DALLAS-FORT WORTH REGIONAL GREENHOUSE GAS EMISSIONS INVENTORY AND BEYOND

2023 INTERNATIONAL EMISSIONS INVENTORY CONFERENCE

SEPTEMBER 27, 2023

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NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

IMPORTANCE AND RELEVANCE

Demonstrate accountability and leadership with multi-pollutant inventory and reduction efforts and not just criteria pollutants such as Ozone

North Central Texas is the fourth largest region in the nation (after New York, Los Angeles, and Chicago) and the only region of the four without either a regional or state GHG inventory

Current Administration's target for the United States to achieve a 50-52 percent reduction from 2005 levels in economy-wide net greenhouse gas pollution in 2030

FACTSHEET

FHWA's proposed amendment to the regulations on national performance management measures to establish a method for the measurement and reporting of GHG emissions associated with transportation

EPA's Climate Pollution Reduction Grants (CPRG) Program

GHG VS. SIP/REGULATORY INVENTORIES

- Sectors/Source Category Breakdown
- Emissions based on Consumption (Electricity, Natural Gas)
- Granular Metrics (Link Level Activity, Vehicle Processes)
- Data/Results Annualization

SECTORS (COMMUNITY-WIDE GHG INVENTORY)

- Energy
  - Electricity
  - Natural Gas
  - Other Fuels
- Transportation & Mobile Sources
  - Aviation
  - Rail
  - Water/Pleasure Craft
  - On-Road
  - Off-Road
- Water
- Waste
  - Solid Waste
  - Wastewater
- Process and Fugitive
- Agriculture, Forestry, and Other Land use

2019 GREENHOUSE GAS EMISSIONS INVENTORY

Regional GHG Inventory

Contracted with Local Governments for Sustainability (ICLEI), formally known as the International Council for Local Environmental Initiatives, thanks to contribution from Burlington-Northern Santa Fe (BNSF) railroad

