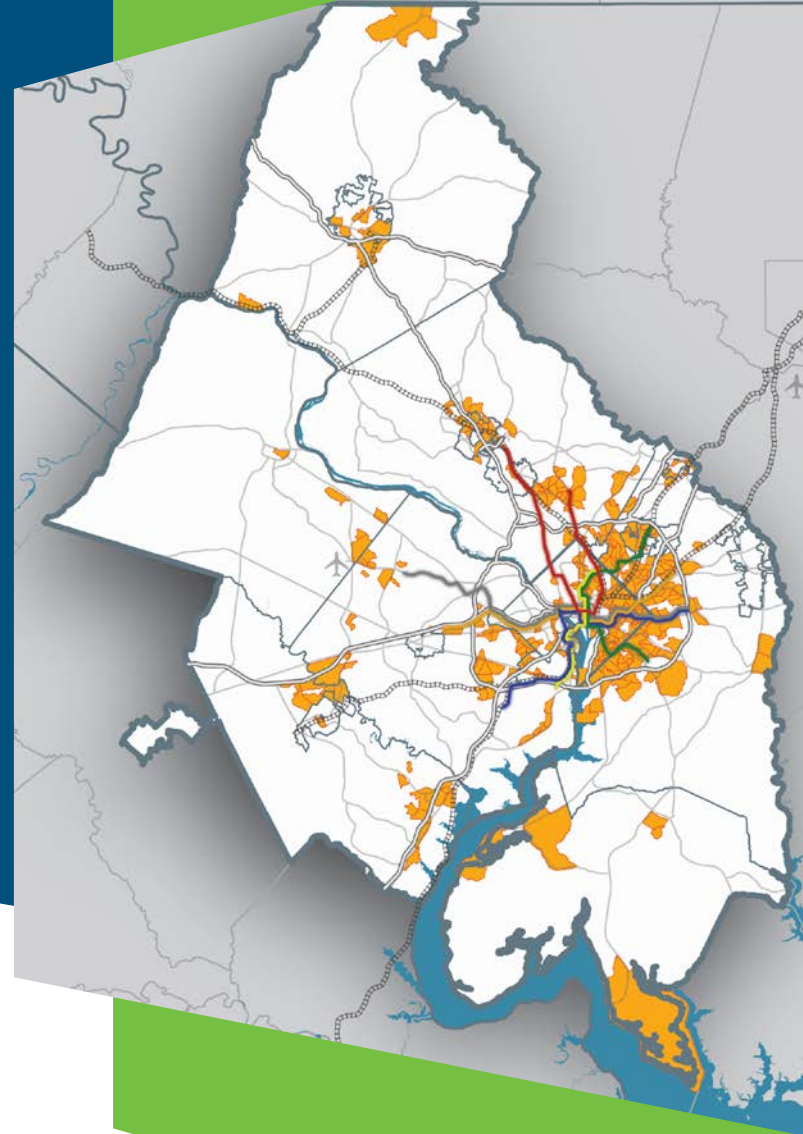


2022 Update to Visualize 2045, FY 2023-2026 TIP and the Air Quality Conformity Analysis

Jane Posey, TPB Transportation Engineer

MWAQC TAC

April 12, 2022



visualize
2045

A long-range
transportation plan
for the National
Capital Region

Air Quality Conformity



The 2022 Update to Visualize 2045 meets the federal Air Quality Conformity requirements—mobile source VOC and NOx emissions associated with the LRTP/TIP are below EPA approved motor vehicle emissions budgets.

