

MAINTENANCE PLAN UPDATE (2008 OZONE NAAQS)

Sunil Kumar
Principal Environmental Engineer

MWAQC
May 24, 2023

Background

- May 27, 2008 - EPA published a new 8-hour ozone standard (75 ppb). Previous 8-hour standard of 0.08 ppm (84 ppb) published in 1997 was revoked.
- EPA designated the Washington, DC-MD-VA area as “Marginal Nonattainment Area” for the 2008 standard on July 20, 2012.
- Washington region attained the standard first in 2015 and has been in compliance with the standard since then.
- Washington region submitted a request to EPA in 2017 to redesignate the area to attainment/maintenance along with a maintenance plan.
- EPA redesignated Washington region to attainment/maintenance area in 2019.

Maintenance Plan Update

- Washington region is in the process of updating the maintenance plan it submitted in 2017.
- A draft plan has been developed and details will be discussed shortly in next few slides.
- Why update maintenance plan?
 - The initial maintenance plan set Motor Vehicle Emissions Budgets (MVEBs) or maximum allowable vehicle emissions that were developed using EPA's MOVES2014a onroad emission estimation model.
 - TPB must ensure that the regional transportation plan does not result in emissions above this level.
 - TPB uses above MVEBs to demonstrate transportation conformity with the 2008 (and also 2015) ozone standard.

Maintenance Plan Update

- EPA recently published a new MOVES3 model and TPB is now required to use this model to demonstrate transportation conformity.
- TPB’s preliminary analysis shows MOVES3 produces more NOx emission compared to MOVES2014a.
- This could pose issues for demonstrating conformity as higher NOx emissions in the Washington region would likely exceed MVEBs.
- For this reason, the Washington region needs to update the maintenance plan that will contain revised MOVES3 model based MVEBs.
- Since MOVES3 also produces emissions from nonroad sources that are different from MOVES2014a, the Washington region decided to update nonroad inventories as well.

Emission Sources in Maintenance Plan



Point Source (Electric Generating Units (EGUs) & Non-EGUs)



Area Source (Woodstove, Portable fuel container)



Nonroad Source (Lawn mowers, construction equipment, marine engine, airport, railroad)



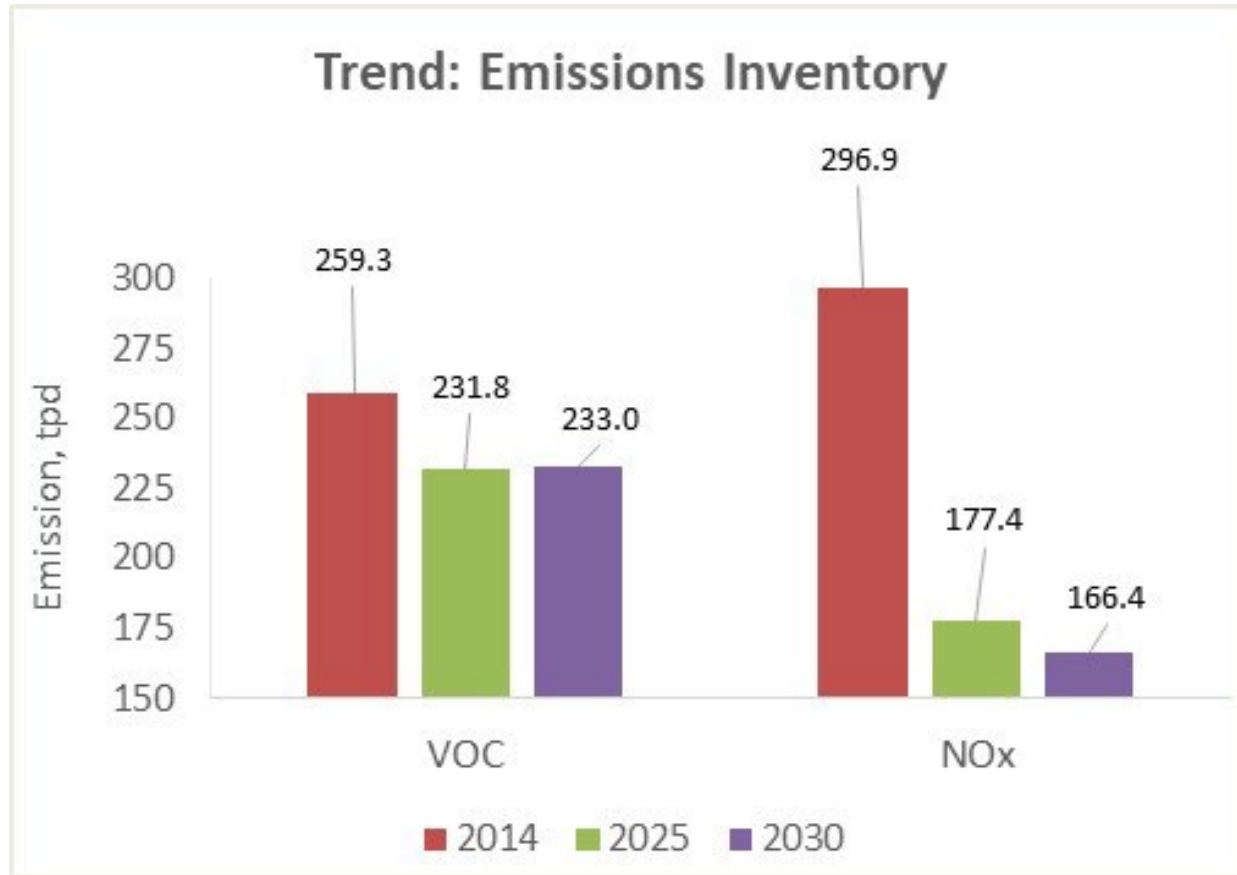
Onroad Source (Motor vehicles)



