<sub>2</sub>) and volatile organic compounds (including benzene) near parking facilities.<sup>140</sup>

These findings are not surprising since vehicles operate differently in parking lots than they do on roadways or Interstates. In parking lots, vehicles cruise around looking for a parking spot at slow speeds, which elevates emissions. They also idle for extended periods, which elevates emissions. In parking lots vehicle engines are started after being turned off for a period of time, which also elevates emissions. Many vehicles undergoing these “cold-starts,” slow speeds and idling concentrate these higher emissions in and near parking lots. Analytic techniques for including emissions from parking lots are well known. In formulating its Motor Vehicle Emission Simulator (MOVES), its current emissions model, EPA recognized the different operating characteristics of vehicles in and around parking lots and devised an “off-network” mode for the model, designed specifically to analyze and calculate the emissions associated with parking lot conditions. Information and guidance on how to use MOVES for parking lots is available. *See* Chapter 4 of Input Guidelines for Motor Vehicle Emissions Simulator Model, Volume 2: Practitioners’ Handbook: Project Level Inputs, NCHRP 25-38. EPA’s approved dispersion model, AERMOD, could then be used to calculate concentrations of these pollutants to generate more accurate estimates of air pollution associated with this Project.

The Project sponsor should examine the land uses within 1000 meters of the analysis sites to determine if there are any major parking lots located nearby. Sites with nearby parking lots must be re-analyzed to include parking lot emissions of CO, PM<sub>10</sub>, PM<sub>2.5</sub> and NO<sub>2</sub>.

### 3. The DEIS Fails to Properly Address Ozone and its Precursors

There is a large body of peer-reviewed and accepted research, built over the past 40 years, connecting both regional and localized air pollutants to adverse public health outcomes such as pulmonary disease, cardiovascular disease, neurological effects, and even cancer.<sup>141</sup> Ground-level ozone is particularly harmful for the most vulnerable members of society,

<sup>139</sup> Pranas Baltrenas, Danguole Kaziukoniene, & Mindaugas Kvasauskas, *Air Pollution at Parking Lots of Vilnius*, Journal of Engineering and Landscape Management, 12:1, 38-43 (2004), <https://www.tandfonline.com/doi/pdf/10.1080/16486897.2004.9636813>.

<sup>140</sup> I. Steinberga & J. Kleperis, *Urban Air Pollution: Input from Car Parking Places*, 75 Urban Transport X 851, (2004), <https://www.witpress.com/Secure/elibrary/papers/UT04/UT04083FU.pdf>.

<sup>141</sup> *See, e.g.*, 83 Fed. Reg. 42,986, 43,337 (Aug. 24, 2018).

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including those with pre-existing health conditions, the elderly, and children.<sup>142</sup> Low-income families and communities of color are disproportionately exposed to elevated levels of ozone pollution and other factors that exacerbate the risks of exposure, such as inadequate access to health care and proximity to sources of harmful pollution, including heavy traffic.<sup>143</sup> In its 2013 Integrated Science Assessment, EPA found that “most studies of individuals have reported that individuals with low SES [socioeconomic status] and those living in neighborhoods with low SES [socioeconomic status] are more at risk for O<sub>3</sub> [ozone]-related health effects, resulting in increased risk of respiratory hospital admissions and ED [emergency department] visits.”<sup>144</sup> Yet the DEIS performs no health analysis beyond referencing a NAAQS conformity modeling performed two years prior.

Based on the scale and scope of the Project, the air quality analysis should include a regional emissions analysis (or mesoscale analysis) of ozone precursors (volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>)). The Project area is in a moderate ozone non-attainment area. If the Project is completed, it will result in a massive increase in VMT of about one thousand million annual VMT, based on traffic projections for the build alternatives.

<sup>142</sup> *See* EPA, Integrated Science Assessment for Ozone and Related Photochemical Oxidants, Sections 8.3.1.1, 8.3.1.2, 8.2.2, 8.2.3, EPA-600/R-10/076F (2013).

<sup>143</sup> *See* D.E. Schraufnagel, et al., *Air Pollution and Noncommunicable Diseases: A Review by the Forum of International Respiratory Societies’ Environmental Committee, Part 1: The Damaging Effects of Air Pollution*, Chest, 155(2), 409–416 (Nov. 9, 2018), <https://doi.org/10.1016/j.chest.2018.10.042> (“Susceptibility is partly under genetic and epigenetic regulation. Although air pollution affects people of all regions, ages, and social groups, it is likely to cause greater illness in those with heavy exposure and greater susceptibility. Persons are more vulnerable to air pollution if they have other illnesses or less social support.”); RC Gwynn, and GD Thurston, *The Burden of Air Pollution: Impacts in Racial Minorities*, Env’tl. Health Perspectives, 109(4): 501-6 (Aug. 2001) (identifying socioeconomic status and access to healthcare as key factors influencing risk of negative health effects from exposure to ozone and other air pollutants); M.L. Bell, F. Dominici, *Effect Modification by Community Characteristics on the Short-Term Effects of Ozone Exposure and Mortality in 98 US Communities*, 167 Am. J. Epidemiology 986 (Apr. 15, 2008), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2430754/> (finding that “some populations (i.e., Black/African American and the unemployed) may bear a higher health burden from ozone and that a higher prevalence of central air conditioning may modify ozone exposure, thereby lessening its health impacts.”); B. Ostro et al., *Air Pollution and Exacerbation of Asthma in African-American Children in Los Angeles*, Epidemiology, Vol. 12 (2): 200-8 (Mar. 2001); *see also*, J.T. Lee et al., *Effect of Air Pollution on Asthma-Related Hospital Admissions for Children by Socioeconomic Status Associated with Area of Residence*, 61 Archives Env’tl. Occupational Health 123 (2006); S. Cakmak et al., *The Risk of Dying on Days of Higher Air Pollution Among the Socially Disadvantaged Elderly*, 111 Env’tl. Res. 388 (2011).

<sup>144</sup> EPA, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants*, EPA-600/R-10/076F, at 8-28 (2013).



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Although the area's latest transportation conformity determination indicates that, with the completion of this Project,<sup>145</sup> the area will meet the required emissions tests for VOCs and NO<sub>x</sub>, the Project still will generate large amounts of these ozone precursors. These amounts should be reported so that the public and decisionmakers are aware of the Project's impact on emissions of these pollutants.

In addition, since the formation of ozone occurs miles downwind and hours after the release of ozone precursors, the regional emissions of ozone precursors should be reported and assessed for their potential impact on downwind areas that also do not meet the ozone NAAQS. These areas may include the Baltimore area, the Philadelphia area, the Seaford City area in Delaware, and Kent and Queen Anne Counties in Maryland, among others. The Project sponsor should consult with officials in the affected nonattainment areas to determine if these areas will be able to complete successful future transportation conformity determinations and meet their air quality attainment goals despite the transport of ozone and ozone precursors into these areas as a result of the Project.

FHWA Technical Advisory T 6640.8A (Oct. 30, 1987), Guidance for Preparing and Processing Environmental and Section 4(f) Documents, states that a DEIS should, when addressing air quality concerns that occur on the mesoscale, present information on ozone and related pollutants:

Ozone (O<sub>3</sub>), Hydrocarbons (HC), and Nitrogen Oxide (NO<sub>x</sub>) air quality concerns are regional in nature and as such meaningful evaluation on a project-by-project basis is not possible. Where these pollutants are an issue, the air quality emissions inventories in the State Implementation Plan (SIP) should be referenced and briefly summarized in the draft EIS. Further, the relationship of the project to the SIP should be described in the draft EIS . . . .

Ozone pollution is a significant issue in the geographic area in which the Project is proposed. The Washington, DC-MD-VA nonattainment area is in maintenance status for the 2008 ozone NAAQS and must address conformity levels in its maintenance plan. The region is also currently in non-attainment for the 2015 ozone NAAQS and a monitor located several miles upwind of this project has a current design value that is 2 ppb above the health-based standard. The correct thing to do from the standpoint of public health and welfare would be to evaluate whether the Project will allow the Washington, DC area to achieve all health-based federal ozone standards. The bare minimum would be for the DEIS to at least include summary information, as recommended by FHWA guidance, on ozone precursor levels related to the conformity levels, but the DEIS failed to do so.

The lack of ozone precursor information in the DEIS is particularly troubling since the evidence from *Visualize 2045* shows that for both VOCs (Exhibit 17) and NO<sub>x</sub> emissions during

<sup>145</sup> Air Quality Conformity Analysis of Visualize 2045 and the FY 2019 – 2024 Transportation Improvement Program. October 17, 2018, <https://www.mwcog.org/visualize2045/document-library/>.

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ozone season (Exhibit 18), the maintenance plan for the area at issue is above the agreed-to Tier 1 budgets for both 2025 and 2030.

#### 4. The DEIS Fails to Sufficiently Address Mobile Source Air Toxics

FHWA guidance requires that a project of this size be evaluated with regards to Mobile Source Air Toxics (MSATs). While the DEIS provides information about how the levels of various MSATs will change because of a build alternative, the Agencies just insert template EIS language that has been used by Departments of Transportation (DoTs) around the country for years to avoid evaluating the health impacts of MSATs. This omission is not acceptable.

Motor vehicles are a primary source of Benzene emissions (second only to smoking).<sup>146</sup> EPA last updated the Integrated Risk Assessment (IRA) for Benzene in 2003 and it was determined to be a human carcinogen, the highest level of certainty of adverse health impacts available. EPA, through the Integrated Risk Information System (IRIS), provides both a Reference Dose (RfD) and Reference Concentration (RfC) for Benzene.<sup>147</sup> These data can easily be used in conjunction with modeled emissions from EPA's MOVES and information about the populations that live, go to school, work, and otherwise inhabit the area near I-495 and I-270 to determine the impact that the change in Benzene levels would have on public health, and thereby to determine if the increased risk is acceptable.

Benzene is not the only air toxic associated with motor vehicles. EPA also provides the same degree of information for numerous other air toxics such as:

- Diesel PM – Likely to be a human carcinogen (Evaluated 2003)<sup>148</sup>
- Formaldehyde – Probable human carcinogen (Evaluated 1990)<sup>149</sup>
- 1,3-butadiene – Carcinogenic to humans by inhalation (Evaluated 2002)<sup>150</sup>
- Acetaldehyde – Probable human carcinogen (Evaluated 2002)<sup>151</sup>

<sup>146</sup> Wallace L. A., *Major Sources of Benzene Exposure*, Environmental Health Perspectives, 82, 165–169 (1989), <https://doi.org/10.1289/ehp.8982165>.

<sup>147</sup> [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance\\_nmbr=276](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=276).

<sup>148</sup> [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance\\_nmbr=642](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=642).

<sup>149</sup> [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance\\_nmbr=419](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=419).

<sup>150</sup> [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance\\_nmbr=139](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=139).

<sup>151</sup> [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance\\_nmbr=290](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=290).



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- Napthalene – Impacts nervous and respiratory function (Evaluated 1998)<sup>152</sup>
- Toulene – Impacts kidney function (Evaluated 2005)<sup>153</sup>
- Xylene – Impacts nervous function (Evaluated 2003)<sup>154</sup>

Even though this information has been available for nearly 20 years, due to amendments to the Clean Air Act put in place 30 years ago, MDOT states:

In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

DEIS, App. I, at 77. It is absurd that in the past 30 years MDOT has not developed an approach to evaluate MSATs. This language comes from a template utilized by DoTs around the country that claim we can never know if people exposed to these toxics will get cancer. The DEIS uses this language despite the fact that FHWA in the mid-2000’s developed a protocol that can be the basis of a system to evaluate MSATs.<sup>155</sup> It is hard to understand how 15 years later, the DEIS would still be claiming that tools and techniques do not exist to evaluate MSATs for a highway project.

Additionally, the DEIS also could have utilized systems developed by other agencies to conduct an evaluation of the health impacts from MSATs:

- Minnesota Department of Transportation – Air toxics template dated 2007<sup>156</sup>

<sup>152</sup> [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance\\_nmbr=436](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=436).

<sup>153</sup> [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance\\_nmbr=118](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=118).

<sup>154</sup> [https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance\\_nmbr=270](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=270).

<sup>155</sup> Michael Claggett and Terry L. Miller, *Recent Examinations of Mobile Source Air Toxics: A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, U.S. Dept. of Transportation, Federal Highway Administration, [https://www.fhwa.dot.gov/ENVIRONMENT/air\\_quality/air\\_toxics/research\\_and\\_analysis/mobile\\_source\\_air\\_toxics/msatemiissions.cfm](https://www.fhwa.dot.gov/ENVIRONMENT/air_quality/air_toxics/research_and_analysis/mobile_source_air_toxics/msatemiissions.cfm).

<sup>156</sup> <http://www.dot.state.mn.us/stateaid/projectdelivery/environmental/guidance-air-toxics-category2-sample-writeup-new-interchange-new-connector-roadway.doc>.

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- South Coast Air Quality Management District – *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003)<sup>157</sup>
- Sacramento Metropolitan Air Quality Management District – *Mobile Sources Air Toxics Protocol* (2019)<sup>158</sup>

Given that there are eleven public schools (five in Montgomery County and six in Prince George’s County) that are within 500 meters of I-495 and I-270 within the scope of the Project, such as Montgomery Blair High School that directly abuts the Project area, at a minimum the impacts of increased air toxics being breathed day in and day out by young Marylanders must be evaluated. We know young people will be in those facilities nearly half of the year, for years on end, breathing these toxics. MDOT can develop approximations for exposure that these vulnerable populations are likely to experience, and it has an obligation to do so.

For MDOT to have failed to come up with a solution to evaluate MSATs, despite the decades it had available, the numerous data points provided by EPA and other researchers, and the examples provided by other jurisdictions, and instead for MDOT to cut and paste form language into the DEIS to avoid analyzing the risk of getting cancer or experiencing other negative health effects from MSATs, is completely unacceptable.

Additionally, the MSAT analysis presented in Appendix I downplays the significance of the findings regarding this important set of air pollutants. The discussion in the Appendix emphasizes a reduction in MSAT emissions over time and minimizes the large increase in MSAT emissions and, therefore, exposures, associated with the Project (the build versus no-build comparisons). Figures 3-41 to 3-49 show substantial decreases in MSAT emissions over time, but those emission declines have nothing to do with completion of this Project. Those declines are the result of improvements in vehicle and fuel technology mandated by the federal government and have no relation to the Project or the selection of any of its alternatives. Instead, the DEIS should focus on the substantial increase in emissions of MSATs, ranging from 4.1% to 13.3% (see Table 3-36 of Appendix I), directly attributable to the Project. Five of the six analyzed alternatives show these increases, with the range depending on the alternative and the specific pollutant considered.

Although there are no NAAQS established for these pollutants, the Maryland Department of Environmental Quality (MDEQ) has established “screening levels” for a myriad of hazardous air pollutants, <https://mde.maryland.gov/programs/Permits/AirManagementPermits/Documents/2012-Revised->

<sup>157</sup> <http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2>.

<sup>158</sup> <http://www.airquality.org/Residents/CEQA-Land-Use-Planning/Mobile-Sources-Air-Toxics-Protocol>.



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[TAP-Screening-Levels-cas-sort.pdf](#)) with various compound forms of the pollutants listed by MDEQ. This list includes the MSATs analyzed for the Project. For example:

MSAT	1-hour screening level (ug/m3)	8-hour screening level (ug/m3)
acrolein		2.29
benzene	28.0	82.0
1,3 butadiene		29.11
formaldehyde		6.3
naphthalene		36.49
acetaldehyde		5.46
ethylbenzene		5400.0

These chemical compounds are associated with elevated cancer risks and other major health concerns. The MSAT analysis for the Project should assess whether the increased exposures of these pollutants due to the construction and operation of the Project, or any increased exposure, are acceptable, rather than using uncertainties in the science and analytical techniques as justification to sidestep the issue, as is done in the MSAT discussion in Appendix I. A health risk assessment should be performed to more completely assess the potential air quality and health impacts of the Project and to evaluate the need for mitigation measures to reduce the risk of exposing residents and the general public to these dangerous chemicals.

The screening levels shown above and on the MDEQ hazardous air pollutant list are geared toward worker exposures and protections. However, they offer a starting point for analysis. Historically, screening levels or other standards to protect the health of the general population are more stringent than guidelines for worker protection. Nevertheless, the DEIS should use these values to analyze the Project's potential MSAT health impacts. Specifically, it should:

- determine the appropriate screening level from several related hazardous pollutants on the MDEQ list to compare to the MSAT compounds emission rates determined by MOVES runs and analyzed for the DEIS
- re-run MOVES as necessary (see comment regarding speeds, Section II.H.13)
- determine appropriate concentration levels for each MSAT for each appropriate time scale (1-hour, 8-hour, daily, annual, etc.)

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- compare against appropriate screening level
- perform a health risk assessment to indicate increased cancer and other disease risks
- determine if this acceptable to build this project.

The analytical approach described above and the preparation of a health risk assessment to assess health impacts of MSATs from transportation projects is not new. The California Department of Transportation has performed health risk assessments for its projects (*e.g.*, Schuyler Heim Bridge Replacement and Truck Expressway), using guidance provided by the California Air Resources Board (<http://www.airquality.org/Residents/CEQA-Land-Use-Planning/Mobile-Sources-Air-Toxics-Protocol>). It is not clear why the residents in and around the Project area are being accorded less protection than the residents of California.

Finally, the MSAT discussion in Section 3.4 of Appendix I is unclear. The opening discussion suggests that only the portion of the Project area that exceeds FHWA's threshold for a quantitative MSAT analysis was considered in the study. Yet much of the discussion later in the section focuses on the "affected network." This inconsistency should be clarified and an MSAT analysis should be done for the entire affected network, not just those segments that meet FHWA's thresholds.

#### 5. The DEIS Does Not Properly Perform the Necessary Carbon Monoxide Hot-Spot Analysis

The carbon monoxide (CO) hot-spot analysis presented in the DEIS incorrectly applies EPA's CO Hot-Spot modeling guidance, Guideline for Modeling Carbon Monoxide from Roadway Intersections, USEPA-454/R-92-005, Office of Air Quality Planning and Standards, November 1992, in two important respects. Correct application of the Guidance would likely result in higher predicted CO concentrations resulting from the Project, and, potentially, reveal a greater air quality impact from the Project.

The misapplications relate to the temperature and stability class used in the analysis.

Temperature – Table 3-25 indicates that the emission factors were derived for the average temperature for January. However, EPA's Hot Spot Guidance states that the temperature used in a hot-spot analysis should correspond to the average of the ten highest non-overlapping 8-hour CO readings from an appropriately sited CO monitor (page 4-7 of the Guidance). The Project sponsors should calculate the correct temperature to be used, based on the Guidance; re-run the MOVES model to generate correct emission factors; and re-run the CAL3QHC dispersion model to obtain the correct predicted CO concentrations.

Stability class – Page 4-8 of EPA's Hot-Spot Guidance identifies two stability classes that may be used in a CO analysis: stability class D and stability class E. Stability class D applies to urban areas and stability class E applies to rural areas. The Guidance offers advice if an analysis area has a mixture of land uses (*i.e.*, use class D if more than half the area is urban). The air quality analysis for this Project assumed a stability class D (urban) for every analysis site



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within the Project corridor. The Project corridor is 48 miles long. While some of the analysis sites are likely urban in character, and thus appropriately modeled as stability class D, other sites are likely more suburban or rural in character. If the area of these sites is less the half urban in character, they should be modeled with stability class E. Rather than making a blanket assumption that stability class D applies throughout the Project corridor, the Project sponsors should review each analysis site to determine its urban/suburban/rural character and model each site with the appropriate stability class.

It should not be overlooked that the Project will increase CO concentrations at every site that was analyzed, in many cases nearly doubling the expected concentrations under a build scenario compared to the no-build case (see Table 3-29). The build concentrations, while still below the 1-hour and 8-hour CO NAAQS, represent a substantial negative impact on air quality. CO is a poison to the human body, and any increase represents an unneeded exposure to this poison for nearby residents and visitors to the Project area. The build alternatives increase VMT and congestion, reduce vehicle efficiency, and cause much higher concentrations of carbon monoxide at the sites analyzed.

Two other issues should be considered as well with regard to the CO analysis for the Project:

1) The CO analysis in Table 3-29 only looked at intersections and interchanges in the immediate Project corridor. However, the greenhouse gas and MSAT analyses uncovered a much wider “affected network” with many more intersections negatively affected by the Project. CO hot spot analyses were not done at any of these locations. Performing analyses at these locations will almost certainly uncover similar findings, i.e., a substantial increase in CO concentrations. Thus, it appears that the entire region will experience a substantial increase in CO levels as a result of this Project.

2) As pointed out below, there are several other technical errors and omissions in the air quality analysis. When those errors and omissions are corrected and the air quality analysis is redone, it is expected to reveal much higher CO emissions and CO concentrations at the analyzed locations and at locations yet to be analyzed on the “affected network.” Some of those re-calculated CO concentrations may approach or exceed the 8-hour CO NAAQS. If that is the case, then this Project will be the reason for new or exacerbated violations of an air quality standard. This result would be highly significant, impacting public health for years to come, and should not be allowed unless sufficient mitigation measures can be found and implemented to reduce those concentrations to safe levels.

#### 6. Climate Change and Greenhouse Gas Emissions

Construction and operation of this Project will violate the spirit, if not the letter, of the Maryland Greenhouse Gas Reduction Act of 2009 and the Greenhouse Gas Emissions Reduction Act – Reauthorization (GGRA of 2016), which requires a 40% reduction in greenhouse gas emissions (GHGs) by 2030 from 2006 levels. While this target applies across all sectors of the Maryland economy, the transportation sector is required to help achieve this target. Construction

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and completion of this Project will seriously stymie and delay, if not prevent, achievement of this target, placing a greater burden on other sectors of the Maryland economy to reach the target.

The Air Quality Appendix of the DEIS (Appendix I) acknowledges that the transportation sector accounts for 28% of Maryland’s greenhouse gas emissions. Examination of the Greenhouse Gas Emissions Reduction Act 2019 Draft Plan shows that Maryland’s transportation sector’s share will rise to 40% of economy-wide GHGs as other sectors of the economy get cleaner. *See* The Greenhouse Gas Emissions Reduction Act: 2019 GGRA Draft Plan, Appendix C, Figure ES-1, transportation on-road plus transportation non-road. **Yet those figures do not even include the excess GHGs that will be generated by the construction and operation of this Project!**

Appendix I also shows that of the six alternatives analyzed and compared to the no-build alternative, five would increase GHGs substantially. (As noted above, the DEIS indicates that Alternative 5, the one screened alternative that reduces GHGs, has been dropped from further consideration.) The increases range from over 300 thousand tons per year of CO<sub>2</sub>e to nearly 500 thousand tons per year of CO<sub>2</sub>e in the opening year of 2025. This magnitude of GHG increases will occur just within the Project area. Appendix J of the Greenhouse Gas Emissions Reduction Act: 2019 GGRA Draft Plan identifies a number of transportation strategies that the Plan indicates are necessary to even approach the GHG reduction target for the transportation sector. Many of these strategies are challenging to implement from an administrative, financial, logistical and policy perspective. It is unfortunate that the difficult work undertaken to implement these strategies will be undermined, to a large degree, by the construction and operation of this Project.

For example, alternative 8 for this Project shows a 499 thousand ton increase in GHGs compared to the no-build alternative in 2025 (Table 3-38 of Appendix I). To use the units of Appendix J of the 2019 GGRA Draft Plan, this translates to 0.0006 million metric tons of CO<sub>2</sub>e. Table 6.1 of Appendix J identifies a number of strategies and their potential greenhouse gas emission reductions. For example:

- Intermodal Freight Centers Access Improvement 0.017 mmt CO<sub>2</sub>e
- Lead by example - Alternative Fuel Usage in State Fleet 0.004 mmt CO<sub>2</sub>e
- Truck Stop Electrification 0.007 mmt CO<sub>2</sub>e

It is unfortunate that the GHG increase from the Project area will substantially reduce the effectiveness of the above-listed and many other strategies.

The DEIS misleadingly states:

By reducing congestion and increasing speeds, vehicle travel duration and the associated amount of fuel combustion and associated emissions will decrease, minimizing the impacts of GHGs. Thus, the study area would see a net reduction



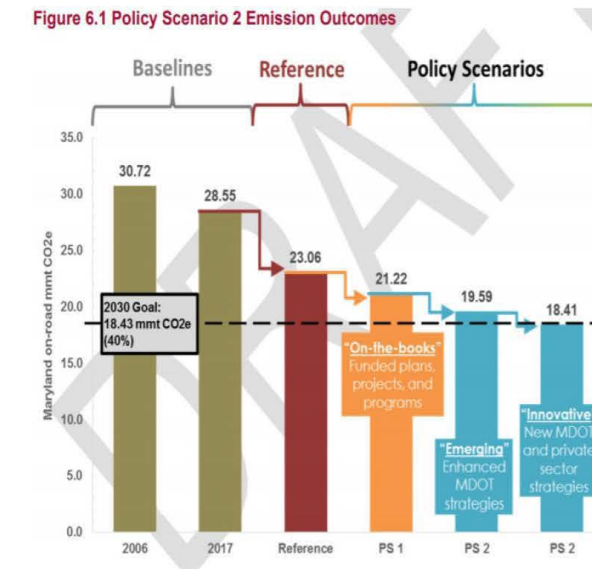
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in GHG emissions under any of the Build Alternatives, even though VMT increases relative to the No Build Alternative and 2015 levels.

DEIS at 4-62. The DEIS claims, but fails to quantify, supposed reductions in GHGs that the build alternatives will bring based on reduced congestion and increased speeds. The Organizations have repeatedly asked the Agencies for the basis of this claim but it has not been provided. Again, what is the basis for this claim in the DEIS? How much will reduced congestion and increasing speeds reduce GHGs in the build alternatives? What levels of reduced congestion are the Agencies relying on, and how does that congestion compare to the level the Agencies rely on elsewhere in the DEIS to make the managed lanes financially viable? To what extent, and how, does this claim account for induced demand or land use changes? The Agencies presumably have performed this calculation in their analysis, so it should be easy to present. Why are the Agencies hiding this impact, and presenting the public with only the final result of changes in GHGs (one which incorporates other factors such as fuel efficiency increases)?

There also is an inconsistency between the DEIS and the 2019 FFRA Draft Plan with respect to GHGs, resulting in incorrect information for Maryland's climate change planning efforts. The DEIS for this project shows a substantial increase in GHGs associated with this Project, as presented in Appendix I. On the other hand, in Appendix J of the 2019 GGRA Draft Plan, MDOT identifies "Managed Lanes (I-270/I-495 Traffic Relief Plan Implementation)" as an "Emerging Policy Scenario" with a 0.051 mmt CO<sub>2</sub>e emission **reduction** (Table 6.1 of Appendix J). Appendix B of Appendix J does not provide any significant information on how these emission reductions were derived. What assumptions was MDOT relying on in the GGRA Draft Plan to reach this conclusion? Clearly there is a discrepancy in the climate change planning scenarios, with the newer calculations in the Project demonstrating that the optimistic assumptions and outcomes for the previous, older Managed Lanes (I-270/I-495 Traffic Relief Plan Implementation) strategy are not correct. When will MDOT update the GGRA Plan to fix these faulty assumptions and incorrect GHG impact? How can MDOT say in one arena the Project will reduce GHGs while saying in another arena that the Project will increase GHGs?

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The attached Figure from Appendix J of the Draft Plan shows how tenuous the achievement of the "40 by 30" target is in the transportation sector, relying on "Emerging" and "Innovative" strategies to achieve the target. Construction and completion of this Project may prevent the emission reduction target from being achieved and so undermine Maryland's GHG policy.

Further, Maryland's 2019 GGRA Draft Plan of 2019 assumes deployment of 600,000 electric vehicles in Maryland by 2030.<sup>159</sup> This assumption forms the bulk of the projected emissions reductions necessary to achieve the "40 by 30" target. Yet, in its 2019 Annual Report,<sup>160</sup> the Maryland Electric Vehicle Infrastructure Council reports that only approximately 23,000 plug-in electric vehicles had been registered in Maryland by the end of 2019. This statistic makes the likelihood of reaching the electric vehicle deployment goal and, therefore, the "40 by 30" target highly unlikely, even without the Project, which will add large amounts of unaccounted for GHGs into the atmosphere and will essentially make Maryland's climate action targets impossible to attain.

<sup>159</sup>

<https://mde.maryland.gov/programs/Air/ClimateChange/Documents/2019GGRAPlan/Appendices/Appendix%20J%20-%20MDOT%20GGRA%20Draft%20Plan.pdf>

<sup>160</sup> [http://www.mdot.maryland.gov/newMDOT/Planning/Electric\\_Vehicle/Documents/2019-ZEEVIC\\_Annual\\_Report\\_Final.pdf](http://www.mdot.maryland.gov/newMDOT/Planning/Electric_Vehicle/Documents/2019-ZEEVIC_Annual_Report_Final.pdf)



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Appendix I of the DEIS does not provide information on the GHGs associated with construction of the Project, postponing disclosure of that impact to the Final EIS. This omission violates the requirements of NEPA because it keeps important information from the public and decisionmakers—information needed to evaluate the potential environmental impacts of the Project—and thereby favors selection of one of the build alternatives. The construction of new highway lanes is an intense activity using many types of equipment. The operation of this equipment will generate large amounts of GHGs. For the 48-mile segment of the Project, the construction will be long-lasting and involve many different pieces of equipment. This activity will use fuel for power and will produce emissions that include greenhouse gasses. It is expected that the greenhouse gas emission tonnage will be large and will, in addition to the increase in GHGs from vehicle operation on the expanded highways, offset much of the progress that Maryland is trying to accomplish in attaining its GHG reduction targets.

The following list contains off-road equipment commonly used in highway construction, with the most common engine and fuel type and the emissions (kg) of CO<sub>2</sub> per 100 hours of operation.

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Aerial Lifts Diesel 739  
Air Compressors Gas 4-Stroke 777  
Bore/Drill Rigs Gas 4-Stroke 326  
Cement and Mortar Mixers Gas 4-Stroke 521  
Concrete/Industrial Saws Gas 2-Stroke 255  
Cranes Diesel 4,600  
Crawler Tractors Diesel 27,030  
Crushing/Proc. Equipment Gas 4-Stroke 935  
Dumpers/Tenders Gas 4-Stroke 467  
Excavators Diesel 5,774  
Forklifts LPG 1,353  
Generator Sets Gas 4-Stroke 830  
Graders Diesel 6,585  
Off-Highway Tractors Diesel 27,030  
Off-Highway Trucks Diesel 27,078  
Other Construction Equipment Diesel 10,190  
Other General Industrial Equipment Gas 4-Stroke 474  
Other Material Handling Equipment Diesel 1,673  
Pavers Diesel 3,810  
Paving Equipment Gas 4-Stroke 655  
Plate Compactors Gas 4-Stroke 367  
Pressure Washers Gas 4-Stroke 750  
Pumps Gas 4-Stroke 621  
Rollers Diesel 3,070



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Rough Terrain Forklifts Diesel 3,200

Rubber Tired Dozers Diesel 7,815

Rubber Tired Loaders Diesel 7,815

Scrapers Diesel 12,412

Signal Boards Diesel 513

Skid Steer Loaders Diesel 724

Surfacing Equipment Gas 4- Stroke 543

Sweepers/Scrubbers Diesel 2,220

Tractors/Loaders/Backhoes Diesel 1,342

Source: National Cooperative Highway Research Program, Greenhouse Gas Mitigation Measures for Transportation Construction, Maintenance, and Operations Activities, Program 25-25, Task 58.

The actual equipment used for construction of the Project will depend on the items and specifications for the Project. There are tools available to calculate the emissions associated with the construction of a roadway project. Section 3.6 of Appendix I of the DEIS identifies one tool available to calculate greenhouse gas emissions from construction of the project: Infrastructure Carbon Estimator (ICE), [https://www.fhwa.dot.gov/environment/sustainability/energy/tools/carbon\\_estimator/](https://www.fhwa.dot.gov/environment/sustainability/energy/tools/carbon_estimator/). However, to apply this tool requires specific details about the project and its construction methods which are not generally available to the public reviewers of a DEIS.

Examination of the literature, however, shows a number of studies that have examined GHGs from construction of roadways and that can be used to provide generalized estimates of greenhouse gas emissions from the construction of this Project. These include Chehovits and Galehouse, *Energy Usage and Greenhouse Gas Emissions of Pavement Preservation Processes for Asphalt Concrete Pavements* (July 2010)<sup>161</sup>; Williams-Derry, *Increases in Greenhouse-Gas Emissions From Highway-Widening Projects*, (Oct. 2007)<sup>162</sup>; Egis *Greenhouse Gas Emissions Mitigation in Road Construction and Rehabilitation A Toolkit for Developing Countries*<sup>163</sup>; etc. Chehovits and Galehouse calculated that construction of a new roadway (which would be the

<sup>161</sup> [https://www.pavementpreservation.org/icpp/paper/65\\_2010.pdf](https://www.pavementpreservation.org/icpp/paper/65_2010.pdf).

<sup>162</sup> <http://www.jtc.sala.ubc.ca/reports/analysis-ghg-roads.pdf>.

<sup>163</sup> [https://www.esmap.org/sites/default/files/esmap-files/Road\\_Emission\\_Optimization\\_User\\_Manual%5B1%5D.pdf](https://www.esmap.org/sites/default/files/esmap-files/Road_Emission_Optimization_User_Manual%5B1%5D.pdf).

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case for this Project) generates 24.1 lbs of greenhouse gas emissions per square yard. Using this emission factor and assuming 12-foot-wide lanes, 6-foot-wide shoulders on each side of the roadway, and new roadways in each direction for the Project yields construction greenhouse gas estimates of:

One lane, each direction	8, 143 tons greenhouse gasses
Two lanes each direction	12, 216 tons greenhouse gasses

While these are very large tonnages, they are still conservative figures. They do not include several important additional considerations that would lead to higher greenhouse gas emissions:

- Bridge construction. The estimates do not include additional emissions due to bridge construction, including the American Legion Bridge. FHWA estimates that bridge construction could increase construction emissions by 30% (Infrastructure Carbon Estimator Final Report and User's Guide).
- Routine Maintenance. Typically, roadways require repaving after 15 years of use and reconstruction after 30 years of use. They also require snow removal and vegetation management. This could lead to another 120 gallons of diesel fuel consumed for each lane mile of the Project. These impacts have also not been added to the above estimates.
- Operational impacts on the existing facility. During construction, there will likely be impacts on the existing roadway. These include lane closures, lane narrowing, and detours. These impacts will affect traffic speeds, causing traffic to move at a slower speed and concomitantly increasing greenhouse gas emissions. The actual increase in emissions will depend on the length and duration of the actual lane closures and detours.

In reality, therefore, the actual greenhouse gas emissions due to the construction of the Project will likely be much higher than the conservative tonnage estimates calculated above.

The Sierra Club Maryland Chapter expressed these concerns in its comments to the Board of Public Works on the I-495 and I-270 P3 Program on June 4, 2019 ("Climate Change Impacts of Proposed Expansion of I-270 and I-495" Author: David Smedick, Policy Director, Maryland Sierra Club), but they still were not addressed in the DEIS.

Thus, GHGs from construction, in combination with the increase in GHGs from the operation of the expanded highway (up to 499 thousand tons per year of CO<sub>2e</sub> plus the conservative estimate of 12 thousand tons of CO<sub>2</sub> emissions associated with the construction of the project's roadways) yield a massive increase in GHGs associated with this Project and puts Maryland's greenhouse gas emissions reduction targets seriously in jeopardy.



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**7. The DEIS Fails to Consider the Relationship Between Air Quality and Covid-19; the Agencies Must Release a Supplemental EIS That Does So**

Especially given the current environment, it is not acceptable for the DEIS to not include an analysis of air quality impacts on public health. As of writing these comments, the two counties that this project runs through have the highest levels of COVID-19 infections and deaths in Maryland (32,800 infections and 835 deaths in Prince George’s County, 25,692 infections and 832 deaths in Montgomery County).<sup>164</sup> Many of these deaths are in communities that are near I-495 and I-270.

Since COVID-19 began devastating communities in Maryland and throughout the nation, researchers have been hard at work understanding the illness. One thing has become clear: higher levels of air pollution are correlated with higher incidence and mortality from COVID-19. Some of the studies that have related negative health outcomes from COVID-19 and automobile-related air pollution have found:

- “Chronic [NO<sub>2</sub>] exposure could be an important contributor to the high COVID-19 fatality rates observed.”<sup>165</sup>
- “Statistically significant, positive associations between long-term exposure to NO<sub>2</sub> and COVID-19 case-fatality rate and mortality rate, independent of PM<sub>2.5</sub> and ozone.”<sup>166</sup>
- “We found that an increase of 1 µg/m<sup>3</sup> in the long-term average PM<sub>2.5</sub> is associated with a statistically significant 11% (95% CI, 6 to 17%) increase in the county’s COVID-19 mortality rate.”<sup>167</sup>

<sup>164</sup> <https://coronavirus.maryland.gov/> Accessed October 29, 2020.

<sup>165</sup> Ogen Y., *Assessing Nitrogen Dioxide (NO<sub>2</sub>) Levels as a Contributing Factor to Coronavirus (COVID-19) Fatality*, The Science of the Total Environment, 726, 138605 (Apr. 11, 2020), <https://doi.org/10.1016/j.scitotenv.2020.138605>.

<sup>166</sup> Liang, D., Shi, L., Zhao, J., Liu, P., Schwartz, J., Gao, S., Samat, J., Liu, Y., Ebelt, S., Scovronick, N., & Chang, H. H., *Urban Air Pollution May Enhance COVID-19 Case-Fatality and Mortality Rates in the United States*, The Innovation (Oct. 8, 2020), <https://doi.org/10.1016/j.xinn.2020.100047>.

<sup>167</sup> X. Wu et al., *Air Pollution and COVID-19 Mortality in the United States: Strengths and Limitations of an Ecological Regression Analysis*, Science Advances 2020; 6 : eabd4049 (Nov. 4, 2020), <https://advances.sciencemag.org/content/advances/6/45/eabd4049.full.pdf>.

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- “Short-term exposure to higher concentrations of PM<sub>2.5</sub>, PM<sub>10</sub>, CO, NO<sub>2</sub> and ozone is associated with an increased risk of COVID-19 infection.”<sup>168</sup>
- “[Re-]enforcing pollutant release limits is indeed related to health betterment in society”, “cumulative exposure to HAPs at levels below reference concentration (RfC), an estimate of daily inhalation exposure likely to be without an appreciable risk of deleterious effects during a lifetime (EPA 2020d), may heighten population vulnerability to COVID-19 mortality,” and “signals of cumulative exposure [to air toxics] impacting COVID-19 mortality.”<sup>169</sup>
- PM<sub>2.5</sub> contributed ~15% to COVID-19 mortality worldwide, 27% in East Asia, 19% in Europe, and 17% in North America.<sup>170</sup>
- According to our results, a one µg/m<sup>3</sup> increase in PM<sub>2.5</sub> (about 15% of the average concentration of PM<sub>2.5</sub>) increases the number of severe cases by roughly 2% and same-day deaths by 3% from the mean case rate in a county.<sup>171</sup>

Based on these studies, additional analysis is needed in the DEIS to demonstrate how this Project will or will not adversely impact communities experiencing higher levels of mortality and other negative health impacts from COVID-19.

<sup>168</sup> Zhu, Y., Xie, J., Huang, F., & Cao, L., *Association Between Short-Term Exposure to Air Pollution and COVID-19 Infection: Evidence from China*, Science of the Total Environment, 727, 138704 (July 20, 2020), <https://doi.org/10.1016/j.scitotenv.2020.138704>.

<sup>169</sup> Petroni, Michael, Dustin Hill, Lylla Younes, Liesl Barkman, Sarah Howard, I Brielle Howell, Jaime Mirowsky and Mary B Collins, *Hazardous Air Pollutant Exposure as a Contributing Factor to COVID-19 Mortality in the United States*, Environmental Research Letters, Volume 15, Number 9 (Sept. 11, 2020), <https://iopscience.iop.org/article/10.1088/1748-9326/abaf86#:~:text=Early%20inquiry%20suggests%20preexisting%20conditions,exposure%20could%20exacerbate%20this%20relationship.&text=We%20find%20that%20an%20increase,inc rease%20in%20COVID%2D19%20mortality>.

<sup>170</sup> Andrea Pozzer et al., *Regional and Global Contributions of Air Pollution to Risk of Death from COVID-19*, Cardiovascular Research (Oct. 26, 2020), <https://academic.oup.com/cardiovascres/advance-article/doi/10.1093/cvr/cvaa288/5940460>.

<sup>171</sup> Wes Austin, et al., *COVID-19 Mortality and Contemporaneous Air Pollution*, International Center for Public Policy, Working Paper 20-16 (Oct. 2020), <https://icepp.gsu.edu/files/2020/10/paper2016.pdf>.



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#### 8. The DEIS and Its Reference to Visualize 2045 Lack Clarity in Data Sets and Prevent Meaningful Public Review

A build alternative from this Project cannot be approved unless it is included in a regional emissions analysis and “the project’s design concept and scope have not changed significantly from those that were included in the regional emissions analysis . . .” 40 C.F.R. § 93.121 (a).

Appendix I states that the managed lanes for I-270 and I-495 are included in the NCRTPB Fiscal Year (FY) 2019 – 2024 TIP (Visualize 2045).<sup>172</sup> DEIS, App. I, at 23. Appendix B of *Visualize 2045* mentions managed lanes for I-270 and I-495 as stated, but that is where the clarity ends. There are four discrepancies that need to be resolved.

First, *Visualize 2045* relies on a base case of 2019 for its projections. Yet all of the analysis presented in Appendix I is based on 2016. The previously approved Constrained Long Range Plan (CLRP) was 2016-based, but Appendix B of the 2016 CLRP does not include the managed lane project. It is unclear whether the data being shown in the DEIS corresponds to *Visualize 2045* and its base case of 2019 and if so how that is being presented as a 2016 base case, or if outdated modeling is being used. All work should only rely on data used in *Visualize 2045* and the assessment should be redone to reflect that data.

