

AMC Fall Transportation & Infrastructure Policy Committee GHG/VMT Legislation Update

September 14, 2023
MCEA Legislative Committee



GHG Coalition



- AMC and MCEA led a coalition of groups that shared concerns with the proposed language and offered suggestions:
 - Include language that takes safety issues into account
 - Establish a working group
 - Include GF dollars to cover the cost of mitigation measures
 - Use a programmatic approach
 - Exempt projects eligible for funding through Corridors of Commerce
- MCEA, CEAM, MnDOT met weekly and several meetings with bill authors
- Analysis on TH65 & TH5 showed projects would decrease GHG emissions but increase VMT
- Legislative efforts were **successful** in adding language relating to **safety**, **adding to the list of mitigation options**, and **creating a working group**



Overview

- 2023 GHG/VMT Legislation Overview
 - How does it apply to counties
 - Implementation dates/timelines
- GHG Impact Mitigation Work Group
 - Work group tasks
 - Deadlines
 - How can we stay informed?



MCEA Secretary and Legislative Committee Co-Chair
Lyndon Robjent testifies before the House Transportation
Committee with Pope County Commissioner Gordy Wagner



GHG Emissions Impact Assessment

- **New** Statute 161.178 – Transportation Greenhouse Gas Emissions Impact Assessment
 - Which projects does this apply to?
 - ‘Capacity expansion projects’ on the trunk highway (TH) system
 - What is a ‘capacity expansion project’?
 - (1) A major highway project, with a cost of \$15M or more in the metro area and \$5M or more in Greater MN; and
 - (2) Adds highway traffic capacity or provides for grade separation at an intersection, excluding auxiliary lanes with a length of less than 2,500 feet



GHG Emissions Impact Assessment

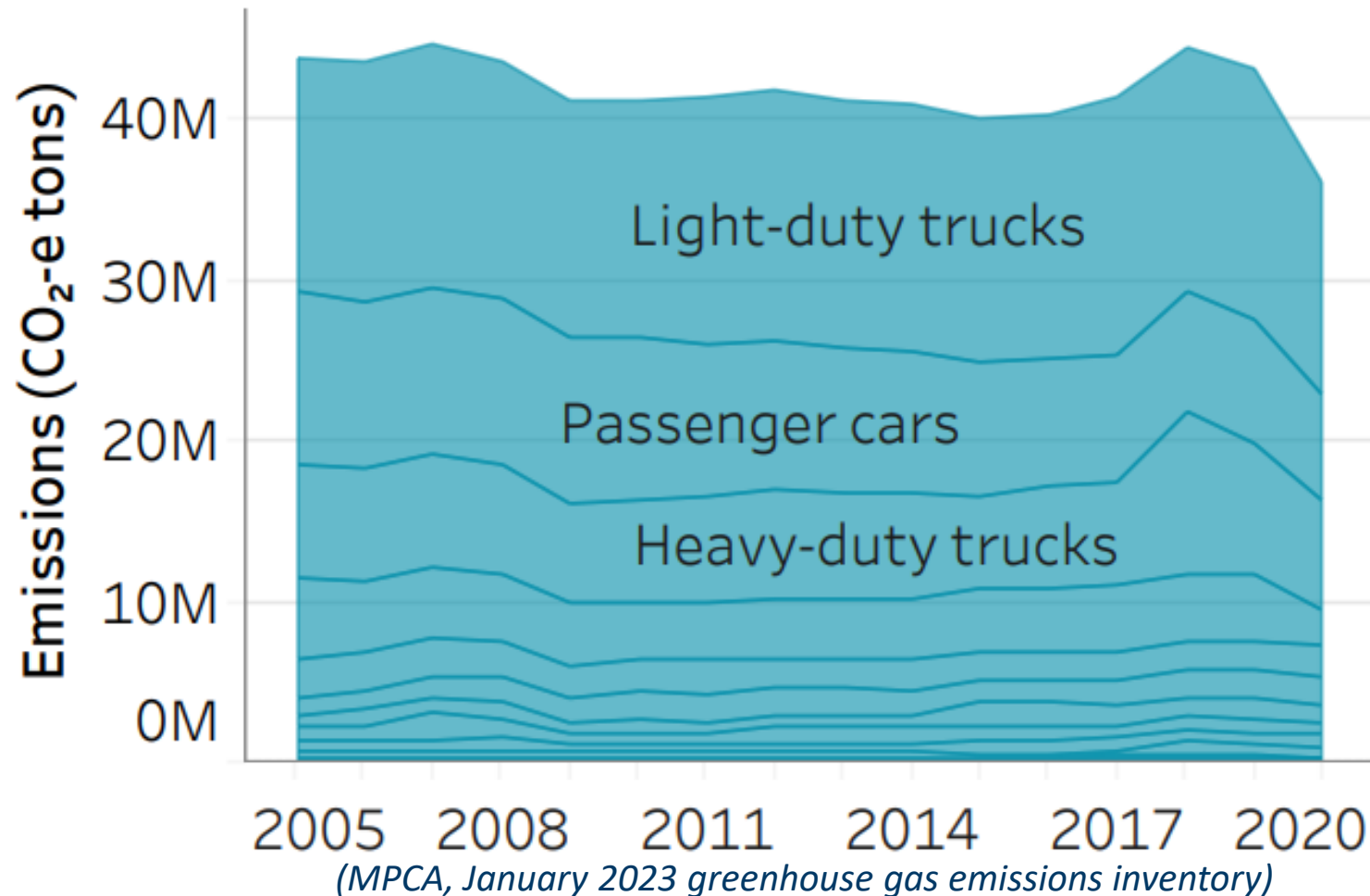
- Prior to inclusion of a capacity expansion project in the state transportation improvement program (STIP) or a metropolitan transportation improvement program, the **applicable entity** must perform a capacity expansion impact assessment of the project. Following the assessment, the **applicable entity** must determine if the project conforms with:
 - the greenhouse gas emissions reduction targets under section 174.01, subdivision 3; and
 - the vehicle miles traveled (VMT) reduction targets established in the statewide multimodal transportation plan under section 174.03, subdivision 1a.