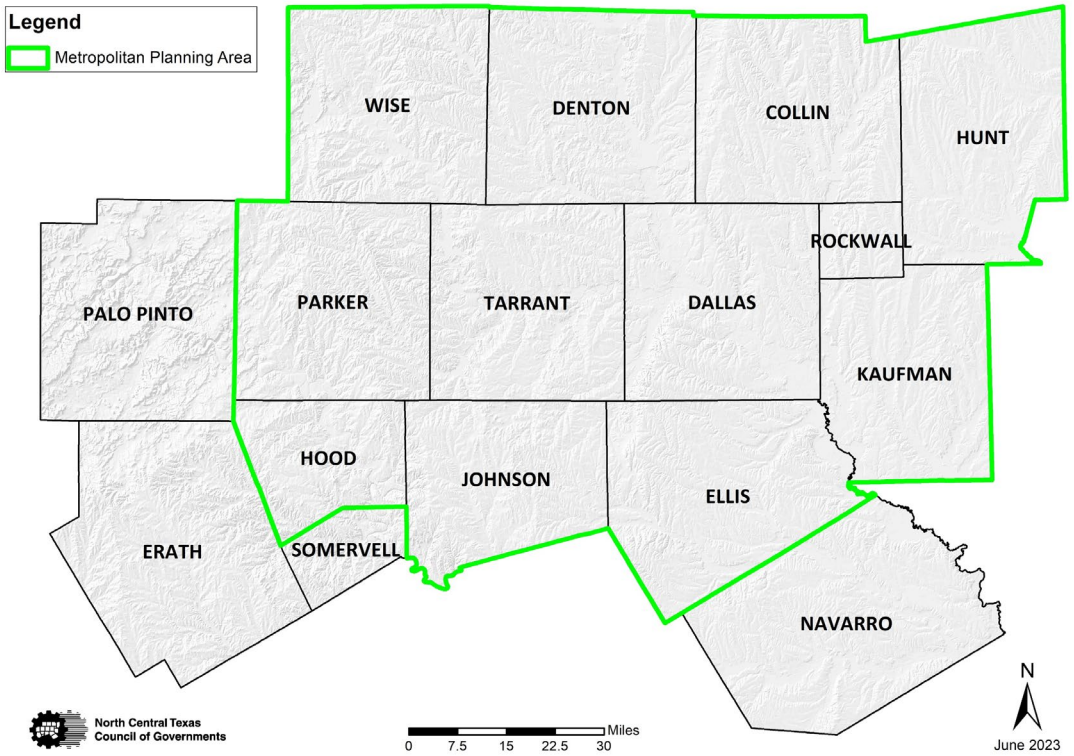
Cohort participants

2019 baseline

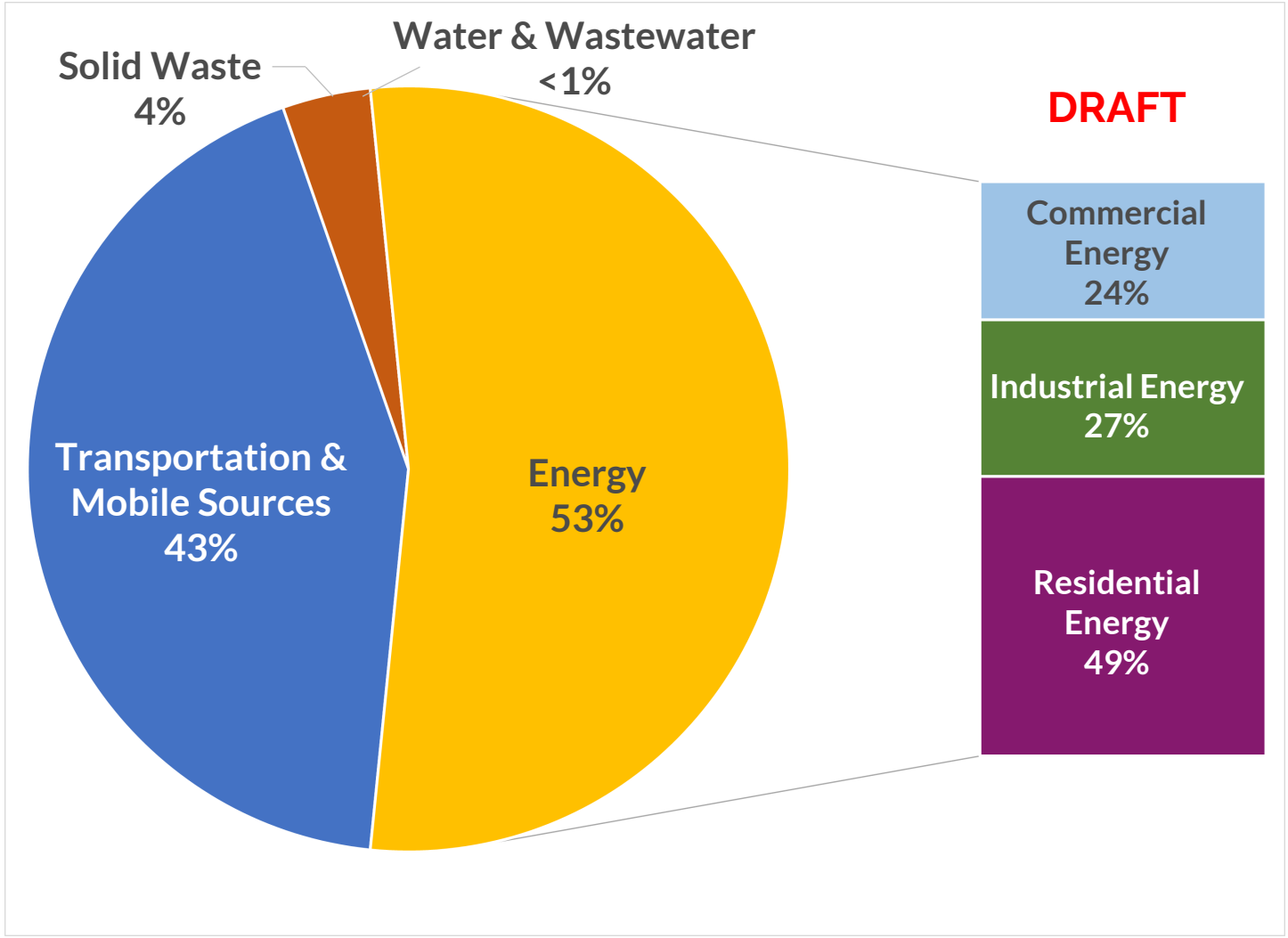
Energy, Transportation, Solid Waste, Water, and Wastewater sectors for region