Secondly, only one option is presented for managed lanes on I-270 and I-495 in *Visualize 2045* in terms of modeling assumptions. Yet five alternatives are proposed in the DEIS that include High Occupancy Toll (HOT) lanes and Express Toll Lanes (ETL). Since no ozone precursor information is presented, nor is it made clear which alternative was considered in *Visualize 2045*, it is not possible to evaluate if some, if not most, of the alternatives increase emissions beyond the approved CLRP or even beyond the approved conformity budgets. It appears that *Visualize 2045*’s conformity analysis assumes mostly ETL lanes and some High Occupancy Vehicle (HOV) lanes, but no HOT lanes.<sup>173</sup> It also appears *Visualize 2045*’s analysis is based on the entire 70 miles of the P3 Program with a completion year of 2025 but that appears extremely unlikely and this DEIS is only about a segment of the Program. Table 3-39 of Appendix I shows that CO<sub>2</sub> emissions from Alternatives 8, 9, 10 13B, and 13C range from an increase in CO<sub>2</sub> emissions by 7.3% to 12.4% in the 2025 opening year. Depending on which alternative was included as the baseline assumptions in *Visualize 2045*, it is quite possible that alternative could lead to future emissions that do not conform with the CLRP, but this analysis does not provide any clarity as to whether they would and so should be redone.

Thirdly, there is no evaluation of 2030 or another year between 2025 and 2040. Conformity regulations require no more than 10 years between conformity evaluations. 2030 was the year chosen in *Visualize 2045*, and therefore will be assumed to be the most logical year to

<sup>172</sup> FY 2019 – 2024 Transportation Improvement Program for the National Capital Region (Oct. 17, 2018), <https://www.mwcog.org/visualize2045/document-library/>.

<sup>173</sup> “Air Quality Conformity Analysis,” *Visualize 2045, A Long-Range Transportation Plan for the National Capital Region*, at B-43 to B-45 (Oct. 17, 2018).

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choose. It is particularly troubling that 2030 was not included in the DEIS because that year appears to have the greatest potential to lead to conformity problems given that the modeled emissions for both VOC (Exhibit 17) and NO<sub>x</sub> (Exhibit 18) are the closest to violating the Tier 2 budgets (they both also violate the Tier 1 budgets already). In both cases the projected ozone season day emissions are within 5 tons per day of the Tier 2 budget. As a result, evaluation of 2030 is necessary for an acceptable analysis.

Finally, these discrepancies could have been resolved had model inputs for MOVES been provided. In Appendix D of the Air Quality Technical Report, RunSpecs for MOVES were provided. While these would be necessary to conduct a thorough review of the inputs used in the modeling as well as the outputs that were created by MOVES, they do not provide the truly necessary data, namely the MySQL input and output databases from the MOVES runs. Without this information, it is impossible to determine if MDOT is relying on valid assumptions for vehicle speeds, VMT growth, vehicle ages, the split between diesel and gasoline vehicles, etc. This also makes it impossible to compare the alternatives to what was modeled in *Visualize 2045*. Finally, it makes it impossible to evaluate whether the alternatives that were not the basis for *Visualize 2045* would indeed allow this project to remain under conformity budgets. Without this information the air quality assessment cannot be considered a truly open public process and therefore it should be revised and a new public comment period provided to allow for evaluation of this additional data and revised analysis.

#### 9. The DEIS’s (Insufficient) GHG and Other Emissions Analyses are Based on Data that Were Already Outdated When the DEIS was Published

The DEIS ignores EPA’s and National Highway Traffic Safety Administration’s revocation of California fuel efficiency standards and their weakening of national fuel efficiency standards.<sup>174</sup>

The DEIS states:

It should be noted that the Safer Affordable Fuel Efficient (SAFE) Vehicles Rule, finalized on March 30, 2020 may affect the EIA [Energy Information Administration] estimates. This new rule would require less stringent CAFE and CO<sub>2</sub> emissions standards through 2026 compared to the standards implemented in 2012 which it replaces. . . . A major factor in mitigating the GHG emissions associated with this increase in VMT is more stringent fuel economy standards. EIA projects that vehicle energy efficiency, thus GHG emissions, on a per-mile basis, will improve by 28 percent between 2012 and 2040.

<sup>174</sup> The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24,174 (April 30, 2020); The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, 84 Fed. Reg. 51,310 (Sept. 27, 2019).



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DEIS, at 4-62; *id.*, App. I, at 118-19. The Agencies appear to: 1) recognize the significance of fuel efficiency standards, and 2) recognize the significant roll back of those standards. Nevertheless, the emissions analyses in the DEIS rely on fuel efficiency gains from now-revoked standards. The two final rules mentioned above, revoking California’s waiver (whose standards Maryland also had adopted) and the SAFE Vehicles Rule, contain detailed analyses of their impacts on fuel efficiency. The rulemaking dockets also contain detailed analyses disputing the rules’ analyses. Do the Agencies believe the rules’ analyses are scientifically sound? Why does the DEIS fail to address the impact of the two rules? What would the GHG emissions from the build alternatives be under the currently effective legal landscape?

Whatever the Agencies’ reasoning for ignoring these issues in the DEIS, they must supplement the DEIS to analyze GHG and other air emissions using modeling based on currently effective fuel efficiency standards. The Agencies certainly should not reach a decision based only on what the air emissions from the various alternatives would have been under now revoked standards.

Not only does the 2020 SAFE Vehicles Rule impact the emission estimates the DEIS presents that relied on Energy Information Administration (EIA) data, the SAFE Vehicles Rule also impacts the entirety of the MOVES model that was used throughout the DEIS and Visualize 2045, including for determining conformity. The MOVES model is based on the earlier fuel efficiency standards, so the Agencies are relying on a now outdated model. The SAFE Vehicles Rule changes fleet size, fleet age distribution, fleet mix of vehicle types, VMT by vehicle type, and VMT growth rates.<sup>175</sup> Any planning done with an outdated MOVES model lacks a basis in reality and is unlawful. As explained in comments on the SAFE Rule: “The SAFE Vehicles Rule, by changing the fundamental assumptions of vehicle fuel-efficiency, would invalidate California’s air quality emissions model (known as EMFAC) which is used by the State to meet the Federal Highway Administration’s transportation planning requirements.”<sup>176</sup> The DEIS does not explain how the Agencies have adjusted the model (it appears they have not).

Moreover, the increased emissions of all air pollutions from the California waiver revocation and the weakened SAFE Vehicles Rule impact the ability to meet the Ozone and other NAAQS. The Metropolitan Washington Council of Governments and National Capital Region Transportation Planning Board commented that they “are concerned that any relaxation of the 2012 Greenhouse Gas and CAFE Final Rule will make it increasingly difficult for the region to realize the reductions in NO<sub>x</sub> emissions needed to comply with the 2015 Ozone

<sup>175</sup> See North Carolina Department of Environmental Quality, *Comments on Proposed Rulemaking and Draft Environmental Impact Statement for “The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks”*, Docket ID Nos. NHTSA-2018-0067/EPA-HQ-OAR-2018-0283 (Oct. 26, 2018), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2018-0283-4209>.

<sup>176</sup> Letters from Industry Coalition to Diane Feinstein and California Congressional Delegation, (September 10, 2019 and June 12, 2019).

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NAAQS.”<sup>177</sup> The DEIS does not explain if or how the new standards were taken into account in determining the project’s conformity (it appears they were not). Have the Agencies evaluated whether the build alternatives would cause or contribute to a NAAQS violation under the current legal landscape, with the SAFE Rule and waiver revocation, as well as all of the current Administration’s rollbacks of regulations that provided for decreased emissions of ozone, PM<sub>2.5</sub>, and other criteria pollutants? The Agencies must do so before moving forward and present the results for public comment.

Further, the GHG emissions estimates do not appear to consider the effects of induced demand or land use changes after the highways are expanded.

The Agencies must start over and properly analyze the proposed alternatives’ impacts on air emissions, including GHGs, based on accurate and current laws, data, and models.

#### 10. The DEIS’s Air Quality Environmental Justice Discussion is Insufficient

Appendix E and Section 21 of Chapter 4 of the DEIS purport to address environmental justice concerns. These sections of the DEIS are completely inadequate to address the air quality concerns of environmental justice communities negatively impacted by this Project. They are inadequate in two significant respects:

- 1) These sections misrepresent the discussion and findings from the air quality studies carried out for the Project and documented in Appendix I. They minimize the outcome of the air quality studies by focusing on their least negative aspects. For example, Chapter 4 Section 21.5.B.b states “... the Build Alternatives are not predicted to increase emission burdens compared to the No Build Alternative in 2040, aside from a slight increase in ghg emissions; nor cause or contribute to a violation of the NAAQS, no long-term or regional air quality impacts are anticipated, and no mitigation measures are warranted.” (Page 4-138). Yet Appendix I tells a different story. Tables 3-34 through 3-36 show increases in MSATs in 2025 for all likely build alternatives and continue to show increases in 2040 for some MSATs for some alternatives. Similarly, Tables 3-37 through 3-39 show increases in greenhouse gas emissions for all likely build alternatives with continuing increases in greenhouse gas emissions for all likely build alternatives in 2040. Thus, the Project corridor and the environmental justice communities will be subject to increased MSAT and greenhouse gas emissions starting in 2025 and continuing every year through at least 2040! The above quote also downplays the near doubling of projected CO concentrations due to this Project at analyzed locations and likely elsewhere in the Project area (the affected network) as well.

<sup>177</sup> MWCOG Comment on the Proposed SAFE Vehicle Rule for CAFE and Tailpipe Carbon Dioxide Emissions Standards for Model Year 2021-2026 Light-Duty Vehicles, Docket ID No. EPA-HQ-OAR-2018-0283 (Oct. 17, 2018), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2018-0283-3326>.



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- 2) These sections are incomplete because it does not identify additional air quality sources and stressors for the environmental justice communities. Industrial and commercial emissions sources such as power plants, freight yards, rail yards, truck terminals, bus terminals, ports, depots, etc. have historically been sited in environmental justice communities and disproportionately negatively affect these communities. The increased emissions from the Project would impose an additional emissions burden on these communities. The Environmental Justice Chapter and Appendix must address this aspect of the Project. The Project sponsors must inventory the Project corridor and the affected network to identify these types of industrial and commercial emission sources and assess the impact of the Project's new and additional emissions, and downgraded air quality, on those communities already suffering from excess air pollution from other sources.
- 3) We also agree with the deficiencies identified by Ron Bialek and Eyal Li in their testimony presented during the Project public hearings.

Ron Bialek, Public Health Foundation CEO, stated in his September 3, 2020 testimony:

One of the most grievous examples of how human health was not adequately considered is found in Chapter our in Appendix 8 [sic], both addressing environmental justice and the impact on minority communities. The study notes that there are 199 black groups within the Environmental Justice Analysis area and 107 have minority populations equal to or greater than 50 percent. Unfortunately, the health impacts of minority communities have been excluded from the document. Chapter four in Appendix E states that excess emissions may be reduced. Even in the unlikely event this is true, those emissions will be closer where people live and play with many fewer trees to filter the pollutants. And what about emissions increases on the roads to and from the Beltway to 270? In Chapter four, there are 61. The following statement is made. Information is currently incomplete or unavailable to credibly predict the study's specific health impacts. This is an inaccurate statement. Valid and reliable data exist and science exists to model and predict health impacts. Unfortunately, none of these are addressed in the study. And looking at the study team of over 70 individuals, I was unable to find a single individual with an MPH degree in epidemiology, with expertise to analyze the data and human health impacts. The absence of facts, data and data sources about the impacts on human health and no evidence sound public health science has been used in developing D- DEIS is unacceptable and is an embarrassment to the state and to the citizens. In the event that any of the global trends continue to be considered, this DEIS must be redone. That is a legal requirement.<sup>178</sup>

<sup>178</sup> I-495 and I-270 Managed Lanes Study Joint Public Hearing, at 11-12 (Sept. 3, 2020), [https://495-270-p3.com/wp-content/uploads/2020/10/MLS\\_JPH\\_September\\_3\\_Combined.pdf](https://495-270-p3.com/wp-content/uploads/2020/10/MLS_JPH_September_3_Combined.pdf).

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Eyal Li, an environmental engineer at the Union of Concerned Scientists, stated:

On behalf of our 24,000 supporters in Maryland and our network of more than 26,000 scientists, engineers and public health professionals nationwide, you see us strongly opposes the proposed addition of lanes to I-495 and I-270 and supports a No Build option. We urge the MDOT SHA to evaluate additional alternatives for detailed study that provide equitable and sustainable mobility options for Maryland residents, including public transit, transportation, demand management on existing roadways, and transit-oriented land use that weren't considered in-depth in the DEIS.

UCS is particularly concerned about the project's disproportionate health impacts on marginalized communities near the highways. The race and ethnicity characteristics of the analysis area reveal that Latino, Asian Americans, and African-Americans are overrepresented by 50, 49, and 9 percent, respectively, while white residents are underrepresented by 37 percent compared to their population statewide. In 2019, UCS released a study showing African-American and Latino Marylanders are exposed to levels of traffic-related air pollution that are 12 and 11 percent higher than the average, while white Marylander's breathe air that is eight percent cleaner than the average Maryland resident. Chronic exposure to particulate matter pollution from vehicles causes increased death rates attributed to cardiovascular disease and respiratory ailments, including COVID-19, among other conditions. Given the systematic oppression of marginalized groups throughout history, we call on the Maryland DOT to shoulder a greater burden of proof that its actions are not harmful to the health and well-being of minority populations, low-income populations and/or indigenous peoples.<sup>179</sup>

#### 11. The DEIS's Analysis of Construction Impacts is Insufficient

The DEIS fails to analyze harmful air emissions from construction activities, including increased particulate matter, silica dust particles, CO, and greenhouse gas emissions. The Agencies attempt to justify this failure by claiming that construction will be segmented and each construction segment will take less than five years. DEIS at 4-158.

This justification does not meet the Agencies' obligations under NEPA or the CAA. First, it is unlawful to segment a project in order to avoid analyzing the impacts from construction. Second, construction, even within the currently studied segment of the plan, will certainly take more than five years. Even ignoring the 32 additional miles of proposed construction that will be needed for the overall P3 Program, this study is proposing to construct managed lanes on 48 miles and re-construct the American Legion Bridge. By contrast, the \$2 billion Virginia I-495

<sup>179</sup> I-495 and I-270 Managed Lanes Study Joint Public Hearing, at 5-6 (Aug. 18, 2020), [https://495-270-p3.com/wp-content/uploads/2020/10/MLS\\_JPH\\_August\\_18\\_Combined.pdf](https://495-270-p3.com/wp-content/uploads/2020/10/MLS_JPH_August_18_Combined.pdf).



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Capital Beltway High-Occupancy Toll Lanes project that added four new managed lanes to 14 miles of the Beltway contracted for five years of construction and took 4.5 years to construct.<sup>180</sup> The DEIS states that “It is anticipated that construction of any phase will last approximately four to five years.” DEIS, at 4-157. However, the DEIS does not explain the basis for this expectation. The Agencies have not specified how long they intend the construction to be under contract, but it certainly will be longer than 5 years even for phases, let alone for the entire P3 program. The Agencies must analyze the air emissions and other impacts construction will have on the environment and human health and provide that analysis to the public in a supplemental EIS.

The DEIS states that “A quantitative analysis of the construction related GHG emissions for the Preferred Alternative will be conducted using FHWA’s Infrastructure Carbon Estimator tool. The results of that analysis will be included in the FEIS.” DEIS, at 4-158; *see also* DEIS, App I, at 119. Delaying an analysis until after the public comment period on the DEIS has closed prevents meaningful public comment and informed decision-making and violates NEPA. Why are the Agencies waiting until an FEIS (which they plan to release at the same time as the ROD) to consider and provide the public with such important information about the Project’s impacts? There is no justification for withholding this information or rushing the Project through without considering it. The Agencies must provide that information to the public before proceeding before proceeding with the NEPA process.

Further, the assertion in the DEIS that detours need not be considered in an air quality analysis of a transportation project is misleading. The stated reference only applies to the maximum allowed duration of a detour before it must be included in the modeling analysis for a project-level “hot-spot” conformity determination in a CO, PM<sub>10</sub> or PM<sub>2.5</sub> nonattainment or maintenance area. There is no prohibition against considering the air quality impacts of detours and traffic diversions in an air quality analysis conducted under NEPA.

The EIS for this Project should assess and report the potential air quality impacts of detours and diversions that are in place for at least one year. For those locations where traffic detours and diversions result in air quality impacts, appropriate mitigation measures must be identified. Detours and diversions have the effect of adding traffic to existing roadways, and/or narrowing roadways and causing lane closures, thereby reducing those roadways’ capacity. This leads to higher traffic volumes, lower speeds and greater congestion, resulting in greater emissions and higher pollutant concentrations, which negatively affect public health. To address the health concerns of residents and visitors to the Project area during construction, a thorough, detailed, project-wide consideration of detours and diversions should be included in the air quality studies for this Project.

<sup>180</sup> U.S. Dept. of Transp. Federal Highway Admin, Public-Private Partnership (P3) Procurement: A Guide for Public Owners (March 2019), [https://www.fhwa.dot.gov/ipd/p3/toolkit/publications/other\\_guides/p3\\_procurement\\_guide\\_0319/appb.aspx](https://www.fhwa.dot.gov/ipd/p3/toolkit/publications/other_guides/p3_procurement_guide_0319/appb.aspx).

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Also, the DEIS discusses air quality mitigation measures in generic terms. More information must also be presented on mitigation measures to protect and limit exposure to harmful pollutants for construction workers.

It is important to raise and discuss worker safety and health issues in the DEIS, rather than leaving it as an item in the Project’s final construction details and specifications, where this issue is often addressed. Typically, a state DOT may insert a simple catch-all that imposes all responsibility on the contractor, requiring the contractor to observe and follow all laws, rules, and regulations.

Working on transportation facilities can be hazardous for the contractor’s employees. Studies have shown that exposure to harmful levels of pollutants are frequently encountered. For example, a recent report indicated that “Airborne levels of crystalline silica associated with 7 major road repair tasks . . . indicated a significant risk of overexposure to crystalline silica for workers who performed the 5 highway repair tasks involving concrete.”<sup>181</sup> This type of information should be made available to the public and decision makers so that projected costs can be more fully assessed and risks to worker health can be weighed with other risks and benefits of the Project.

## 12. The DEIS Ignores the Impacts of Construction-Generated Silica Dust, Which is a Public Health Hazard

The roads and bridges deconstruction processes required for the Project will create massive amounts of toxic crystalline silica construction dust. Such toxic air pollution will cause respiratory diseases in children, grandchildren, and the entire public, especially for those closer to I-495 and I-270.<sup>182</sup> These illnesses include asthma, silicosis, chronic obstructive pulmonary disease (COPD), and lung cancer.<sup>183</sup> This is an urgent public health issue. And it is not addressed in the DEIS.

<sup>181</sup> David J. Valiante, et al., Highway Repair: A New Silicosis Threat, American Journal of Public Health Research and Practice, Vol 94, No. 5, 878 (May 2004), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448352/pdf/0940876.pdf>.

<sup>182</sup> *Id.* at 876-80; *Examples of Silica Dust-Producing Tasks, Highway/Road Construction and Repair*, New Jersey Occupational Health Surveillance Program Silicosis Surveillance & Intervention Project, <https://www.nj.gov/health/workplacehealthandsafety/documents/silicosis/highwayphotos.pdf>; *Silicosis There is No Cure But it Can be Prevented!*, New York State Department of Health (June 2017), [https://www.health.ny.gov/environmental/workplace/lung\\_disease\\_registry/docs/silicosis\\_road.pdf](https://www.health.ny.gov/environmental/workplace/lung_disease_registry/docs/silicosis_road.pdf).

<sup>183</sup> *Danger in the Air: Health Concerns for Silica in Outdoor Air*, Environmental Working Group (Sept. 25, 2014), <https://www.ewg.org/research/sandstorm/health-concerns-silica-outdoor-air>.



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According to the National Cancer Institute and OSHA, and various other U.S. and British sources, workers in such environments must wear respiratory protection masks and take various other precautions. As the I-495 and I-270 road and bridge construction occurs, with the continuous generation of harmful silica dust, without significant mitigation measures being taken, it will become necessary for schools to prohibit outdoor recess, sports events, and all outdoor activities (no walking, no bicycling). Some schools may have to shut down, such as Julius West Middle School, Farmland Elementary, Carderock Elementary, and Walter Johnson High. And what about precautions for others, of whatever age, should they also stay indoors and then need to wear respiratory facemasks when they go outside?

The massive and continuous generation of toxic silica dust will require major mitigation measures, such as vacuum systems and watering by tanker trucks, which are only marginally effective.<sup>184</sup> There is also the issue of disposal of this toxic material and its environmental impact. Moreover, these necessary precautions will require more equipment and workers and will generate more traffic and pollution (and costs) during the deconstruction phase. Yet, none of this is covered in the DEIS.

### 13. Technical Errors and Omissions

Review of the air quality analysis for the Project revealed several technical errors and omissions, all of which, individually and in combination, tend to underestimate vehicular emissions and air pollutant concentrations and, therefore, understate potential impacts to overall air quality and public health. Specifically:

- Page 42 of Appendix I indicates that posted speeds were used to generate emission factors for the dispersion analysis and Page 96 indicates average speeds were used for the greenhouse gas and MSAT analyses. These data are not appropriate for use in the air quality analysis at issue here. Peak hour speeds, rather than posted speeds and average speeds, should be used. Peak hour speeds are slower than posted and average speeds, thereby producing higher emissions and higher concentrations of pollutants. This makes the analysis more conservative and more reflective of periods associated with higher levels of air pollution. Peak hour speeds are typically used on project-level air quality analysis for transportation projects. The Traffic Technical Analysis Report (Appendix C) indicates that peak-hour speeds are available. Consequently, all the air quality analyses must be redone with peak hour speeds. This affects the hot-spot analysis and the regional or mesoscale analyses (the MSAT and greenhouse gas analyses).

<sup>184</sup> This reference concerns air quality criteria and mitigation measures for silica dust for above ground construction works in a project. *MetroTunnel Environmental Management Framework*, Melbourne MetroRail Authority, at 32-33 (Dec. 2019), [https://metrotunnel.vic.gov.au/\\_data/assets/pdf\\_file/0006/96135/Environment-Management-Framework-updated-December-2019.pdf](https://metrotunnel.vic.gov.au/_data/assets/pdf_file/0006/96135/Environment-Management-Framework-updated-December-2019.pdf). This Project should also have these kind of mitigation measures, particularly when road, soundwall, and bridge demolition will occur near “sensitive receptors,” including schools.

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- The state-of-the-art practice for an air quality analysis for a transportation project is to examine three years for analysis. Typically, the opening year is analyzed, an intermediate year (such as 10 years after opening) and an outer year (such as 20 years after opening). This is done to capture the year with highest emissions, combining two different competing effects. Due to improvement in vehicle technology and cleaner fuels, emissions are expected to decrease into the future. On the other hand, increasing VMT with time leads to higher emissions. By analyzing appropriately separated years, the year with the highest emissions, and potentially the greatest air quality and public health impact, is captured. The analysis for this project did look at the opening year but instead chose to analyze a year 15 years after opening. By doing so, the analysis may have missed the year with the highest emissions and therefore have understated the potential emissions and air pollutant concentrations.
- Examination of the Traffic Technical Analysis Report discloses that no indication of the effects of induced demand were accounted for in the future traffic estimates. Induced demand is a well-known phenomenon that results in additional travel when highways are expanded, or capacity is increased. This means that for the air quality analyses, the traffic volumes used are underestimated and speeds are overestimated, leading to lower emission estimates than would actually occur. Techniques are available to account for induced demand, such as Susan Handy and Marlon Boarnet, *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions Policy Brief*, California Environmental Protection Agency Air Resources Board (Sep. 30, 2014), [https://ww2.arb.ca.gov/sites/default/files/2020-06/Impact\\_of\\_Highway\\_Capacity\\_and\\_Induced\\_Travel\\_on\\_Passenger\\_Vehicle\\_Use\\_and\\_Greenhouse\\_Gas\\_Emissions\\_Policy\\_Brief.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-06/Impact_of_Highway_Capacity_and_Induced_Travel_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_Brief.pdf), and Volker et al., *Induced Vehicle Travel in the Environmental Review Process*, Transportation Research Record (June 15, 2020).
- There is a discrepancy in what is defined as the project area for the hot-spot analysis and for the MSAT and greenhouse gas analyses. There should only be one project area for this Project. The hot-spot analysis considered intersections and interchanges in the immediate Project corridor, while the other two analyses looked at the “affected network” as determined from changed conditions on various roadways based on runs of the National Capital Region Transportation Planning Board transportation demand model. The transportation demand model identified many additional roadways that are affected by the Project. This affected network now becomes the project area for air quality analysis purposes. The hot-spot analysis should examine the intersections in the affected network to determine if any meet the criteria for a hot-spot analysis. If any do, then they must undergo an analysis. This will provide a more complete picture of potential air quality impacts of the Project.
- Appendix I mentions the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, finalized on March 30, 2020. This new rule requires less stringent emission standards through 2026 compared to the standards which they replace. Since these standards have gone through the review and public processes and have been finalized, they should be



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part of the air quality analysis for this Project. Emission rates for the hot-spot analysis and the MSAT and greenhouse gas analyses should be recalculated and the appropriate comparisons for each analysis re-examined. In general, this new rule is expected to show higher emission rates and greater levels of air pollutants.

The fact that every error and omission results in an underreporting of emissions and air quality effects is troubling. The outcome is a minimization and an undervaluation of the impacts this Project would have on air quality and public health throughout the entire region.

**I. The DEIS Fails to Adequately Identify and Analyze Impacts to Forests**

Tree canopy provides extraordinary ecological value for habitat, water processing and cleansing, and mitigating climate change by sequestering carbon and providing cooling shade. Forested lands are increasingly scarce in the impacted counties, whose streams are already under assault. Approximately 1,500 acres of “tree canopy”/forest loss is anticipated for each build alternative. DEIS, at 4-100. Of that amount, about 19 acres are county and state Forest Conservation Act (FCA) areas with easements, 61 acres are TMDL-required reforestation sites, and almost five acres are tree replacement mitigation sites created to mitigate impacts from the construction of the Intercounty Connector. *Id.*, Table 4-25. These re- or afforested areas are often found in highway cloverleaves. 76 acres of forest loss would occur on National Park land. *Id.*, Table 4-26. It is telling that both FCA- and ICC-required forest mitigation sites, even if protected by easements, may so readily be lost due to the construction of yet more highway. Indeed, it should be made especially difficult to take such areas for any purposes, let alone the construction of additional highway lane-miles.

While both forest mitigation processes and costs/acre for paying fees-in-lieu into a Maryland Department of Natural Resources (MDNR) mitigation fund are mentioned in the DEIS, DEIS, at 4-101, no detail is provided. For example, there is no discussion of where tree mitigation will occur, whether it will occur near where trees are destroyed, or whether sufficient forest mitigation funds are available for these two counties and in the impacted sub-watersheds. In addition, Maryland FCA mitigation requirements are relatively weak in terms of their replacement ratios, currently allowing thousands of acres of forested land to be lost to development and not replaced each year; neither Montgomery nor Prince George’s County has enacted a stronger program, such as Anne Arundel, Howard, and Frederick Counties have recently done. The DEIS must provide more detailed information on how the loss of tree canopy in the impacted watershed will be avoided and mitigated.

Instead, the public is asked to take on faith that the already inadequate mitigation promised in the DEIS will be accomplished, and that the newly planted trees or forest will, in fact, remain intact—but apparently, only until the next new highway, highway alteration, or highway expansion. This is neither the way that that forestland should be treated in general, nor the way that state-mandated forest mitigation laws envision addressing deforestation.

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**J. The DEIS Does Not Sufficiently Consider Noise**

The noise analysis contains rather neutral and therefore misleading conclusions with respect to the amount, duration, and effect of construction noise, as it shows that in some cases at least, with respect to continuous traffic noise, the Project would negatively impact quality of life for those living, working, or attending school nearby. DEIS, at 4-67, Table 4-15. Examples of the latter include several instances of parkland (one with a public golf course that has significant amount of citizen usage, Sligo Creek Park); single family residences near schools, playing fields and churches, all of which are proximate to where I-95 meets I-495; an apartment complex along I-270; and single family residences in the Adelphi area. The DEIS ignores or glosses over the additional houses and properties impacted by noise from the build alternatives, which can be seen on maps, but are not quantified because the DEIS only describes impacts to overall areas. The public should know whether their property would be subject to loud noise because of the Project.

Regular, heavy construction noise that exceeds 70-75 dBA—sometimes substantially, since dBA is on a logarithmic scale—and which drones and rattles and pounds for 6-8 hours/day over a period of months and years, has adverse health consequences, and these will be experienced by many if not most of the 36 environmental justice communities impacted by the Project. These health consequences include sleep deprivation, hearing loss, increased heart rate, constriction of the blood vessels and elevated blood pressure, as well as increased risk of Alzheimer’s disease and other forms of dementia.<sup>185</sup> High volume traffic noise resulting from the newly configured highway can also be incessant and health-damaging. Where high volume traffic noise is adequately mitigated by noise barriers, those noise volumes can be reduced, but if effective barriers are deemed too costly the impacts on nearby populations and homes can be severe. It is not clear in the DEIS that mitigation will be forthcoming in those instances, and once again, environmental justice communities will suffer disproportionately. The DEIS even states that noise barrier systems will not be installed in nine areas with environmental justice communities. DEIS, at 4-139. Instead of merely assuming or recommending some noise barriers, the Agencies must commit to noise walls along all stretches of the Project that impact communities, schools, parkland, and places of worship. Given that the LODs for all the built alternatives are virtually identical, there is no justification for delaying this decision. This should not be left to the whim of a private developer to decide based on what is most profitable for them; if it is, it is clear that the barriers will not be built, and the communities will suffer. Moreover, the DEIS must fully consider and analyze the health impacts from the increased and expanded noise of the Project with and without any barriers that are not committed to be built.

<sup>185</sup> Jennifer Weuve, et al., *Long-Term Community Noise Exposure in Relation to Dementia, Cognition, and Cognitive Decline in Older Adults*, *Alzheimer’s & Dementia* (Oct. 20, 2020), <https://alz-journals.onlinelibrary.wiley.com/doi/10.1002/alz.12191>. Nicholas Bakalr, *Living in Noisy Neighborhoods May Raise Your Dementia Risk*, *New York Times* (Oct. 28, 2020), <https://www.nytimes.com/2020/10/28/well/mind/living-in-noisy-neighborhoods-may-raise-your-dementia-risk.html>.



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**K. The DEIS Relies on Flawed Traffic Modeling**<sup>186</sup>

The Maryland I-495 & I-270 Managed Lanes Project Draft Environmental Impact Statement and Draft Section 4(f) Evaluation (DEIS) tells a simplistic traffic story. It claims that if the Project is not constructed, corridor traffic volumes will grow significantly and delays will grow exponentially. It claims that the Project will reduce congestion in the general-purpose lanes relative to traffic conditions today. It claims that the Project will alleviate congestion on other roads.<sup>187</sup>

This simple story is wrong. The same promises were made in the Virginia I-495 Express Lanes Final Environmental Impact Statement (FEIS), and the results were completely different. During the peak traffic periods, the Express Toll lanes created what is the worst bottleneck on I-495 today—at the northern terminus of the lanes. The FEIS either did not disclose this impact or it was not anticipated. As a result, the Virginia Department of Transportation (VDOT) had to quickly open a shoulder lane to partially mitigate this bottleneck.

(Pre-Covid) travel times in the Virginia I-495 general-purpose lanes are higher today than they were before the Express Lanes opened and much higher than forecast in the FEIS. The FEIS got this wrong. Otherwise in the peak periods, the effects of the Express Lanes are complex, causing both increases in traffic on some roads and decreases on others. The FEIS wrongly claimed that the project would only benefit other roads.

<sup>186</sup> This Traffic Modeling Section was prepared by Norman Marshall, President, Smart Mobility, Inc. Mr. Marshall received a B.S. in Mathematics from Worcester Polytechnic Institute (1977) and an M.S. in Engineering Sciences from Dartmouth College (1982). Mr. Marshall's studies at Dartmouth College included graduate courses in transportation modeling. Mr. Marshall has 33 years of professional experience in transportation modeling and transportation planning including 14 years at RSG Inc. (1987-2001) and 19 years at Smart Mobility Inc. (2001-now). Mr. Marshall's primary professional focus is regional travel demand modeling and related transportation planning. Mr. Marshall is a nationally known expert in this field and has completed projects in over 30 states including work for the U.S. government, state Departments of Transportation, Metropolitan Planning Organizations, cities and non-profit organizations. One of Mr. Marshall's particularly notable projects is a \$250,000 project with the California Air Resources Board where he led a team including the University of California in reviewing the state's regional travel demand models. Mr. Marshall has many peer-reviewed publications and conference presentations, including presentations at national Transportation Research Board conferences in 2017, 2018 and 2019. Mr. Marshall is an Associate Member of the Transportation Research Board. Mr. Marshall's resume is attached to these comments.

<sup>187</sup> Current Transportation Secretary Greg Slater commented in January 2020 about this Project: "And what we're showing is a 35 percent reduction in delay on 495 and 270, as well as a seven percent reduction in delay on the surrounding arterial roads." Board of Public Works Meeting, at 24 (Jan. 8, 2020), <https://bpw.maryland.gov/MeetingDocs/2020-Jan-8-Transcript.pdf>.

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Part of the reason things in Virginia did not turn out as anticipated is due to reliance on flawed modeling. Flaws in the Metropolitan Washington Council of Governments (MWCOG) model include that it: (1) does not constrain traffic flow to capacity; (2) does not properly feed congested travel times back to non-work trip destinations; (3) assumes no increased traffic from road expansion; (4) fails to accurately forecast bottlenecks; (5) cannot calculate net congestion tradeoffs; and (6) cannot accurately model peak period conditions.

The claims made in the Maryland DEIS are the same as those made in the Virginia FEIS. The underlying modeling approach is the same.

Based on empirical data from Virginia and Maryland, understanding of model flaws, and data analysis, the reasonably foreseeable impacts of constructing managed lanes on I-495 and I-270 follow.

- 1) Expanding I-495 and I-270 will shift traffic from the shoulder hours into the peak hours and create and/or exacerbate bottlenecks. The flawed models employed in the DEIS analyses are incapable of forecasting this type of problem. As bottlenecks are most likely at the terminus of the managed lanes, project phasing is critically important as well as the final extent of the project.
- 2) An improvement in general-purpose lane speed is unlikely because constructing the managed lanes will shift traffic from the shoulder hours into the peak hours, and the general-purpose lanes will be just as congested during the peak hours as they would have been otherwise. The foundational premise of this Project is that extreme congestion in the general-purpose lanes is needed to justify the high tolls that will be required to fund the project.
- 3) Constructing the I-495 and I-270 managed lanes is likely to make arterial congestion worse. No trip begins or ends on a limited access highway, and traffic does not magically switch between limited access highways and arterials as is presented in the DEIS. Any shifts between these roadway classes increases traffic on some arterials and decreases traffic on others. As managed lanes concentrate traffic in peak hours, arterial roads at I-495 and I-270 interchanges will be severely impacted, and these impacts are likely to outweigh the congestion benefits of traffic diversion from other arterials. The DEIS models are incapable of calculating these tradeoffs.
- 4) If the managed lanes are constructed, it is likely that there will be significant traffic growth (induced travel) and induced land use impacts.
- 5) Managed lane proponents stress "choice." In fact, the choice is between two bad options: extreme congestion vs. extremely high tolls. Only about 1/6 of the daily traffic is carried by the Virginia I-495 Express Lanes despite the Express Lanes having 1/3 of the roadway capacity. This is an inefficient use of infrastructure. The other 5/6 of traffic is carried by the general-purpose lanes. The estimates in the DEIS are consistent with those ratios. The toll lanes are "chosen" primarily by high-income travelers and/or travelers who are having the tolls reimbursed. This elite group will remain small because increases in



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demand by other users will prompt the tolls to increase further, becoming even less affordable.

- 6) The managed lanes would benefit only the few who are able to outbid the majority of travelers. There would be no benefits for non-users of the toll lanes, that is, most travelers. Non-users of the toll lanes would face continued high congestion in the general-purpose lanes and increased congestion on arterial roadways accessing I-495 and I-270 interchanges. Nevertheless, a portion of their taxes likely would go toward subsidizing the private toll lanes as has occurred in Virginia.

The flawed traffic models used in the DEIS overestimate future congestion to justify the project. The DEIS then fails to acknowledge that the project depends on peak period general purpose lane congestion while also causing additional connecting arterial congestion and large bottlenecks where the toll lanes end. The proposed managed lanes in Maryland would make congestion worse for the majority of peak period drivers and push drivers to choose between extreme congestion and extremely high tolls to make the lanes profitable. The promised benefits for non-users of the toll lanes will not materialize, and taxpayers will likely have to subsidize the project.

#### 1. Flaws in the MWCOG Model Used in the I-495 and I-270 DEIS

Traffic growth forecasts in the Maryland I-495 & I-270 Managed Lanes Project Draft Environmental Impact Statement (DEIS) are unrealistically high. The projected forecasts are based on the Metropolitan Washington Council of Governments (MWCOG) regional travel demand model, which has two fatal flaws that exaggerate traffic growth in congested conditions:

- 1) The MWCOG model does not constrain traffic flow to capacity; and
- 2) The MWCOG model does not properly feed congested travel times back to non-work trips.

##### a. MWCOG Model Does Not Constrain Traffic Flow to Capacity

The MWCOG model includes an hourly capacity value for each roadway segment. Modeling best practice is to use “ultimate capacity”, i.e. the “maximum volume that should be assigned to a link by the forecasting model.”<sup>188</sup> The MWCOG model sets freeway capacity at 2,000 vehicles per lane per hour in lower-density areas and 1,900 per-lane per hour in higher-density areas. As shown in Figure 1 reproduced from the DEIS, the maximum traffic volumes mostly max out around 8000 for the four-lane sections (not including segments with more lanes including the American Legion Bridge, the split south of the I-270 spur, the I-95 interchange area, and the approach to the Woodrow Wilson Bridge).

<sup>188</sup> Cambridge Systematics, Vanasse Hangen Brustlin, Gallop, Bhat, C.R., Shapiro Transportation Consulting and Martin/Alexious/Bryson. Travel Demand Forecasting: Parameters and Techniques, National Cooperative Highway Research Program Report 716, 2012.

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As the modeling reference states, the MWCOG’s model capacity is the “maximum volume that should be assigned to a link by the forecasting model.” Assigned volumes that exceed capacity are errors, and assigned volumes that greatly exceed capacity are serious model errors. Alan Horowitz, one of the most respected experts in travel demand modeling wrote:

*I am quite familiar with alternatives that assign traffic well beyond a volume-to-capacity ratios (v/c) of 1, and I cannot fathom why anybody would take any of this seriously, either as a realistic representation of the future or as a strawman case study...*

*... do not publish any alternative/scenarios with facilities loaded beyond a v/c ratio of 1.1. <sup>189</sup> (Horowitz 2019)*

In the DEIS, many segments of I-495, I-270 and other roads are loaded with v/c greater than 1.1 (Figure 2). Horowitz admonishes that the DEIS modeling should not be published with v/c > 1.1. Therefore, these model results should not be used for planning purposes. However, not only does the DEIS publish these modeling results and use them for planning, but it even goes so far as to represent these over-capacity assignments as a performance measure. This claim is false and is rebutted in the Appendix B of this section.

The MWCOG model relies on 40-year-old Static Assignment Algorithm (STA) that was adopted when computers were less powerful than today’s smart phones. STA treats every road segment as independent of other road segments. In peak periods, traffic on I-495 and I-270 is characterized by queues behind bottlenecks. In STA there are no queues behind bottlenecks, and the MWCOG models cannot capture backups at the merges on I-270/I-495 or accurately model conditions during the peak of rush hour traffic

A peer-reviewed journal article authored by Norm Marshall: *Forecasting the Impossible: The Status Quo of Estimating Traffic Flows With Static Traffic Assignment and the Future of Dynamic Traffic Assignment*<sup>190</sup>, documents that STA always produces impossibly high freeway traffic volumes in congested networks and cannot be relied on for planning. The only solution is to replace STA with a more modern Dynamic Traffic Assignment (DTA) algorithm. MWCOG has a long-term plan to replace STA with DTA. Alan Horowitz also wrote: “Choose DTA over STA whenever possible.”<sup>191</sup>

<sup>189</sup> Horowitz, Alan. Posting on the Travel Model Improvement Program (TMIP) listserv, March 2019.

<sup>190</sup> Marshall, Norman. Forecasting the impossible: The status quo of estimating traffic flows with static traffic assignment and the future of dynamic traffic assignment, *Research in Transportation Business & Management*, Volume 29, 2018, 85-92.  
<https://www.sciencedirect.com/science/article/pii/S2210539517301232?via%3Dihub>.

<sup>191</sup> Horowitz, Alan. Posting on the Travel Model Improvement Program (TMIP) listserv, March 2019.



