ZAMURS AND ASSOCIATES, LLC

Transportation Air Quality Energy Climate Change Sustainability

Review and Comment

I-495 and I-270 Managed Lanes Study

Final Environmental Impact Study

And

Final Section 4(f) Evaluation

Dated June 2022

In its comments of November 6, 2020, and November 30, 2021, the Sierra Club Maryland Chapter offered highly technical, specific, and detailed comments concerning the failings of the air quality, greenhouse gas and environmental justice aspects of the DEIS and SDEIS. In reviewing the FEIS and its response to comments, it is highly disappointing to see that the comments have not been sufficiently or significantly addressed. In many cases, the comments have been simply ignored. In other cases, they have been lumped together with other comments to facilitate a very generalized and inadequate response. In addition to new information and comments presented below, all previous comments are to be considered as outstanding and are remanded for further consideration.

Transportation Conformity

Under the transportation conformity rule (40 CFR Parts 51 and 93), a regionally significant transportation project must be found to conform to the purpose of the State Implementation Plan before it can be approved and adopted. Paragraph 51.400(d) indicates that FHWA projects must be found to conform before they are adopted, accepted, approved, or funded by FHWA. Similarly, §51.450(b) and 93.129(b) forbid recipients of Federal transportation assistance (for this project that is Maryland Department of Transportation) to approve a regionally significant project unless it is included in a conforming long-range Plan and Transportation Improvement Program (TIP). For a project approval, it must have the same design scope and concept as the project included in the conforming Plan or TIP (§ 51.422 (b)(1) and (c)(1) and 93.115 (b)(1) and (c)(1)). Examination of the FEIS for the project, specifically Appendix K, the Final Technical Air Quality Report, and the conformity determination of the "Visualize 2045, a Long-Range Transportation Plan for the National Capital Region", adopted June 2022, identified

Exhibit G

a substantial difference in the design scope and concept of the project as included in the conformity determination and the project as described in the FEIS, that make approval of the FEIS and the project by FHWA and Maryland Department of Transportation untenable.

The Air Quality Appendix identifies the opening year for the project as 2025. However, the air quality conformity determination distinguishes several important design elements of the project to be completed in 2030. These elements include:

1. I-270 Northbound Toll Lanes, I-370 to Middlebrook Road;
2. I-270 Southbound Toll Lanes, Middlebrook Road to I-370;
3. I-270 Northbound Toll Lanes, Middlebrook Road to MD 121;
4. I-270 Southbound Toll Lanes, MD 121 to Middlebrook Road; and
5. I-270 Toll Lanes, MD 121 to I 70 / US 40.

These design elements may contribute significant emission additions to the regional emissions for ozone precursors in the conformity determination. By not including these design elements in the emissions analysis for the horizon year 2025, the regional emissions analysis may be severely underestimating ozone precursor emissions from the transportation system. It should be noted that the 2025 analysis year comes closest to the mobile source emissions budget, as shown in Figures 6 and 7 of the conformity determination, indicating a greater possibility of not meeting the appropriate emissions test. With the exclusion of these design elements from the 2025 horizon year emissions analysis, the design scope and concept of the project as described in the FEIS and as described in the most recent conformity determination are not consistent.

The opening year of 2025 in the FEIS and the opening year of 2025 of some design elements as shown on the conformity determination seems highly unlikely. Since the conformity determination horizon year of 2025 analyzed for ozone precursors, the design elements as modeled in the determination would have to be open by the summer of 2025 (since ozone is a summertime pollutant) to properly account for the emissions from those design elements. It is highly unlikely that this estimated $3.75 – 4.25-billion-dollar project will be able to be completed in three years from now. In fact, the FEIS recognizes that construction is expected to last five years (Page 96, Appendix F – Final Community Affects Assessment and Environmental Justice Analysis Technical Report) and Appendix B of Appendix K, which considers construction greenhouse gas emissions and indicates the project will not be open in 2027. Thus, an opening year for the project of 2025 is not feasible and, therefore, the project FEIS and the conformity determination do not have the same design scope and concept. A more reasonable opening year should be determined, and both the air quality analysis and the conformity determination should be re-analyzed with a new opening year to determine the project's impact on air quality, both on a project level and on a regional basis.