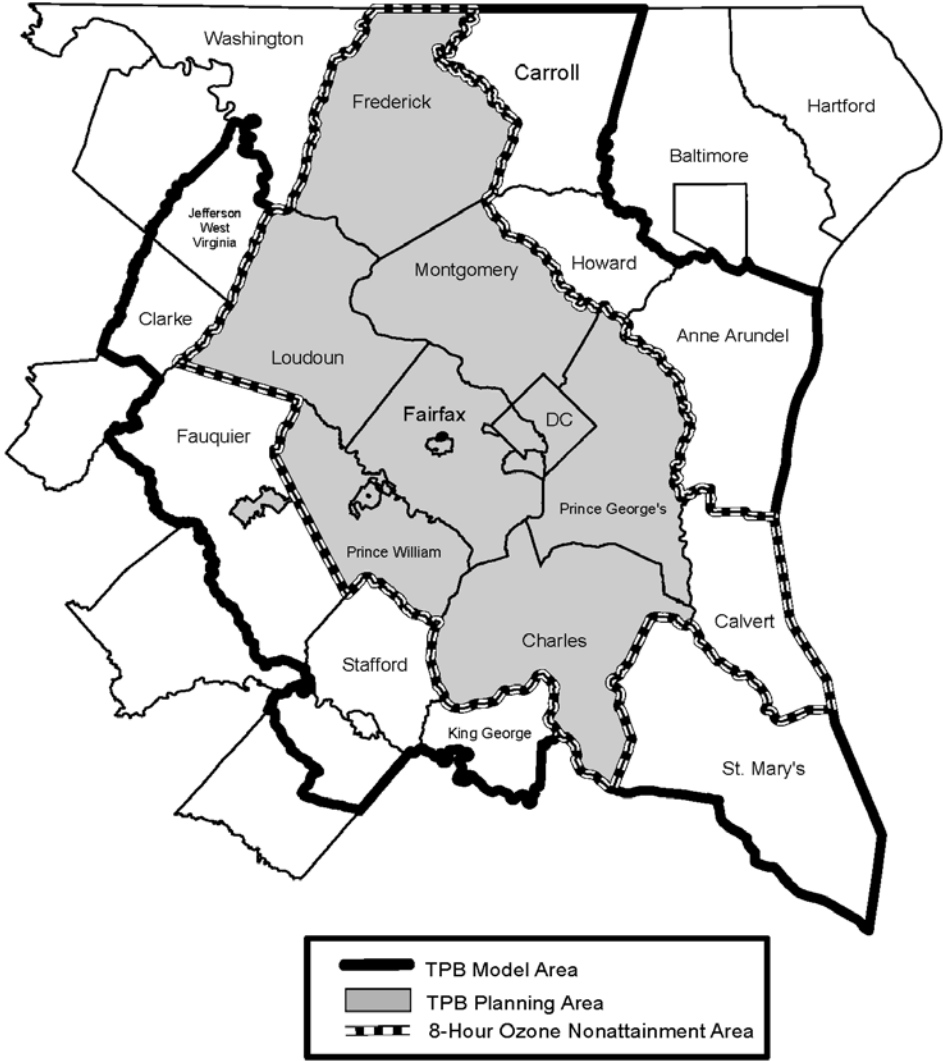
visualize
2045

2022 Update to Visualize 2045

- Washington Region's Long-Range Transportation Plan
- Federally mandated quadrennial update
- Originally developed in 2018
- Amended in 2020
- Updates to financial plan, demographics, modeling tools, projects/programs/policies
- Uses 2008 Ozone Maintenance Plan mobile emissions budgets

visualize2045.org

TPB Planning Areas



Pollutants

- Volatile Organic Compounds (VOC)
- Nitrogen Oxides (NO_x)

- Greenhouse Gases

NOTE: Greenhouse gases are analyzed to track regional trends.
They are not officially part of the conformity analysis.

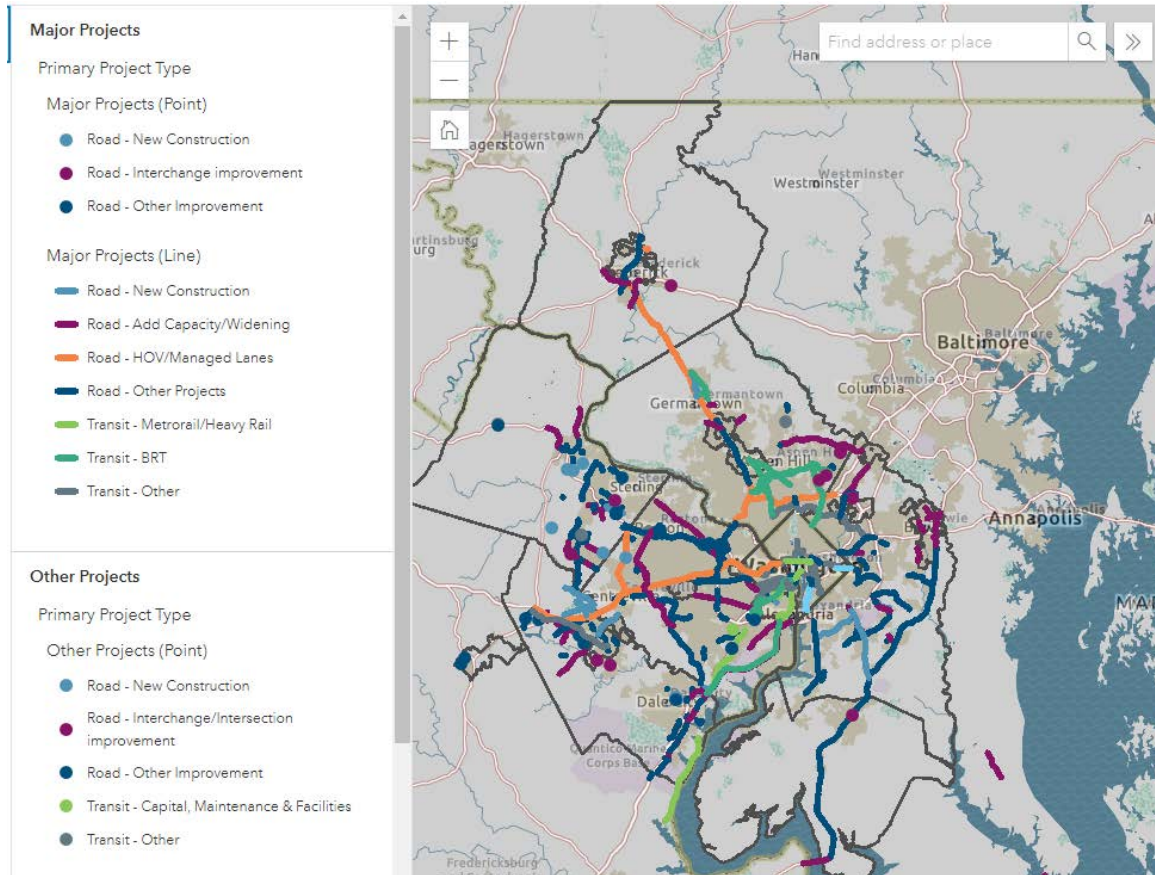
Analysis Years

2021, 2023, 2025, 2030, 2040, 2045

Key Technical Inputs and Tools

- “Regionally Significant” Transportation Projects - *NEW*
- Round 9.2 Cooperative Forecasts – *NEW*
- 2020 Vehicle Registration Data (VIN) - *NEW*
- Gen2/Version 2.4 Travel Demand Model - *NEW*
- EPA’s MOVES2014b Mobile Emissions Model