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Figure 1: 2017 I-495 Inner and Outer Loop Peak Period Hourly Volumes  
Figure 2-12: I-495 Existing (2017) Inner Loop Peak Period Hourly Volumes

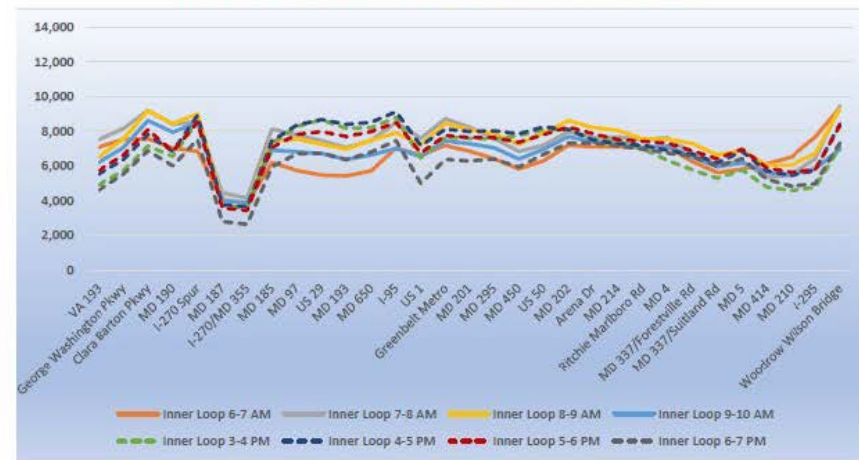
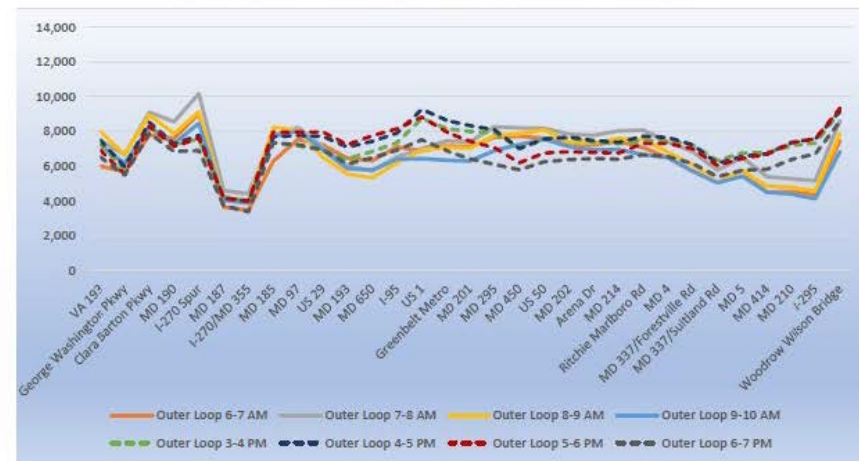


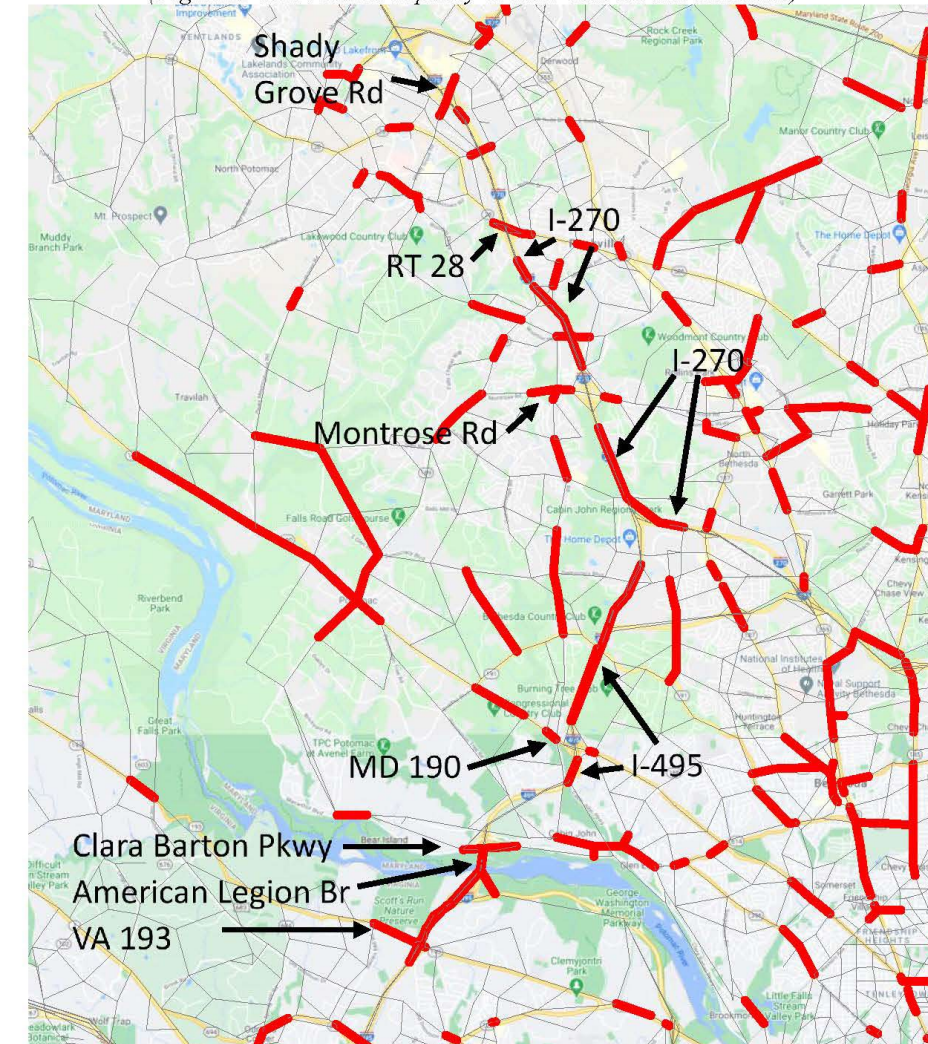
Figure 2-13: I-495 Existing (2017) Outer Loop Peak Period Hourly Volumes



Source: DEIS, 2020.

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Figure 2: Impossible Traffic Forecasts in MWCOG 2040 No Build Afternoon Peak Period (Segments with Volume/Capacity Greater than 1.1 Shown in Red)<sup>192</sup>



Source: Mapped from MWCOG model link in DEIS.

<sup>192</sup> Loaded network file downloaded from  
[ftp://dtpcog:cog.dtp@ftp.mwcog.org/MD\\_SHA\\_TRP\\_Study\\_2040\\_Alt1\\_Model\\_Files.zip](ftp://dtpcog:cog.dtp@ftp.mwcog.org/MD_SHA_TRP_Study_2040_Alt1_Model_Files.zip)  
referenced in DEIS, App. C, at 841.



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All the model traffic forecasts for roadway segments shown in red have volume-to-capacity ratios greater than 1.1. As Horowitz advises, these results should neither be published nor used in planning. The AM peak period map is similar.

**b. MWCOG Model Does Not Properly Feed Congested Travel Times Back to Non-Work Trip Destinations**

All good travel demand models employ a feedback process so that the destinations chosen are sensitive to congested travel time. The MWCOG model feeds back congested travel time from the morning peak period, but only for work trips. The destination choices for the other trip types are based on off-peak travel times. This is inadequate. As Norm Marshall commented about the MWCOG model in 2002:

The TPB DCV2 model does include distribution feedback. However, the feedback mechanism is only applied to home-based work trips. Specifically, AM congested times are used to distribute HBW trips while off-peak uncongested times are used to distribute HBS, HBO, and NHB trips.<sup>193</sup> The underlying assumption by TPB staff is that congestion does not influence non-work trip making...

In a publication by the Travel Model Improvement Program (TMIP) – a program sponsored by the EPA and U.S. DOT – entitled *Incorporating Feedback in Travel Forecasting: Methods, Pitfalls, and Common Concerns* dated March 1996, the authors provide technical guidance on incorporating feedback in the traditional four-step model. Some of the findings published in the report ... [include] ... Feedback should be implemented for the work-related trips at a minimum, and the other purposes should be examined for their percentage of peak travel.<sup>194</sup>

In the 2002 review, in the forecast year, modeled congestion on the Potomac River crossings was severe. The MWCOG model assumed that non-work travelers, including those making shopping trips, would cross the river regardless of congestion, because peak period congestion did not affect their destination choices in the model. Perversely, these non-work travelers crowded out work trips from the Potomac River bridges in the model during peak times. It appears that these problems remain in the MWCOG model today and are especially relevant to modeling the American Legion Bridge. The MWCOG model over-assigns non-work trips to all the bridges during peak periods because the model is not representing travel times for these trips properly.

In the DEIS 2040 no build model, MWCOG morning and afternoon peak period traffic volumes for all Potomac River bridge crossings are ridiculously high (Figure 3). All greatly

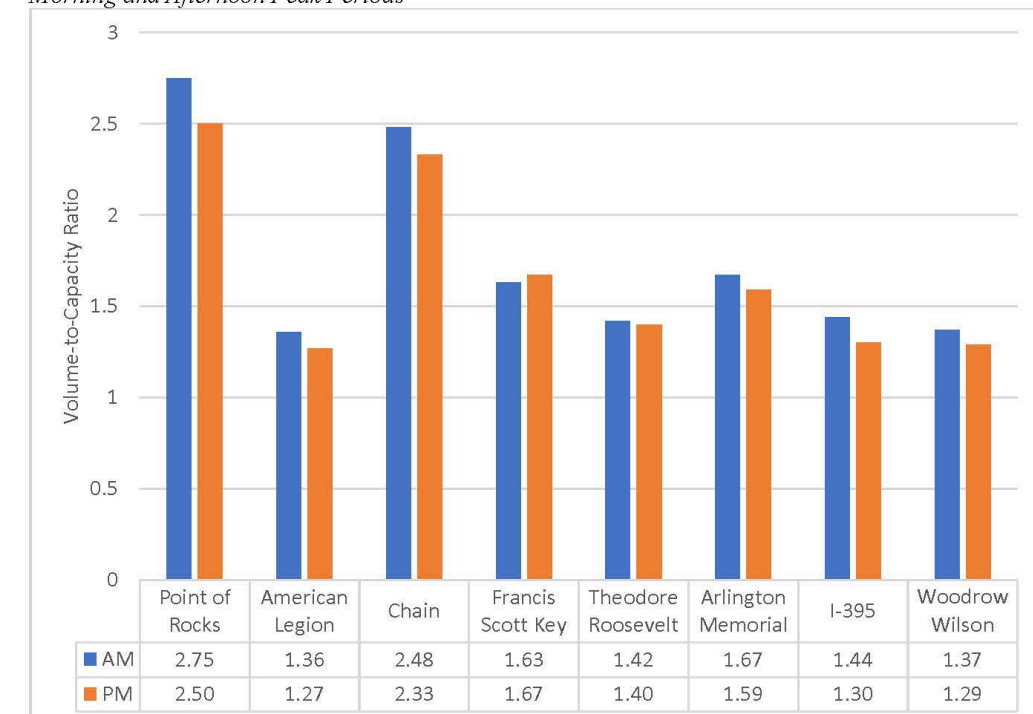
<sup>193</sup> HBS - Home-based Shop; HBO - Home-Based Other, NHB - Non Home-Based

<sup>194</sup> Letter Concerning “Effects of Proposed Potomac River Crossings on Land Use and Traffic and Identification of Serious Deficiencies in TPB Version 2 Transportation Model.” (Nov. 4, 2002), <http://www1.mwco.org/uploads/committee-documents/pF1eWV020040726152612.pdf>.

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exceed the 1.1 volume-to-capacity ratio threshold, and range as high as 2.75, i.e., the bridge traffic volume is 275% of the highest possible volume.

*Figure 3: Wildly Impossible Potomac Bridge Traffic Forecasts in MWCOG 2040 No Build Morning and Afternoon Peak Periods*



Source: I extracted data from MWCOG model link in DEIS.

**c. MWCOG Model Assumes No Increased Traffic from Road Expansion**

In general, freeway expansion causes induced travel. A review of the induced travel research by Handy and Boarnet (2014) concluded that induced travel is real, and that the magnitude is enough to prevent capacity expansion from reducing congestion:

*Thus, the best estimate for the long-run effect of highway capacity on VMT [vehicle miles traveled] is an elasticity close to 1.0, implying that in congested metropolitan areas, adding new capacity to the existing system of limited-access highways is*



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*unlikely to reduce congestion or associated GHG [greenhouse gas] in the long-run.<sup>195</sup>*

The DEIS rejected Alternative 6 adding only general-purpose lanes because of the induced travel impacts:

*The results of the Alternative 6 modeling indicated that latent demand, meaning trips from other routes, times and modes, would be expected to fill the GP lanes by 2040, resulting in worse traffic operations than all of the Screened Alternatives in several metrics, including network-wide delay and average travel time. (DEIS, at 2-12)<sup>196</sup>*

Induced travel represents the difference between Build Vehicle Miles Traveled (VMT) and no build VMT. The DEIS models cannot accurately account for induced travel because the MWCOG model overestimates traffic growth in the no build alternative.

In the long-term, induced land use is an important cause of induced travel. Widening I-270 in the late 1980s is a classic case study.

*In the five years before construction began, officials endorsed 1,745 new homes in the area stretching from Rockville to Clarksburg. During the next five years, 13,642 won approval.<sup>197</sup>*

By 1997, I-270 was routinely overrunning its designed capacity, and peak-hour traffic volumes on some segments had surpassed levels forecasted for 2010.

A primary cause of the inaccurate traffic forecasts was inaccurate land use forecasts which were assumed to be the same for both no build and build analyses. The total number of households forecast for the Washington region for the year 2000 was only off by 2 percent. However, the forecasts were completely wrong about the distribution of the households.<sup>198</sup>

<sup>195</sup> Susan Handy and Marlon G. Boarnet, *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions: Policy Brief*, prepared for California Air Resources Board (Sept. 30, 2014).

<sup>196</sup> See Appendix B of this report for a discussion of latent demand, induced travel and generated traffic.

<sup>197</sup> Alan Sipress, *Md.'s Lesson: Widen the Roads, Drivers Will Come*, Washington Post (Jan. 4, 1999), <https://www.washingtonpost.com/wp-srv/digest/traffic4.htm>.

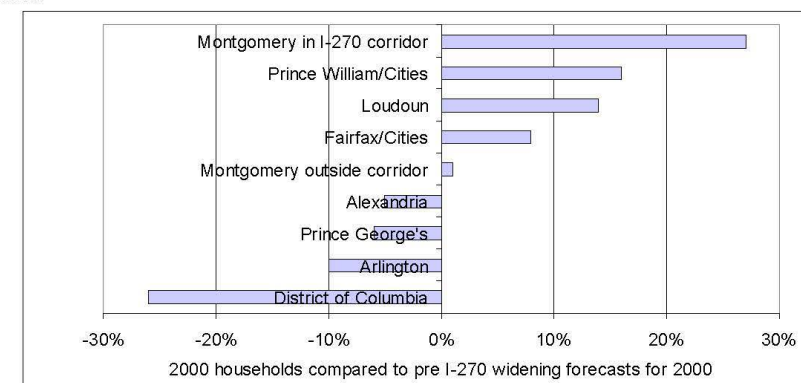
<sup>198</sup> Data from National Capital Region Transportation Planning Board, Metropolitan Washington Council of Governments, "Comparison of 1984 Study Forecasts with Most Recent Data: I-270 Corridor, June 18, 2001.

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Growth was much lower in the region's core than forecast, and much higher in western suburban areas, especially in the I-270 corridor.

Figure 4 compares the 2000 forecast made before the I-270 widening with actual 2000 numbers. The largest forecasting error was for Montgomery County in the I-270 corridor, where the actual number of households in 2000 exceeded the forecast by 27 percent. Widening I-270 was a primary cause.

Figure 4: Washington DC Region: Suburban Freeway Projects Shifted Households to Suburbs from Core<sup>199</sup>



Source: Data from National Capital Region Transportation Planning Board and MWCOG.

The total number of regional households in 2000 was 2 percent less than forecast prior to the I-270 widening project. When the I-270 widening project was planned, forecast housing and employment growth in the corridor was moderate, and growth in the region's core was expected to be much stronger.<sup>200</sup> The forecasts were completely wrong about the distribution of the households. Growth was much lower in the region's core than forecast, and much higher in western suburban areas, especially in the I-270 corridor.

<sup>199</sup> National Capital Region Transportation Planning Board and Metropolitan Washington Council of Governments, *Induced Travel: Definition, Forecasting Process, and a Case Study in the Metropolitan Washington Region*, September 19, 2001.

<sup>200</sup> Data from National Capital Region Transportation Planning Board, Metropolitan Washington Council of Governments, "Comparison of 1984 Study Forecasts with Most Recent Data: I-270 Corridor, June 18, 2001.



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The other areas where growth exceeded the forecast are suburban Virginia areas where freeway capacity also was expanded. Projects in these areas include construction of the Dulles Greenway, the Route 234 Bypass, and widening I-66.

The suburban increases were balanced by declines and slower growth in the core of the region, including D.C., Arlington, Prince George's County, and Alexandria.

The I-495 and I-270 DEIS states on page 144, "As the land use assumptions do not vary between Alternative 1/No Build and the Build Screened Alternatives, all the trip generators are equal among scenarios: there will not be new housing developments or new places of employment." Such assumptions are clearly debatable. Widening I-270 and I-495 will likely induce land use and travel. Induced travel causes increased energy use and air pollution, including greenhouse gas emissions.

The DEIS also asserts: "Induced demand represents new trips. While the project may generate some new trips, MWCOG modeling shows that the amount of induced demand caused directly by the project would be less than 1% of the total VMT in the region."<sup>201</sup> Despite this assertion, due to its deficiencies, the MWCOG model cannot accurately account for induced travel. (See Appendix B.)

d. MWCOG Model Fails to Accurately Forecast Bottlenecks

Figures 5 and 6 show the traffic increases in peak hour traffic on Virginia I-495 following the opening of the Express Lanes (EL) and General-Purpose Lanes (GPL). The increases are calculated as the average of post-construction 2013-2019 to pre-construction 2005-2007. Appendix C provides details of how these numbers were estimated.

<sup>201</sup> DEIS, App. C, Traffic Analysis Technical Report, May 2020, at 144.

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Figure 5: Change in *Outer Loop GPL Peak Hour Traffic in Virginia After Express Lanes Opening (change per segment comparing 2013-2019 to 2005-2007 traffic volumes)*

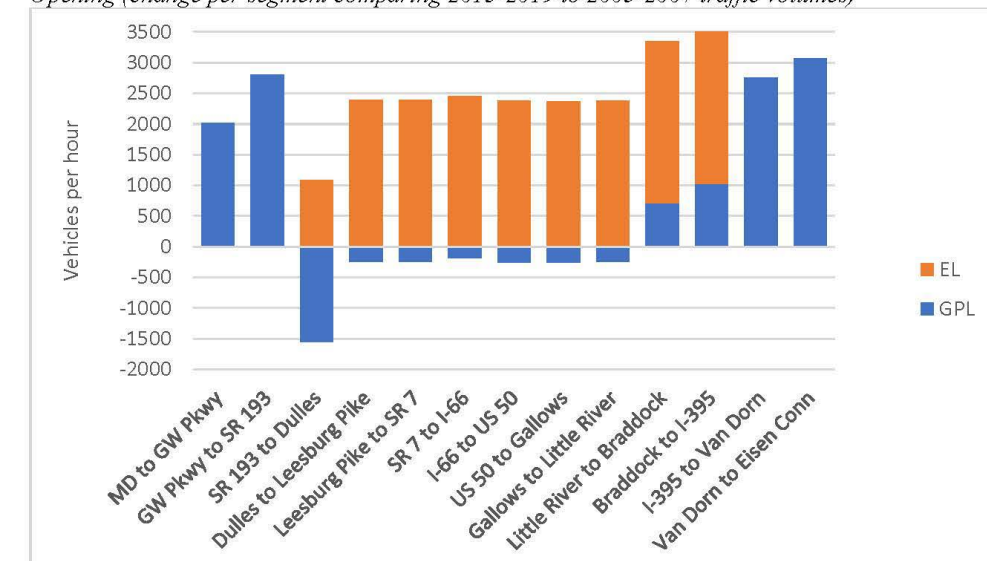
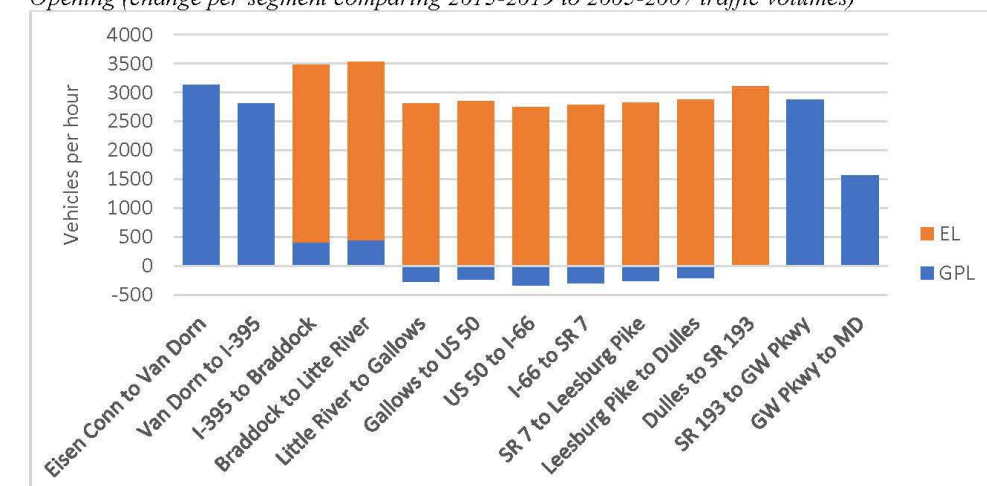


Figure 6: Change in *Inner Loop GPL Peak Hour Traffic in Virginia After Express Lanes Opening (change per segment comparing 2013-2019 to 2005-2007 traffic volumes)*



Source: Virginia Department of Transportation traffic count reports.



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In general, the before and after decreases in peak hour GPL traffic volumes are small, on the order of 200-300 per hour, or less than 5% of the total GPL peak hour traffic volume. The one outlier shown in Figure 5 for the Outer Loop southbound between SR 193 to the Dulles Toll Road is not an exception but is just a quirk in the data. The Express Lanes begin in this section, and the VDOT traffic count is after the split. If the count were upstream of the split, no such large reduction would be shown.

What is most striking in the data is that the higher peak hour volumes carried in 6 lanes (4 GPL + 2 EL) also extend into the 4-lane GPL sections north and south of the endpoints of the Express Lanes. There is little, if any, congestion relief where the Express Lanes are parallel to the general-purpose lanes, but much worse congestion upstream and downstream. This large increase in peak hour traffic was caused by the opening of the Express Lanes and has resulted in the worst bottleneck on I-495 in the afternoon on the Inner Loop where the Express Lanes must merge back into the general-purpose lanes. (See Appendix C for more details.)

The Express Lanes opened in November 2012. This bottleneck problem was not anticipated or disclosed in the planning process. Only a few months later in June 2013, VDOT announced a plan to partially address these problems by opening a shoulder lane on the left side of the Inner Beltway to increase the effective width to five general-purpose lanes at the merge.

Expanding I-495 and I-270 in Maryland likely will result in similar unintended negative congestion impacts, creating and/or exacerbating bottlenecks. The Virginia modeling was not up to the task of forecasting these types of problems and the DEIS modeling is not either.

e. MWCOG Model Cannot Calculate Net Congestion Tradeoffs

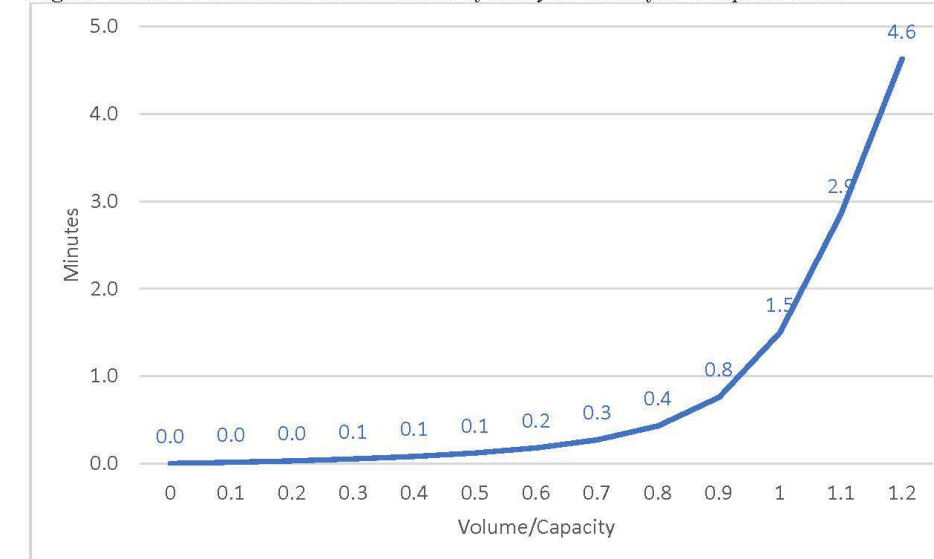
The MWCOG model treats daily traffic as a composite of four time periods<sup>202</sup> including a 3-hour morning peak period (6-9 a.m.) and a 4-hour afternoon peak period (3-7 p.m.). The time shifts that resulted from the opening of the Express Lanes in Virginia is mostly within these peak periods, i.e., it shifts traffic from what planners call the “shoulder” hours into the peak hour. The MWCOG model does not have any way of considering time shifts within the peak periods and therefore cannot calculate the congestion changes related to such shifts.

Instead, the MWCOG model calculates vehicle hours of delay (VHD) as if traffic volumes are constant throughout the 3-hour morning peak period and 4-hour afternoon peak period. The calculated VHD grows exponentially as a function of the volume-to-capacity ratio (V/C)—especially when modeled V/C exceeds 1.0. As discussed above, V/C greater than 1.0 is impossible and represents model errors. Figure 7 shows MWCOG model arterial delay in minutes per mile as a function of V/C.

<sup>202</sup> Four time periods: morning peak, midday, afternoon peak, and overnight.

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Figure 7: MWCOG Model Vehicle Minutes of Delay Per Mile for 40 mph Arterial<sup>203</sup>



Source: MWCOG model documentation.

In the figure, a road segment with calculated V/C = 1.0 has 1.5 minutes of delay per mile, and modeled delay grows exponentially with an impossible V/C > 1.0. V/C in the MWCOG model is not capped at 1.2, and there are higher V/C road segments in the model, including the value of 2.75 for the Point of Rocks Bridge shown in Figure 3. Beyond the V/C point shown in the Figure 7, MWCOG model VHD continues to increase exponentially – 6.6 minutes per mile at V/C = 1.3, 8.6 minutes per mile at V/C = 1.4, and so forth with MWCOG model table values as high as V/C = 3.0.

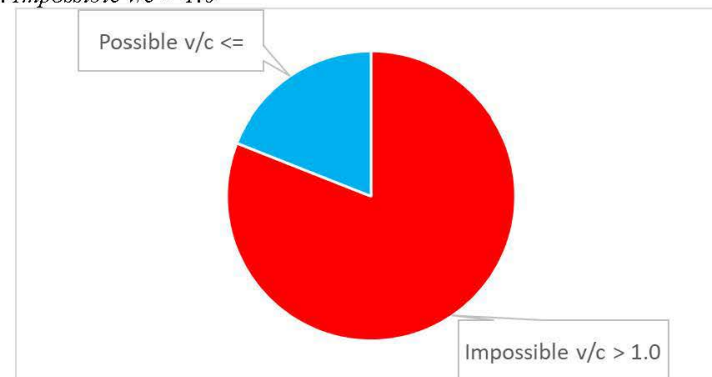
As shown in Figure 8, 81% of regional afternoon peak period VHD in the 2040 no build modeling is from impossible assignments with volume-to-capacity ratio exceeding 1.0. The exponential increases in modeled delay as a function of V/C makes MWCOG model VHD more of a metric of model errors than a metric of real-world performance.

<sup>203</sup> Calculated from MWCOG. Calibration Report for the TPB Travel Forecasting Model, Version 2.3, on the 3,722-Zone Area System: Final Report, January 20, 2012.



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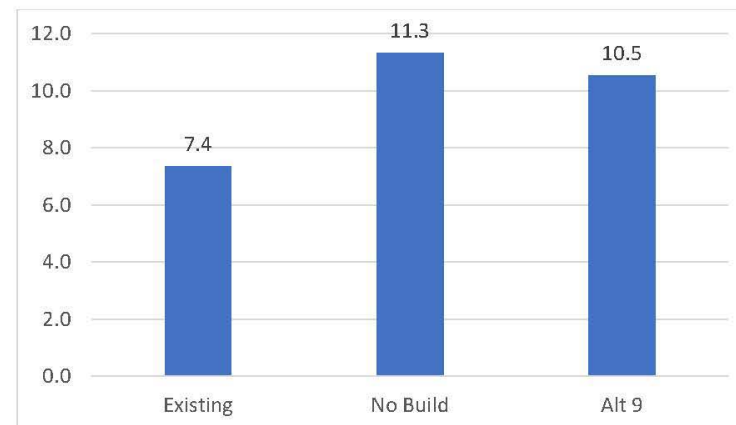
Figure 8: 2040 No Build Regional Afternoon Peak Period VHD – Road Segments with Possible  $v/c \leq 1.0$  vs. Impossible  $v/c > 1.0$



Source: Data extracted from MWCOG model link in DEIS.

The DEIS VHD calculations are invalid. However, even if they were valid, they do not provide a compelling case for the proposed managed lanes project. Figure 9 takes the DEIS VHD numbers for a combination of Montgomery and Prince George's Counties and divides by current and 2040 population so the alternatives can be compared on a per capita basis.

Figure 9: DEIS Vehicle Minutes of Delay Per Capita for Montgomery and Prince George's Counties<sup>204</sup>



Source: DEIS, 2020.

<sup>204</sup> Numbers from DEIS Table 1-1, p. 1-5 and DEIS, App. C, Table 5-23, at 149.

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The DEIS modeling proposes that congestion is going to get much worse in the future, but that I-495/I-270 managed lanes will make it somewhat less bad. In fact, however, the real story the told by the VHD outputs is that the MWCOG model overestimates future traffic volumes and translates relatively small increases in VMT into larger increases in VHD. For example, for an arterial roadway in the model where the volume has reached capacity in the peak period, a 1% increase in traffic volume in the MWCOG model translates into a 10% increase in VHD per vehicle. This amplification of small VMT changes into large VHD numbers is just a way of making impacts look larger.

#### f. DEIS Models Cannot Accurately Model Peak Period Conditions

As documented above, the peak period traffic volume outputs from the MWCOG model are not capacity constrained. The model forecasts impossibly high volumes for many roadway segments including segments of I-495 and I-270 that are the focus of the DEIS.

The DEIS analysis takes these over-capacity assignments and uses them as inputs to a VISSIM microsimulation model that is capacity constrained. This is a useless exercise because the VISSIM model can only report that the inputs are impossible. The DEIS tries to represent what are essentially VISSIM error messages as measure of latent demand. This claim is false and is rebutted in the Appendix B of this report.

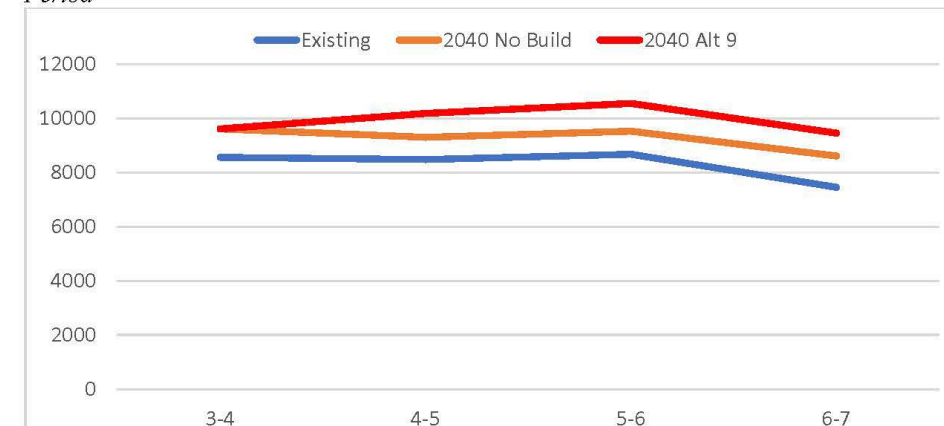
This is an example of an old computer adage—"garbage in—garbage out." The two-model process is analogous to money laundering. Bad forecasts from the MWCOG model are filtered through the VISSIM model and come out as very detailed precise-looking numbers. However, the underlying MWCOG model forecasts are invalid, and the VISSIM outputs also are invalid.

Figure 10 shows afternoon peak period "demand" (vehicles per hour) on the American Legion Bridge Inner Loop from the MWCOG model. Figure 11 shows afternoon peak period "throughput" (vehicles per hour) on the American Legion Inner Loop from the VISSIM model.



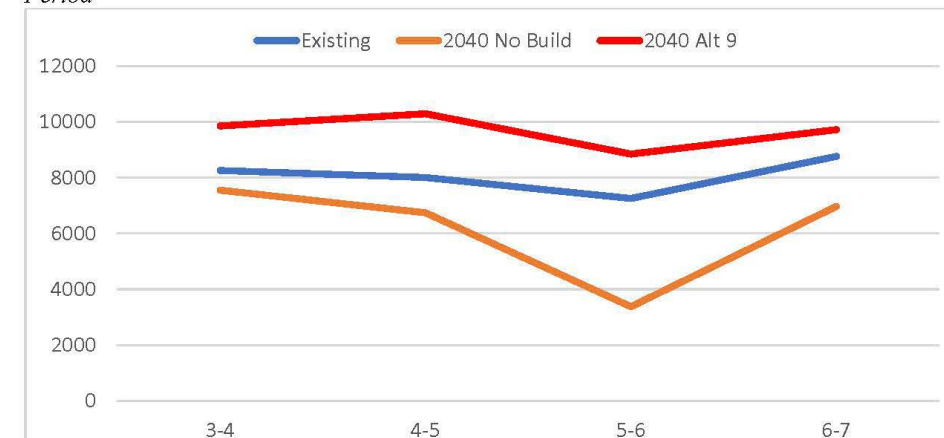
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Figure 10: DEIS “Demand” for American Legion Bridge Inner Loop in the Afternoon Peak Period



Source: Graphed numbers from DEIS Appendix C.

Figure 11: DEIS “Throughput” for American Legion Bridge Inner Loop in the Afternoon Peak Period



Source: Graphed numbers from DEIS Appendix C.

Neither of the graphics represents reality. As discussed above, the 2040 no build alternative afternoon period volumes cannot increase significantly from existing volumes due to capacity constraints; therefore, the DEIS “demand” volumes are impossible. The graphic showing future no build throughput being much less than throughput today is implausible and the large dip in throughput is ridiculous. It would never happen and is just an artifact of VISSIM model limitations. The impossible over-capacity inputs cause VISSIM model errors. Congestion

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can never get so bad that it will reduce traffic volumes by 50% on a road that is already very congested.

The DEIS framing of “demand” vs. “throughput” is fundamentally wrong. Demand is not a point; demand is a curve with more demand when the price is lower and less demand when the price is higher. For un-tolled roads, this “price” is primarily based on the value of travel time. The generalized price for toll roads includes both cost and time. As shown in this illustration from the Federal Highway administration, there is a market equilibrium balance between demand and price/supply (Figure 12).

Figure 12: Market Equilibrium User Costs and Traffic Volumes (FHWA)<sup>205</sup>

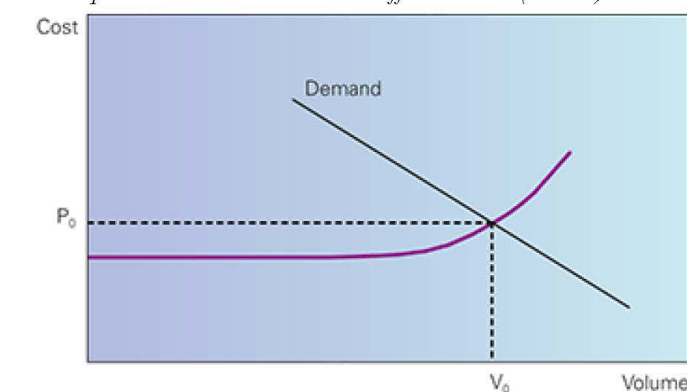


Exhibit 4. Equilibrium user costs and traffic volumes.  
P = price. V = volume.

Source: Federal Highway Administration, 2017.

The narrative accompanying the figure reproduced above states:

When supply and demand are in balance, a market is said to be in *equilibrium*. This is often represented as the intersection of a supply curve and a demand curve, which determines the market-clearing price and quantity (see Exhibit 4). At this point, everyone who purchases the good is willing to (collectively) buy that amount at that price, and producers are willing to supply that quantity at that price. If either the supply or demand curves shift, the market price and quantity will also change.

For highway travel, demand is determined as described above. The “supply” curve, however, is essentially represented by the generalized cost curve. The intersection of these two curves determines how high traffic volumes will be and what the

<sup>205</sup> Federal Highway Administration. Economics: Pricing, Demand, and Economic Efficiency – A Primer. 2017. [https://ops.fhwa.dot.gov/publications/fhwahop08041/cp\\_prim4\\_03.htm](https://ops.fhwa.dot.gov/publications/fhwahop08041/cp_prim4_03.htm).



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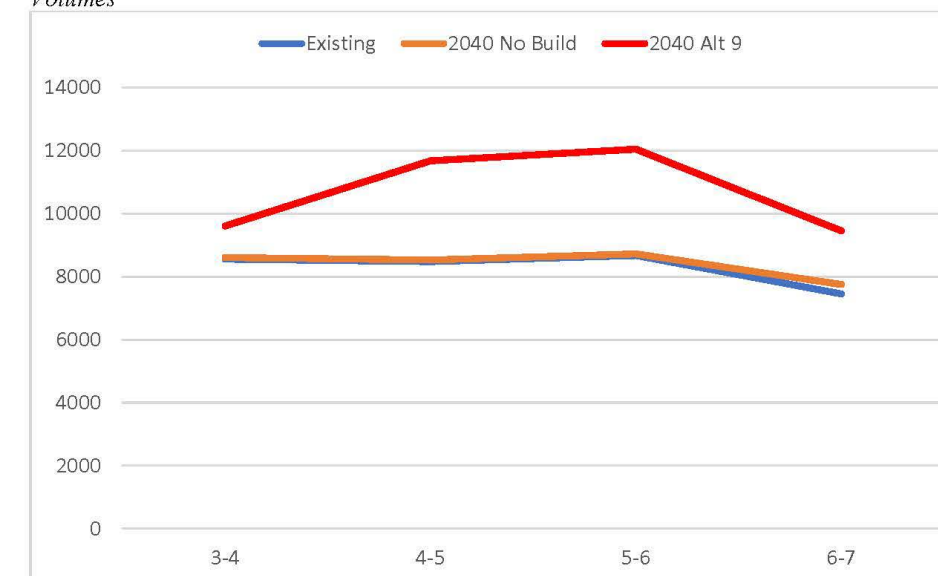
associated average highway-user costs will be at that volume level. When the level of demand is low relative to the capacity of the road, it will be uncongested, and prices will be relatively constant even as volumes increase (the “flat” part of the user cost curve in Exhibit 4). However, when demand levels are high and the road is congested, both user costs and traffic volumes will be higher, potentially rising sharply as demand continues to increase.

The dichotomy put forward in the DEIS of “demand” vs. “throughput” does not exist. There are only traffic volumes at the equilibrium point. The volume  $V_0$  represents the point on the demand curve where the cost equals  $P_0$ . The “throughput” should equal this equilibrium traffic volume.

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Figure 13 shows a more realistic estimate of forecast traffic based on the experience of the Virginia Express Lanes. The 2040 no build traffic volumes would be very similar to existing traffic volumes because of capacity constraints. The 2040 build volumes (represented here as Alternative 9)<sup>206</sup> would be significantly higher—and particularly higher during the mid-point of the afternoon peak period in the 4-5 and 5-6 hours. This shift happened following the opening of the Virginia Express Lanes.

Figure 13: Realistic American Legion Bridge Inner Loop in the Afternoon Peak Period Traffic Volumes



Source: Created this graphic based on Virginia Express Lanes data.

<sup>206</sup> Alternative 9, according to the DEIS, is two priced managed lanes in each direction on I-495 and convert one existing HOV lane to a priced managed lane and add one priced managed lane in each direction on I-270.



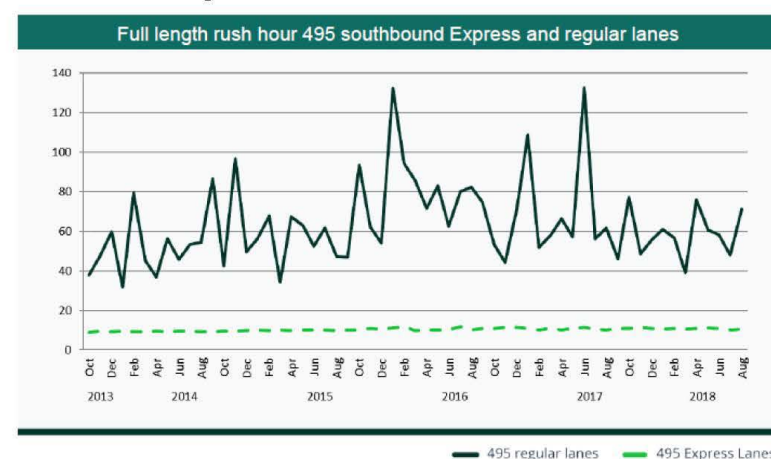
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## 2. Foreseeable Impacts of Building I-495 and I-270 Managed Lanes

### a. Managed Lanes Are Unlikely to Reduce Congestion on the General-Purpose Lanes

The small reductions in general-purpose lane volumes shown in Figures 5 and 6 have not improved general-purpose lane travel times. As shown in Figure 14, the Express Lanes operator, Transurban, reports reliably fast travel times in the southbound Express Lanes and large average time savings compared to the general-purpose lanes.

Figure 14: Transurban Travel Time Data<sup>207</sup>



Source: Transurban, 2019.

Figure 14 shows average general-purpose lane travel times of about 60 minutes. Assuming that this is for the entire 14-mile length, this represents a speed of about 15 mph. However, Figure 13 could represent a shorter distance because the average time shown for the Express Lanes of about 10 minutes is impossible for the entire 14-mile length (because it would require an average speed of 84 mph). If the segment underlying the data is shorter than the full 14 miles, the actual general-purpose lane speeds may have been even lower than 15 mph.

<sup>207</sup> Bell, Elisa, Transurban. 495 and 95 Express lanes: Customer choice regional benefit. Presented as part of the Transportation Research Board's Webinar on Ensuring Equity with Priced Managed Lanes in April 2019, <http://onlinepubs.trb.org/onlinepubs/webinars/190429.pdf>.

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Researchers at the University of Virginia found that in March 2018, average morning and peak hour travel times in the general-purpose lanes were typically 20-30 mph.<sup>208</sup> March 2018 was one of the better months in the Transurban data. However, the discrepancy between the two sets of data is unexplained. An estimate of 20 mph is used in the figure below.

