MEMORANDUM

DRAFT

TO: National Capital Region Transportation Planning Board

FROM: Jane Posey, TPB Transportation Engineer

SUBJECT: Summary Report: Air Quality Conformity Analysis of the 2020 Amendment to Visualize 2045

DATE: January 31, 2020 (for distribution at the February 19, 2020 TPB meeting)

INTRODUCTION

This memorandum documents summary results of the air quality conformity analysis of the 2020 amendment to the Visualize 2045 Long Range Transportation Plan (LRTP) and FY 2021-2024 Transportation Improvement Program (TIP) with respect to ozone season pollutants, Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). TPB staff has found that **the estimated emissions from the LRTP and TIP adhere to the motor vehicle emissions budgets (MVEBs) for the pollutants analyzed, VOC and NOx.** The results and findings of the analysis have been reviewed by the National Capital Region Transportation Planning Board (TPB) Technical Committee and the Metropolitan Washington Air Quality Committee Technical Advisory Committee (MWAQC TAC). The findings were released for a 30-day public comment and interagency consultation period on January 31, 2020 which will end on March 1, 2020.

OZONE STANDARD & MOBILE BUDGETS

2015 Ozone Standard

Effective August 3, 2018 EPA designated the Metropolitan Washington, DC (DC-MD-VA) region as "marginal" non-attainment for the 2015 Ozone Standard. Under a "marginal" designation, it is not necessary to develop MVEBs, and consequently there are no MVEBs specific to the 2015 Ozone Standard. Provisions of the conformity regulations[1], however, require that emissions from the Plan and TIP conform to previously approved (or "found adequate for conformity purposes") MVEBs. The current MVEBs for the DC-MD-VA non-attainment area are those developed for the Maintenance Plan for the 2008 Ozone Standard (discussed below). The emissions from the 2020 amendment to the Visualize 2045 Plan and FY2021-2024 TIP adhere to these MVEBs.

Marginal non-attainment areas have three years, from the date of designation, to achieve the 2015 Ozone Standard. Accordingly, the DC-MD-VA area would have an attainment year of 2021 (i.e., three years following the August 3, 2018 designation).

[1] U.S. Environmental Protection Agency Transportation Conformity Regulations as of April 2012; EPA-420-B-12-013 April 2012; https://nepis.epa.gov/Exe/ZyPDF.cgi/P100E7CS.PDF?Dockey=P100E7CS.PDF

2008 Ozone Standard Maintenance Plan Budgets

In 2012, EPA designated the Metropolitan Washington, DC (DC-MD-VA) region as "marginal" non-attainment for the 2008 Ozone Standard. With this designation EPA regulations do not require the development of MVEBs. Instead, as per EPA regulations, conformity analyses for the region's Plan and TIP were being demonstrated to previously approved MVEBs from the older 1997 Ozone Standard.

In 2015, the region attained the 2008 Ozone Standard, based on the readings from ambient air quality monitors. The Metropolitan Washington Air Quality Committee (MWAQC) developed a Redesignation Request and Maintenance Plan which the State Air Agencies submitted to the EPA in early 2018. The 2008 Ozone Maintenance Plan included MVEBs for VOC and NOx. In August 2018, EPA found these mobile emissions budgets adequate for use in the region's conformity analyses.

The 2008 Ozone Maintenance Plan established VOC and NOx emissions budgets for three specific periods: the attainment year (2014), an intermediate year (2025), and for the final year (2030) of the Maintenance Plan. The plan includes two sets of mobile budgets for each pollutant. The first set of budgets, referred to as "Tier 1 budgets", were based on projected emissions developed as part of the Maintenance Plan, and were set at the inventory level for each year. The second set of budgets, referred to as "Tier 2 budgets", were developed by adding a 20% transportation buffer to the mobile emissions inventories for VOC and NOx in 2025 and 2030. Tier 1 and Tier 2 mobile budgets for VOC and NOx are shown in Exhibit 1 and Exhibit 2, below.

The maintenance plan provides for using the Tier 2 budgets (buffers) in situations "where the conformity analysis must be based on different data, models, or planning assumptions, including but not limited to updates to demographic, land use, or project-related assumptions, than were used to create the [mobile budgets] in the Maintenance Plan".[2]

Exhibit 1: Tier 1 Mobile Budgets[1]

Year	NO_x On-Road Emissions (tpd)	VOC On-Road Emissions (tpd)
Attainment Year 2014 Emission & Budget	136.8	61.3
Intermediate Year 2025 Emission & Budget	40.7	33.2
Final Year 2030 Emission & Budget	27.4	24.1

[2] *Maintenance Plan for the Washington DC-MD-VA 2008 Ozone NAAQS Nonattainment Area*. Prepared by the Metropolitan Washington Council of Governments for the District Department of the Environment, the Maryland Department of the Environment, and the Virginia Department of Environmental Quality on behalf of the Metropolitan Washington Air Quality Committee. December 20, 2017. https://www.mwcog.org/documents/2017/09/18/washington-dc-md-va-2008-ozone-naaqs-marginal-nonattainment-area--redesignation-request-and-maintenance-plan-air-quality-air-quality-conformity-ozone/

Exhibit 2: Tier 2 Mobile Budgets[1]

Year	NO_x On-Road Emissions (tpd)	VOC On-Road Emissions (tpd)
Attainment Year 2014 Emission & Budget	**136.8**	**61.3**
Predicted 2025 Emission	40.7	33.2
Transportation Buffer	8.1	6.6
Intermediate Year 2025 Budget	**48.8**	**39.8**
Predicted 2030 Emission	27.4	24.1
Transportation Buffer	5.5	4.8
Final Year 2030 Budget	**32.9**	**28.9**

Note:
[1]The MVEBs with transportation buffers will be used only as needed in situations where the conformity analysis must be based on different data, models, or planning assumptions, including but not limited to updates to demographic, land use, or project-related assumptions, than were used to create the first set of MVEBs in the maintenance plan.

Budget Setting vs. Conformity

An air quality conformity analysis is conducted to formally demonstrate that projected motor vehicle emissions associated with the regional transportation plan and TIP are less than or equal to the mobile budgets for each analysis year. The conformity regulations require the use of the "latest planning assumptions," which means that each conformity analysis must incorporate the most up-to-date planning inputs and technical methods available at the beginning of the process. Therefore, the inputs used in regional air quality conformity analyses change with time. Mobile budgets in air quality plans are established based on analyses that incorporate the "latest planning assumptions" when the air quality plan is developed, and do not change with time.

Changes to the inputs used in air quality conformity analysis are not limited to transportation projects. They include other assumptions such as vehicle fleet mix and demographics. Such changes to inputs in conformity analyses relative to inputs used to establish mobile emissions will inevitably yield mobile emissions differences that are not strictly attributable to the transportation plan itself.

Anticipating such situations, federal air quality conformity regulations allow air quality (Attainment and Maintenance) plans to provide a "conformity buffer" while establishing MVEBs. Accordingly, the DC-MD-VA 2008 Ozone Maintenance Plan established the Tier 2 mobile emissions budgets with a 20% buffer to address uncertainty that is introduced when inconsistent assumptions are used between budget-setting and the conformity analysis.

Exhibit 3 below lists the contrasting assumptions used in the mobile budget development and in the current air quality conformity analysis (of the 2020 amendment to the Visualize 2045 plan and FY 2021-2024 TIP). Details related to these inputs are discussed in the next section of this summary report.

EXHIBIT 3
INPUT ASSUMPTIONS

	Maintenance SIP Mobile Budgets	2020 Amendment to Visualize 2045 Conformity Emissions
Cooperative Forecasts	Round 9.0	**Round 9.1a**
Vehicle Fleet	2014 VIN	**2016 VIN**
Travel Demand Model	Version 2.3.66	**Version 2.3.78**
Project Inputs	2016 CLRP	**2020 Amendment**
Metrorail Constraint	Yes	**No**

WORK ACTIVITIES & TECHNICAL INPUTS

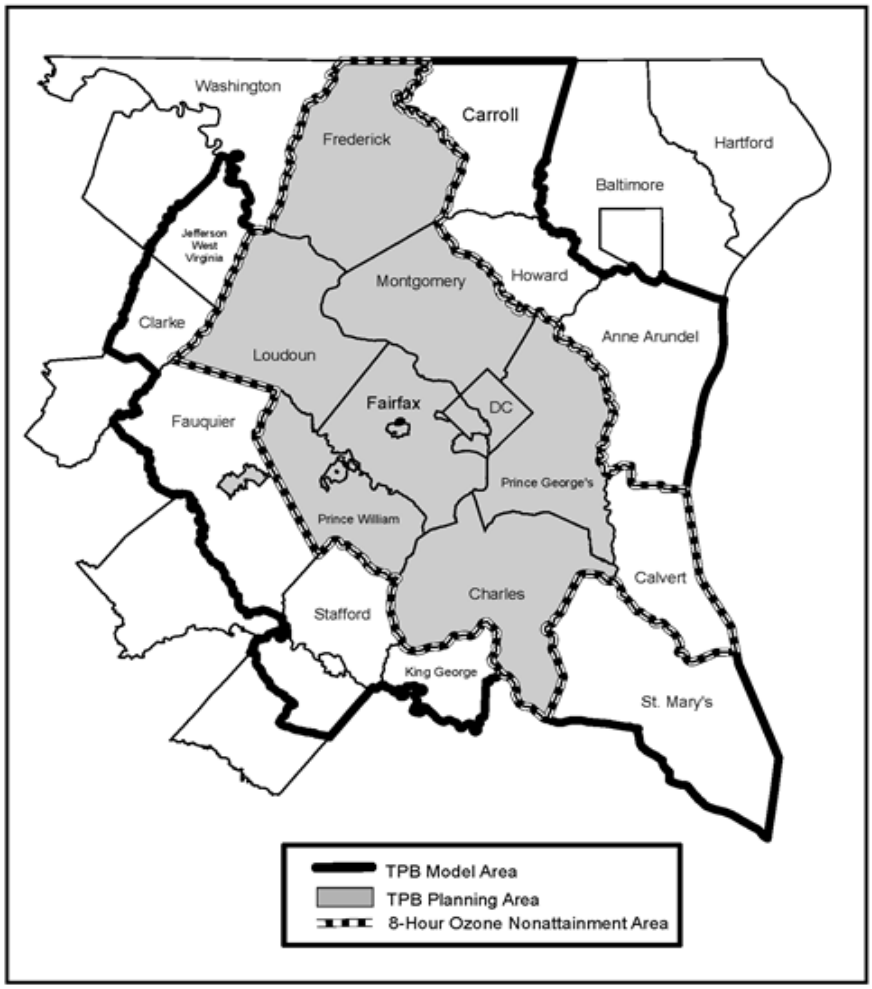
The TPB approved the Scope of Work and project submissions for the 2020 amendment to Visualize 2045 and the FY 2021-2024 TIP air quality conformity analysis on July 17, 2019. The Scope of Work is included as Attachment A.

