Regional Comprehensive Emissions Reduction Program

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September Public Input

AIR POLLUTANTS

- GROUND LEVEL OZONE
- CARBON MONOXIDE
- LEAD
- NITROGEN DIOXIDE
- PARTICULATE MATTER
- SULFUR DIOXIDE

- GREENHOUSE GASES

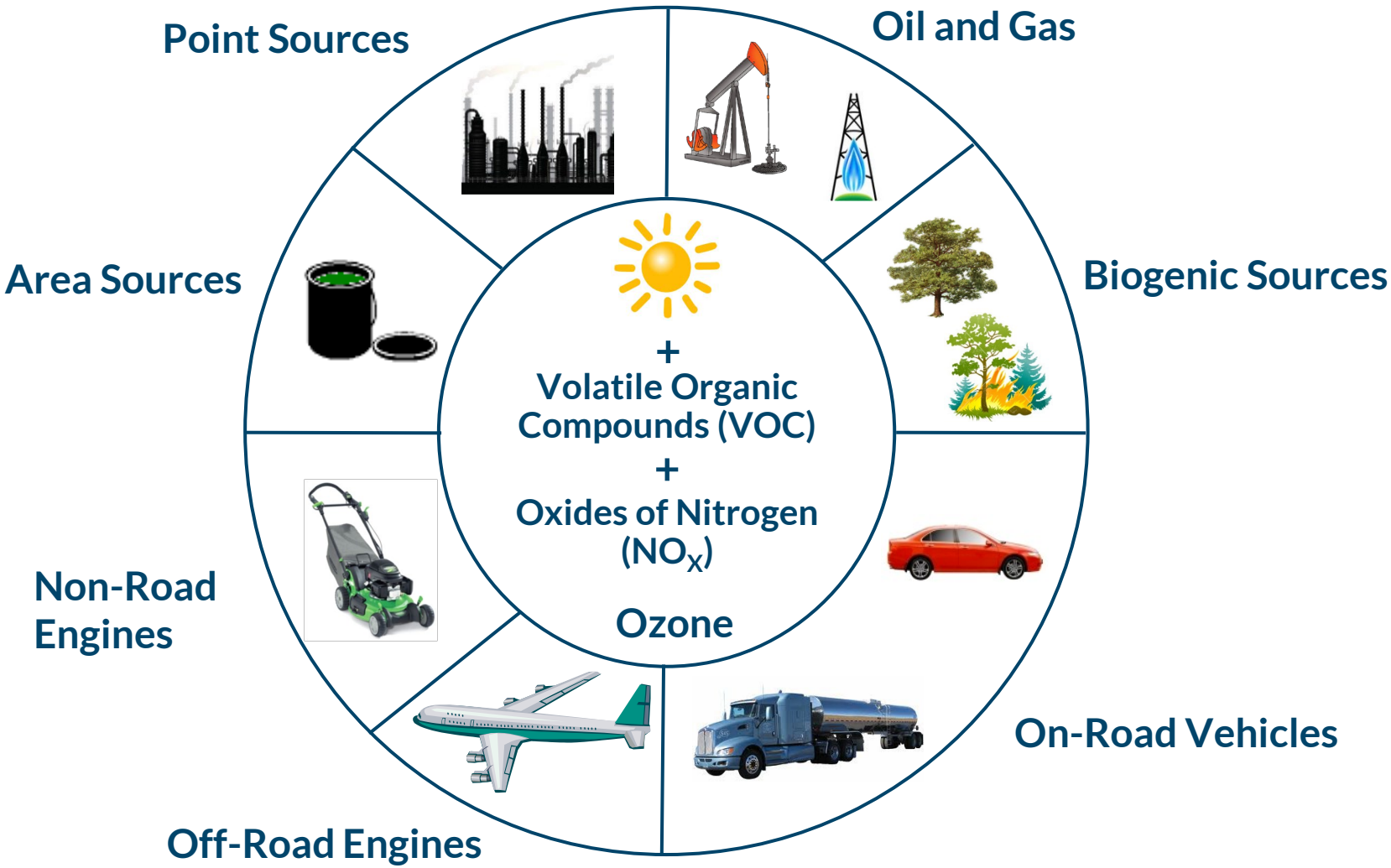
www.nctcog.org/trans/quality/air/federal-air-quality/criteria-pollutants