Community Protocol

County-based breakdown



2019 GREENHOUSE GAS EMISSIONS INVENTORY



Carbon Dioxide Equivalent
CO_2e
=
Greenhouse Gases
(Carbon Dioxide CO_2
Methane CH_4
Nitrous Oxide N_2O)
x
Respective
Global Warming Potentials
(GWP)

U.S. Total – 6.3 Billion Metric Tons*

*Based on 2021 data

Note: The agricultural emissions, process & fugitive emissions were not part of this inventory

Dallas-Fort Worth (DFW) 12-County MPA Carbon Dioxide Equivalent (CO_2e) = 103,014,917 Metric Tons

2019 GREENHOUSE GAS EMISSIONS INVENTORY EQUIVALENCIES

103,014,917 Metric Tons of CO_2e is equivalent to:


~28 coal-fired power plants


~23 million gas passenger vehicles driven for one year


~12 trillion smartphone charged


~10 billion gallons of diesel consumed

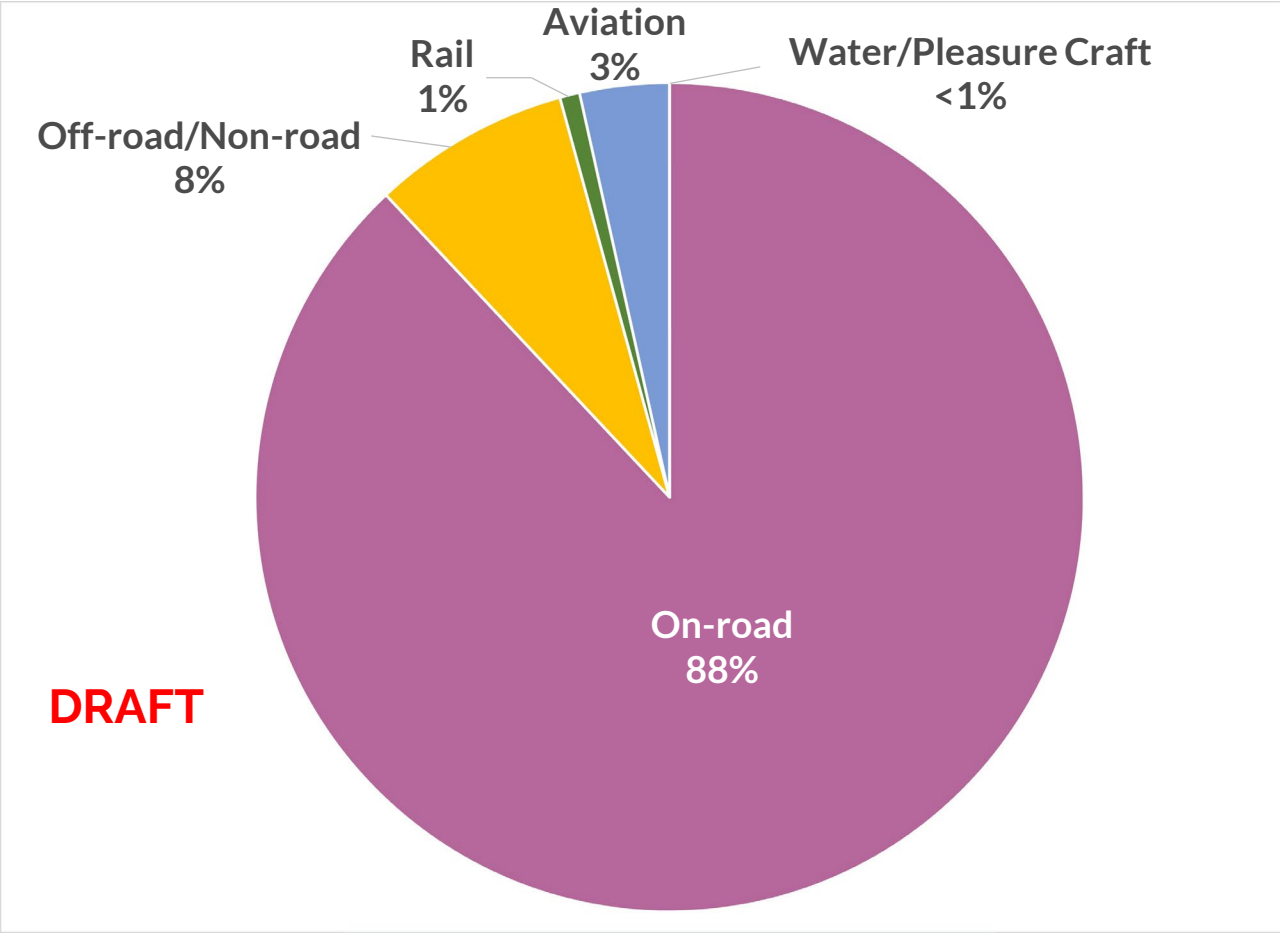
Source: [Greenhouse Gas Equivalencies Calculator | US EPA]