As explained above, because the design scope and content of the project as described in the FEIS and as described in the National Capital Transportation Planning Board conformity determination is not consistent with one another, both FHWA and Maryland DOT cannot approve the FEIS. Under §51.406 and 93.307, this project must be treated as a project not from a conforming TIP and Plan. Accordingly, the National Capital Transportation Planning Board must re-evaluate conformity with the same opening year for all elements of the project, consistent with the FEIS. Upon completion, FHWA and Maryland DOT could approve the FEIS (assuming a successful comparison to the motor vehicle emissions budgets). Alternatively, FHWA/Maryland DOT must perform a regional ozone precursor emissions analysis to

document that the project, as completed, will not cause the motor vehicle emissions budgets to be exceeded.

Air Quality/NEPA issues

For a project of this scale and cost, it is surprising and disappointing to read the numerous inconsistencies, inaccuracies, and misstatements between the DEIS and its air quality study and the FEIS and its air quality study.

The response to comments (MLS_FEIS_App%20T%20DEIS%20&%20SDEIS%20C&R_T.2.A_Volume%203_June%202022p.pdf) relies on the analyses for carbon monoxide and the conformity determination (cited above) as indicating that the project will not cause a new exceedance of a National Ambient Air Quality Standard (NAAQS) or exacerbate an existing violation. This is not correct. The conformity determination only considered ozone precursors. It did not consider any other pollutants. The Air Quality studies (DEIS and FEIS) did examine carbon monoxide (although with many technical errors). However, the pollutants that cause the greater health impacts, $PM_{2.5}$, PM_{10} and NO_2 remain unexamined and unconsidered, despite the legal obligation to assess these pollutants under NEPA.

The Response to Comments document (cited above) indicates the Sierra Club Maryland Chapter "requested" analyses for these pollutants. That is not correct. Under NEPA, project sponsors must take a "hard look" at the potential adverse impacts of the project and mitigate to the extent practicable. The analysis for these pollutants is part of that "hard look". In their comments on the DEIS (November 6, 2020) and on the SDEIS (November 30, 2021), the Sierra Club Maryland Chapter offered numerous studies that demonstrate the potential linkage of transportation projects to elevated emissions, elevated concentration levels and increased adverse health effects. To add to this evidence, two additional studies are brought forth for consideration as to the negative health effects of these pollutants.

The Supplement to the 2019 Integrated Science Assessment for Particulate Matter (EPA/600/R-22/028, May 2022) examined recent health studies related to exposure to ambient $PM_{2.5}$ levels. The study found elevated incidences of cardiovascular effects and mortality at a short-term ambient level of 7.1 ug/m^3 over a 24-hour period average and a long-term ambient level of 5.9 ug/m^3 on an annual average. This study also found enhanced susceptibility to PM related health effects in EJ communities. This EPA study will likely lead to a tightening of the NAAQS for $PM_{2.5}$.

A recent article in the Guardian (https://www.theguardian.com/environment/2022/jun/03/car-tyres-produce-more-particle-pollution-than-exhausts-tests-show, June 3, 2022) demonstrated that tire wear produced high levels of particulates, significantly greater than produced by exhaust emissions. The particulates produced a wide range of toxic compounds. While this study focused on ultrafine particulates, it nevertheless documents the linkage between transportation and health impacts. There are currently no ambient air quality standards for ultrafine particulates but there are standards for larger particulates ($PM_{2.5}$ and PM_{10}). The project sponsors should use $PM_{2.5}$ and PM_{10} as proxies for particulates in general and address the health concerns associated with particulate emissions by performing the required analyses for $PM_{2.5}$ and PM_{10}.

These two additional studies plus all the previously cited studies indicate that recent evidence shows the health connection between transportation and transportation projects and increased risk of adverse health effects. Instead of addressing this issue in a technically sound manner, the project sponsors rely on outdated FHWA guidance as an excuse for not performing an analysis for these pollutants, The cited guidance, GUIDANCE FOR PREPARING AND PROCESSING ENVIRONMENTAL AND SECTION 4(F) DOCUMENTS (FHWA TECHNICAL ADVISORY, T 6640.8A, October 30, 1987) is over 30 years old and only addresses carbon monoxide and ozone precursors. It was developed prior to the promulgation of the NAAQS for $PM_{2.5}$ (1997), PM_{10} (1987) and NO_2 (2010) and has not been updated to account for these pollutants.