GROUND LEVEL OZONE

- Dallas-Fort Worth in Nonattainment
  - 2008 STANDARD
    - ≤75 ppb
    - Severe classification
    - Attainment date: July 20, 2027
  - 2015 STANDARD
    - ≤70 ppb
    - Moderate classification
    - Attainment date: August 3, 2024
    - Ongoing emissions inventories

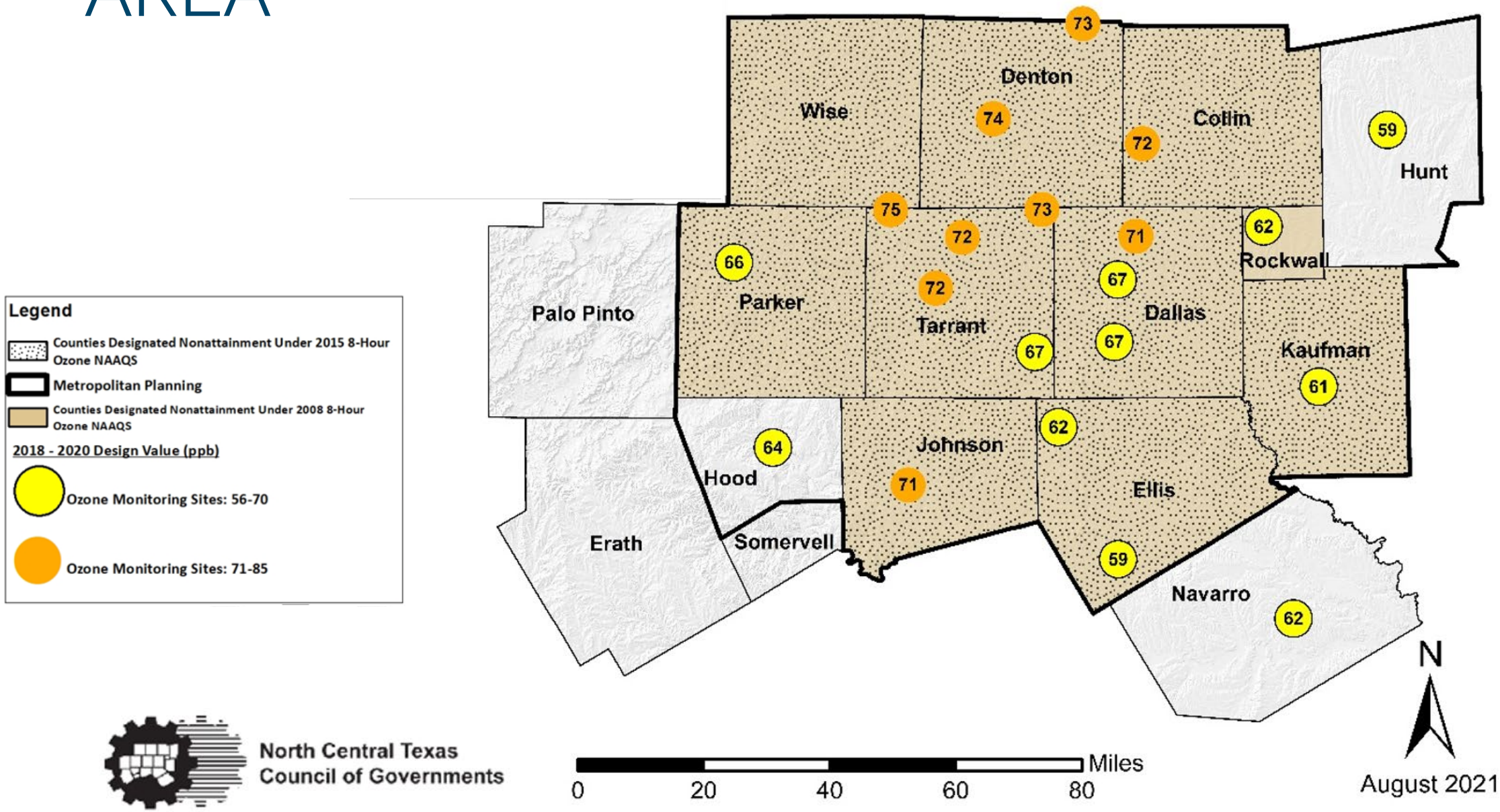
www.nctcog.org/trans/quality/air/emissions-inventories

OZONE FORMATION



Optimum conditions for the formation of ozone include high temperatures and low winds.
Sections are not to scale and are for illustrative purposes only.

