



PM2.5 Maintenance Plan

Important Elements

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PM2.5 Designation

- 1997 EPA set standard at
 - 15.0 $\mu\text{g}/\text{m}^3$ (annual)
 - 65 $\mu\text{g}/\text{m}^3$ (24 hour average)
- 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 PM2.5 from 2002-2007

Maintenance Plan

Demonstrate compliance ten years into future

2007, 2017, 2025

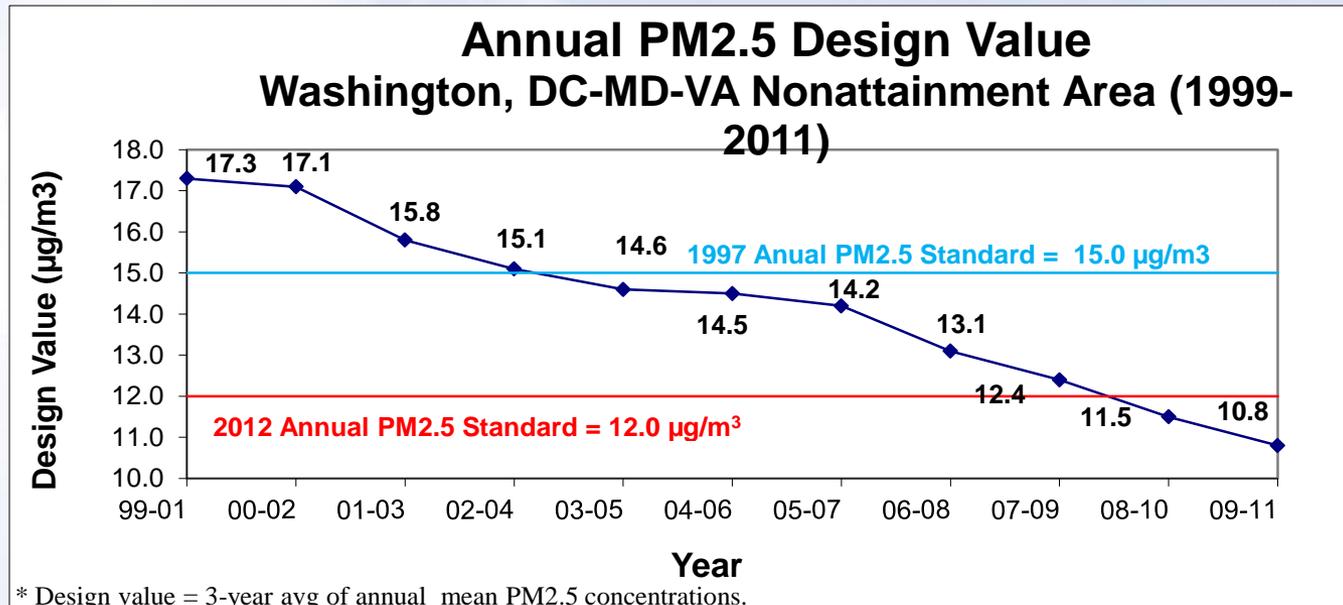
Contingency triggers, Contingency measures

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**
 - Continued emissions reduction in future
- **Mobile Budgets**
 - Mobile emissions ceiling for transportation conformity purposes
- **Contingency Measures**
 - Emissions controls to be implemented if region exceeds PM2.5 standard in future
- **State Agreement**
 - Agreement between DDOE, MDE, and VDEQ to implement control measures and plans to improve air quality in future

