



# PM2.5 Maintenance Plan

## Important Elements

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# PM2.5 Designation (2005)

- 1997 EPA set standard at
  - 15.0 ug/m<sup>3</sup> (annual) ---now 12
  - 65 ug/m<sup>3</sup> (24 hour average)---now 35
- EPA designated the Washington, DC-MD-VA as “nonattainment” for the standard in 2005
- Washington, DC-MD-VA region submitted PM2.5 SIP in 2007

# Request & Maintenance Plan

- Redesignation Request

Base Year 2002, Attainment Year 2007

Demonstrate decline in PM<sub>2.5</sub> from 2002-2007

Maintenance Plan

Demonstrate compliance ten years into future

2007, 2017, 2025

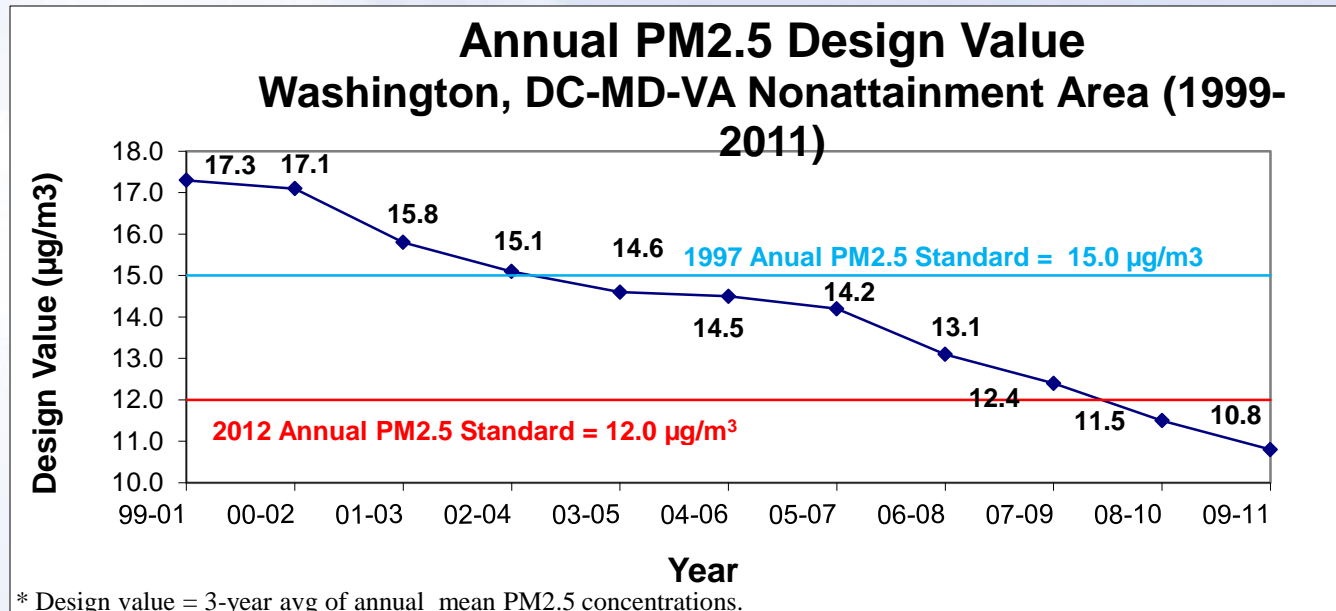
Contingency triggers, Contingency measures

# What's in the PM2.5 Maintenance Plan ?

- **Air Quality Data**
  - Air quality data to show compliance with the 1997 PM2.5 standard
- **Emissions Inventories**
  - Demonstrate even lower emissions in future
- **Mobile Budgets**
  - Mobile emissions ceiling for transportation conformity purposes
- **Contingency Measures**
  - In case region exceeds PM2.5 standard in future, these measures would be implemented
- **State Agreement**
  - Agreement between DDOE, MDE, and VDEQ to implement control measures and plans to improve air quality in future