2008 AND 2015 OZONE NONATTAINMENT AREA



North Central Texas Council of Governments

August 2021

GREENHOUSE GASES

- Local governments' request
- Current administration goals: 50-52% reduction from 2005 levels by 2030
- Future potential regulatory requirements
- Regional Emissions Inventory
- Local Cities Cohort Inventories
  - Cedar Hill
  - Carrollton
  - Dallas
  - Denton
  - Farmers Branch
  - Frisco
  - Grand Prairie
  - Grapevine
  - Lewisville
  - Mesquite
  - Plano

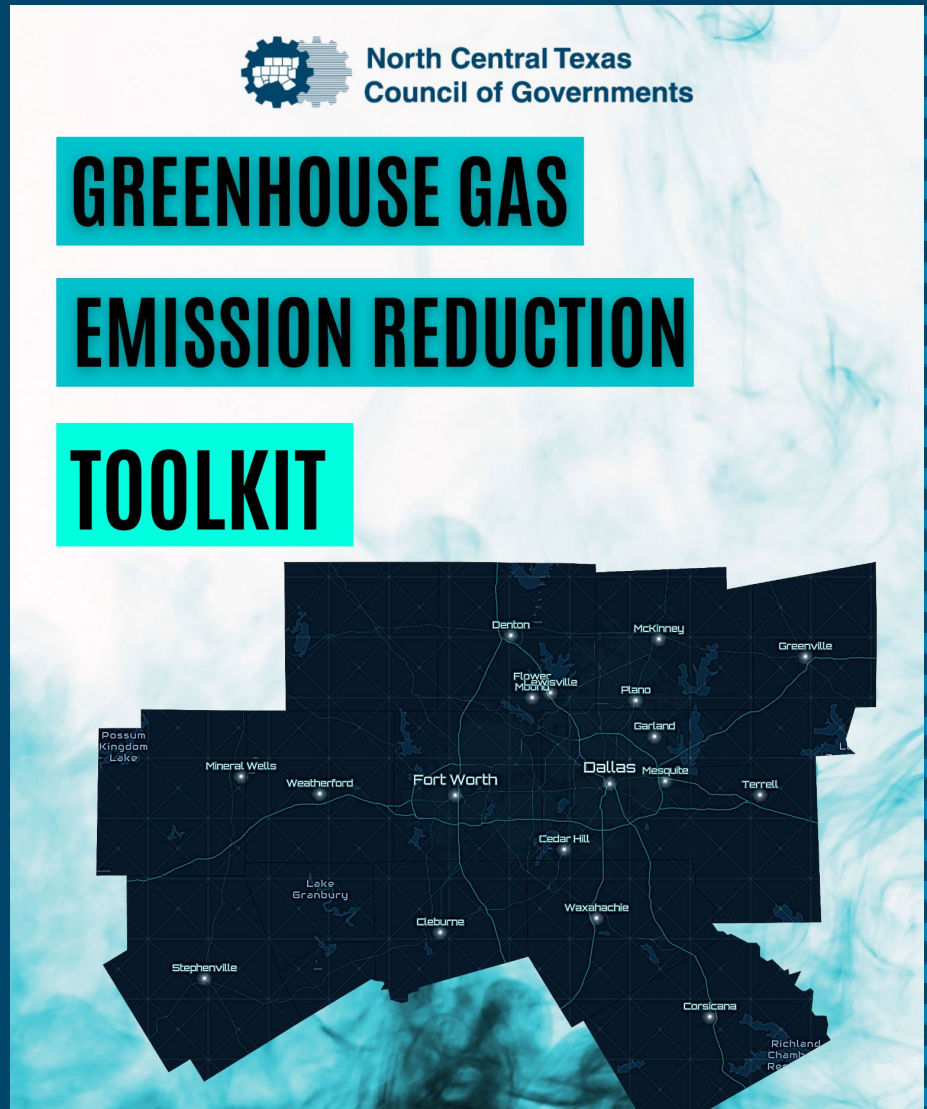
www.nctcog.org/trans/quality/air/emissions-inventories