Key technical planning assumptions and methods include:

- New Cooperative Land Activity Forecasts- Round 9.1a
- December 2016/Jan 2017 Vehicle Registration Data (with District of Columbia corrections, described later)
- New Transportation Projects and Updates to Existing Projects
- Metrorail capacity constraint through the regional core (modeling assumption): No longer used.
- EPA's MOVES 2014b Mobile Emissions Model
- TPB Version 2.3.78 Travel Demand Model

Mobile emissions inventories were developed for ozone season VOC and NOx for six forecast years (2019, 2021, 2025, 2030, 2040 and 2045). These inventories address a primary conformity requirement to demonstrate that emissions associated with the plan and TIP do not exceed the EPA-approved mobile budgets. Exhibit 4 depicts the geographic areas for travel demand modeling and for emissions reporting.

EXHIBIT 4
Planning Areas

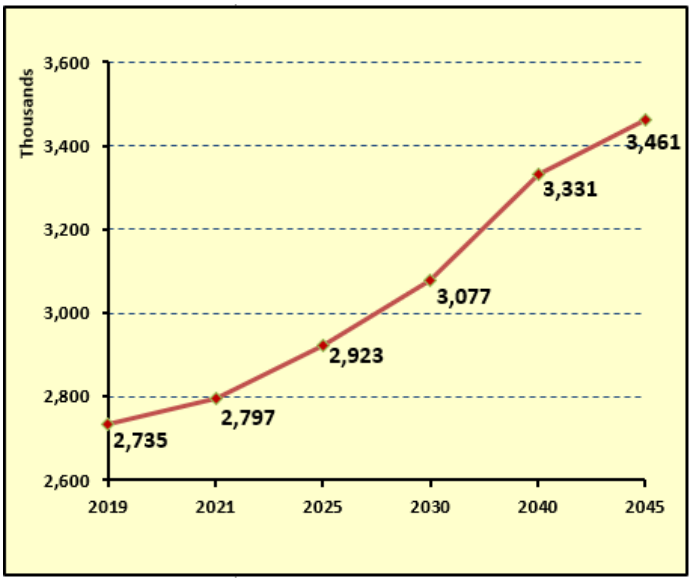


Cooperative Forecasts

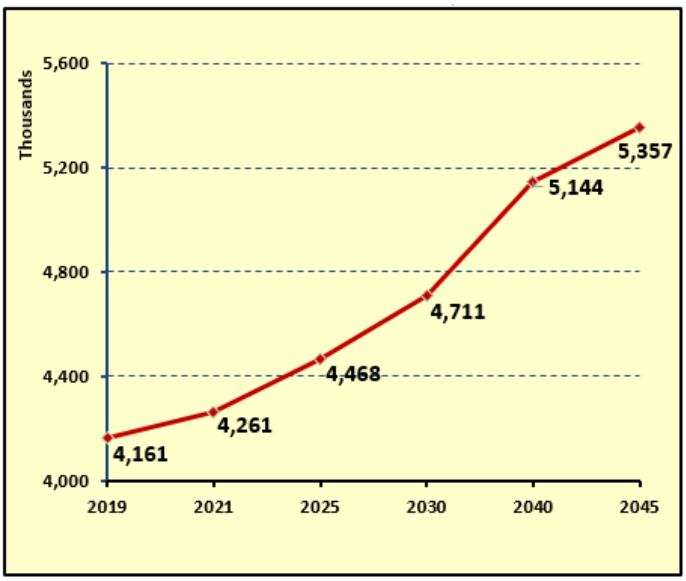
The Metropolitan Washington Council of Governments (COG) Board approved the draft Round 9.1 Cooperative Forecasts for use in the air quality conformity analysis of the Visualize 2045 Plan and FY 2019-2024 TIP in January 2018. In the Spring of 2019, staff received updated land activity forecasts from the Baltimore Metropolitan Council (BMC) and the Fredericksburg Area Metropolitan Planning Organization (FAMPO). Staff in COG's Department of Community Planning and Services (DCPS) developed the Round 9.1a Cooperative Forecasts by combining the Round 9.1 Cooperative Forecasts with the updated data from BMC and FAMPO. Subsequently, TPB staff revised employment definition adjustment factors to assure a consistent definition of employment for all jurisdictions. The Round 9.1a data were used for the conformity analysis of the 2020 amendment to the Visualize 2045 plan and are summarized in Exhibit 5.

EXHIBIT 5
Round 9.1a Cooperative Forecasts

Households
(in thousands)



Employment*
(in thousands)



NOTE: Values are for the modeled area

*Includes employment definition adjustment

Vehicle Registration Data

TPB staff has analyzed vehicle fleet inventory information on a regular basis since 2005. This information is used to understand the vehicle type composition and vehicle age distributions, which are important determinants of mobile emissions. Periodic inventory reviews enable staff to refresh mobile emissions modeling inputs with the most current available information. The current data are from December 2016.[3] TPB staff analyzed the December 2016 vehicle registration data (known as VIN data) and the analysis was reviewed by the COG/TPB technical oversight committees prior to being approved for use in transportation planning applications. The December 2016 data were used for the first time in 2018 for the air quality conformity analysis of Visualize 2045. The District of Columbia Department of Energy and Environment (DOEE) found an error in the District's data and provided updated 2016 VIN data for the city in June 2018. The updated data were used in the air quality conformity analysis of the 2020 amendment to Visualize 2045.

Exhibits 6 and 7 show characteristics of the region's vehicle fleet through time. The exhibits indicate that the fleet is continuing to grow, and that light duty trucks (SUVs) are growing at the fastest rate, relative to other vehicle types. Light duty trucks have a higher emissions rate than light duty cars. Also, for the first time since the TPB has collected fleet data, the average vehicle fleet age has decreased, as seen when comparing 2014 to 2016 statistics in Exhibit 7. Typically, such a trend favors reduced emissions because of better emissions controls on newer vehicles.

[3] Maryland and Virginia data are from December 31, 2016 and the District of Columbia data are from January 1, 2017.

EXHIBIT 6
Historical growth in vehicles by type

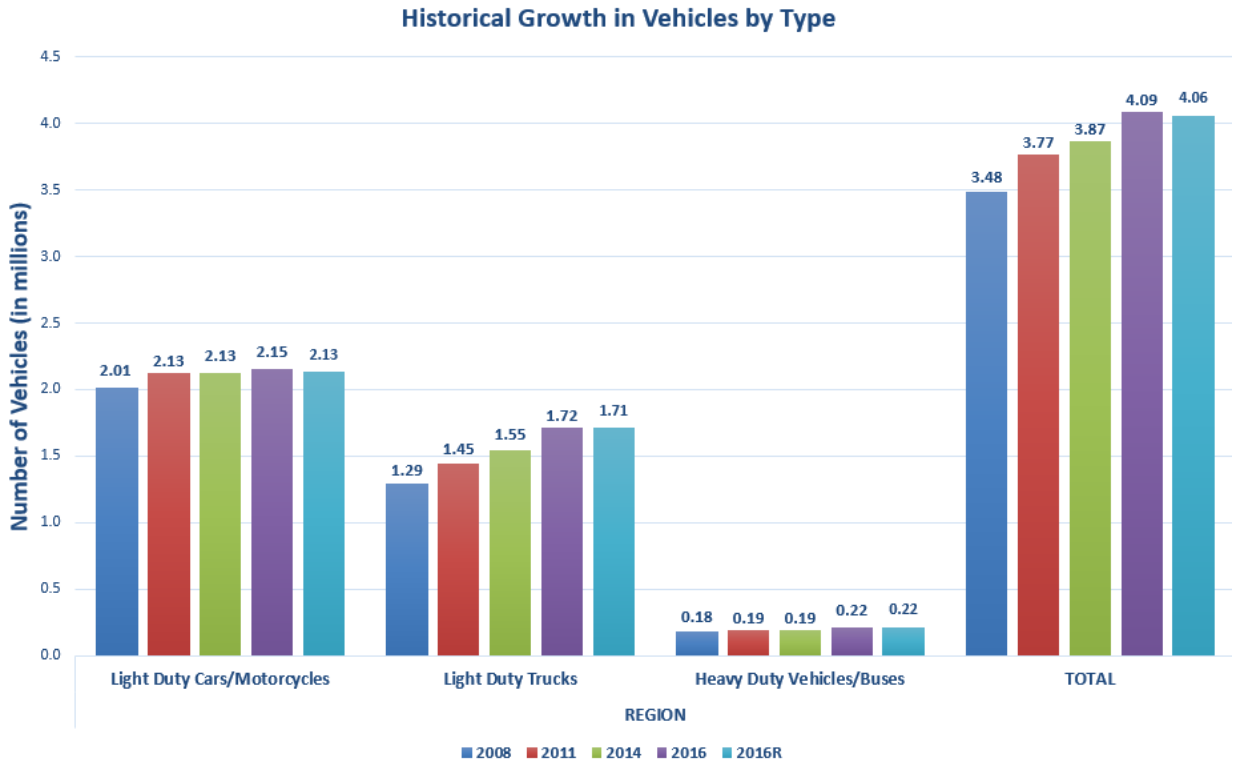


EXHIBIT 7
Average Age of Regional Vehicle Fleet by Year

Year	Light Duty Vehicles* (LDV)	Light Duty Trucks (LDT)	Heavy Duty Vehicles (HDV)	All Vehicle Types
2008	8.51	7.53	9.21	8.18
2011	9.25	8.55	10.56	9.05
2014	9.62	9.09	11.30	9.49
2016	**9.32**	**8.68**	**11.29**	**9.16**