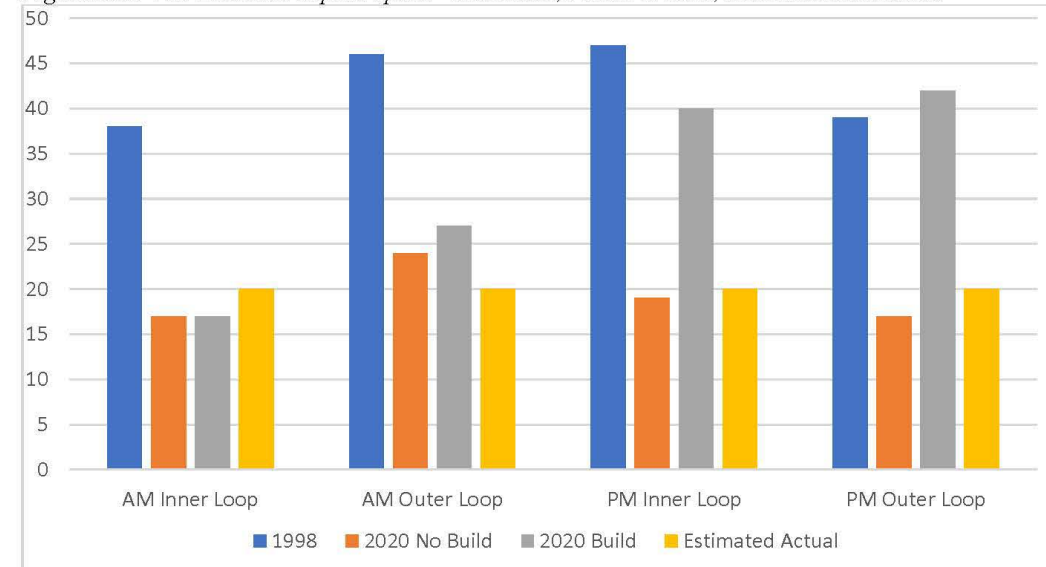
<sup>208</sup> Babiceanu, Simona and Donna Chen. Empirical Evidence for Estimating the Value of Travel Time on Express Lanes: Northern Virginia Regional Case Study, 2018.



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The Virginia I-495 Express Lanes FEIS reported pre-construction “existing” speeds for the Outer Loop of 46 mph in the AM peak hour and 39 mph in the PM peak hour, i.e., twice the speeds reported for today by Transurban. This suggests that peak hour general-purpose lane speeds have declined significantly since opening the Express Lanes. As shown in Figure 15, current general-purpose lane speeds are generally much lower than was forecast in the FEIS.

Figure 15: I-495 General-Purpose Speed – Historical, FEIS Forecast, and Estimated Actual<sup>209</sup>



Source: Virginia Express Lanes 2006 FEIS and current data.

The DEIS general-purpose lane travel time forecasts are invalid because (as discussed above):

- The models overestimate no build traffic volumes; and
- The models fail to account for the shift to the peak hours that would follow managed lanes construction.

These two factors cause the models to overestimate general-purpose lane congestion in the no build alternative and underestimate general-purpose-lane congestion in the build alternative.

<sup>209</sup> Virginia Department of Transportation (VDOT). Capital Beltway Study: Final Environmental Impact Statement and Section 4(f) Evaluation, Table 2-9, at 45, April 2006.  
[http://www.virginiadot.org/VDOT/Projects/Northern\\_Virginia/asset\\_upload\\_file77\\_72985.pdf](http://www.virginiadot.org/VDOT/Projects/Northern_Virginia/asset_upload_file77_72985.pdf).

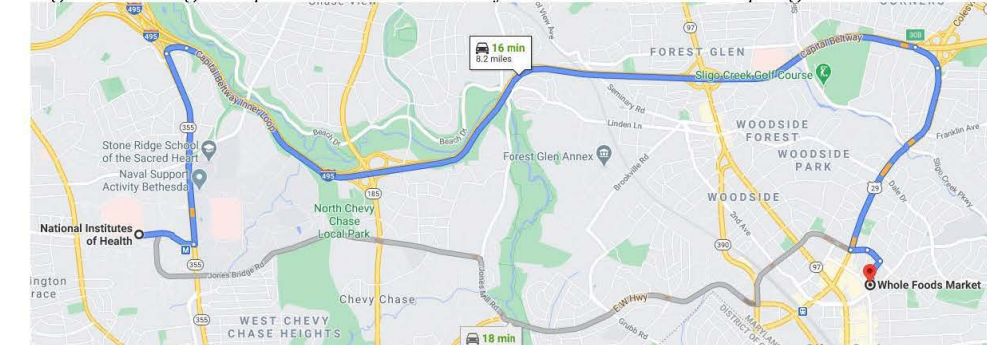
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The Virginia experience suggests that constructing similar managed lanes in Maryland would do little or nothing to reduce congestion on the general-purpose lanes. In fact, as discussed in a subsequent section of this report, the entire premise of this project is that extreme congestion is needed to justify the extremely high tolls required to pay for the project.

#### b. Managed Lanes Are Likely to Make Arterial Congestion Worse

The DEIS puts forward a simplistic and incorrect framing of diversion from arterial roadways to I-495/I-270. It pretends that traffic is magically subtracted from one class of roadway and added to the other. In fact, no trip begins and ends on a limited access roadway and a traffic shift from arterials to I-495/I-270 necessarily adds traffic to some arterials as it reduces traffic on others. Figure 16 shows a typical example from Google Maps comparing routes between Bethesda and Silver Spring.

Figure 16: Google Maps Recommended Route from Bethesda to Silver Spring



Source: Google Maps, 2020.

Google Maps recommends a route using I-495 over an arterial route even through the I-495 route is more than 50% longer in miles (8.2 miles vs. 5.4 miles) because it is 2 minutes faster (16 minutes vs. 18 minutes). The I-495 route reduces the traffic volume on Jones Bridge Road and East-West Highway, but it adds traffic to MD 355 and US 29. Whether this represents a net congestion benefit depends on the congestion levels on all these roads.

The DEIS assumes trips like this should be on I-495 and that the non-freeway route represents undesirable diversion. However, circuitous routing that adds vehicle miles traveled (VMT) and air pollution including greenhouse gas emissions is undesirable. Adding express toll lanes also is likely to make arterial congestion worse because it counteracts peak spreading and will increase peak hour arterial traffic in the areas around I-495 and I-270 interchanges. The increased peak hour traffic congestion in these areas is likely to outweigh the congestion benefits on other roads.

Here is real world example. As discussed above, the opening of the Express Lanes in Virginia in November 2012 caused the worst I-495 bottleneck. Several months later in June



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2013, VDOT announced a plan to partially address these problems by opening a shoulder lane on the left side of the Inner Beltway to increase the effective width to five general-purpose lanes at the merge. The public relations handout developed at this time stated that there would be “no impact to nearby bridges and neighborhoods.”<sup>210</sup>

This change was implemented in 2015. Residents of McLean have complained that this seemingly minor change has had a large impact on their community as it shifts the bottleneck farther north and adds significant congestion to Georgetown Pike and other intersecting local streets.<sup>211</sup> Figure 17 shows traffic congestion at one of the key intersections where McLean residents are concerned about I-495 congestion spreading to I-495.

Figure 17: Georgetown Pike Westbound at I-495



Source: Google Maps, 2020.

As a response to these complaints, in 2018 VDOT analyzed returning to the original configuration. It found that such a return would improve operations at the SR 193 intersection [contradicting their 2013 public relations handout]: “as a result of the merge area for the Express Lanes moving back to the Old Dominion Drive area, which meters the traffic and provides a more consistent flow to the mainline near Route 193.”<sup>212</sup> However, it also found that the closure of the shoulder lane would increase delay on the I-495 Express Lanes. The change was not made

<sup>210</sup> VDOT 495 North Traffic Congestion to Get Better With New VDOT Shoulder-Use Lane Project, Express Lanes (June 28, 2013). [https://www.expresslanes.com/uploads/1000/382-Shoulder\\_use\\_Lane\\_Project\\_121013.pdf](https://www.expresslanes.com/uploads/1000/382-Shoulder_use_Lane_Project_121013.pdf).

<sup>211</sup> Brian Trompeter, *Residents Fume Over I-495 Shoulder Lane in McLean*, InsideNova (Jan. 16, 2018), [https://www.insidenova.com/news/arlington/residents-fume-over-i-495-shoulder-lane-in-mclean/article\\_da2f87a2-f871-11e7-8a7b-a7b93e288cea.html](https://www.insidenova.com/news/arlington/residents-fume-over-i-495-shoulder-lane-in-mclean/article_da2f87a2-f871-11e7-8a7b-a7b93e288cea.html).

<sup>212</sup> VDOT. I-495 Auxiliary Lane Study, May 9, 2018.

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because Express Lanes traffic was prioritized over MacLean traffic. Nevertheless, even with the use of the shoulder lane, this merge area remains the worst bottleneck on I-495.

The VDOT quote uses the word “meters.” Traffic metering is an underappreciated congestion control measure. Peak period traffic bottlenecks are inevitable but can be used as a management tool by choosing the bottleneck locations, metering traffic there, and providing peak period protection to other roadways. Constructing managing lanes focuses more traffic in the peak hours and undermines peak spreading and traffic metering.

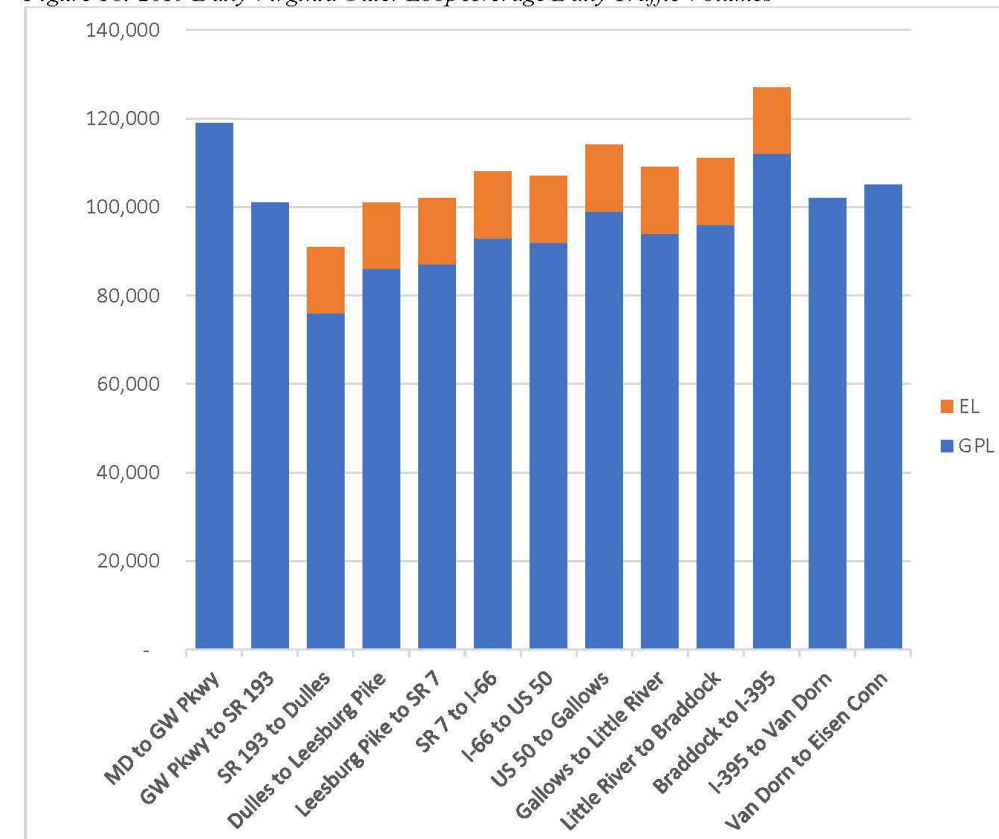
c. Managed Lanes Would Benefit Only the Few Able to Pay Large Tolls

The Virginia I-495 Express toll lanes only carry about 1/6 of the daily traffic volume on the sections with Express Lanes despite being 1/3 of roadway capacity (Figures 18 and 19). The other 5/6 of traffic is carried in the general-purpose lanes. This is an inefficient use of infrastructure.



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Figure 18: 2019 Daily Virginia Outer Loop Average Daily Traffic Volumes<sup>213</sup>

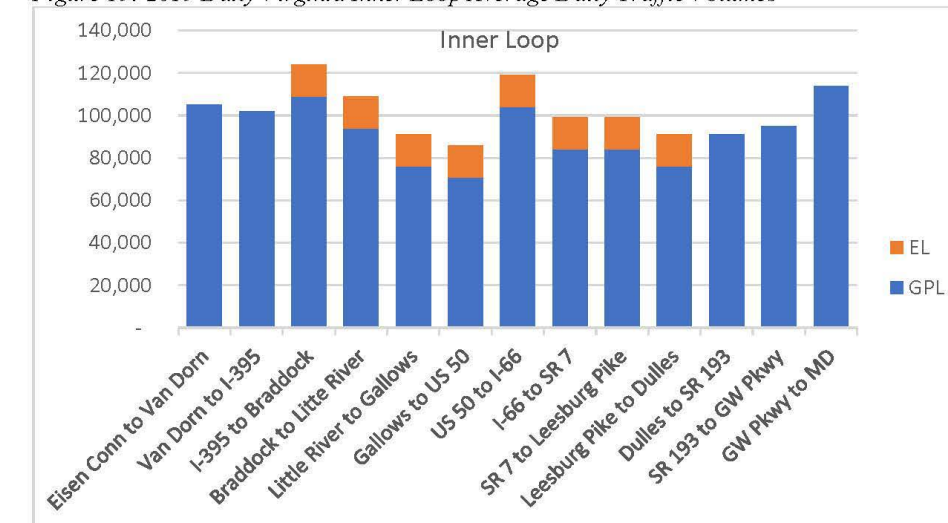


Source: Virginia Department of Transportation traffic count data, 2019.

<sup>213</sup> Commonwealth of Virginia Department of Transportation Average Daily Traffic Volumes with Vehicle Classification Data on Interstate, Arterial and Primary Route 2019, [https://www.virginiadot.org/info/resources/Traffic\\_2019/AADT\\_PrimaryInterstate\\_2019.pdf](https://www.virginiadot.org/info/resources/Traffic_2019/AADT_PrimaryInterstate_2019.pdf)

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Figure 19: 2019 Daily Virginia Inner Loop Average Daily Traffic Volumes



Source: Virginia Department of Transportation traffic count data, 2019.

The DEIS forecasts managed lane usage for Alternative 9 ranging from 10% to 31% during the 7-8 a.m. peak hour and from 12% to 35% during the 4-5 p.m. peak hour (DEIS, Appendix C, Figures 5-19 – 5-22, p. 99-100). These numbers are consistent with the estimate of 1/6 of daily traffic for Virginia because the managed lanes will attract a larger share of traffic during the peak hour. Only about 1/6 of the Maryland I-495 and I-270 traffic will be carried by the managed lanes despite being 1/3 of roadway capacity.

One of the “big ideas” from the 2018 Capital Region Transportation Forum was that “There’s a market for \$40 toll lanes.” As reported in an article on the event, Nicholas Donohue from the Virginia Department of Transportation explained that “paying a \$40 toll won’t be an everyday choice for most people.”<sup>214</sup>

The DEIS stresses “choice”—but who are these 1/6 that can afford to choose the Express Lanes? Researchers at the University of Virginia studied Virginia Express Lanes tolls and time savings. They found:

<sup>214</sup> Longendyke, Lindsey. Five Big Ideas from the Capital Region Transportation Forum, Greater Washington Board of Trade December 13, 2018. <https://www.bot.org/five-big-ideas-from-the-capital-region-transportation-forum/>

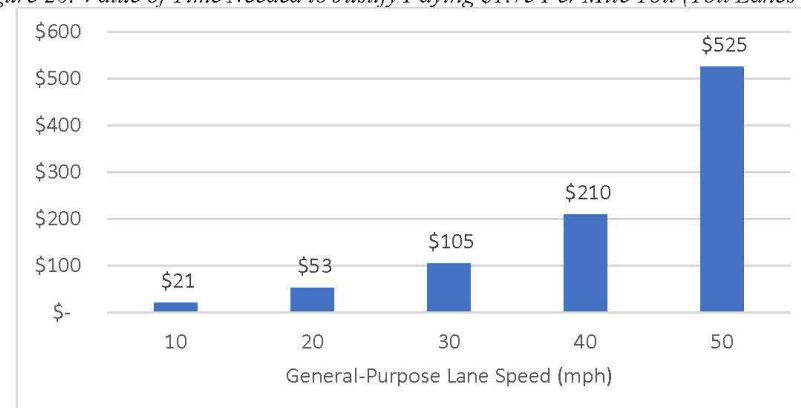


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The I-495 Express Lanes appear to provide the most time savings around 8:45 a.m. Mondays, when the toll rate also rises to around \$1.75 per mile, and Wednesday evenings around 5:30 p.m. when tolls rise to a similar level.<sup>215</sup>

Whether paying \$1.75 per mile is worth it depends on both how much time is saved and an individual's "value of time" expressed in \$/hour. Figure 20 shows how high a value of time is needed to justify using the Express Lanes vs. the speed on the general-purpose lanes.

Figure 20: Value of Time Needed to Justify Paying \$1.75 Per Mile Toll (Toll Lanes at 60 mph)



Source: I created this figure using basic mathematics.

The U.S. General Accountability Office recommends using half the median wage for a typical value of time. The median wage in Maryland is \$22.10 per hour.<sup>216</sup> This corresponds to a value of time of \$11.05 per hour which would not justify a \$1.75 per mile toll until general-purpose speeds decline to 5 mph. Wages in the study area are higher than the Maryland average, so it is possible that the median income worker might be willing to pay up to the \$21 per hour at a general-purpose lane speed of 10 mph. However, such a worker would not be able to buy in at this price because with this much congestion, higher-income travelers would outbid them and the dynamic price would rise above \$1.75. In fact, the DEIS shows a preliminary toll estimate as high as \$2.36 per mile on I-270.<sup>217</sup>

<sup>215</sup> Max Smith, *Are Tolls Worth it on Virginia's HOT Lanes?*, WTOPnews (July 24, 2018), <https://wtop.com/dc-transit/2018/07/are-tolls-worth-it-on-virginias-hot-lanes/>.

<sup>216</sup> Occupational Employment Statistics. May 2019 State Occupational Employment and Wage Estimates Maryland. Bureau of Labor Statistics. [https://www.bls.gov/oes/current/oes\\_md.htm#00-0000](https://www.bls.gov/oes/current/oes_md.htm#00-0000).

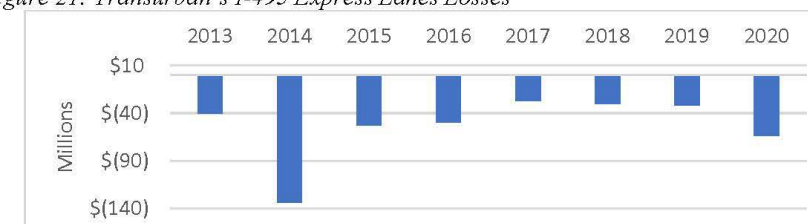
<sup>217</sup> DEIS, App. C, at 883.

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#### d. Taxpayers May Not Be Off the Hook for Managed Lane Costs

This choice between extreme congestion and extremely high tolls is fundamental to making the managed lanes attractive to private operators. They need high peak hour tolls to pay off bonds. They need extreme congestion to justify high tolls. Most toll roads including the Virginia I-495 Express Lanes lose money in the early years and count on increasing congestion in the future to allow them to raise tolls to the point that the investment finally pays off. Figure 21 shows Transurban's I-495 losses by year since the project was opened.

Figure 21: Transurban's I-495 Express Lanes Losses<sup>218</sup>



Source: Created graph using information from Transurban financial reports.

The Virginia I-495 Express Lanes have never been profitable, and cumulative losses now exceed \$400 million. The 2020 fiscal year ending June 30<sup>th</sup> includes Covid-19 impacts, but it doesn't appear the road was on its way to profitability even before this. If the Virginia I-495 Express Lanes are ever to break even, the worst toll rates are yet to come.

The I-95 Express Lanes (also managed by Transurban) were profitable pre-Covid-19, but were not in FY 2020. It appears that a radial commuting route like I-95 is a better market than a circumferential highway like I-495. It is likely that the private operators are hoping to duplicate the I-95 success by extending the I-495 Express Lanes into Maryland in order to emphasize a radial north-south I-270/I-495 commuter route Maryland into Virginia.

The DEIS promises a free lunch where the entire project is paid for by private funding. As shown in Figure 22, this is not what happened in Virginia. The Virginia I-495 Express Lanes were constructed at a cost of over \$2 billion with private equity and private bonds providing less than half the total. The larger share (over \$1 billion) came from a government Transportation Infrastructure Finance and Innovation (TIFIA loan) and \$495 million from the Virginia Department of Transportation.

The VDOT \$495 million contribution was, pre-Covid, supporting just 46,000 transactions per day for the VA I-495 Express Lanes.

Virginia did not plan to contribute to the Express Lanes but was pushed into it in order to make a deal that was acceptable to the private entities. Maryland likely will be in an even weaker

<sup>218</sup> Reporting Suite. Transurban. <https://www.transurban.com/investor-centre/reporting-suite>.



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bargaining position. This project will look riskier post-Covid, because it is not certain that prior travel patterns ever will return completely. The poor I-495 Express Lanes financial performance will cast doubt on the financial viability of the east-west I-495 sections in Maryland.

Figure 22: Virginia I-495 Express Lanes Construction Cost<sup>219</sup>



Source: Federal Highway Administration project profile.

When asked about the potential for high tolls, Terry Owens, a state spokesman for the project, said,

*... the group's assertion that motorists "will" pay the amounts projected by COG is "inaccurate, misleading and suggests a lack of understanding" of the federal environmental review process. The final toll rates will be set by the Maryland Transportation Authority's board after public hearings.*<sup>220</sup>

This contention that the private operators will assume all the risk for construction but allow a public board to hold down toll rates is frankly implausible. If Maryland goes ahead with this project, it can be expected that negotiations with private operators on a binding long-term contract will include discussions of:

<sup>219</sup> Federal Highway Administration. Project Profile: Capital Beltway High Occupancy Toll (HOT) Lanes (I-495). [https://www.fhwa.dot.gov/ipd/project\\_profiles/va\\_capital\\_beltway.aspx](https://www.fhwa.dot.gov/ipd/project_profiles/va_capital_beltway.aspx)

<sup>220</sup> Katherine Shaver, *Beltway, I-270 Toll Lanes Could Cost More Than \$1.50 and \$2 Per Mile, Study Says*, Washington Post (Oct. 16, 2020), [https://www.washingtonpost.com/local/trafficandcommuting/beltway-i-270-toll-lanes-could-cost-more-than-2-per-mile-study-says/2020/10/15/3d3e7fa0-0f27-11eb-8a35-237ef1eb2ef7\\_story.html](https://www.washingtonpost.com/local/trafficandcommuting/beltway-i-270-toll-lanes-could-cost-more-than-2-per-mile-study-says/2020/10/15/3d3e7fa0-0f27-11eb-8a35-237ef1eb2ef7_story.html)

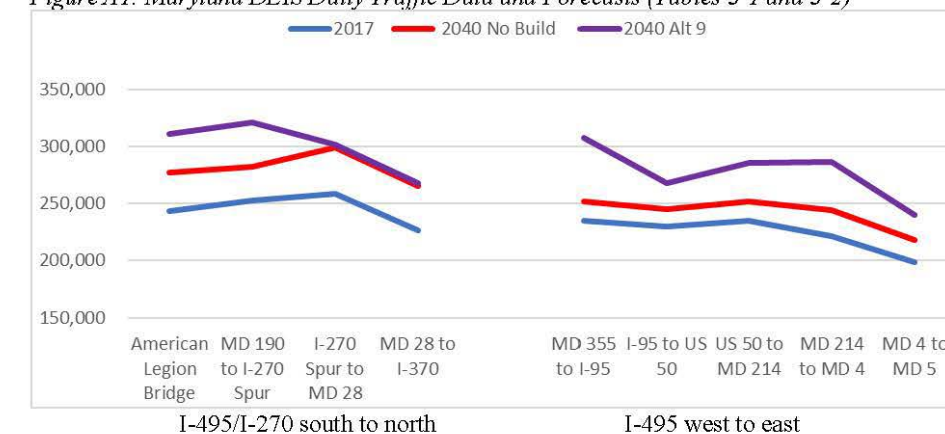
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- Maryland making financial contributions (in addition to the many millions already being spent on studies and that will be spent on a bidding process),
- Maryland committing to a minimum rate of return and/or specified high toll rates,
- Maryland assuming risk, and/or
- the private operators agreeing only to build a small section of the entire project which they see as most profitable, creating the type of bottleneck problem that has occurred in Virginia at the end of the managed lanes.

### 3. Appendix A: Traffic Forecasts

Figure A1 shows DEIS daily traffic data and forecasts for I-495 and I-270. The DEIS forecasts significant traffic growth in the 2040 no build alternative, particularly in the north-south direction, and considerably higher growth in the build alternatives (Alternative 9, which appears to be preferred by MDOT).<sup>221</sup>

Figure A1: Maryland DEIS Daily Traffic Data and Forecasts (Tables 3-1 and 3-2)



Source: DEIS, 2020.

Figure A2 shows the traffic data and forecasts from the 1998 FEIS for the Virginia Express Lanes, along with 2019 actual Average Annual Weekday Traffic (AAWDT).

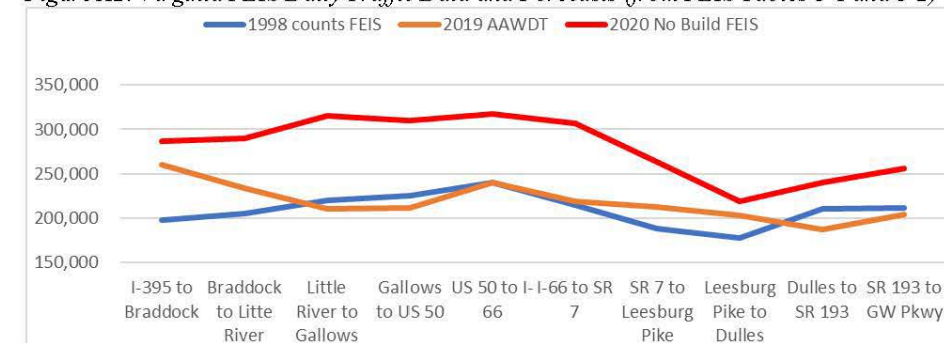
<sup>221</sup> Alternative 9, according to the DEIS, is two priced managed lanes in each direction on I-495 and convert one existing HOV lane to a priced managed lane and add one priced managed lane in each direction on I-270.



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Officials offered a similar forecast of significant growth in the 1998 FEIS for the Virginia Express Lanes (Figure A2), but total daily I-495 traffic has changed little in 21 years and is much lower today than what was forecast in the FEIS no build scenario. Presumably, the 1998 FEIS modeling forecast even higher traffic volume for the build alternative but those numbers are not reported in the FEIS and therefore are not shown in Figure A2.

Figure A2: Virginia FEIS Daily Traffic Data and Forecasts (from FEIS Tables 3-1 and 3-2)



Source: Virginia Express Lanes FEIS, 2006.

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#### 4. Appendix B: DEIS Wrongly Claims that Over-Capacity Assignments Indicate Latent Demand

Generated traffic is a critical concept that is explained by Litman in Box B1.

Box B1. Excerpt from *Generated Traffic and Induced Travel: Implications for Transport Planning*

Todd Litman, Victoria Transport Policy Institute, July 1, 2020 <https://www.vtpi.org/gentraf.pdf>

Traffic engineers often compare traffic to a fluid, assuming that a certain volume must flow through the road system, but it is more appropriate to compare urban traffic to a gas that expands to fill available space (Jacobsen 1997). Traffic congestion tends to maintain equilibrium: traffic volumes increase to the point that congestion delays discourage additional peak-period vehicle trips. Expanding congested roads attracts *latent demand*, trips from other routes, times and modes, and encourage longer and more frequent travel. This is called *generated traffic*, referring to additional peak-period vehicle traffic on a particular road. This consists in part of *induced travel*, which refers to absolute increases in vehicle miles travel (VMT) compared with what would otherwise occur (Hills 1996; Schneider 2018).

This is not to suggest that increasing road capacity provides no benefits, but generated traffic affects the nature of these benefits. It means that road capacity expansion benefits consist more of increased peak-period mobility and less of reduced traffic congestion. Accurate transport planning and project appraisal must consider these three impacts:

1. Generated traffic reduces the predicted congestion reduction benefits of road capacity expansion (a type of rebound effect).
2. Induced travel imposes costs, including downstream congestion, accidents, parking costs, pollution, and other environmental impacts.
3. The additional travel that is generated provides relatively modest user benefits, since it consists of marginal value trips (travel that consumers are most willing to forego).

Ignoring these factors distorts planning decisions...

Litman makes an important distinction between latent demand and induced travel, with generated traffic encompassing both.

- *Latent demand: Additional trips that would be made if travel conditions improved (less congested, higher design speeds, lower vehicle costs or tolls)*
- *Induced travel: An increase in total vehicle mileage due to roadway improvements that increase vehicle trip frequency and distance, but exclude travel shifted from other times and routes*



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- *Generated traffic: Additional peak-period vehicle trips on a particular roadway that occur when capacity is increased. This may consist of shifts in travel time, route, mode, destination and frequency.*<sup>222</sup>

#### The MWCOG Model Assignments Are Not Intended to Include Any Latent Travel

The DEIS uses the phrase latent demand in the same way Litman does: "... latent demand refers to people who want to use I-495 or I-270 during the peak hours, but do not because of the congestion." (DEIS, Appendix C, p. 76). The DEIS then mistakenly assumes that over-capacity MWCOG model forecasts can be used to quantify latent demand. This assumption is not supported by MWCOG model documentation or by the professional travel demand modeling literature in general.

The DEIS used MWCOG Version 2.3.71. The MWCOG website includes travel demand model documentation on the versions 2.3.70, 2.3.75 and 2.3.78. including:

- The TPB Version 2.3 Travel Model, Build 70, also known as the Version 2.3.70 Travel Mode became the adopted travel model on October 18, 2017.
  - [User's Guide for the COG/TPB Travel Demand Forecasting Model, Version 2.3.70 \(Volume 1\)](#)
  - [Highway and Transit Networks from the VDOT and MDOT Off-Cycle Amendment to the 2016 CLRP \(TPB Version 2.3.70 Travel Model\)](#)
- The TPB Version 2.3 Travel Model, Build 75, also known as the Version 2.3.75 Travel Mode became the adopted travel model on October 17, 2018.
  - [User's Guide for the COG/TPB Travel Demand Forecasting Model, Version 2.3.75: Volume 1 of 2: Main Report and Appendix A \(Flowcharts\)](#)
  - [User's Guide for the COG/TPB Travel Demand Forecasting Model, Version 2.3.75: Volume 2 of 2: Appendices B \(Batch Files\), C \(Cube Voyager Scripts\), and D \(AEMS Fortran Control Files\)](#)
  - [Highway and Transit Networks for the TPB Ver. 2.3.75 Travel Model and Air Quality Conformity Analysis of Visualize 2045 and the FY 2019-2024 TIP](#)
- The user's guide and the highway and transit networks documentation for the current model, Ver.2.3.78, were released April 14, 2020.

<sup>222</sup> Litman, 2020, at 3.

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- [User's Guide for the COG/TPB Travel Demand Forecasting Model, Version 2.3.78](#). Metropolitan Washington Council of Governments, National Capital Region Transportation Planning Board, April 14, 2020.
- [Highway and Transit Networks used in the Air Quality Conformity Analysis of the 2020 Amendment to Visualize 2045 and the FY 2021-2024 TIP \(Ver. 2.3.78 Travel Model\)](#). Metropolitan Washington Council of Governments, National Capital Region Transportation Planning Board, April 14, 2020.
- Validation reports:
  - [Calibration Report for the TPB Travel Forecasting Model, Version 2.3, on the 3.722-Zone Area System](#). Final Report. Washington, D.C.: National Capital Region Transportation Planning Board, January 20, 2012.
  - In 2013, the Version 2.3 Travel Model was **validated to year-2010 conditions**. Updates to the model resulting from this validation work were part of Ver.2.3.52. The model validation effort was documented in the following memo: Milone, Ronald. Memorandum to Files. ["2010 Validation of the Version 2.3 Travel Demand Model."](#) Memorandum, June 30, 2013.
  - In 2019, TPB staff conducted a re-validation of Version 2.3.75 to **year-2014 conditions**. The work was documented in the following memo: Feng Xie to Dusan Vuksan and Mark Moran, ["Year-2014 Validation of TPB's Version 2.3 Travel Demand Model,"](#) Memorandum, March 12, 2019.

It appears that the version 2.3.75 documentation and validation report are generally consistent with the version used in the DEIS (2.3.71).

None of the ten model documents on the MWCOG website make any reference to "latent", "induced" or "generated" demand. The MWCOG model's traffic volume outputs are intended to represent actual traffic volumes - either for the base year or for a forecast year. This is apparent in the latest validation report (2019). It compares traffic volumes assigned by the model to traffic counts – both for an entire day (Figure B1) and for each of the four model time periods (Figure 26). In each case, the target is an exact match.



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Figure B1: MWCOG Model Daily Model Traffic Volumes vs. Counts<sup>223</sup>

Table A3-1. Estimated and Observed 2014 Daily VMT by Facility Type\*

Facility Type	Links w/ Counts	Observed ("O")	Estimated ("E")	Ratio (E/O)	Standard †	
					Acceptable	Preferable
Freeway	517	29,419,832	31,618,131	1.07	±7%	±6%
Major Arterial	1,867	14,795,795	15,845,341	1.07	±15%	±10%
Minor Arterial	2,939	10,897,071	12,343,027	1.13	±15%	±10%
Collector	1,144	2,311,056	1,718,105	0.74	±25%	±20%
Expressway	224	5,063,294	4,826,940	0.95	±15%	±10%
Ramp	2	30,176	26,161	0.87	N/A	N/A
<b>Total:</b>	<b>6,693</b>	<b>62,517,224</b>	<b>66,377,704</b>	<b>1.06</b>	<b>±5%</b>	<b>±2%</b>

Source: MWCOG, 2019.

Figure 26: MWCOG Model Daily Model Traffic Volumes vs. Counts<sup>224</sup>

Table A4. 2014 VMT Estimated to Observed Ratio (E/O) by Time Period and Facility Type\*

	Links w/ Counts	AM Peak	Mid-day	PM Peak	Night	Daily
Freeway	125	1.12	1.40	0.93	1.12	<b>1.13</b>
Major Arterial	543	1.05	1.08	0.87	1.15	<b>1.02</b>
Minor Arterial	596	1.33	1.12	1.17	1.37	<b>1.22</b>
Collector	319	0.81	0.68	0.71	0.72	<b>0.72</b>
Expressway	93	0.91	1.07	0.82	0.98	<b>0.94</b>
<b>Total:</b>	<b>1,676</b>	<b>1.09</b>	<b>1.20</b>	<b>0.92</b>	<b>1.12</b>	<b>1.07</b>

Note: \* Based on 1,676 directional links with hourly traffic counts (none of them are ramps)

Source: MWCOG, 2019.

The model outputs summarized in the tables above include both overestimated and underestimated traffic volumes relative to counts. Some of the overestimated volumes are impossibly high because they exceed roadway capacity, but these errors are not an estimate of latent demand—they are just errors.

<sup>223</sup> Xie, Feng. "Year-2014 Validation of TPB's Version 2.3 Travel Demand Model." Memorandum, (March 12, 2019).

<sup>224</sup> Xie, Feng. "Year-2014 Validation of TPB's Version 2.3 Travel Demand Model." Memorandum, (March 12, 2019).

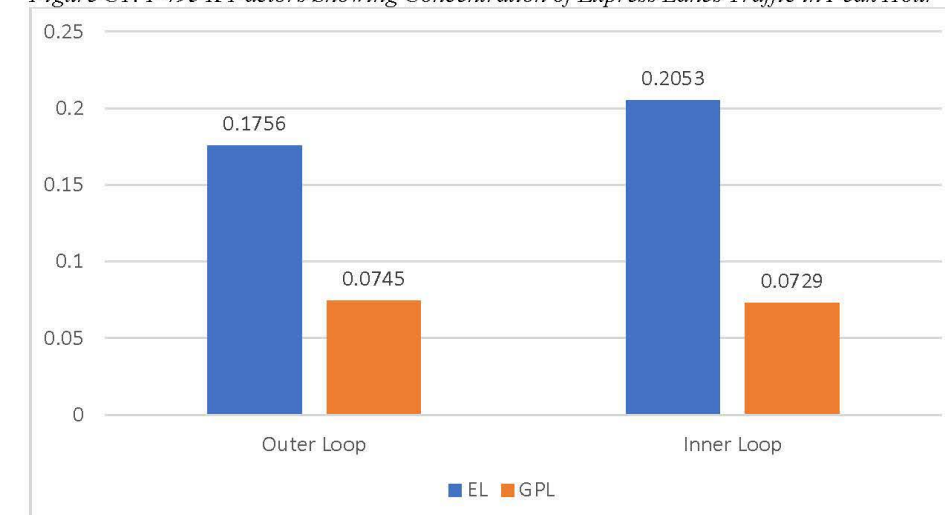
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## 5. Appendix C: The Virginia Express Lanes Caused the Worst Bottleneck on I-495

Peak hour traffic volumes increased sharply after the Express Lanes opened. Peak hour traffic numbers were extracted from VDOT traffic reports by multiplying Annual Average Daily Traffic (AADT) by the estimate of the portion traveling during the peak hour or design hour (K Factor).

The VDOT reports do not include AADT for the Express Lanes except for a 2019 value of 15,000 at the southern exit. This 15,000 per direction number is used as an estimate. The VDOT traffic reports include K factors for the Express Lanes at the southern end in both directions. In 2019, these K factors were 0.1756 for the Outer Loop and 0.2053 for the Inner Loop. As shown in Figure C1, these are over two times the average K factors for parallel general-purpose lane (GPL) segment. This is logical because there is much less incentive to use the Express Lanes during off-peak periods, even given lower toll rates.

Figure C1: I-495 K Factors Showing Concentration of Express Lanes Traffic in Peak Hour<sup>225</sup>



Source: Virginia Department of Transportation traffic count reports, 2019.

The K-factors in Figure C1 show that traffic on the general-purpose lanes is spread widely across the day. This is an efficient use of the roadway capacity. "Peak spreading" is an underappreciated congestion management strategy. In sharp contrast, a large proportion of traffic

<sup>225</sup> From VDOT traffic data report. General-purpose-lanes K Factor is average of segments parallel to Express Lanes.

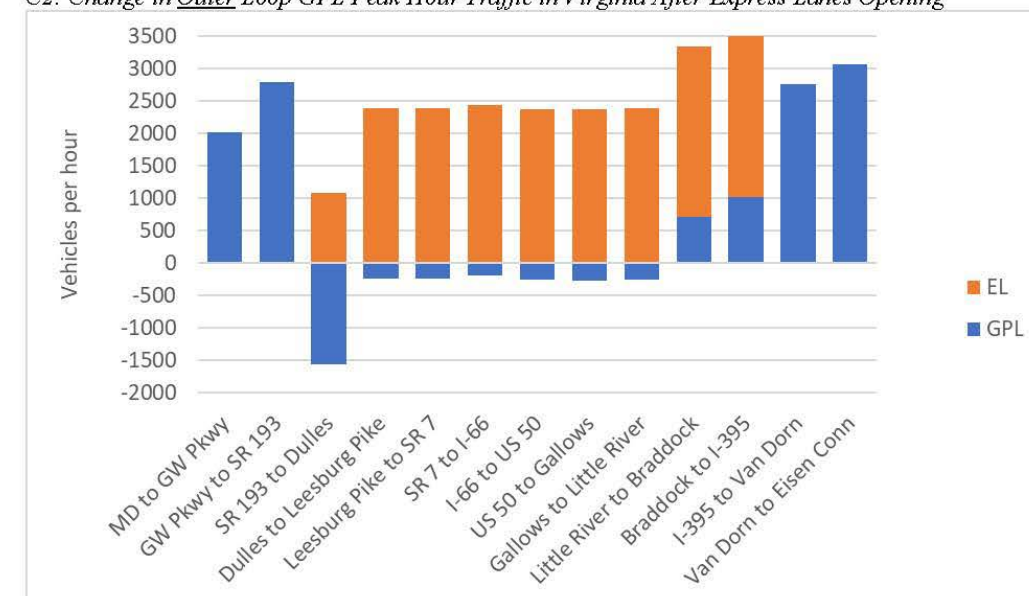


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on the Express Lanes is during the peak hours. This undermines the congestion relief that otherwise would result from peak spreading and causes unintended negative consequences.

Figures 5 and 6 earlier in this report (reinserted for convenience as Figures C2 and C3 show the estimated change in peak hour traffic volume<sup>226</sup> for the Outer and Inner Loop GPL before and after construction. The “Before” numbers are averages from 2005-2007. The “After” numbers are averages from 2013-2019. The period 2008-2012 is omitted due to the extended construction period.

C2: Change in Outer Loop GPL Peak Hour Traffic in Virginia After Express Lanes Opening

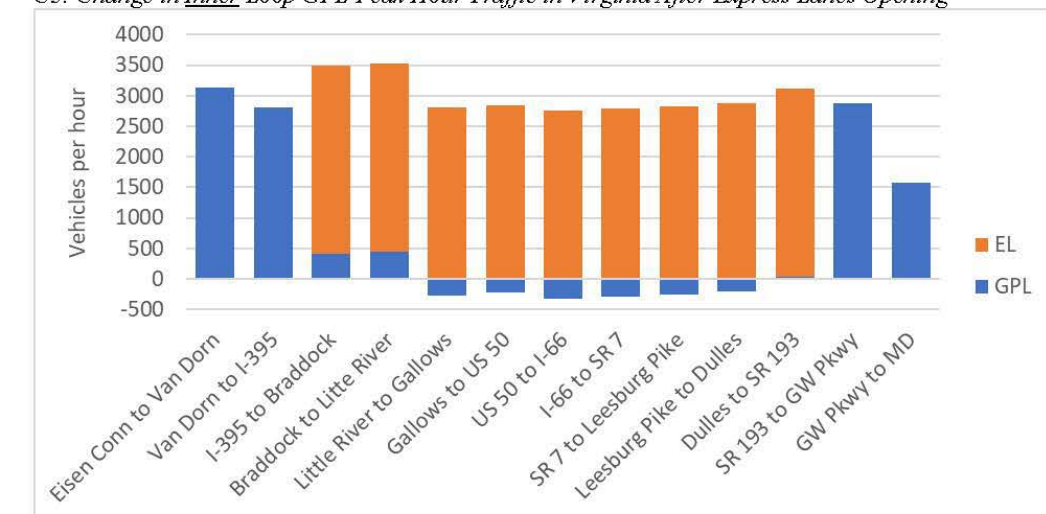


Source: Virginia Department of Transportation traffic count reports.

<sup>226</sup> Calculated as AADT x K Factor.

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C3: Change in Inner Loop GPL Peak Hour Traffic in Virginia After Express Lanes Opening



Source: Virginia Department of Transportation traffic count reports.