GREENHOUSE GASES EMISSIONS REDUCTION TOOLKIT

- Expanding comprehensive multipollutant emissions reductions strategies
  - Energy strategies underway
    - Partnering with Environmental Defense Fund
      - Incorporating:
        - Economic growth
        - Environmental justice
        - Equity
        - Applicability
        - Emissions impact
        - Feasibility
        - Cost per ton
- Lauren Johnson – 2021 EDF Climate Corps Fellow

GHG EMISSION REDUCTION TOOLKIT

- Inform GHG emission reduction in the Dallas-Fort Worth region
  - GHG Toolkit Report
  - Strategy Catalogue
  - Equitable Community Engagement
- Recommend for local government consideration in the Dallas-Fort Worth region
- Generate in response to the growing nature of local governments accepting and emphasizing the need to address global climate change through climate risk adaptation, mitigation, and resiliency in the public, private sector, and social sector



OVERBURDENED COMMUNITIES

"Minority, low-income, tribal, or indigenous populations or geographic locations in the United States that potentially experience disproportionate environmental harms and risks. This disproportionality can be a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of positive environmental, health, economic, or social conditions within these populations or places. The term describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities." – U.S. EPA

Source: U.S. EPA and Resources Provided By U.S. EPA

RESEARCH

NCTCOG COMMUNITIES RESEARCHED

‘21 ESTIMATED POPULATION COUNT

>50,000	50,000-100,000	100,000-250,000	250,000+
CEDAR HILL	FLOWER MOUND	DENTON	DALLAS
DECATUR	MANSFIELD	IRVING	PLANO
COPPELL	ROWLETT	GRAND PRAIRIE	ARLINGTON
ROCKWALL	NORTH RICHLAND HILLS	MESQUITE	FORT WORTH
WAXAHACHIE	EULESS	GARLAND	DFW INTERNATIONAL AIRPORT
CORINTH	DESOTO	FRISCO	
RICHLAND HILLS	WYLIE	CARROLLTON	
FARMERS BRANCH	GRAPEVINE	RICHARDSON	
		LEWISVILLE	
		ALLEN	