*Motorcycles are included

Transportation Project Inputs

Attachment B contains the transportation project changes and additions from the Visualize 2045 plan that are included in the 2020 amendment conformity analysis. A complete list of highway and transit projects, as approved by the TPB on July 17, 2019, is shown in Appendix B of the full technical report. An on-line interactive map showing all project can be found here: https://www.mwcog.org/maps/map-listing/visualize-2045-2020_amendment_projects_map/.

Metrorail Capacity Constraint

In March 2018, lawmakers from the District of Columbia, Maryland, and Virginia agreed to jointly provide an additional $500 million annually for regional transit under the Washington Metropolitan Area Transit Authority (WMATA). All three governments passed legislation to provide dedicated funding

sources to support the transit agency. This money will fund WMATA's capital improvements to ensure the system is in a state of good repair, which will include investments such as the infrastructure and equipment needed to support a 100% 8-car train system.

Since 2000, due to the lack of such a funding commitment for WMATA's capital needs, the TPB's air quality conformity analysis had included a technical adjustment to travel forecasts to account for the expectation that future peak-period Metrorail ridership in the region's "core" downtown area will be subject to capacity limitations of the Metrorail system. This so-called "Metrorail transit constraint" was used to account for WMATA's expressed concern that the Metrorail ridership would exceed peak period capacity in the regional core unless the rail fleet and station infrastructure were expanded to allow for 8-car trains. The 2018 legislation establishing stable long-term funding will now support WMATA's plans to implement all 8-car trains during peak periods. Consequently, the transit constraint was removed from the travel model process for the Visualize 2045 Plan and subsequent updates.

TRAVEL MODELING

Travel demand forecasts were developed for each of the analysis years using the Version 2.3.78 Travel Demand Model. Changes between the version of the model used to set the mobile budgets (Version 2.3.66) and the version of the model used for conformity (Version 2.3.78) include updates to airport trips to more accurately reflect travel to and from the region's three major airports and enhancement of managed lanes modeling to account for the operational nature of facilities in MDOT's Traffic Relief Plan (TRP). Exhibit 8 presents the resulting average weekday vehicle and transit trips through time for each conformity analysis year for the modeled area.

EXHIBIT 8
Modeled Area Trips

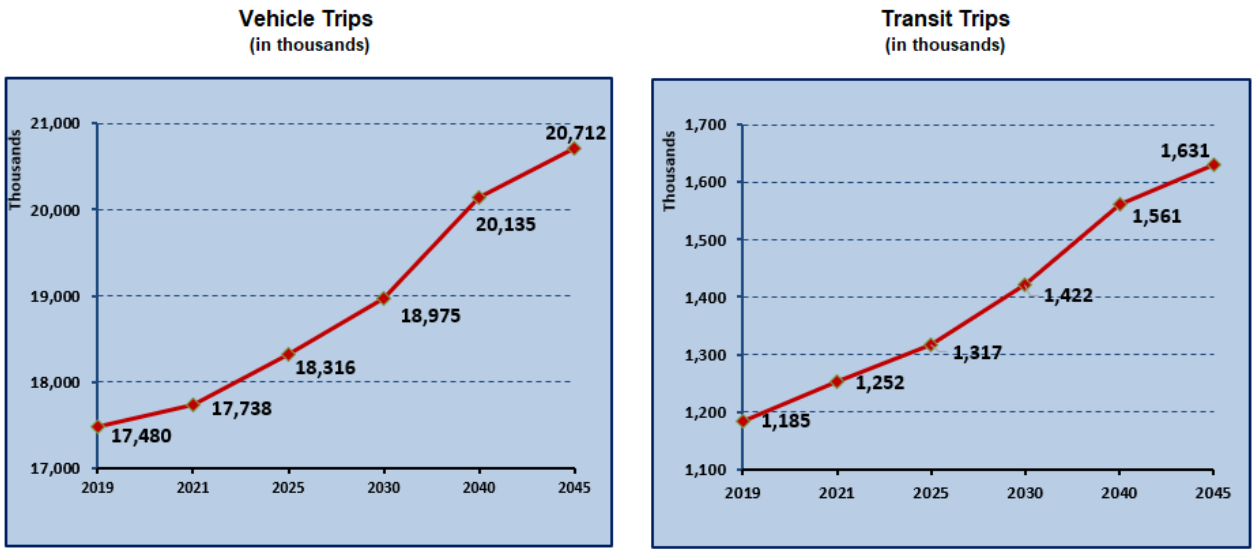
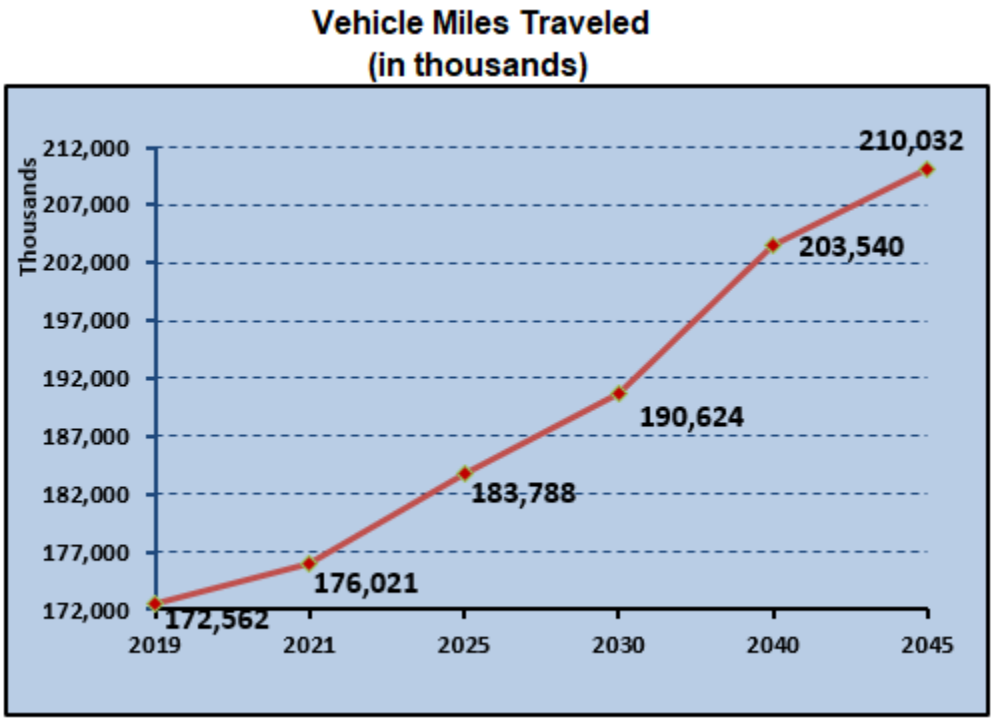


Exhibit 9 shows Vehicle Miles Traveled (VMT) results through time for each conformity analysis year for the modeled area.