USEPA also recognized the microscale aspect of these pollutants by establishing both a short-term NAAQS (1 hour or 24-hour average) and a long-term NAAQS (annual average). In its November 6, 2020, comments on the DEIS, the Sierra Club Maryland Chapter documented how concentrations of these pollutants can vary substantially over short distances. Reliance on regulatory fixed air quality monitors many miles away from the project area does not accurately depict actual concentrations and exposures that residents and visitors in the project area are subject to. Nevertheless, in its November 30, 2021, comments on the SDEIS, the Sierra Club Maryland Chapter documented that the nearest regulatory monitors exceed the concentration level of the NAAQS for $PM_{2.5}$, indicating that elevated levels likely exist in the project area, and it is critical to determine whether the project will exacerbate those elevated concentrations as well as how much the project will increase concentrations closer to the highway and what the health impacts associated with those increased concentrations will be.

The traffic analysis continues to show that traffic levels along the project exceed the 125,000 annual average daily traffic count and it continues to fail to document levels of diesel truck traffic. In designated $PM_{2.5}$ nonattainment and maintenance areas, that level of traffic (along with a needed diesel truck percentage) would be sufficient to trigger a micro-scale $PM_{2.5}$ analysis, according to USEPA guidance (PM Hot-spot Guidance Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas, EPA-420-B-21-037 October 2021). The attainment/nonattainment status of an area should not be the only determinant for this type of analysis. In order to provide public health protection to the residents and visitors in the area, the project sponsors must perform a $PM_{2.5}$ analysis to ascertain the potential air quality impacts of this major project, especially since it appears the project would otherwise meet the thresholds for an analysis in a nonattainment or maintenance area.

Environmental Justice

Perhaps no section of the FEIS is as full of misleading and inaccurate statements as in Appendix F, Final Community Affects Assessment and Environmental Justice Analysis Technical Report, particularly with regard to air quality and the effects of the project on identified environmentally disadvantaged communities. Page 86 of Appendix F concedes that "(E)xposure to traffic-related air pollution would result from short-term construction activities (approximately four to five years) and long-term highway operations. EJ populations who live with high EPA and MD EJSCREEN EJ index scores … may experience air quality impacts from construction activities and highway operations more acutely than populations with lower EJ index scores." Yet, Appendix F inaccurately states on Page 85 "… air quality modeling at a localized level – the level at which this EJ analyses are otherwise conducted – is not available.

Furthermore, due to industry-wide limitations and tools/techniques for measuring project-specific health outcomes, detailed air quality effects on public health effects cannot be projected for any specific location along the Phase I South limits."

The statement on Page 85 is incorrect. The tools for doing these types of analyses are well known and available. For the criteria pollutants ($PM_{2.5}$, PM_{10} and NO_2) emission and dispersion models are approved by USEPA for use in these types of analyses. Determination of health outcomes would be based on comparing the results from these models to the relevant peer-reviewed literature on concentration-response relationships for those pollutants. For mobile source air toxics, the November 6, 2020, comments by the Sierra Club Maryland Chapter documented examples of health risk assessment procedures for transportation projects around the country and application of a procedure to a specific transportation project. The November 6, 2020, comments also offered air quality guideline values that can be used to compare the outcome of an analysis to possible health outcomes. Although the uncertainties of health outcomes and impacts for mobile source air pollutants may be greater than those for criteria pollutants, nevertheless it is not appropriate for the project sponsors to rely on outdated and misleading guidance from FHWA to avoid informing the public of air quality and health impacts of the project. Table 3-3 of the Appendix K, Final Air Quality Technical Report, shows increases in emissions for all the mobile source air pollutants, ranging from 4.7% to as high as 6.5%. The project sponsors should not impose their judgement that the possible uncertainties in some aspects of a health risk assessment are too large and use that as an excuse not to disclose the impacts to the residents and visitors of the project area and to decision makers. Instead, the project sponsors must fully and openly assess the health impacts of the increases in mobile source emissions and let the public and decision makers decide whether those impacts are acceptable for this project to go forward. Only then would an analysis and a project EIS comply with the requirements of NEPA.