ENERGY-RELATED POLLUTION CONTROL SOURCES

AREA SOURCE

Ex: Emissions related to building energy usage

AREA SOURCE: OIL & GAS

Ex: Electric power grid powered by fossil fuels

POINT SOURCE

Ex: Regional landfill methane emissions

NON-ROAD

Ex: Gasoline and diesel-powered equipment

ON-ROAD

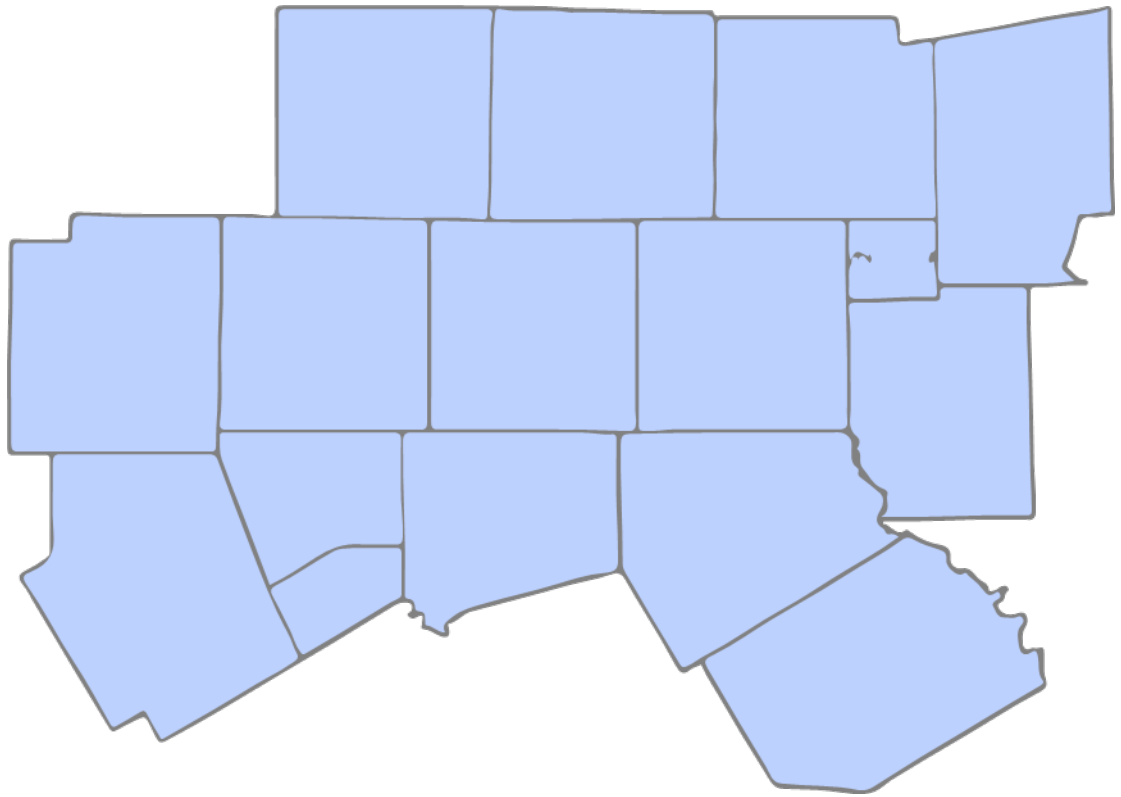
Ex: Conventional light duty vehicle fleet

BIOGENICS

Ex: Volatile organic compounds from plants

GHG TOOLKIT STRUCTURE

1. MAIN STRATEGY RECOMMENDATIONS
    1. Function as an executive summary
    2. Prioritize greatest emission reductions and equity
2. INTRODUCTION
    1. Greenhouse Gases
    2. Climate Risk Assessment in North Central Texas
    3. Equity & Overburdened Communities
    4. Health Equity Analyses
    5. Strategy Structure & Criteria
3. SECTOR-SPECIFIC SECTIONS
    1. Energy, transportation, solid waste, water, buildings, equity, food systems, wastewater
    2. Strategy emphasis areas → GHG pollution control measures
4. STRATEGY CATALOGUE
5. APPENDIX



Energy Goal 1: Mitigate Area Source Emissions

- E1.1: Building Energy Audit
- E1.2: Commercial and Industrial Building Retro-commissioning
- E1.3: Energy Conservation Ordinance
- E1.4: Residential Solar Energy Development
- E1.5: Commercial Solar Energy Development
- E1.6: Residential Weatherization Assistance Program
- E1.7: Utility Assistance Program
- E1.8: Urban Heat Island Effect Mitigation
- **E1.9: Grid Flexibility and Resilience**
- E1.10: Grid Reliability
- E1.11: Energy Efficiency and Renewable Energy Education
- **E1.12: Tree Planting**
- E1.13: Equitable Planning and Policymaking Practices

Energy Goal 2: Mitigate Oil & Gas Emissions

- E2.1: Sustainable Aviation Fuel Initiative
- E2.2: Methane & Landfill Gas to Energy Projects
- **E2.3: Limited Fossil Fuel Infrastructure and Carbon-Free Economy**

Energy Goal 3: Mitigate Point Source Emissions

- E3.1: Group Energy Switch & Demand Response Program
- E3.2: Renewable Energy Credits
- E3.3: Renewable Energy Infrastructure
- E3.4: Renewable Energy Policy Development
- **E3.5: Air quality Data and Permitting Accessibility**
- **E3.6: Zip Code Emission Cap with Buffer Zones and Industrial Polluter Relocation Amortization**

