



## **MEMORANDUM**

**TO:** Transportation Planning Board  
**FROM:** Kanti Srikanth, TPB Staff Director  
**SUBJECT:** Climate Change Mitigation Study - Background and Context for Study Findings  
**DATE:** December 15, 2021

---

The board is being briefed on the results of the Climate Change Mitigation Study (CCMS) that it initiated in January 2021. Members of the board received a more detailed briefing on the study, particularly its assumptions and the results of the analysis, in a special work session on Monday, December 13, 2021. This memo provides background for the study and an overall context to understand the scope of work and the findings of this study.

The CCMS has been a very timely and important initiative of the National Capital Region Transportation Planning Board (TPB). While the TPB has been engaged in this important topic since at least 2010,<sup>1</sup> there have been many other recent calls to action, such as 1) those made at the COP26 United Nations Climate Change Conference, held in Glasgow, Scotland, October-November 2021; 2) the recently announced federal national greenhouse gas (GHG) emissions reductions goal (50% to 52% below 2005 levels by 2030);<sup>2</sup> and 3) the prominent role of climate change mitigation in recent federal funding actions. Each of these speaks to the timeliness of TPB's CCMS. The study is intended to inform decision makers within the metropolitan Washington region (e.g., TPB member jurisdictions, and various agencies/stakeholders, including federal agencies), on the strategies to reduce GHG within the on-road transportation sector in this region and contribute to the efforts to attain the region's multi-sector greenhouse gas reductions goals for 2030 and 2050.

## **A NOTE OF THANKS**

This study has also been an intensive work effort for staff and the consultant team. The study was launched in January of this year to address two questions that had been raised by the TPB in the fall and winter of 2020 while discussing the region's ability to attain the Metropolitan Washington Council of Governments' (COG's) GHG reduction goals. Thus, staff and the consultants had fewer than 11 months to complete this study, which involved the analysis of thirteen scenarios. I believe the scope of the analysis is comprehensive, the technical methods of the analysis are robust and

---

<sup>1</sup> 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), <http://www.mwcog.org/uploads/publications/qF5eXVw20110617114503.pdf>.

<sup>2</sup> "Fact Sheet: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies," Press Release (The White House, April 22, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/>.

consistent with state of practice for such high-level, scenario-planning work. I trust you will find this to be the case as well.

TPB staff and the consultant team have worked long and hard – many late nights and weekends to complete the study on an expedited schedule. So, I take this moment to thank the staff of the TPB and the consultant team, particularly those listed below.

- ICF ( particularly Michael Grant, Adam Agalloco, and Mike McQueen), Fehr & Peers, and Gallop Corporation
- TPB staff (particularly Erin Morrow, Dusan Vuksan, and Mark Moran)

## CONTEXT TO UNDERSTAND THE STUDY FINDINGS

While the study follows the long-standing interest and work of the TPB on the matter of climate change planning/mitigation, and builds on its previous studies, it is useful to note four points that provides context for this study.

1. By undertaking this study and other related actions (e.g., revisions to the project solicitation document of the long-range transportation plan and the recent Voices of the Region survey), the TPB recognizes that taking actions to mitigate and adapt to the effects of climate change is both a national and regional priority. The TPB did this last year when it endorsed COG's regional goal to reduce GHG emissions from all sectors to achieve a total reduction of 50% by 2030.

As part of its endorsement, the TPB reaffirmed its commitment to do its part within the on-road, transportation sector to reduce GHG emissions, leading to this study. I say to do its part because the regional GHG reduction goals are multi-sector, not sector-specific, meaning the 50% and 80% reduction goals for 2030 and 2050 respectively, are not allocated in specific amounts to the individual sectors (e.g., energy production, residential/commercial buildings, and transportation). Despite this, the TPB's approach has been to take the regional reduction levels as applicable to each sector. This has meant that, for this study, the study team chose to make its goals to reduce on-road, transportation-sector GHG emissions by 50% by 2030 and 80% by 2050.

2. When COG adopted the multi-sector 2030 GHG reduction goal last year, it did a preliminary analysis to determine if the region could meet its new 2030 GHG reduction goal if every sector took a set of actions to reduce GHG. The answer was yes, according to the Metropolitan Washington 2030 Climate and Energy Action Plan (CEAP).<sup>3</sup> This analysis examined two broad types of actions within the transportation – (1) converting vehicles to clean fuel and (2) reducing the amount of on-road travel, i.e., reducing vehicle miles travelled (VMT).

---

<sup>3</sup> “Metropolitan Washington 2030 Climate and Energy Action Plan” (Washington, D.C.: Metropolitan Washington Council of Governments, November 18, 2020), <https://www.mwcog.org/documents/2020/11/18/metropolitan-washington-2030-climate-and-energy-action-plan/>.

In January, with these two types of actions in mind - converting vehicles to clean fuel and reducing VMT - the TPB asked staff two specific questions: What types of actions and what level of outcomes from these actions would be needed to reduce the on-road sector's GHG emissions by 50% by 2030 and 80% by 2050? The CCMS was designed to answer these two questions.

3. The scope of the CCMS is limited to the reduction in GHG that one might expect within the on-road, transportation sector. Thus, even if a proposed scenario shows that transportation will not reduce on-road GHG by 50% by 2030, it does not mean the region cannot achieve its multi-sector 50% GHG reduction goal. The region could still achieve its multi-sector GHG reduction goals with the actions from the other sectors as outlined in COG's 2030 Climate and Energy Action Plan.

Conversely, if the answer from this study is "yes, a particular scenario can reduce on-road transportation GHG by 50%", it does not mean that the region's multi-sector GHG reduction would be met with no other actions from the other sectors.

4. Consistent with the available time and funding resources for the study, the CCMS utilized a scenario-planning approach with mostly sketch-planning tools, which has two resultant consequences. First, the analysis is at aggregate or regional level, and not at the level of an individual project or program. The analysis assumes the outcomes and not all the different ways we can achieve those outcomes. Second, because the study relied mostly on sketch-planning tools and due to the unprecedented implementation levels and general uncertainties associated with the assumptions, the results of the analysis represent order-of-magnitude estimates of the changes in GHG emissions one may expect if all the outcomes are achieved by various program and policies.

Additionally, it must be noted that for the ten bottom-up scenarios analyzed, each scenario is a combination of different strategies (programs and policies) to achieve a specific outcome. Also, the levels of outcomes assumed from these strategies vary between the scenarios. For example, if scenario one assumes transit fares will be reduced by 40%, scenario two might assume that transit will be fully free.

It is my belief that the strategies and the levels of implementation assumed in this study are unprecedented and extremely aggressive! The study did not constrain its assumptions by questions the actions that would be needed to implement the strategies. Questions such as:

- a. How would the region achieve these levels of changes?
- b. Would the region be able to enact some of the specific policies?
- c. How would the region secure the community's acceptance to implement these programs and policies?
- d. What amount of funding would be needed to develop, operate, and maintain these programs?

The study stayed focused on the questions asked by the TPB – what actions and what levels of outcomes from these actions would be needed to maximize GHG reductions in the on-road, transportation sector. In summary, the results tell us where we will need to be, in 2030 and 2050, but they do not tell us how to get there!

I believe how we get there will be the hardest part to figure out and one that we will require coordination, consultation, and cooperation among all TPB members and the region's transportation planning stakeholders. I also believe that the outcomes identified in this study cannot be achieved overnight and will not only take several years, but they will require sustained commitment at all levels of government (local, state and federal), contributions from the industry/commercial sector, and importantly the public. I do not believe any of these will be easy nor do I believe it will be cheap. However, I do believe the cost of inaction will be much higher!