



MEMORANDUM

TO: National Capital Region Transportation Planning Board (TPB)
FROM: Dusan Vuksan, Manager, Model Application Group, COG/TPB
Mark S. Moran, Program Director, Travel Forecasting and Emissions Analysis, COG/TPB
SUBJECT: Overview of Upcoming Planned Climate Change Planning Work Activities in the Metropolitan Washington Region
DATE: December 8, 2020

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This memorandum provides an overview of proposed future work activities that the National Capital Region Transportation Planning Board (TPB) staff plan to undertake in the area of estimating and planning for on-road transportation (“mobile source”) greenhouse gas (GHG) emissions in the metropolitan Washington region. The primary purpose of these work activities is to assess what types of actions in the transportation sector could lead to attaining the interim goal of reducing GHG emissions in 2030 by 50% relative to 2005 levels. The work activities that are discussed in this memorandum are expected to occur in calendar year 2021 (fiscal years 2021 and 2022).

BACKGROUND

In November 2008, concluding almost a yearlong effort by its staff and the staff of its member jurisdictions, the Metropolitan Washington Council of Governments Board of Directors (COG Board) adopted the National Capital Region Climate Change Report.¹ The most notable outcome from this report was the adoption of non-sector-specific aspirational goals that the Climate Change Steering Committee chose to adopt for reducing GHG emissions in the region. Three principle goals were adopted by the COG Board:

- By 2012, to reduce GHG emissions by 10% below “business as usual” (BAU) levels
- By 2020, to reduce GHG emissions by 20% below 2005 levels
- By 2050, to reduce GHG emissions by 80% below 2005 levels (p. 9)

Earlier this year, during development of the 2030 Regional Climate and Energy Action Plan, a review of the above goals by the Climate, Energy and Environment Policy Committee (CEEPC) members and COG’s Department of Environmental Programs staff affirmed the need to develop and adopt interim 2030 GHG reduction goals to address the 30-year gap in targets between 2020 and 2050. The interim 2030 climate mitigation goal calls for 50% reductions in GHG emissions by 2030 relative to the 2005 levels. Along with the GHG reduction targets, CEEPC also recommended a set of resiliency

¹ Climate Change Steering Committee for the Metropolitan Washington Council of Governments Board of Directors. “National Capital Region Climate Change Report.” Final Report. Washington, D.C.: Metropolitan Washington Council of Governments, November 12, 2008.

goals. The COG Board adopted a resolution endorsing regional climate mitigation and resiliency goals on October 14, 2020,² while TPB affirmed the goals on October 21, 2020.³

2030 REGIONAL CLIMATE AND ENERGY ACTION PLAN

The 2030 Climate and Energy Action Plan (CEAP) is a comprehensive document that includes priority collaborative mitigation actions in various climate-action areas, including planning, equity, clean electricity, zero-energy buildings, zero-emission vehicles, mode shift and travel behavior, zero waste, and carbon sequestration.⁴ Actions in these specific areas should, in theory, enable the region to attain the interim GHG reduction goal of reducing the GHG emissions by 50% in the year 2030 relative to the 2005 levels. Of these mitigation strategies, zero-emission vehicles and mode shift and travel behavior categories are most directly related to the transportation sector.

The plan, for the first time, also includes a climate resilience goal of becoming a Climate Ready Region and making significant progress to be a Climate Resilient Region by 2030. Finally, the plan also emphasizes the need to incorporate equity principles and expand education on climate change into the actions of both COG's CEEPC and its member local governments to reach the climate mitigation and resiliency goals.

The 2030 Regional Climate and Energy Action Plan was adopted by CEEPC on November 18, 2020.

PROPOSED WORK ACTIVITIES IN CALENDAR YEAR 2021 (FISCAL YEARS 2020 AND 2021)

Earlier this year, the TPB Chair, Kelly Russell, indicated that climate change was one of her top priorities. As part of adopting the new interim 2030 GHG reduction goals, at CEEPC and the TPB, requests were made to provide estimates of the levels of outcomes from various transportation strategies that would help reduce GHG emissions in the transportation sector.⁵ In response to these requests staff plan to conduct additional climate planning work that would examine specific strategies to develop estimates of the levels of outcomes needed to help reduce the transportation sector's GHG emissions commensurate with the region's GHG reduction goals for 2030.

The following is the proposed scope of work related to climate change planning in the near future:

- 1) Review of Past COG and TPB Studies related to Climate Change (Literature Review)

² COG R45-2020: Resolution Endorsing Regional Climate Mitigation and Resiliency Goals
<https://www.mwcog.org/documents/2020/10/14/certified-resolution-r45-2020---endorsing-regional-climate-mitigation-and-resiliency-goals/>

³ TPB R8-2021: Resolution on the Metropolitan Washington Council of Governments' Regional Multi-Sector Interim Goals for Reducing Greenhouse Gases

⁴ Metropolitan Washington 2030 Climate and Energy Action Plan. Washington, D.C. Metropolitan Washington Council of Governments. November 2020. <https://www.mwcog.org/documents/2020/11/18/metropolitan-washington-2030-climate-and-energy-action-plan/>.

