

# Project Submissions and Scope of Work for the Air Quality Conformity Analysis

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**Transportation Planning Board**

**June 16, 2021**

**visualize**  
**2045** A long-range  
transportation plan  
for the National  
Capital Region



# WHAT IS BEING APPROVED?

## Updated inputs to the regional air quality conformity analysis for an updated long range transportation plan – Visualize 2045

1. Cooperative Forecast – Spatial distribution of Population, Employment and No. of Household (2021 thru 2045)
2. Scope of Work for Regional Air Quality Conformity Analysis
3. Highway and Transit projects represented in the regional air quality analysis modeling (not all projects)
4. Preliminary Financial Analysis of projects and programs in Visualize 2045 (2021 thru 2045)

# 1. Cooperative Forecast

## 1. Federal Requirements:

*23 CFR § 450.324 (e): The MPO, the State(s), and the public transportation operator(s) shall validate data used in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.*

## 2. Source of data used by the TPB Process:

COG's Planning Directors Technical Advisory Committee develops the cooperative forecasts for the region by reconciling jurisdictional forecasts with regional econometric projections.  
(TPB Technical Committee – March 2021)

Excerpts from: 23 CFR § 450.324 - Development and content of the metropolitan transportation plan

# 1. Updated Cooperative Forecast

- Round 9.2; represents a technical update to the Round 9.0 forecast
- Long-range forecasts: do not account for short term variations
- Effects of COVID-19 on the timing and distribution of future growth are not accounted for in this technical update



The next major round, Round 10, will be prepared in the future and will consider results from the 2020 Census as well as other applicable global, national, and regional demographic and market trends

## 2. Scope of Work: Air Quality Conformity Analysis

Pollutants	Ozone Season VOC and NOx
Emissions Model	MOVES2014b
Conformity Test	<u>Budget Test</u> : Using mobile emissions budgets most recently approved by EPA: 2008 Ozone NAAQS Maintenance Plan mobile budgets found adequate by EPA in August 2018.
Vehicle Fleet Data	July 2020 (DC) and December 2020 (MD & VA) vehicle registration data
Geography	8-hour ozone non-attainment area
Network Inputs	Regionally significant projects
Land Activity	Cooperative Forecasts Round 9.2
HOV/HOT	<u>Restrictions, such as Truck Prohibitions, Reversible lanes, etc. as provided by operating agencies</u> <u>VA</u> : I-95, I-395, and I-495 are all HOT3+; I-66 inside the Beltway will convert from HOT2+ to HOT3+ when I-66 outside the Beltway opens as HOT3+; the Dulles Toll Road will convert from HOV2+ to HOV3+ in 2023; all other HOV facilities will be HOV2+ through 2045 <u>MD</u> : HOV facility on US 50 will remain HOV2+ through 2045; HOV facility on I-270 will convert from HOV2+ to HOT3+ when an additional HOT lane is added; planned additional Capital Beltway express toll lanes will be HOT3+ when added
Roadway Restrictions	Roadway restrictions, such as truck prohibitions, are reflected in the travel model network using information supplied by the Departments of Transportation
Transit Constraint	NO Metrorail “capacity constraint” (removed with March 2018 passage of annual funding for WMATA agreement)
Analysis Years	2021 and/or 2023 or 2024, 2025, 2030, 2040, and 2045
Modeled Area	6,800 square mile area with 3,722 Transportation Analysis Zones (TAZs)
Travel Demand Model	Gen2/Version 2.4 or latest

# 3. Projects Included in Air Quality Analysis

- As submitted by TPB member agencies (Highway and Transit)
- Reviewed by public and the TPB (April and May work sessions)
  - 2018 Plan Projects and 2020 Amendment projects
  - Changes to existing projects
  - New Projects