EXHIBIT 9



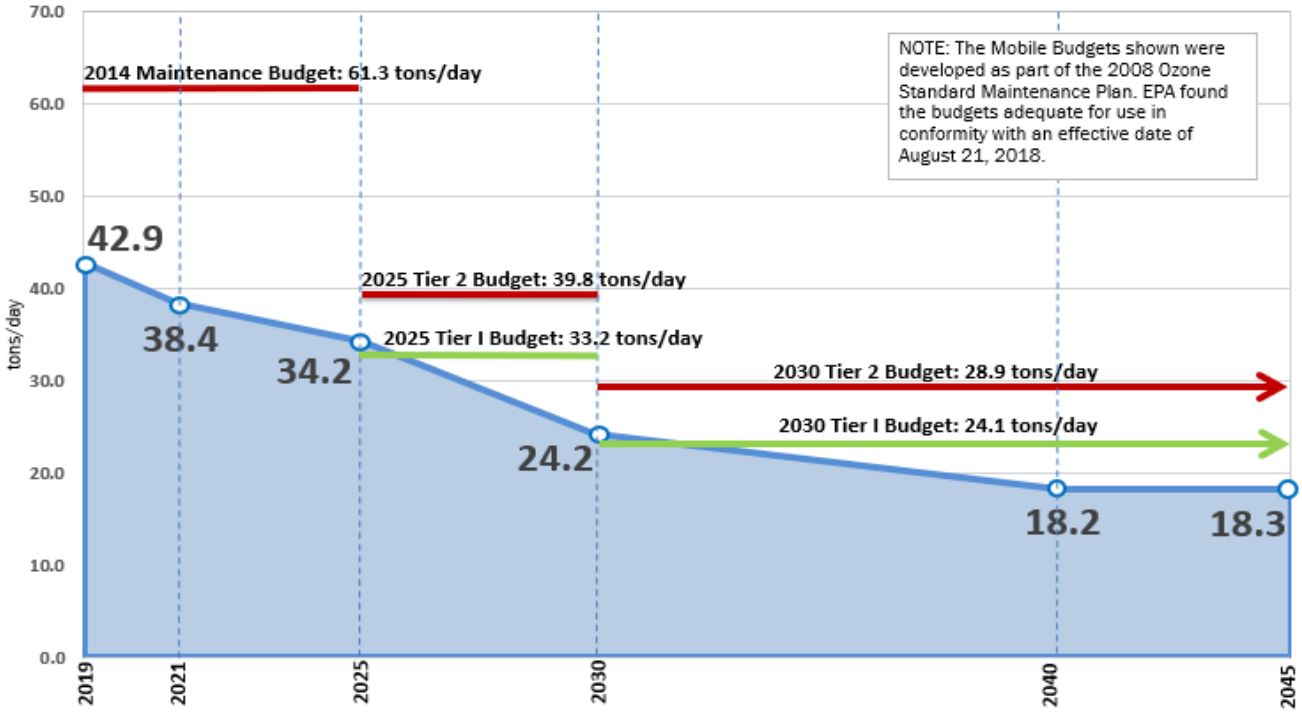
EMISSIONS

Mobile Emissions Inventories & Tier 1 and Tier 2 Mobile Budgets

Ozone season emissions totals are illustrated in Exhibits 10 and 11. The emissions are shown in relation to the Tier 1 and Tier 2 mobile budgets for each pollutant. Emissions levels for VOC and NOx are slightly above the Tier 1 mobile budgets for the 2025 and 2030 analysis years. For the 2025 analysis year, the VOC emissions level is 1 ton/day above the 34.2 tons/day Tier 1 budget, and the NOx emissions level is 1.8 tons/day above the 40.7 tons/day Tier 1 budget. For the 2030 analysis year, the VOC emissions level is 0.1 tons/day above the 24.1 tons/day Tier 1 budget, and the NOx emissions level is 0.4 tons/day above the 27.4 tons/day Tier 1 budget. These emissions are marginally higher than Tier 1 budget levels due to the differences in the inputs used in this conformity analysis relative to those used in the 2008 Ozone Maintenance Plan.

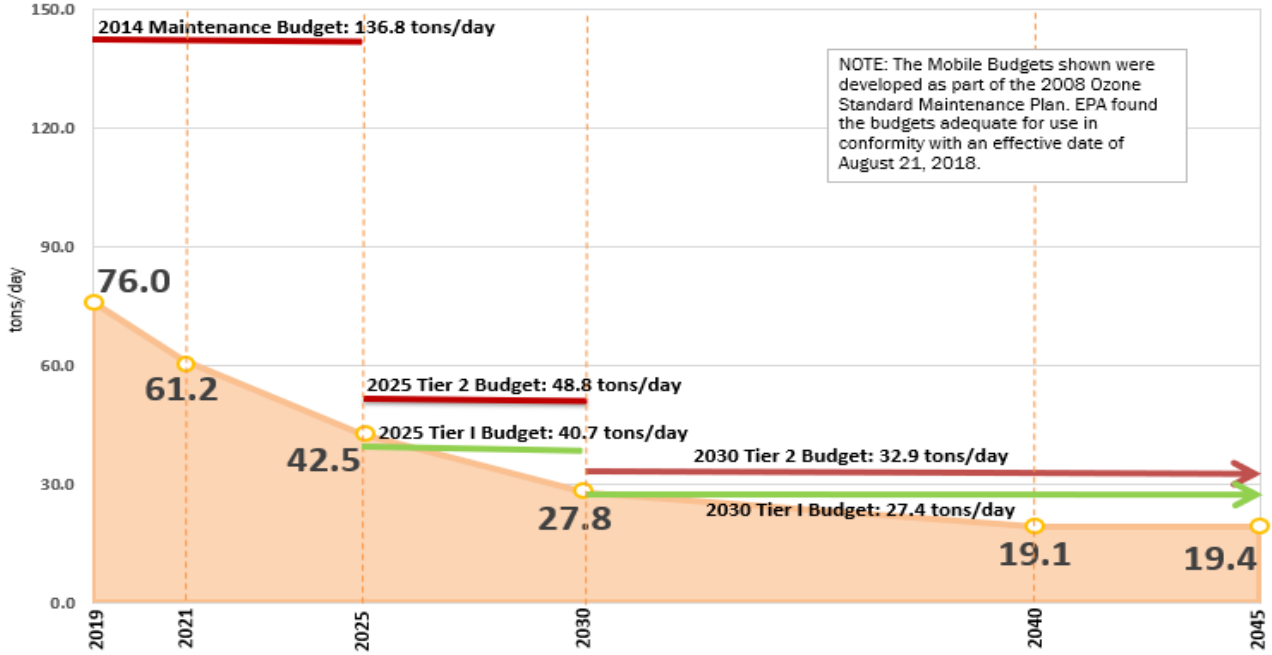
The transportation buffers established in the Tier 2 Mobile Budgets were implemented to account for changes in data, models, or planning assumptions used in the conformity analysis. As outlined earlier in this report, there were numerous input changes between the conformity analysis and the analysis used to set the mobile budgets. Therefore, the Tier 2 budgets are used to demonstrate conformity of the 2020 amendment to the Visualize 2045 transportation plan and FY2021-2024 TIP with respect to VOC and NOx. Emissions levels for VOC and NOx are well below the Tier 2 mobile budgets for all analysis years, as shown in Exhibit 10 and Exhibit 11.

EXHIBIT 10
Mobile Source Emissions
Ozone Season VOC



TCMs and TERMS not included in totals.

EXHIBIT 11
Mobile Source Emissions
Ozone Season NOx



TCMs and TERMS not included in totals.

VIN Data Sensitivity Test

Each input to the conformity analysis impacts the resulting emissions estimates. It would not be feasible with respect to the project schedule to test the impact of each input change individually, but staff did conduct a sensitivity test for the Visualize 2045 analysis to determine the impact of the change in the vehicle fleet. At that time, staff re-estimated mobile emissions for the 2025 analysis year, one of the years for which new MVEBs were established in the 2008 Ozone Maintenance Plan, substituting the 2014 VIN data (same data used in the Maintenance plan) for the newer 2016 VIN data (used in conformity analysis). The sensitivity test indicated that the updated vehicle fleet data caused most of the increase in emissions in the conformity analysis when compared to the analysis used to create the mobile budgets.

TERMs

Transportation Emission Reduction Measures (TERMs) are special strategies or actions that the TPB and/or its member agencies can employ to further reduce forecasted emissions from mobile sources. All TERMs are intended to reduce motor vehicle emissions by reducing either the number of vehicle trips (VT), vehicle miles traveled (VMT), or both. These strategies may include ridesharing and telecommuting programs, improved transit and bicycling facilities, clean fuel vehicle programs or other possible actions. TERMs benefits were calculated for the Visualize 2045 plan and FY2019-2024 TIP conformity analysis. They were not updated for the 2020 amendment to the Visualize 2045 plan because the amendment is considered a minor update to the plan and the changes in emissions benefits would be minimal. The next major update of the Visualize 2045 plan is scheduled for 2022.

TERMs analyzed for the Visualize 2045 conformity analysis were grouped into four categories:

- TPB Commuter Connections Program
- Regional Incident Management Program
- Pedestrian Facilities Expansions & Enhancements
- Freeform Carpooling (Slug Lots)

Exhibit 12 lists the emission reduction potential of these TERMs, by pollutant, for each analysis year. The benefits of these projects are not included in the conformity emissions totals in this report, but are available, if necessary, to ensure that regional emissions stay below the approved motor vehicle emissions budgets and help offset future growth in mobile emissions.

EXHIBIT 12
Transportation Emission Reduction Measures

ADDITIONAL EMISSIONS REDUCTIONS: ALL TERMS COMBINED		
Years/Pollutants	Ozone - VOC (tons/day)	Ozone - NOx (tons/day)
2019	0.228	0.214
2021	0.223	0.191
2025	0.229	0.162
2030	0.177	0.106
2040	0.162	0.074
2045	0.172	0.076

NOTE: Benefits from these TERMs are not included in the emissions totals in this conformity analysis.

SUMMARY

The analytical results described in this air quality analysis provide a basis for a determination, by the TPB, of conformity for the 2020 amendment to the Visualize 2045 Long Range Transportation Plan and the FY 2021-2024 TIP.

ATTACHMENT A

Air Quality Conformity Scope of Work

National Capital Region
Transportation Planning Board

July 3, 2019

AIR QUALITY CONFORMITY ANALYSIS: FY 2021-2024 TIP & 2020 Amendment to the Visualize 2045 Plan DRAFT SCOPE OF WORK

I. INTRODUCTION

The FY2021-2024 Transportation Improvement Program (TIP) and 2020 Amendment to the Visualize 2045 Plan are scheduled to be finalized at the March 18, 2020 Transportation Planning Board (TPB) meeting. This work effort addresses requirements associated with attainment of the ozone standard (volatile organic compounds (VOC) and nitrogen oxides (NOx) as ozone precursor pollutants).

The amended plan must meet air quality conformity regulations: (1) as originally published by the Environmental Protection Agency (EPA) in the November 24, 1993 Federal Register, and (2) as subsequently amended, most recently on March 14, 2012, and (3) as detailed in periodic FHWA / FTA and EPA guidance. These regulations specify both technical criteria and consultation procedures to follow in performing the assessment.

This scope of work provides a context in which to perform the conformity analyses and presents an outline of the work tasks required to address all regulations currently applicable.