⁵ See, for example, Shyam Kannan to Kanti Srikanth, "Request That COG/TPB Staff Conduct a Series of Analyses to Determine the Reduction in VMT Needed to Attain Greenhouse Gas Reduction Goals for 2030 and 2050," November 9, 2020; Stewart Schwartz, Bill Pugh, and Coalition for Smarter Growth to Kelly Russell and National Capital Region Transportation Planning Board, "Agenda Items #10, 11: Visualize 2045 Technical Input Solicitation and Performance Measures," November 18, 2020.

The TPB and COG have conducted several analyses in the past 10 years examining the potential of various types of strategies to reduce GHG emissions. TPB staff plan to conduct a review of these prior studies and other activities that evaluated the impacts of different actions on GHG emissions. Example studies include the “What Would it Take?” Scenario Study,⁶ the Multi-Sector Working Group (MSWG),⁷ and the Long-Range Plan Task Force.⁸ The background information related to these studies and other projects was provided in a recent memorandum to the TPB.⁹ TPB staff plan to undertake a more detailed review of specific actions that were analyzed in these and other studies and quantify the impacts of these actions on GHG emissions. This review would enable the staff to re-assess and document which types of mitigation activities related to the transportation sector would have the highest potential to reduce GHG emissions. This effort is expected to be finalized early in calendar year 2021.

2) Scenario Study: What would it take to reduce transportation sector greenhouse gas emissions by 50% by 2030?

Upon completion of the literature review, in the spring of 2021, TPB staff plan to initiate a technical analysis that would assess the level of outcomes needed to reduce the transportation-sector GHG emissions by 50% by 2030. This study would be different from the past analyses referenced above. On the basic level, it would include updated assumptions related to demographic data, travel, and emissions in our region. But on another level, the study would evaluate specific “categories” of actions that would be informed by the literature review with strategies grouped commensurate with the category of action being evaluated/pursued. Past analyses have shown that the various transportation-related strategies can be grouped into three categories: (1) strategies that help reduce the amount of travel, in terms of vehicle trips (VT) and vehicle-miles of travel (VMT); (2) strategies that help change the fuel type of the vehicular fleet; and (3) strategies that optimizes the travel operating conditions. The following are the three categories of actions with a few examples of various strategies under each category. The actual “strategies” to be analyzed will be developed based on the review of previous analyses and as part of developing inputs for the new analyses with input from the TPB Technical Committee.

1) Mode Shift and Travel Behavior (VMT and Trip Reduction)

- Invest in Infrastructure that Increases Transit, Carpooling, and Non-Motorized Travel

⁶ Monica Bansal and Erin Morrow, “What Would It Take? Transportation and Climate Change in the National Capital Region,” Final Report (Washington, D.C.: National Capital Region Transportation Planning Board, Metropolitan Washington Council of Governments, May 18, 2010).

⁷ ICF International, “Multi-Sector Approach to Reducing Greenhouse Gas Emissions in the Metropolitan Washington Region,” Final Technical Report (Metropolitan Washington Council of Governments, January 31, 2016).

⁸ “TPB R16-2017, as Amended: Revised Resolution Establishing the Mission and Tasks for Phase II of the Long-Range Plan Task Force,” Resolution (Washington, D.C.: National Capital Region Transportation Planning Board, May 17, 2017), <https://www.mwcog.org/documents/2017/03/30/r16-2017---establishing-the-mission-and-tasks-of-the-long-range-plan-task-force/>.

⁹ Srikanth, Kanti. Memorandum to the Transportation Planning Board. “Overview of COG and TPB Climate Change Planning Work Activities in the Metropolitan Washington Region.” October 15, 2020. <https://www.mwcog.org/file.aspx?&A=IXr81RdQN3mqk%2bshOxOy7IpWrxfo7oywjYOo12NYsw%3d>



- Bring Jobs and Housing Closer Together
 - Enhance Options for Commuters (primarily Telework)
- 2) Vehicle Fuel and Fuel Economy
- Expand Light-Duty Electric Vehicle Deployment and Accelerate Electrification of Medium- and Heavy-Duty Vehicles
 - Improve Fuel Economy of the Light-Duty Vehicle Fleet
- 3) Operational Efficiency
- Enhancing System Operations (Signal Optimization and Incident Management)
 - Reduce Speeding on Freeways
 - Idling Reduction

The technical analysis will likely involve testing scenarios that would examine different combinations of the three action categories. The results of this analysis will provide the TPB and other policy makers the level of outcomes that would be needed in the transportation sector to reduce its GHG emissions by 50% by 2030. It is likely that subsequent activity would be to evaluate alternative policies that the region would need to pursue to be able to achieve the level of outcomes in the above three action categories (for example, is a VMT tax one of the ways to reduce VMT in order to achieve GHG reductions?). Although the focus of this analysis will be evaluation of actions needed to meet the newly established 2030 interim greenhouse gas reduction goals, some analysis of estimates of levels of outcome related to the 2050 reduction goal may also be undertaken.

It is expected that the scenario study will be completed by the end of the calendar year 2021.