Table 5.4 of Appendix F identifies EJ communities in Gaithersburg, Rockville, North Bethesda, and Potomac. Appendix H of the Final Traffic Analysis Technical Report (Appendix A of the FEIS) identifies locations in the project area that will suffer from bottlenecks and general traffic congestion based on Level of Service (LOS) F. An LOS of F signifies severe congestion. Not surprisingly, many of these bottlenecks and congested stretches of the Preferred Alternative occur on EJ communities. According to Appendix H, some of these locations will experience the highest vehicle densities of the entire project area. Some examples of bottlenecks and severe congestion in EJ areas include:

- I-270 between Maryland 85 and Maryland 117
- I-270/Montrose Road interchange
- I-270 between Shady Grove Road and I-370
- I-270 W Spur interchange with I-495
- I-495 between Clara Barton Parkway and Maryland 201

In these already-overburdened communities, it is imperative that negative air quality impacts do not occur or are not exacerbated. Therefore, the project sponsors are obligated to examine potential concentrations of $PM_{2.5}$, PM_{10} and NO_2 under NEPA and under the intent of the EJ regulations and guidance. This is especially important since, as is generally well understood and as Appendix H confirms, the longest stretches of congestion and most severe bottlenecks will be in the general-purpose lanes, compared to the HOT lanes. Numerous Figures in the FEIS and Appendices show that the general-purpose lanes will be on the outside of the roadway and closer to the communities impacted. The

November 6, 2020, comments by the Sierra Club Maryland Chapter showed how concentrations of air pollutants emitted by traffic increase exponentially with decreasing distance from the emission source. Thus, as the roadway is expanded, the more congested general-purpose lanes will be shifted closer to the community, increasing exponentially the likelihood of a significant negative air quality impact. The project sponsors must perform these analyses to determine whether this is the case and employ mitigation measures, if needed, to lessen the impact.

Particulate Matter Considerations

Regarding $PM_{2.5}$ emissions and concentrations, the Sierra Club Maryland Chapter explained in its November 6, 2020, comments pertaining to the DEIS, the applicability of transportation conformity requirements for the Washington D.C.-Maryland-Virginia area. As explained in those comments, this area should be considered as a $PM_{2.5}$ orphan maintenance area. The court case that established orphan nonattainment/maintenance areas (South Coast Air Quality Management District v EPA, DC Cir. 2018) and EPA's implementing guidance with respect to transportation conformity (Transportation Conformity Guidance for the South Coast II Court Decision, EPA-420-B-18-050 November 2018) are silent on the applicability of the decision to former $PM_{2.5}$ nonattainment areas. However, conformity requirements cannot differ from pollutant to pollutant but are all governed by the general requirements of the Clean Air Act Amendments of 1990. Since conformity requirements for ozone orphan areas are non-quantitative, this would likely be the case for $PM_{2.5}$ areas as well for regional emissions. However, it is expected that $PM_{2.5}$ hot-spot analysis requirements would apply to major projects (such as the I-270/I-495 Managed Lanes project) in these types of areas. The importance of doing $PM_{2.5}$ analyses for NEPA purposes are explained above and in the previous two sets of comments by the Sierra Club Maryland Chapter. The transportation conformity aspects only add additional urgency to performing these analyses.

Climate change

The Preferred alternative will increase greenhouse gas emissions by close to 40 thousand tons of CO2 equivalent (CO2eq) as shown in Table 3-5 of Appendix K, an unnecessary increase on these emissions that will have to be offset by other means.

In its November 30, 2021, comments, the Sierra Club Maryland Chapter indicated it was contrary to NEPA to submit a SDEIS for the preferred alternative without including an analysis of the greenhouse gas emissions associated with the construction and maintenance of the preferred alternative. The FEIS does have such an analysis. Unfortunately, it is presented in a manner that it is impossible to isolate the emissions associated with the construction and maintenance of the preferred alternative compared to the No-Build alternative.

The construction greenhouse gas emission analysis assumes construction starts in 2023 and presents results for a 30-year lifespan, or 2053. The assumed completed project operational greenhouse gas emissions analysis goes out to 2045 (Tables 3-4 and 3-5 of Appendix K), making a direct comparison difficult. Appendix K greenhouse gas emissions are presented in tons per year while conventional reporting of greenhouse gas emissions is presented in metric tons per year.