2022 Update to VISUALIZE 2045 AIR QUALITY CONFORMITY NETWORK INPUTS (highway)

DRAFT 5/19/2021

PIT Project ID	Con ID	Project ID	Agency ID	Improvement	Facility	From	To	Facility		Lanes		Completion Date
								Fr	To	Fr	To	
3476 CE1462	206	MS2F	MO8861	Widen	MD 28 Norbeck Road	MD 97	MD 182	2	2	2	2-4	2045
3476 CE1462	925	NRS	MO8861	Reconstruct	MD 28 Norbeck Road	MD 182	Norwood Road	2	2	4	4	2045
3476 CE1462	926	NRS	MO8861	Reconstruct	MD 198	Norwood Road	MD 650	2	2	2	2	2045
3476 CE1462	927	NRS	MO8861	Reconstruct	MD 198	MD 650	Old Columbia Pike	2	2	2	2	2045
3476 CE1462	928	NRS	MO8861	Reconstruct	MD 198	Old Columbia Pike	US 29A	2	2	4	4	2045
3476 CE1462	929	NRS	MO8861	Reconstruct	MD 198	US 29A	I95	2	2	4	4	2045
3106	137	MP12C	MD7461	Construct	MD 97 Brookeville Bypass	Gold Mine Road	North of Brookeville	0	2	0	2	2021
CE2618	931	NRS	MO2241	Widen-Reconstruct	MD 97	MD 390	MD 192 / Forest Glen Road	2	2	6/7	2/8 6/7	2025 2030
CE1211	392	NRS	MO8521	Upgrade	MD 97 Georgia Avenue Interchange	at MD 28 Norbeck Road		2	2	6	6	2035
	135	NRS	MO8541	Upgrade	MD 97 Georgia Avenue Interchange	at Randolph Road		2	2	6	6	2018
CE1203	115	MS32		Widen-Reconstruct	MD 117 Clopper Road	I270	Metropolitan Grove Road	2/3	2/3	2/4 4	4	2030
CE1203	921	NRS		Reconstruct	MD 117 Clopper Road	Metropolitan Grove Road	West of Game Preserve Road	3	3	2/4 2	2/4 3	2030 2035
3057 CE1206	118	MS6B	MO632	Widen	MD 124 Woodfield Road	Midcounty Highway	South of Airpark Drive	3	3	2	6	2035
3057 CE1206	1	MS6D	MO6323	Widen	MD 124 Woodfield Road	North of Fieldcrest Road	Warfield Road	3	3	2	6	2035
CE2253	356	MS35	PG6911	Widen	MD 197 Collington Road	MD 450	Kenhill Drive	2	2	2	4	2025 2030

NOTE: Shaded areas represent changes from the 2020 Amendment to Visualize 2045. Pink shading indicates technical corrections since the beginning of the comment period.

Confidentiality: This document contains information that is exempt from public release under the Freedom of Information Act.

TPB June 16, 2021 Meeting material packet Item # 7

# 4. Preliminary Financial Analysis

# Requirements for the Visualize 2045 Financial Analysis

- Meet federal requirements for MPO planning and air quality conformity (FHWA, FTA, EPA)
- Demonstrate that the forecast revenues are reasonably expected to be available to implement the long-range transportation plan through 2045
- Demonstrate the region's commitment to maintaining a State of Good Repair (SGR) by fully funding projects required to keep highways and public transportation systems in good repair
- Provide for operations and maintenance of the existing transportation system
- Provide for focused capacity expansion to address forecasted growth in the region's population and economy