Details of Maintenance Plan Update

- **Emissions Inventories in Initial Maintenance Plan**
 - Volatile Organic Compounds (VOCs), Nitrogen Oxides (NO_x)
 - Base Year: 2014
 - Intermediate Year: 2025
 - Final Maintenance Year: 2030
- **Revisions of Emissions Inventories in Updated Maintenance Plan**
 - 2014: No updates made to any emission sources
 - 2025 & 2030: Inventories updated for onroad & nonroad **SOURCES** (except marine, railroad, and Virginia airport sources), **NO** updates made to point and nonpoint source inventories

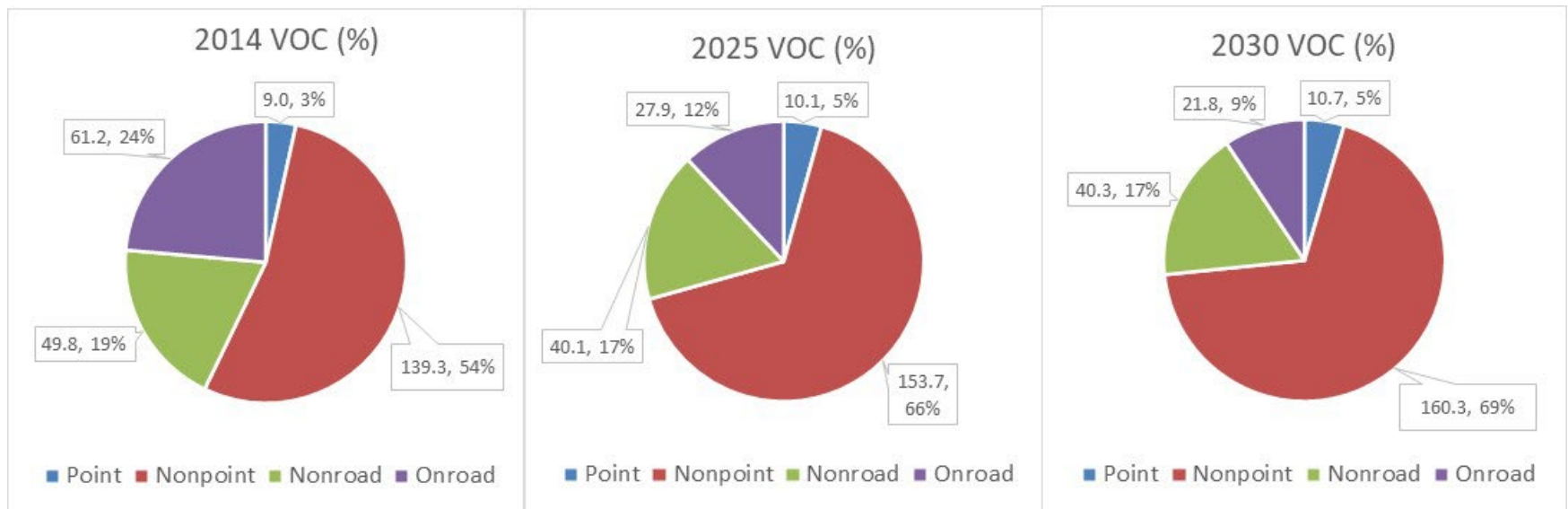
Emissions – Lower in Future



- Emissions in 2025 and 2030 must stay below 2014 levels
- 2014 – Onroad & nonroad emissions were developed using MOVES2014a
- 2025 & 2030 - Onroad & nonroad emissions were developed using MOVES3.0.4



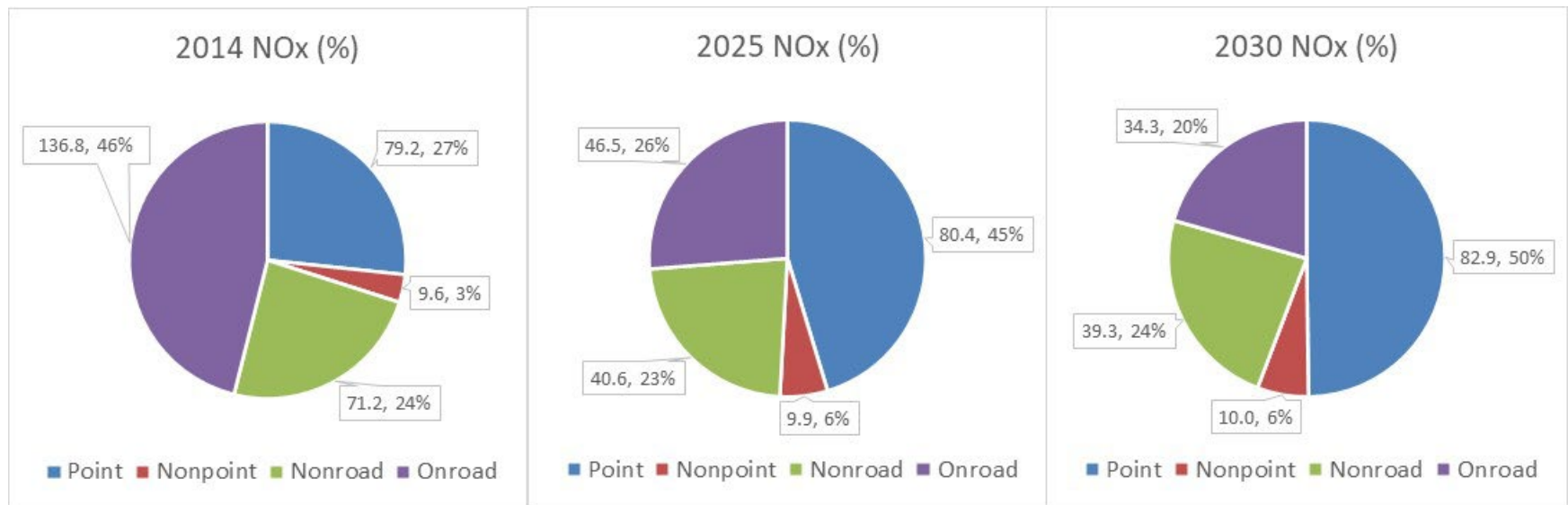
Source Contribution to VOC Emission



- 2014 - Onroad & nonroad emissions were developed using MOVES2014a
- 2025 & 2030 - Onroad & nonroad emissions were developed using MOVES3.0.4
- Emissions are in tons per day