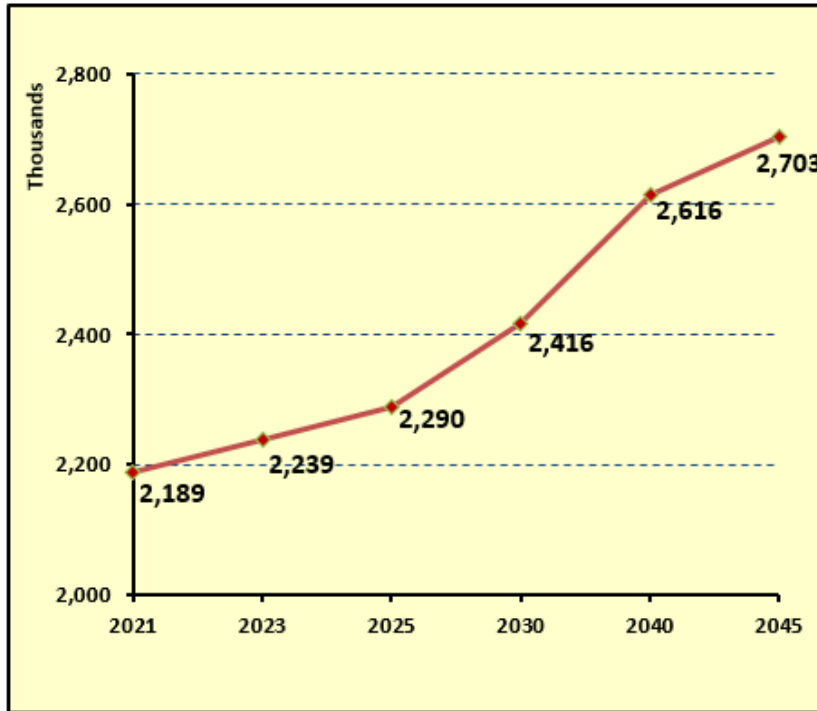
Visualize 2045 Interactive Project Map



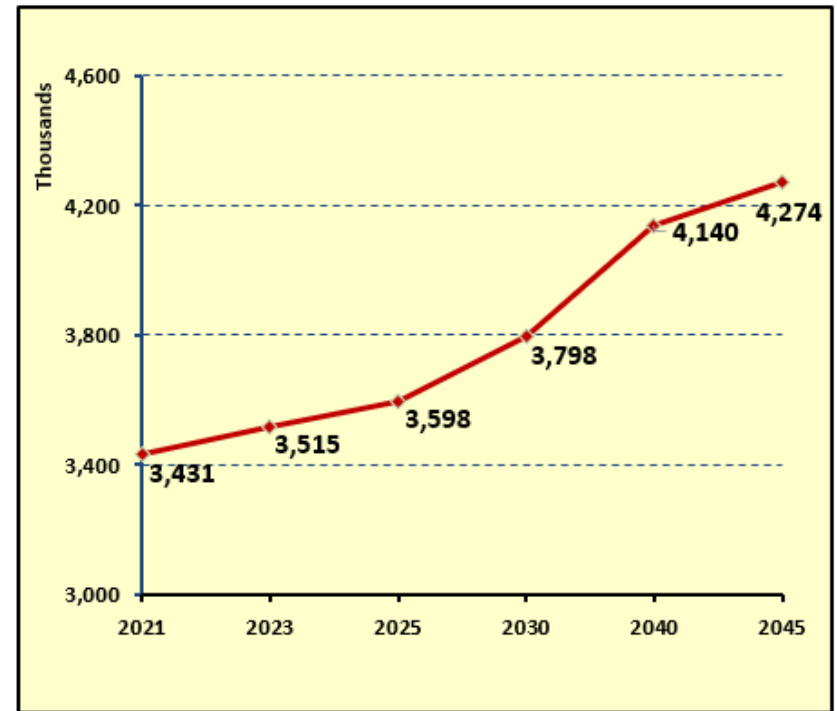
<https://www.mwcog.org/maps/map-listing/visualize-2045-project-map/>

Round 9.2 Cooperative Forecasts

Households (in thousands)