Energy Goal 4: Mitigate Non-road Emission Sources

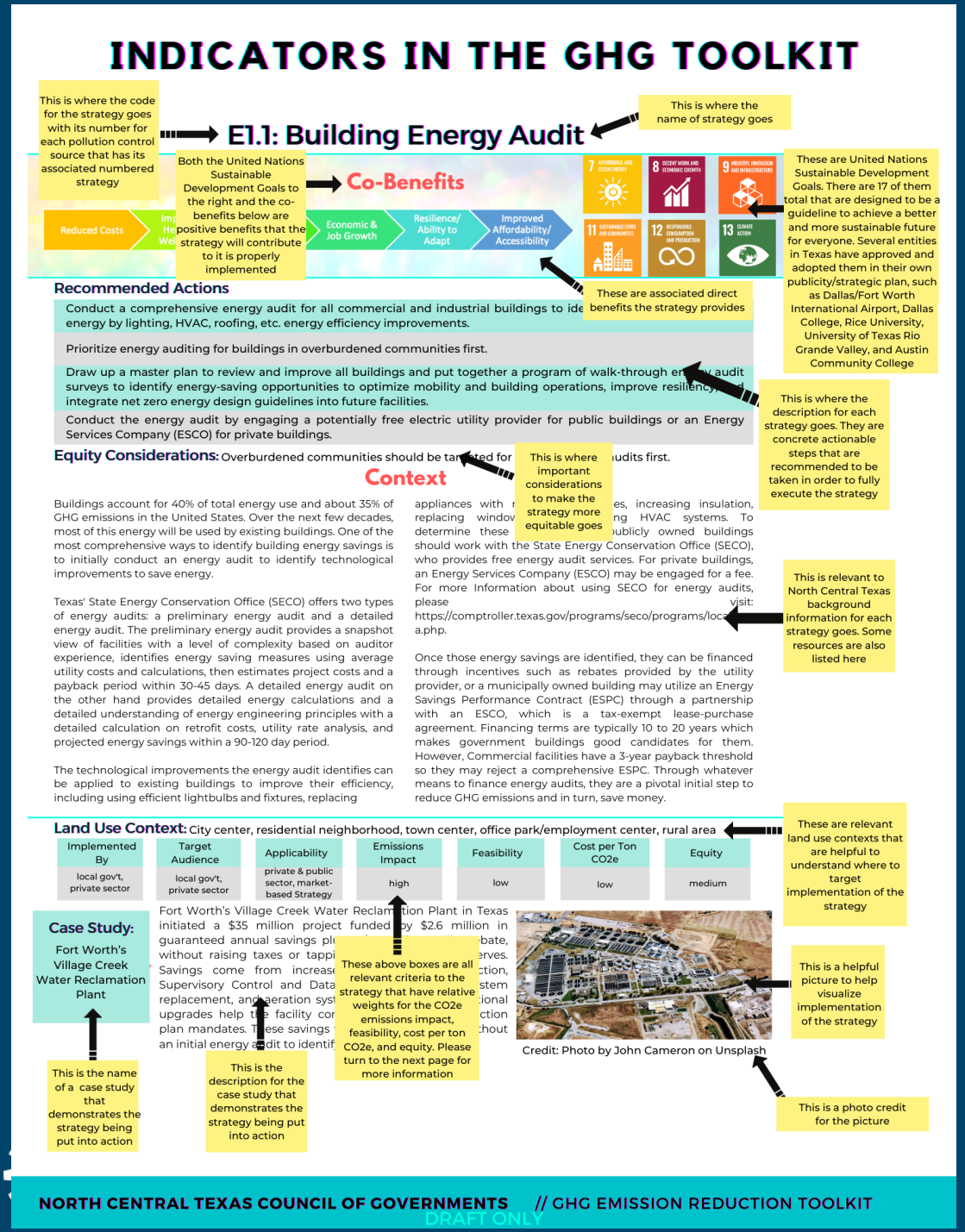
- E4.1: Ground Support Equipment Electrification
- E4.2: Electric Vehicle Charging Stations
- E4.3: Sustainable and Equitable Pedestrian Infrastructure

Energy Goal 5: Mitigate On-road Emission Sources

- E5.1: Fleet Decarbonization Transition
- E5.2: Single Occupancy Vehicle Trip Reduction

Energy Goal 6: Mitigate Biogenic Emission Sources

- E6.1: Waste to Energy Generation
- E6.2: Environmentally Conscious Building Development & Green Infrastructure
- E6.3: Public and Private Greenspace Development