II. FEDERAL REQUIREMENTS

As described in the 1990 Clean Air Act Amendments, conformity is demonstrated if transportation plans and programs:

1. Are consistent with most recent estimates of mobile source emissions budgets
2. Provide expeditious implementation of Transportation Control Measures (TCMs)
3. Contribute to annual emissions reductions

The federal requirements governing air quality conformity compliance are contained in §93.110 through §93.119 of the Transportation Conformity Regulations (printed April 2012), as follows:

CONFORMITY CRITERIA & PROCEDURES	
All Actions at all times	
§93.110	Latest Planning Assumptions
§93.111	Latest Emissions Model
§93.112	Consultation
§93.113	TCMs
§93.114	Currently conforming Plan and TIP
§93.115	Project from a conforming Plan and TIP
§93.116	CO, PM10 and PM2.5 hot spots
§93.117	PM10 and PM2.5 Control Measures
§93.118 and/or §93.119	Emissions Budget and/or Interim Emissions

§ 93.110 Criteria and procedures: Latest planning assumptions - The conformity determination must be based upon the most recent planning assumptions in force at the time of the conformity determination.

§ 93.111 Criteria and procedures: Latest emissions model - The conformity determination must be based on the latest emission estimation model available.

§ 93.112 Criteria and procedures: Consultation – The Conformity must be determined according to the consultation procedures in this subpart and in the applicable implementation plan, and according to the public involvement procedures established in compliance with 23 CFR part 450.

§ 93.113 Criteria and procedures: Timely implementation of TCMs - The transportation plan, TIP, or any FHWA/FTA project which is not from a conforming plan and TIP must provide for the timely implementation of TCMs from the applicable implementation plan.

§93.114 Criteria and procedures: Currently conforming transportation plan and TIP - There must be a currently conforming transportation plan and currently conforming TIP at the time of project approval.

§93.115 Criteria and procedures: Projects from a plan and TIP - The project must come from a conforming plan and program.

§93.116 Criteria and procedures: Localized CO, PM10, and PM2.5 violations (hot spots) -The FHWA/FTA project must not cause or contribute to any new localized CO, PM10, and/or PM2.5 violations or increase the frequency or severity of any existing CO, PM10, and /or PM2.5 violations in CO, PM10, and PM2.5 nonattainment and maintenance areas.

§93.117 Criteria and procedures: Compliance with PM10 and PM2.5 control measures -The FHWA/FTA project must comply with PM10 and PM2.5 control measures in the applicable Implementation Plan.

§93.118 Criteria and procedures: Motor vehicle emissions budget - The transportation plan, TIP, and projects must be consistent with the motor vehicle emissions budget(s).

§93.119 Criteria and procedures: Interim emissions in areas without motor vehicle budgets - The FHWA/FTA project must satisfy the interim emissions test(s).

Assessment Criteria:

Ozone season pollutants will be assessed by comparing the forecast year pollutant levels to the mobile budgets in the 2008 Ozone National Ambient Air Quality Standards (NAAQS) Maintenance Plan. In August 2018 EPA found these budgets adequate for use in conformity analyses, and the budgets were used in the Visualize 2045 conformity analysis. The 2008 Ozone NAAQS Maintenance Plan includes mobile budgets for 2014 (attainment year), 2025 (intermediate year), and 2030 (out year). The 2014 budgets will be used for any analysis year between 2014 and 2024, the 2025 budgets will be used for any analysis year between 2025 and 2029, and the 2030 budgets will be used for any analysis year beyond 2029.

III. POLICY AND TECHNICAL APPROACH

The table below summarizes the key elements of the Policy & Technical Approach:

Pollutants	Ozone Season VOC and NOx
Emissions Model	MOVES2014b
Conformity Test	Budget Test: Using mobile budgets most recently approved by EPA: 2008 Ozone NAAQS Maintenance Plan mobile budgets found adequate by EPA in August, 2018.
Vehicle Fleet Data	December 2016 vehicle registration data for all jurisdictions
Geography	8-hour ozone non-attainment area
Network Inputs	Regionally significant projects
Land Activity	Cooperative Forecasts Round 9.1a
HOV/HOT	VA: All HOV 2+/HOT 2+ facilities become HOV 3+/HOT 3+ in 2020 and beyond except I-66 inside the Beltway, which will convert to HOT3+ when I-66 outside the Beltway opens MD: All HOV facilities remain HOV2+ through 2045
Transit Constraint	NO Metrorail "capacity constraint" (removed with March 2018 passage of annual funding for WMATA agreement)
Analysis Years	2019, 2021, 2025, 2030, 2040, 2045
Modeled Area	3,722 TAZ System
Travel Demand Model	Version 2.3.75 or latest

IV. CONSULTATION

The TPB adheres to the specifications of the consultation procedures (as outlined in the consultation procedures report adopted by the TPB on May 20, 1998). The TPB will participate in meetings of MWAQC, its Technical Advisory Committee, and its Conformity Subcommittee to discuss the Scope of Work, project inputs, and other elements as needed.

V. WORK TASKS

The work tasks associated with the air quality conformity analysis are as follows:

1. Receive project inputs from programming agencies and organize into conformity documentation listings by:
   - Project type, limits, etc.
   - Phasing with respect to forecast years
   - Transit operating parameters, e.g., schedules, service

2. Update Travel Model Base Transit Service to reflect:
   - Service current to December 2018
   - Fares current to July 1, 2019

3. Update 2016 Vehicle Registration Data (VIN data)
   - Corrections to DC VIN data as provided by the DC Department of Energy and Environment on June 19, 2018

4. Review and Update Land Activity files to reflect Round 9.1a Cooperative Forecasts with respect to:
   - Zonal data files
   - Employment Data Census Adjustment
   - Households by auto ownership, size and income
   - Coordination with agencies outside the MWCOG Cooperative Forecast area (Baltimore Metropolitan Council, Fredericksburg Area Metropolitan Planning Organization, Calvert-St. Mary's Metropolitan Planning Organization, etc.)
   - Exogenous Travel (external, through trips etc.)

5. Prepare forecast year highway, HOV, and transit networks including regionally significant projects, as follows:
   - 2019, 2021, 2025, 2030, 2040, and 2045 highway networks
   - 2019, 2021, 2025, 2030, 2040, and 2045 transit network input files
   - Update highway tolls, as necessary

6. Execute travel demand modeling for years 2019, 2021, 2025, 2030, 2040, and 2045

7. Derive Mobile Emissions Estimates for years 2019, 2021, 2025, 2030, 2040, and 2045 using inputs from the 2008 Ozone NAAQS Maintenance Plan mobile budgets

8. Summarize key inputs and outputs (VMT, mode share, emissions, etc.) of the conformity determination

9. Assess conformity and document results in a report

    - Document methods
    - Draft conformity report
    - Forward to technical committees, policy committees
    - Make available for public and interagency consultation
    - Receive comments
    - Respond to comments and present to TPB for action
    - Finalize report and forward to FHWA, FTA, and EPA

DRAFT

SCHEDULE FOR DEVELOPMENT & ADOPTION FY 2021-2024 TIP & 2020 Amendment to the Visualize 2045 Plan

May 3, 2019	Technical Committee is briefed on request for TIP and Plan updates; solicitation opens
May 31, 2019	Solicitation closes; all air quality conformity project inputs are due
June 7, 2019	Technical Committee briefed on draft project inputs and draft air quality conformity Scope of Work
June 19, 2019	TPB briefed on draft project inputs and draft air quality conformity Scope of Work
June 2019	TPB staff briefs Metropolitan Washington Air Quality Committee Technical Advisory Committee (MWAQC TAC) on inputs and Scope of Work
July 17, 2019	TPB is asked to approve inputs and draft Scope of Work
December 20, 2019	Financial updates for the FY 2021-2024 TIP are due
January 16, 2020	Public Forum on the FY 2021-2024 TIP
January 31, 2020	Draft FY 2021-2024 TIP, 2020 Amendment to the Visualize 2045 Plan, and air quality conformity analysis are released for 30-day comment period
February 7, 2020	Technical Committee reviews draft TIP, Plan, and conformity analysis
February 2020	TPB staff briefs MWAQC TAC on the draft TIP, Plan, and conformity analysis
February 19, 2020	TPB is briefed on TIP, Plan, and conformity analysis
March 1, 2020	Comment period ends
March 18, 2020	TPB reviews comments and responses to comments, and is presented with the FY 2021-2024 TIP, the 2020 Amendment to the Visualize 2045 Plan, and the air quality conformity analysis for approval

ATTACHMENT B

Additions & Changes
for the FY 2021-2024 TIP
& 2020 Amendment
to the Visualize 2045 Plan

National Capital Region
Transportation Planning Board

MEMORANDUM

TO: Transportation Planning Board

FROM: Jane Posey, Transportation Engineer

SUBJECT: Project Inputs and Scope of Work for the Air Quality Conformity Analysis of the FY 2021-2024 TIP and the 2020 Amendment to the Visualize 2045 Plan

DATE: July 18, 2019

The project submissions and the Scope of Work for the air quality conformity analysis of the FY 2021-2024 Transportation Improvement Program (TIP) and the 2020 Amendment to the Visualize 2045 Plan were reviewed by the Technical Committee in June and July and shared with the TPB at its June meeting. The board will be asked to approve the project submissions for inclusion in the air quality conformity analysis of the FY 2021-2024 Transportation Improvement Program (TIP) and the 2020 Amendment to the Visualize 2045 Plan, and the corresponding Scope of Work.

Attachment A lists the proposed inputs to the FY 2021-2024 TIP and changes to the Visualize 2045 Plan for inclusion in the air quality conformity analysis.

Attachment B documents the air quality conformity analysis Scope of Work, which presents an outline of the work tasks required to address all regulations currently applicable.