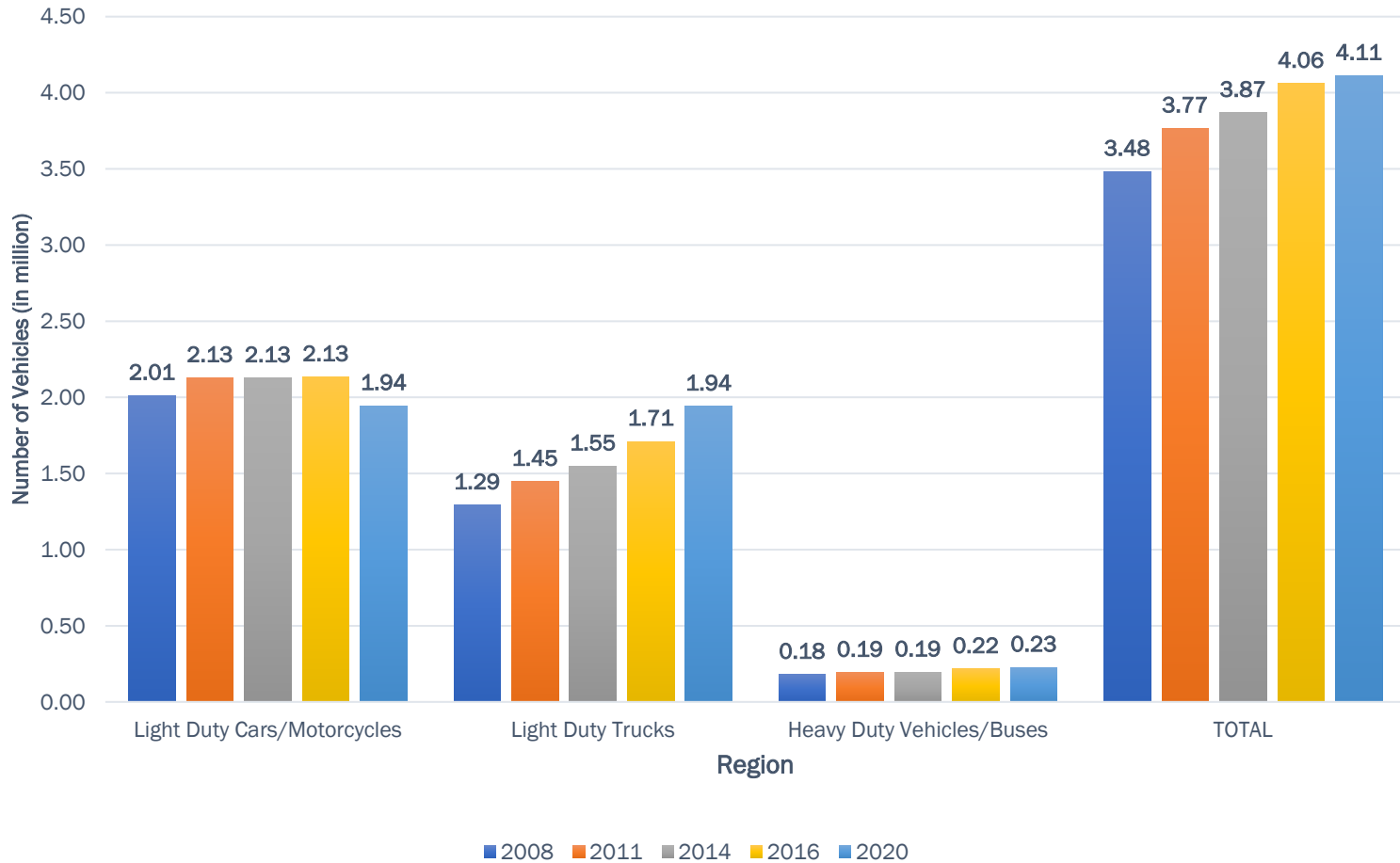
Employment* (in thousands)



Note: Values are for the non-attainment area.

*Includes Employment Definition Adjustment to Ensure Consistent Definition of Employment used Throughout Modeled Area

Vehicle Fleet: Historical Growth



Vehicle Fleet: Average Age by Year

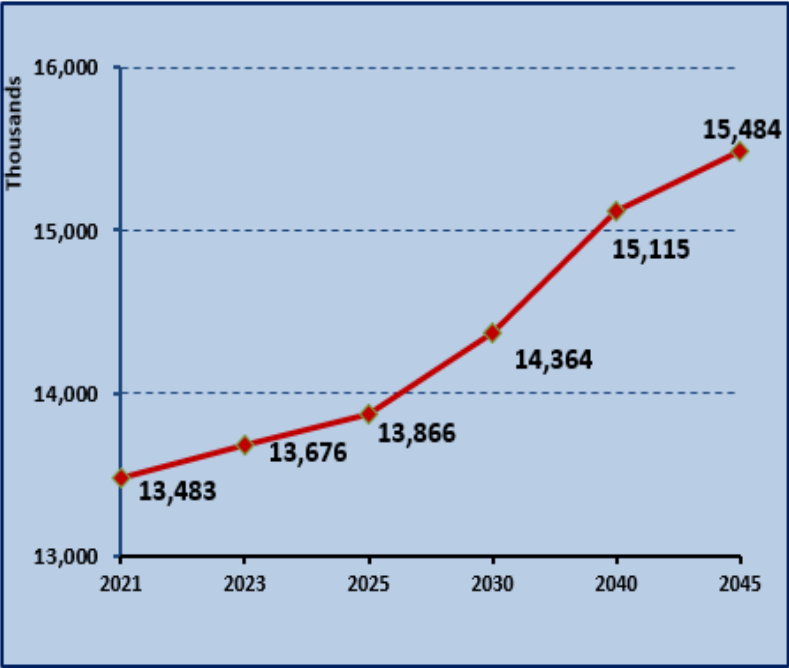
Year	Light Duty Vehicles* (LDV)	Light Duty Trucks (LDT)	Heavy Duty Vehicles (HDV)	All Vehicle Types
2008	8.51	7.53	9.21	8.18
2011	9.25	8.55	10.56	9.05
2014	9.62	9.09	11.30	9.49
2016	9.32	8.68	11.29	9.16
2020	10.05	8.74	11.51	9.51