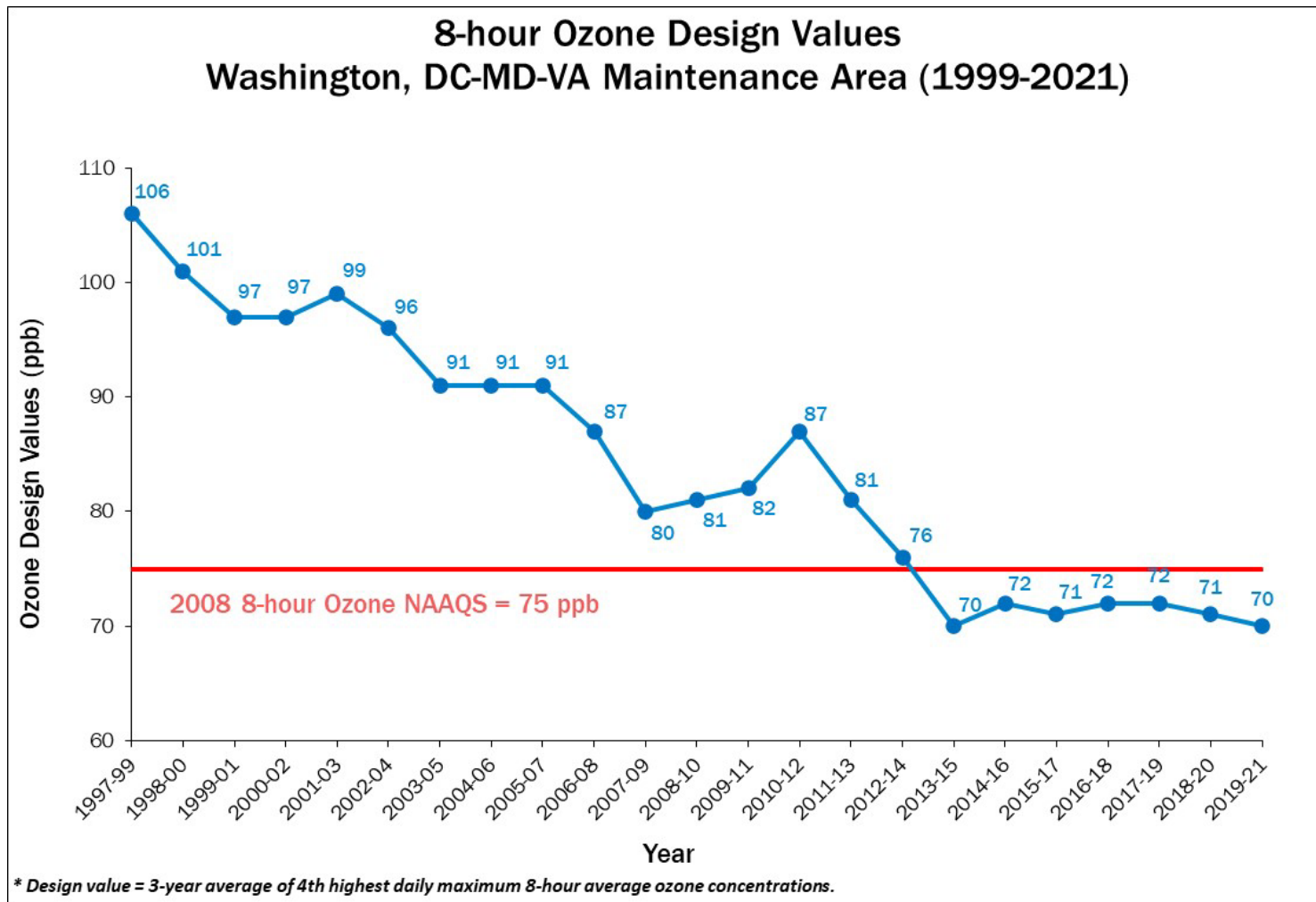
Source Contribution to NOx Emission



- 2014 - Onroad & nonroad emissions were developed using MOVES2014a
- 2025 & 2030 - Onroad & nonroad emissions were developed using MOVES3.0.4
- Emissions are in tons per day