GHG Emissions Impact Assessment

- If the project **does** conform with GHG and VMT reduction targets the project can move forward
- If the project **does not** conform with GHG and VMT reduction targets
 - (1) Alter project scope, perform a revised assessment to show the project meets requirements
 - (2) Interlink sufficient impact mitigation measures
 - (3) Halt project development
- **Must not supplant safety and well-being goals**

GHG Emissions Reduction Target for Transportation

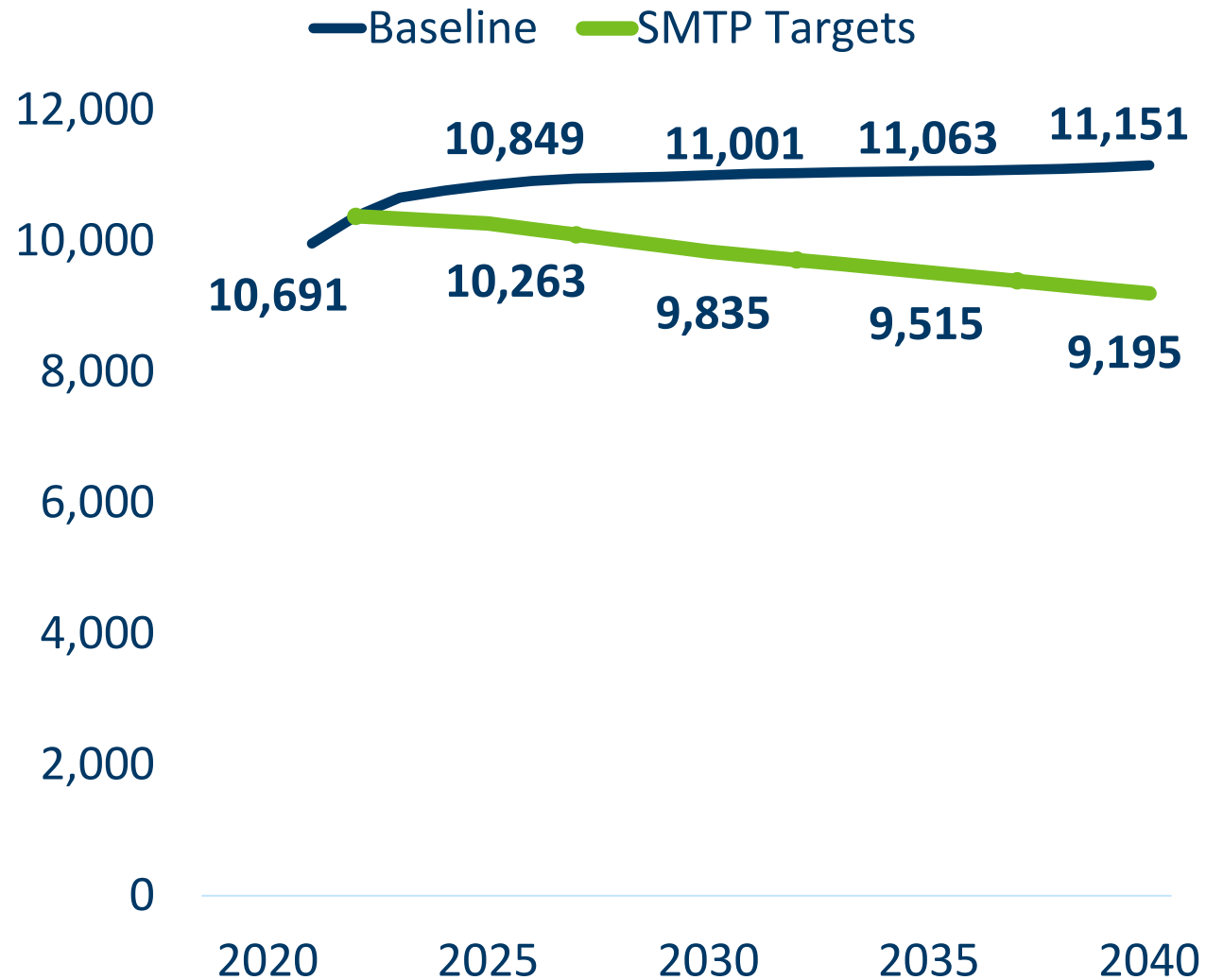


MnDOT Transportation GHG Reduction Target

From 2005 baseline:

- ≤ 29.5 million metric tons CO₂e by 2025 (-30%)
- ≤ 20.1 million metric tons CO₂e by 2030 (-50%)
- ≤ 14.1 million metric tons CO₂e by 2035 (-65%)
- ≤ 8.0 million metric tons CO₂e by 2040 (-80%)

Vehicle Miles Traveled Per Capita Reduction Target



VMT Per Capita Reduction Target

From 2019 baseline:

≤ 10,263 by 2025 (-4%)

≤ 9,835 by 2030 (-8%)

≤ 9,515 by 2035 (-11%)

≤ 9,195 by 2040 (-14%)



Mitigation Options (included in Statute)

- Transit expansion, including but not limited to regular route bus, arterial bus rapid transit, highway bus rapid transit, rail transit, and intercity passenger rail;
- Transit service improvements, including but not limited to increased service level, transit fare reduction, and transit priority treatments;
- Active transportation infrastructure;
- Micromobility infrastructure and service, including but not limited to shared vehicle services;
- Transportation demand management, including but not limited to vanpool and shared vehicle programs, remote work, and broadband access expansion;



Mitigation Options (continued)

- Parking management, including but not limited to parking requirements reduction or elimination and parking cost adjustments;
- Land use, including but not limited to residential and other density increases, mixed-use development, and transit-oriented development;
- Infrastructure improvements related to traffic operations, including but not limited to roundabouts and reduced conflict intersections; and
- Natural systems, including but not limited to prairie restoration, reforestation, and urban green space.



GHG Working Group

- Working group consists of:
 - (1) Commissioner of transportation (or designee),
 - (2) Chair of Met Council (or designee),
 - (3) Two representatives from MnDOT Sustainable Transportation Advisory Council,
 - (4) Two representatives from MCEA
 - (5) Two representatives from CEAM
 - (6) One representative from MPO or APO in greater MN
 - (7) One representative from Move MN
- Chair:
 - Erik Rudeen



GHG Working Group

- Working group charged with assisting the Commissioner with:
 - (1) **development of a process for impact assessment,**
 - (2) development of an impact mitigation plan,
