North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

A Priority Climate Action Plan Deliverable - March 1, 2024

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Denton County Transportation Authority
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DFW International Airport
Hood County Clean Air Coalition
On-the Road Companies
University of Texas at Dallas

A full list of agencies who provided letters of support is available in Appendix 2.

Acronyms

Air Emissions Reporting Requirements (AERR)

Air Transportation Advisory Committee (ATAC)

Americans with Disabilities Act (ADA)

Attainment Demonstration (AD)

Automatic Traffic Recorder (ATR)

Auxiliary Power Unit (APU)

Aviation Administration's Aviation Environmental Design Tool (AEDT)

California Air Resources Board (CARB)

California Climate Action Registry (CCAR)

Climate Pollution Reduction Grants (CPRG)

Code of Federal Regulations (CFR)

Comma Separated Values (CSV)

Comprehensive Climate Action Plan (CCAP)

Comprehensive Environmental and Climate Action Plan (CECAP)

Compressed Natural Gas (CNG)

Congestion Mitigation and Air Quality (CMAQ) Improvement Program

CO-OP Electric Power Cooperative

Dallas Area Rapid Transit (DART)

Dallas Fort Worth (DFW) Air Quality Improvement Plan (AQIP)

Dallas Garland & Northeastern Railroad (DGNO)

Department of Transportation (DOT)

Disadvantaged Business Enterprise (DBE)

Disadvantaged Communities (DACs)

Eastern Research Group (ERG)

Electric Generating Units (EGU)

Electric Vehicles (EV)

Emissions and Generation Resource Integrated Database (eGRID)

Energy Efficiency and Conservation Block Grants (EECBG)

EPA's Enforcement and Compliance History Online (ECHO)

Environmental Defense Fund (EDF)

Environmental Protection Agency (EPA)

Executive Board

Facilities Level Information on Greenhouse Gases Tool (FLIGHT)

Fats, Oils, and Grease (FOGs)

Federal Transit Administration (FTA)

Fuel Cell Electric Vehicles (FCEVs)

Fort Worth & Western Railroad (FWWR)

Gasoline Gallon Equivalent (GGE)

Global Warming Potential (GWP)

Greenhouse gas (GHG) Emissions Inventory (GHG EI)

Heating, Ventilation, and Air Conditioning (HVAC)

Integrated Stormwater Management Program (iSWM)

Intelligent Transportation Systems (ITS)

International Panel on Climate Change (IPCC)

Light Emitting Sodium (HPS)

Liquified Petroleum Gas (LPG)

LoanSTAR Texas LoanSTAR (Saving Taxes and Resources)

Local Governments for Sustainability, former International Council for Local Environmental Initiatives (ICLEI)

Local Government Operations Protocol (LGO)

Low Income/Disadvantaged Communities (LIDACs)

MOU Memorandum of Understanding?

Metropolitan Planning Organization (MPO)

Metropolitan Statistical Area (MSA)

MOtor Vehicle Emissions Simulator (MOVES Model)

Municipal Separate Storm Sewer System (MS4)

National Ambient Air Quality Standards (NAAQs)

National Emissions Inventory (NEI)

National Pollutant Discharge Elimination System (NPDES)

National Oceanic and Atmospheric Administration (NOAA)

North Central Texas Council of Governments (NCTCOG)

Oxides of Nitrogen (NO_x)

Particulate Matter (PM)

Priority Climate Action Plan (PCAP)

Property Assessed Clean Energy Program (PACE)

Public Works Council (PWC)

Operations and Maintenance (O&M)

Railroad Commission of Texas (RRC)

Reasonable Further Progress (RFP) [Request for Proposal???]

Regional Codes Coordinating Committee (RCCC)

Regional Emissions Enforcement Program (REEP)

Regional Integration of Sustainable Efforts Coalition (RISE)

Regional Toll Revenue (RTR)

Regional Traffic System Program (RTSP)

Regional Transportation Council (RTC)

Regional Smoking Vehicle Program (RSVP)

Resource Conservation Council (RCC)

Saving Money and Reducing Truck Emissions (SMARTE)

Social Costs of Greenhouse Gas Emissions (SC-GHG)

South-Central Partnership for Energy Efficiency as a Resource (SPEER)

Sources Hours Extended Idling (SHEI)

Source Hours Parked (SHP)

Surface Transportation Block Grant (STBG)

State Energy Data System (SEDS)

State Implementation Plan (SIP)

Texas Commission on Environmental Quality (TCEQ):

Texas Parks and Wildlife (TPW)

Texas Pollutant Discharge Elimination System (TPDES)

Texas Water Development Board (TWDB)

TexN Model

Total Maximum Daily Load Implementation Plan (TMDL I-Plan)

Transportation Computer-Aided Design (TransCAD)

Transportation Analytical Forecasting Tool (TAFT)

Transportation Planning Funds (TPF)

Travel Demand Management (TDM)

Trinity Railway Express (TRE)

TTI Texas A&M Transportation Institute

TxShare Cooperative Purchasing Program

Texas Department of Transportation (TxDOT)

U.S. Energy Information Administration Form 861 – Annual Electric Power Industry Report (EIA-861).

U.S. DOE Department of Energy

Vehicle Miles Traveled (VMT)

Vehicle-to-Grid Technology (V2G)

Volatile Organic Compounds (VOCs)

Wastewater and Treatment Education Roundtable (WATER)

Water Quality Management Plan (WQMP)

Water Resources Council (WRC)

Workforce Solutions for North Central Texas (WSNCT)

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1- Introduction

The North Central Texas Council of Governments (NCTCOG) is a voluntary association of, by, and for local governments, established to assist in regional planning for 16 counties in North Texas. The counties served by NCTCOG include Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise. This service area incorporates all of the 11-county Dallas-Fort Worth (DFW)-Arlington Metropolitan Statistical Area (MSA).