2019 GREENHOUSE GAS EMISSIONS INVENTORY- COUNTY BREAKDOWN

County	Transportation & Mobile Sources	Energy	Solid Waste	Water*	Wastewater
Collin	10.96%	12.37%	19.51%	9.58%	14.21%
Dallas	36.92%	38.67%	39.68%	55.59%	47.21%
Denton	8.66%	9.02%	12.96%	6.34%	2.21%
Ellis	3.54%	3.62%	4.23%	2.22%	0.58%
Hood	0.87%	0.73%	0.00%	0.24%	0.25%
Hunt	2.29%	1.13%	4.08%	0.67%	1.05%
Johnson	2.43%	2.34%	6.68%	2.00%	1.29%
Kaufman	2.95%	1.31%	0.00%	2.00%	1.32%
Parker	2.46%	1.66%	4.28%	0.66%	0.29%
Rockwall	1.12%	1.17%	0.00%	0.96%	0.71%
Tarrant	26.03%	27.01%	8.59%	19.59%	30.50%
Wise	1.77%	0.96%	0.00%	0.15%	0.38%

*For Information Only. The emissions have been included under the Energy Sector in the inventory

2019 GREENHOUSE GAS EMISSIONS INVENTORY- TRANSPORTATION



Vehicle Types	Fuel	On-road CO_2e
Light-Duty	Gas	70.02%
Light-Duty	Diesel	0.94%
Medium-Duty	Gas	4.54%
Medium-Duty	Diesel	0.48%
Heavy-Duty	Gas	3.65%
Heavy-Duty	Diesel	20.37%

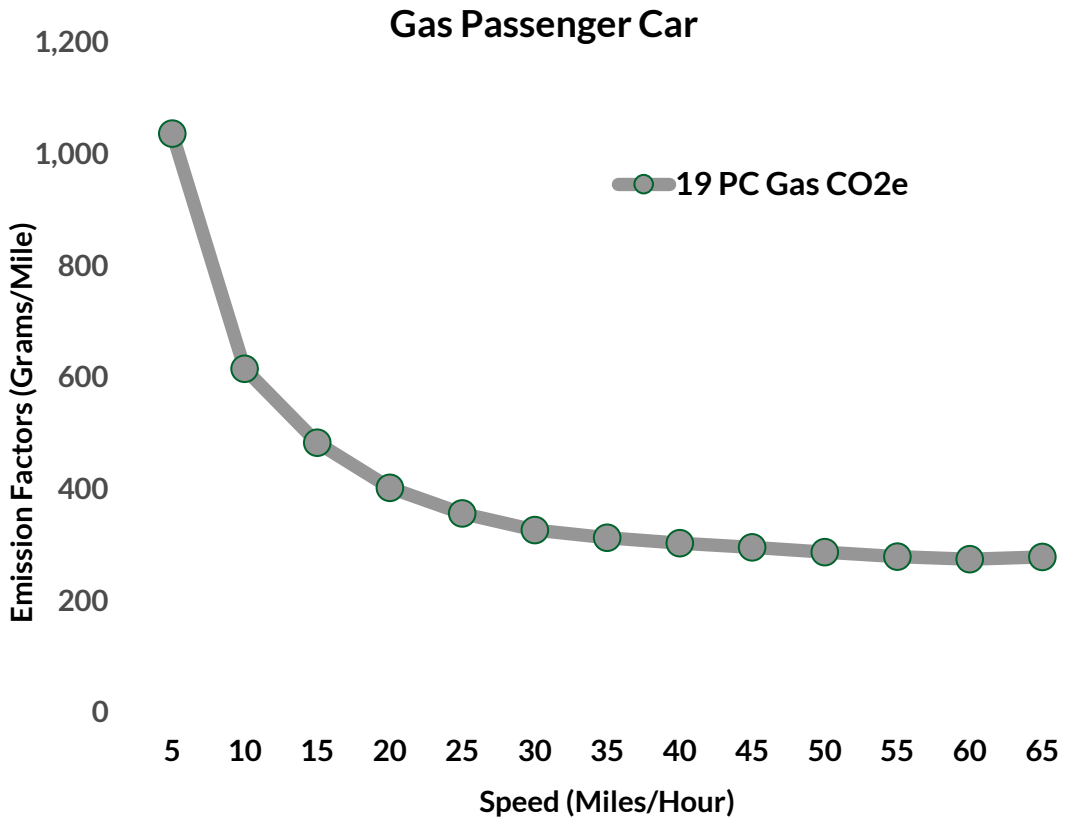
DFW 12-County MPA On-road CO_2e = 39,006,087 Metric Tons