 - (3) consideration of options related to funding GHG emissions mitigation activities in conjunction with transportation capacity expansion projects, and
 - (4) consideration of options for alternative mitigation options
- Working group must submit findings and recommendations, **including any recommendations for legislation**

Themes + Priorities from Work Group Members

Upon reflection from 1st meeting, what other priorities do you have?



Overview of options for Impact Assessment determination

Context + Conformance

Discussion Questions:

What does it mean to conform with GHG + VMT reduction targets and what is the context of that determination?

What questions do you have about the potential approaches?



Engagement

Project Development Continuum

A consistent and predictable approach for how MnDOT engages with internal and external audiences to inform decision making and best meet the state's transportation needs.

	Technical Objectives	Stage	Engagement Objectives
State	Determine investment categories for Minnesota's highway system. Establish a vision for Minnesota's transportation system.	MNSHIP / SMTP / 20-YEAR PLANS	Set a direction for investment spending for the next 20 years. Collect people's opinions about what MN's transportation priorities should be.
Districts	Identify roads and bridges that are in need of upgrades. Work with local governments to align project timing and resources.	CHIP / 10-YEAR PLAN	Learn what local governments are planning so that project timing and budgets can be aligned.
Highways and Bridges	Identify other opportunities for this project to address community needs. Initiate the environmental process <ul style="list-style-type: none"> Develop purpose and need Collect baseline data Conduct agency and public scoping meetings Begin developing alternatives 	SCOPING	Learn about local priorities. Encourage the community to weigh in on environmental and other project-related issues. Identify neighborhood and business preferences for mitigating construction impacts.
Projects	Create a list of projects with identified funding that will occur in the next four years.	STIP / 4-YEAR PLAN	Share STIP with broad audiences explaining how and why projects were selected.
	Identify key design elements within the project.	DESIGN	Identify public preferences for certain elements within a project, such as a bridge railing design, lane width, aesthetics, pedestrian access, landscaping, etc.
	Select a contractor who can perform the work required within the specified scope, schedule, and budget.	LETTING	Communicate contract award and DBE participation goals.
	Complete the work.	CONSTRUCTION	Follow through with mitigation and commitment plans. Identify preferences for how and how often people receive updates.
	Conduct maintenance to ensure safety and ongoing performance.	MAINTENANCE / OPERATIONS	Provide information; respond to issues/concerns.