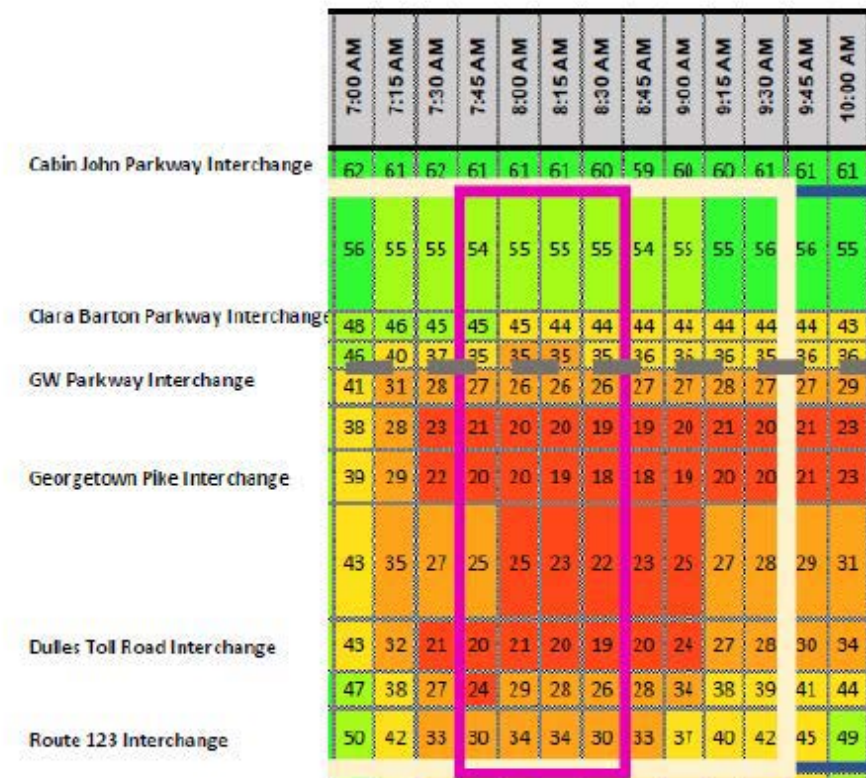
The I-495 Inner Loop often is severely congested for several miles both north and south of the Potomac River in the afternoon. Therefore, the American Legion Bridge is often considered a primary bottleneck in the system. However, a close examination of speed data shows that the worst bottleneck is the first mile north of the end of the Express Lanes north of the Dulles Toll Road. This case is presented fully in Appendix A of this report.

Figure C4 shows Inner Loop speeds for 15-minute intervals from 7 a.m. to 10 a.m. Speeds for 11 Inner Loop segments are shown – from the Route 123 interchange at the bottom/south to the Cabin John Parkway interchange at the top/north. The gray dashed line above the GW Parkway interchange line represents the state line. The northbound speeds at the Georgetown Pike interchange just north of the Express Lane merge are 20 mph or less for a 2-hour period, but the speeds at the American Legion Bridge (above the gray dashed line) never fall below 35 mph. The bridge is not the primary bottleneck in the morning peak period.



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Figure C4: Inner Loop Morning Peak Period Speed Data (INRIX)<sup>227</sup>



Source: Virginia Department of Transportation, 2018.

Legend: Purple box peak hour for core study area; white box longer study period.

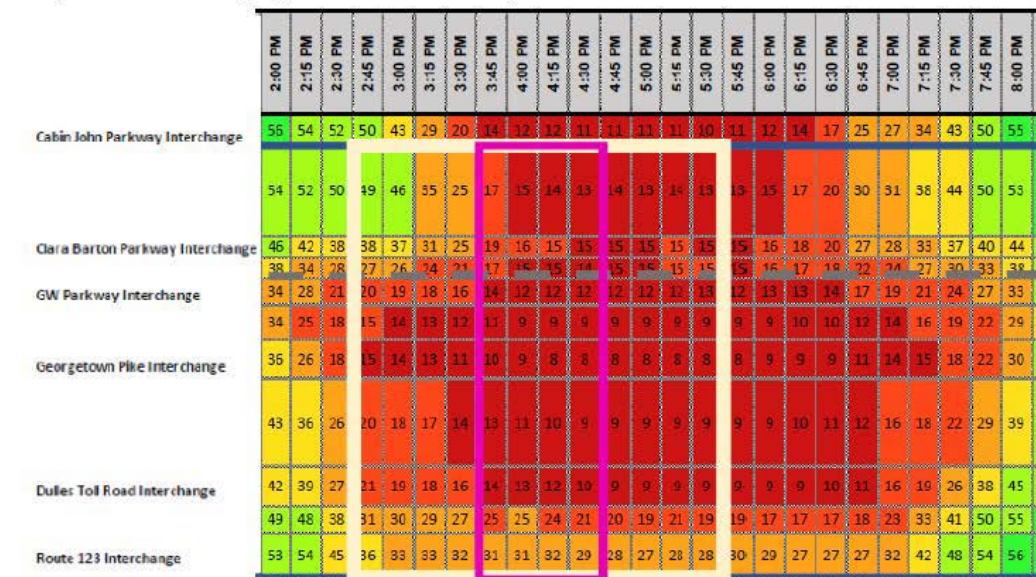
<sup>227</sup> Extracted from VDOT, I-495 Express Lanes Northern Extension Environmental Assessment Scoping Framework Document (November 15, 2018), Figure 7, p. 22. The purple box highlights the peak hour and the white box is for the peak period.

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The afternoon picture is murkier because queues behind bottlenecks spill back into upstream bottlenecks. Nevertheless, Figure C5 shows that the worst afternoon bottleneck in the system is also north of the Express Lanes merge. Compared to the American Legion Bridge, the Express Lanes merge area:

- becomes severely congested (red) about an hour earlier,
- is severely congested for about two hours longer, and
- has lower minimum speeds (8 mph vs 15 mph).

Figure C5: Inner Loop Afternoon Peak Period Speed Data (INRIX)<sup>228</sup>



Source: Virginia Department of Transportation, 2018.

Legend: Purple box peak hour for core study area; white box longer study period.

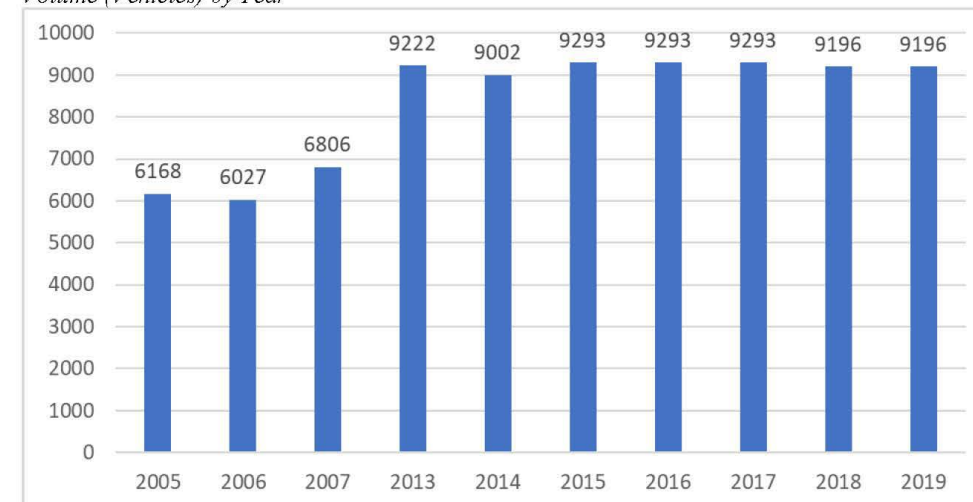
<sup>228</sup> Extracted from VDOT, I-495 Express Lanes Northern Extension Environmental Assessment Scoping Framework Document (November 15, 2018), Figure 7, p. 22. The purple box highlights the peak hour and the white box is for the peak period.



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Finally, Figure C6 shows Inner Loop peak hour traffic for the segment from Georgetown Pike (SR 193) to the George Washington Parkway (the first segment with VDOT data after the Express Lanes merge).

Figure C6: I-495 Inner Loop from SR 193 to George Washington Parkway Peak Hour Traffic Volume (Vehicles) by Year<sup>229</sup>



Source: Virginia Department of Transportation traffic count reports.  
Note: 2008-2012 omitted because of construction during this period.

Figure C6 shows that there was adequate capacity for the pre-Express Lanes traffic volume on four general purpose lanes (less than 8000 vehicles per hour) but not enough for the post-Express Lanes traffic volume. After the Express Lanes opened, the peak hour volume immediately shot up to about 9200 vehicles per hour and has stayed constant at that level from 2013 through 2019. This constant value indicates that this is the maximum capacity for this roadway segment – even with the use of the shoulder lane. The extreme delay results from the queue that spills back behind this bottleneck – a bottleneck that was caused by the Express Lanes project and the worst bottleneck on I-495 in Virginia.

#### L. Other Traffic Problems in the DEIS

##### 1. Increase in “Heavy Truck versus Car” Crashes and Fatalities

Well over 95% of severe to fatal traffic injuries occur to the occupants of passenger cars, vans, and SUVs, as compared to trucks. With the road widening and toll lanes added to the I-270 and the I-495 Beltway, there will be a great increase in such truck-versus-car collisions.

<sup>229</sup> Estimated from VDOT annual Daily Traffic Volume Estimates reports.

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These horrific crashes will occur when cars and trucks need to shift from or into toll lanes to get to exits, and also because heavy trucks and tractor trailers need much greater stopping distances than do cars. If the cars ahead need to suddenly slow or stop, the trucks following in their wakes may be unable to avoid the crash.

The DEIS includes Appendix C - Traffic Analysis Technical Report, which is merely a statistical review of historic crash data along I-270 and I-495 “to help identify potential safety impacts” of the Managed Lane Study. The analysis is sorely lacking in any inputs or insights about how to mitigate or prevent such crashes. In the five-year review period of 2012-2016 there were a total of 2,918 crashes along I-270. There was no breakdown of the types of injuries, nor their severity. Nor was there information about the mismatch of large trucks and tractor-trailers interacting with passenger vehicles (cars, minivans, SUVs).

Look at the multiple lane designs for two of the proposals for I-270. Design #9 has 7 lanes in each direction, and design #10 has 8 lanes in each direction. Imagine you’re going about 60 mph and you’re on a northbound toll lane, and suddenly realize you need to exit. But all the adjacent lanes are jammed with vehicles all moving between 45 and 60 mph. How confident are you in being able to make six lane changes through traffic to your right in a rainstorm on a dark night?

The DEIS also lacks a sufficient safety analysis and does not consider how potentially increased speeds in managed lanes will reduce safety, causing crash injuries to be more severe and even fatal at higher speeds. The rise in traffic fatalities during the COVID-19 epidemic demonstrates this phenomenon.

#### 2. **Bottlenecks: Traffic Will Stall and Pollute as it Funnels Down**

The proposed build-out of I-270 will expand the road in each direction from the present four lanes to seven or eight lanes, which must then funnel down to four lanes in Gaithersburg and then to two lanes north of Germantown up through Frederick. Those bottlenecks will cause immense backups on I-270 south of Germantown.

During the 5 years (or more) of the construction phase for the Project, the local traffic will have to be re-routed throughout the surrounding local streets. There will be construction barriers preventing local travel in certain areas, thus forcing circuitous re-routing that will greatly increase the time and distances for travel. Imagine trying to go from the Beltway northbound on I-270 to your home in Frederick when major portions of I-270 are missing or restricted to one or two lanes. Living in Montgomery County will be a traffic nightmare.

#### M. The Agencies Failed to Take the Required “Hard Look” At Environmental Justice Issues

Executive Order 12,898 directs each federal agency to “make achieving environmental justice part of its mission.” Executive Order 12,898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 8,113 (Feb. 16, 1994) [hereinafter EO 12,898], § 1-101. Moreover, agencies are required to include an



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environmental justice analysis in their NEPA review. *See Sierra Club v. Fed. Energy Reg. Comm'n*, 867 F.3d 1357, 1368 (D.C. Cir. 2017). The purpose of the environmental justice analysis is to determine whether the proposed federal action will have a “disproportionately adverse effect on minority and low-income populations.” *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 541 (8th Cir. 2003).

As with all NEPA requirements, agencies must “take a ‘hard look’ at environmental justice issues,” *Sierra Club*, 867 F.3d at 1368, and their analysis is measured against the “arbitrary and capricious” standard. *See Cmty. Against Runway Expansion, Inc. v. FAA*, 355 F.3d 678, 689 (D.C. Cir. 2004) (arbitrary and capricious standard applies to every section of an EIS). Thus, an agency’s environmental justice analysis must be both thorough and “reasonable and adequately explained.” *Id.*

The Agencies failed to discharge this duty. First, the DEIS uses a fundamentally flawed methodology to identify environmental justice populations. Second, far from investigating the Project’s environmental impacts on environmental justice populations, the Agencies relied on conclusory statements and alleged regulatory compliance to evade any meaningful analysis. Third, the DEIS does not compare environmental justice impacts to impacts on the general population, a necessary step to identify any “disproportionately adverse effect on minority and low-income populations.” *Mid States Coal. for Progress*, 345 F.3d at 541 (emphasis added). Finally, by failing to adequately consider the impacts of the project on environmental justice populations, FHWA prevented those populations from effectively participating in the NEPA process. *See* 40 C.F.R. § 1500.1(b) (2019).

#### 1. The Agencies’ Methodology for Identifying Environmental Justice Populations Is Fundamentally Flawed

NEPA requires that an EIS contain high-quality information and accurate analysis. *See* 40 C.F.R. § 1500.1(b) (2019). If the agency relied on an incomplete model or the relevant data is unavailable, the EIS must disclose this shortcoming. *See Lands Council v. Powell*, 395 F.3d 1019, 1031-32 (9th Cir. 2005) (citing 40 C.F.R. § 1505.22 (2005)) (Forest Service violated NEPA by relying on data that it knew had shortcomings but did not disclose those shortcomings until its decision was challenged).

Here, the Agencies relied on census block group data for its environmental justice analysis. *See* DEIS, App. E, at 70. As a threshold matter, census data is deficient because it excludes “pockets of minority or low-income communities, including those that may be experiencing disproportionately high and adverse effects.” EPA, Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses, 2.1.1 (1998). Further, as FHWA itself has found, census data fails to reveal the intricate communal networks that could exacerbate negative impacts on environmental justice populations. *See* FHWA, U.S. DOT, Environmental Justice Reference Guide 15 (2015) (FHWA Guidance). FHWA did not disclose these shortcomings in the DEIS.

To remedy these limitations, the Agencies’ environmental justice analysis must incorporate supplemental demographic data. For instance, the environmental justice analysis

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should include data from a full range of state and local health, environmental, and economic agencies. *See* CEQ, Exec. Office of the President, Environmental Justice Guidance Under the National Environmental Policy Act 14 (1997) (CEQ Guidance). Additionally, FHWA should conduct a door-to-door household survey of the study corridor to identify cultural practices and patterns of living that are relevant to the environmental justice analysis.<sup>230</sup>

#### 2. The Agencies’ Discussion of Environmental Justice Lacks Any Meaningful Analysis of Impacts to Environmental Justice Populations

The Agencies failed to adequately analyze and explain the impacts of its proposed actions on environmental justice populations. At a minimum, the analysis must be sufficient to demonstrate that the Agencies have “adequately considered and disclosed the environmental impact of its actions and that its decision is not arbitrary or capricious.” *Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97-98 (1983).

Proper analysis is especially important in the environmental justice context. Over the past 40 years, research has connected localized air pollutants to adverse health outcomes including pulmonary and cardiovascular disease, neurological effects, and cancer. 83 Fed. Reg. 42,986 (Aug. 24, 2018). These effects are compounded in environmental justice populations due to their proximity to major interstates and highway systems. *Id.* Though the DEIS admits there are at least 111 environmental justice populations within the study area, DEIS, App. E, at 72, it fails to adequately identify or evaluate the adverse environmental effects on any of those communities, and is therefore arbitrary and capricious.

##### a. The Agencies Improperly Relied on Conclusory Statements to Sidestep Their Duty to Take a Hard Look at Impacts to Environmental Justice Populations

The DEIS makes several conclusory statements regarding potential environmental impacts, but these passing remarks are insufficient to discharge the Agencies’ duty to take a hard look at environmental justice issues. *See Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014) (alteration in original) (quoting *Found. on Econ. Trends v. Heckler*, 756 F.2d 143, 154 (D.C. Cir. 1985)) (“[s]imple, conclusory statements of ‘no impact’ are not enough to fulfill an agency’s duty under NEPA”).

In its discussion of air quality impacts, the DEIS simply states that “construction-related effects of the project would be limited.” DEIS, App. E, at 105. However, the analysis does not consider, or even *list*, the harmful effects of construction-related fugitive dust.<sup>231</sup> Similarly, the DEIS asserts that “impacts by relocation or partial property acquisition would be limited to the individuals immediately affected by the property acquisition.” DEIS, App. E, at 107. The DEIS

<sup>230</sup> *Cf. Friends of Buckingham v. State Air Pollution Control Bd.*, No. 19-1152, (4th Cir. Jan. 7, 2020).

<sup>231</sup> *See supra* Section II.H.1, 10, 11, & 12.



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cites no data—neither quantitative nor qualitative—to support this conclusion. This is especially concerning in the environmental justice context, where “the intricate relationships that exist between community members or institutions” could exacerbate negative impacts that would be benign in other communities. FHWA Guidance at 15.

FHWA’s conclusory statements regarding environmental justice impacts in the DEIS are plainly insufficient under NEPA. Instead, the agency must evaluate all relevant data and “articulate a satisfactory explanation” for the conclusions reached in the EIS. *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

**b. The Agencies Cannot Rely on Regulatory Compliance to Obviate NEPA’s Requirement to Consider Impacts on Environmental Justice Populations**

Even if the Agencies intend to follow all relevant regulations to construct the Project, regulatory compliance does not obviate the need to conduct a proper environmental justice analysis. Indeed, a compliant project may still result in “significant environmental damage.” *Calvert Cliffs’ Coordinating Comm. v. U.S. Atomic Energy Comm’n*, 449 F.2d 1109, 1123 (D.C. Cir. 1971). Consequently, whether a project will violate a regulation is a distinctly different inquiry from whether the project will have “disproportionately high and adverse” impacts on environmental justice populations.

In its short discussion on air quality impacts, the DEIS states that the project will follow “[s]tate and local regulations regarding dust control and other air quality emission reduction controls,” DEIS, App. E, at 105, but provides no analysis of the actual impact of the dust or emissions. Similarly, instead of discussing the potential impacts that congestion pricing would have on environmental justice commuters, the DEIS simply notes that toll prices would be set “in accordance with [Maryland law],” which requires public notice. DEIS, App. E, at 108. Compliance with regulations or established processes is also relied upon to excuse the superficial discussions of impacts to water quality, visual aesthetics, mobility, and the local economy. *See* DEIS, App. E, at 105-07.

Meeting a regulatory standard cannot replace the “reasonably thorough discussion of the significant aspects of the probable environmental consequences” as required by NEPA. *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992). Otherwise, the consideration of environmental justice issues would be limited to projects that cannot lawfully obtain permits in the first place. This stance is illogical and at odds with principles of environmental justice codified in EO 12,898.

**3. The Agencies Failed to Consider Whether the Project Will Disproportionately Affect Environmental Justice Populations**

NEPA requires an agency to consider whether a proposed project’s impacts on environmental justice populations will be “disproportionately high and adverse.” EO 12,898, § 1-101 (emphasis added). To that end, an environmental justice analysis must “compare the

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demographics of an affected population with demographics of a more general character.” *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 541 (8th Cir. 2003).

Here, the Agencies did not compare the impacts on any of the 111 identified environmental justice populations to a more general affected population. In fact, the only comparison in the environmental justice analysis is a small table comparing the project alternatives to one another. *See* DEIS, App. E, at 109, Table 4-7. The table simply lists seven alternatives and whether each alternative has the potential to adversely affect 13 environmental resources that may be present in environmental justice populations, without even stating what those effects might be, let alone comparing them to effects on the general population. *Id.*

An EIS must *compare* impacts on populations to determine whether the environmental justice impacts “appreciably exceed” impacts to the general population. CEQ Guidance at 26-27. Not only should the comparison be quantitative, but the distinct culture and structure of environmental justice communities means the comparison should include qualitative analysis as well. *See id.* at 14. Even with the limited and insufficient data provided at the census block level, disproportionality of impact would be expected given the general demographics of the populations living within the impacted counties.

**4. The Agencies’ Failure to Take a “Hard Look” at Environmental Justice Impacts Precluded Meaningful Participation by Environmental Justice Populations**

The NEPA process relies on public scrutiny. *See* 40 C.F.R. § 1500.1(b) (2019). Further, environmental justice principles prohibit agencies from excluding low-income and minority populations from participating in the NEPA process. EO 12,898, § 2-2. However, without taking a hard look at environmental justice impacts, a DEIS cannot foster the “informed public participation” that is central to NEPA. *State of Cal. v. Block*, 690 F.2d 753, 761 (9th Cir. 1982).

An informed evaluation of the project’s impacts on environmental justice populations, which was lacking here, is critical to “effective community participation.” CEQ Guidance at 4. The Agencies’ failure to adequately disclose the impacts of its action “preclude[d] meaningful evaluation of the effectiveness of the agency’s proposed action.” *Fund for Animals v. Norton*, 281 F. Supp. 2d 209, 227 (D.D.C. 2003).

Additionally, the Agencies did not conduct sufficient outreach to communities of color. During the scoping and commenting periods, outreach and informational materials, like interpretation messages, were largely made available in English only, and the multilingual factsheets that were provided are hard to find on the Project website. Communities of color should be afforded equal access to and participation in every level of decisions making on projects that will impact their communities, but this has not occurred with the Project. For example, the percentage of people who answered the public opinion survey conducted during the scoping period shows 18% fewer respondents came from Prince George’s County (which is majority African-American and Latinx) than Montgomery County. DEIS, App. P, at 18 (Table 2-6) (showing 39% of respondents were from the project area from the I-495/I-95 Interchange to the I-495/US 50 Interchange and only 21% of commenters were from the I-495/US 50



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Interchange to the Woodrow Wilson Bridge). The lack of outreach to these communities of color flies in the face of the Principles of Environmental Justice.<sup>232</sup>

Had the Agencies taken a legally sufficient hard look at the project’s environmental justice impacts and conducted more outreach to these communities, low-income and minority populations would be better informed of the Beltway expansion’s environmental effects on their communities and, consequently, would be able to offer meaningful comment. *See Center for Biological Diversity v. Gould*, 150 F. Supp. 3d 1170, 1182 (E.D. Cal. 2015) (agency’s failure to include environmental information that it relied upon in its decision precluded plaintiffs from submitting more complete comments and thus violated NEPA). Instead, the DEIS gives environmental justice populations scant basis to “understand and consider meaningfully the factors involved.” *Concerned Citizens on I-190 v. Sec’y of Transp.*, 641 F.2d 1, 5 (1st Cir. 1981). Accordingly, the Agencies must supplement the DEIS with a thorough discussion of environmental justice impacts that meets NEPA requirements, complete with information that would allow environmental justice populations to meaningfully participate in the NEPA process.

#### N. The DEIS Does Not Address Induced Demand

Building this hugely expensive highway capacity increase project will not solve the congestion problem but will cause long-term growth in automobile traffic and greenhouse gas emissions. Current research confirms that building new highway capacity does not, in the long run, reduce highway congestion.<sup>233</sup> Rather, it stimulates an increase in Vehicle Miles Traveled to soak up the new capacity, resulting in new congestion, more VMT, and more greenhouse gas emissions.

<sup>232</sup> See People of Color Environmental Leadership Summit, *17 Principles of Environmental Justice*, <https://www.ejnet.org/ej/principles.pdf>.

<sup>233</sup> Ronald T. Milam et al., *Closing the Induced Vehicle Travel Gap Between Research and Practice*, Transportation Research Record: Journal of the Transportation Research Board, No. 2653, at 10-16 (2017); Handy, Susan and Marlon G. Boarnet, *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions: Policy Brief*, California Air Resources Board, (2014), [https://www.researchgate.net/profile/Chris\\_Ganson/publication/315534829\\_Closing\\_the\\_Induced\\_Vehicle\\_Travel\\_Gap\\_Between\\_Research\\_and\\_Practice/links/59ee5a9ba6fdcc32187db6bd/Closing-the-Induced-Vehicle-Travel-Gap-Between-Research-and-Practice.pdf](https://www.researchgate.net/profile/Chris_Ganson/publication/315534829_Closing_the_Induced_Vehicle_Travel_Gap_Between_Research_and_Practice/links/59ee5a9ba6fdcc32187db6bd/Closing-the-Induced-Vehicle-Travel-Gap-Between-Research-and-Practice.pdf); Handy, Susan, *Increasing Highway Capacity Unlikely to Relieve Traffic Congestion*, Policy Brief, National Center for Sustainable Transportation, University of California, Davis, (Oct. 2015), [https://ww2.arb.ca.gov/sites/default/files/2020-06/Impact\\_of\\_Highway\\_Capacity\\_and\\_Induced\\_Travel\\_on\\_Passenger\\_Vehicle\\_Use\\_and\\_Greenhouse\\_Gas\\_Emissions\\_Policy\\_Brief.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-06/Impact_of_Highway_Capacity_and_Induced_Travel_on_Passenger_Vehicle_Use_and_Greenhouse_Gas_Emissions_Policy_Brief.pdf).

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Researchers have concluded that “[i]ncreased roadway capacity induces additional VMT in the short-run and even more VMT in the long-run.”<sup>234</sup> Further, “increases in GHG emissions attributable to capacity expansion are substantial”,<sup>235</sup> and the increase in VMT “offsets any reductions in GHG emissions that would result from improved traffic flow.”<sup>236</sup>

A timely new paper by three experts in the field, titled “Induced Vehicle Travel in the Environmental Review Process” confirms and elaborates on these findings and suggests how they should be applied in the environmental review process.<sup>237</sup>

The pertinent findings of this new study are summarized below:

1. “Roadway capacity expansion is frequently proposed as a solution to traffic congestion” due to “flawed logic... The logic is flawed because it does not account for the induced vehicle travel effect. Constructing new highway lanes generally increases the average speed of highway traffic and thereby reduces the effective cost of driving on the highway. That, in turn, induces more vehicle travel on the highway—more vehicle miles traveled.”<sup>238</sup>
2. Induced travel is often not fully accounted for in the planning and environmental review process. “As a result, agencies often *overestimate* the traffic congestion-reducing benefits of capacity expansion projects and *underestimate* the projects’ environmental impacts, resulting in a potential overallocation of public money on road construction.”<sup>239</sup> [emphasis in original].
3. The authors detail the process of induced travel (a term they believe more accurately describes the phenomenon than “induced demand”):

The reduction in the time cost of vehicle travel induces driving by inducing shifts in travel behavior that increase VMT on the road network and can ultimately return congestion to pre-expansion levels. Those behavioral responses can include shifts from non-auto travel modes to driving, shifts in destinations, and shifts in driving routes, as well as entirely new trips. These responses can cause increases

<sup>234</sup> Handy, 2015, 1.

<sup>235</sup> Handy, 2015, 1.

<sup>236</sup> Handy, 2014, 7.

<sup>237</sup> Volker, Jamey M. B., Amy E. Lee, and Susan Handy, *Induced Vehicle Travel in the Environmental Review Process*, Transportation Research Record: Journal of the Transportation Research Board, No. 2674, at 468-479 (June 15, 2020).

<sup>238</sup> Volker, 468.

<sup>239</sup> Volker, 468.



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in both personal and commercial driving. In the longer term, adding capacity to highways or other major roadways can lead to changes in residential and employment location decisions that increase travel distances and may eventually spur commercial or residential growth in the region. The latter effect, an increase in population and jobs, represents a shift in the demand curve, increasing VMT even further, and is sometimes referred to as “induced demand.” Instead of the intended effect of steady-state VMT and congestion relief, the initially reduced congestion and resulting decrease in time cost of driving induce yet more driving. The increasing VMT then worsens congestion and can start the whole process over again in a vicious cycle.<sup>240</sup>

4. A range of studies suggests that VMT grows to consume new highway capacity in 5 to 10 years.<sup>241</sup>
5. Studies identify four broad components of induced VMT growth: (1) increased household VMT, (2) increased commercial truck VMT, (3) diversion of traffic from other routes, and (4) migration (population increase). The share of each of these will vary from situation to situation. All but (3), diversion, represent new VMT.<sup>242</sup>
6. “Current travel demand models do not fully account for induced travel.” The models “may do an adequate job of accounting for changes in route and shifts in mode, but they underestimate increases in VMT attributable to increases in trip frequencies and lengths that capacity expansion will induce.”<sup>243</sup>
7. The authors have created an “Induced Travel Calculator” instrument, which, however, has not yet been calibrated for cases outside California.<sup>244</sup>
8. The authors examined five highway expansion projects in California. They found that the environmental documents for these projects “differ widely in their discussion, analysis, and reporting of induced travel. The documents range from not mentioning induced travel by name nor by concept, to addressing induced travel in response to public comments, to citing the induced travel literature and explaining why it does not apply to this project.”<sup>245</sup>

<sup>240</sup> Volker, 469.

<sup>241</sup> Volker, 469-470.

<sup>242</sup> Volker, 470.

<sup>243</sup> Volker, 470.

<sup>244</sup> Volker, 471.

<sup>245</sup> Volker, 473.

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9. One of the case studies presented by the authors is the addition of 10.2 lane miles to I-405 in Los Angeles. The purpose of the project, according to the EIS, was to “reduce existing and forecast traffic congestion.” The subject of induced traffic was not raised in the DEIS, but was addressed in response to public comments. The response minimized the concern, stating that the widening served “latent demand,” not “new demand.” The authors conclude: “The discussion does not acknowledge that providing new capacity to serve this latent demand could generate additional vehicle travel, that is, induced VMT.” The Induced Travel Calculator estimates that the I-405 project will produce an additional 87.8 million VMT per year!<sup>246</sup>

10. The authors present three main conclusions to their review of case studies: First, the environmental documents “did not address induced travel in much detail except in response to comments.” Second, responses to public comments on the subject “were inconsistent both within and across the documents, and they were inconsistent with the induced travel literature.” Third, where estimates of induced travel *were* included in the environmental documents, they were much lower than the predictions of the Induced Travel Calculator, in some cases by orders of magnitude.<sup>247</sup>

11. The authors, not surprisingly, recommend further research in this area, “particularly given the confluence of the vast sums of funding that continue to flow toward roadway expansion projects and the urgency of reducing VMT as a way to combat climate change and alleviate many other environmental, economic, and social impacts of driving and highway infrastructure.”<sup>248</sup>

The I-495/I-270 DEIS does have a discussion of induced travel (“latent and induced demand”), contained in the traffic technical report.<sup>249</sup> To classify this DEIS alongside the Volker et al. case studies, the DEIS contains some discussion of induced travel, but neither references the current literature on the subject, nor recognizes it as a significant factor.

Of the four factors contributing to induced travel cited by Volker et al. (item 5 above), the only one discussed in detail is diversion from other (in this case, arterial) routes. Mirroring the I-495 EIS, this is labeled “induced demand”: “Latent demand represents diverted trips. The project will improve the system by serving more latent demand on the freeways instead of on arterials.”<sup>250</sup>

<sup>246</sup> Volker, 474.

<sup>247</sup> Volker, 477.

<sup>248</sup> Volker, 478.

<sup>249</sup> DEIS, App. C, Traffic Analysis Technical Report.

<sup>250</sup> DEIS, App. C, at 144.



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The document does recognize other induced travel (“induced demand”) as a factor, but concludes that it will have only a minor impact: “Induced demand represents new trips. While the project may generate some new trips, MWCOG modeling shows that the amount of induced demand caused directly by the project would be less than 1% of the total VMT in the region.”<sup>251</sup>

Land use changes that could be a result of highway widening are explicitly not considered in the DEIS: “There is little room for increased land use along I-270 and I-495 as the areas (sic) is already built out, and the model already accounts for changes in land use in areas further from these facilities.”<sup>252</sup>

It seems likely that this DEIS is a case of traffic modeling (here by the MWCOG traffic model) underestimating VMT differential between the build cases and the no-build cases (see Volker item 6 above).

We recommend that DEIS be tasked with using the Volker et al. Induced Travel Calculator to provide a more accurate picture of the induced travel that would be generated by the highway widening.

**O. The DEIS Does Not Adequately Examine The American Legion Bridge Contingencies**

The DEIS fails to take a hard look at the environmental impacts of constructing the American Legion Bridge. The impacts from the Bridge reconstruction and widening go well beyond a traditional highway expansion.<sup>253</sup> The Bridge’s reconstruction will significantly impact the traffic costs and benefits of the Project, including potential bottlenecks, as well as air emissions and hotspots.

The status, plans, and risks relating to the Bridge reconstruction remain unknown to the public. The “Bi-state Capital Beltway Accord” announced on November 12, 2019 by Governors Hogan and Northam merely represents an “agreement on principles,” not a written agreement.<sup>254</sup> Shortlisted proposers were perplexed about the Capital Beltway Accord; MDOT and VDOT asked:

The RFQ mentions that MDOT and VDOT intend to enter into a bi-state, bipartisan accord regarding the coordination of the Project within Virginia. MDOT indicated

<sup>251</sup> *Id.*

<sup>252</sup> *Id.*

<sup>253</sup> See, e.g., the extensive considerations and mitigations undertaken for the Woodrow Wilson Bridge. *Woodrow Wilson Bridge Improvement Study Supplemental Draft Environmental Impact Statement / 4(f) Evaluation*, FHWA and Virginia Department of Transportation (Jan. 1996), <https://babel.hathitrust.org/cgi/pt?id=ien.35556030096788&view=1up&seq=1>.

<sup>254</sup> I-495 & I-270 P3 Program Phase 1 Transaction Summary, at 6.

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this would be released during the RFP phase. Can MDOT and MDTA provide further visibility on timing and key terms of this agreement?

Will Shortlisted Proposers have an opportunity to comment on the agreement before it is executed?

Please also confirm that this agreement is only intended to cover the Section Work that will be delivered in Virginia.

What are the risks related to the Capital Beltway Accord anticipated by MDOT to be covered by the P3 agreements as mentioned in section 5.2 of the RFQ?<sup>255</sup>

The response from MDOT in this March 25, 2020 document was initially “PENDING.” but was later changed to:

More information regarding the Capital Beltway Accord, the scope of the Section Work and the form of the Section P3 Agreement, which will identify risk allocations for the Section Developer, will be provided as part of the draft RFP documents to the Shortlisted Proposers.<sup>256</sup>

This important information does not appear to have been included in the DEIS. Given the importance of the American Legion Bridge, its potential to connect the two states by rail in addition to highway, and the fact that rail is not currently being considered, it is inappropriate to minimize the actual number of alternatives and importance of fully informed decision making in relation to the American Legion Bridge. The nature and impact of the Bi-state Accord and how it will constrain state decision-making should have been evaluated in the DEIS to give the public an opportunity to comment. Reserving space for rail on the American Legion Bridge should have been considered in the DEIS. At a minimum, all information that has been provided to shortlisted proposers should also have been included in the DEIS.

The DEIS also should include consideration of and reference to the proposed 495 Next project on the Virginia side of the American Legion Bridge as well as the Bi-state Capital Beltway Accord. Specifically, information and documents from both the VA 495 Next project and consultations between Maryland and Virginia regarding the Bi-state Capital Beltway Accord should be considered in the DEIS. The DEIS should describe whether the cumulative impact of the 495 Next traffic data has been incorporated into the traffic analysis as well as whether cumulative impacts to neighborhoods and the environment have been considered. The DEIS does not examine these issues, although these questions and concerns have been raised with MDOT and VDOT, and it remains unclear to what extent these issues have been considered by the

<sup>255</sup> Addendum No. 2 and 3, Phase 1 of the I-495 & I-270 Public-Private Partnership (P3) Program Request for Qualifications (RFQ), MDOT SHA, at 2, 6 (Mar. 25, 2020), [https://emma.maryland.gov/bare.aspx/en/fil/download\\_public/2BC5622F-E806-48F4-8115-1C3C88F983E3?file\\_context%255brfp%255d=23413/process\\_manage\\_extranet/23413](https://emma.maryland.gov/bare.aspx/en/fil/download_public/2BC5622F-E806-48F4-8115-1C3C88F983E3?file_context%255brfp%255d=23413/process_manage_extranet/23413).

<sup>256</sup> *Id.*



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Agencies, if at all.<sup>257</sup> The Project’s cumulative impacts should include the Potomac Heritage Trail, George Washington Parkway, and any other federal, state or local parklands and natural resources relating to the American Legion Bridge and 495 Next project in Virginia.

**P. NEPA Procedural Problems**

**1. The Agencies Violated NEPA by Initially Providing the Public with an Incomplete DEIS and then Adding Appendices Without Notifying the Public**

NEPA requires that FHWA “[m]ake diligent efforts to involve the public in preparing and implementing their NEPA procedures[.]” “[p]rovide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected[.]” and “[i]n all cases . . . mail notice to those who have requested it on an individual action.” 40 C.F.R. § 1506.6 (2019). NEPA also required the Agencies to circulate the appendices together with the DEIS or make them readily available upon request. 40 C.F.R. § 1502.18 (2019); 40 C.F.R. § 1502.19 (2020). Specifically, the Agencies:

must circulate the draft EIS for comment. The draft EIS must be made available to the public and transmitted to agencies for comment no later than the time the document is filed with the Environmental Protection Agency in accordance with 40 CFR 1506.9. The draft EIS must be transmitted to:

(1) Public officials, interest groups, and members of the public known to have an interest in the proposed action or the draft EIS.

23 C.F.R. § 771.123(i).

The Agencies instructed the interested public to sign up for email updates about the DEIS. On Friday, July 10, the Agencies announced on the Project’s website and emailed those who signed up for notifications that the DEIS, including supporting traffic, environmental, engineering and financial analyses, was available online at 495-270-P3.com/DEIS.

An untold number of people went to that website and downloaded the DEIS’s PDF files to start their review, including reviewers within and members of the Organizations.<sup>258</sup> The public had every right to expect that the files on the website the Agencies directed them to contained the

<sup>257</sup> See Letter from VDOT and MDOT to Sierra Club re 495 Next, (Nov. 2, 2020); Letter from Sierra Club to VDOT and MDOT re 495 Next, (Sept. 30, 2020).

<sup>258</sup> The Organizations do not know how many people downloaded the wrong files on July 10 and 11, but the Agencies certainly do. The Organizations request that the Agencies disclose that number.

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DEIS and supporting information. The public had every right to start using their limited time to review and comment on the files on the website.

However, seven weeks later, on August 18, 2020, it was reported in the media that the files available on 495-270-P3.com/DEIS on July 10 and July 11 were incomplete and that at some point on July 11, MDOT SHA added a new appendix and modified another appendix, adding about 1,700 new pages.<sup>259</sup> The Agencies claimed that the new information was added on Saturday, July 11.<sup>260</sup> Disturbingly, despite having the ability to notify the public about the added files through emails, publication in the Federal Register, or other means, the Agencies kept this change secret. As a result, the Agencies left many people reviewing and working on comments based on the incomplete DEIS for over a month.

If that were not bad enough, the Agencies still did not inform the public of the new files even after some local reports indicated their existence, with the result that many people continue to review the incorrect DEIS. After discovering the unannounced and unexplained DEIS changes, on August 25, 2020, the Organizations wrote to the Agencies requesting that the Agencies:

1. Announce to the public that the DEIS downloaded from the 495-270-P3.com/DEIS website on July 10 was incomplete;
2. Provide an itemized list of changes made to the posted DEIS after July 10, and when these changes were made; and
3. Extend the comment period to 90 days from the day of that announcement.

The Organizations explained that by law, the public is entitled to review the complete DEIS and the Agencies are required to circulate appendices or make them readily available upon request. The Organizations further explained that everyone who downloaded the files was unknowingly reviewing incomplete information. The Organizations also requested a count of how many people downloaded the incomplete documents on July 10. The Organizations explained that the 90 day comment period should not begin until the Agencies informed the public that they were reviewing incomplete information; otherwise, the comment period would be arbitrarily shortened

<sup>259</sup> Louis Peck, *UPDATED: State’s I-495/I-270 Study Expanded Without Proper Notice, Regional Agency Complains*, Bethesda Magazine (Aug. 18, 2020), <https://bethesdamagazine.com/bethesda-beat/transportation/states-i-495-i-270-study-expanded-without-proper-notice-regional-agency-complains/>; Brude DePuyt, *Local Planners Fume Over Unreported Additions to Highway Document*, Maryland Matters (Aug. 18, 2020), <https://www.marylandmatters.org/2020/08/18/local-planners-fume-over-unreported-additions-to-highway-document/>.

<sup>260</sup> A “Wayback Machine” website captured from the morning of Saturday, July 11 shows the website still containing the incorrect DEIS. <http://web.archive.org/web/20200711094558/https://495-270-p3.com/DEIS/>.



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for those people or, even worse, leave some of the public commenting on incomplete information. Last, the Organizations requested that the Agencies add public hearings at least 15 days after providing notice to the public that the posted DEIS was incomplete.

On September 8, 2020, MDOT SHA responded by confirming that the DEIS and supporting appendices on the website were incomplete as of July 10 and that two new appendices were uploaded sometime on July 11 after the initial release. The response ignored the bulk of the Organizations' requests, but said:

Considering the clarification of the facts regarding publication and availability of the DEIS and Technical Reports on July 10, we will not be further extending the comment period on the grounds that the DEIS was not complete.

This response is insufficient and the Agencies' actions with respect to their error render the process unlawful. As explained in the Organizations' letter, an untold number of people were reviewing an incomplete DEIS from July 10 until August 18. An untold number of people still are reviewing an incomplete DEIS and will be submitting comments based on the incomplete DEIS. The Organizations have attempted to inform their reviewers and members of this problem and make sure they submit comments based on the complete DEIS. However, the Organizations cannot reach everyone, and it is not in any event their obligation to inform the public. There is no justifiable reason why on July 11, August 18, or even September 8, the Agencies did not send out a simple notification to the public explaining the error and informing them that they could download the corrected DEIS files. Until the Agencies do so, and provide additional time to comment, they cannot legally proceed with the NEPA process.