In order to be able to isolate the construction and maintenance effects of the project correctly, the analysis should have presented the No-Build operational emissions from the affected transportation network plus maintenance emissions due to maintaining the existing roadway in place compared to greenhouse gas emissions (including upstream materials emissions, transportation of materials to the site emissions and direct construction equipment emissions) from the construction of the project, emissions of maintaining the additional lanes, and effects of construction on the operation of the roadways (detours and delays from construction). It should be noted that the greenhouse gas construction emission analysis incorrectly assumed speeds on the facilities during construction would be unchanged from normal operating conditions because all traffic lanes would remain open (Table on Page 4 of Appendix B of Appendix K). It is well known that during construction, the capacity of the roadways will be reduced by drivers slowing their normal driving speeds due to construction activities in the median or on the shoulders and/or due to lane narrowing during construction. Thus, assuming normal operating speeds during construction severely underestimates usage greenhouse gas emissions and the greenhouse gas emissions analysis results in the FEIS may be significantly understated.

Nevertheless, using the information that is available in the FEIS and Appendix K, it is possible to get a rough estimate of the true impact of this project on climate change. Using the annualized construction greenhouse gas emissions column from Table 3-6 as the best available estimate of combined annual construction emissions and operating emissions and converting the value to million metric tons yields 1.2 mmt (million metric tons). Table 3-5 of Appendix K estimates an additional 39,792 tons of greenhouse gas emissions from the preferred alternative. Converting this value to million metric tons yields and additional 0.36 mmt. Combining these values, produces a best available estimate of 1.56 mmt of total greenhouse gas emissions associated with this project. This means that starting in 2023 as constructions is expected to begin, greenhouse gas emissions associated with the project will increase every year until the level of 1.56 mmt of greenhouse gas emissions is reached (on an annualized basis). Although it is not possible to distinguish the actual greenhouse gas emissions from the analysis in Appendix K, it is reasonable to extrapolate that this high level of greenhouse gas emissions will continue for many years as construction proceeds and the roadways remain open during construction.

Below are Tables 3.1 and 4.1 from Appendix J of the Maryland 2030 Greenhouse Gas Emissions Reduction Act (GGRA) Plan.[1] Appendix J is the Maryland DOT component of the Plan and documents what steps and strategies are necessary to achieve Maryland's climate goals. Table 3.1 shows emission benefits and the dollar costs of various funded strategies in place to reduce greenhouse gas emissions from the transportation sector in Maryland. Table 4.1 shows additional strategies that are unfunded. The cost-benefit of amounts of mmt reduction of these strategies contrast with the I-495/I-270 Managed Lanes Phase 1 South project that will emit 1.56 mmt every year.[2] Given the urgent need to reduce greenhouse gas emissions, drastic impacts of climate change (increased extreme temperatures, increased wildfires, increased droughts, increased extreme rainfall, etc.), and the requirements of Maryland's Climate Solutions Now Act (SB528) which sets a statewide GHG reduction goal of 60% by

[1] https://mde.maryland.gov/programs/Air/ClimateChange/Pages/Greenhouse-Gas-Emissions-Reduction-Act-(GGRA)-Plan.aspx

[2] For another reference point on greenhouse gas emissions, the average passenger vehicle emits about 404 grams of CO2 per mile, and a typical passenger vehicle emits about 4.6 metric tons of carbon dioxide per year. Source: EPA, Greenhouse Gas Emissions from a Typical Passenger Vehicle, last updated June 30, 2022, *available at* https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle.

