SETTING TARGETS FOR

FHWA'S GREENHOUSE GAS EMISSIONS MEASURE

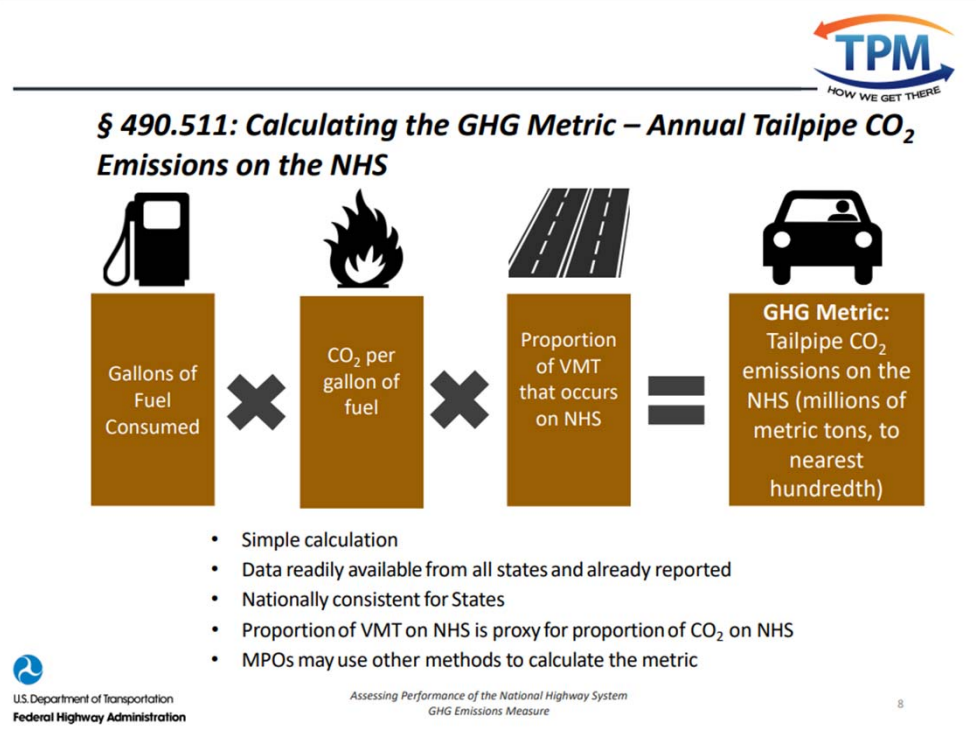
Federal Guidance

GHG Metric and Measure
[§ 490.511(a)(2), and §490.507(b)]

GHG Metric- Annual total Tailpipe CO2 emissions on the NHS

GHG Measure- Percent change in Tailpipe CO2 emissions in the NHS compared to the reference year(Calendar year 2022)

FHWA METHODOLOGY



Required by States to use

Data needed:

- Total Tailpipe CO2 Emissions on the NHS in a calendar year
- Total number of on-road fuel types
- Gasoline and Gasohol volume
- Gasoline and Gasohol CO2 Factor
- Special Fuel Volume
- Special Fuel CO2 Factor
- NHS VMT
- Total system VMT in the calendar year

Role of State DOTs

State DOTs are required to establish 2022 baseline Greenhouse Gas metric on **March 29, 2024.**

INITIAL TARGET AND REPORTING

BY STATE DOTS

March 29, 2024 INITIAL TARGETS

DECLINING 4 YEAR TARGETS

The report shall include:

- 4-year target for performance period
- Basis for the established target
- Relationship with other performance expectations
- The GHG metric for CY 2022, the reference year, and the individual values used to calculate the metric

WHAT OTHER REGIONS ARE DOING

- As of Dec 21, 2023, 21 states filed a lawsuit, claim that the executive agencies lack the authority to regulate greenhouse gas emissions or to compel states to administer a federal regulatory program. “Arbitrary and Capricious” and will affect American economy by forcing states to make choices about projects, contracts and regulations in order to meet declining targets” and affects more rural areas, who have fewer options
  - **Kentucky, South Dakota, Alabama, Alaska, Arkansas, Florida, Idaho, Indiana, Iowa, Kansas, Mississippi, Montana, Nebraska, North Dakota, Ohio, Oklahoma, South Carolina, Utah, Virginia, West Virginia and Wyoming.**
- 14 States thank FHWA-
  - Arizona, California, Colorado, Connecticut, District of Columbia, Hawaii, Illinois, Maryland, Michigan, Minnesota, New York, Oregon, Pennsylvania, Vermont, and Washington.
- Lots of electrification

TRANSPORTATION SECTOR EMISSIONS CONTRIBUTION

MAKES UP 37.2% OF OVERALL EMISSIONS

Target unknown, committed to setting targets on the actual date(2012, MAP-21)

METHODOLOGY

Unknown, committed to setting targets on the actual date(2012, MAP-21)

