

TPB CLIMATE CHANGE MITIGATION STUDY OF 2021

Overview and Update

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Access for All Advisory Committee
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Study Purpose

- Assess the actions and levels of implementation needed to reduce on-road transportation greenhouse gas (GHG) emissions to meet COG's 2030 and 2050 goals
 - 50% below 2005 levels by 2030
 - 80% below 2005 levels by 2050



Study Overview

Review of Past Studies

Conduct review of climate change mitigation studies in the COG region (Phase I, performed by TPB staff)

Literature review

Conduct Phase II literature review of climate change mitigation studies and climate action plans

List of scenarios and actions

Develop a limited list of scenarios and associated GHG reduction actions to explore

Tool/model selection

Select tools/models for the analysis

Analysis

Calibrate and validate the selected tools and models; conduct analysis using the selected tools

Report

Document and present findings in a draft and final report

Source: ICF, September 2021



Review of Past TPB and COG Studies

- Conducted by TPB staff
- Summarized the major findings of past TPB and COG studies
 - “What Would it Take?” Scenario Study (2010)
 - Multi-Sector Working Group Study (2015-2016)
 - Long Range Plan Task Force Study (2017)
 - 2030 Climate and Energy Action Plan (2020)
- Memorandum finalized in March 2021
- Summary of findings presented to the TPB in May 2021



Literature Review

- Conducted by consultant team
- Reviewed state and local climate action plans in the Washington region
- Reviewed climate plans from outside the region, as well as national-level policies that influence GHG reduction
- Addressed questions:
 - How have other regions throughout the country and the world achieved GHG reductions? Or plan to achieve GHG reductions?
 - What strategies work? How were strategies implemented? By whom?
- Literature review was sent to the TPB in July 2021



List of Scenarios and Actions

- Developed by consultant team
- Presentation to the TPB in September 2021 ([slides](#), [technical memorandum](#), and [video](#))
- Identified three pathways for GHG reductions
 - Mode Shift and Travel Behavior (MSTB)
 - Vehicle Technology and Fuels
 - Transportation Systems Management and Operations (TSMO)
- Presented findings of preliminary analysis of two “top-down” scenarios
 - What level of VMT reduction would be needed to meet the 2030 and 2050 goals?
 - What level of technology adoption would be needed to meet the 2030 and 2050 goals?



List of Scenarios and Actions

Pathway	Scenario	Title
Vehicle Technology and Fuels Improvements	VT.1	Vehicle Technology and Fuels Improvement Scenario
	VT.2	Amplified Vehicle Technology and Fuels Improvement Scenario
Mode Shift and Travel Behavior	MS.1	Mode Shift Scenario
	MS.2	Amplified Mode Shift Scenario
	MS.3	Amplified Mode Shift Scenario + Road Pricing
Transportation Systems Management and Operation (TSMO)	TSMO	Transportation System Management and Operations Improvement Scenario
Combined Pathways	COMBO.1	Combined Scenario (VT.1 + MS.1 + TSMO)
	COMBO.2	Combined Scenario with More Aggressive Technology Emphasis (VT.2 + MS.1 + TSMO)
	COMBO.3	Combined Scenario with More Aggressive Mode Shift Emphasis (VT.1 + MS.3 + TSMO)
	COMBO.4	Combined Scenario with Aggressive Actions Across All Pathways and Shared Connected and Automated Vehicle (CAV) Future (VT.2 + MS.3 + shared CAV assumptions)

Source: ICF, September 2021



Tool/Model Selection

- Completed by consultant team
- Sketch planning tools and models selected to analyze individual strategies and combinations
 - For vehicle technology and fuels strategies, use of fleet analysis tools (VISION) along with sketch analysis
 - For MSTB strategies, use of TRIMMS analysis tool combined with limited analysis using the regional travel demand model
 - For TSMO strategies, apply adjustments to emissions rates based on literature review and scale based on congestion
- Spreadsheet-based model developed for study to analyze effects of scenarios
- Sensitivity analysis to be conducted using electric power carbon intensity
 - Building on Integrated Planning Model (IPM)

Source: ICF, September 2021



Analysis and Final Report

- Technical analysis is currently underway
- Presentation of results to the TPB expected in December 2021
- Final report expected in January 2022



Study documents

- <https://www.mwcog.org/documents/2021/07/15/tpb-climate-change-mitigation-study-of-2021-climate-change-greenhouse-gas-scenario-planning/>



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