2031 and net zero by 2045, it would seem that Maryland and FHWA could find a more beneficial project to improve quality of life and fight climate change. Montgomery County, where the project is located, has also adopted ambitious greenhouse gas reduction goals in its climate action plan, which aims to cut greenhouse gas emissions 80% in five years and to eliminate them by 2035.[3]

Table 3.1 Policy Scenario 1 Strategies Summary Table

Strategies (Funded)	GHG Emission Reduction (mmt CO_2e)	Estimated Costs ($M)
2018/2019 MPO Plans & Programs yield lower annual VMT growth (estimated at 0.6% per year growth)	1.712	$10,146.5
On-Road Technology (CHART, Traveler Information)	0.142	$247.0
Freight and Freight Rail Programs (National Gateway, Howard Street Tunnel, MTA rail projects)	0.037	$503.2
Public Transportation (New rail or bus capacity or frequency, improved operations)	0.011	$2,009.8
Public Transportation (50% EV transit bus fleet)	0.074	$625.1
Intercity Transportation Initiatives (Amtrak NE Corridor, Intercity bus)	0.006	$0.0
Transportation Demand Management	0.146	$63.9
Pricing Initiatives (Electronic Tolling)	0.022	$188.5
Bicycle and Pedestrian Strategies (current program continuation and expansion through 2030)	0.024	$263.8
Port of Baltimore Drayage Track Replacements	0.005	$18.0
BWI Airport parking shuttle bus replacements	<0.001	$26.1
MDOT Vehicle Fleet (Fleet Innovation Plan)	0.006	n/a
Total Policy Scenario #1	**2.19**	**$14,091.9**

[3] Christine Zhu, Montgomery County Council votes to require climate impact assessment for proposed legislation, Bethesda Beat, July 12, 2022, available at https://bethesdamagazine.com/bethesda-beat/government/montgomery-county-council-votes-to-require-climate-impact-assessment-for-proposed-legislation/.

Table 4.1 Policy Scenario 2 Strategies Summary Table

Strategies (Unfunded)	GHG Emission Reduction (mmt CO_2e)	Estimated Costs ($M)
Emerging Strategies		
TSMO/Integrated Corridor Management (Limited Access System)	0.08 to 0.14	$108 to $152
TSMO//Integrated Corridor Management (Arterial System)	0.10 to 0.18	$453 to $680
Variable Speeds/Speed Management	0.01 to 0.02	$108 to $152
Intermodal Freight Centers Access Improvement	0.02	$2,240 to $3,136
Commercial Vehicle Technologies (Idle Reduction, Low-Carbon Fleet, Dynamic Routing)	0.03 to 0.05	Uncertain §
Regional Clean Fuel Standard	0.895	$148
Eco-Driving (informal implementation underway)	0.042	$3 to $5
EV Market Share Ramp-up of an additional 255,000 vehicles	0.88	$140
Extended CAFE Standards (Model Years 2026-2030)	0.80	$0
Transit capacity/service expansion (fiscally unconstrained)	0.019 to 0.039	$2,307 to $2,659
MARC Growth and Investment Plan / Cornerstone Plan	0.038 to 0.054	$1,078
Transit-Oriented Development (TOD) Build-Out (20 zones)	0.033	$4 to $8
50% to 75% EV Transit Bus Fleet	0.081 to 0.103	$93
Expanded TDM strategies (dynamic)	0.274 to 0.972	$15 to $30
Expanded Telework	0.300 to 0.793	$100 to $200
Expanded bike/pedestrian system development	0.040 to 0.051	$103
Innovative Strategies		
Autonomous/Connected Vehicle Technologies	0.68 to 0.73	$43 to $63
Zero-Emission Truck Corridors	0.03 to 0.06	$34 to $128
Freight Villages/Urban Freight Consolidation Centers	0.03 to 0.04	$4,705 to 6,893
Speed Management on Freeways (increased enforcement)	0.04 to 0.20	$7 to $14
High-Speed Rail/SCMAGLEV	0.011 to 0.021	$45,300 to $47,300
Pay-As-You-Drive Insurance	0.123 to 0.292	n/a §§
Total Policy Scenario #2 "Emerging and Innovative"	**4.539 to 6.417**	**$56,893 to $62,886**

§ Policy change with potential incentive program. Uncertain costs.
§§ Policy action with supportive technology/programs offered by private sector.

Unaddressed or Insufficiently Addressed Previous Comments

The following comments from the Sierra Club Maryland Chapter were ignored or not sufficiently addressed and are cited again as a failing of the FEIS.

November 6, 2020

1) Comment II. 1 – The DEIS does not perform Sufficient Emissions and Health Analyses for Particulate Matter (PM_{10} and $PM_{2.5}$) or Nitrogen Dioxide (NO_2).