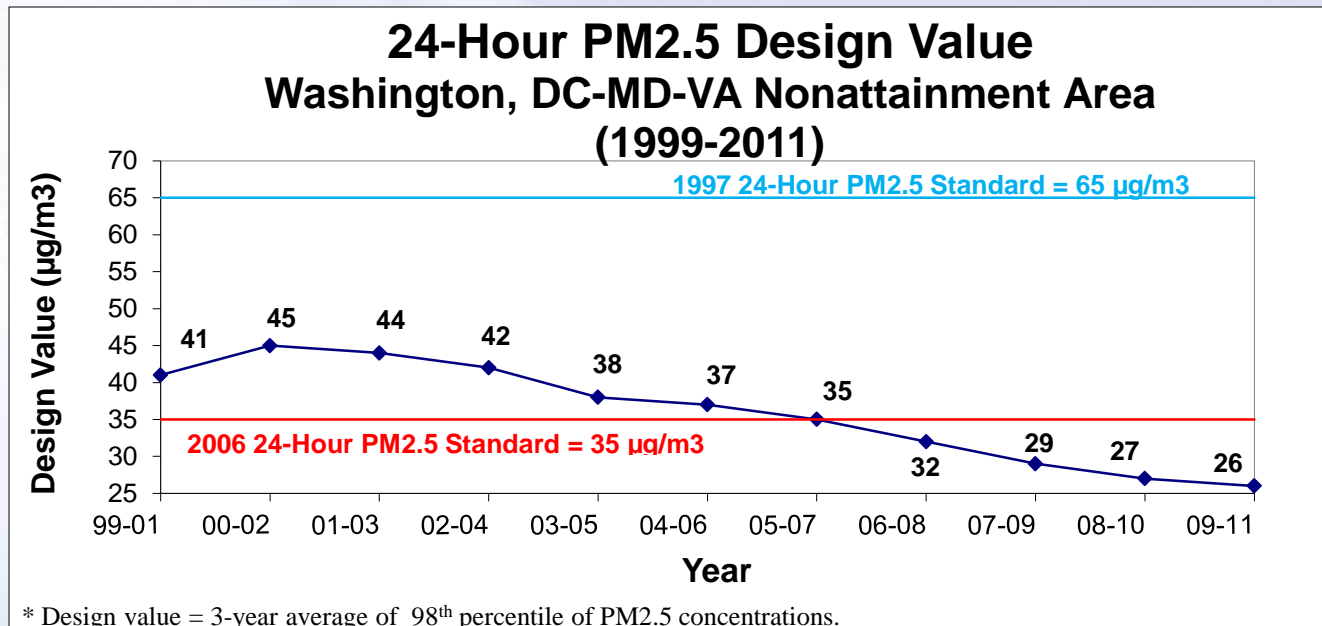
# Trend in Ambient PM2.5 Levels

## Washington DC-MD-VA PM2.5 Nonattainment Area



# Trend in Ambient PM2.5 Levels

## Washington Dc-MD-VA PM2.5 Nonattainment Area



# Redesignation Request & Maintenance Plan Timeframe

Base Year

Attainment  
Year

Interim Year

Out Year

2002

2007

2017

2025

Redesignation Request

Maintenance Plan



# Emissions Inventories

2002, 2007, 2017, 2025



Point Source (Electric Generating Units & Non-EGU)



Area Source (residential wood burning, road dust)



Nonroad Source (lawn mowers, marine engine, airport, railroad)