Travel Demand Model Assumptions

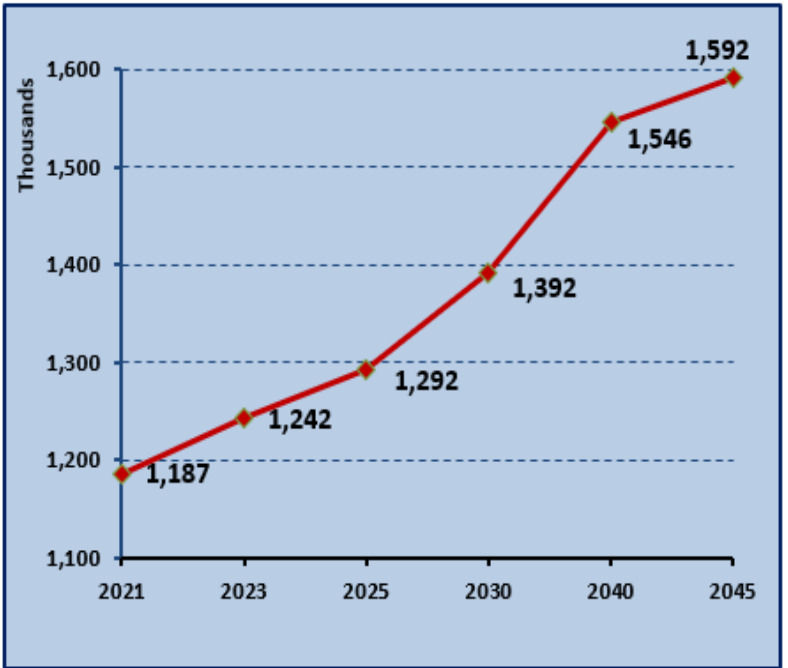
- Validated and reflective of pre-COVID conditions
- Transit
 - The base transit reflects December 2019 schedules with transit service projects built upon it
 - Transit fares are current to June 2021 but do not include pilot program or COVID-related free fares
- Highway tolls in the travel model are current to January 2021
- Vehicle fleet data are current to December 2020

Travel Model Results

Vehicle Trips
(in thousands)



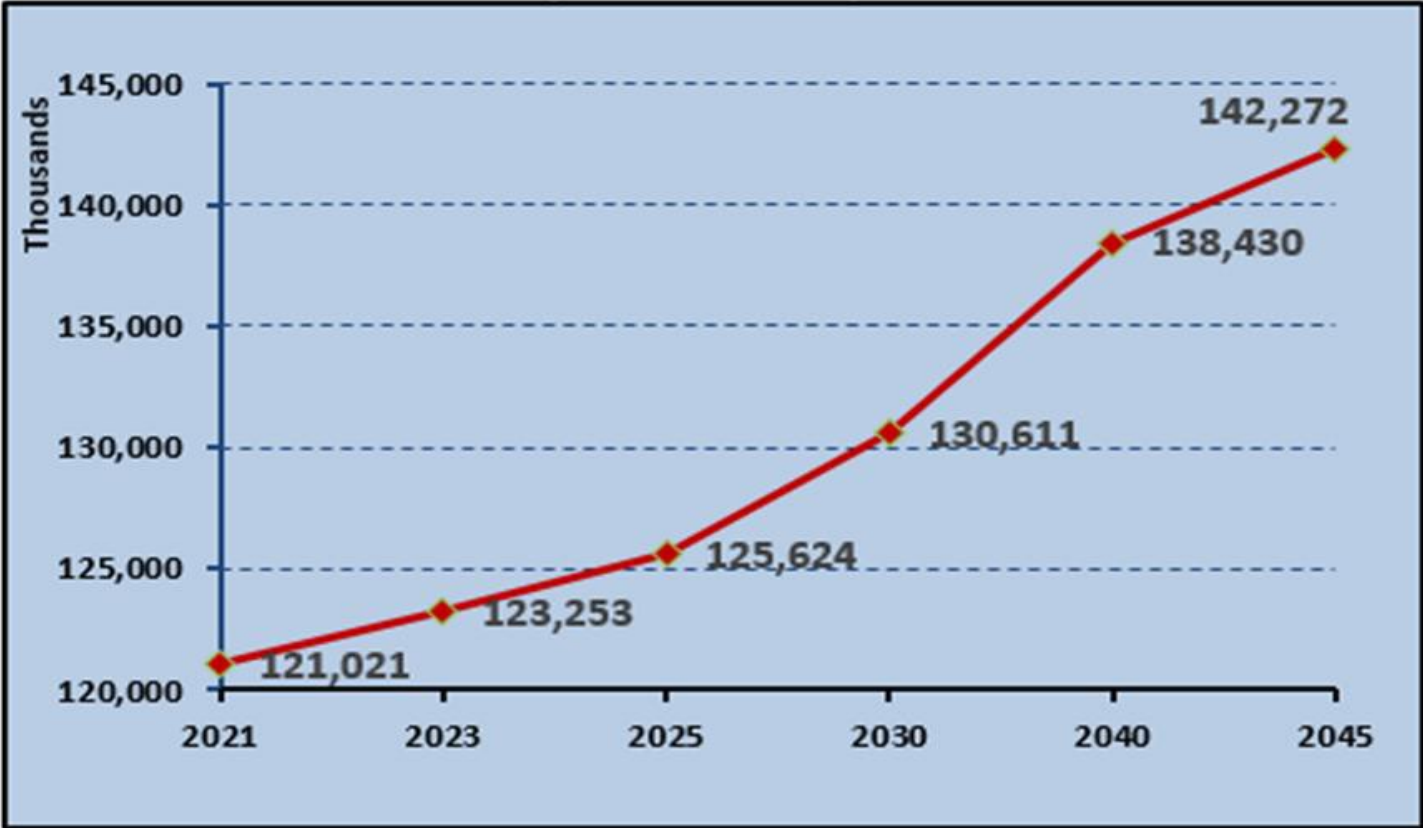
Transit Trips
(in thousands)