*The financial plan is Appendix A of Visualize 2045*

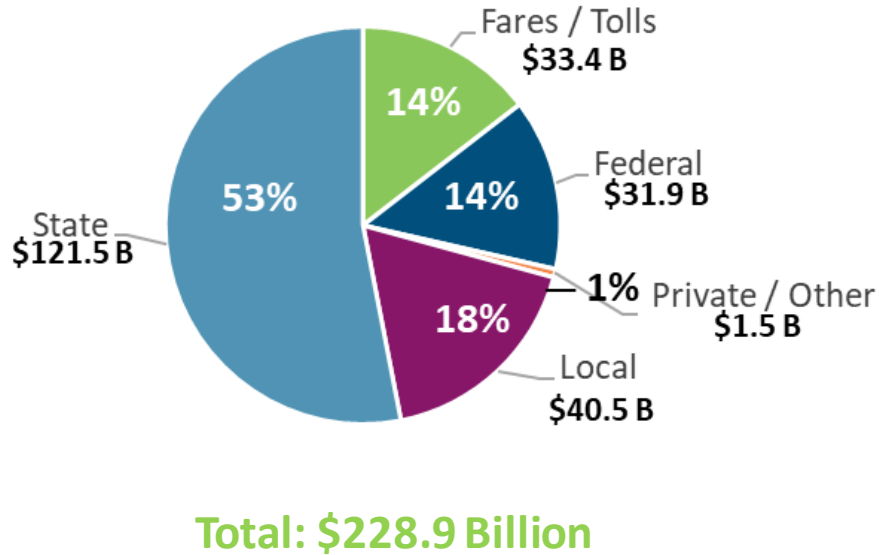


# Transportation Revenues

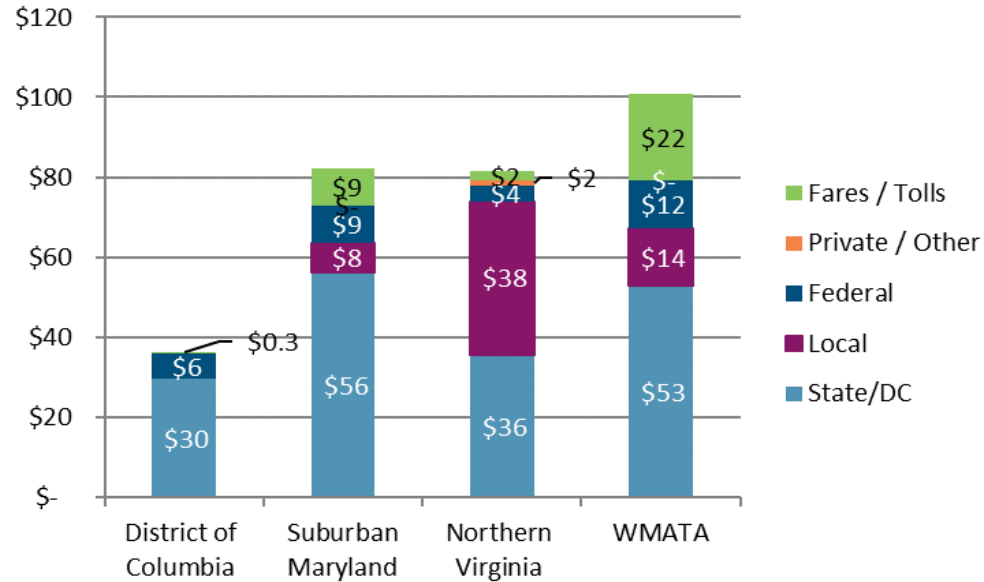
- *Where does funding come from?*
  - Federal program funds
    - Highway: National Highway Performance Program (NHPP), Highway Bridge Program (HBP), Highway Safety Improvement Program (HSIP), State Planning and Research (SPR), Surface Transportation Program, CMAQ, etc.
    - Transit: Operating Assistance, State of Good Repair, WMATA PRIIA, and competitive grants: New Starts, No-Low Emission Buses, etc.
  - State and Regional funds
    - VDOT's SmartScale, Northern Virginia Transportation Authority funding, WMATA Compact, etc.
  - *Most transportation funding is not fungible, it comes from specific sources with goals and constraints on use*

# 2022 Preliminary Analysis – Revenues

Visualize 2045 Revenues (2023 – 2045)  
\$ Billions Year of Expenditure



Revenues by State / WMATA (2023 – 2045)



2018 Analysis (2019-2045)  
\$291.1 Billion

- Period of analysis: 2023 – 2045 (twenty-three years)
- All revenue and cost estimates are in year of expenditure (YOE) dollars

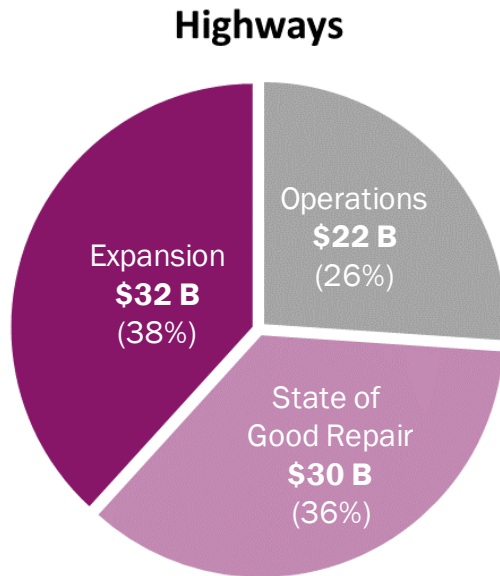
# Projects, Plans, and Programs

- *Where does regional transportation funding go?*
  - Transit Operations & Maintenance (O&M), followed by Transit State of Good Repair (SGR) and then Highway projects
    - WMATA is our region's biggest project: 45% of all funds go to support Metrorail, Metrobus, MetroAccess
    - O&M and SGR for other transit services: local bus and commuter rail
    - Highway SGR and Highway and Transit capacity expansion projects in the TIP and Plan that have been planned and developed over years
  - In 2018, it was estimated that about 45% of capital expansion funding supported the TPB's adopted Aspirational Initiatives
  - State DOTs and MPOs must report on progress towards Performance Based Planning and Programming (PBPP) targets: safety, pavement condition, bridge condition, etc., including "linking investment priorities to those performance targets"