- Facilitating community participation in MnDOT's planning, project development and decision-making processes
- Holding or convening community meetings, focus groups or advisory committees to identify and solve problems or help MnDOT make a decision
- Reviewing and analyzing public input to inform decision-making

Local Agency Project Development on Trunk Highways

Corridor Studies

- Identification of issues in the corridor; Mapping of the corridor; Environmental assessment; Traffic forecasting; Access management plan; Corridor improvement alternative(s) development and evaluation; Phasing of future projects; Estimate of funding needed
- Community engagement, agency coordination

Capital Improvement Plan

- Typical 5 year plan
- Identifies priority investments by county boards/city councils for implementation of transportation projects based on technical analysis, employee resource availability, coordination with other agencies, community input, and available funding

Funding, funding, funding

- Project costs on trunk highways can range from \$30-50/new interchange and \$10-15M/mile for 2- to 4-lane expansion
- Project development, preliminary engineering, and layout refinement typically occur while funding is actively being secured
- Funding sources – federal formula funds (competitive), federal discretionary funds (competitive), federal earmarks, state bonds or general funds (competitive or earmark), trunk highway funds (MnDOT directed), local agency funds (state aid, wheelage tax, local option sales tax, levy)

Local Agency Project Development on Trunk Highways

Project Development

- Project added into the Transportation Improvement Plan (TIP) or State Transportation Improvement Plan (STIP)
- Environmental document (Purpose and Need); Preliminary and final design, ROW acquisition (18-24 months), MnDOT layout approval and cooperative agreement
- Community engagement throughout all of this
- Typically 3-4 year timeline total
- Need to meet funding timelines/deadlines

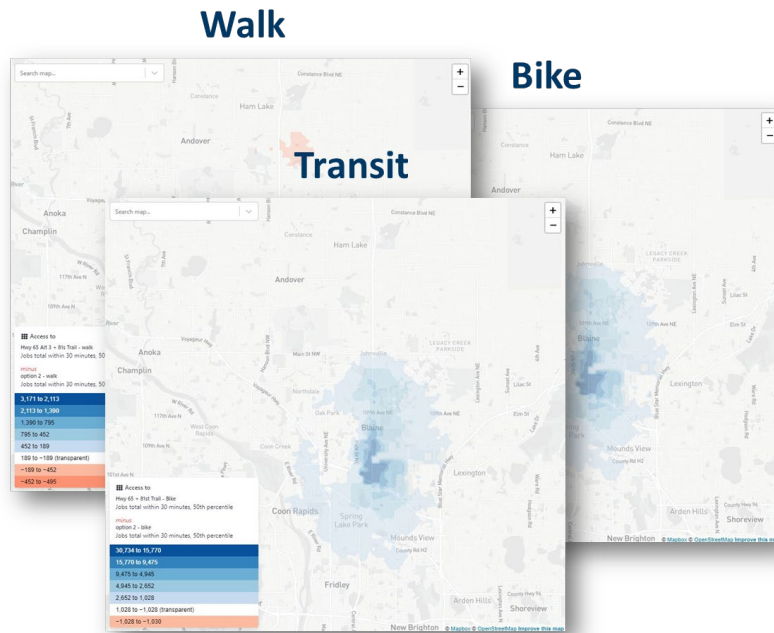
Project Delivery

- Advertise for bids; award contract to lowest responsible bidder; Construction commences
- Construction administration services provided by applicable agencies
- Process partial contract payments; funding source updates (i.e. INFRA term sheets quarterly updates); contract changes; funding reimbursements
- Continued response to community questions, concerns, complaints
- Ensure all environmental permits and ROW obligations are adhered to during construction (this can include daily/weekly/monthly reporting)

Project Closeout

- Ensure contractor(s) completes all punchlist work items; Process final contract changes; complete material certifications and testing reports; prepare/process final payment to contractor(s)
- Process all funding reimbursement requests; prepare/submit all funding reports (some funding sources require ongoing reporting several after project completion); coordinate project closeout with partner agencies

New Areas of Measurement + Analysis



- Expanding + improving Minnesota Infrastructure Carbon Estimator (MICE)
- Integrating multimodal accessibility analysis in program + project development
- In dialogue with peer states such as Colorado to better connect decision making and GHG impacts
- Evaluating existing travel behavior modeling to better internalize induced demand



Colorado's New Greenhouse Gas Standard for Transportation Planning

OVERVIEW

The Colorado Transportation Commission has approved a new standard to reduce greenhouse gas emissions from the transportation sector, improve air quality, reduce smog and provide more travel options. The standard requires CDOT and the state's five metropolitan planning organizations to determine the total greenhouse emissions expected from future transportation projects and reduce emissions by set amounts. This standard recognizes that the projects we build have an impact on how Coloradans travel and will help bring about a transportation system that provides more choices for travelers across the state.

