ITEM 12 –Action

April 19, 2017

Briefing on Ozone Maintenance Plan and Approval of Letter to MWAQC with Recommendations related to Motor Vehicle Emissions Budgets

Staff Recommendation: Approve letter to the Metropolitan Washington Air Quality Committee providing recommendations related to the establishment of motor vehicle emissions budgets in the ozone maintenance plan.

Issues: None

Background: The Metropolitan Washington Air Quality Committee (MWAQC) is preparing a request to EPA for redesignation of the Washington, DC-MD-VA non-attainment area to attainment status for the 2008 ozone standard, along with a maintenance plan demonstrating compliance with the 2008 ozone standard through 2030. The board will be briefed on the ozone maintenance plan and on the establishment of motor vehicle emissions budgets in the plan.

National Capital Region
Transportation Planning Board

April 19, 2017

DRAFT

Honorable Hans Riemer
Chairman
Metropolitan Washington Air Quality Committee
777 North Capitol Street, NE, Suite 300
Washington, DC 20002

Dear Chairman Riemer:

At its meeting on April 19, 2017, the National Capital Region Transportation Planning Board (TPB) was briefed on the development by the Metropolitan Washington Air Quality Committee (MWAQC) of a request to EPA for redesignation of the Washington DC-MD-VA non-attainment area to attainment status for the 2008 ozone standard, along with a maintenance plan demonstrating compliance with the 2008 ozone standard through 2030. The TPB is glad to note this important milestone of the region attaining compliance with federal air quality standards for yet another criteria pollutant. The TPB recognizes that having achieved this important milestone the region must continue its efforts to ensure that it remains in compliance of this standard.

The TPB understands that the region must now develop, for EPA approval, a plan by which the region will maintain its compliance with the 2008 ozone standard. The TPB understands that the ozone maintenance plan will include estimates of motor vehicle emissions of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) for years 2014, 2025 and 2030. TPB staff has worked closely with MWAQC staff in preparing the motor vehicle emissions inventories for the maintenance plan using the EPA approved MOVES2014a model. These inventory estimates will be used to establish emissions budgets that, once approved (or found adequate for use in conformity analyses) by EPA, will be required for use in the TPB's conformity analysis of future updates to the region's Constrained Long Range Plan (CLRP) and Transportation Improvement Program (TIP).

Conformity analysis for the CLRP and TIP involves demonstrating that projected motor vehicle emissions for 2014 through 2024 are less than or equal to the 2014 budgets; emissions for 2025 through 2029 are less than or equal to the 2025 budgets; and emissions for 2030 through 2045, the out year of the CLRP starting with the 2018 CLRP, are less than or equal to the 2030 budgets. These maintenance plan emissions budgets, established at a given moment in time using a set of assumptions and current trends, will typically remain applicable to regional transportation planning for more than 10 years into the future

The TPB has noted that the motor vehicle VOC and NOx inventories for 2025 and 2030 are projected to decline significantly through time, even as the region continues to grow. In developing these estimates the TPB has had to make several assumptions for future conditions. These assumptions are based on current federal, state, and local programs, empirical data and projections reflecting current trends. However, there are significant uncertainties in these 2025 and 2030 projections due to several factors associated with the assumptions made. These include: federal mobile emissions control programs (which could be rolled back), revisions to EPA's emissions estimation model (MOVES) to make methodological changes based on new science and/or empirical data (as was done with the transition from an older version of EPA's mobile emission model, called Mobile6, to

MOVES); potential changes in the age and composition of the region's vehicle fleet; and changes to the region's projections in jobs and households (known as the Cooperative Forecasts).