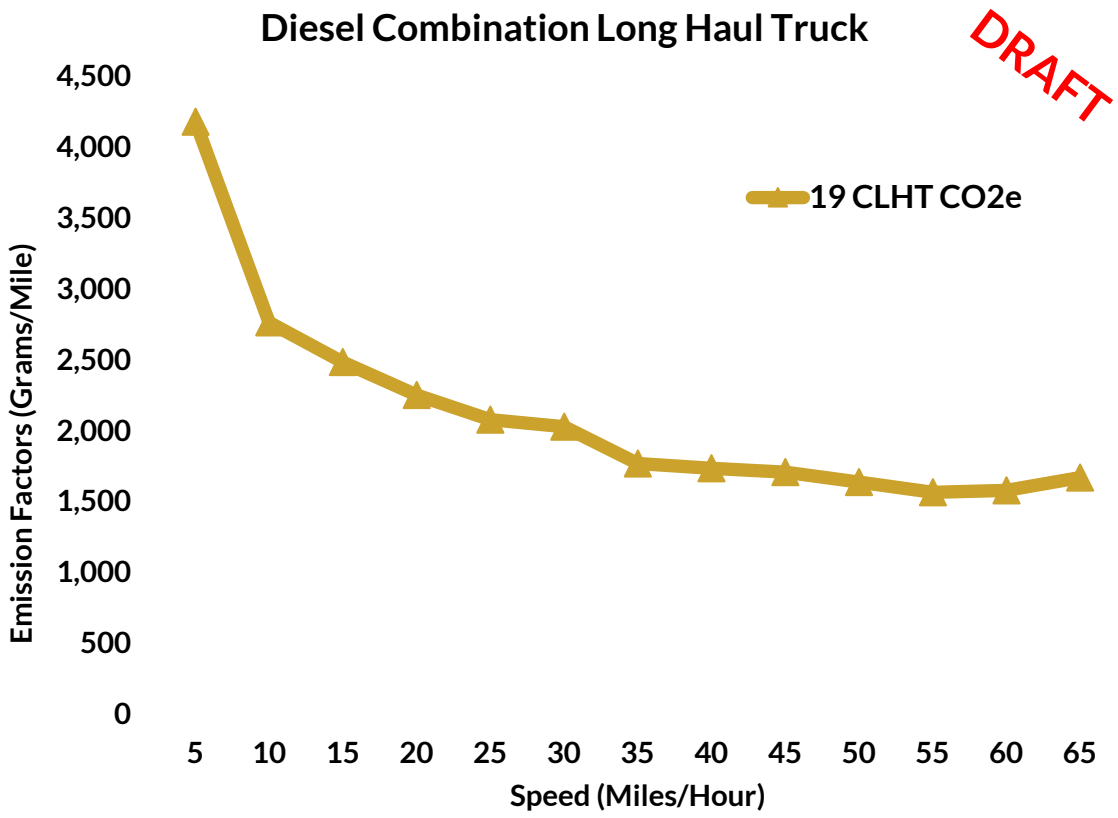
County	On-road CO_2e
Collin	11.25%
Dallas	37.54%
Denton	8.91%
Ellis	3.55%
Hood	0.89%
Hunt	2.46%
Johnson	2.47%
Kaufman	3.11%
Parker	2.59%
Rockwall	1.13%
Tarrant	24.30%
Wise	1.79%

DFW 12-County MPA Transportation and Mobile Sources CO_2e = 44,322,788 Metric Tons