MAKES UP 27% OF OVERALL EMISSIONS

27% of IL's overall emissions reduction between 2005-2021

Target: 2.6% Reduction from 2022 to 2026

METHODOLODY

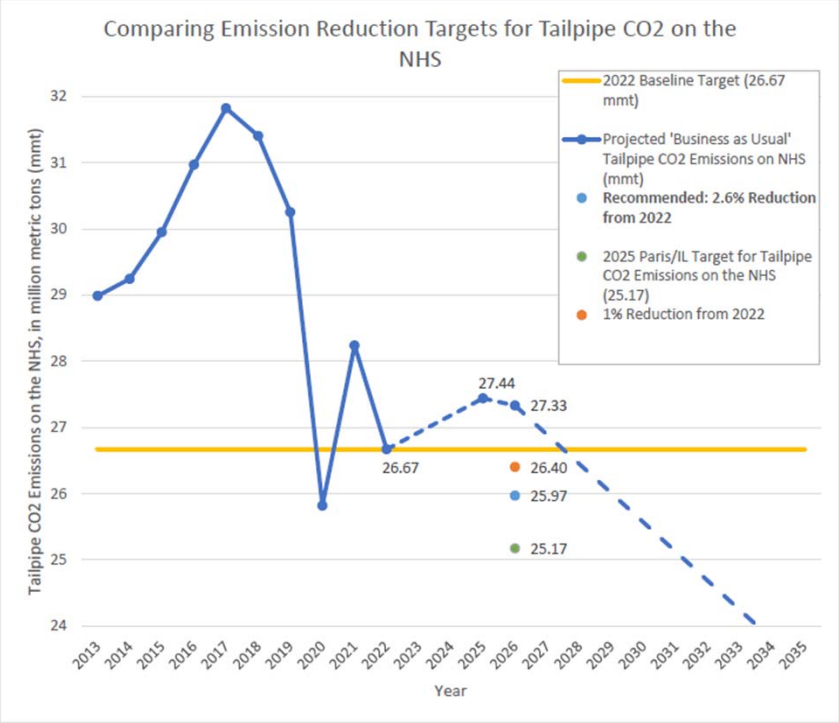
Paris Agreement (reduce GHG emissions by at least 26-28% below 2005 levels by 2025

Illinois 2021 Climate and Equitable Jobs Act (Ceja)- target of 1 million electric vehicles on the road by 2030

ILLINOIS

Target Options

We present three potential emission reduction targets:



SELECTED: 2.6% REDUCTION FROM 2022 TO 2026.

Illinois has committed to the Paris Agreement cross-sector target of reducing GHG emissions by at least 26 to 28 percent below 2005 levels by 2025.6 Based on US Energy Information Administration data, a 27% reduction over 2005 levels by 2025 would be a statewide reduction from 244.4 mmt in 2005 to 178.4 mmt in 2025. In 2021, IL produced 184.2 mmt of CO2 across all sectors, which is on track to meet Paris Agreement targets.7

$$(Tailpipe\ CO_2\ Emissions\ on\ NHS)_{CY} = (\sum_{t=1}^{T}(Fuel\ Consumed)_t * (CO_2 Factor)_t) * (\frac{NHS\ VMT}{Total\ VMT})$$

Where:

$(Tailpipe\ CO_2\ Emissions\ on\ NHS)_{CY}$ = Total tailpipe CO_2 emissions on the NHS in a calendar year, expressed in million metric tons and rounded to the nearest hundredth;

T = the total number of on-road fuel types;

t = an on-road fuel type, which for the purposes of this calculation, FHWA categorizes as gasoline and gasohol, and special fuels;

$(Fuel\ Consumed)_t$ = the quantity of total annual fuel consumed for on-road fuel type "t" (rounded to the nearest thousand gallons, and expressed in thousand gallons), which is based on FHWA-published highway statistics produced from state reporting;

$(CO_2 Factor)_t$ = the amount of CO_2 released per unit of fuel consumed for on-road fuel type "t," which are published by the FHWA for base year 2022;

$\frac{NHS\ VMT}{Total\ VMT}$ = the proportion of vehicle-miles travelled on the National Highway System versus the total system in the calendar year. VMT data is pulled from FHWA-published highway statistics produced from state reporting.

For 2022, the equation is:

$(Tailpipe\ CO_2\ Emissions\ on\ NHS)_{2022}$	=	(Gasoline and Gasohol Volume	*	Gasoline and Gasohol CO_2 Factor	+	Special Fuels Volume	*	Special Fuels CO_2 Factor)	*	$\frac{NHS\ VMT}{Total\ VMT}$
26.67	=	(3,892,024	*	0.00000810	+	1,537,337	*	0.00001019)	*	58,635 / 103,752
26.67	=			47.191					*	0.565

Role of MPOs

MPOs (and State DOTs) are to establish a declining CO2 emission reduction target for 2025, relative to the reference year 2022, and report progress towards the targets

MPO METRIC CALCULATION METHODS

180 Days after initial targets are set by DOTs-- September 25, 2024

Flexibility in how to calculate metric (total tailpipe CO2 Emissions on the NHS)

- MPO share of the State's VMT
- VMT estmates with model emission factors from EPA's Motor Vehile Emissions Simulator (MOVES) model.
- FHWA's Energy and EMissions Reduction Policy Analysis (EERPAT) tool
- Other method with valid and useful results for CO2 measurement

MPO NEXT STEPS

- Receive and review MoDOT initial targets
- Determine Baseline
- Establish a methodology for determining a declining performance target (Percent change in tailpipe carbon dioxide emissions on the NHS compared to the reference year 2022)
  - Include a description of methodology chosen and projects/policies it supports
- Determine Scenarios (Business as usual, Recommended reduction, reduction from the last calendar year)
- Share established targets with both DOTs