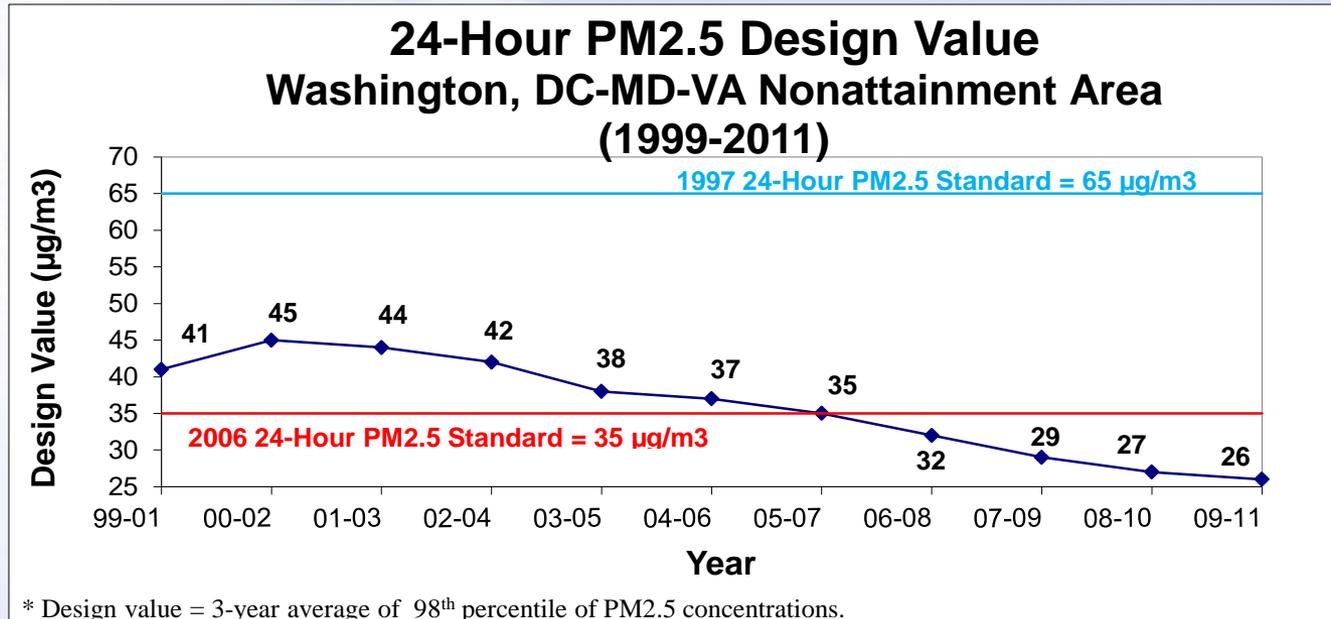
Trend in Ambient PM2.5 Levels

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)



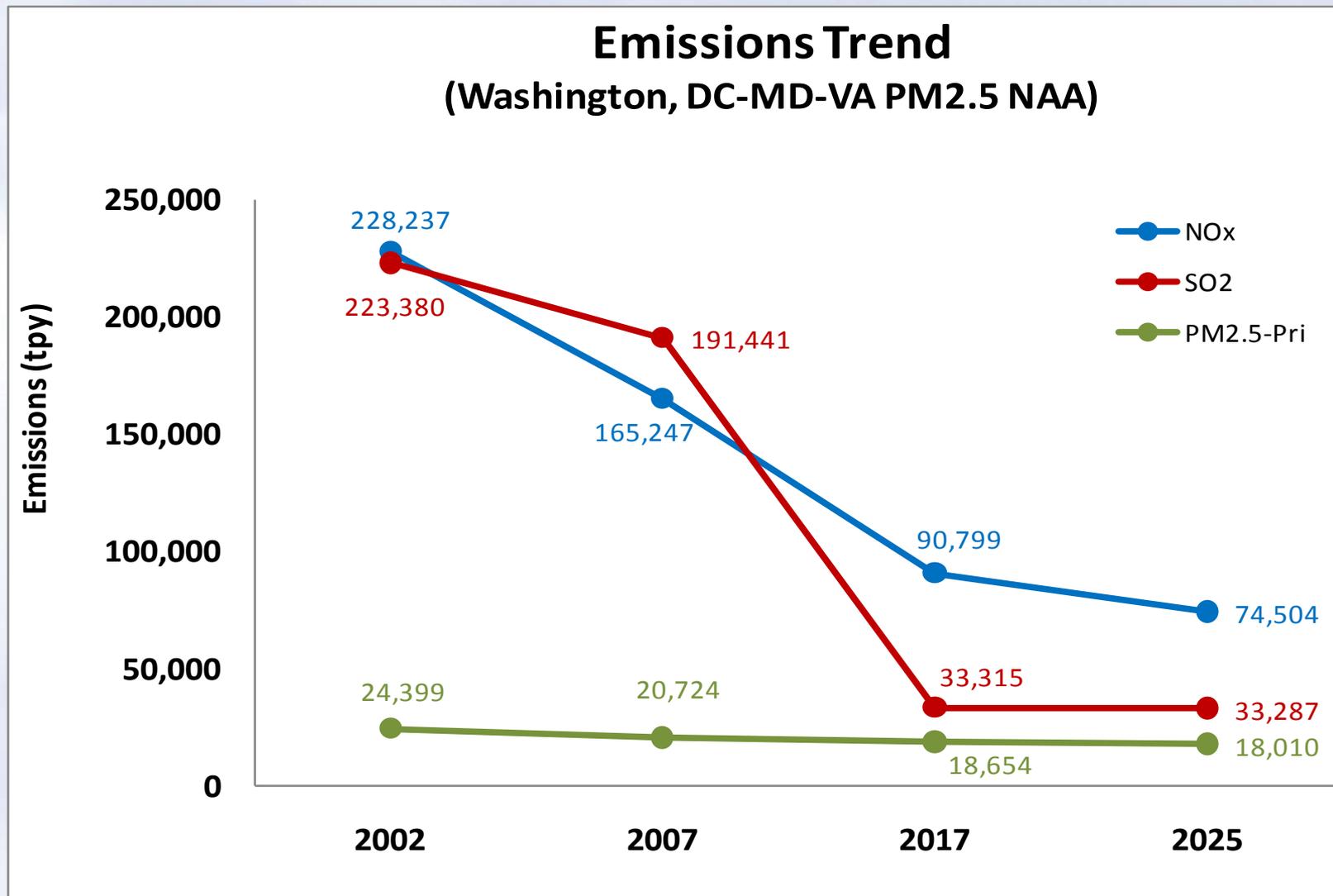
Nonroad Source (lawn mowers, marine engine, airport, railroad)