NOTE: Daily trips are for the non-attainment area

Travel Model Results

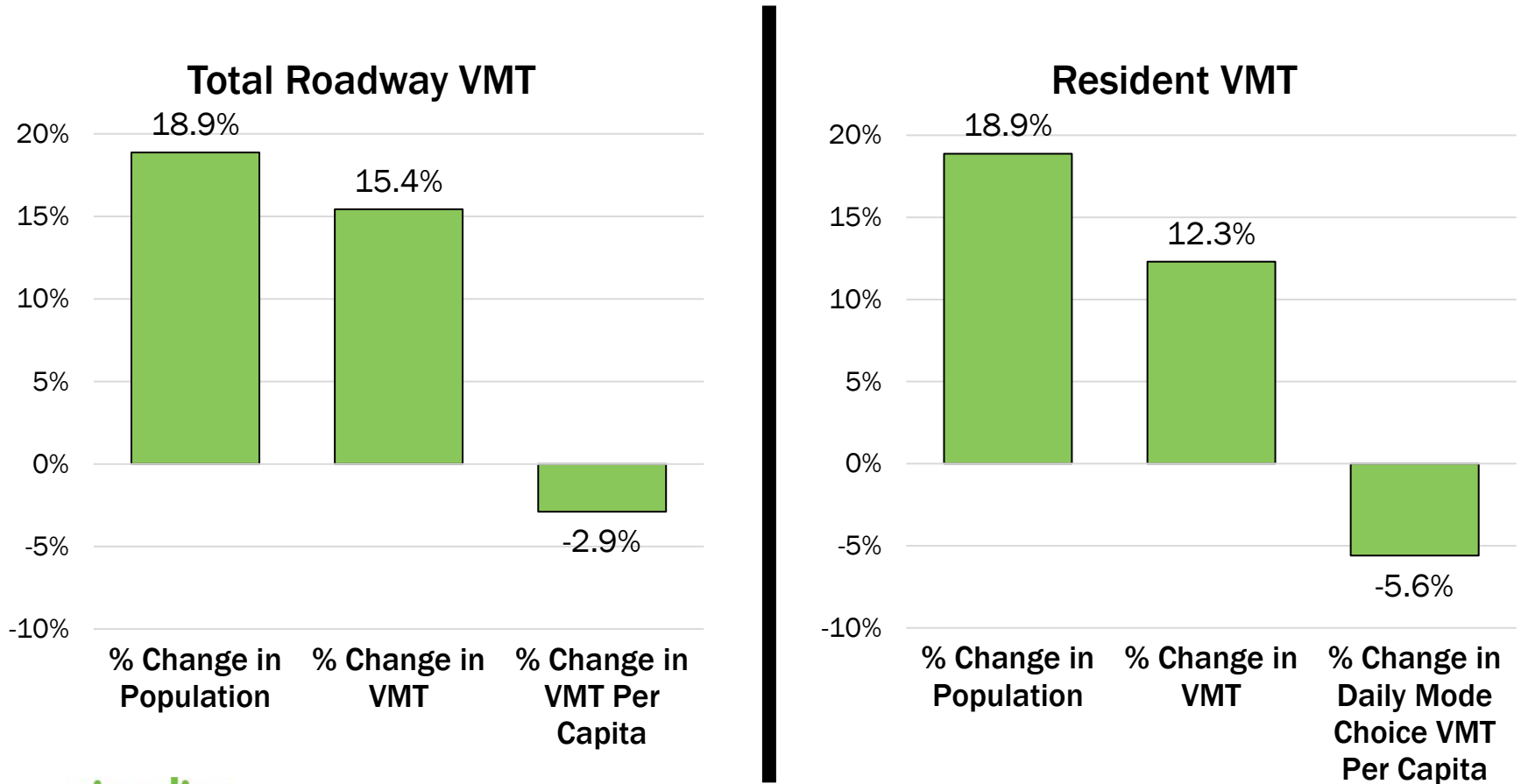
Daily Vehicle Miles Traveled (in thousands)