KEY PROVISIONS OF THE NEW STANDARD

- Requires CDOT and the state's five metropolitan planning agencies to create transportation plans that provide more travel choices, resulting in reduced GHG emissions. The agencies must use sophisticated travel models to make this determination for different years in the future, and the emission goals differ for each agency and metro region.
- The modeling applies to "regionally significant projects," which are those projects that result in a fundamental change to the way people travel (e.g. new highway lanes).
- If an agency can't meet the greenhouse gas reduction levels, it can choose one or more mitigation measures as needed to meet the standard. These can include more public transit, more walking and bicycle trails, more medium- and heavy-duty electric vehicle charging stations, cleaner construction policies, carpool programs and smarter land use policies.

What tool does MnDOT use?

Minnesota Infrastructure Carbon Estimator (MICE)

- Based off Infrastructure Carbon Estimator (ICE)
 - Developed by Federal Highway Administration (FHWA), approved and suggested by Environmental Quality Board (EQB)
- MICE developed by Jeff Houk, formally of FHWA, with Peter Wasko (MnDOT Transportation Program Supervisor Senior)
- Tailored to Minnesota
 - Mitigation practices
 - Build/No build results, construction and resurfacing results separated
 - Specific lane widths, lighting, lane closure duration
- Uses Motor Vehicle Emission Simulator (MOVES) pollution coefficients and vehicle fleet data
- Updated alongside MOVES and ICE

Greenhouse Gas Analysis

MnDOT evaluates greenhouse gas (GHG) emissions from projects due to concerns about current and future impacts of climate change in Minnesota. GHGs from transportation (carbon dioxide, methane and nitrous oxide) contribute to warming of the atmosphere, which leads to effects in Minnesota that include increases in heavy precipitation, increased flooding, and more episodes of extreme heat.

The project is expected to improve traffic flow, which should reduce operational greenhouse gas emissions. The proposed project improves safety and congestion at corridor intersections without appreciably increasing traffic volumes. Construction greenhouse gas emissions will result from production and transportation of construction materials, and from fuel used in construction equipment.

Table 1. Analysis Results

Operational Emissions (Base Year and Design Year)	CO ₂ e, Metric Tons Per Year
Base Year (2018)	40,922
No Action Alternative (2045)	34,835
Build Alternative (2045)	31,146
Difference Build vs No-Build	-3,690
Cumulative Difference over project lifetime (27 years)	CO₂ , Metric Tons (total)
	-49,817

Table 2. Analysis Results

Construction CO ₂ e Emissions (Total over Construction Period)	CO ₂ e, Metric Tons (total)
Build Alternative	13,119
No Build (maintenance of existing system)	4,084

I-94 Gap Project

- 9.6 miles between Monticello to Albertville
- Expansion project
 - Two lanes EW to Three lanes EW
- 27 Lane Miles added
- 501,523 VMT in 2021 to 781,085 VMT in 2040,

Table 1: Construction Emissions Analysis

Construction CO ₂ e Emissions (Total over Construction Period)	CO ₂ e, Metric Tons (total)
Build Alternative	17,071
No Build (maintenance of existing system)	5,435

Table 2: Vehicle Operations GHG Emissions Under Build and No-Build Scenarios

Operational Emissions (Base Year and Design Year)	CO ₂ e, Metric Tons Per Year
Base Year (2021)	104,040
No Build (2040)	102,781
Build (2040)	126,420
Difference Between Build and No Build	23,639
Cumulative Difference over project lifetime (19 years)	CO ₂ e, Metric Tons (total)
	224,573

Minnesota Infrastructure Carbon Estimator (MICE) Greenhouse Gas Emissions Analysis – Interstate 94



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Mitigation/Interlinking Options

Project or Program Focused Approach



Pros

- Provides direct accountability for funding mitigation at the level expansion projects are being developed
- Opportunity to align transportation options interlinked on a project corridor with trip purpose on expanded roadway