Moreover, sometime after August 26, a month and a half after releasing the DEIS, the Agencies changed the title of one of the appendices: "Appendix A & B: MD 200 Diversion Alternative Analysis Results Paper" was changed to "Appendix A & B: MD 200 Diversion Alternatives Analysis Results Paper and Alternative 9 Modified Preliminary Evaluation."<sup>261</sup> The Agencies again made this change without informing the public. The Organizations and the public have had to devote significant time within the comment period comparing documents to ensure they are reviewing the right ones, because the Agencies keep changing what is posted as the DEIS without providing notice to the public. The Organizations and the public still cannot be confident they are reviewing the correct version of the DEIS.

The Organizations therefore reiterate their requests that the Agencies:

1. Announce to the public that the DEIS downloaded from the 495-270-P3.com/DEIS website on July 10 was incomplete;
2. Provide an itemized list of changes made to the posted DEIS after July 10, and state when these changes were made;

<sup>261</sup> See <https://web.archive.org/web/20200828182138/https://495-270-p3.com/deis/#DEIS>.

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3. Extend the comment period to 90 days from the date of that announcement; and
4. Add public hearings at least 15 days after providing notice to the public that the posted DEIS was incomplete.

## 2. The Agencies Systematically Downplayed and Miscounted Public Comments Opposing the Project

According to the DEIS, MDOT SHA received over 3,900 public comment submissions over the Project's three public comment periods. DEIS, at 7-2. Under the NEPA process, MDOT SHA was required to collect, report on, and respond to public comments. Instead of transparently documenting the number of comments that were opposed to part or all of the Project, MDOT SHA employed policies and practices that kept opposition comments from being accurately labeled and fully counted in reported data. The information presented below shows how MDOT SHA's downplayed opposition comments.

### a. MDOT SHA Undercounted Opposition Comments

MDOT SHA quantified and reported on the content of public comments by tabulating the theme labels it assigns to each comment. MDOT SHA established a policy to label a comment as being in opposition to the Project only if the submitter used exactly the right words. No comparable stipulation was made for pro-Project comments. MDOT SHA's stated that:

"Opposition to I-495 & I-270 Managed Lanes Study" was typically only selected [as a theme label] when a submitter stated it directly. Otherwise, opposition or critical sentiments toward the Study/proposed improvements may be interpreted through [such theme labels as] "Support for Alternate Transportation Improvements," "Effectiveness of Proposed Alternatives in Addressing Traffic," "Support for Transit," or "Support for Alternative 1/No-Build."

*Summary of Public and Stakeholder Engagement for the Recommended ARDS*, at 21.

A clear example of how this played out is the **unequal treatment of an opposition letter** signed by multiple grassroots groups and a **pro-Project letter** signed by multiple business groups.<sup>262</sup>

1. The opposition letter spoke of the "egregious failures" of Project alternatives. MDOT SHA gave the letter the following three theme labels, none of which indicate opposition of any kind:

<sup>262</sup> The first letter is from the Maryland Transit Opportunities Coalition (MTOC). *Summary of Public and Stakeholder Engagement for the Recommended ARDS*, at PDF page 419. The second letter is from regional businesses, *id.*, at PDF page 446. MDOT SHA's assigned labels for the MTOC letter can be seen on page 292 and for the business groups' letter on page 294 of the referenced document.



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- “I-495 & I-270 Managed Lanes Study Process/NEPA”
  - “Public-Private Partnership Program”
  - “Support for Transit”
2. In contrast, the business groups’ pro-Project letter—nearly identical in length to the opposition letter—received seven theme labels, five of which call out support, even though the letter writers used the word “support” only once:
- “Public-Private Partnership Program”
  - “Regional Economy”
  - “Support for General Price-Managed/Toll Lanes”
  - “Support for High-Occupancy Vehicle Lanes”
  - “Support for I-495 & I-270 Managed Lanes Study”
  - “Support for Specific ARDS Build Alternative”
  - “Support for Transit”
3. MDOT SHA interpreted multiple instances of support in the pro-Project letter.
4. But MDOT SHA failed to interpret any opposition in the letter that speaks of the Project’s “egregious failures.”
5. This disparity is significant because this process leads to inaccurate representation of comments that do not support the Project or P3 Program. In the case of these two letters, the theme label count is 0 instances of opposition and 5 instances of support.
- The following is a representative example of the significant number of individual submissions assigned theme labels that nullified the writers’ opposition to the Project:
6. “Terrible idea! You’re going to adversely impact quality of life and potentially adversely impact property values for an entire community with no likely long-term benefit to the traffic conditions in Montgomery County. This looks like a fast-moving train by financially interested parties, with no concern for affected Montgomery homeowners. The Governor should care about these voters’ concerns and rights!! Over the long haul, this will reduce the excellence of one of our school systems in the country because of impact on community.” [ARDS Summary](#), App. C. at 10.
7. MDOT SHA did not label this submission as opposing anything. The comment’s three assigned theme labels effectively hide the writer’s voice and intent:
- “Property/Community Impacts”

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- “Effectiveness of Proposed Alts. in Addressing Traffic”
- “I-495 & I-270 Managed Lanes Study Process/NEPA”

b. MDOT SHA Says Opposition Must Be “Interpreted” from the Theme Labels, but MDOT Makes That Impossible

MDOT SHA chose overly broad and opaque theme labels that did not effectively convey the points found in opposition submissions. MDOT SHA’s themes worked to confuse, neutralize, and hide the content of public opposition comments. MDOT SHA even acknowledged this subterfuge, stating, “[c]omments under neutral themes (i.e., comment themes without ‘support’ or ‘opposition’) are not necessarily neutral in tone” [Summary of Public and Stakeholder Engagement for the Recommended ARDS](#), at 21. In the DEIS process for a P3 Program as large, costly, long, consequential, and controversial as this one, there is no excuse for not having a menu of theme labels that reflect the Project and capture and convey the public’s reaction to it. Anything less, including what we see here, violates the intent of the NEPA public comment process.

Additionally, the numbers, names, and definitions of MDOT SHA’s theme labels varied significantly across the three comment periods, making it impossible to compare theme totals, or to “interpret” what the public said about the project in the aggregate.

- The first public comment period had 17 themes; the second comment period had 7; the third comment period had 38. [DEIS, App. P](#), at 17, 32-33, 52-56.
- The names and definitions of the themes changed between comment periods:
  - The theme “Environmental” in the first comment period is defined as “Mentioned environmental aspects, such as wildlife and natural resources.” *Id.*, at 16.
  - The theme “Environmental Considerations” in the second period covered natural resources and wildlife habitat, traffic noise levels, vehicle emissions, air quality, residential property, and overall quality of life. [Alternatives Public Workshops Summary](#), at 16-17 (Jan. 2019). Including opposition comments about ‘residential property’ and ‘overall quality of life’ under Environmental Considerations in this context is the same as burying those comments.
  - The theme “General Environmental Impacts” in the third period meant general pollution and potential physical impacts to the environment. [DEIS, App. P](#), at 53.
- The definitions of themes became increasingly opaque from one comment period to the next. In the first period, at least some of definitions included the word “concerns” indicating, for instance, that a comment labeled “Noise” was about “Specific noise concerns” [DEIS, App. P](#), at 17. By the second and third periods, the word “concerns” disappeared, and all theme labels just indicated that the commenter made a statement,



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question, or suggestion about the theme. Most theme labels gave no indication of the writer's opinion or point of view.

For the second comment period, MDOT SHA did not provide a matrix showing each individual comment matched to its theme labels. We know the matching was done because there are cumulative totals in the summary table in the Alternative Public Workshops Summary, Appendix C, at PDF page 55. We also know because MDOT SHA speaks in vague terms about it: "A number of comment submissions stated preference for HOV lanes, opposition to HOV lanes or suggestion on how to most effectively implement HOV lanes in the Study, and questions about tolling." DEIS, App. P, at 32.

But for the second comment period, we cannot see individual comments matched to their MDOT SHA comment labels. This disadvantages opposition comments:

- The second comment period had the largest number of submissions: 2,282.
- The majority of comments were from Rockville and Silver Spring. [DEIS, App. P](#), at 32, where levels of opposition to the Project were—and remain—high.
- That means we would expect that many of the comment submissions during this comment period would have been in opposition to the Project.
- Without the ability to see comments matched with their theme labels, the public cannot verify the accuracy of MDOT SHA's labeling and characterizations and no way to hold MDOT SHA responsible for mislabeling and miscounting.
- The voices of opposition comment submitters are lost.

c. MDOT SHA's Decisions Regarding Which Comment Submissions to Include in Its Totals Led to Undercounting of Opposition Comments

The following examples show how MDOT SHA's "gatekeeper" decisions disfavored opposition submissions. MDOT SHA counted two opposition petitions, with a total of 1,950 signatures, as only two comments in the official tally:

8. In MDOT SHA's own words: "Petitions were received from Growing East County (with 1,323 signatures) and Sierra Club, Maryland Chapter (with 627 signatures). Each petition was counted as one comment submission." [Alternative Public Workshops Summary](#), at 14.
9. MDOT SHA did this, even though the submitter of the Growing East County petition wrote: "Attached are signatures and comments . . . in opposition to the proposed Beltway widening. Contact information for each of the petition signers can be provided if necessary for the public record." *Id.* at 97 (emphasis added).

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In contrast, MDOT SHA appeared to count supportive submissions with identical content as discrete submissions. In MDOT SHA's own words: "Submissions with almost identical content in support of the Study accounted for 141 submissions containing the 'Support for I-495 & I-270 Managed Lanes Study' comment theme" [Summary of Public and Stakeholder Engagement for the Recommended ARDS](#), at 21. Of the 157 comments listed in the ARDS final summary table, *id.* at 21-22, as being in support of the Managed Lanes Study, 141 seem to be, by MDOT's admission, cut-and-pastes of identical text. Contrast that with 1,950 opposition petition signers being counted as only two.

Comments received by telephone during the second comment period, as recorded in the [Alternative Public Workshops Summary](#) table (PDF page 55), show 115 calls received: 12 of the callers were counted as not supporting the Managed Lane Study. However, one of the 115 lines detailing those calls says, "8/8/2018: 26 calls captured - Opposed to project - destroy homes, community - Rockville" (PDF page 57). Those 26 opposition calls were counted as only one call.

d. MDOT SHA's Treatment of Opposition Comments Makes Its Final Accounting Not Credible

Given MDOT SHA's treatment of opposition comments, it should come as no surprise that the final comment period's Summary of Comments by Theme table, in quantifying the 3,873 comments found in 1,035 submissions, identified only 335 comments, or less than 10%, as opposing anything at all, [Summary of Public and Stakeholder Engagement for the Recommended ARDS](#), at 21-22. Even with the addition of the 81 comments labeled "Support for Alternative 1-No Build," the total shown as opposing the project is under 11%. As the information presented here indicates, significant opposition to the Project is hidden. *Id.* This accounting is not credible and not acceptable.

MDOT SHA was required to fully and accurately report on public comments as part of the NEPA process. The evidence of biased policies, processes, and practices, and the resulting minimizing of public opposition to the Project shows MDOT SHA has not complied with this requirement. MDOT SHA must correct the record of all three public comment periods. We urge MDOT SHA to:

1. create new menus of themes that enable the truthful and accurate capture of opposition comments;
2. relabel all comment submissions using the new menus of themes; and
3. compile individual comment/theme-label matrices and summary tables for all three comment periods and make them easily accessible by the public.

For the current DEIS public comment period, MDOT SHA must ensure that all opposition comments are fully, accurately, and publicly labeled and reported on.



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### 3. The Agencies' Decision to Hold Public Hearings During a Time that Guaranteed Lower Public Participation

The inopportune timing of this Project's public hearings did not escape attention. That timing, combined with other actions taken by MDOT, bolsters the appearance of a desire to suppress public engagement and participation to mask the heavy opposition to the Project. Several op eds raised concerns with the timing of the public hearings. Two examples are provided below.

This one was published before the hearings:<sup>263</sup>

Gov. Larry Hogan's proposed I-495/I-270 project will influence transportation and economic development in the Washington region for the next 50 years. Given the potential consequence of this project, it is inexplicable why the Maryland Department of Transportation is holding the bulk of its public hearings in August.

If you have any familiarity with politics, you know that August is the Valley of Death for public participation – a time to sneak through the unwanted and unacceptable. While the August hearings will be online, the reality is that even more than ever they are totally inappropriate.

Many citizens are desperately focused on their jobs, worried about food and even being evicted. School and children are an existential preoccupation. Does school open? Are my kids safe? What do I do for child care if they are at home? These are just some of the concerns.

With an increasing COVID-19 infection rate in Maryland it is hardly the time that the public will be thinking about something that is not an immediate crisis.

This one was published after the hearings:<sup>264</sup>

If the goal was to maximize public participation, the timing of the hearings couldn't have been worse, in the middle of a pandemic, an economic crisis, massive unemployment, a superheated presidential campaign, and unprecedented weather events. During the second and final in-person hearing on Sept. 10 in Rockville, the day I testified, the area was paralyzed by a torrential rainstorm and flash flooding.

<sup>263</sup> Arthur Katz, *Opinion: What's the Hurry on Governor's I-495, I-270 Project?* Maryland Matters (Aug. 1, 2020), <https://www.marylandmatters.org/2020/08/01/opinion-whats-the-hurry-on-governors-i-495-i-270-project/>.

<sup>264</sup> Gary Hodge, *The Fatally Flawed Scheme to Outsource Md.'s Highways to Toll-Road Profiteers*, Maryland Matters (Sept. 21, 2020), <https://www.marylandmatters.org/2020/09/21/gary-hodge-the-fatally-flawed-scheme-to-outsource-md-s-highways-to-toll-road-profiteers/>.

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### 4. The Agencies' Refusal to Provide Underlying Environmental Data, Files and Referenced Documents in the DEIS Hinders Meaningful Public Review and Violates NEPA

The CEQ regulations implementing NEPA require that the Agencies:

(a) Make diligent efforts to involve the public in preparing and implementing their NEPA procedures.

(b) Provide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected.

...

(d) Solicit appropriate information from the public.

...

(f) Make environmental impact statements, the comments received, and any underlying documents available to the public pursuant to the provisions of the Freedom of Information Act (5 U.S.C. 552), without regard to the exclusion for interagency memoranda where such memoranda transmit comments of Federal agencies on the environmental impact of the proposed action. Materials to be made available to the public shall be provided to the public without charge to the extent practicable, or at a fee which is not more than the actual costs of reproducing copies required to be sent to other Federal agencies, including the Council.

40 C.F.R. § 1506.6 (2019); *id.* § 1506.6 (2020). Moreover, NEPA requires that Agencies "insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements [and] shall identify any methodologies used." *Id.* § 1502.24 (2019); *id.* § 1502.23 (2020). "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." 40 C.F.R. § 1500.1(b) (2019)

The CEQ regulations explain that:

Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. **No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment. Material based on proprietary data which is itself not available for review and comment shall not be incorporated by reference.**



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*Id.* § 1502.21 (2019) (emphasis added); *id.* § 1501.12 (2020). The public’s review and comment is important and the Agencies’ decision-making must be informed by it. *Id.* §§ 1500.3(b), 1503.4(a), 1505.2(b) (2020).

“To fulfill NEPA’s public disclosure requirements, the agency must provide to the public ‘the underlying environmental data’ from which the [agency] develops its opinions and arrives at its decisions.” *WildEarth Guardians v. Mont. Snowmobile Ass’n*, 790 F.3d 920, 925 (9th Cir. 2015); *Or. Natural Desert Ass’n v. Bureau of Land Mgmt.*, 625 F.3d 1092, 1099 (9th Cir. 2008) (NEPA requires agencies “to take a ‘hard look’ at how the choices before them affect the environment, and then to place their data and conclusions before the public”). NEPA’s EIS requirement “guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.” *Dep’t of Transp. v. Public Citizen*, 541 U.S. 752, 768 (2004) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)). It would be arbitrary and capricious to take action without data needed to carefully consider whether a project would have a significant environmental impact and without providing data to the public during the EIS process to allow the opportunity to participate in the decisionmaking process. *Northern Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2012).

Ultimately, FHWA, as the lead Agency, is responsible for the accuracy, scope, and content of environmental documents prepared by the Agency, MDOT SHA, or a contractor, and must independently evaluate the information. 40 C.F.R. § 1506.5 (2019); 23 C.F.R. § 771.09(c).

The DEIS references materials such as MDOT SHA’s 2004/2005 Capital Beltway Study, MDOT SHA’s 2017 Highway Construction Cost Estimating Manual, and unit costs from the March 2018 and July 2019 Common Item Guides, discussed in Section A above, but the Agencies did not make these documents reasonably available for public review within the time allowed for comment. Further, the DEIS reaches conclusions based on traffic modeling and data files that have not been made available for public review. The Organizations have tried to work with the Agencies to obtain the information, but the Agencies’ refusals have further illustrated their disregard for their obligations. And FHWA cannot abdicate its responsibility for the NEPA process by claiming it does not have data that underlie the DEIS’s conclusions; FHWA must independently verify those conclusions, which it cannot do without reviewing the underlying data. Moreover, FHWA is independently responsible for compliance with NEPA, and must obtain and publicly provide data underlying the DEIS’s conclusions. The Agencies must make available to the public the materials referenced in the DEIS and the data the Agencies used to reach their conclusions, and provide the public with additional time to review and comment on the DEIS, with the benefit of this material.

a. The Agencies Refused to Provide Copies of the MDOT SHA’s 2004/2005 Capital Beltway Study Despite Their Reliance on it in the DEIS and the Organizations’ Specific Request for it

The MDOT SHA’s 2004/2005 Capital Beltway Study is referenced in the DEIS in the following places:

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Management strategies were evaluated in several prior studies for these corridors: Capital Beltway Study, I-270 Multi-modal Corridor Study, and the West Side Mobility Study. The management strategies previously evaluated in these prior studies include HOV, high-occupancy toll (HOT), or express toll lanes (ETLs).

DEIS, at 1-7.

Data from the 2006 MDOT SHA Draft Capital Beltway Study Natural Environmental Technical Report (NETR) and the 2017 MDOT SHA I-270 ICM Project provide vegetation cover type information that remains applicable within the Maryland portions of the corridor study boundary.

DEIS, at 4-98.

In 2003, the transit and highway portions of the Capital Beltway/Purple Line Study were separated into two independent studies, the Purple Line Project and the Capital Beltway Study (MDOT SHA et al., 2013), with the justification that both projects were needed to meet the demands of the corridor. . . .

The 2004 Capital Beltway Study focused on roadway improvements that would address congestion of the Beltway. MDOT SHA carried three alternatives forward into the Alternatives Retained for Detailed Study (ARDS): 1) No-build; 2) Build Alternative 2 – six general-purpose and four ETLs; and 3) Build Alternative 3 – eight general-purpose and two ETLs. In 2004, environmental technical reports were completed analyzing the potential impacts to these three alternatives, in anticipation of completing the NEPA process. However, due to changes in transportation priorities, the NEPA process of the Capital Beltway Study was not completed and a Draft Environmental Impact Statement was not published.

DEIS, App. A, at 6.

Alternatives development and evaluation for the I-495 & I-270 Managed Lanes Study was informed by . . . the Capital Beltway/Purple Line Study; . . . the 2004 Capital Beltway Study . . . Each of these studies included, in part, proposed transportation solutions reflecting some of the operational and/or engineering alternatives that were considered in development of the Preliminary Range of Alternatives. In particular, the studies evaluated the implementation of managed lanes including ETLs, HOV lanes, HOT lanes and parallel transit facilities on I-495, I-270, and I-95. These studies considered the potential to provide additional capacity along I-495 and I-270 that would connect with other regional transportation facilities. The solutions retained in these studies are listed in the respective sections below.

DEIS, App. B, at 9.



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The 2004 Capital Beltway Study focused on roadway improvements that would address congestion on the Beltway from the American Legion Bridge to the Woodrow Wilson Bridge. MDOT SHA carried three alternatives forward into the Alternatives Retained for Detailed Study (ARDS): 1) No Build; 2) Build Alternative 2 – six GP lanes and four ETLs; and 3) Build Alternative 3 – eight GP lanes and two ETLs. In 2005, preliminary environmental technical reports were prepared analyzing the potential impacts to these three alternatives, in anticipation of completing the NEPA process. However, due to changes in transportation priorities, the NEPA process for the Capital Beltway Study was not completed and a DEIS was not published. A brief description of the ARDS, excluding the No Build, is provided below.

3.4.1 Alternative 2 – 6&4 Build Alternative (6 General Purpose & 4 Express Toll Lanes includes TSM/Transportation Demand Management (TDM) Strategies)

This alternative would have provided one additional lane per direction that would have been tolled and would have converted one existing GP lane per direction to be tolled. Both lanes would have been concurrent flow and marked using pavement striping (no barrier separation from the GP lanes). The proposed typical section would have included six GP lanes and four ETLs (Figure 3-1).

TSM/TDM included measures to optimize the existing transportation system (TSM) and measures to affect the demand on the existing system (TDM). The strategies were improvements that would have increased safety and enhanced operation without any increase in lane capacity. The TDM strategies focused on system demand and techniques to change drivers' behavior. Typical solutions would have included modest interchange improvements, employer participating flexible work hour or telecommuting programs, and parking restrictions/fees.

3.4.2 Alternative 3 – 8&2 Build Alternative (8 General Purpose & 2 Express Toll Lanes includes TSM/TDM Strategies)

This alternative would have provided one additional concurrent flow (no barrier separation) lane per direction that would have been tolled. The typical section would have included eight GP lanes and two ETLs (Figure 3-2). A modified version of Alternative 3 has been included in this study as Alternative 5. More detail on Alternative 5 is provided in Section 4.2.

*Id.* at 10-12 (footnote omitted).

MDOT SHA, MDOT MTA, and VDOT have performed numerous studies to evaluate a myriad of transportation solutions on I-495 and I-270. Options from these previous studies and planning documents were incorporated into the list of Preliminary Range of Alternatives for this Study. In particular, MDOT SHA reviewed alternatives that had been assessed to some level of detail from the following studies: the 1998 Capital Beltway HOV Feasibility Study, 2002 Capital

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Beltway/Purple Line Study, 2002 I-270/US 15 Multi-Modal Corridor Study, 2004 Capital Beltway Study, and the 2009 West Side Mobility Study.

*Id.* at 19.

Existing forest canopy conditions within the Maryland portion of the corridor study boundary were identified based on field investigations from MDOT SHA's 2006 Capital Beltway Study and 2017 I-270 ICM Program and GIS desktop review of Chesapeake Conservancy Conservation Innovation Center High Resolution Data of forest canopy.

*Id.* at 116.

The possibility and uncertainty of airborne or subsurface contaminant migration from an off-site location was assessed by evaluating potential sites of concern within a one-quarter mile buffer of each of the screened alternative LODs (the hazardous materials investigation area, see corridor overview map in Appendix B). For continuity and comparison with previous NEPA investigations along the I-495 corridor, the assessment of sites of concern uses a methodology comparable with the 2005 Initial Site Assessment for the Capital Beltway Study (MDOT SHA, 2005).

DEIS, App. K, at 10.

Each site of concern within the hazardous materials investigation area was evaluated and given a ranking based on a combination of the data review, site reconnaissance findings and distance from the LOD for each Alternative. Because Alternatives 8 and 9 have the same LOD, these Alternatives were evaluated as a single Alternative. Seven criteria were used to rank the sites of concerns based on the general ranking methodology used in the Draft December 2005 Initial Site Assessment Capital Beltway Study to allow for consistency and comparison between the investigations.

*Id.* at 11.

Data from the 2006 MDOT SHA Draft Capital Beltway Study Natural Environmental Technical Report (NETR) and the 2017 MDOT SHA I-270 ICM Project provide vegetation cover type information that remains applicable within the Maryland portions of the corridor study boundary.

Descriptions of land cover included below were adapted from the Draft Capital Beltway Study NETR (MDOT SHA, 2006) and the I-270 ICM Program field investigation. Although the Draft Capital Beltway Study NETR information was collected in 2006, the land cover are still generally the same based on windshield survey and aerial review; therefore, the data collected for this purpose remains valid.



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DEIS, App. L, at 96.

Moreover, the DEIS lists the 2004/2005 Capital Beltway Study as a reference in Appendix K and Appendix L (without a link to or description of where to find the study). The Agencies clearly referenced, considered, and relied on this study to make decisions regarding the current DEIS, its scope, and its methodology.

The Organizations searched for this study in order to meaningfully review and provide comment on the DEIS, but they could not find it. Accordingly, on July 21, 2020, the Organizations sent the following email to the Agencies:

In our review of the I-495 & I-270 Managed Lanes Study Draft Environmental Impact Statement, we noticed that the DEIS references and relies on data from an MDOT SHA Capital Beltway Study, but we could not find that study on the 495-270-p3.com website or linked in the references sections. *See* Draft Environmental Impact Statement, at 1-7, 4-98; Appendix L, at 96; *see also* Letter from Pete K. Rahn, MDOT Secretary, to Montgomery County Council Members, at 7 [https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2018/180911/20180911\\_3.pdf](https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2018/180911/20180911_3.pdf) (“The framework for the plan was developed based on previous studies including the Capital Beltway Planning Study, . . . These previous studies contain valuable technical information and will provide insight as MOOT delivers transformative, innovative solutions.”).

We request that you provide that study and its accompanying data on 495-270-p3.com or by email. If it is already available online, please direct us to that location.

The Agencies’ response did not comply with NEPA. First, on August 3, 2020, MDOT responded by treating the Organizations’ email as a Maryland Public Information Act Request. MDOT stated that it was providing an incomplete preliminary draft copy of the Capital Beltway Study’s Natural Environmental Technical Report, with redactions based on the deliberative process privilege and intra-agency memoranda privilege. MDOT stated that the document requested is a rough draft that was never finalized and that redacted sections of the National Environmental Technical Report contain “very preliminary interpretative analysis of yet defined alternatives for that project.” MDOT also stated that: “The MDOT now considers this request closed.” MDOT provided 8 PDFs from the Study’s Natural Environmental Technical Report: 1) unredacted cover pages, 2) an unredacted table of contents, 3) an unredacted introduction chapter, 4) an unredacted chapter describing the affected environment, 5) a completely redacted chapter that analyzed the environmental consequences, 6) an unredacted reference list, 7) an appendix of wetland descriptions, and 8) another appendix of wetland descriptions.

The letter ignored the Organizations’ request for the Capital Beltway Study itself, including the study’s nine other technical reports,<sup>265</sup> rather than only the Natural Environmental

<sup>265</sup> The Capital Beltway Study also includes: Socioeconomic and Land Use Technical Report, Secondary and Cumulative Effects Analysis Technical Memorandum, Section 4 Evaluation, Air Quality Technical Report, Noise and Vibration Technical Report, Traffic Analysis Technical

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Technical Report. That would be like providing Appendix L to the DEIS in response to a request for the DEIS. It also was misleading in that MDOT’s response could be taken to mean that the one report/appendix was the entirety of the study. Moreover, the Environmental Consequences chapter of the Natural Environmental Technical Report that was provided was entirely redacted, making review impossible.

On August 27, 2020, Jitesh Parikh, from FHWA, followed up on MDOT’s response by email stating:

The purpose of the reference to the Capital Beltway Study was to indicate that traffic management solutions have been the subject of several previous studies, i.e. the Capital Beltway Study, I-270 Multi-modal Corridor Study, and the West Side Mobility Study (DEIS pg. 1-7) and to draw upon previous data collection efforts related to vegetation cover type information in the study area (DEIS pg. 4-98 and DEIS Appendix L pg. 96). Though the report was never finalized in its entirety, the information the DEIS referred to was accurate for the purpose it was referenced.

We understand that MDOT SHA has provided you a redacted copy of the draft report containing information referenced in the DEIS. To reduce confusion over the purpose of the reference and to clarify conclusions were not being drawn from a draft report, the Final Environmental Impact Statement (FEIS) will remove references to the Draft Capital Beltway Study Report. All comments will be reviewed and considered in the FEIS.

This response is nonsense. First, the Capital Beltway Study is clearly referenced and relied upon for additional reasons beyond merely indicating it was previously studied. *See, e.g.*, DEIS, App. B, at 11 (explaining that a modified version of a Capital Beltway Study alternative was included in this study); DEIS, App. K, at 10, 11 (claiming to use the same or a comparable methodology for hazardous materials assessment to that in the Capital Beltway Study, but not providing the Capital Beltway Study for review). Moreover, MDOT has officially stated that the framework for this plan was developed based on the Capital Beltway Planning Study.<sup>266</sup>

Report, Assessment of Effects to Archaeological and Historical Properties, Phase 1 Archaeological Identification Survey for the I-495 Capital Beltway Mainline Project and Storm Water Management Ponds, and Preliminary Survey Assessment of Transportation Corridor Alignments (HAZMAT).

<sup>266</sup> Letter from Pete K. Rahn, Maryland Department of Transportation to Roger Berliner, Nancy Floreen, and Tom Hucker, Montgomery County Council, at 2 (Oct. 23, 2017), available at PDF page 7 of 2018-09-07-Managed Lanes Study Briefing with Letters Attached, [https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2018/180911/20180911\\_3.pdf](https://www.montgomerycountymd.gov/council/Resources/Files/agenda/col/2018/180911/20180911_3.pdf).



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Second, regardless of the Agencies’ stated purpose for referencing the study in the DEIS, the Agencies must by law provide the public the opportunity to review the referenced study and comment on how it is used in the DEIS, as explained above.

Third, removing any reference in the final EIS to a document that was relied upon in the DEIS does not remove the Agencies’ legal obligation to make the referenced document publicly available. Instead FHWA’s action seems to be an attempt to conceal the Agencies’ failure to comply with the law.

The Organizations tried again to obtain copies of the referenced materials, and sent the following email on September 8, 2020, to MDOT SHA and FHWA:

Thank you for your response. To clarify, did MDOT SHA or FHWA consider any information from the full Capital Beltway Study in developing the DEIS beyond the unredacted information provided by MDOT SHA on August 3? That includes information considered in the references noted below and anywhere else in the DEIS (potential other places such as Appendix B, Appendix E, Appendix K). If so, we request those documents, unredacted, as soon as possible, in order to meaningfully analyze and comment on the DEIS.

On September 22, 2020, MDOT responded:

The MDOT SHA did not consider any additional information beyond the records previously provided to you on August 3, 2020. Therefore, the MDOT SHA has no additional records responsive to your request and now considers this request closed.

This response beggars belief and is contradicted by former MDOT SHA Secretary of Transportation Pete Rahn’s 2017 letter to Montgomery County Council Transportation, Infrastructure, Energy & Environment Committee, which stated, “[t]he framework for the plan was developed based on previous studies including the Capital Beltway Planning Study, West Side Mobility Study, I-270 Multi-Modal Corridor Study.”<sup>267</sup> The Agencies clearly relied on information in the Capital Beltway Study when they made decisions impacting the DEIS, which will also impact a final EIS, or they would not have referenced it in all the instances noted above. Yet the Agencies refuse to provide the Capital Beltway Study to the public.

The information discussed and described in the DEIS from the Capital Beltway Study is not found in the unredacted parts of the provided Capital Beltway Study Natural Environmental Technical Report. The public therefore has no way to review, evaluate, or comment on those statements. To the extent MDOT SHA (or FHWA) truly did not consider any additional information beyond the unredacted sections of the Natural Environmental Technical Report, that omission would be arbitrary and capricious; there is no justification for the Agency to ignore the majority of a study that examined the exact same issues—whether and how to expand the Beltway—as the current DEIS is looking at.

<sup>267</sup> *Id.*

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Moreover, the Agencies’ statement in the DEIS that “the NEPA process of the Capital Beltway Study was not completed and a Draft Environmental Impact Statement was not published,” “due to changes in transportation priorities,” is disingenuous. *See* DEIS, App. B, at 10. First, the Organizations request that the Agencies explain what this statement is based on and what the changes in transportation priorities were. If the only thing that was examined in the Capital Beltway Study was the limited unredacted portion of the Natural Environmental Technical Report, how would the Agencies know why the Capital Beltway Study’s NEPA process was not completed? The Organizations further request all information the Agencies possess regarding the reasons that NEPA process was discontinued. The Agencies’ refusal to provide the study and its supporting information prevents the public from meaningfully evaluating the Agencies’ claim.

The NEPA process for the Capital Beltway Study apparently showed that widening the Beltway by two lanes per side was not feasible<sup>268</sup>, and that determination may have been a reason why the NEPA process was not completed. The “analysis found that four additional lanes could fit on Maryland’s portion of the Beltway if they were double-decked 80 feet in the air —

<sup>268</sup> Other MDOT SHA studies came to the same conclusion, finding that only one lane per side should be considered. The [I-270 Multimodal Study of 2002](#) states: “Only one additional lane is being considered on I-270 between MD 121 and I-70 and this additional lane will be evaluated as an HOV lane in Alternates 3A/B.” The [West Side Mobility Study of 2009](#) says:

However, the physical footprint for all of the alternatives was the same and it included widening for two lanes per direction in Virginia and widening for one lane per direction on the American Legion Bridge and in Maryland. The widening in Maryland was constrained by the right-of-way, proximity to sensitive environmental features, and proximity to adjacent residences.

MDOT SHA, *West Side Mobility Study*, at 21 (Nov. 2009), <https://web.archive.org/web/20131102090131/http://capitalbeltway.mdprojects.com/pdfs/FinalWestSideMobilityStudyReport.pdf>. As recently as 2015, former MDOT SHA Secretary Pete Rahn said:

How do we address I-270, which is the most congested corridor in the state? How do you address an interstate that there is no room to expand? How do you deal with the Washington Beltway that can no longer be expanded and it needs to be reconstructed because we have mush underneath it and the system frankly has got to be taken right down to the dirt and brought back up?

Sean Slone, *Transportation Policy Academy 2015 – DC – Maryland Secretary of Transportation Pete Rahn*, The Council of State Governments (May 19, 2015), <https://web.archive.org/web/20200906121216/https://knowledgecenter.csg.org/kc/content/transportation-policy-academy-2015-%E2%80%93dc-%E2%80%93maryland-secretary-transportation-pete-rahn>.



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an idea rejected as prohibitively expensive and impractical.”<sup>269</sup> If that finding, even if preliminary, played any role in the NEPA process being stopped, the Agencies should not claim in this DEIS that the process was stopped for other reasons.

Removing references to the study, while consistent with MDOT SHA’s lack of transparency throughout this process, only serves to hide the Agencies’ rationale and preclude meaningful public review and comment. The Agencies must provide the entire Capital Beltway Study to the public and re-open public comment so the public can consider and comment on the DEIS with the same underlying information the Agencies’ utilized.

**b. The Agencies Have Not Publicly Provided the Traffic Model or Spreadsheets Containing Traffic and Speed Data that the Agencies Relied on to Reach Their Conclusions**

The DEIS relies on traffic and speed data and modeling as a backbone to conclusions throughout the document.<sup>270</sup> Unfortunately, the DEIS provides an incomplete accounting of this data and modeling, merely presenting some of the modeling results and data in table or figure form in the DEIS and appendices PDFs. It is common for agencies, including FHWA, to publicly release the underlying data and modeling files either with the DEIS or, at a minimum, upon request. But the Agencies refused to do either here, instead delaying and withholding the data and modeling files, preventing the public from meaningfully reviewing the DEIS’s traffic-based conclusions.

On October 1, 2020, the Sierra Club Maryland Chapter sent a request to the Agencies for the following basic information:

1) MWCOC model loaded traffic assignment output files for each of the 4 modeled periods (AM peak, midday, PM-Peak and night) for the:

\* base year, and

\* future year for all alternatives shown in DEIS Table 2-3 (1, 5, 8, 9, 9M, 10, 13B and 13C)

2) The spreadsheets containing the traffic data in DEIS Appendix C Traffic Analysis Technical Report Figures 2-10, 2-11, 2-12, 2-13, 2-14 and 2-15.

<sup>269</sup> Katherine Shaver, *Hogan’s Plan to Add Additional Toll Lanes Faces a Long, Tough Road Ahead*, Frederick News-Post (Oct. 22, 2017), [https://www.fredericknewspost.com/news/politics\\_and\\_government/transportation/hogan-s-plan-to-add-additional-toll-lanes-faces-a/article\\_596a73a6-8b97-5124-b731-ff2a847bed37.html](https://www.fredericknewspost.com/news/politics_and_government/transportation/hogan-s-plan-to-add-additional-toll-lanes-faces-a/article_596a73a6-8b97-5124-b731-ff2a847bed37.html).

<sup>270</sup> See, e.g., DEIS, at ES-13 to ES-14, 1-1 to 1-14, 2-3 to 2-31, 2-41 to 2-44, 2-48 to 2-50, Chapter 3, 4-58 to 4-63, 4-137 to 4-138.

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3) The spreadsheets containing the speed data in DEIS Appendix C Traffic Analysis Technical Report Figures 2-20, 2-21, 2-22, 2-23, 2-24 and 2-25.

These are simple files that the Organizations’ traffic consultant has received from departments of transportation numerous times in the past regarding proposed highway projects. The request simply requires copying and pasting computer folders to a cloud-based folder and emailing the link. The Agencies or their consultants should have these files organized and easy to provide, based on their use to form the basis for conclusions in the DEIS. Hearing no response to this request, the Sierra Club Maryland Chapter followed up on October 9, 2020, requesting the information by October 13, in order to meet the upcoming comment deadline.

Despite the request for the underlying data and files not being a Maryland Public Information Act (PIA) request, but rather a request for files required to be publicly disclosed under NEPA, on October 11, MDOT responded that the request was forwarded to the MDOT PIA Manager. Then, on October 14, MDOT’s PIA Manager sent a letter stating the traffic data spreadsheet for Figures 2-12 through 2-15 are available in the DEIS appendix PDF. For the rest of the request, MDOT’s PIA Manager would not review or produce the underlying data and information until the Sierra Club Maryland Chapter paid **\$6,294.51**. The PIA Manager said this is MDOT’s estimated cost to prepare, search, and review the documents, without further explanation. Also on October 14, FHWA responded, but merely said MDOT SHA would respond to the inquiry.

On October 15, 2020, the Sierra Club Maryland Chapter reiterated the request for the files and explained that the Agencies’ response was unlawfully withholding underlying environmental data in violation of NEPA.

First, the underlying data requested is required to be disclosed publicly with the DEIS. 40 C.F.R. § 1500.1(b) (2019) (“NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA”); *id.* § 1502.21 (2019) (underlying data may be incorporated by reference only if “it is reasonably available for inspection by potentially interested persons within the time allowed for comment”); *WildEarth Guardians v. Mont. Snowmobile Ass’n*, 790 F.3d 920, 925 (9th Cir. 2015) (“To fulfill NEPA’s public disclosure requirements, the agency must provide to the public ‘the underlying environmental data’ from which the [agency] develops its opinions and arrives at its decisions.”). MDOT and FHWA’s failure to provide this data violates NEPA.

The Sierra Club Maryland Chapter explained that the request was not one under Maryland’s PIA but a request for files required to be disclosed under NEPA. The Sierra Club Maryland Chapter further explained that the requested data and files was not publicly available in Appendix C of the DEIS. Figures and tables presented in the DEIS appendix to support the Agencies’ conclusions that were created from data files and models do not provide 1) the complete data



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used to create those figures and tables or 2) the underlying formula and calculations that went into those figures and tables.

The Sierra Club Maryland Chapter further explained that providing these files should not take more than two hours, let alone cost \$6,294.51, and pointed out nine instances where this data had been provided promptly to their consultant without charge:

1. Florida Department of Transportation District 1 – Collier County MPO RTP Update;
2. Colorado Department of Transportation – I-70 East EIS;
3. Berkeley Charleston Dorchester Council of Governments (South Carolina) – RTP Update and I-526 Extension;
4. New York Department of Transportation – Hunts Point Interstate Access Improvement Project DEIS;
5. Southern California Association of Governments – High Dessert Corridor DEIR;
6. Arkansas Department of Transportation – I-30 Planning and Linkages Study;
7. Utah Department of Transportation – West Davis Corridor DEIS;
8. Texas Department of Transportation – RTP Update and South Mopac modeling;
9. Charlottesville/Albemarle Metropolitan Planning Organization (Virginia) – Charlottesville Bypass.

It is unclear why the Agencies think this project is so different than all of those such that it warrants withholding the data files. The Sierra Club Maryland Chapter requested that the files be provided by October 19, 2020 and further requested an extension of the comment period to allow a reasonable opportunity to review and comment on the traffic analysis and its conclusions. The Sierra Club Maryland Chapter also followed up to FHWA explaining that, as the lead Agency, FHWA is responsible for compliance with NEPA and requested the files from FHWA.

Hearing no response, the Sierra Club Maryland Chapter followed up on October 20 with both Agencies.

Later that day, FHWA stated: “We do not have the data files that you are requesting in FHWA’s record for the I-495 & I-270 Managed Lane Study. Our subject matter experts reviewed the traffic analysis and information included in the DEIS and appendices, and FHWA agreed with the analysis as presented.”

This response is insufficient. First, FHWA is responsible for complying with NEPA’s requirements, including publicly providing underlying environmental data that formed the DEIS’s conclusions to enable meaningful public review. If FHWA truly does not have this data,

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it has the responsibility to obtain it, which it easily could, and provide it. Second, FHWA is responsible for the accuracy, scope, and content of environmental documents prepared by the Agency, MDOT SHA, or a contractor, and must independently evaluate the information. This includes evaluating the data files that form the basis of conclusions made in the DEIS. Has FHWA truly not reviewed the underlying traffic data and modeling that underlie the DEIS? How can FHWA agree with the analysis without reviewing its underlying data and modeling?

The Sierra Club Maryland Chapter also followed up with MDOT on October 27, after hearing no response from that Agency. Finally, on November 2, a week before the comment deadline, MDOT responded claiming first that the State of Maryland simply disagrees that NEPA requires the production of these files and data, and that documents responsive to the request can be found in the DEIS’s Appendix F. (Note that the requestor has looked and have not found the Microsoft Excel or modeling files requested in the appendix.) MDOT stated that “some of the records you seek include data contained in the work papers of outside MDOT consultants and/or the work product of outside entities.” MDOT stated that it has revised its estimate such that the Sierra Club Maryland chapter must pay **\$6,082.60** before the Agency will begin working on the request. It is not clear why this amount is different than MDOT’s earlier estimate.

The Organizations request that the Agencies make the data used to support the traffic conclusions in the DEIS be made publicly available. Contrary to MDOT’s claim, this is required by NEPA. Merely presenting the end result of some of that data as figures and tables is not sufficient; the public cannot meaningfully review the conclusions. MDOT’s changing claims that providing this data would cost over \$6,000 are not credible and run contrary to every other department of transportation providing the data promptly free of charge. What is different about this DEIS than others that prevents the transparent production of underlying traffic data? Finally, FHWA remains responsible for complying with NEPA and cannot skirt its responsibilities by claiming it does not have the files.