CHANGES AND CORRECTIONS MADE TO PROJECT INPUTS AND SCOPE OF WORK

The attached conformity project input tables and the Scope of Work for the upcoming air quality conformity analysis are identical to the materials shared with the TPB in June, with the exception of the following minor corrections/updates:

<u>In project inputs table (Attachment A):</u>

Page A-1 Added K St. NW Transitway project with transit projects (was mentioned in significant changes list and included with the highway projects)

Page A-1 Changed completion date of Corridor Cities Transitway from 2022 to 2028

Page A-1 Changed completion date of VRE Service Improvements from 2020 to 2028

Page A-1 Added Long Bridge Study (already included in listing under DDOT)

Page A-1 Changed completion date of Crystal City Transitway Northern Extension dedicated lanes from 2021 to 2022

Page A-2 Added two segments of the Crystal City/Potomac Yards Transitway realignment to dedicated right-of-way in 2025 and 2030

Page A-2 Changed West End Transitway limits from "Van Dorn St. to Pentagon" to "Van Dorn St. to Pentagon & Landmark"

Page A-5 Changed "Reduce Capacity- Streetcar" to "Reduce Capacity- Transitway" for the two segments of the K St. NW Transitway

Page A-6 Added a capacity reduction- bike lane project on Lottsford Road from MD 202 to Largo Dr. West.- reduce from 6 to 4 lanes in 2020

Page A-8 Changed South Clark St. (Arlington) demolition limits from "12th St. S. to 18th St. S." to "12th St. S. to 20th St. S."

In the Scope of Work (Attachment B):

The reference to the Cooperative Forecasts was changed from "Round 9.1 or latest" to "Round 9.1a"

SUMMARY OF MAJOR PROJECT SUBMISSIONS

This section of the memo highlights the new or updated major project submissions from those listed in Attachment A.

DISTRICT OF COLUMBIA

The District Department of Transportation (DDOT) has proposed **to add the following projects** to the conformity analysis of the FY 2021-2024 TIP and Visualize 2045 amendment:

1. Two **Peak Period Bus-Only Lane Pilot Projects** implemented in 2019:
   a. **H St. NW from 14th St. to 19th St.**, reduce capacity from 5 to 4 lanes (CON IDs 582, 822)
   b. **I St. NW from 13th St. to Pennsylvania Ave.**, reduce capacity from 4 to 3 lanes (CON IDs 583, 823)

2. Eight **bicycle lane projects** that would reduce capacity for vehicular traffic (CON IDs 1003-1013):
   a. **9 St. NW from Florida Ave. to Massachusetts Ave.** (4 to 2 lanes); **from Massachusetts Ave. to Constitution Ave.** (6/4 lanes to 4/2 lanes), complete 2019
   b. **Dalecarlia Pkwy. NW from Loughboro Rd. to Westmoreland Circ.** (4 to 2 lanes), complete 2020
   c. **Florida Ave. NE from 2nd St. to West Virginia Ave.** (6 to 4 lanes) **and from West Virginia Ave. to 14th St.** (3 to 2 lanes), complete 2019
   d. **K St. NE from 1st St. to 8th St.** (3 to 2 lanes), complete 2019
   e. **M St. SE from Half St. to 11th St.** (6 to 5 lanes), complete 2020
   f. **Mount Olivet Rd. NE from Brentwood Pkwy. to West Virginia Ave.** (4 to 3 lanes), complete 2020
   g. **Nebraska Ave. NW from New Mexico Ave. to Loughboro Rd.** (4 to 3 lanes), complete 2020
   h. **Pennsylvania Ave. SE from 2nd St. to 17th St.** (8 to 6 lanes), complete 2020

3. Construct two segments of the **K St. NW Transitway from 9th St. to 12th St.,** reducing capacity from 4 lanes to 2 lanes **and from 12th St. to 21st St.,** reducing capacity from 6 lanes to 4 lanes allowing bus-only service on the transitway by 2021.

COMMONWEALTH OF VIRGINIA

The Virginia Department of Transportation (VDOT) has proposed to **add the following projects**:

1. Modifications to the **I-495 Capital Beltway Express Lanes ramps around the Dulles Toll Road interchange**, complete in 2025 and 2045 (CON IDs 999-1002)
2. Construct a **reversible ramp from I-95 at Opitz Dr.**, complete in 2022 (CON ID 1011)
3. Construct **VA 28 Manassas Bypass from VA 234 Sudley Rd. to VA 28 Centreville Rd.,** 4 lanes, complete in 2025 (CON ID 995)
4. Widen **VA 55 from US 29 to the Town of Haymarket**, 2 to 4 lanes, complete in 2028 (CON ID 997)
5. Widen **VA 123 from VA 267 Dulles Access Rd. to VA 634 Great Falls St.,** 4 to 6 lanes, complete in 2030 (CON ID 1015)
6. Widen **VA 286 Fairfax County Parkway from US 29 Lee Hwy. to Rolling Rd.,** 4 to 6 lanes, complete in 2030 (CON ID 728)
7. Construct **West End Transitway Phase II (Southern Segment) from Van Dorn Street Metro to Landmark Mall**, complete in 2026 (CON ID 1034)

NEXT STEPS

Following the TPB approval of the project inputs and Scope of Work, the air quality conformity analysis will be conducted between July 2019 and January 2020. Draft results will be released on January 31, 2020 for a public comment period. After the public comment period, the board will be asked to approve the air quality conformity analysis and the FY 2021-2024 TIP and the 2020 Amendment to the Visualize 2045 Plan at the March 18, 2020 meeting.

2020 Amendment to VISUALIZE 2045 AIR QUALITY CONFORMITY NETWORK INPUTS (transit)

DRAFT 7/15/2019

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
DDOT						
822		~~Study~~ Implement	H St. NW Peak Period Bus-Only Lanes Pilot Project	~~17th St. NW~~ 19th St NW	~~New York Ave. NW~~ 14th St NW	~~Not Coded~~ 2019
823		~~Study~~ Implement	I St. NW Peak Period Bus Only Lanes Pilot Project	13th St. NW	Pennsylvania Ave. NW	~~Not Coded~~ 2019
		Construct	K St. NW Transitway	9th St. NW	21st St. NW	2021
610	DCSTGTWN	Construct	Union Station/Georgetown Streetcar	K Street/34th Street NW	3rd Street/H Street NE	~~2025~~ 2030
MDOT/MTA						
481	CCTBRT	Construct	Corridor Cities BRT	Shady Grove	Comsat	~~2022~~ 2028
VDOT						
1028		Construct	Franconia to Occoquan 3rd Track Project	Control Point RO (Arlington) Rosslyn (RO) Interlocking near Long Bridge Park in Arlington, Virginia	L'Enfant (LE) Interlocking near 10th Street SW in the District of Columbia	2028
1029		Construct	Alexandria 4th Track Project	milepost 110.1 south of the George Washington Memorial Parkway	near milepost 104.3 south of Telegraph Road	2025
504	VREFREQ	Implement	VRE Service Improvements (Reduce Headways) - associated with 3rd and 4th Track Projects	Fredericksburg and Manassas lines		~~2020~~ 2028
1030		Study	Long Bridge (also in DDOT)	One mile north of the Franconia-Springfield VRE station (CFP 99.0)	Approximately 400 feet north of Furnace Road, just north of the Occoquan River (CFP 90.08)	Not Coded
511	MWAYBRT	Construct	Crystal City/Potomac Yard Busway (2 lane-dedicated)	Vicinity of Glebe Road Extended (City/County Line)	Pentagon City Metro Station	Complete
861		Construct	Crystal City Transitway: Northern Extension - complete dedicated lanes	Crystal City Metro Station	Army Navy Drive Transit Station (Army Navy Dr halfway between Hayes St and Joyce St)	~~2021~~ 2022

NOTE: Shaded areas represent changes from Visualize 2045

2020 Amendment to VISUALIZE 2045 AIR QUALITY CONFORMITY NETWORK INPUTS (transit)

DRAFT 7/15/2019

ConID	Scenario	Improvement	Facility	From	To	Projected Complete
		Construct	Crystal City Transitway: Southern Extension - complete dedicated lanes	South Glebe Road	Alexandria city line	2025
		Construct	Crystal City/Potomac Yard Transitway- realign with dedicated right-of-way	East Glebe Road	Evans Lane	2030
1018	**SILVER 2**	**Construct**	**Park-and-Ride Garage**	**Herndon-Monroe Station**		**2020**
1019	**SILVER 2**	**Construct**	**Park-and-Ride Garage**	**Innovation Station**		**2020**
		Expand	**Park-and-Ride Lot**	**Stringfellow Road Park-and-Ride**		~~**COMPLETE**~~
505	VANDBRT	Construct	West End Transitway (City Funded)	Van Dorn Street Metro	Pentagon & Landmark	2026
806		~~Expand~~ Construct	I-66 Corridor Park and Ride ~~lot~~ garage	~~Fairfax County Government Center/~~Monument Drive		2021