Cons

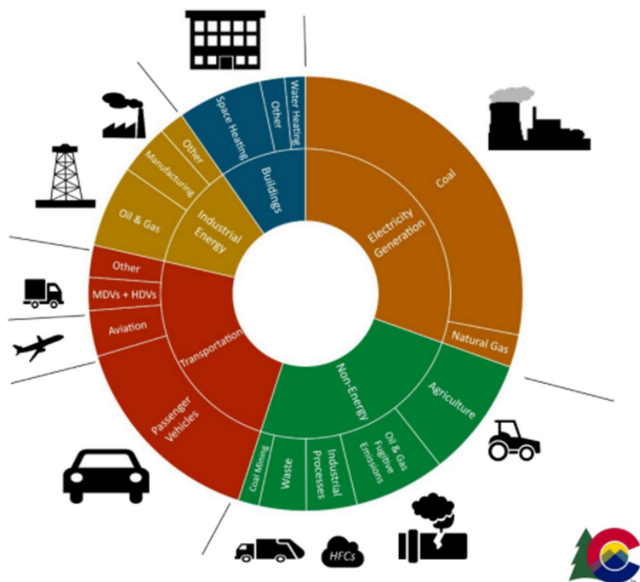
- Comparatively more administratively burdensome for a project to manage mitigation, especially across the state
- Difficult to develop highest ROI mitigation investments

Pros

- Carbon bank (Interlinking/mitigation piggybank)
- Greater opportunity to develop proactive mitigation/ interlinked investments that have a high ROI for emission reduction goals

Cons

- Relationship between expansion projects and accountability for funding mitigation could become disconnected



House Bill 19-1261 - Climate Action Plan to Reduce Pollution

- Reduce GHG emissions **26% by 2025, 50% by 2030, and 90% by 2050.**

In 2023, Governor Polis signed HB23-016, which updated and added additional GHG reduction targets.

- Reduce 2035 GHG emissions by at least 65% of 2005 levels
- Reduce 2040 GHG emissions by at least 75% of 2005 levels
- Reduce 2045 GHG emissions by at least 90% of 2005 levels
- Reduce 2050 GHG emissions by 100% of 2005 levels

Colorado Greenhouse Gas Roadmap

- A list of near-term actions the State will pursue over the next few years to make significant progress toward the Climate Action Plan goals.
- Roadmap 2.0 is in development now

Senate Bill 21-260

- Made the Roadmap recommendation for transportation planning a requirement.



GHG Roadmap-Transportation Near Term Actions

Reduce pollution ~12.7 million tons by 2030

6 MMT
reduction

Low & Zero Emission Vehicle rules

2 MMT
reduction

Utility and public investment in fleet turnover and infrastructure for light-duty zero emission vehicles (SB19-077, electrification investments from SB21-260)

1.5 MMT
reduction

GHG Transportation Planning Standard

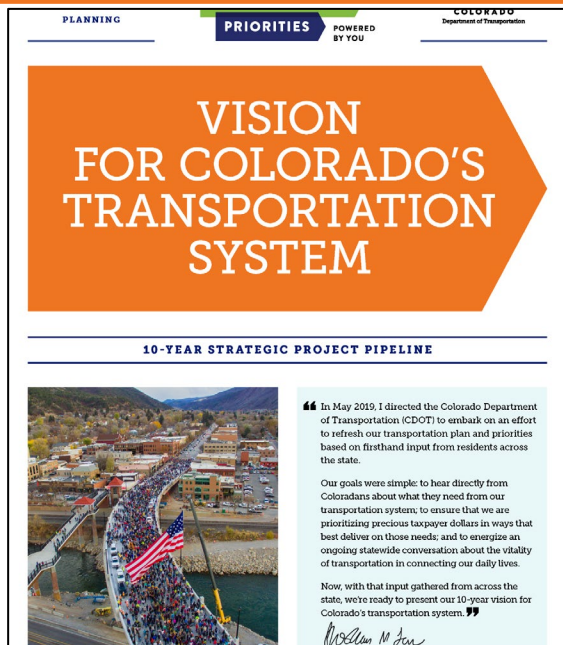
Collectively, the other strategies will target remaining 3.2 million tons

~3.2 MMT
reduction

Incentivize land use to increase housing near jobs and reduce VMT and pollution	HB 21-1271, HB 21-1117; CDOT stakeholder process; affordable housing committee; Strong Communities
Clean trucking strategy - infrastructure, fleet incentives, consider regulatory tools such as advanced clean trucks and fleet rules	Study released October 2021 Stakeholder Engagement - Fall 2021/Winter 2022
Participate in developing post 2025 vehicle standards (state and federal)	Federal and CARB processes
AQCC evaluation of indirect source rules	RAQC has convened committee to start developing proposals
Expansion of public transit, including setting the stage for Front Range Rail	In progress - SB21-238, SB 21-260, Main Streets investments, on-going multimodal emphasis



