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Colorado Implements a Statewide Planning Standard to Account for Greenhouse Gas Emissions in the Transportation Sector

OVERVIEW

Colorado has a statewide standard, or a defined level of performance, for reducing greenhouse gas (GHG) emissions at the State and local levels. The standard is designed to help support and achieve the emissions reduction targets set out in the 2019 [Climate Action Plan](#). The Colorado Department of Transportation (CDOT) and the State's five metropolitan planning organizations (MPOs) account for GHG in their transportation planning and project selection processes and demonstrate, through travel demand modeling and air quality modeling, their regional and statewide plans' impacts on reducing GHG emissions.

BACKGROUND

Building on the 2019 Climate Action Plan, Colorado released a [GHG Pollution Reduction Roadmap](#) in January 2021. The Roadmap directs State agencies to develop their own sector-specific standards and strategies for reducing greenhouse gas emissions in accordance with emissions reduction targets set for each sector (Figure 1). The Roadmap specifies the actions to reduce GHG emissions across multiple sectors. Emissions data from 2020 showed transportation to be the second largest contributing sector to GHG emissions. Short-term actions to achieve emissions reductions include a clean truck strategy, supporting telework options, reducing vehicle miles traveled through changes in land use planning, and new clean car standards.



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Sector	Revised 2005 Baseline (MMT CO ₂ e)	2025 Target (MMT CO ₂ e)	2030 Target (MMT CO ₂ e)
Electricity	40.28	21	8
Oil and Gas	20.17	13	8
Transportation	30.71	23	18
Residential, Commercial, Industrial Energy Use	24.65	26	20
Other	23.42	19.9	15.6
Total	139.22	102.9	69.6
Percent Reduction	--	26%	50%

Source: [CO G–HG Pollution Reduction Roadmap](#)

To implement the Roadmap, the Transportation Commission of Colorado approved a [GHG Pollution Reduction Planning Standard](#) in December 2021. An interagency working group was established to coordinate on implementation across relevant stakeholders. The group consists of representatives from CDOT, the Colorado Department of Public Health and Environment (CDPHE), the State’s five MPOs, and the Colorado Energy Office. The standard requires reducing GHG emissions from the State’s transportation sector through the transportation planning process.

GOALS AND TARGETS

Colorado’s Climate Action Plan set statewide greenhouse gas pollution reduction targets of 26% by 2025, 50% by 2030 and 90% by 2050 (using a 2005 baseline). For the transportation sector, the Greenhouse Gas Pollution Reduction Roadmap sets a goal of reducing transportation emissions to the equivalent of 18 million metric tons (MMT) of CO₂ in 2030, down from the 2005 baseline of 30.71 MMT, a reduction of 59 percent. This goal includes transitioning 940,000 light-duty vehicles to electric by 2030.

INTEGRATION WITH TRANSPORTATION PLANNING

Colorado’s [GHG Pollution Reduction Planning Standard](#) instructs the State’s five MPOs and CDOT to incorporate GHG reduction actions, data monitoring, and progress reporting in their Long-Range Transportation Plans (LRTPs). Beginning in 2022, CDOT and two of the five MPOs, the Denver Region Council of Governments (DRCOG) and the North Front Range MPO (NRFMPO), are required to demonstrate that their LRTPs result in GHG reductions aligned with the State-mandated target reduction levels.



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Regional Area	2025 Reduction Level (MMT)	2030 Reduction Level (MMT)	2040 Reduction Level (MMT)	2050 Reduction Level (MMT)
DRCOG	0.27	0.82	0.63	0.37
NFRMPO	0.04	0.12	0.11	0.07
PPACG	N/A	0.15	0.12	0.07
GVMPO	N/A	0.02	0.02	0.01
PACOG	N/A	0.03	0.02	0.01
CDOT/Non-MPO	0.12	0.36	0.30	0.17
TOTAL	0.43	1.5	1.2	0.7

Figure 2: Colorado MPO GHG Emissions Reduction Levels

Source: [Colorado's Pollution Reduction Planning Standards, TRB](#)

The “reduction level” is the level of GHG emission reductions in the updated plan compared to the baseline plan (Figure 2). Baseline plans are the L RTPs that were adopted at the time the rule was established in 2021. All future long-range plans must achieve a reduction level beyond the baseline plans.

To comply with the standard, the agencies must demonstrate that their L RTPs meet the GHG reduction targets defined in the GHG rule through a combination of strategies, such as reconfiguring projects in their L RTPs to result in fewer GHG emissions and investing in mitigation strategies, such as land use standards and transit expansion. MPOs must achieve the GHG reduction targets for any future plans and ensure the GHG impacts are considered in all of the State transportation planning efforts or have certain funding restricted. MPOs must use data modeling and analysis to determine that the transportation plans do not exceed the GHG levels specified for each MPO’s jurisdiction and for each of the four specified target years (2025, 2030, 2040, and 2050). CDOT will provide technical assistance and funds from the State’s Multimodal Options Fund to help MPOs adapt their models for GHG accounting.

MPOs and CDOT travel demand model outputs are used as inputs to the [U.S. Environmental Protection Agency’s Motor Vehicle Emissions Simulator \(MOVES\)](#) model to estimate total GHG emissions for the region. To aid with projecting and measuring emissions, planners can leverage tools like the state’s existing air quality conformity process for establishing emissions reductions for future years. CDOT and the regions must also leverage travel modeling to determine and demonstrate compliance with the reduction goals. CDOT and the MPOs that fail to meet GHG reduction targets could face impacts to their funding streams specifically outlined in the Rule.

In September 2022, CDOT released and updated the [10-Year Statewide Long Range Transportation Plan](#). The plan outlines current and upcoming project priorities for the department. To determine compliance with the standard for years 2025 and 2030, CDOT is analyzing projects within the 10-Year Plan. CDOT uses a scenario-based analysis for years 2040 and 2050, which are beyond the scope of the 10-Year Plan.



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Scenario planning and analysis allows planners to evaluate different proposed plans, initiatives, and programs to explore impacts and trade-offs. Evaluating multiple scenarios can help planners and decisionmakers determine the preferred pathway for the future.

IMPLEMENTATION AT THE MPO-LEVEL

In September 2022, DRCOG and CDOT updated their plans to address the GHG planning standard and include a transportation GHG emissions report. DRCOG's LRTP update required re-evaluating project scopes and timelines to address the targets. The update included a mitigation action plan, an overview of the agency's methodologies for modeling GHG emissions, and their public engagement strategies and outcomes. Mitigation action plans are an avenue for MPOs to include mitigation measures to achieve compliance with the GHG targets. MPOs must report progress on mitigation action plans annually. The NFRMPO also updated their plan but did not require a mitigation plan to meet the GHG targets. In 2022, the Transportation Commission approved all three of the agencies' GHG Transportation Reports.

NEXT STEPS

The State's other three MPOs will be required to comply with the rule during future plan updates. Each agency will prepare and submit a GHG Transportation Report to the Transportation Commission at least 30 days prior to submitting a LRTP amendment or new plan for adoption.

A new version of the Greenhouse Gas Pollution Reduction Roadmap ("Roadmap 2.0") is in progress as of October 2023. Roadmap 2.0 will include an updated inventory of emissions and a new set of actions to promote emissions reduction. State agency staff will gather public input during the fall of 2023 to include in the update.