NOTE: Shaded areas represent changes from Visualize 2045

2020 Amendment to VISUALIZE 2045 AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

DRAFT 7/15/2019

Con ID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
DDOT											
605	DI9		Reconstruct	I 295 Interchange at Malcolm X Blvd.	Add above grade ramp connection from NB I-295 off ramp to new St. Elizabeth's Access Road						~~2018~~ 2020
~~584~~	~~DS3~~		~~Construct~~	~~Southern Ave. SE~~	~~Branch Ave. SE~~	~~Naylor Rd. SE~~			~~0~~	~~2~~	~~2019~~ withdrawn
582			~~Study~~ Reduce Capacity	H St. NW Peak Period Bus-Only Lanes Pilot Project	~~17th St. NW~~ 19th St NW	~~New York Ave. NW~~ 14th St NW			5	4	~~Not Coded~~ 2019
583			~~Study~~ Reduce Capacity	I St. NW Peak Period Bus Only Lanes Pilot Project	13th St. NW	Pennsylvania Ave. NW			4	3	~~Not Coded~~ 2019
558	DP16	ED0C2A	Reduce Capacity	C Street/N. Carolina Avenue	Oklahoma Avenue	14th Street NE			5	3	~~2019~~ 2020
567	DP16		Reduce Capacity	East Capitol Street	40th Street	Southern Ave			6	4	~~2019~~ 2021
608			Reconstruct	New Jersey Avenue NW 1-way to 2-way	H Street NW	N Street NW					~~2019~~ 2020
717	DS13		Reduce Capacity	Florida Avenue NE	3rd Street	West Virginia Avenue			6	4	~~2015~~ 2019
710			Reduce Capacity	Florida Avenue NE	2nd Street	3rd Street			6	5	~~2017~~ 2019
707	NRS		Reduce Capacity	New Jersey Avenue NW	H Street	Louisiana Ave			4	2	~~2016~~ 2020
713	DS14		Reduce Capacity	Pennsylvania Avenue NW	18th Street	20th Street			5	4	~~2017~~ 2020
712	DS15		Reduce Capacity	Pennsylvania Avenue NW	17th Street	18th Street			6	4	~~2017~~ 2021
715	DS16		Reduce Capacity	Pennsylvania Avenue NW	26th Street	28th Street			5	4	~~2017~~ 2021
716	DS17		Reduce Capacity	Pennsylvania Avenue NW	28th Street	29th Street			4	2	~~2017~~ 2021
714	DS18		Reduce Capacity	Pennsylvania Avenue NW	20th Street	26th Street			6	4	~~2017~~ 2021
709	DS19		Reduce Capacity	Wheeler Road SE	Alabama Avenue	Southern Avenue			4	2	~~2016~~ 2020
837	DS20		Reduce Capacity - bike lanes	4th Street NE	Lincoln Rd. NE	Harewood Rd. NE			4	2	~~2016~~ Complete
832	in base		Reduce Capacity - bike lanes	Blair Road NW	Peabody St. NW	Aspen St. NW			3	2	~~2019~~ 2021
~~833~~	~~DP21~~		~~Reduce Capacity - bike lanes~~	~~Constitution Avenue~~	~~1st Street NW~~	~~Pennsylvania Avenue NW~~			~~6~~	~~4~~	~~2016~~
860	DS23		Reduce Capacity - bike lanes	Harewood Road NW	Rock Creek Church Road NW	North Capitol Street			2	1	~~2016~~ 2020
834	DS24		Reduce Capacity - bike lanes	Klingle Road NW	Adams Mill Road NW	Porter Street NW			4	2	~~2016~~ Complete
836	DS25		Reduce Capacity - bike lanes	Piney Branch Road NW	Georgia Avenue NW	Underwood Street NE			4	2	~~2018~~ Complete

NOTE: Shaded areas represent changes from Visualize 2045

2020 Amendment to VISUALIZE 2045 AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

DRAFT 7/15/2019

Con ID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
944	DP32		Reduce Capacity - bike lanes	17th Street NW	New Hampshire Avenue	Massachussetts Avenue NW	3	3	2	1	~~2018~~ 2020
945	DP33		Reduce Capacity - bike lanes	17th Street	Massachusetts Avenue NW	K Street	3	3	6	4	~~2018~~ Complete
946	DP34		Reduce Capacity - bike lanes	K Street NW	~~3rd Street NW~~ 7th Street NW	1st Street NE			6	4	~~2018~~ 2020
947	DP35		Reduce Capacity - bike lanes	Pennsylvania Ave	2nd Street SE	14th Street SE	2	2	6	4	~~2019~~ 2020
948	DP36		Reduce Capacity - bike lanes	Pennsylvania Ave SE	14th Street SE	Barney Circle			8	6	~~2019~~ 2020
949	DP37		Reduce Capacity - bike lanes	Irving Street NE/NW	Michigan Avenue NE	Warder Street NW			6	4	~~2019~~ 2020
1013			Reduce Capacity - bike lanes	9th St NW	Massachusetts Ave	Florida Ave			4	2	2019
1012			Reduce Capacity - bike lanes	9th St NW	Constitution Ave	Massachusetts Ave			6/4	4/2	2019
1010			Reduce Capacity - bike lanes	Nebraska Ave NW	New Mexico Ave	Loughboro Road			4	3	2020
1009			Reduce Capacity - bike lanes	Pennsylvania Ave SE	2nd St	17th St			8	6	2020
1008			Reduce Capacity - bike lanes	Dalecarlia Pkwy NW	Loughboro Road	Westmoreland Circle			4	2	2020
1007			Reduce Capacity - bike lanes	K St NE	1st St	8th St			3	2	2019
1006			Reduce Capacity - bike lanes	Mount Olivet Rd NE	Brentwood	West Virginia Ave			4	3	2020
1005			Reduce Capacity - bike lanes	M St SE	Half St	11th St			6	5	2020
1004			Reduce Capacity - bike lanes	Florida Ave NE	West Virginia Ave	14th St			3	2	2019
1003			Reduce Capacity - bike lanes	Florida Ave NE	2nd ST	West Virginia Ave			6	4	2019
839	DP23		Reduce Capacity - Bus Priority	16th Street NW	Arkansas Avenue NW	Columbia Road NW			6	4	~~2021~~ 2020
840	DP24		Reduce Capacity - Bus Priority	16th Street NW	Columbia Road NW	W Street NW			5	4	~~2021~~ 2020
841	DP25		Reduce Capacity - Streetcar	H Street NE/NW	3rd Street NE	New Jersey Ave NW			6	4	~~2022~~ 2030

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2020 Amendment to VISUALIZE 2045 AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

DRAFT 7/15/2019

Con ID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
842	DS26		Reduce Capacity - Streetcar	New Jersey Avenue NW	H St NW	K Street NW			3 lanes 1-way	1 lane each 2-way	~~2022~~ 2030
844	DP26		Reduce Capacity - Streetcar	K Street NW	New Jersey Avenue NW	7th Street NW			3	2	~~2022~~ 2030
845	DP27		Reduce Capacity - Transitway	K Street NW	9th Street NW	12th St NW			4	2	~~2022~~ 2021
846	DP28		Reduce Capacity - Transitway	K Street NW	12th St NW	21st St NW			6	4	~~2022~~ 2021
847	DP29		Reduce Capacity - Streetcar	K Street NW	21st St NW	25th Street NW			4	2	~~2022~~ 2030
848	DP30		Reduce Capacity - Streetcar	K Street NW	25th Street NW	29th Street NW			6/4	4	~~2022~~ 2030
849	DP31		Reduce Capacity - Streetcar	K Street NW	29th Street NW	Wisconsin Avenue NW			4	2	~~2022~~ 2030
MDOT											
Interstate											
952	MI2TSB6		Construct	I270 southbound auxiliary lane (innovative congestion management)	South of Shady Grove Rd local slip ramp	South of Shady Grove Rd express lanes slip ramp	1	1			~~2019~~ 2020
Primary											
139	MP10A	PG2531	Reconstruct	US 1	College Avenue	MD 193	2	2	4	4	~~2021~~ 2023
358	MP15	FR5711	Construct	US 15 ~~Catoctin Mountain Highway~~ **Interchange**	at Monocacy Blvd./**Christophers Crossing**		~~2~~ 5	~~2~~ 5	~~6~~ 4	~~6~~ 4	~~2018~~ 2019
391	FP2A	FR3881	~~Widen~~ Construct/Widen	MD 85 Buckeystown Pike	Crestwood Drive**/Shockley Drive**	Spectrum Drive	2	2	~~4~~	6	~~2021~~ 2022
353	NRS	PG7001	Upgrade	MD 210	at Kerby Hill Road/Livingston Road		~~2~~ 5	5	6	6	~~2020~~ 2021
Secondary											
924	MS36A	FR5491	Construct/Widen	MD 180	~~I 70 (west junction)~~ Greenfield Drive	~~Greenfield Drive~~ I 70 (west junction)	4	4	2	4	2030
857	MS36B	FR6781	Construct/Widen	MD 180	~~600 ft north of I-70~~ I 70 (west junction)	~~Structure 10140~~ Ballenger Center Drive	4	4	~~2~~ 2/4	4	~~2020~~ 2021
Frederick County											
Secondary											

NOTE: Shaded areas represent changes from Visualize 2045

2020 Amendment to VISUALIZE 2045 AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

DRAFT 7/15/2019

Con ID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
648	MS36C	FR5491	Widen/Upgrade	MD 180 Ballenger Creek Pike	~~Greenfield Drive~~ Ballenger Center Drive	Corporate Drive	4 ~~3~~	4 ~~2~~	2	4	~~2030~~ 2020
993			Widen/Upgrade	Christopher's Crossing	Whittier Drive	Poole Jones Road	3	2	2	4	2024
880	FS3		Expansion	Christopher's Crossing	Walter Martz Road	Thomas Johnson Drive	3	3	0 to 2	4	~~2021~~ 2020
879	NRS		Construct	Christopher's Crossing	Shookstown Road	Rocky Springs Road	3	3	0	4	~~2020~~ 2026
651	FS2a		Widen	Monocacy Boulevard	Schifferstadt Boulevard	Gas House Pike	~~3~~ 2	~~3~~ 2	2	4	2019
691		F3	~~Study~~ Construct	Spectrum Drive	Technology Way	MD 85 Buckeystown Pike	0	4	0	2	~~Not Coded~~ 2030
Prince George's County											
Secondary											
	PGS40b		Reduce Capacity - bike lanes	Lottsford Road	MD 202 (Largo Rd.)	Largo Dr. West	3	3	6	4	2020
VDOT											
Federal Lands											
243	VP1A	VP1A - 103073	Widen	US 1 Jefferson Davis Highway	Telegraph Road	VA 235 South	2	2	4	6	~~2016~~ COMPLETE
Interstate											
769	I66R17 I66R18		Revise Operations	I-66 Express Lanes Interchange Ramps	~~Existing reversible HOV ramp converted to HOT EB on-ramp only, 24 hrs/day; Construct new flyover ramp for HOT WB off-ramp from I-66 Express Lanes, operating 24 hrs/day~~ The existing reversible HOV ramp at Stringfellow Road will be expanded and converted to Express Lanes ramps providing access to and from the east using the Express Lanes. The new ramps will allow two-way traffic to and from the Express Lanes toward the Beltway 24 hours a day.	@ Stringfellow Road	1	1	Bus / HOV-2 Reversible by time of day	Bus / HOV-3 / HOT both directions 24 hrs / day	2022
			Remove	**I-395 HOV/HOT SB Slip Ramp to I-395 main lanes**	**Just south of Eads St**		**1**	**0**	**1**	**0**	**2019**
270	VI2AC		Reconstruct	I 95 Interchange	VA 613 Van Dorn Street		1	1			~~2015~~ 2030