TPB staff has previously analyzed the impact on emissions estimates resulting from changes to some of these assumptions, such as shifts in the composition of the region's vehicle fleet and modifications to the forecast growth due to changing economic conditions. To account for such uncertainties that are outside of the TPB's control in the establishment of motor vehicle emissions budgets, the TPB recommends that conformity buffers of 20% of the 2025 and 2030 inventory levels be included in the budgets for both VOC and NOx, as was done for the fine particles maintenance plan, approved by MWAQC in 2013. A 20% conformity buffer would result in the following mobile budgets: 2025 VOC=39.8 tons/day, 2030 VOC= 28.9 tons/day, 2025 NOx = 48.8 tons/day, and 2030 NOx = 32.9 tons/day. Mobile budgets reflecting the inclusion of these conformity buffers are shown in the attached charts. Conformity buffers are explicitly defined and provided for in EPA's Conformity Regulations, and the use of such buffers is common practice in maintenance plans approved by EPA.

Additionally, TPB staff has previously analyzed the impact of changes to certain major assumptions in the development of the emissions inventories, such as the Mobile6 to MOVES emissions model upgrade (methodological changes), and from the MOVES2010 to MOVES2014 upgrade (federal fuel and vehicle control program changes). In the upgrade from Mobile6 to MOVES, NOx estimates for the 2040 analysis year increased by over 100%. The update from Mobile6 to MOVES generally represented a revision in the methodology of calculating the emissions, and was not implemented to reflect an actual increase in air pollution observed at air quality monitors. In the MOVES2010 to MOVES2014 model upgrade, both VOC and NOx estimates for the 2040 analysis year decreased by more than 50%. The update from MOVES2010 to MOVES2014 mostly reflected the inclusion of federal fuel and vehicle control programs passed into law by the Obama administration, which have been incorporated to account for actual decreases in air pollution.

Such drastic changes in the estimated emissions amounts in future years due to changes not related to transportation plans and programs are significantly greater than can be accommodated using conformity buffers. Failure to demonstrate the transportation plan and program's conformity with emissions budgets has serious consequences to the region, including withholding of federal transportation funds and project approvals for transit, highway, and non-motorized projects.
The TPB therefore recommends that if federal emissions control programs are rolled back, or the EPA mandates revisions to its emissions estimation model in the future which result in significant changes in emissions inventories, MWAQC should undertake a formal update to the region's motor vehicle emissions budgets, without necessarily going through the time-consuming process of a full State Implementation Plan (SIP) update. This process has been successfully executed at other Metropolitan Planning Organizations. Furthermore, the TPB requests explicit language in the maintenance plan showing that MWAQC agrees to update the mobile budgets under these circumstances, similar to the language that was included in "Appendix D" of the 2013 fine particles maintenance plan, as shown here:

> *"The Washington DC-MD-VA area commits to evaluating and submitting, as a revision to the 1997 PM2.5 NAAQS maintenance plan, updated annual 2017 and 2025 MVEBs for NOx and PM2.5 by the end of 2015. These budgets will again be re-evaluated in the 2018 timeframe to accommodate transportation planning issues when the Constrained Long Range Plan horizon year is extended beyond 2040."*
> *-Appendix D (Washington DC-MD-VA 1997 $PM_{2.5}$ Maintenance Plan, May 22, 2013)*