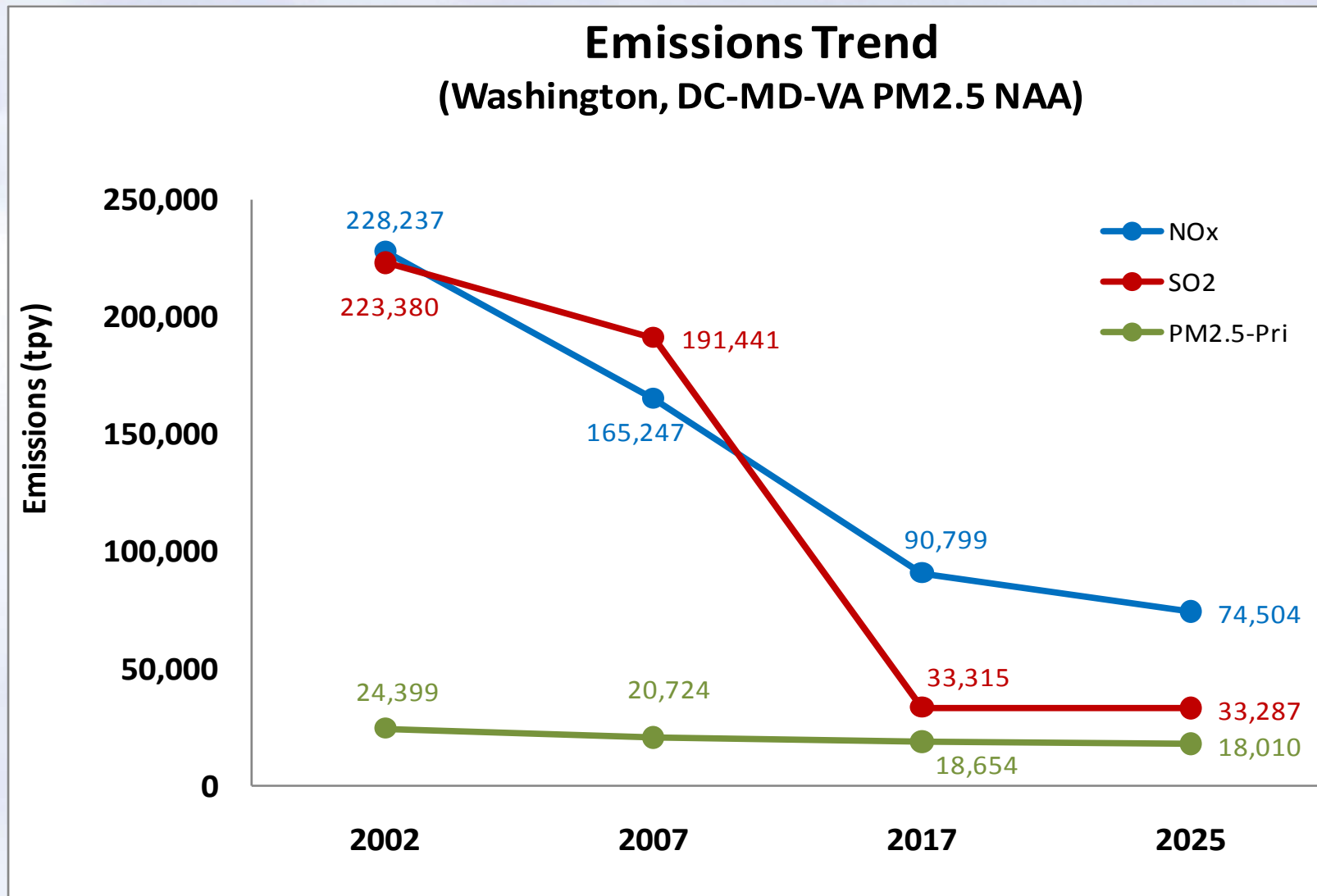


Onroad Source (motor vehicles)





# PM<sub>2.5</sub> Emissions – Lower in Future



2002 data – PM2.5 Attainment SIP (March 2008)

# How Do Transportation Plans Relate to the SIP?

- The SIP sets the *mobile budget*, the maximum allowable emissions from vehicles.
- TPB must ensure that the regional transportation plan does not result in emissions above this level.