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2020 Amendment to VISUALIZE 2045 AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

DRAFT 7/15/2019

Con ID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
969	VI2X		Construct	I-95 Auxiliary Lane SB	VA 123	VA 294	1	1	0	1	~~2028~~ 2022
1011			**Construct**	**I-95 Opitz Drive Reversible Ramp**	**I-95 Express Lanes at Opitz Drive**	**Optiz Drive**	**1**	**1**	**0**	**1**	**2022**
999			**Construct**	**I-495 Express Lanes On-Ramp**	**Dulles Connector Road WB**	**I-495 Express Lanes NB**	**0**	**1**	**0**	**1**	**2025**
1000			**Construct**	**I-495 Express Lanes (Shoulder Lane) – NB DIRECTION PEAK PERIODS ONLY**	**Dulles Connector WB On-Ramp**	**GW Parkway Off-Ramp**	**0**	**1**	**0**	**1**	**2025**
1001			**Construct**	**I-495 NB Exchange Ramp**	**Interstate Ramp**	**I-495 NB GP Lanes at Dulles Toll Road**	**0**	**1**	**0**	**1**	**2045**
1002			**Construct**	**I-495 SB Exchange Ramp**	**Interstate Ramp**	**I-495 SB Express Lanes at Dulles Toll Road**	**0**	**1**	**0**	**1**	**2045**
				Primary							
633	NRS	100938	Reconstruct	US 1 Richmond Highway	at VA 123 Gordon Boulevard (Interchange)						~~2025~~ 2028
626	NRS	82135	Construct	VA 7 Leesburg Pike	Bridge over Dulles Toll Road		2	2	4	6	~~2030~~ Complete
628	VP2Lb		Widen	VA 7 Leesburg Pike	VA 123 Chain Bridge Road	I 495 Capital Beltway	2	2	6	8	~~2021~~ 2030
87	VP2N		Widen	VA 7 Leesburg Pike	I 495	I 66	2	2	4	6	~~2021~~ 2030
347	VP2B	TBD	Widen	VA 7	Seven Corners	Bailey's Crossroads	2	2	4	6	~~2025~~ 2030
1022			**Study**	**VA 7 Interchange**	**VA 123 Dolly Madison Road**						**2030**
1023			**Construct**	**US 15 Bypass / Battlefield Parkway Interchange**							
737	VP6N	108720	Widen	VA 28 Centreville Road	~~VA 898 Old Cntreville Road~~ US 29	Prince William County Line	2	2	4	6	~~2025~~ 2023
995			**Construct**	**VA 28 Manassas Bypass**	**VA 234 Sudley Road**	**VA 28 Centreville Road**			**0**	**4**	**2025**
622	VP7AG		Widen	US 29 (add NB lane)	Legato Road	Shirley Gate/Waples Mill Rd.	2	2	2	3	~~2017~~ Complete
997			**Widen**	**VA 55**	**Route 29**	**Town of Haymarket**			**2**	**4**	**2028**
235	VP10H		Widen	VA 123 Ox Road	Hooes Rd.	Fairfax Co. Parkway	2	2	4	6	~~2025~~ 2030
337	VP10F	1784	Widen	VA 123 Ox Road	Fairfax Co. Parkway	Burke Center Parkway	2	2	4	6	~~2025~~ 2030
300	VP10R		Widen	VA 123	Burke Center Parkway	Braddock Road	2	2	4	6	~~2025~~ 2030
95	VP10S		Widen	VA 123	VA 677 Old Courthouse Road	VA 7 Leesburg Pike			4	6	~~2025~~ 2030
595	VP10T		Widen	VA 123 Chain Bridge Road	VA 7 Leesburg Pike	I 495 Capital Beltway	2	2	6	8	~~2025~~ 2030
1016			**Upgrade**	**VA 123**	**I-495 Capital Beltway**	**VA 267 Dulles Access Road**	**3**	**3**	**6**	**6**	**2030**
1015			**Widen**	**VA 123**	**VA 267 Dulles Access Road**	**VA 634 Great Falls Street**	**2**	**2**	**4**	**6**	**2030**
1024		111725	**Widen/Construct**	**VA 286 Fairfax County Parkway Interchange**	**VA 654 Pope's Head Road**		**2**	**2**	**4**	**6**	**2025**
728			~~Study~~ Widen	VA 286 Fairfax County Parkway	US 29 Lee Highway	Rolling Road	**2**	**2**	**4**	**6**	**2030**
104	VSF26a		Construct	VA 289 Franconia-Springfield Parkway HOV Interchange	Neuman Street		1	1			~~2025~~ 2035
			Construct	**VA 234 Bypass Interchange**	**Clover Hill Road**						**2026**
1028			**Construct**	**VA 294 Prince William Parkway Intersection Improvements**	**VA 641 Old Bridge Road**						**2028**
1027			**Construct**	**VA 294 Prince William Parkway Interchange**	**VA 640 Minnieville Road**						**2028**

NOTE: Shaded areas represent changes from Visualize 2045

2020 Amendment to VISUALIZE 2045 AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

DRAFT 7/15/2019

Con ID	Project ID	Agency ID	Improvement	Facility	From	To	Facility Fr	Facility To	Lanes Fr	Lanes To	Completion Date
106	VP15CD		Construct	Collector-Distributor Rd Westbound (parallels Dulles Toll Rd.)	~~Spring Hill Rd.~~ **Route 7 Leesburg Pike**	VA 828 Wiehle Avenue	0		0	1	~~2037~~ **2035**
107	VP15CD		Construct	Collector-Distributor Rd Eastbound (parallels Dulles Toll Rd.)	VA 828 Wiehle Avenue	~~Spring Hill Rd.~~ Route 7 Leesburg Pike	0		0	**1**	~~2036~~ **2035**
			Construct	Collector-Distributor Rd Westbound (parallels Dulles Toll Rd.)	Route 7 Leesburg Pike	Spring Hill Rd.			**0**	~~1~~ **2**	~~2037~~ **2035**
			Construct	Collector-Distributor Rd Eastbound (parallels Dulles Toll Rd.)	Spring Hill Rd.	Route 7 Leesburg Pike			**0**	~~1~~ **2**	~~2036~~ **2035**
Secondary											
Arlington County											
	AR31		Demolish	South Clark Street	12th Street South	~~18th~~ 20th Street South	4	0	2	0	2019
Fairfax County											
241	VSF4f	VSF4f	Widen	VA 611 Furnace Road	VA 123 Ox Road	VA 642 Lorton Road	3	3	2	4	~~2016~~ COMPLETE
586	VSF10E	102905	Widen	VA 638 Rolling Road	Rt 5297 DeLong Drive	Fullerton Drive	3	3	2	4	~~2022~~ 2035
217	FFX11a		Widen	VA 645 Stringfellow Road	US 50	VA 286 Fairfax County Parkway	3	3	2	4	~~2020~~ 2030
688	VSF17b		Construct	VA 655 Shirley Gate Road	VA 286 Fairfax County Parkway	VA 620 Braddock Road	0	3	0	4	~~2025~~ 2030
724	VSF46		Construct	VA 2677 Frontier Drive	Franconia-Springfield Transportation Center	VA 789 Loisdale Road	0	4	~~0~~ **4**	~~2~~ **4**	2024
1017			**Construct**	**Town Center Parkway Underpass of Dulles Toll Road**	**VA 5320 Sunrise Valley Dr.**	**VA 675 Sunset Hills Road**	**0**	**4**	**0**	**4**	**2030**
Loudoun County											
330	VSL1B	97529, 105064	Widen/Upgrade	VA 606/607 Old Ox Rd/Loudoun County Parkway	VA 634 Moran Rd	VA 621 Evergreen Mills Rd	4	3	2	4	~~2017~~ **2018**
564			Construct	~~Glascock Road~~ Dulles West Blvd. Phase I	Dulles Landing Drive	Hutcheson Farm Drive	0	4	0	4	~~2023~~ **2022**
565			Construct	~~Glascock Road~~ Dulles West Blvd. Phase II	Hutcheson Farm Drive	Arcola Blvd	0	4	0	4	~~2023~~ **2022**
1031			Construct	~~Glascock Road~~ Dulles West Blvd. Phase III	Arcola Blvd	Northstar Dr.	0	4	0	4	~~2023~~ **2025**
Prince William County											
996			**Widen**	**VA 621 Devlin Road**	**Linton Hall Road**	**Wellington Road**			**2**	**4**	**2028**
998			**Widen**	**VA 674 Wellington Road**	**University Boulevard**	**VA 621 Devlin Road/Balls Ford Road**			**2**	**4**	**2028**

NOTE: Shaded areas represent changes from Visualize 2045