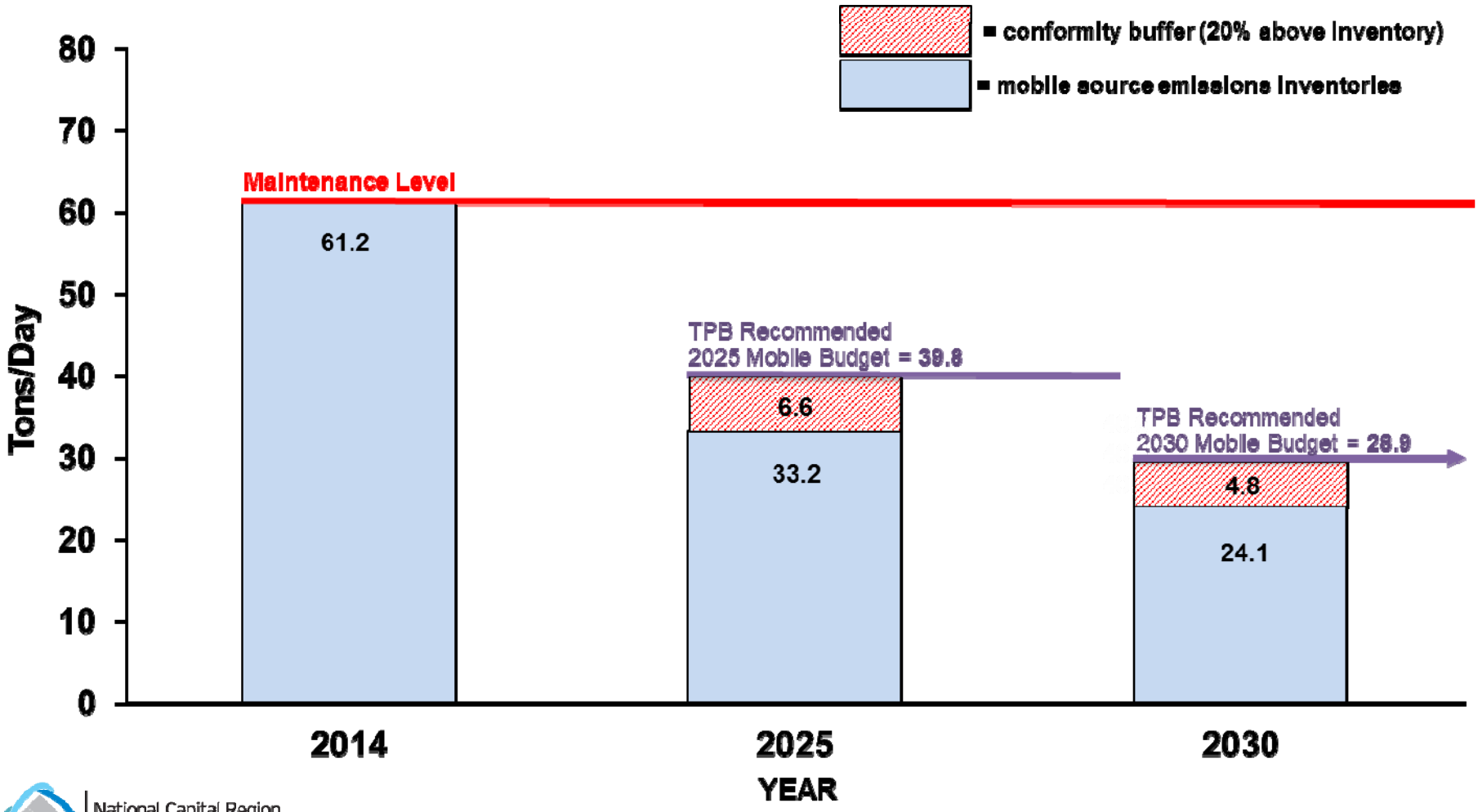
In summary, the TPB is happy to provide the emissions inventory for the mobile source sector for use in the maintenance plan for the 2008 ozone standard with the recommendation that: (1) the mobile emissions budgets for 2025 and 2030 be set with a conformity buffer of 20%, as shown in the attached charts; and (2) the maintenance plan includes explicit language indicating that the mobile emissions budgets will be updated to accommodate transportation planning issues due to changes in federal control programs and/or emissions models.

TPB staff would be happy to provide any technical information or answer any questions that MWAQC members may have concerning these recommendations. The TPB is pleased to support the development and submission of the ozone redesignation request and maintenance plan, which represent significant steps forward in the region's effort to attain and maintain national ambient air quality standards.