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c. The Format and Structure of the DEIS Hides Impact Information from Affected People and the Public

There are many examples of how the DEIS is structured to hide impacts on community assets, below is just one of the most egregious. The Organizations scoured the DEIS and 54 appendices and sub-appendices (some appendices over 1500 pages; plus 25 more appendices in the JPA Appendix R) to identify properties that would be impacted by the Project. In DEIS Appendix E, Table 3-10 shows that 75 community properties and places will be partial acquired to allow the project to be built, but their names are not listed. This includes five schools and 14 places of worship.

**Table 3-10: Summary of Impacted Community Facility Properties Within the CEA Analysis Area**

Type of Community Facility Property*	Alternative 5	Alternatives 8 and 9	Alternative 10	Alternative 13B	Alternative 13C
Schools (#)	5	5	5	5	5
Higher Education (#)	1	1	1	1	1
Places of Worship (#)	12	14	14	14	14
Hospitals (#)	3	3	3	3	3
Recreation Centers (#)	4	4	4	4	4
Publicly-Owned Parks (#)	44	45	45	45	45
Police Stations and Correctional Facilities (#)	2	2	2	2	2
Public Libraries, Post Offices, etc. (#)	1	1	2	1	1
<b>Total Community Facility Properties Impacted (#)</b>	<b>72</b>	<b>75</b>	<b>76</b>	<b>75</b>	<b>75</b>

\*All community facility property impacts are partial acquisitions. No community facilities would be relocated under any Screened Alternative.

DEIS, App. E, CEA EJ Tech Report, at 63.

It is impossible to identify the names of these properties or other identifying information from the DEIS documents. When asked for the list of names of places corresponding to the Table, MDOT FHWA responded:

Please note that information presented in Tables 3-10 of Appendix E, page 63 (item 2 of your email) is depicted in Appendix E, Chapter 5 & Appendix C (CEA Analysis Area Community Profiles and Effects) and, and the information presented in Table 3-11, Appendix E, page 66 (item 3 of your email) is depicted in Environmental Resource Mapping (DEIS Appendix D).<sup>271</sup>

When the lead agency project managers should be going into the communities and bending over backwards to help them understand impacts and hear their mitigation requests, yet, many of these communities are unaware their community areas are in harm's way from this

<sup>271</sup> October 30, 2020 Email response from FHWA to Maryland Sierra Club regarding "Request for I-495/I-270 DEIS underlying data" sent on October 23, 2020.

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Project and that they are legally entitled to voice their concerns and defend their need for mitigation measures. And when groups want to help their community members understand what is happening and how their lives could be impacted, they have often been shut out with comments like this. This shows MDOT SHA's disregard for transparency and accountability. Everyone has a right to know what those significantly impacted places are, to know if their children attend those schools or their families use those community facilities. When a document is over 19,500 pages, it would show good faith to provide, when asked, this requested information in a clear and accessible way.

So to identify more information regarding the properties listed in Tables 3-10 and 3-11 of Appendix E, the Agencies (the MDOT project manager was asked and copied on FHWA's response and made no further reply) asks the reader and our Organizations to hopscotch between Appendix C, D, and E and Chapter 5 (a combined 2,029 pages). However, even after doing this full review of these appendices, we were unable to identify this information. The complete information needed is not in those chapters, despite their assertions otherwise. Only bits and pieces are extractable from those chapters, but the complete information is simply not there.

In the same email request, the following documents were requested:

1) The underlying data and complete itemized budget that went into Table 8-1 (Appendix B, page 148), including the assumed "efficiencies" coefficient and detailed explanation of any and all assumptions used to lower the estimates.

4) The DEIS provided estimated opening year (2025) average weekday toll rates per mile, varying from \$0.68 per mile to \$0.77 per mile. In order to calculate an average, the data necessarily contains maximum and minimum tolls. Please provide the underlying data for 13 time periods and underlying data for the average tolls given on DEIS page 2-43, including the maximum and minimum tolls.

5) The AM peak per mile rates were given on page 883 of Appendix C. Please provide the equivalent table for the PM peak.

6) Any cost-benefit or value-for-money analysis done for this project to establish the cost-savings of using the public-private partnership financing method in place of increasing bonding capacity and using a more traditional design-build approach.

FHWA's response stated, "[w]e do not have the data files or analyses requested in your email for items 1, 4, 5 and 6 in FHWA's record for the I-495 & I-270 Managed Lane Study." It is concerning that the agency does not have and has not bothered to obtain this underlying data.

d. The Agencies Should Provide All Documents That Formed the Basis of the DEIS and Re-Open the Comment Period

In addition to refusing to make referenced documents available, the Agencies have failed to provide requested documents that the Agencies considered and relied on in the DEIS and that they are required to provide pursuant to NEPA, the Freedom of Information Act (FOIA), and the



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Maryland Public Information Act (PIA). On February 18, 2020, the Sierra Club Maryland Chapter and Rock Creek Conservancy requested records in the Agencies' possession, custody, or control that underlie important aspects of decisions the Agencies made in the DEIS as well as in the earlier steps of retaining and eliminating alternatives from detailed study:

1. Terminus Concerns/Logical Termini records, including communications with the U.S. Department of Transportation and the Virginia Department of Transportation, regarding the logical terminus of the I-495 & I-270 Managed Lanes Study concerning connecting I-495 managed lanes to the Woodrow Wilson Bridge.
2. Records of the Stormwater Management Report for the project, including existing and proposed stormwater management impacts to state and national park property from the project.
3. Records of the project's impacts to state and national parkland.
4. Records (including traffic, financial, avoidance, minimization, and other environmental analyses) related to the decision to select the project's Alternatives Retained for Detailed Study and to eliminate Alternative 5 and MD-200 diversion from further review. *See* Alternatives Retained for Detailed Study, <https://495-270-p3.com/environmental/alternatives/alternatives-retained-for-detailed-study/>.
5. Records of the project's impacts on greenhouse gas emissions, including, but not limited to, reports and analyses performed to provide the project's estimated greenhouse gas emissions impact in Maryland's 2019 Greenhouse Gas Reduction Act Draft Plan and all records supporting and relating to the following tweet:

<https://twitter.com/MDOTNews/status/1132300556599537669>.

NEPA requires that the Agencies:

Make environmental impact statements, the comments received, and any underlying documents available to the public pursuant to the provisions of the Freedom of Information Act (5 U.S.C. 552), without regard to the exclusion for interagency memoranda where such memoranda transmit comments of Federal agencies on the environmental impact of the proposed action. Materials to be made available to the public shall be provided to the public without charge to the extent practicable, or at a fee which is not more than the actual costs of reproducing copies required to be sent to other Federal agencies, including the Council.

40 C.F.R. § 1506.6(f) (2019).

The Sierra Club Maryland Chapter and Rock Creek Conservancy have made clear repeatedly that their requests seek information that underlie the DEIS, not draft versions of the DEIS. However, over the course of five months, the Agencies refused to turn over these records, in violation of their NEPA, FOIA, and PIA obligations, and hindering meaningful comment as a result. *See* 5 U.S.C. § 552(a)(3), (a)(4)(B), (b), & (c). (providing the public a right to obtain

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access to federal agency records, except to the extent such records are protected from disclosure); Md. Code Ann., GP § 4-103 (providing public a right to access records that are in possession of state and local government agencies). FHWA is required to determine whether to comply with the request within 20 business days, which may be extended 10 business days in unusual circumstances, and upon determination, must make records promptly available. 5 U.S.C. § 552(a)(6)(A), (B)(i), (C)(i); 49 C.F.R. § 7.31(a)(2). MDOT is required to promptly grant or deny a request, not more than 30 days after receipt. Md. Code Ann., GP § 4-203(a). If MDOT denies inspection of a responsive record, it must provide "a brief description of the undisclosed record that will enable the applicant to assess the applicability of the legal authority for the denial." *Id.* § 4-203(c)(1)(i)(3) requires "a brief description of the undisclosed record that will enable the applicant to assess the applicability of the legal authority for the denial." If a record contains exempt and non-exempt material, MDOT must permit inspection of the non-exempt portion of a record, typically by redacting the exempt material. *See id.* § 4-203(c)(1)(ii). And if inspection is denied as not in the public interest under § 4-343, MDOT must provide "an explanation of why redacting information would not address the reasons for the denial." *Id.* § 4-203(c)(1)(i)(2)(B).

Four months after the February 18 request, and after repeated follow-up, on June 24 (by letter dated June 17), FHWA: 1) produced three unredacted documents, 2) produced 71 redacted documents, and 3) claimed that an additional 253 unspecified responsive records were withheld in full pursuant to FOIA exemptions 4, 5, and 6. The only unredacted documents produced were two letters sent by Sierra Club Maryland Chapter and Rock Creek Conservancy themselves to FHWA and a Stream Channel Assessment prepared by Maryland National Capital Parks and Planning Commission. Almost all documents with redactions were emails with only the sender, receiver, and subject left unredacted. FHWA's actions violate 40 C.F.R. § 1506.6(f) (2019); 5 U.S.C. § 552(a)(6)(A), (B)(i), (b)(5); 49 C.F.R. § 7.31(a)(2), and prevent Sierra Club Maryland Chapter and Rock Creek Conservancy, and the public, from meaningfully commenting on the DEIS.

MDOT-SHA's response to Sierra Club Maryland Chapter and Rock Creek Conservancy's requests show an even more flagrant violation of that Agency's NEPA and PIA obligations, and a general lack of transparency regarding the Project. At each point, the Sierra Club Maryland Chapter and Rock Creek Conservancy emphasized their willingness to work with MDOT to efficiently obtain the needed information, only to be met with changing reasoning, lies, and unlawful denials. The Agencies should not go forward with the NEPA process until MDOT-SHA publicly releases the documents that were sought, which formed the basis for decisions in the DEIS.

Initially, MDOT falsely denied having records responsive to two of the requests (communications between MDOT, the U.S. Department of Transportation, and the Virginia Department of Transportation with regard to the Project's logical termini and the requested Stormwater Management Report for the Project). The Agency also denied other requests broadly, without specification, claiming that the documents being sought were preliminary, pre-decisional, deliberative, and subject to a non-disclosure agreement with FHWA, and that the documents' release was not in the public interest. With respect to one request, regarding the publicly posted tweet about the Project's estimated greenhouse gas emissions, the Agency



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eventually agreed to produce responsive documents by April 30, 2020 at no charge, based on a narrowed scope of search.

The Agency's broad exemption claims are improper, particularly for information underlying decisions that already had been made. While pre-decisional deliberative materials may be protected, "[o]nce an agency's decision has been made, the records embodying the decision or policy, and all subsequent explanations and rationales, are available for public inspection." Maryland Public Information Act Manual, 3-30 (14th ed., October 2015). Moreover, "[t]he exception [for pre-decisional deliverable materials] is also meant to cover only the deliberative parts of agency memoranda or letters. Generally, it does not apply to records that are purely objective or factual or to scientific data." *Id.* Sierra Club Maryland Chapter and Rock Creek Conservancy explained that they were "seeking records that formed the basis of this already made decision. If MDOT-SHA is asserting that these decisions were made based on incomplete and non-final records, please tell us so." Letter from Sierra Club Maryland Chapter and Rock Creek Conservancy to MDOT, at 2 (March 16, 2020).

MDOT then informed the Sierra Club Maryland Chapter and Rock Creek Conservancy that it would not abide by its agreement to respond to one of the requests by April 30, 2020 because of the COVID-19 state of emergency declared on March 5, 2020 and the stay at home order released on March 31, 2020. MDOT-SHA requested the Sierra Club Maryland Chapter and Rock Creek Conservancy's "agreement to extend the 10-day period for providing a time and cost estimate, as well as the 30-day period for responding to your request, until 10 days after the date that the state of emergency is lifted." Letter from MDOT to Sierra Club Maryland Chapter and Rock Creek Conservancy, at 4 (Apr. 14, 2020). MDOT estimated that the response would involve potentially 150 emails and their attachments, which, according to the Agency, was overwhelming under remote working conditions. Sierra Club Maryland Chapter and Rock Creek Conservancy did not agree to this indefinite extension request, but the Agency nevertheless has not produced any documents responsive to the request. The state of emergency was recently renewed and it is still ongoing.<sup>272</sup> If MDOT cannot produce responsive documents regarding the Project and the DEIS because of the state of emergency, or review the 150 emails and their attachments, MDOT also should delay the DEIS process until the state of emergency is over.

With respect to the other requests for records underling the DEIS, MDOT stated generally that that all records are exempt as pre-decisional and deliberative, based on its claim that: "Draft documents are not automatically denied. Each is considered on a case-by-case basis." Letter from MDOT to Sierra Club Maryland Chapter and Rock Creek Conservancy, at 4 (Apr. 14, 2020). MDOT further stated "In reference to the Logical Termini paper, this paper falls

<sup>272</sup> Larry Hogan, Renewal of Declaration of State of Emergency and Existence of Catastrophic Health Emergency — COVID-19 (Oct. 6, 2020), <https://htv-prod-media.s3.amazonaws.com/files/10-6-2020-1602005863.pdf>. October 30, 2020 marked the 10th time Hogan renewed this declaration of emergency which was first made on March 5, 2020. Abigail Constantino, *Maryland Once Again Renews State of Emergency During Pandemic*, WTOPnews (Oct. 30, 2020), <https://wtop.com/coronavirus/2020/10/maryland-coronavirus-update-october-30/>.

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under the jurisdiction of the FHWA and they have reiterated that it is a confidential report and is not disclosable under FOIA or PIA." *Id.*

Sierra Club Maryland Chapter and Rock Creek Conservancy responded and explained that MDOT's response:

again fails to satisfy MDOT-SHA's obligations under Maryland GP § 4-203(c)(1), which requires "a brief description of the undisclosed record that will enable the applicant to assess the applicability of the legal authority for the denial," and for denials pursuant to Maryland GP § 4-343, "an explanation of why redacting information would not address the reasons for the denial."

Letter from Sierra Club Maryland Chapter and Rock Creek Conservancy to MDOT, at 2 (Apr. 23, 2020).

Sierra Club Maryland Chapter and Rock Creek Conservancy repeatedly followed up with MDOT on their requests and were ignored. Finally, on June 23, 2020, MDOT responded, but instead of withholding documents based on the previously claimed exemptions or a finding that they did not possess responsive documents, MDOT refused to review and provide documents for three of the requests, including the one MDOT had previously agreed to produce by April 30 at no charge, until the Sierra Club Maryland Chapter and Rock Creek Conservancy paid **\$302,835.12**. It appears, but is not clear, that MDOT withdrew its previously claimed exemptions. Sierra Club Maryland Chapter and Rock Creek Conservancy had requested a fee waiver because the information was in the public interest, but the letter ignored that request.

On July 7, 2020, Sierra Club Maryland Chapter and Rock Creek Conservancy requested that MDOT respond to their unaddressed requests regarding stormwater and parkland impacts and respond to the fee waiver request, which detailed how their requests were in the public interest and explained how such a waiver was justified. After getting no response, Sierra Club Maryland Chapter and Rock Creek Conservancy followed up on July 22, 2020.

On July 24, 2020, MDOT responded by pointing Sierra Club Maryland Chapter and Rock Creek Conservancy to the Project's website and saying: "Given the number of documents publicly and readily available at this time, we recommend that you review those records and file a new request for any additional records you may be seeking" and that "MDOT considers this request closed." Letter from MDOT to Sierra Club Maryland Chapter and Rock Creek Conservancy, at 2 (July 24, 2020). MDOT did not address the fee waiver request or other requests.

Because the response did not answer the Sierra Club Maryland Chapter and Rock Creek Conservancy's questions, on July 27, 2020, they followed up with the below email:

Based on your July 24 letter and previous letters, we understand MDOT SHA has:

- 1) Denied the organizations' request for a fee waiver with respect to the requests numbered 1, 4, and 5 in the February 18 PIA request; and



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2) Concluded that all records in MDOT SHA's possession that are responsive to requests numbered 2 and 3, and that are not already publicly available, are exempt from disclosure under Maryland GP §§ 4-343 or 4-344.

If any part of this is incorrect, please let us know by Monday, August 3.

As of November 6, 2020, Sierra Club Maryland Chapter and Rock Creek Conservancy have not received a response.

Throughout the process, MDOT has misrepresented, obfuscated, and violated its obligations under the PIA and NEPA. MDOT's actions to hide documents relevant to the DEIS demonstrate a lack of transparency and intent to preclude meaningful public review on the Project. MDOT has admitted that it possesses documents that are responsive to the requests, which underlie the DEIS, and that are not publicly available. MDOT is not allowed to withhold responsive documents based on a claim that it has already provided some, or even many, related documents online. Nor can either Agency withhold a document that it relied on to decide the termini of the Project by claiming that the document is proprietary, confidential, or subject to a non-disclosure agreement; once the Agencies use the document in the DEIS process, they must make it publicly available under both NEPA and the PIA.

MDOT based decisions made prior to and within the DEIS on documents that it still will not publicly disclose. It is shocking that MDOT would demand that two non-profit organizations pay the Agency over \$300,000 just for the Agency to evaluate releasing documents that underlie a project as significant as this one, particularly when the Agencies should have made these documents publicly available from the start. And it is shocking that MDOT would deny the request for a fee waiver without explanation. Provision of these documents, and compliance with NEPA, particularly with such a significant project, is certainly in the public interest.

This letter requests that the Agencies put a halt to the NEPA process until they provide the public with access to all relevant documents that underlie decisions made in the DEIS. Once that occurs, the Agencies must provide a new comment period. As it stands, by refusing to provide such documents, the DEIS only provides a selective presentation, and does not allow the public to meaningfully review or comment on the DEIS and its alternatives.

### III. Problems with the Section 4(f) and National Historic Preservation Act Analyses

#### A. The DEIS and Section 4(f) Analysis Fail to Adequately Address the Project's Effects on Historic and Cultural Resources

The Project has the potential to cause irreparable damage to historic and cultural resources in the pathway of the proposed interstate expansion plans. In addition to National Historic Landmarks, such as the Greenbelt Historic District and Washington Aqueduct, the continued integrity of numerous other historic and cultural resources, including parks, are threatened, too.

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In addition to numerous historic resources, should the Proposal move forward, the National Parks Conservation Association estimates that seven National Parks including Greenbelt Park, Chesapeake & Ohio Canal National Historical Park, Clara Barton Parkway, George Washington Memorial Parkway, Baltimore-Washington Parkway, Suitland Parkway, and Rock Creek Park would be harmed—amounting to approximately eighty-six acre of National Park land—along with dozens of local and regional parks amounting to approximately 725 acres.<sup>273</sup> The Agencies should note that Greenbelt Park, C & O Canal National Historical Park, George Washington Memorial Parkway, Clara Barton Memorial Parkway, Baltimore Washington Parkway, Suitland Parkway, and Rock Creek Park are each listed or eligible for listing in the National Register of Historic Places. However, the Agencies have concluded that adverse effects cannot be fully determined.<sup>274</sup>

Nevertheless, as these comments have already made clear, a federal agency may not proceed with a proposed action until it performs an environmental review that includes meaningful consideration of alternatives to the proposed action that would avoid harm or have a less harmful impact. In addition to the other environmental considerations already discussed, environmental review must include meaningful consideration of impacts to historic and cultural resources, too. An accurate DEIS is important because the Project is expected to adversely affect these properties and sites, along with other environmental impacts that these comments have discussed.

Notwithstanding the importance of these resources to the American public, the DEIS fails to adequately consider the Project's effects on historic and cultural resources for three reasons. First, the DEIS relies admittedly on incomplete information. Second, the DEIS fails to consider the effect of Section 110(f) of the National Historic Preservation Act and the heightened scrutiny it requires federal agencies to apply to resolve adverse effects on National Historic Landmarks, such as the Greenbelt Historic District and Washington Aqueduct. Third, in preparing the Section 4(f) analysis, the Agencies failed to consider alternatives that would have emerged if they had used all possible planning to avoid use of historic properties and parks, among other resources, by exploring feasible and prudent alternatives. For the reasons discussed below, the DEIS violates the letter and intent of federal historic preservation laws that the Agencies are required by Congress to follow. The Agencies must prepare a Supplemental EIS to correct these defects.

#### 1. **The Agencies Failed to Take a "Hard Look" at the Project's Effects on Historic and Cultural Resources Because Information Related to These Resources is Not Complete**

The DEIS is fundamentally flawed because it has failed to give adequate consideration not only to all historic and cultural resources that would be adversely affected, but also to Project alternatives that would avoid harm to those resources or have a less harmful impact, which

<sup>273</sup> National Parks Conservation Association, "Highway Expansions Threaten Our Parks," <https://www.npca.org/advocacy/95-don-t-pave-mid-atlantic-parks>.

<sup>274</sup> DEIS, App. G, Cultural Resources Technical Report 3.1.2, at 26-28.



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include the parks and parkways owned by the National Park Service. As with other effects on the human environment, NEPA requires that the Agencies take a “hard look” at the effects of the Project on historic and cultural resources should the Project receive all necessary approvals.<sup>275</sup>

Here, however, the Agencies have not gone far enough to evaluate the effects of the Project on those resources. No “hard look” has occurred as required by law because the NEPA analysis has too many unanswered questions about how historic and cultural resources will be affected.<sup>276</sup> Specific examples of ways the DEIS is deficient include, but are not limited to, the following:

- The Maryland Historical Trust, Maryland’s State Historic Preservation Office or SHPO has stated that additional archaeological investigations are warranted.
- The DEIS’s reliance on a smaller “Limits of Disturbance” radius, instead of a broader Area of Potential Effect that would consider all potential direct, indirect, and cumulative effects, impermissibly restricts consideration of the Project’s true effects on historic and cultural resources and incorrectly limits effects considered to physical impacts only, even though adverse visual, audible, and atmospheric effects are also expected.
- The DEIS admits that its analysis is not only incomplete, but that it cannot assess all effects on historic and cultural resources because the Agencies do not know what they are.
- The DEIS admits that 329 resources within the Area of Potential Effect require additional documentation or evaluation for purposes of determining listing or eligibility for listing in the National Register of Historic Places.
- The DEIS fails to consider effects on cultural resources, such as Indian Spring, that are tied to American Indian tribes.
- The boundaries of the Montgomery County Poor Farm Cemetery and the Moses Hall Cemetery have not been delineated and the potential for an unknown number of grave sites being disturbed is acknowledged.<sup>277</sup>

<sup>275</sup> *Greater Bos. Television Corp. v. FCC*, 444 F.2d 841, 851 (D.C. Cir. 1970) (courts must examine the methodology and substance of agency decisions to ensure that they have adequate factual support).

<sup>276</sup> The “hard look” doctrine could never be satisfied where information needed to analyze environmental effects is not complete. *See id.*

<sup>277</sup> DEIS, Ch. 4 Env’tl Commentaries C Historic Cemeteries, at 4-55; *see also* Katherine Shaver, *Maryland Beltway Expansion Might Require Moving Part of Historic African American Cemetery*, Washington Post (Oct. 17, 2020), [https://www.washingtonpost.com/local/trafficandcommuting/maryland-beltway-expansion-might-require-moving-part-of-historical-african-american-cemetery/2020/10/17/ae4696ca-0da5-11eb-8a35-237ef1eb2ef7\\_story.html](https://www.washingtonpost.com/local/trafficandcommuting/maryland-beltway-expansion-might-require-moving-part-of-historical-african-american-cemetery/2020/10/17/ae4696ca-0da5-11eb-8a35-237ef1eb2ef7_story.html). The potential impacts to these sites are not sufficiently evaluated, nor is there discussion of how impacts may be avoided.

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- The DEIS fails to consider all direct, indirect, and cumulative effects of how the removal of trees and the Project’s proximity will affect the integrity of Greenbelt Historic District, a National Historic Landmark.
- The DEIS fails to make clear the extent to which the Project might harm the Washington Aqueduct, a National Historic Landmark.
- By limiting its scope to physical harm only, the DEIS fails to consider all direct, indirect, and cumulative impacts on historic and cultural resources.

Taken together, these shortcomings demonstrate a fundamental failure of the DEIS, which was likely rushed due to efforts to comply with the “One Federal Decision” rule: it is not complete, and therefore prevents the Agencies from taking a hard look at the Projects’ impacts.

In addition to these overall deficiencies, the DEIS impermissibly defers full consideration of historic properties listed in or eligible for listing in the National Register of Historic Places by relying on a boilerplate Programmatic Agreement that the Agencies will not execute until after selecting a Preferred Alternative. Although a Programmatic Agreement may be sufficient for compliance with Section 106 of the National Historic Preservation Act, delaying full assessment of historic properties until a Programmatic Agreement is executed ignores the Agencies’ present duty to comply with NEPA, which requires a “hard look” at all of the environmental consequences that will flow from the Project if the Agencies grant the permits needed for the Project to proceed. It is also impossible to understand how the Agencies could ever select a Preferred Alternative for the Final EIS without having fully considered this information. For these reasons, relying on an unexecuted Programmatic Agreement as part of the Section 106 review process mandated by the National Historic Preservation Act precludes, rather than assists, the Agencies and the public from understanding how these effects might harm historic and cultural resources as required by NEPA.

## **2. The Agencies Have Failed to Comply With Section 110(f) of the National Historic Preservation Act**

Section 110(f) of the National Historic Preservation Act mandates that federal agencies have affirmative, substantive responsibilities to protect National Historic Landmarks to the “maximum extent possible.”<sup>278</sup> Section 110(f) provides:

Prior to the approval of any Federal undertaking that may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall to the maximum extent possible undertake such planning and actions as may be necessary to minimize harm to the landmark. The head of the Federal Agency shall afford the Council a reasonable opportunity to comment with regard to the undertaking.<sup>279</sup>

<sup>278</sup> 54 U.S.C. § 306107. (emphasis added).

<sup>279</sup> *Id.* (emphasis added).



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Section 110(f) imposes a stringent substantive standard for any project that will adversely affect a National Historic Landmark. Congress authorized the National Historic Landmark program to recognize “properties of exceptional value to the nation as a whole rather than to a particular State or locality.”<sup>280</sup> In contrast to properties listed in the National Register of Historic Places, which are nominated by state historic preservation officers and federal agencies,<sup>281</sup> the Secretary of the Interior designates National Historic Landmarks based on the Department’s own research. Each property considered for National Historic Landmark designation must be approved and recommended by the National Park System Advisory Board.<sup>282</sup>

Section 110(f) was enacted in 1980 as part of a comprehensive set of amendments to the NHPA.<sup>283</sup> The amendments significantly expanded the statutory responsibilities of federal agencies to preserve and protect historic properties. The legislative history of Section 110(f) states explicitly that it “establishes a higher standard of care to be exercised by federal agencies” with respect to National Historic Landmarks, as compared to the standard imposed by Section 106 of the NHPA, which applies to all sites listed in, or eligible for, the National Register of Historic Places.<sup>284</sup> Section 106, part of the original 1966 NHPA, requires only that federal agencies “take into account” the effect of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation an opportunity to comment in advance on any such proposed undertaking.<sup>285</sup> Section 110(f) requires more than that. “[Section 110(f)] does not supersede Section 106, but complements it by setting a higher standard for agency planning in relationship to [National Historic] landmarks before the agency brings the matter to the [Advisory] Council.”<sup>286</sup>

The higher standard was described by the National Park Service (NPS) in The Secretary of the Interior’s Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to Section 110 of the National Historic Preservation Act of 1966 (“Section 110 Guidelines”), which state that “Section 110(f) of the NHPA requires that Federal agencies exercise a higher standard of care when considering undertakings that may directly and adversely affect NHLs [National Historic Landmarks].”<sup>287</sup> The Section 110(f) Guidelines further direct

<sup>280</sup> 36 C.F.R. § 65.2(a).

<sup>281</sup> *Id.* §§ 60.5-60.9.

<sup>282</sup> *Id.* § 65.5(d)-(e).

<sup>283</sup> See Pub. L. No. 96-515, 94 Stat. 2957, 2981 (1980).

<sup>284</sup> H.R. Rep. No. 96-1457, at 38 (1980), *reprinted in* 1980 U.S.C.C.A.N. 6378, 6401.

<sup>285</sup> 54 U.S.C. § 306108.

<sup>286</sup> H. Rep. No. 96-1457, at 38, *reprinted in* 1980 U.S.C.C.A.N. at 6401.

<sup>287</sup> 63 Fed. Reg. 20,495, 20,503 (Apr. 24, 1998).

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agencies to “consider all prudent and feasible alternatives to avoid an effect on the NHL.”<sup>288</sup> This language mirrors that of Section 4(f) of the Department of Transportation Act.<sup>289</sup> The explicit terms of the statutory language of Section 110(f), as well as its legislative history, provide clear guidance as to the statute’s strict mandate—to set the strongest and highest standard possible for protection of the nation’s historic landmarks.

Here, the Agencies did not comply with Section 110(f) of the NHPA. In a letter dated March 16, 2020, FHWA notified the Department of the Interior that two National Historic Landmarks—Greenbelt Historic District and the Washington Aqueduct—are within the Project’s Area of Potential Effects. However, the letter inaccurately minimized the expected effects that the Project will have on the historic resources and, as such, is insufficient. The DEIS contains no further evidence of compliance with Section 110(f)’s substantive requirements. Therefore, the DEIS is deficient as a matter of law because the Agencies have not undertaken “all possible planning” to minimize harm to National Historic Landmarks.

A Supplemental EIS is needed because the DEIS fails to consider alternatives that have been developed using all possible planning to minimize harm as Section 110(f) requires. Therefore, the Agencies should not select a Preferred Alternative or issue the Final EIS until they have complied with their Section 110(f) responsibilities and the Secretary of the Interior is satisfied that the Project will either avoid harming National Historic Landmarks or that all possible planning has been undertaken to minimize harm. In addition, the Agencies have a duty to inform the public of new alternatives that Section 110(f) requires the Agencies to consider. A Supplemental DEIS will be required to ensure that this information is disclosed not only so that the public will understand effects on National Historic Landmarks, but also so that Agencies can make an informed decision about the least harmful alternative.

**B. The Agencies’ Section 4(f) Analysis Fails to Comply With the Letter and Intent of the Department of Transportation Act Because it Does Not Consider the Full Range of Ways That the Project Will Use—Directly, Indirectly, and Constructively—Historic Sites of Local, State, or National Significance, and Parks**

Section 4(f) of the Department of Transportation Act of 1966 is the most stringent federal historic preservation law ever enacted. Congress passed it to protect public parks, recreation areas, wildlife and waterfowl refuges, and any significant public or private historic sites.<sup>290</sup> Section 4(f) applies to all transportation projects that require funding or approval by the U.S. Department of Transportation. Although minor changes to Section 4(f) have occurred since it

<sup>288</sup> *Id.*

<sup>289</sup> 49 U.S.C. § 303.

<sup>290</sup> 49 U.S.C. § 303(c).



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was established, federal courts have repeatedly validated the importance of this policy goal and need for compliance with Section 4(f)'s mandates.<sup>291</sup>

Section 4(f)'s mandate is substantive rather than procedural in nature. Protected sites cannot be "used" in transportation projects unless there is no feasible and prudent avoidance alternative and "all possible planning" is incorporated to minimize harm resulting from the use.<sup>292</sup> When deciding whether a protected site will be "used," courts construe the term broadly.<sup>293</sup>

Moreover, the Federal Highway Administration (FHWA) and Federal Transit Administration have adopted regulations to define "use" of Section 4(f)-protected sites. Under these regulations, a "use" of protected property occurs when: (1) land from a 4(f) property is permanently incorporated into a transportation project; or (2) there is a temporary occupancy of a 4(f) site that causes adverse impacts that are contrary to the statute's preservation purposes; or (3) when constructive use of the site occurs.<sup>294</sup>

Here, the Agencies have not complied with either the letter or spirit of Section 4(f). So far, the Agencies have identified a total of 111 Section 4(f) properties within the corridor study boundary including historic sites, parks, and recreation areas.

Of the 111 Section 4(f) properties, the Draft Evaluation notes that 68 would have a Section 4(f) use and 43 would be avoided. Of the 68 Section 4(f) properties that have a use, 36 would result in minor Section 4(f) use, 22 require an evaluation of avoidance alternatives and analysis of least overall harm, and four properties meet the exception criteria. Not all of these conclusions, however, are accurate.

First, as part their Section 4(f) review, and for the same reasons the Agencies have failed to take a hard look at historic and cultural resources, the Agencies have improperly deferred the full identification of historic resources and the full extent of their "use." As a result, the Draft Section 4(f) Evaluation is not complete. Second, the Agencies have ignored indirect and cumulative effects on historic resources, even though they would amount to a "constructive use"

<sup>291</sup> See *id.* at 404-05; *Benton Franklin Riverfront Trailway & Bridge Comm. v. Lewis*, 701 F.2d 784, 787-88 (9th Cir. 1983); *Stop H-3 Ass'n v. Dole*, 740 F.2d 1442, 1447 (9th Cir. 1984).

<sup>292</sup> 49 U.S.C. § 303(c); 23 C.F.R. § 774.3.

<sup>293</sup> *Adler v. Lewis*, 675 F.2d 1085, 1092 (9th Cir. 1982) ("Even off-site activities are governed by § 4(f) if they could create sufficiently serious impacts that would substantially impair the value of the site in terms of its prior significance and enjoyment."); *Stop H-3 Ass'n v. Coleman*, 533 F.2d 434, 445, 452-53 (9th Cir. 1976) (6-lane highway passing within 100-200 feet of a historic petroglyph rock would result in "constructive use").

<sup>294</sup> See 23 C.F.R. § 774.17.

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if the Project is approved. Therefore, the Agencies have failed to recognize or satisfy the stringent mandate of Section 4(f) to avoid and minimize harm.

For example, the Section 4(f) Evaluation does not make clear how the Agencies intend to address impacts on a historic African American cemetery, also raising environmental justice implications.<sup>295</sup> Other historic properties identified by the Maryland Historical Trust within the administrative record are incorporated herein by reference, as well as sites that require additional study for eligibility determinations.

In addition, the National Parks Conservation estimates that seven National Parks including Greenbelt, the Chesapeake & Ohio Canal, Clara Barton Parkway, George Washington Memorial Parkway, Baltimore-Washington Parkway, Suitland Parkway, and Rock Creek Park<sup>296</sup> would be harmed—amounting to approximately eighty-six acre of National Park land—along with dozens of local and regional parks amounting to approximately 725 acres.<sup>297</sup> However, the Section 4(f) Evaluation fails to address the full extent of the Project's use of these resources. Consequently, the Agency could not possibly consider all feasible and prudent alternatives that would avoid this harm.

The Agencies' decision to defer full consideration of historic properties and affected park acreage, along with the full extent of their use or constructive use, renders the Project legally vulnerable under Section 4(f) of the Department of Transportation Act.<sup>298</sup> For this reason, the Agencies should prepare a revised Section 4(f) Evaluation to address this deficiency.

<sup>295</sup> See Katherine Shaver, *Maryland Beltway Expansion Might Require Moving Part of Historic African American Cemetery*, Washington Post (Oct. 17, 2020), [https://www.washingtonpost.com/local/trafficandcommuting/maryland-beltway-expansion-might-require-moving-part-of-historical-african-american-cemetery/2020/10/17/ae4696ca-0da5-11eb-8a35-237ef1eb2ef7\\_story.html](https://www.washingtonpost.com/local/trafficandcommuting/maryland-beltway-expansion-might-require-moving-part-of-historical-african-american-cemetery/2020/10/17/ae4696ca-0da5-11eb-8a35-237ef1eb2ef7_story.html).

<sup>296</sup> In addition, it is anticipated that Rock Creek Stream Valley Park Units 2 and 3, which are managed by Maryland-National Capital Parks and Planning Commission, will also experience adverse effects or "use." However, the Section 4(f) analysis does not appear to adequately consider these effects or alternatives to avoiding them.

<sup>297</sup> National Parks Conservation Association, *Highway Expansions Threaten Our Parks*, <https://www.npca.org/advocacy/95-don-t-pave-mid-atlantic-parks>. It is also expected that the following estimates are the minimum estimate of acreage that will likely be used by the Project: George Washington Memorial Parkway (12.2 acres); C & O Canal (15.4 acres); Clara Barton Parkway (1.8 acres); Baltimore Washington Parkway (69.3 acres); and Greenbelt Park (0.6 acres). The Agencies have refused to estimate the amount of acreage affected by Suitland Parkway, another flaw in the Section 4(f) Evaluation.

<sup>298</sup> See *Corridor H Alternatives, Inc. v. Slater*, 166 F.3d 368 (D.C. Cir. 1999).



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**C. The Agencies Cannot Reasonably Rely on a Non-Executed Programmatic Agreement to Satisfy NEPA, Section 110(f), or Section 4(f)**

Relying on an unexecuted Programmatic Agreement for NEPA, Section 110(f), and Section 4(f) purposes is fundamentally flawed. Programmatic Agreements are a common legal tool used in the separate Section 106 process under the National Historic Preservation Act that are used to spell out the terms of formal, legally binding agreement between federal agencies and other parties.<sup>299</sup>

Programmatic Agreements are used when the effects of an undertaking are not fully known, as well as for implementing approaches that do not follow the normal Section 106 process, usually in the name of streamlining project approval. Here, however, the Agencies cannot reasonably rely on a Programmatic Agreement that is not yet fully drafted or executed to satisfy their Section 110(f), NEPA, or Section 4(f) responsibilities.

By contrast, full information is needed now to comply with those individual mandates that do not depend on the outcome of a Section 106 Programmatic Agreement. Without a complete understanding of the Project's full range of environmental effects, including harm to historic properties and parks, there is no way that the Agencies can reasonably select a preferred alternative as required by NEPA, use all possible planning to minimize harm to National Historic Landmarks as required by Section 110(f), or identify an alternative that avoids use of historic properties, parks, and recreation areas unless no other feasible and prudent alternative is available as required by Section 4(f).

The *Corridor H* case, like this one, involved a long, linear transportation project that was the subject of a Programmatic Agreement under Section 106 of the National Historic Preservation Act. The Programmatic Agreement there deferred the identification of historic properties to the future. Although a Programmatic Agreement may be adequate for purposes of compliance with Section 106, the court found it was not adequate to comply with Section 4(f). In *Corridor H*, the historic resources at stake were large rural historic landscapes and battlefields, which could not be avoided without going outside the alignment that had been studied for the project. As a result, the agency could not document that it had made a meaningful evaluation of whether the project would require the "use" of historic properties under Section 4(f), unless and until it had sufficient information on whether historic properties existed within the corridor.<sup>300</sup> Here, the Agencies cannot make a reasonable evaluation, either. Thus, the DEIS and Draft Section 4(f) Evaluation are insufficient.

<sup>299</sup> 36 C.F.R. § 800.14(b).

<sup>300</sup> In fact, a large rural historic district was later determined eligible for the National Register, which required a major reroute of the proposed highway. Likewise, in this case, it makes no sense for the Agencies to forge ahead based on incomplete information that could later require the Project's rerouting.

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Deferring the full identification of historic properties may be acceptable where the nature and scope of the resources would allow them to be easily avoided, as in the case of archaeological sites that are only significant under National Register Criterion D. However, resources such as historic properties and parks require an entirely different approach, because they have in-place significance, and the project may not be able to avoid harm to these resources without selecting a different alternative. If a determination of National Register eligibility would influence the agency's selection of alternatives under Section 4(f) (and Section 106 and NEPA as well), then the identification of those historic properties, and the Project's potential effects on them, must be evaluated at a time when they can actually inform the selection of alternatives, rather than being deferred to a later date after alternatives have been foreclosed.

Therefore, we request that Agencies develop a mitigation measure that is not currently offered, but that will provide a timely way for indirect and cumulative effects to be monitored and meaningful consequences if the effects turn out to be significant.

For the reasons discussed above, it is impossible to comment meaningfully on the Agencies' plans concerning historic and cultural resources because important baseline questions have not been decided. Outstanding issues that need to be resolved include the complete identification of historic properties affected and how the Project will affect them. In addition, it is impossible to determine how the Project will affect two National Historic Landmarks, especially when the Agencies have failed to consider anything other than physical impacts or comply with the heightened review mandates required by Section 110(f) of the NHPA.

Moreover, the Agencies' Draft Section 4(f) Evaluation is likewise insufficient because it does not have full information needed to understand the complete range of direct, indirect, and cumulative effects of the Project and therefore cannot know how the Project will use historic properties and parks. For these reasons, among others, the Agencies should issue a Supplemental DEIS, as well as a revised Section 4(f) Evaluation, addressing these issues fully. A Supplemental DEIS is especially appropriate where, as here, the DEIS acknowledges that damage to cultural resources may be irreversible and irretrievable.<sup>301</sup> If the Agencies refuse to issue a Supplemental DEIS, their analysis in the DEIS will be wide open to legal challenge as arbitrary, capricious, and contrary to law.<sup>302</sup>

**IV. Conclusion**

The Project will harm the environment and human health and the Agencies should not move forward with the flawed and inadequate DEIS. We urge the Agencies to restart the NEPA process after reformulating the Purpose and Need Statement to appropriately identify a solution that will equitably increase mobility and connectivity and reduce congestion. Any proposed solution should utilize the best available science and data and incorporate meaningful feedback

<sup>301</sup> DEIS, Ch. 4 Environmental Commentaries, at 4-159.

<sup>302</sup> 5 U.S.C. § 706 (an executive agency's decision amounts to an abuse of discretion if arbitrary, capricious, or contrary to law).



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from the public and lessons learned from failed highway expansions and P3 projects in the past. We also urge the Agencies to consider alternatives that utilize transportation demand management and multimodal alternatives. The new NEPA process should be characterized by transparency and community outreach conducted in good faith to ensure that the public in general, and environmental justice communities specifically, are provided the information needed to fully vet the alternatives considered by the Agency. The new NEPA process must not predetermine the outcome prior to its beginning, as the current process has done. If the Agencies nevertheless decide to move forward with the predetermined Project, the Agencies must fix the fundamental flaws identified throughout this document and provide a Supplemental EIS with revised analyses and an opportunity to review and comment on the impacts the Agencies failed to evaluate in this DEIS. If the Agencies decide to move forward without providing the required Supplemental EIS, the Agencies should separate the FEIS and ROD in order to provide the public an opportunity to comment on the new information likely to be provided in any FEIS, including the selection of the preferred alternative.