Trend in Ozone Design Value



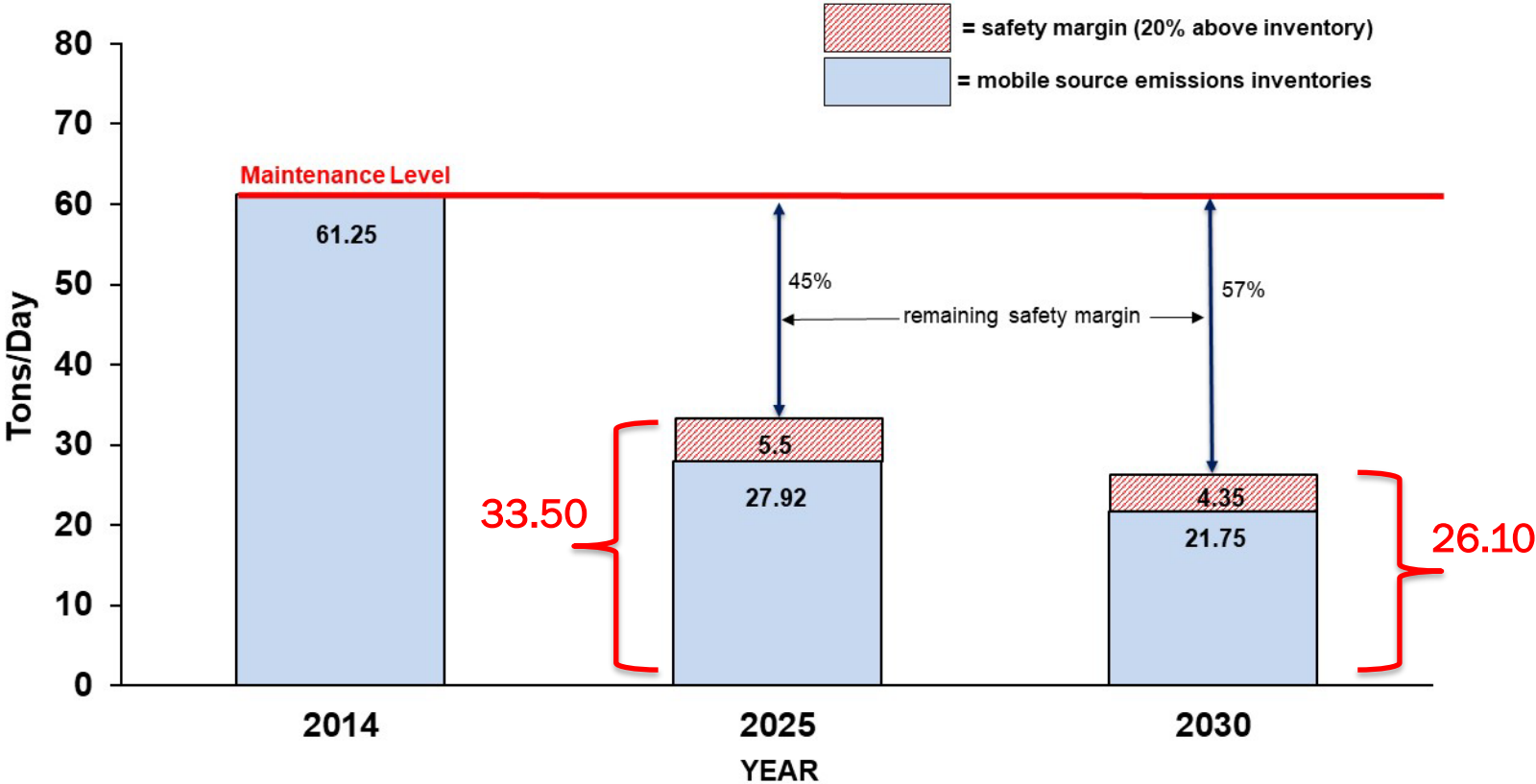
Maintenance Plan Update: Mobile Budgets

- The updated maintenance plan sets revised mobile emissions ceilings (“budgets”) for 2025 & 2030 for
 - VOC
 - NO_x
- Mobile budgets – 20% Safety Margin added to onroad VOC and NO_x emissions in 2025 and 2030 to develop mobile budgets

	Nitrogen Oxides (NO _x)				Volatile Organic Compounds (VOCs)		
	tons/day				tons/day		
	Inventory	Safety Margin	New MVEBs		Inventory	Safety Margin	New MVEBs
2025	46.52	9.30	55.82	2025	27.92	5.58	33.50
2030	34.26	6.85	41.11	2030	21.75	4.35	26.10