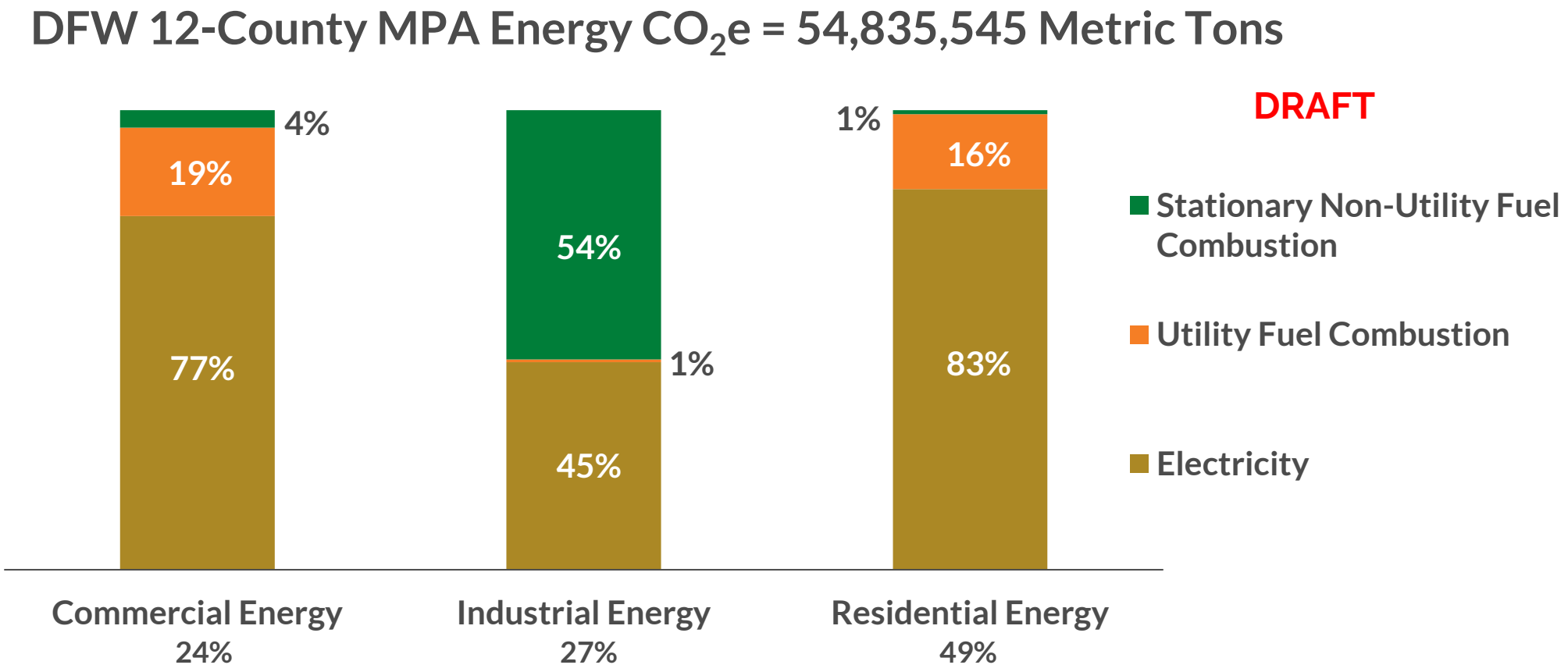
2019 GREENHOUSE GAS EMISSIONS INVENTORY- OM-ROAD TRANSPORTATION

Dallas County, Freeway, CO2e Emission Rates, Year 2019





2019 GREENHOUSE GAS EMISSIONS INVENTORY- ENERGY

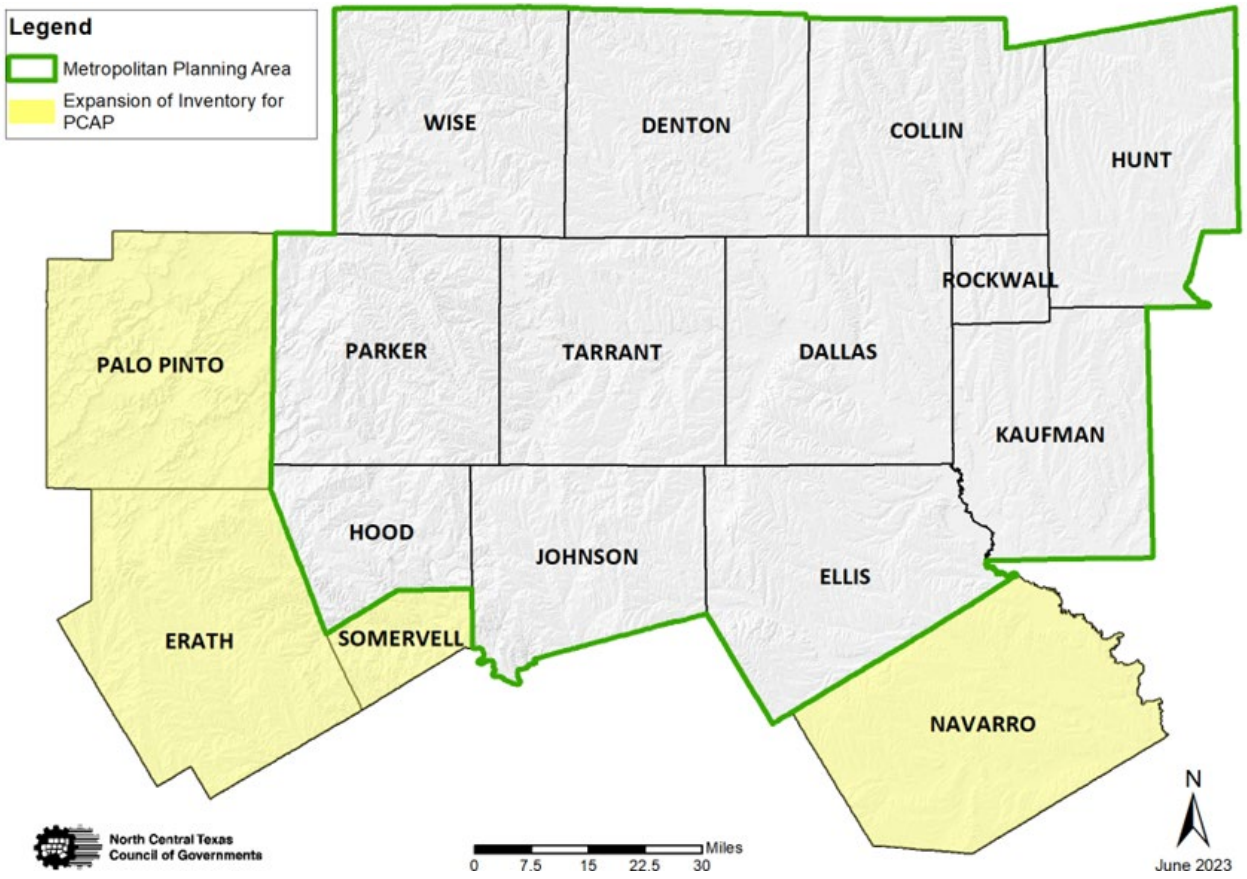


Stationary Non-Utility Fuel Combustion includes Kerosene, Distillate Fuel Oil, Propane, and Wood