NOTE: VMT is for the non-attainment area

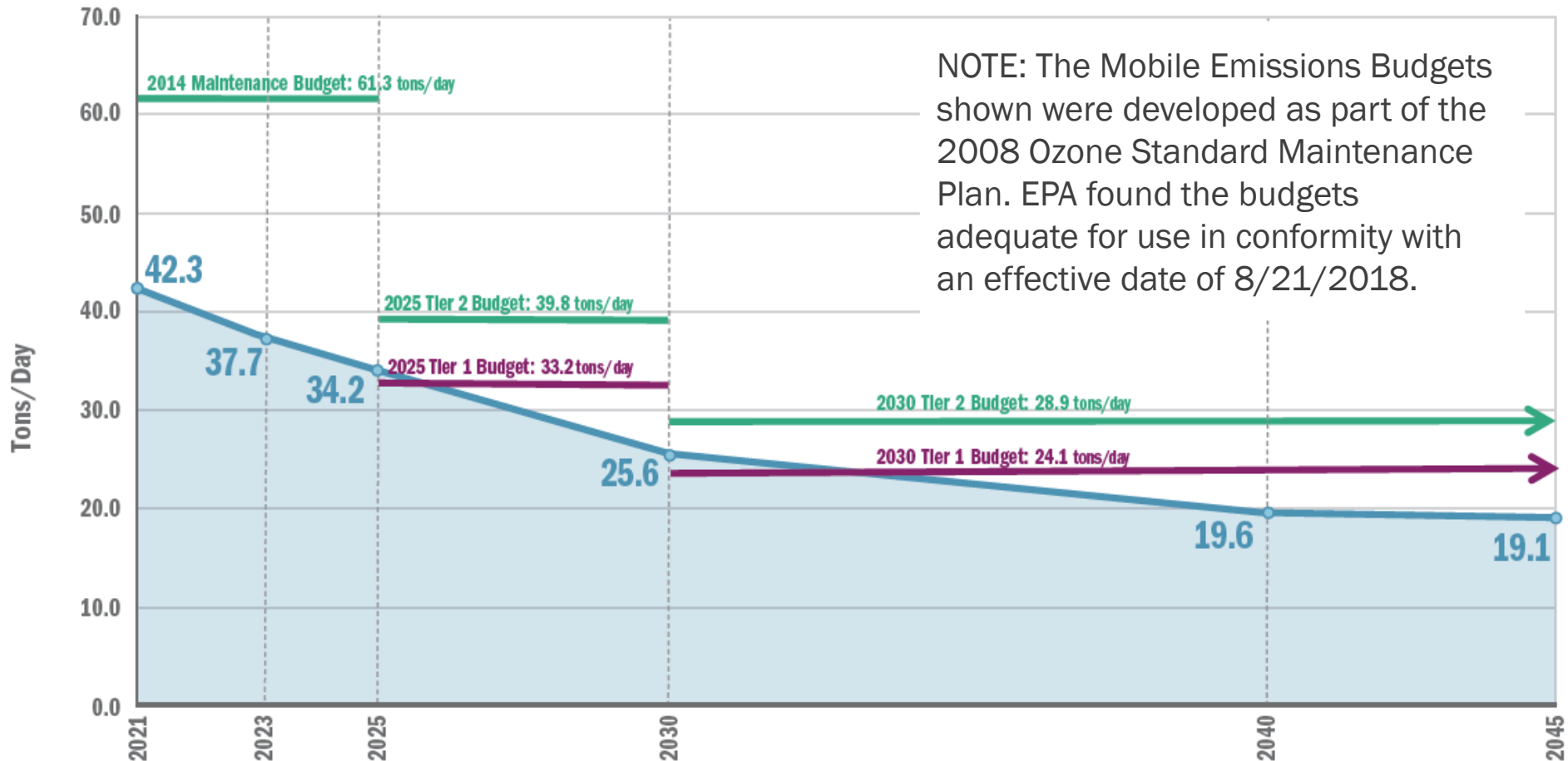
Driving in the Region to Decline Per Capita

VMT per capita of region residents predicted to decline by more than 5% between 2023 and 2045