Criteria	Description	Meaning
Land Use Context	These are relevant land use contexts that are helpful to understand where to target implementation of the strategy	City center/high density mixed use, residential neighborhood/medium density, town center, office park/employment center, rural area/low density
Implemented By	This is the governing entity that is meant to implement this strategy	Local government (gov't), state gov't, private sector, utilities, etc.
Target Audience	This is the audience that this strategy is meant to be implemented for	Local gov't, state gov't, private sector, homeowners, residents, utility customers, etc.
Applicability	This is who the strategy is relevant to so that it can be implemented by them in a specific manner	Private sector, public sector implemented as a market-based strategy and/or a policy-based strategy
Emissions Impact	This is a relative ranking of the amount of emissions in metric tons of carbon dioxide equivalents annually (MTCO2e/year) that is expected to be reduced by the strategy	Low: Emissions < 9x10^2 MTCO2/year Medium: 1x10^3 MTCO2e/year < Emissions < 9x10^3 MTCO2e/year High: Emissions > 1x10^4 MTCO2e/year
Feasibility	This is a relative ranking of how easily the strategy can be implemented, based upon if it has been done before and how much effort it takes to implement it	Low: Has barely been done before and takes a lot of effort to implement Medium: Has sometimes been done before but takes a lot of effort to implement High: Has frequently been done before and takes minimal effort to implement
Cost per Ton CO2e	This is a relative ranking of how much the strategy costs per metric ton equivalent of carbon dioxide (MTCO2e)	Low: cost per MTCO2e < $1000 Medium: $1000 < cost per MTCO2e < $25000 High: cost per MTCO2e > $25000
Equity	This is a relative ranking of how much the strategy will alleviate the disproportionate cumulative burdens experienced by overburdened communities	Low: no direct mention or positive influence on equity Medium: equitable outcomes are indirectly positively impacted High: equitable outcomes are directly positively impacted

SAMPLE ENERGY STRATEGY PAGE

E1.9: Grid Flexibility and Resilience

Co-Benefits

Reduced Costs → Cleaner Environment → Economic & Job Growth → Resilience/ Ability to Adapt → Improved Affordability/ Accessibility

7 AFFORDABLE AND CLEAN ENERGY · 8 DECENT WORK AND ECONOMIC GROWTH · 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE · 13 CLIMATE ACTION · 10 REDUCED INEQUALITIES · 11 SUSTAINABLE CITIES AND COMMUNITIES · 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Recommended Actions

- Increase power outage resilience by insulating and weatherizing existing power infrastructure to ensure that is prepared for another extreme weather event.
- Implement grid flexibility and smart grid strategies by advancing priority grid technology and modernization strategies for the region such as utility-scale and distributed energy storage.
- Expand advanced metering and monitoring technologies to better track outages and vulnerabilities and strategically focus regional buried power line projects.
- Implement recommendations as listed in the ERCOT "Roadmap to Improving Grid Reliability" August 2021 report.
- Identify community centers that could be developed into resilience centers/shelters to improve emergency preparedness and resilience and engage surrounding communities to equip centers appropriately.

Equity Considerations: Ensure that there are fully equipped resilience centers/shelters in overburdened communities.

Context

The vulnerability of the electric power grid was most prominently displayed during Winter Storm Uri. As explained earlier, uncharacteristically extreme freezing conditions led to a downfall in grid reliability due to conditions that are so out of the ordinary that can only be explained by extreme climatic changes.

We can only expect more extreme weather as the years progress, from extremely hot summers to unparalleled cold snaps, as the polar vortex wobbles into Texas, which occurred during Winter Storm Uri. With more lives at stake due to extreme weather, which the current electric grid is in the process of being weatherized against, the power grid must continued to upgraded to prevent further power outages.

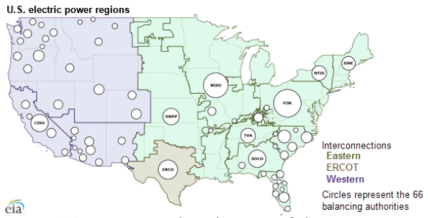
Some actions that can be taken are, smart grid technologies, advanced metering and monitoring, and investments in burying power lines in areas particularly at risk for power outages. In addition to these measures, communities need to be readily prepared through thoroughly equipped resilience shelters. Only by acknowledging the disastrous effects of climate change and recognizing that something can be done about it will communities become stronger, more resilient and ready for any emergencies which will in turn save lives.