Utility Fuel Combustion includes Natural Gas

GREENHOUSE GAS EMISSIONS INVENTORY AREA EXPANSION

What we are doing:

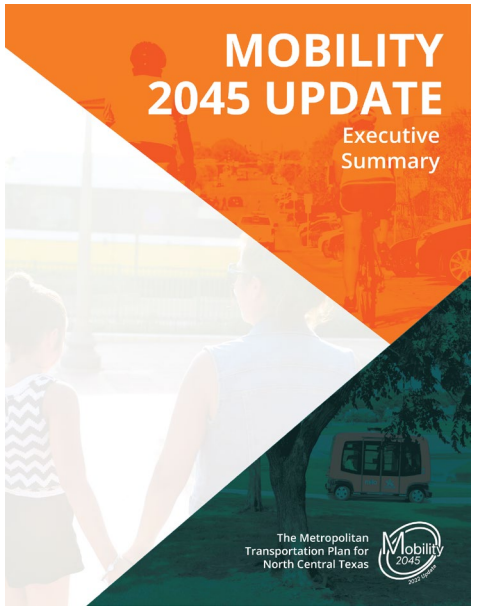
- 2019 baseline
- Utilizing existing data from 2019 inventory
- Collect data for new counties:
    - Erath
    - Navarro
    - Palo Pinto
    - Somervell
- ICLEI – ClearPath Tool
- Community Protocol
- County-based breakdown