The GHG Planning Rule



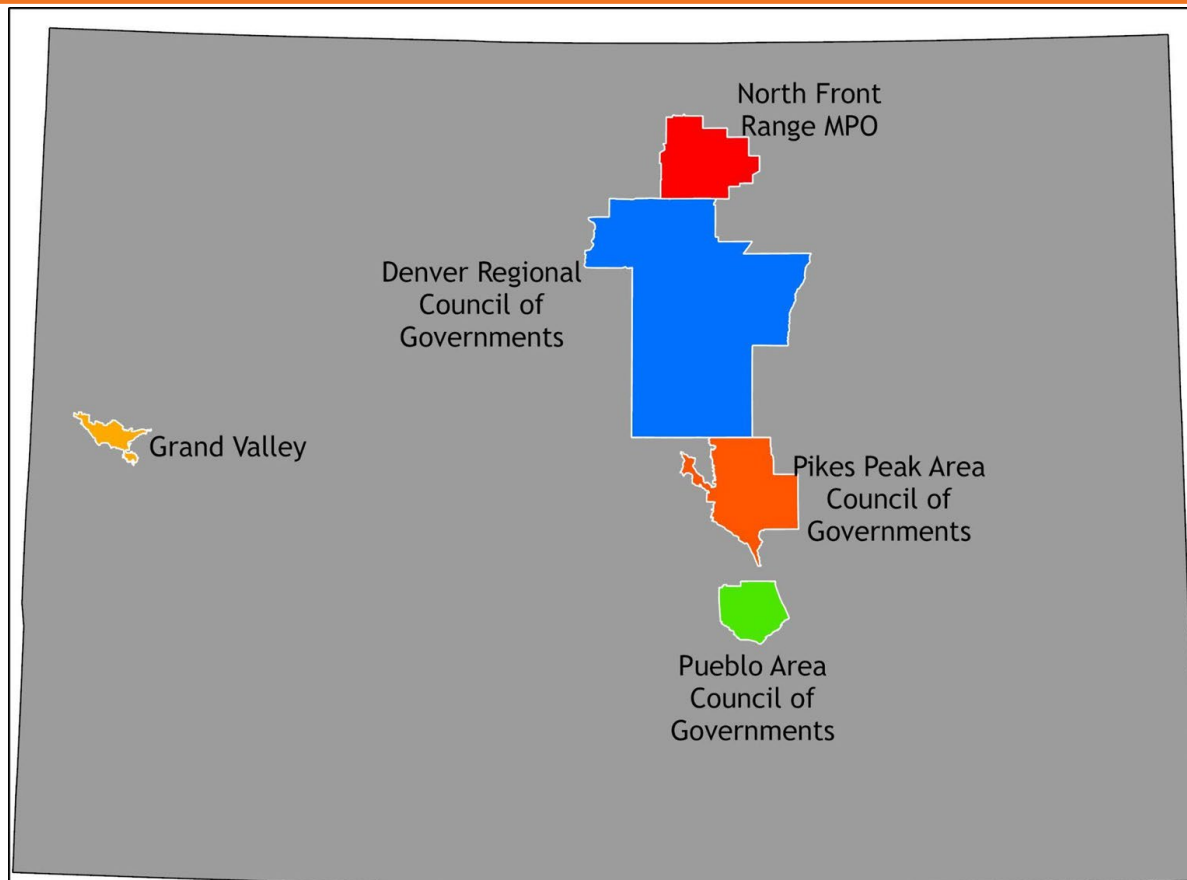
- Adopted by the Colorado Transportation Commission on December 2021
- Requires CDOT and the State's five metropolitan planning organizations (MPOs) to create **transportation plans** that provide more travel choices, **resulting in reduced GHG emissions**
- Systems planning decisions provide a greater opportunity to reduce GHGs than individual projects on their own

<https://www.codot.gov/programs/environmental/greenhousegas/assets/2-ccr-601-22-eff-10-30-22.pdf>

Planning Standard Goal: Reduce GHG emissions from the transportation sector through the development of long range transportation plans that support more travel choices.



Colorado's Planning Agencies



- Denver Regional Council of Governments (DRCOG)
- Grand Valley MPO (GVMPO)
- North Front Range MPO (NFRMPO)
- Pikes Peak Area Council of Governments (PPACG)
- Pueblo Area Council of Governments (PACOG)



How much will CDOT & MPOs need to reduce GHG emissions?

Table 1: GHG Transportation Planning Reduction Levels in MMT of CO₂e

Regional Areas	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

How were these reduction levels chosen?