Land Use Context: Residential neighborhood, town center, office park/employment center, rural area

Implemented By	Target Audience	Applicability	Emissions Impact	Feasibility	Cost per Ton CO2e	Equity
state & local gov't, utilities	local gov't, utilities	public sector, market-based strategy		low		high

Case Study:
Electric Reliability Council of Texas (ERCOT)

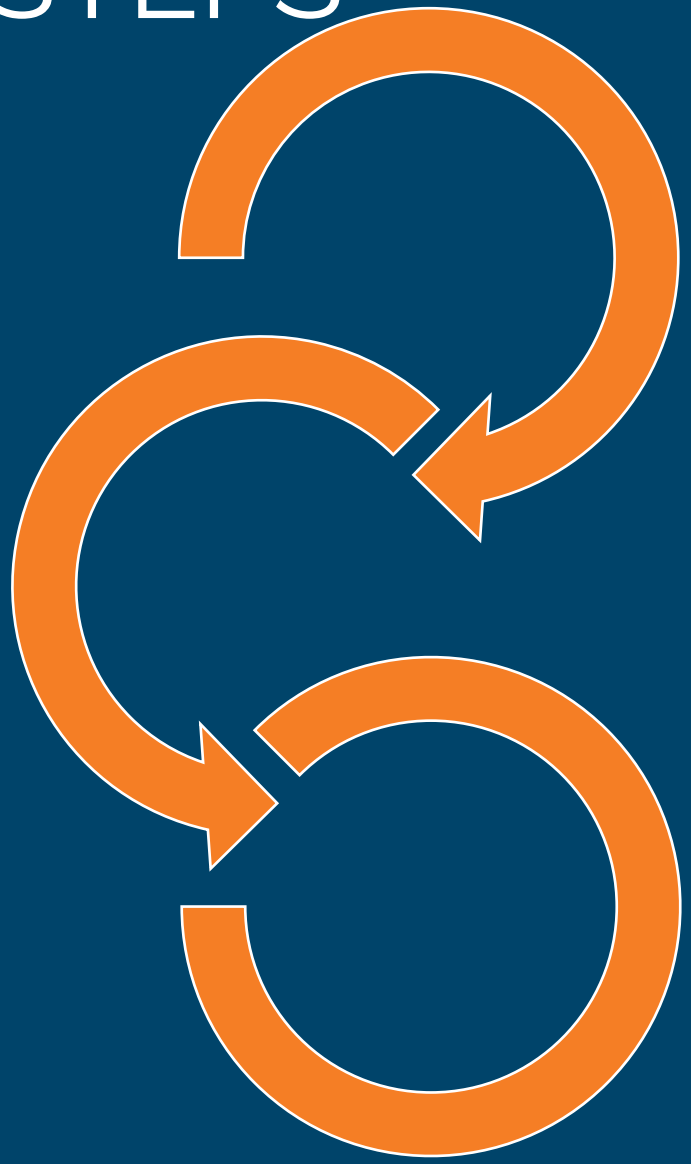
The Electric Reliability Council of Texas (ERCOT) is responsible for managing 90% of Texas' power supply. It does this through monitoring over 700 power generation units and managing over 46,500 miles of transmission lines. Recently ERCOT released a roadmap for improving grid reliability in July 2021 as a response to the outcry over its managing of the power outages associated with Winter Storm Uri. These are necessary first steps to meet the power needs during climatic extremes that will and are already happening. This report may be accessed here: http://www.ercot.com/content/wcm/lists/219694/ERCOT_Roadmap_August_Update_8.6.2021.pdf



ERCOT compared to the rest of the country

CONCLUSION & NEXT STEPS

- GHG mitigation an increased emphasis in the Dallas Fort Worth region → co-benefits
- Finish the Regional GHG Inventory and set Science-Based Targets for regional GHG reductions → carbon law aligned
- Finish the Greenhouse Gas Toolkit with sector-specific sections
- Implement a public review process (public meetings, surveys, website) and collaborate with community organizations to partner with overburdened communities



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