MOBILITY FOR TRANSPORTATION EMISSION REDUCTION

Mobility Plan (DFW Area's Metropolitan Transportation Plan) will provide benefits from an aspect of multi-pollutant reduction measures

Mobility Plan is impactful in bringing together recommendations of policies, programs, and projects regarding transportation emission reduction



https://www.nctcog.org/trans/plan/mtp/policy-bundle

GREENHOUSE GAS EMISSIONS CONTROL STRATEGIES

Background and Purpose

- Catalog of emission reduction strategies to reduce multipollutant emissions regionwide
- Head start on regional CPRG deliverable
- Sector-based control strategy catalogs

GHG Emissions Reductions Toolkit (In partnership with Environmental Defense Fund (EDF) Fellow)

- Energy
- Transportation
- Waste, Water & Wastewater

EXAMPLE STRATEGY (FROM EDF CLIMATE FELLOW EVALUATION)

Residential Solar Energy Development

Municipalities can increase solar capacity through a SolSmart designation, just as with Cedar Hill. Cedar Hill earned a gold designation through the SolSmart Program. They created an online permitting checklist, identified restrictions, allowed solar by-right accessory use, and cross-trained staff on solar PV. This streamlined a pathway for small PV systems and increased transparency for community members and solar installers.

Recommended Actions:

Crafting policy solutions related to virtual metering and exploring opportunities for a solar-ready roof ordinance ensures all residences can ultimately support solar energy. Reducing the soft costs of installations encourages solar companies to do business in the area. Developing/sharing model ordinances and processes among municipalities and utilities can streamline the permitting and interconnection of solar panels. Expanding community outreach about solar options with a focus on low-income housing/communities, while increasing incentives and eliminating barriers for all residential and community solar energy production can significantly reduce GHG emissions and support community capitalization on solar energy.

Cost per Ton CO_2e	EMISSIONS IMPACT	EQUITY
Medium	High	Medium

EXAMPLE STRATEGY (FROM EDF CLIMATE FELLOW EVALUATION)

Bike Signals

Implement dedicated bicycle signals at high traffic areas to decrease bike related accidents and improve efficiency. This would also encourage people to bike more because it is safer and more efficient, reducing the number of people driving.

Overall Recommendation:

Adding dedicated bike signals in areas with existing bike lanes, or in conjunction with bike lane construction, is a key way to increase safety and encourage more individuals to bike due to increased efficiency. Making biking safer is an important way to reduce costs associated with injury and death and reduce vehicle usage and transportation emissions.

TIMELINE	EMISSIONS IMPACT	FISCAL IMPACT
Short-Term	Very High	Cost can be as much as $40,000 but funding opportunities are available

EXAMPLE STRATEGY (FROM EDF CLIMATE FELLOW EVALUATION)

Idling Limit

Put limits on how long a vehicle can be idling for at a given time. This would cut down on transportation emissions and improve air quality. Idling limits can be five minutes or whatever time is reasonable for a given area.

Overall Recommendation:

Setting a limit of five minutes or less is recommended to see the greatest reduction in GHG emissions. An ordinance or statute creating an idling limit should be a priority in areas that do not have one already in place. If one already exists, look to cut down the amount of time allowed for idling to further reduce GHG emissions and save consumers money.

TIMELINE	EMISSIONS IMPACT	FISCAL IMPACT
Short-Term	Very High	Could save drivers $1,000/year in reduced maintenance and fuel

PUBLIC ENGAGEMENT

North Central Texas Council of Governments (NCTCOG)

- Create public engagement materials, including:
  - Outreach toolkit
  - Surveys
  - Flyers
- Coordinate and promote community meetings
  - One community meeting in each participating county

Local Governments

- Host NCTCOG for community meetings
  - Assist in promotion of community meetings
    - NCTCOG will provide list of requirements for community engagement sites and materials for promotion
- Promote engagement opportunities to residents and businesses
- Provide NCTCOG with results of previous community engagement

FOR MORE INFORMATION

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https://nctcog.org/trans/quality/air/emissions-inventories/local-regional-greenhouse-gas-emission-inventory

QUESTIONS AND DISCUSSION