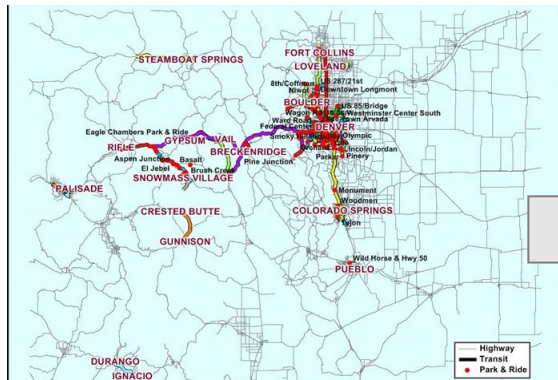
3 scenarios (layer cake - building on each level)

- Travel choices
- Travel choices + Transit
- Travel choices + Transit + Land Use

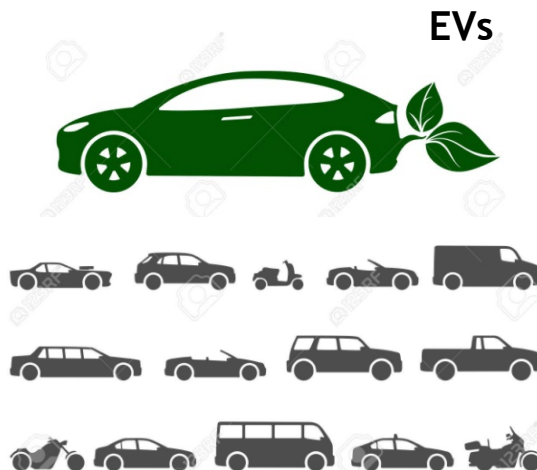


How Are Emissions Calculated?

CDOT TRAVEL MODEL



EPA MOVES MODEL



TOGETHER
these models show

TRANSPORTATION
GHG
EMISSIONS

Outputs: VMT,
congestion/speed

Fleet Mix/Age & Fuel Type

Baseline = existing transportation plan.

Compliance = updated plan.



What types of projects can be considered a GHG Mitigation Measures?



Bicycle infrastructure



Walking infrastructure



Micromobility E-share



Transit



Land use development



What types of projects can be considered a GHG Mitigation Measures?



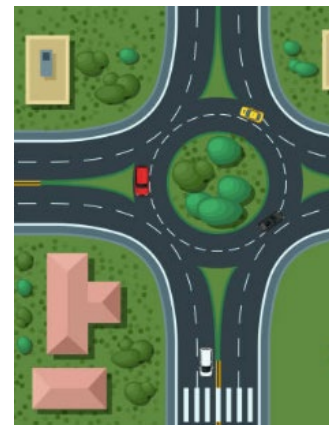
Transportation Demand Management



MD/HD Electrification



Parking Management



Operations



Mitigation Table

Table 1. GHG Mitigation Measures and their tons/unit in each compliance year.

Project Type	Unit	Project Lifetime (Years) ¹	Tons/ Unit ² <u>Now-2025³</u>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
Pedestrian/Bicycle							
Bike lane/facility ⁴ - core urban ⁵	Miles of two-way facility built between plan year 1 and evaluation year ⁶	30	26	21	12	6	2.0 – separated / protected lane or bike boulevard
Bike lane/facility - urban			14	11	7	3	
Bike lane/facility – suburban			4	4	2	1	



Colorado GHG Program

- Statewide travel demand model
- Program level GHG impact assessment and mitigation plans focused on “regionally significant” projects
- Interlinked with land use
 - Regional transportation plans must incorporate transportation mode/improvement options and investments that reduce GHG
 - GHG reduction goals vary for different regions (rural/urban)
- Utilize a catalog of mitigation measures/tools



GHG Working Group

- Working group charged with assisting the Commissioner with:
 - (1) development of a process for impact assessment,
 - (2) development of an impact mitigation plan,
 - (3) **consideration of options related to funding GHG emissions mitigation activities in conjunction with transportation capacity expansion projects,** and
 - (4) **consideration of options for alternative mitigation options**
- Working group must submit findings and recommendations, **including any recommendations for legislation**



GHG Working Group

- Key Dates:
 - Working group must submit findings and recommendations, including any recommendations for legislation, to Chairs and ranking minority members of legislative committees with jurisdiction over transportation finance and policy by **February 1, 2024**
 - GHG/VMT Legislation becomes effective **February 1, 2025**
 - Applies to capacity expansion projects that are not included in the state transportation improvement program (STIP) or have not been submitted to MnDOT for approval of the geometric layout



How Do I Stay Informed?

- Visit the GHG Working Group website:
<https://www.dot.state.mn.us/sustainability/greenhouse-gas-emissions-impact-mitigation-working-group.html>
- Contact a MCEA representative on the GHG Working Group
 - Lyndon Robjent – Carver County Engineer/MCEA Secretary and Legislative Committee Co-Chair - lrobjent@co.carver.mn.us
 - Joe MacPherson – Anoka County Engineer/MCEA Environmental Resources Committee Member – joe.macpherson@anokacountymn.gov
- Contact Emily Murray

Questions?