Sincerely,

Bridget Donnell Newton
TPB Chairman

Recommended Mobile Budgets with Conformity Buffers- VOC



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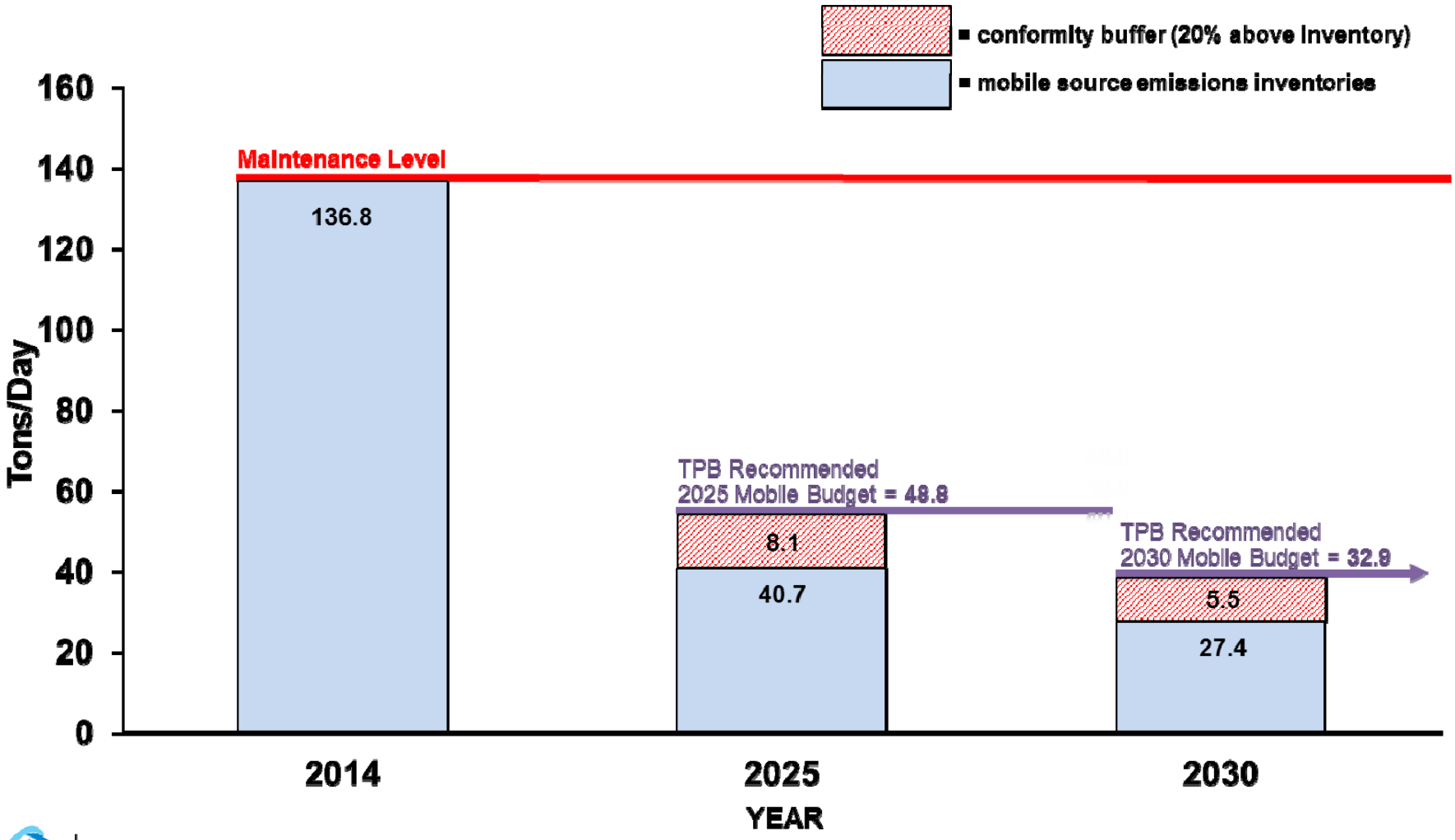
Recommended Mobile Budgets with Conformity Buffers- NOx



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