Onroad Source (motor vehicles)



Emissions Trends, NOx, SO2, PM2.5 2007-2025



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

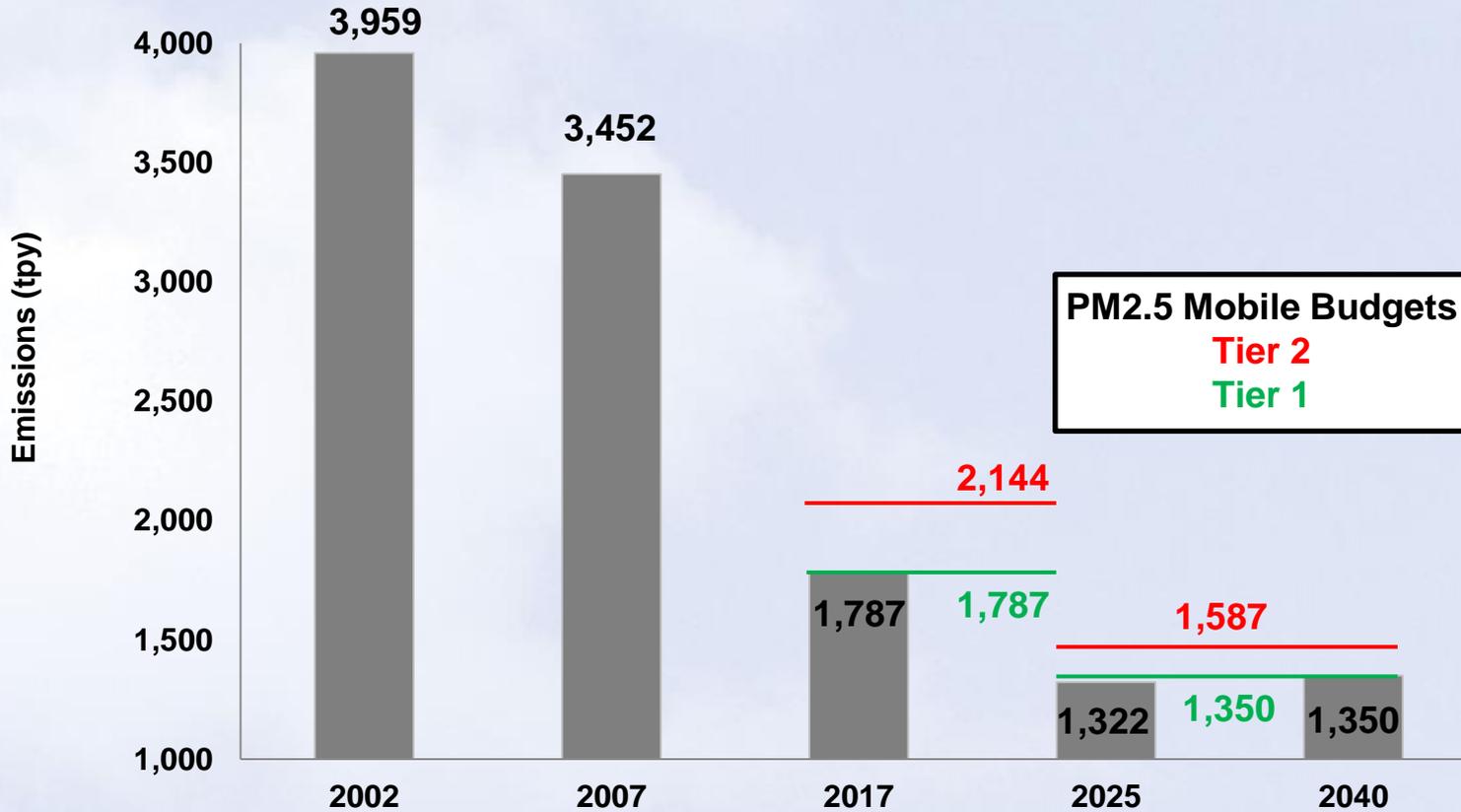


Mobile

Maintenance Plan: Mobile Budgets

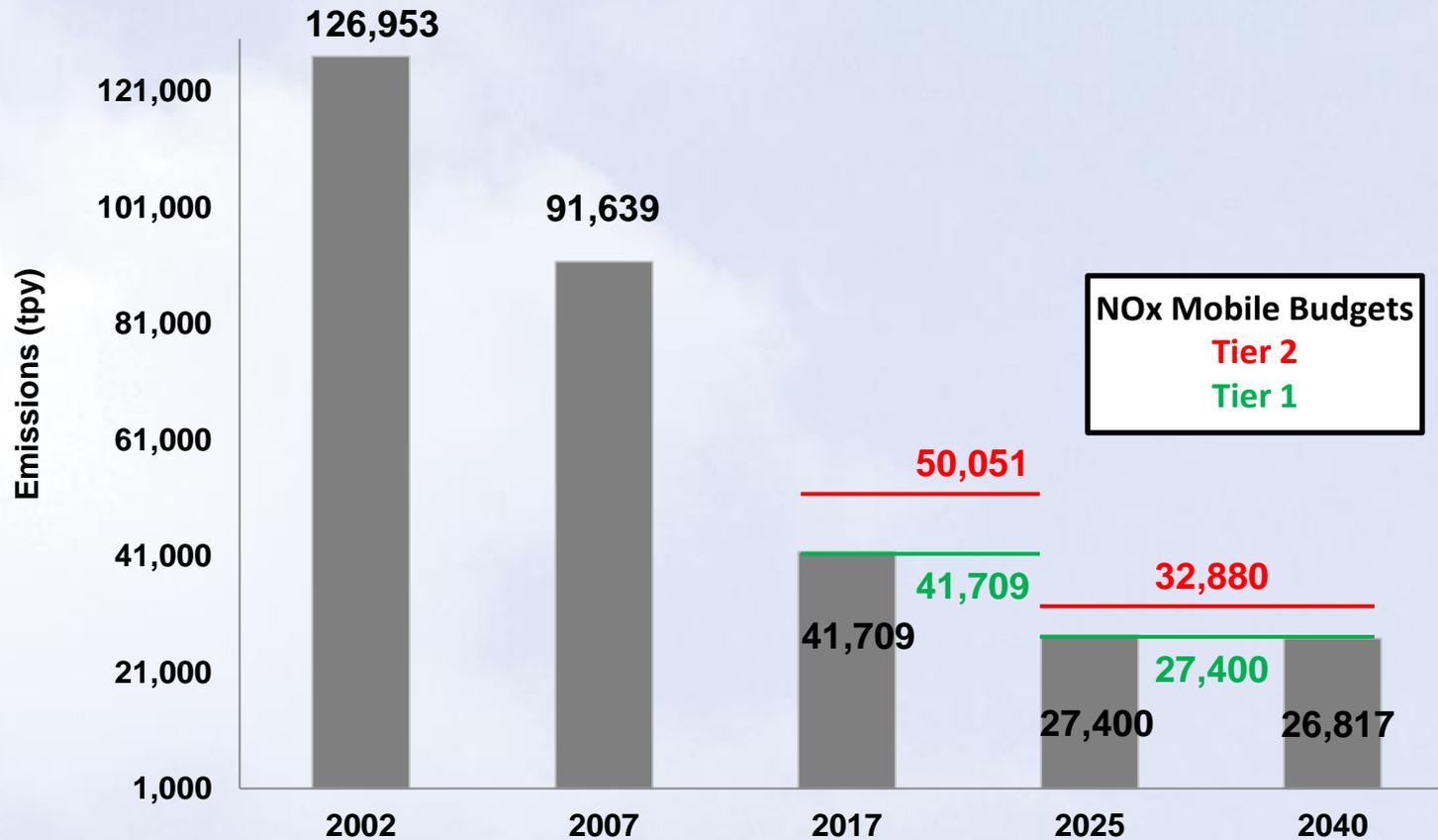
- The Maintenance Plan sets mobile emissions ceilings (“budgets”) for 2017 & 2025 for
 - NO_x
 - PM_{2.5}
- Mobile budgets
 - Two tiered approach: Tier 1 & Tier 2

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_{2.5} Redesignation Request and Maintenance Plan

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