REQUEST FOR 2023 VEHICLE REGISTRATION DATA

Visualize 2050 and Other Modeling Activities

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Presentation Purpose – Why Now?

- Vehicle registration data, a.k.a. vehicle identification number (VIN) data, provide information about the composition of the current motor vehicle fleet in metropolitan Washington and are used to create key inputs for COG's mobile emissions model (MOVES)

- TPB staff periodically obtains vehicle registration data from departments of motor vehicles through the state air agencies and COG's Dept. of Environmental Programs (DEP) to ensure that MOVES inputs are current for the purposes of emissions forecasting

- Requested 2023 vehicle registration data will be used in various calendar year 2024 activities, including:

  - Upcoming air quality conformity analysis of the Visualize 2050 Long-Range Transportation Plan (ozone-season pollutants),

  - Greenhouse gas (GHG) analyses, and

  - Upcoming State Implementation Plan (SIP) activities related to the 2015 Ozone National Ambient Air Quality Standards (NAAQS) (depending on timing)

Why are Vehicle Characteristics Important?

- The **size, composition,** and **age** of the vehicle fleet are important determinants of mobile source emissions calculations

- The current mobile emissions model (MOVES3.0.4) requires two key vehicle-related inputs to be specified by jurisdiction, obtained from vehicle registration data:

  - The number of vehicles by 13 vehicle classes; and

  - The age distribution by vehicle class

What are Vehicle Registration Data?

- A complete inventory of private, public, and commercial registered motor vehicles maintained by departments of motor vehicles (DMVs) at a specific point in time

- Data are obtained for specific jurisdictions that comprise the Ozone Nonattainment Area

- Registration data is essentially list of Vehicle Identification Numbers (or VINs)

What are Vehicle Identification Numbers (VINs)?

- Can be viewed as the "fingerprint" of each vehicle

- A standardized 17-character code that indicates the characteristics of each vehicle including manufacturer, model year, engine type, weight, vehicle type, and fuel type

- VINs were standardized in 1981 by the National Highway Traffic Safety Administration (NHTSA)

- *VIN data analysis requires substantial staff effort:*

  - *data cleaning;*

  - *decoding (i.e., using the VINs to identify the key vehicle attributes, such as engine type, engine size, etc.); and*

  - *software and technical analysis.*

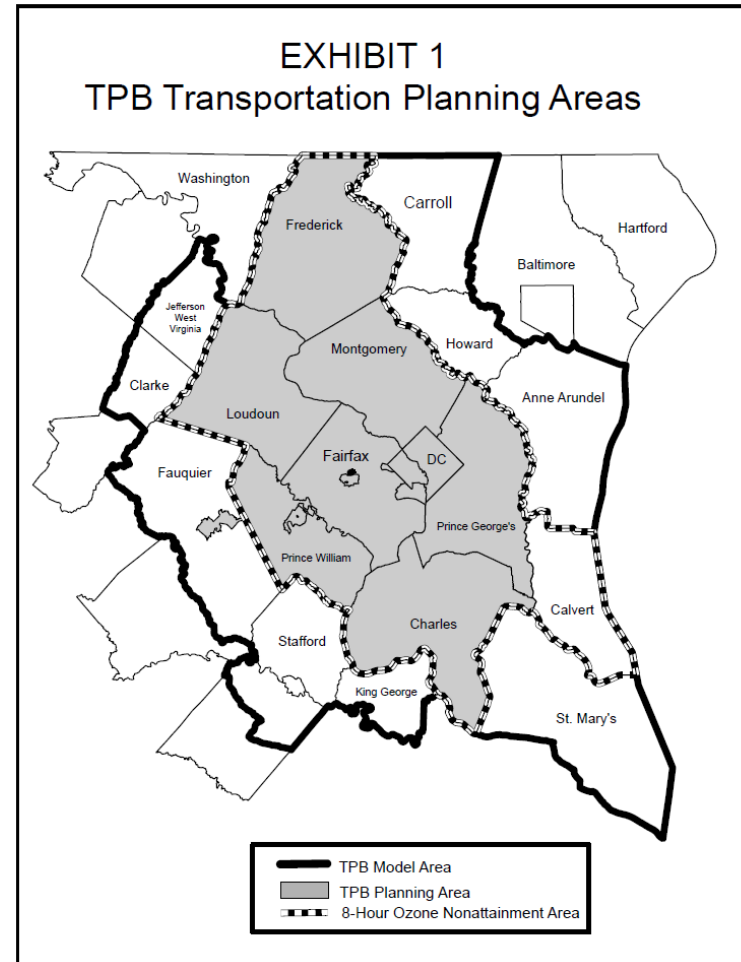# History of TPB Staff's Vehicle Registration Data Analysis

- Vehicle registration data have been collected regularly and analyzed since 2008

- Previous registration data collections corresponded to:

  - July 1, 2008

  - July 1, 2011

  - July 1, 2014

  - December 31, 2016

  - December 31, 2020 for Maryland and Virginia; July 1, 2020 for District of Columbia

- Desired data for future analyses:

  - **December 31, 2023 for all jurisdictions**

Study Area

VIN data are collected for the **Ozone Nonattainment Area** (dashed line on map):

- District of Columbia
- Maryland:
  - Calvert County
  - Charles County
  - Frederick County
  - Montgomery County
  - Prince George's County
- Virginia:
  - Arlington County
  - City of Alexandria
  - Fairfax County and Cities
  - Loudoun County
  - Prince William County and Cities

EXHIBIT 1
TPB Transportation Planning Areas

Legend:
— TPB Model Area
▨ TPB Planning Area
▪▪▪ 8-Hour Ozone Nonattainment Area

Next Steps

- COG staff will make a formal request for the **2023 VIN data** to the state air agencies later this year

- Asking to receive a "clean" dataset by March 1, 2024

- Apply in various calendar year 2024 activities, including:

  - Air quality conformity analysis of the constrained element of the Visualize 2050 Long-Range Transportation Plan

  - Visualize 2050 GHG Analysis

  - 2015 National Ambient Air Quality Standards Ozone Maintenance SIP (depending on timing)

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