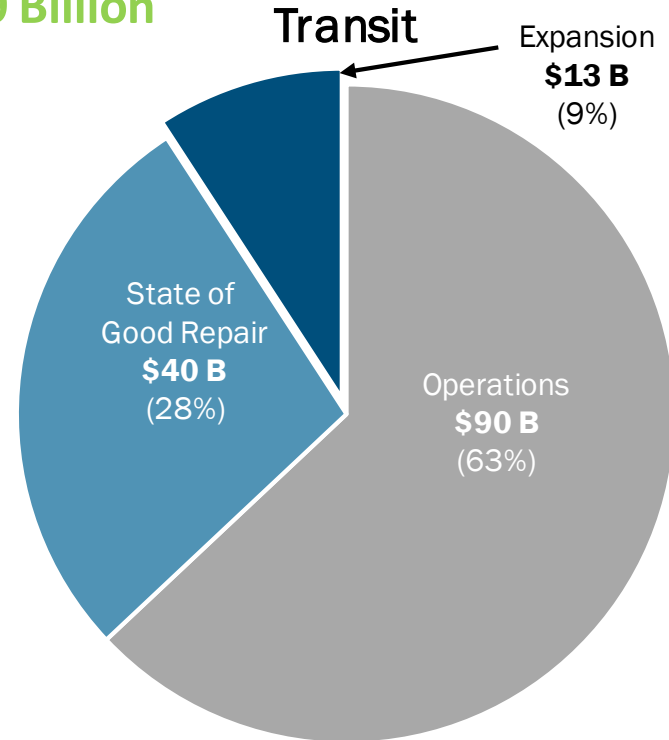
# 2022 Preliminary Analysis – Expenditures

Numbers will change

Total: \$228.9 Billion



**\$85.0 Billion**  
**(37% of total expenditures)**



**\$143.0 Billion**  
**(62% of total expenditures)**

**Bike & Pedestrian Projects \$0.8 Billion**  
(not included above) **0.4% of all expenditures**

**WMATA \$104 Billion**  
(included in Transit) **45% of all expenditures**

# Role of the TPB

Provide perspective:

- Operating and keeping our current transportation system in a State of Good Repair is our #1 priority (~84% of funding)
- Expansion project planning and development is a drawn-out process, with many projects having been planned for years or even decades
- Most funding is directed through federal, state, regional, and local processes and priorities

TPB's priorities and interests are laid out in the Vision (1998), the Regional Transportation Priorities Plan (2014), and most recently the Aspirational Initiatives (2018)

- Keep advancing planning and engineering for these projects so that they keep moving forward every day
- Use our prepared videos, infographics, and other materials to build support for current projects and advance new projects

# Proposed Action:

Adopt Resolution R19-2021 to approve the project submissions for inclusion in, and the scope of work for, the Air Quality Conformity Analysis for the 2022 Update to Visualize 2045 and the FY 2023-2026 TIP.

NOW, THEREFORE, BE IT RESOLVED THAT: the National Capital Region Transportation Planning Board approves:

## Part A

1. The Air Quality Conformity Analysis Scope of Work, as described in Attachment 1; and
2. The project submissions of the TPB member agencies, listed in tables in Attachment 2, for inclusion in the Air Quality Conformity Analysis for the proposed FY 2023 2026 TIP and update to the Visualize 2045 Plan; and
3. The draft Round 9.2 Cooperative Forecasts of employment, population and households developed by COG's Planning Director's Technical Advisory Committee for use in the Air Quality Conformity Analysis, as described in Attachment 3.

# Substitute Resolution:

**NOW, THEREFORE, BE IT FURTHER RESOLVED THAT:** the National Capital Region Transportation Planning Board will initiate a full update to the Long-Range Transportation Plan upon completion and adoption of the Visualize 2045 Plan with a target completion date of 2024, and that—

## Part B

1. The development of such plan will include the consideration of multiple build scenarios and an analysis of each scenario's impact on the region's adopted goals and targets, including reduction of greenhouse gas emissions;
2. The development of such plan will be based on the concept of 'zero-based budgeting' where all projects, including those currently included in the Plan, must be resubmitted for consideration in such Plan, provided that projects currently under construction or currently funded with federal, state, regional, local or private funds shall be exempt from such requirement; and
3. TPB will use the above scenario analysis to inform the development of the 2024 and future updates of the Long-Range Transportation Plan.

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# Summary of Draft Round 9.2 Forecasts

## COG / TPB Planning Area (Thousands)

	<u>2020</u>	<u>2045</u>	2020 to 2045	
			<u>Number</u>	<u>Percent</u>
Employment	3,364.0	4,244.4	880.5	26%
Population	5,694.2	7,006.2	1,312.0	23%
Households	2,130.2	2,676.4	546.1	26%