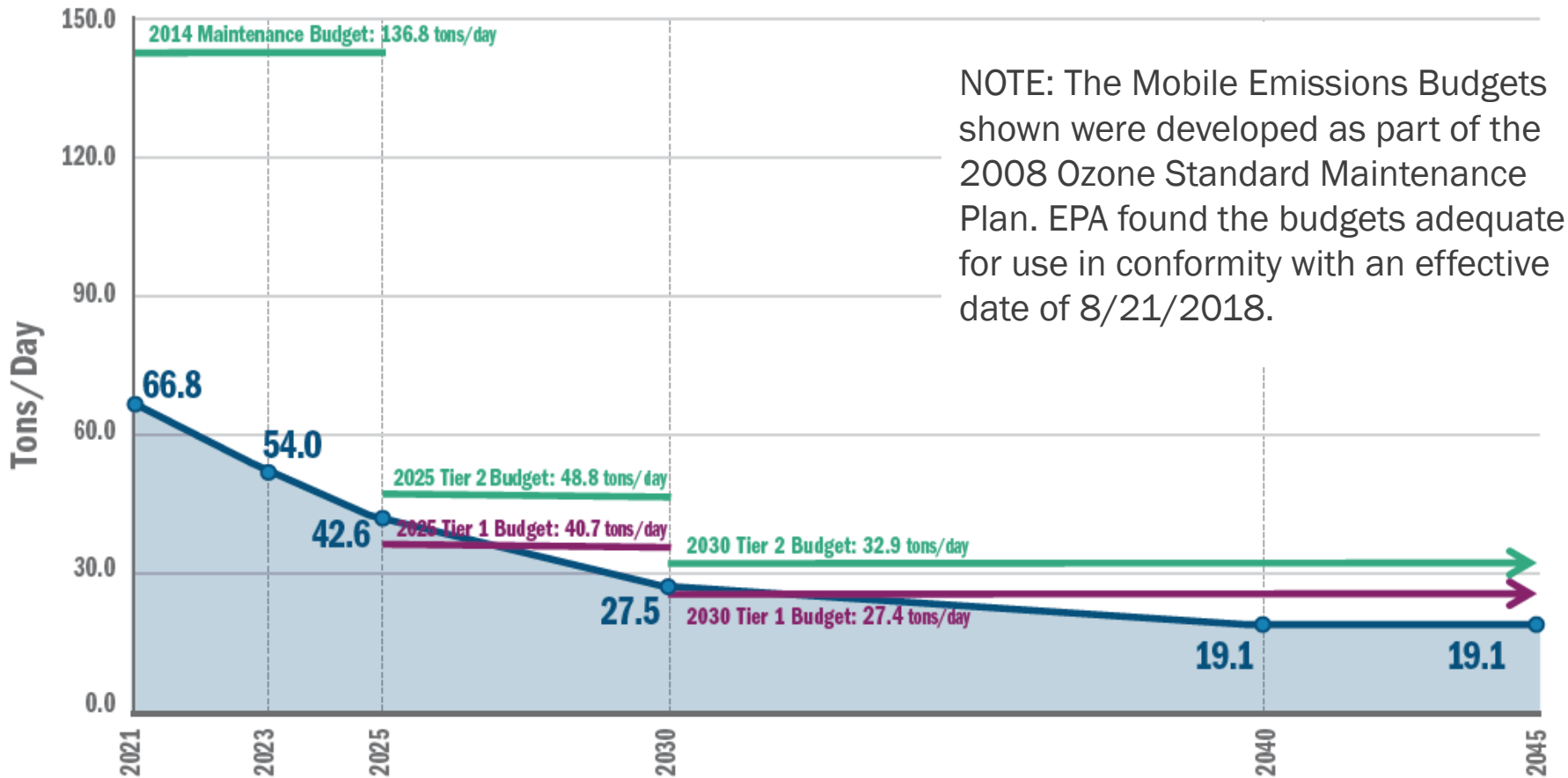
Air Quality Conformity

2022 Update to Visualize 2045 Air Quality Conformity Mobile Source Emissions and Mobile Emissions Budgets Ozone Season VOC



Air Quality Conformity

2022 Update to Visualize 2045 Air Quality Conformity Mobile Source Emissions and Mobile Emissions Budgets Ozone Season NOx



Air Quality Conformity

From the August 6, 2018 Federal Register – Notice of Adequacy Finding for the Mobile Emissions Budgets in the 2008 Ozone Maintenance SIP:

“The MVEBs ...that include a transportation buffer 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”

Air Quality Conformity

	Maintenance SIP Mobile Budgets	2022 Update to Visualize 2045 Conformity Emissions
Cooperative Forecasts	Round 9.0	Round 9.2
Vehicle Fleet	2014 VIN	2020 VIN
Travel Demand Model	Version 2.3.66	Version 2.4
Project Inputs	2016 CLRP	2022 Update to Visualize 2045
Metrorail Constraint	yes	no

Air Quality Conformity: Findings

- ✓ Ozone Season VOC within Mobile Budget
- ✓ Ozone Season NOx within Mobile Budget

Forecast Greenhouse Gases

Greenhouse Gas Mobile Source Emissions CO₂e and CO₂e Per Capita

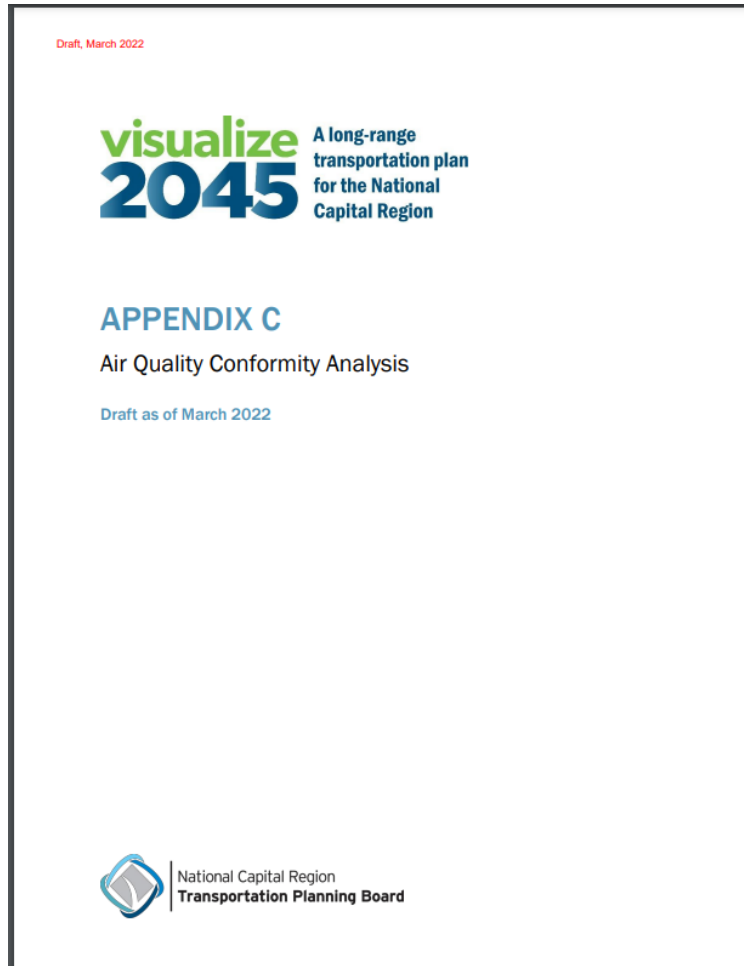


*NOTE: 2005 and 2012 are historic estimates.

Next Steps

- Comment Period: April 1 – May 1, 2022
- Presentation to TPB: April 20
- Presentation of Comments to TPB: May 18
- TPB Asked to Approve the Conformity Analysis, the 2022 Update to Visualize 2045 Transportation Plan, and the FY2023-2026 TIP: June 15

Summary Report



https://visualize2045.org/wp-content/uploads/2022/03/Appendix-C-Air-Quality-Conformity-Summary_Draft-Final.pdf

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QUESTIONS?

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2045**