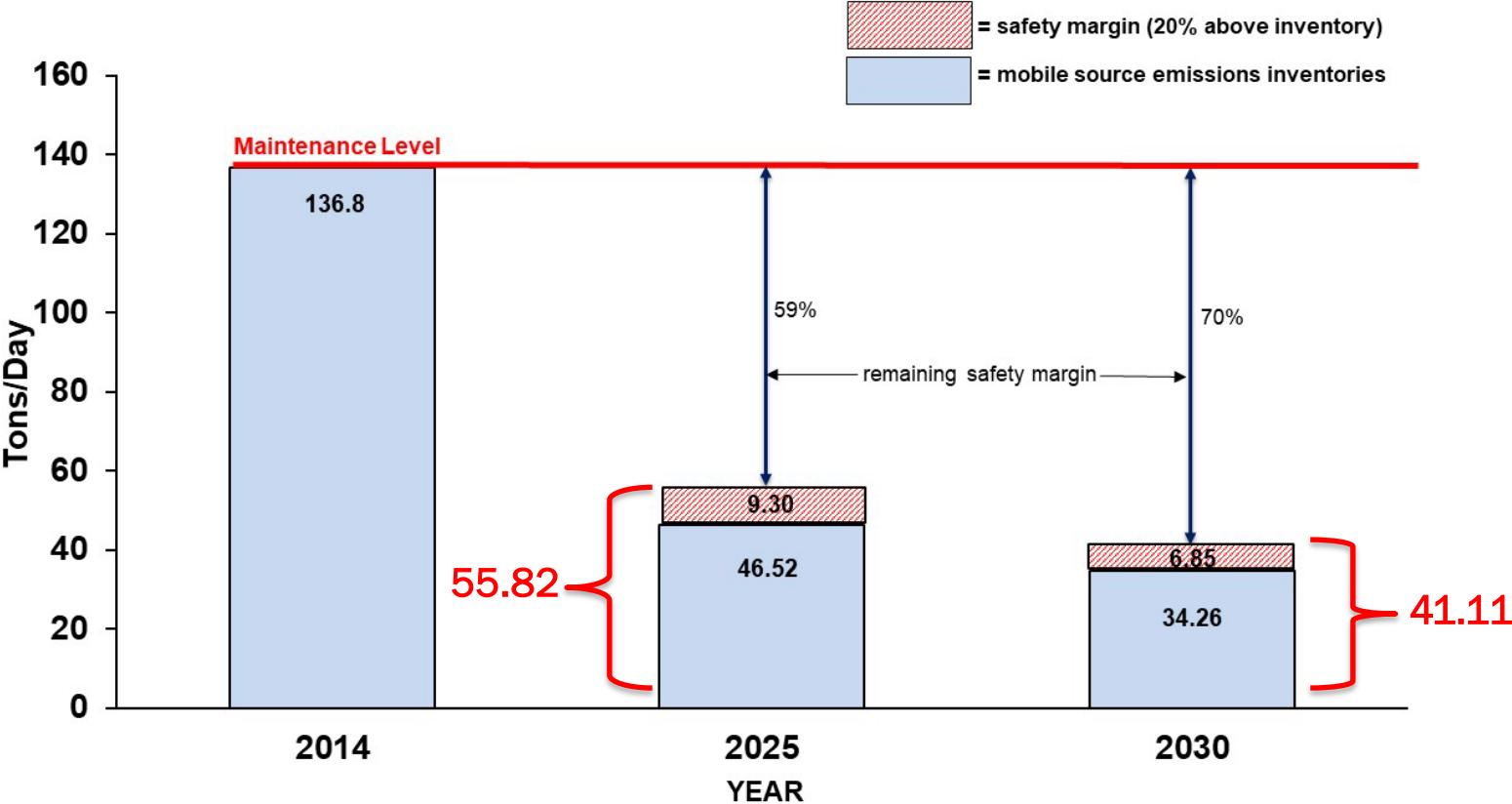
Onroad Mobile VOC Emission

(Washington, DC-MD-VA 2008 Ozone NAAQS Maintenance Area)



Onroad Mobile NOx Emission

(Washington, DC-MD-VA 2008 Ozone NAAQS Maintenance Area)



Request for Approval of Maintenance Plan for Public Hearing & Comment

- Request MWAQC approve today the 2008 Ozone NAAQS Maintenance Plan Update for public hearing and comment purposes. This is with the understanding that in case substantial comments are received from EPA, plan will be brought back to the committee for discussion on those comments and proposed response before starting PH&C process.
- EPA previously reviewed parts of the plan and is currently reviewing the complete draft copy.
- Plan documents are available at -
<https://www.mwcog.org/events/2023/5/24/metropolitan-washington-air-quality-committee/>

Questions?

Sunil Kumar

skumar@mwcog.org

202-962-3244