## Maintenance Plan/SIP

TIP

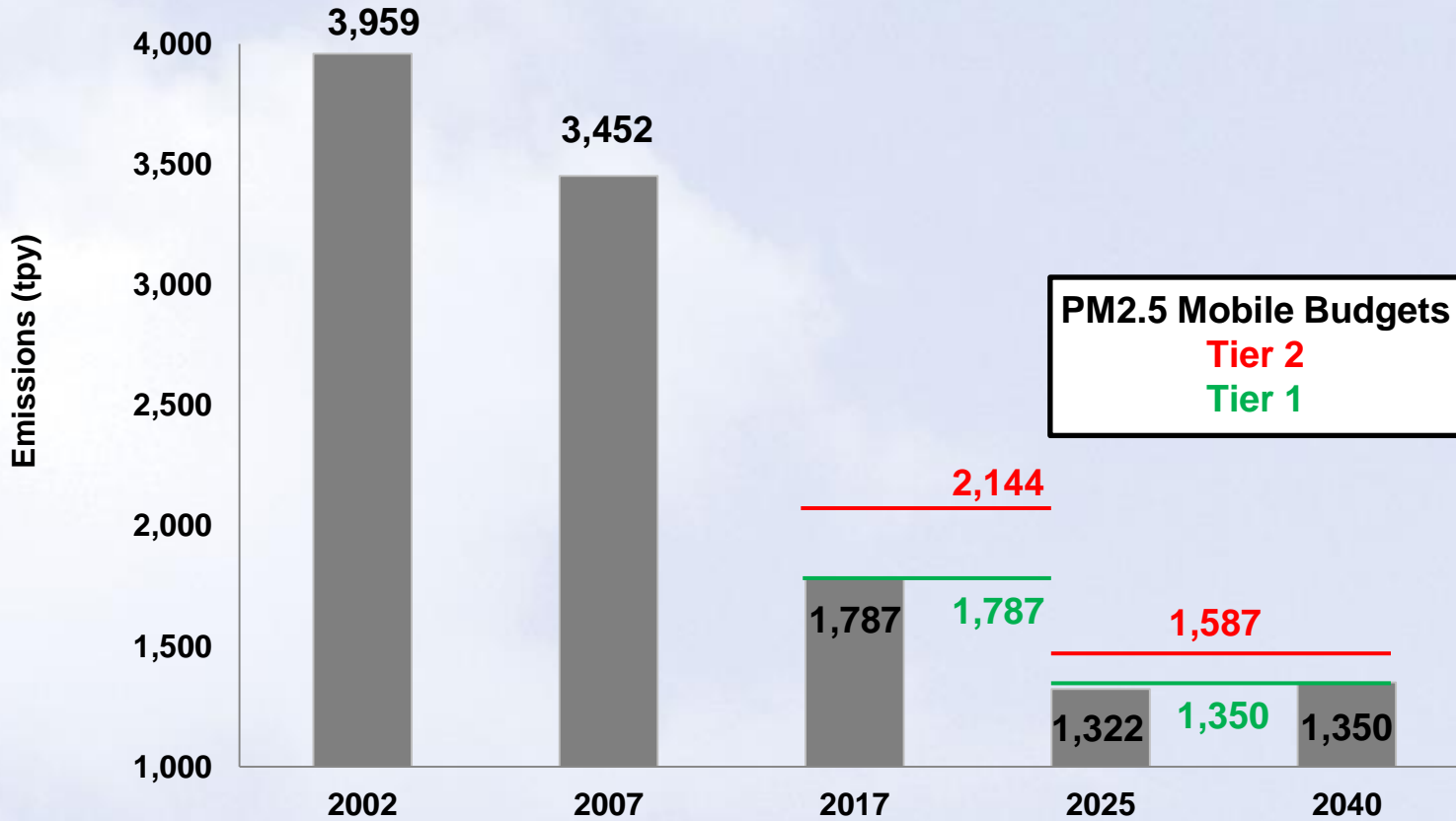


Mobile

# Maintenance Plan: Mobile Budgets

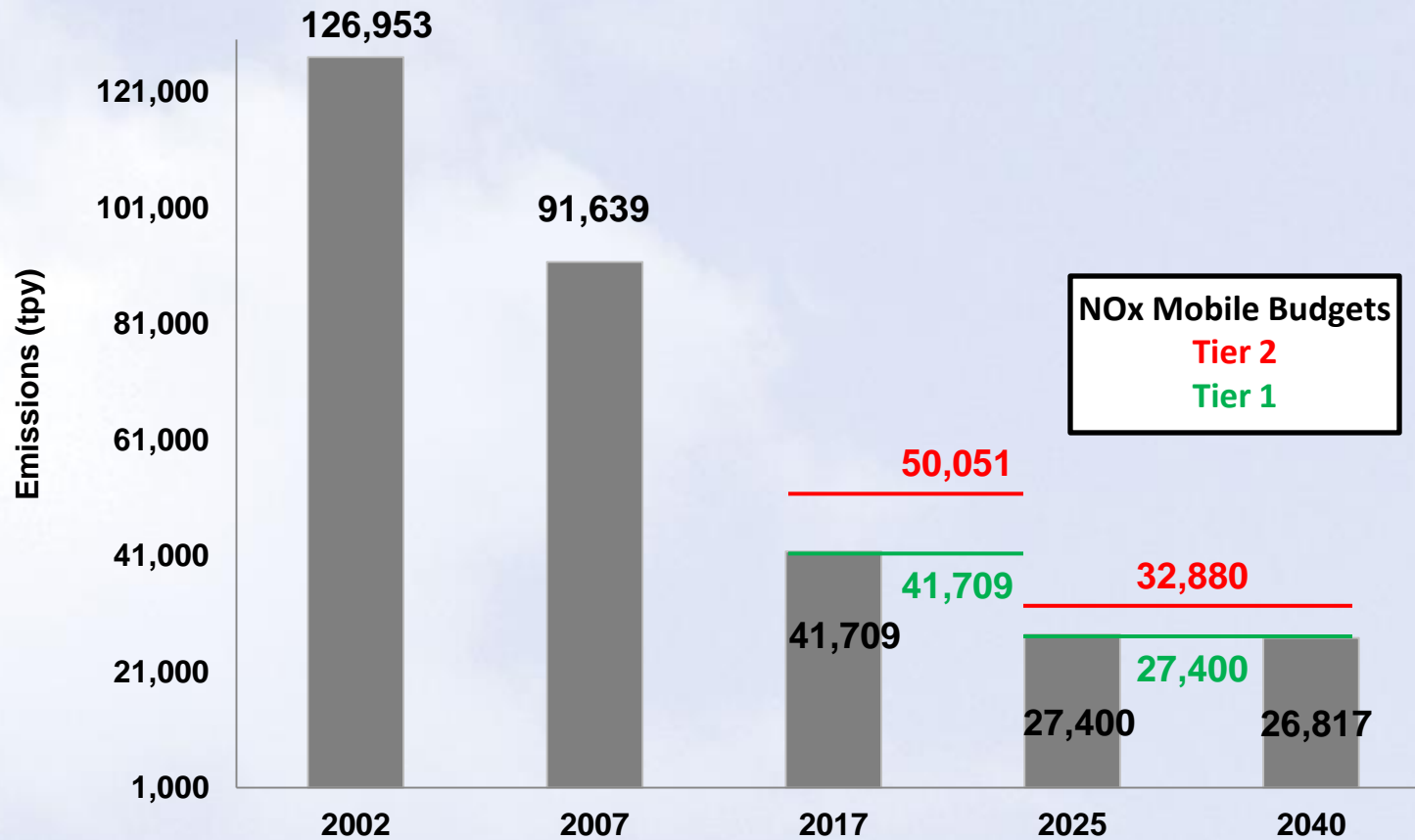
- The Maintenance Plan sets mobile emissions ceilings (“budgets”) for 2017 & 2025 for
  - NO<sub>x</sub>
  - PM<sub>2.5</sub>
- Mobile budgets
  - Two tiered approach: Tier 1 & Tier 2

# Onroad Mobile PM2.5 Emission (Washington, DC-MD-VA PM2.5 NAA)



Tier 2 budgets are 20% above mobile emissions levels

# Onroad Mobile NOx Emission (Washington, DC-MD-VA PM2.5 NAA)



Tier 2 budgets are 20% above mobile emissions levels

# Which mobile budget is used?

- Tier 1 – Applicable when maintenance plan budgets are determined to be adequate or are approved.
- Tier 2 – Applicable if either model changes or vehicle fleet turnover leads to increase in motor vehicle emissions above the Tier 1 budgets.
- Determination to apply Tier 2 mobile budgets
  - Interagency consultation (State Air & Transportation agencies, TPB)
  - To be fully documented in the first conformity analysis that utilizes the Tier 2 budgets

# Maintenance Plan: Contingency Measures

- **Contingency Measures**
  - Emissions controls to be implemented if region exceeds PM2.5 standard in future
    - PM2.5/NOx/SO2 Reasonable Available Control Measure (RACM) Determination (SO2 RACM only in DC & VA)
    - Non Road Diesel Emission Reduction Strategies
    - Low Sulfur Home Heating Oil Requirements (DC & MD only)
    - Alternative Fuel and Diesel Retrofit Programs for Fleet Vehicle Operations
    - Concrete Manufacturing – Wet Suppression Upgrade Requirements



# Maintenance Plan: State Agreement

- 15% emission reduction plan, potential strategies for current ozone standard
  
- At least five new regulations in DC & MD to be adopted
  - Low sulfur home heating fuel
  - Enhanced controls on consumer products
  - Enhanced controls on industrial adhesives
  - Nonroad engine idling control
  - Tougher controls on small boilers (diesel generators)
  
- Remote sensing program for onroad vehicles & voluntary EE/RE programs in VA
  
- Re-evaluation of PM2.5 mobile budgets in 2015 and 2018 with new version of MOVES model

## PM<sub>2.5</sub> Redesignation Request and Maintenance Plan

<http://www.mwcog.org/environment/air/downloads/PM/default.asp>