   There is very little if any discussion related to PM_{10} and NO_2 in the FEIS and the Response to comments

2) Comment II.1.a – Fine Particulate Matter Conformity
   There is very little if any discussion related to this in the FEIS and the Response to Comments. See above for additional comments.

3) Comment II.2 – The DEIS's Air Quality Analysis Missed Parking Lots
   There is very little, if any, discussion related to this in the FEIS and the Response to Comments. Parking lots are an important emission source and can have elevated levels of transportation-related pollutants associated them. These emissions sources are not included in background

concentrations and emissions must be included when analyzing pollutant hot-spot situations for a technically sound and complete analysis.

4) Comment II.4- The DEIS Fails to Sufficiently Address Mobile Source Air Toxics

   Although a mobile source air toxics emissions analysis was performed, the comments on completing this analysis to make it a health risk assessment have not been addressed.

5) Comment II. 5 – The DEIS Does Not Properly Perform the Necessary Carbon Monoxide Hot-Spot Analysis

   The comments on temperature and stability class have not been addressed.

November 30, 2021

1) Comment IV.B. 1 – Particulate Matter and Nitrogen Dioxide

   There is very little if any discussion related to PM_{10} and NO_2 in the FEIS and the Response to comments

2) Comment IV.B. 2 – Carbon Monoxide
   The comments on source-receptor distance and persistence factor have not been addressed.

3) Comment IV. B. 3 – Mobile Source Air Toxics

   See above comment regarding failure to perform a health risk assessment

4) Comment IV. B. 4 – Parking Lots

   See comment above. There is very little, if any, discussion related to this in the FEIS and the Response to Comments.

5) Comment IV. C. – The SDEIS Fails to Address Air Quality Concerns in Environmental Justice Communities

   The comments on adequacy of analysis sites and accounting for Environmental Indicators have not been addressed.

6) Comment IV. F.- Information in the SDEIS Reveals Numerous Additional Air Quality-Related Concerns that the SDEIS Fails to Analyze

   There is very little, if any, discussion related to this in the FEIS and the Response to Comments.

There are also several air quality related inconsistencies within the FEIS and between the FEIS and the earlier DEIS and SDEIS. Namely:

- The mobile source air toxics and greenhouse gas analyses used the current EPA-approved emissions model, MOVES 3.0.1. Yet the carbon monoxide analysis relies on the older version of the model, MOVES 2014b. A consistent air quality analysis should use the same emission model for all transportation-related air pollutants.

- Different traffic networks were used in earlier analyses compared to the analyses in the FEIS. Page 9 of Appendix K, the Final Technical Air Quality Report, indicates two parameters were removed from the development of the traffic network, compared to the traffic network used in the earlier project documents. One parameter, the travel time criterion, likely materially affects the results of the air quality analysis. Travel time can be a surrogate for speed, delay, or congestion, all of which affect emissions and therefore, air quality levels. For a proper air quality analysis, all traffic roadways that are affected by the project, including those whose travel time is affected substantially should be included in the network. The second parameter, called "artifacts", are not sufficiently defined, or discussed. This could potentially lead to an underestimation of emissions, depending on the links (or other parameters) removed.
- It is unclear from Appendix K whether the same roadway network was used to generate emissions for the mobile source air toxics and greenhouse gas emissions analyses. Page 23 of Appendix K states "… the Project has analyzed GHG within MSAT affected network as well as a broader more appropriate level for GHG". Later, on the same page, it is indicated that the same network was used for both pollutants. Whichever statement is actually correct, the same traffic network should be used for both pollutants.
- As shown in the comments by Smart Mobility, Inc. on the traffic modelling performed for this study, the traffic volumes, speeds, and levels of congestion may not have been properly determined. If so, this would affect the air quality analyses that were done for the project. This could indicate that the No-Build emissions and CO concentrations (since CO was the only pollutant for which atmospheric concentrations were calculated) were overstated, leading to an incorrect impression regarding the emissions and CO concentrations of the Preferred Alternative and its supposed benefits. Given this observation, it is especially critical that the air quality studies be re-done with correct traffic inputs. This includes re-analysis for CO, greenhouse gasses, mobile source air toxics and inclusion of PM 2.5, PM 10 and NO 2 (for the reasons explained above and in earlier comments).