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**Comment Attachments**

Date	Title
1989	Major Sources of Benzene Exposure
1999-01-04	Md.'s Lesson Widen the Roads, Drivers Will Come
1999-09	The Health Costs of Motor Vehicle Related Air Pollution
2001-03	Air Pollution and Exacerbation of Asthma in African American Children in Los Angeles
2001-08	The Burden of Air Pollution Impacts among Racial Minorities
2002-11-04	Letter Concerning Effects of Proposed Potomac River Crossings
2002	Capital Beltway Purple Line Study Initial Findings & Recommendations Draft
2003-08	South Coast Air Quality Management District Health Risk Assessment Guidance
2004-05-06	Capital Beltway Study Public Display Boards
2004-05	Highway Repair A New Silicosis Threat
2004	Air Pollution at Parking Lots of Vilnius
2004	Urban Air Pollution Input from Car Parking Places
2006-01	Capital Beltway Study-NETR Appendix B 3-3-05
2006-01	Capital Beltway Study NETR Chapter 2_Redacted
2006-01	Capital Beltway Study NETR Chapter 3_Redacted
2006-01	Capital Beltway Study NETR Cover and Dividers
2006-01	Capital Beltway Study-NETR-Appendix A References
2006-01	Capital Beltway Study-NETR-Appendix C Wetland and Waterways Chart
2006-01	Capital Beltway Study-NETR-Ch1 121505
2006-01	Capital Beltway Study-NETR-TOC 11306
2007-08	Minnesota Department of Transportation – Air toxics template
2007-10	Increases in Greenhouse-Gas Emissions From Highway Widening Projects
2008-04-15	Effect Modification by Community Characteristics on the Short term Effects of Ozone Exposure and Mortality in 98 US Communities
2009-03-12	Near Road Air Quality Monitoring Factors Affecting Network Design and Interpretation of Data
2009-11	West Side Mobility Study
2010-06-25	Prediction and Analysis of Near Road Concentrations



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2010-07	Energy Usage and Greenhouse Gas Emissions of Pavement Preservation Processes for Asphalt Concrete Pavements
2011-01	Maryland Nontidal Wetland Mitigation Guidance 2nd Ed.
2012	Travel Demand Forecasting Parameters and Techniques
2013-02	Integrated Science Assessment for Ozone and Related Photochemical Oxidants
2013-12	Countywide Transit Corridors Functional Master Plan
2014-08-14	Degradation in Urban Air Quality From Construction Activity and Increased Traffic
2014-09-15	Danger in the Air Health Concerns for Silica in Outdoor Air
2014-09-30	Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use
2014-11	Ecological Restoration of Streams and Rivers Shifting Strategies and Shifting Goals
2015-05-19	Transportation Policy Academy 2015 - DC Maryland Secretary of Transportation Pete Rahn
2015-05	Final Draft Function Based Rapid Stream Assessment Methodology
2015-08-14	Monitoring Study of the Near Road PM2.5 Concentrations in Maryland
2016-03	Stormwater Management In Response To Climate Change Impacts
2016-11	MARC Brunswick Frederick Line Improvement Proposal
2017-06	Silicosis There is No Cure But it Can be Prevented!
2017-09-21	Maryland Gov. Larry Hogan Proposes Widening the Beltway and I-270 to Include 4 Toll Lanes
2017-10-22	Hogan's Plan to Add Additional Toll Lanes Faces a Long, Tough Road Ahead
2017-11-16	The Best Way to Improve Transportation in Our Region is
2017-12-01	Hogan's Proposed Beltway Widening Project Could Require Taxpayer Funding and Exorbitant Tolls
2017-12	An Assessment of Regional Initiatives for the National Capital Region, Technical Report
2017	Closing the Induced Vehicle Travel Gap Between Research and Practice
2017	Economics Pricing, Demand, and Economic Efficiency – A Primer
2018-01-16	Residents Fume Over I-495 Shoulder Lane in McLean
2018-04-20	MDE Performance Standards and Monitoring Protocol For Permittee
2018-07	Comprehensive Assessment of Climate Change Impacts in Maryland
2018-07	Sacramento Metropolitan Air Quality Management District Board-Adopted Methodology

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2018-08-01	The Concentration-Response Between Long-Term PM2.5 Exposure and Mortality
2018-09-04	Despite Skepticism, Hogan Says No Homes Will be Razed for I-270 Widening
2018-09-07	Managed Lanes Study Briefing with Letters Attached
2018-10-11	MDOT Officials on Widening I-270 'We're Not Going to Take Your Home'
2018-10-17	MWCOG Comments on SAFE Vehicles Rule
2018-10-26	North Carolina Environmental Quality Comment on SAFE Vehicles Rule
2018-12-19	Rejected Maryland Toll-Road Contract Goes to Different Bidder
2018-12	Forecasting the Impossible The Status Quo of Estimating Traffic Flows
2019-03-29	Traffic Terrors After 13-Hour Shutdown, Lanes Reopen on Inner Loop at American Legion Bridge
2019-04	MDOT GGRA Draft Plan Appendix J
2019-05-19	Conditions Leading to Elevated PM2.5 at Near-Road Monitoring Sites
2019-05-29	Here's Everything You Need To Know About The Capital Beltway Expansion
2019-06-05	Board of Public Works Transcript
2019-07-22	Caltrain has an Ambitious Plan to Run BART-Like Service
2019-07-25	Metro Reasons More Trains Bring More Riders to the Red Line
2019-09-10	Letters from Industry Coalition re SAFE Vehicles Rule Impact on Transportation Projects
2019-10-22	Advice from the Independent Particulate Matter Review Panel
2019-10-24	A Transportation Q&A Rahn Talks I-270, Partnerships, Growth and More
2019-11-09	Air Pollution and Noncommunicable Diseases
2019-11-27	Short Term Exposure to Fine Particulate Matter and Hospital Admission Risks and Costs
2019-12-03	Is MARC's Newest Plan to Improve Service a Step Backwards
2019-12-18	Letter from Lee Currey to Community Water Systems
2019-12	Integrated Science Assessment for Particulate Matter
2019-12	MetroTunnel Environmental Management Framework
2019	Air Pollution and Noncommunicable Diseases
2020-01-08	Board of Public Works Meeting
2020-01-15	Reaction to Governor's Budget Proposal Upbeat So Far
2020-01-22	West Gate Tunnel Workers Laid Off After Delays Caused by PFAS Contamination



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2020-01-29	West Gate Tunnel Builders Seek to Terminate Contract Over Contaminated Soil
2020-01-31	Transurban Warned on PFAS Before West Gate Tunnel Contracts Signed
2020-02-07	Request for Qualifications
2020-02-13	Causal Effect of Impervious Cover on Annual Flood Magnitude
2020-02-18	MDOT PIA Request
2020-02-18	USDOT-FHWA FOIA Request
2020-03-03	MDOT PIA request response
2020-03-12	Memorandum to Prince George's County Council and Montgomery County Council
2020-03-13	Express Toll Lanes Could Raise Water Bills in Montgomery and Prince George's
2020-03-16	MDOT PIA Request Response Letter
2020-03-16	Water Bills In Maryland Could Nearly Triple Under Beltway And I-270 Expansion Plan
2020-03-18	FHWA letter re extension of time
2020-03-25	Addendum No. 2 and 3, Phase 1 of the I-495 & I-270 Public-Private Partnership
2020-03-30	Emails with MDOT re PIA request
2020-04-10	Long-Term Community Noise Exposure in Relation to Dementia
2020-04-11	Assessing Nitrogen Dioxide (NO2) Levels as a Contributing Factor to Coronavirus (COVID-19) Fatality
2020-04-14	Email with MDOT re PIA request
2020-04-14	MDOT Follow Up Response to PIA Request
2020-04-15	Association Between Short-Term Exposure to Air Pollution and COVID-19 Infection Evidence from China
2020-04-23	MDOT PIA Request Response Letter
2020-04-24	Fewer Than Half of Working Americans Will Have a Paycheck in May
2020-05-06	Email with MDOT re PIA request
2020-05-14	Letter from Montgomery County Council to Gregory Slater
2020-05-15	Expanding Paved Areas Has an Outsize Effect on Urban Flooding
2020-05-19	Emails with MDOT re PIA request
2020-05-25	Toll Road Association Federal Money is Route to Recovery
2020-05-28	Email with MDOT re PIA request

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2020-06-01	Emails with FHWA re FOIA request
2020-06-09	Transurban Asked to Rip Up West Gate Tunnel Contract, Court Documents Allege
2020-06-15	Emails with MDOT re PIA request
2020-06-15	Induced Vehicle Travel in the Environmental Review Process
2020-06-23	Emails with MDOT re PIA request
2020-06-23	MDOT SHA Response to PIA Request
2020-06-24	FHWA FOIA Response
2020-07-01	Generated Traffic and Induced Travel Implications for Transport Planning
2020-07-02	Influence of Roadway Emissions on Near-Road PM2.5
2020-07-04	People Are Driving Less and Skipping the Toll Roads, Leaving Less Money for Local Projects
2020-07-07	MDOT-SHA PIA Request Response Letter
2020-07-10	FHWA and MDOT email re Release of DEIS
2020-07-21	Email to MDOT and FHWA re Missing Reference Capital Beltway Study
2020-07-22	Email with MDOT re PIA request
2020-07-24	MDOT SHA PIA Response
2020-07-27	Email with MDOT re PIA request
2020-08-01	Opinion What's the Hurry on Governor's I-495, I-270 Project
2020-08-03	MDOT SHA Response to Request for Missing References
2020-08-04	Traffic Speeds Continue Falling Across the Country, But Still Up vs Pre-COVID
2020-08-12	DC-Area Toll Revenue Plunges 90% Amid Coronavirus Pandemic
2020-08-13	The Need for a Tighter Particulate-Matter Air-Quality Standard
2020-08-18	Local Planners Fume Over Unreported Additions to Highway Document
2020-08-18	Report faults Maryland for failings in Bay pollution
2020-08-18	270 Study Expanded Without Proper Notice, Regional Agency Complains
2020-08-25	State's I-495 I-Email re Request for Extension Missing Appendices
2020-08-25	MDOT Response to Requests re Changing Appendices
2020-08-27	Jitesh Parikh Email re Missing References
2020-08-28	State Adds 30 days to Comment Period for I-495 I-270 Environmental Impact Study
2020-08	Urgent Concern on Toxic Silica Dust as Public Health Hazard



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2020-09-01	As Hogan's Highway-Widening Plan Changes, \$9 Billion Price Tag Does Not
2020-09-08	Email re Follow Up to MDOT and FHWA re Missing References
2020-09-08	Maryland Would Have to Divert Money from Other Projects if Purple Line Builders Quit
2020-09-10	Torrential Rain Triggers Widespread Flooding in D.C. Area, Inundating Roads, Stranding Motorists
2020-09-11	Hazardous Air Pollutant Exposure as a Contributing Factor to COVID-19 Mortality in the United States
2020-09-15	State Figuring Out Who Will Take Over Purple Line Project
2020-09-16	D.C.-Area Employers are Open to the Idea of More Permanent Teleworking
2020-09-16	Transportation Officials Anticipating 'Great Localization' After COVID-19
2020-09-21	The Fatally Flawed Scheme to Outsource Md.'s Highways to Toll-Road Profiteers
2020-09-22	MDOT Letter re Missing Reference
2020-09-23	Purple Line Will be Delayed as MDOT Seeks Management Solution
2020-09-24	Project Website with Email Sign Up Notice 2
2020-09-24	Project Website with Email Sign Up Notice
2020-09-30	Letter from Sierra Club to VDOT and MDOT re 495 NEXT
2020-09	Sacramento Metropolitan Air Quality Management District Mobile Sources Air Toxics Protocol
2020-10-01	Email re Request for I-495 & I-270 Traffic Data and Files
2020-10-06	Hogan Extends State of Emergency
2020-10-08	Transportation's Moving Target Wave of Relocations Prompted by COVID-19
2020-10-08	Urban Air Pollution May Enhance COVID-19 Case-Fatality and Mortality Rates in the United States
2020-10-09	Email re Follow up Request for I-495 & I-270 Traffic Data and Files
2020-10-11	MDOT Email re Request for I-495 & I-270 Traffic Data and Files
2020-10-11	National Association of Clean Air Agencies Comments on SAFE Vehicles Rule
2020-10-12	Editorial Commuting Habits Have Changed During COVID-19
2020-10-14	FHWA Email re Request for I-495 & I-270 Traffic Data and Files
2020-10-14	Report Shows 15 Military Bases in Maryland Contaminated With PFAS
2020-10-15	Email re Follow Up to FHWA Request for I-495 & I-270 Traffic Data and Files
2020-10-16	Beltway, I-270 Toll Lanes Could Cost More Than \$1.50 and \$2 Per Mile

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2020-10-17	Maryland Beltway Expansion Might Require Moving Part of Historic African American Cemetery
2020-10-19	Carol S. Rubin Memo to M-NCPPC, Comments to DEIS and JPA
2020-10-20	Email re Follow Up to FHWA Request for I-495 & I-270 Traffic Data and Files
2020-10-20	Email re Follow Up to MDOT Request for I-495 & I-270 Traffic Data and Files
2020-10-20	FHWA Email re Request for I-495 & I-270 Traffic Data and Files
2020-10-20	Long-Term Community Noise Exposure in Relation to Dementia, Cognition, and Cognitive Decline
2020-10-26	Regional and Global Contributions of Air Pollution to Risk of Death from COVID-19
2020-10-27	Email re Follow Up to MDOT Request for I-495 & I-270 Traffic Data and Files
2020-10-28	An Assessment of the Health Burden of Ambient PM2.5 Concentrations in Virginia
2020-10-28	Labyrinth of Pipelines and Cables Could Face Major Disruption by Highway Plan
2020-10-28	Living in Noisy Neighborhoods May Raise Your Dementia Risk
2020-10-28	Pipes, Cables Could Face Major Disruption by Plan to Widen Beltway and I-270
2020-10-30	FHWA Email re Request for Underlying Data
2020-10	Connecting People and Places Exploring New Measures of Travel Behavior
2020-10	COVID-19 Mortality and Contemporaneous Air Pollution
2020-10	Norm Marshall Resume
2020-10	Thrive Montgomery 2050, Public Hearing Draft Plan
2020-11-02	Letter from VDOT and MDOT to Sierra Club re 495 NEXT
2020-11-02	MDOT Letter Response re Underlying Traffic Data
2020-11-04	Air Pollution and COVID-19 Mortality in the United States
	A Transit Vision for the I-270 Corridor
	ACS Infrastructure Development, Response to Request for Information
	Corridor Cities Transitway
	Examples of Silica Dust-Producing Tasks, Highway Road Construction and Repair
	Greenhouse Gas Emissions Mitigation in Road Construction and Rehabilitation
	Highway Expansions Threaten Our Parks
	The Principles of Environmental Justice



**MDOT SHA Response to the Sierra Club:****Introduction**

The introductory portion of the comment letter summarizes specific comments offered the in rest of the document and restates the organizations' opposition to the proposed action. Because all topics summarized in the introductory pages are covered separately below, as well as in responses to common themes raised by numerous other parties, this portion of the comment letter does not require a specific response.

**Comments on Cost of Project and Impacts on Public and Private Property**

The comments concerning estimated projects costs and potential impacts have been substantially updated as reflected in the Supplemental Draft Environmental Impact Statement (SDEIS). In particular, the estimated range of costs for the Preferred Alternative is between \$3 and \$3.5 billion, which is substantially smaller than the build alternatives outlined in the DEIS. Similarly, the range of project impacts has been reduced substantially, and no property relocations would be required. Comments concerning outdated cost estimates have been superseded by approval of an agreement by the Board of Public Works with Accelerated Maryland Partners, Inc. for Phase I South, including payments to cover upfront predevelopment costs. The comments state incorrectly that the project costs will require diversion of funds from other state infrastructure priorities. For more detail and responses to comments concerning the current financial structure of the Public-Private Partnership (P3) program, refer to FEIS Chapter 9, Section 9.3.5. For a response to comments about the most current summary of impacts to property and community facilities, refer to FEIS Chapter 5, Sections 5.3, 5.4 and 5.5 Chapter 9, Section 9.3.4.K.

**Comments on NEPA Analysis***Segmentation*

The introductory paragraphs of this comment cite to or summarize case law and portions of the Council on Environmental Quality (CEQ) regulations and require no specific response. The remainder of the comments address a proposed action on I-270 North of the I-370 interchange. A pre-NEPA Study for potential improvements on I-270 North is being conducted independent from the MLS for that action. FHWA has carefully considered the proposed action's operational independence, the hallmark for determining whether there is an inappropriate segmentation. As outlined in the DEIS, I-370 (just north) was chosen as the northern terminus to allow the I-270 northbound mainline improvements that are carried to I-370 to be merged and transitioned into the existing general purpose lanes and HOV lanes safely, minimizing congestion due to lane drops and merges. Additionally, I-370 links MD200 with I-270 and is a major traffic generator that carries over 100,000 vehicles per day under existing conditions (2016). The average annual daily traffic volume on I-270 north of I-370 and MD 117 is approximately 10 percent less than the volume south of I-370 in existing conditions, indicating that a significant portion of traffic on I-270 comes from and goes to I-370. Refer to DEIS, Chapter 1, Section 1.1.

The decision concerning the scope of analysis to be conducted under NEPA lies within the discretion of the lead agencies. Depending on the factual circumstances, a programmatic or a project-specific analysis could be conducted to fulfill NEPA's procedural requirements. In this case, proceeding with a project-level review for the MLS was entirely appropriate. The geographic scope of the MLS, while large, is distinctly defined. It includes 37 miles of I-495 and 11 miles of I-270. Consistent with CEQ NEPA regulations 40 CFR 1502.4(a) and 1508.25(a), as well as FHWA NEPA regulations at 23 CFR 771.111(f), the lead agencies have identified the MLS as an independent action that may proceed regardless of whether other actions of the Op Lanes Maryland Program are implemented. Furthermore, the identified scope of the MLS has been sufficiently defined to be advanced with a project-level NEPA document. Consistent with FHWA regulations, other proposed actions, such as potential improvements to I-270 from I-370 to I-70, have been determined to possess independent utility from the MLS and thus will require separate project-level NEPA documents.

The introductory paragraph of this comment cites to or summarizes case law and portions of the CEQ regulations and require no specific response. The remainder of the comment states incorrectly that MDOT SHA must prepare a programmatic EIS for the P3 Program. The Governor's articulation of a broad plan to address congestion and mobility across the state does not mandate preparation of a programmatic NEPA document. The lead agencies properly exercised its discretion in this case to advance a specific project in the order it believes best serves the public and to prepare an appropriate NEPA analysis for that project. Any future proposal for improvements to the remaining parts of I-495 within the study limits outside of Phase I South would advance separately and would be subject to appropriate additional environmental studies, analysis and collaboration with the public, stakeholders, and agencies.

*Purpose and Need and Alternatives Considered*

The introductory paragraphs of this comment cite to or summarize case law and portions of the CEQ regulations and require no specific response. The remainder of the comment is largely addressed in the following common responses provided in the FEIS along with the internal citations to other NEPA documents: for a response to comments on the agency's formulation of the Purpose and Need, refer to DEIS and SDEIS Chapter 1, DEIS Appendix A, FEIS Chapter 9, Section 9.3.1; for a response to comments about the consideration of alternatives, including the specific alternatives mentioned in the comments, refer to DEIS Chapters 2 and 3, DEIS Appendix B, FEIS Chapter 9, Sections 9.3.2 and 9.3.3.

The comments also refer to the pandemic's impact on travel patterns and whether the impacts of COVID-19 diminish the need for the proposed action. For an analysis of current travel trends and the potential impacts of the pandemic on study area congestion, refer to FEIS Chapter 4, Section 4.2.2 and 4.5, FEIS Appendix C and FEIS Chapter 9, Section 9.3.1.

The comments also refer to the potential for a replacement of the American Legion Bridge (ALB) to accommodate rail traffic. The SDEIS accurately states that design options for the ALB will be completed so as not to preclude a future transit line across the bridge. Refer to FEIS Chapter 9, Section 9.3.3.D.

The comments also claim that the lead agencies should have used environmental impacts as a differentiator between preliminary alternatives. The NEPA record demonstrates that environmental impacts were considered as an initial screening criterion as presented to agencies and the public. Analysis of environmental resources considered as part of the alternatives screening process can be found at DEIS Chapter 2, Section 2.2, DEIS Appendix B. The majority of Preliminary Alternatives were located along the existing I-495 and I-270 corridors, and while operationally different, have similar physical footprints. The exception were two rail transit alternatives as they would be on separate alignments adjacent to the existing interstates and, thus, would have a larger physical footprint.

Finally, the comment suggests a completely different project Purpose and Need and, in light of that altered Purpose and Need, asks that the agencies consider a different alternative. MDOT SHA and FHWA have discretion to establish a project Purpose and Need and in this case the Purpose and Need was vetted and approved through an inter-agency process. Refer to comment response, above. An agency is required to analyze a reasonable range of alternative that meet the stated Purpose and Need, and not alternatives that would satisfy some other project Purpose and Need preferred by other parties.

*Water Quality Impacts*

For a response to comments about impacts to water resources, refer to FEIS Chapter 9, Section 9.3.4.E.

For additional information about impacts to water resources, refer to FEIS, Chapter 5 and Appendix M.

For additional information about stormwater management, refer to DEIS Chapter 2, Section 2.2.7, SDEIS Chapter 2, Section 2.3.2 and FEIS Chapter 3, Section 3.1.6.

For additional information about the Compensatory SWM Mitigation Plan, refer to FEIS Appendix D.



<p>Stormwater Management requirements in Virginia will be met by the SWM facilities provided in the FEIS and as required per the applicable laws and regulations of Virginia and under the requirements set forth by VDOT and VDOT's MS4 permit. This project will not adversely impact MDOT SHA's MS4 permitting requirements. The MDOT SHA National Pollutant Discharge Elimination System (NPDES) database tracks all existing best management practices (BMP) and any impacts to existing BMPs from this project will be tabulated as a water quality (WQ) loss, which will be replaced by SWM facilities within the project area or within the compensatory SWM locations. Therefore, the existing level of treatment will remain unchanged. As Maryland requires 50% treatment of the reconstructed untreated impervious area, this project will result in additional water quality for existing untreated impervious area, adding to the MDOT SHA overall MS4 treatment provided.</p> <p><i>Decision Not to Require Permit for American Legion Bridge Construction</i></p> <p>A September 23, 2019, letter from the U.S. Coast Guard confirms that no bridge permit under Coast Guard Authorization Act of 1982 will be required. This letter has been included in the Final Natural Resources Technical Report, FEIS Appendix M, sub-appendix N. However, impacts due to pier and abutment placement within the Potomac River for the replacement bridge are included in the Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Non-Tidal Wetland in Maryland to comply with Section 404 and 401 of the Clean Water Act. Refer to FEIS Appendix P.</p> <p><i>Impacts to Aquatic Species, Aquatic Habitat and Fisheries</i></p> <p>This portion of the comment letter refers to quantities of potential impacts to waterways from the DEIS and supporting documents that are no longer applicable. As documented in the SDEIS, waterway impacts have been substantially reduced, as are potential effects on aquatic resources. The comment states incorrectly that the analysis of aquatic impacts is reflected in one statement in a DEIS Appendix but ignores the comprehensive analysis of aquatic resources reflected in the remainder of the technical report. For additional information about impacts to aquatic species, refer to SDEIS Chapter 4, Sections 4.12 and 4.18, and FEIS Chapter 5, Section 5.18. Also refer to responses to Sierra Club SDEIS letter.</p> <p><i>Impacts to Rare, Threatened and Endangered Species and Habitat</i></p> <p>The introductory paragraphs to this portion of the letter cite to statutory and regulatory provisions concerning the analysis of a project potential impacts on rare, threatened, or endangered species and require no specific response. For additional information about impacts to wildlife, including bat species, refer to DEIS and SDEIS Chapter 4, Sections 4.17 and 4.19, SDEIS Appendix H, and FEIS Chapter 5, Section 5.19. For a response to comments about impacts to wildlife and wildlife habitat, refer to FEIS Chapter 9, Section 9.3.4.J. Also refer to responses to Sierra Club SDEIS letter.</p> <p><i>Hazardous Materials</i></p> <p>The NEPA analysis of potential impacts from hazardous materials was prepared in accordance with FHWA Technical Advisory T6640.8A, "Guidance for Preparing and Processing Environmental and Section 4(f) Documents." This guidance requires, in part, that an agency identify the location of known or potential waste sites and the relationship to alternatives under consideration. If a known or potential site could be impacted by an alternative, the agency should provide information about the site, potential impacts and public health concerns, and potential measures to eliminate or mitigate those impacts. The Final EIS should address issues raised by the public and agencies. For the MLS, the DEIS summarizes all the required information. Refer to DEIS Chapter 4, Section 4.10 and Appendix K. The SDEIS provided additional information, as well as the potential for hazardous materials concerns during construction of the Preferred Alternative. Refer to SDEIS Chapter 4, Section 4.10, SDEIS Appendix I. The SDEIS properly summarizes the recommended site investigations and protocols that will be conducted prior to acquisition of right-of-way and prior to construction. These processes are designed</p>	<p>to characterize surficial and subsurface soils and groundwater at site where it is anticipated to be encountered. Investigations will consider locations of previous releases of materials, if any, former/current/abandoned storage tanks, and inferred groundwater flow. Procedures to address testing and handling of any sites with hazardous waste or other contaminants are also described. Also refer to FEIS, Chapter 5, Section 5.10.</p> <p><i>Air Emissions</i></p> <p>The comment letter expresses concerns with the scope and content of the DEIS analysis of project air quality impacts, and summarizes studies related to certain constituent pollutants. The comments admit that the agency is not required to perform hot spot analyses for PM 10, PM 2.5 and NO2 but requests that additional air quality analyses are included in the NEPA process. While the lead agencies acknowledge the information presented in the comments, as described in detail in the EIS documents and supporting technical appendices, the agency appropriately followed relevant FHWA guidance concerning the assessment of criteria pollutants applicable to the study area based on federal Clean Air Act rules, and therefore fulfills NEPA obligations to analyze potential impacts of the range of reasonable build alternatives and no-build alternative. For additional information about air quality impacts, see DEIS Chapter 4, Section 4.8 and Appendix I and FEIS Chapter 5, Section 5.8 and Appendix K. For a response to comments about impacts to air quality, refer to FEIS Chapter 9, Section 9.3.4.F. Also refer to responses to Sierra Club SDEIS response letter.</p> <p>The comments request additional air quality analysis be performed for all parking lots greater than 100 spaces adjacent to the proposed highway improvements. The lead agencies are not required to analyze air quality from existing facilities that are outside of scope of the study, outside of the study limits and not impacted by the proposed improvements or part of the proposed action. The lead agencies properly considered air quality impacts in the analysis of indirect and cumulative effects and concluded that, based on the regional air quality conformity analysis, the incremental impact of the proposed project on mobile source emissions, when added to past, present and reasonably foreseeable future actions, will not cause or contribute to a new violation, increase in the frequency or severity of any violation, or delay timely attainment of the National Ambient Air Quality Standards established by the Environmental Protection Agency. Refer to FEIS Chapter 5, Section 5.22.</p> <p>While acknowledging that there is no requirement to do so, the comments request additional air quality analysis be performed for ground-level ozone and its precursor. The scope of the air quality analysis is appropriate because ozone emissions are addressed in the regional air quality conformity analysis which is described in the DEIS and SDEIS. As the study is included in the currently conforming long-range plan, Visualize 2045, the proposed action is demonstrated to not cause an exceedance of the NAAQS including ozone.</p> <p>For a response to the air quality analysis including Mobile Source Air Toxics, refer to FEIS, Chapter 9, Section 9.3.4(F). Also refer to DEIS, Chapter 4, Section 4.8.1, DEIS Appendix I, and SDEIS, Chapter 4, Section 4.8.1.</p> <p>For a response to CO Hot Spot analysis, refer to FEIS, Chapter 9, Section 9.3.4.F. Also refer to DEIS, Chapter 4, Section 4.8.1 DEIS Appendix I and SDEIS, Chapter 4, Section 4.8.1.</p> <p>The comments question the scope and content of the analysis of potential project Greenhouse Gas (GHG) emissions and those related to project construction. For additional information about climate change and greenhouse gases, refer to FEIS Chapter 5, Sections 5.8 and 5.23 and FEIS Appendix K. For a response to comments about climate change and greenhouse gases, refer to FEIS Chapter 9, Section 9.3.4.G. For additional information about construction impacts to air quality, refer to FEIS Chapter 5, Sections 5.8 and 5.23 and FEIS Appendix K. For a response to comments about construction impacts, refer to FEIS Chapter 9, Section 9.3.4.I.</p> <p>The comments request additional air quality analysis related to the COVID-19 pandemic and cite to articles speculating about the potential nexus between air pollution and COVID-19 health impacts. Because of the uncertainty regarding the</p>
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future course of the pandemic, the lack of substantial information and absence of approved regulations, guidance and methodology for such an analysis, the lead agencies are not required to conduct this additional analysis.

As accurately noted in DEIS Appendix I, the project is included in the approved 2018 constrained long-range plan, Visualize 2045, and the corresponding air quality conformity analysis. Page 39 of the Visualize 2045 Plan describes the Traffic Relief Plan as constructing four managed lanes on I-495/I-95 and I-270 for their entire length. As properly noted in DEIS Appendix I, prior to the Record of Decision being signed, the selected alternative will be included in the TIP and Long Range Plan, and the accompanying Transportation Conformity Determination. The traffic forecast for the draft air quality analysis in the DEIS appropriately used 2016 as the base year, the anticipated opening year of 2025 and design year based on a 20-year planning horizon as 2040. The final air quality analysis updated the traffic forecast to use the design year of 2045. Refer to FEIS, Chapter 9, Section 9.3.4.F and FEIS Appendix K.

The draft air quality analysis completed for the DEIS alternatives used the US EPA approved model, MOVES2014 which did not include the updated fuel efficiency standards. While not mandatory, the lead agencies used the updated model, MOVES3 (3.0.1), as approved by EPA for the final air quality analysis in the FEIS. MOVES3 includes many updates to exhaust emission rates to better estimate the real-world emissions of new vehicle technologies. Compared to the previous MOVES2014 modeling tool, MOVES3 allows users to model the benefits from new regulations promulgated since MOVES2014 was released, incorporates the latest emissions data, and has improved functionality. Some of the major updates include new regulations such as the Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2 and the Safer Affordable Fuel Efficient (SAFE) Vehicles Rule. Refer to FEIS Chapter 5, Section 5.8 and FEIS Appendix K.

For information concerning the detailed summary of all potential EJ impacts, refer to DEIS and SDEIS Chapter 4, Section 4.21, DEIS Appendix E, FEIS Chapter 5, Sections 5.8 and 5.21, and FEIS Appendix F. For a response to comments about environmental justice and equity, refer to FEIS Chapter 9, Section 9.3.4.D.

The comments repeat concerns with the analysis of potential air impacts associated with project construction. For additional information about construction impacts to air quality, refer to FEIS Chapter 5, Sections 5.8 and 5.23 and FEIS Appendix K. For a response to comments about construction impacts, refer to FEIS Chapter 9, Section 9.3.4.I.

Regarding avoiding and mitigating fugitive dust during construction, the FEIS outlines measures that will be implemented during construction to help minimize construction related dust and emissions include the following:

- Implementing a **Diesel Emissions Reduction Program** that exceeds pertinent Federal and state regulations to minimize air pollution including MSAT emissions during construction
- Implementing a **Truck Staging Area Plan** for all construction vehicles waiting to load or unload material where emissions will have the least impact on sensitive areas and the public. These include but not limited to hospitals, schools, residences, motels, hotels, daycare facilities, elderly housing and convalescent facilities. All sources of emissions shall be located as far away as possible from fresh air intakes, air conditioners and windows.
- Implementing a **Greenhouse Gas Reduction Program** to reduce emissions during construction
- Implementing an **Anti-Idling Policy** to avoid unnecessary idling of construction equipment in order to reduce engine emissions and to provide air quality benefits to those who live and work in or adjacent to the construction sites.
- Implementing **dust control** mitigation measures during construction to limit the production of dust, when practicable

Refer to FEIS, Chapter 9, Section 9.3.4.F., FEIS Chapter 5, Section 5.8 and FEIS Appendix K.

For responses to comments on technical omissions in the air quality analysis, see below:

Accepted practice for selecting analysis years for an MSAT analysis is to estimate emissions for a base year, the expected first year of operation, and the project design year. In the DEIS MSAT and GHG analyses, emissions were estimated for 2016, 2025, and 2040. The quantitative MSAT and GHG analyses were updated for the preferred alternative and an updated design year of 2045 was used in those analyses.

For a response to induced demand in the traffic analysis, refer to FEIS Chapter 9, Section 9.3.4.B.

Per FHWA MSAT guidance, MDOT SHA developed an affected network to be used in the quantitative MSAT analysis for the project. This MSAT affected network was also used for the quantitative GHG analysis. The need for a project level "hot spot" conformity analysis is determined by the attainment status of the county the project is located in. A CO hot spot analysis was not required for this project as Montgomery, Prince Georges, and Fairfax counties are not in non attainment for the CO National Ambient Air Quality Standards (NAAQS). However, CO is highlighted in the FHWA 1987 guidance as a transportation pollutant to be summarized in an EIS. Therefore, the DEIS presented the results of the potential impacts for CO at worst-case intersections throughout the study corridors. The methodologies and assumptions applied for the CO analysis are consistent with FHWA and EPA guidance. The quantitative MSAT and GHG analyses were updated for the Preferred Alternative using the latest version of the EPA MOVES model (MOVES3 Version 3.0.1). This version of MOVES includes new regulations such as the Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2 and the Safer Affordable Fuel Efficient (SAFE) Vehicles Rule.

*Impacts to Forests*

The lead agencies appropriately evaluated potential impacts to forest resources, including forest canopy and vegetated habitat. The Preferred Alternative has dramatically reduced the quantity of potential tree (or forest) canopy loss compared to the data referenced in the comment. For a summary of terrestrial and forest impacts, refer to SDEIS, Chapter 4, Section 4.16, FEIS Chapter 5, Section 5.16 and FEIS Appendix M and N. Maryland Reforestation Law requires state-funded highway project applicants that impact one acre or more of forest to provide one-to-one mitigation according to a preference for on-site planting within the project corridor. Beyond on-site mitigation, the applicant may accomplish off-site planting on public lands within the affected county or watershed, purchase credits from approved forest mitigation banks within the affected county or watersheds and payment into the Maryland Reforestation Fund. The mitigation plan for forest impacts has been developed in close coordination with appropriate local, state, or federal agencies. Refer to FEIS M. For responses to comments about forest (tree) canopy impacts, refer to FEIS Chapter 9, Section 9.3.4.J.

*Noise*

The lead agencies have conducted and documented a comprehensive assessment of potential project noise impacts and the evaluation of proposed noise mitigation. For additional information about noise impacts, refer to DEIS and SDEIS Chapter 4, Section 4.9, DEIS Appendix J, SDEIS Appendix E, and FEIS Chapter 5, Section 5.9 and Appendix L. For a response to comments about noise impacts, refer to FEIS Chapter 9, Section 9.3.4.H.

*Alleged Flaws in Traffic Modeling*

For a response to comments about traffic modeling and analysis, refer to FEIS Chapter 9, Section 9.3.4.B. Also refer to responses to Sierra Club SDEIS letter.

For additional information about traffic modeling and analysis, refer to DEIS Chapter 3 and Appendix C and FEIS Chapter 4 and Appendix A.

*Other Traffic Comments*

For a response to comments about vehicle safety, refer to FEIS Chapter 9, Section 9.3.4.O.

For additional information about vehicle safety, including congestion-related crashes, refer to FEIS Appendix A.



*Environmental Justice Issues*

This portion of the letter cites to or summarizes case law and portions of the CEQ regulations in several sections and requires no specific response. The remainder of the comments concern the scope and methodology used to analyze environmental justice (EJ) impacts generally, including reference to portions of the study area in Prince George’s County that will no longer be impacted by the Preferred Alternative. For information concerning the detailed summary of all potential EJ impacts, including the agency’s comprehensive program to encourage public participation of all identified minority and/or low-income communities in the study area, refer to DEIS and SDEIS Chapter 4, Section 4.21, DEIS Appendix E, FEIS Chapter 5, Sections 5.8 and 5.21, and FEIS Appendix F. For a response to comments about environmental justice and equity, refer to FEIS Chapter 9, Section 9.3.4.D. Also refer to responses to Sierra Clubs SDEIS letter.

*Induced Demand*

The comment letter summarizes a 2020 Transportation Research Record article concerning considerations of induced demand in environmental reviews, including a proposed “calculator” that has not been calibrated for use outside of California. The lead agencies acknowledge the reference. The record contains a comprehensive assessment of the potential induced demand related to the proposed action. Refer to DEIS Appendix C. For a response to comments about induced demand, refer to FEIS Chapter 9, Section 9.3.4.B.

*American Legion Bridge Contingencies*

The NEPA record reflects an extensive effort to consider impacts related to the replacement of the American Legion Bridge (ALB). Substantial interagency coordination was conducted to consider and then incorporate avoidance and minimization efforts related to bridge design in order to address all resources, including Section 106 and Section 4(f) properties, around the replacement bridge. Refer to SDEIS, Chapter 2, Section 2.3.4.C and FEIS Chapter 9, Section 9.3.4.C.

The lead agencies invited VDOT to be a cooperating agency in development of the EIS in consideration of the southern terminus that extends over the ALB into the Commonwealth of Virginia and ties into Virginia Department of Transportation (VDOT) facilities. Extensive coordination with VDOT has occurred and, while the MLS is independent of the 495 NEXT project, close coordination regarding engineering, traffic and environmental analyses has occurred over the last four years. Impacts to Virginia resources were considered in the scope of the Study and were included in the EIS documents. The 495 NEXT project was included in the MLS design year models for both No Build and Build Alternatives. MDOT SHA coordinated with VDOT regarding traffic analyses throughout the Study, including regular meetings and sharing of information related to traffic counts, forecasts, and simulation models used on our respective studies to ensure that the data was compatible. Close coordination with VDOT occurred during development of the Preferred Alternative to ensure compatibility with the 495 NEXT project.

*Alleged Procedural Problems*

The introductory paragraph of this comment cites to or summarizes case law and portions of the CEQ regulations and require no specific response. The comments note a minor error in uploading DEIS appendices to the project website which was brought to the lead agencies attention and rectified in one day. All DEIS material was available to the public for the full duration of the comment period and beyond, with the lead agencies instituting extraordinary measures during the pandemic to ensure maximum public participation and doing so in a manner that was protective of public health. For additional information about public involvement throughout the NEPA process, refer to DEIS and SDEIS Chapter 7, DEIS Appendix P, FEIS Chapter 8 and Appendix R. For a response to comments about public involvement during the NEPA process, refer to FEIS Chapter 9, Section 9.3.7. The lead agencies conducted a comprehensive scoping process, including making preliminary NEPA documents, such as the summary of Alternatives Retained for Detailed Study, available for public review and informal comment. The letter states incorrectly that the lead agencies improperly summarized or “miscounted” the public input on these preliminary NEPA documents. The lead agencies reviewed all comments received and properly summarized the content of those comments during the preliminary scoping stages of the NEPA review in order to inform production of the DEIS. The lead agencies were aware of and considered all such comments, in opposition

to or in support of the project, and properly noted the submission of petitions and other mass mailings or communications. Once the EIS documents were made available for formal comment periods, MDOT SHA reprinted and made available all comments on the DEIS and SDEIS and responded to all substantive comments in the FEIS. Support for or opposition to the project and/or the Preferred Alternative as stated in all public comment is accurately reflected in the NEPA record and available for review. MDOT SHA received and responded to each request for records in compliance with the Maryland Public Information Act (MPIA) as did FHWA in compliance with the Freedom of Information Act (FOIA); commenter has not filed any appeal under either MPIA or FOIA to the said responses.

**Section 4(f) and NHPA Analysis***Effects on Historic and Cultural Resources*

The Preferred Alternative eliminated the majority of resources referenced in this comment. Remaining impacts have been minimized to the extent practicable at this stage of design and reasonable mitigation to address the adverse effect has been developed in consultation with interested parties. The remainder of the comments summarize general concerns with the analysis of potential project impacts on parkland, historical and cultural resources. For a response to concerns over the Section 106 process, refer to DEIS and SDEIS Appendix D, FEIS Chapter 9, Section 9.3.4.C, FEIS Appendices E and J. For additional information about historic architectural and archaeological resources, refer to SDEIS Chapter 2, Section 2.3, FEIS Chapter 5, Section 5.7, and FEIS Appendices E, I and J. For additional information about the Section 4(f) evaluation, refer to DEIS and SDEIS Chapter 5, DEIS Appendix F, FEIS Chapters 5, 6, and 7, and FEIS Appendix G.

*Agency Did Not Follow Intent of DOT*

The Study includes a comprehensive analysis of all potential Section 4(f) resources, including the potential for constructive uses of those resources. The quantity of potential Section 4(f) impacts noted in these comments was reduced substantially as a result of identification of the Preferred Alternative, based in part on extensive coordination with and input from agencies, stakeholders, including Officials with Jurisdiction (OWJ) for Section 4(f) properties. The Final Section 4(f) Evaluation reflects consideration of all potential uses of parkland or historical resources and a comprehensive package of mitigation measures, including improvements to park facilities and amenities, tree planting and invasive species control, water quality improvements, ecological restoration, among others. The record of coordination with OWJs and stakeholders is reflected in DEIS Chapter 5, SDEIS Chapter 5 and FEIS Chapter 6. Refer to the Final Section 4(f) Evaluation in FEIS Appendix G and FEIS Chapter 9, Section 9.3.4.C.

*Cannot Rely on Non-Executed Programmatic Agreement*

The comment incorrectly states that the lead agencies relied solely on the anticipated execution of a Programmatic Agreement to fulfill obligations to analyze project impacts on cultural and historic resources. The lead agencies conducted a comprehensive analysis of cultural and historic properties in coordination with the State Historic Preservation Officers, the Maryland Historical Trust, the Virginia Department of Historic Resources and other agency and community consulting parties. For a summary of the complete analysis of impacts to historical architectural, historic cemeteries, archaeological, and other historical resources, refer to FEIS, Chapter 5, Section 5.7, Chapter 9, Section 9.3.4.C. The executed Programmatic Agreement, which reflects all agreed to mitigation measures as a result of the Section 106 consultation process appears at FEIS, Appendix J.

**Conclusion**

This portion of the letter summarizes all previous comments and does not require a separate response.