NCTCOG is serving as the Lead Agency for the DFW-Arlington MSA under the Environmental Protection Agency (EPA) Climate Pollution Reduction Grants (CPRG) Planning Grants Program and was the grantee that developed this Dallas-Fort Worth Air Quality Improvement Plan (DFW AQIP) Priority Climate Action Plan (PCAP), which serves to fulfill the PCAP deliverable as specified by the EPA under the CPRG Planning Grants Program. NCTCOG consists of 11 departments, including the Environment and Development and Transportation departments. Staff from these two departments led the development of this document and will lead the implementation of proposed priority measures. The NCTCOG Workforce Solutions for North Central Texas Department will join in efforts to develop a Comprehensive Climate Action Plan (CCAP) over the next year.

Climate Pollution Reduction Grants Overview and Purpose

Overview: Authorized under Section 60114 of the Inflation Reduction Act, the CPRG Program[1] provides $5 billion in grants to states, local governments, tribes, and territories to develop and implement plans for reducing greenhouse gas (GHG) emissions and other harmful air pollutions. Phase 1 of the CPRG Program offered noncompetitive funding to all 50 states, the 67 most populous MSAs, and tribes/territories to develop the following deliverables:

1. **PCAP** -- due March 1, 2024 (states and MSAs) and due April 1, 2024 (tribes, tribal consortia, and territories)
2. **CCAP** -- due two years after planning grant award, or approximately mid-2025 (states and MSAs) and due at the close of the grant period (tribes, tribal consortia, and territories)
3. **Status Report** -- at the end of the four-year grant period (approximately mid-2027)

Purpose of PCAP: According to the EPA CPRG Planning Grant Notice of Funding Opportunity, the PCAP is a narrative report focused on near-term (i.e., by 2030), high-priority, implementation-ready measures to reduce GHG pollution and an analysis of GHG emissions reductions that would be achieved through implementation.[2]

NCTCOG has a long history of working collaboratively with local governments (cities, counties, transit agencies, special districts, and school districts) and other local, state, and federal partners across the region on air quality issues. Air quality collaboration efforts began in the mid-1990s when four counties within the NCTCOG region were designated as nonattainment for the pollutant ozone and have continued to grow and expand as air quality concerns have become more complex. These issues are

[1] www.epa.gov/inflation-reduction-act/climate-pollution-reduction-grants
[2] www.epa.gov/system/files/documents/2023-02/EPA%20CPRG%20Planning%20Grants%20Program%20Guidance%20for%20States-Municipalities-Air%20Agencies%2003-01-2023.pdf

described further in Section 2: Regional Context and Section 3.2: Emissions Inventories for Criteria Pollutants of Regional Concern.

The EPA CPRG Program presented a natural opportunity to extend these standing relationships around air quality concerns beyond ozone to other local air quality issues. NCTCOG received support from local governments across the region to take the role of Lead Agency for development of a regional plan and has coordinated across a variety of stakeholders in the region to develop this DFW AQIP, which has been drafted to fulfill the PCAP deliverable. Local governments were major contributors, along with stakeholder input contributed by NCTCOG committee members (which includes nonprofit and business entities), local nonprofits and other organizations, and residents. More detail on this engagement and input is provided in **Section 1: Regional Engagement. The purpose of the DFW AQIP, which constitutes the PCAP for the NCTCOG region, is to identify and drive implementation of measures that achieve reductions in GHGs, ozone precursors, and fine particulate matter emissions to achieve comprehensive air quality improvement.**

DFW AQIP – Overview and Definitions

This document contains the following:

- **Introduction** – Information on the CPRG, definitions, scope, and approach to develop the DFW AQIP.
- **Regional Context** – Information on local concerns and how they impacted the development of the DFW AQIP.
- **GHG Emissions Inventory** – A simplified inventory of greenhouse gases produced in the 16-county NCTCOG region.
- **Emissions Inventories for Criteria Pollutants of Regional Concern** – Information on criteria pollutants of regional concern.
- **Measures** – List of implementation-ready measures (i.e., projects, programs, and policies) to reduce greenhouse gases and criteria pollutants.
- **Benefits Analysis** – A high-level analysis of the potential health benefits to the region through the implementation of proposed measures and associated reduction of criteria pollutants.
- **Low Income and Disadvantaged Communities (LIDAC) Benefits Analysis** – An analysis that identifies where LIDAC are in the region, how they were engaged, potential climate risks LIDAC are facing, and the air quality and other community benefits LIDAC may experience from the implementation of measures.
- **Review of Authority to Implement** – Analysis of the ability of the region to implement proposed measures.
- **Intersection with Other Funding Availability** – A high-level analysis of existing funding sources to implement measures. This information has been incorporated with the measures in **Section 4**.
- **Next Steps** – A discussion of how NCTCOG and local governments will leverage the DFW AQIP to apply for the CPRG Implementation Grants and develop the next EPA-required deliverable, the CCAP.

Scope of the DFW AQIP

The geographic scope of the DFW AQIP includes all 16 counties served by NCTCOG. This includes Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise counties. The NCTCOG region captures the entire 11-county DFW-Arlington

MSA that NCTCOG was required to include as the Lead Agency for CPRG Planning Grants. Exhibit 1 provides the 2023 estimated population of each county within the NCTCOG region, as well as the total regional population encompassed by the scope of this plan.

Exhibit 1: Population by County[3]

County	2023 Population Estimate (January 1)
Collin	1,175,974
Dallas	2,675,009
Denton	1,006,492
Ellis	218,125
Erath	43,287
Hood	62,511
Hunt	109,127
Johnson	201,427
Kaufman	158,672
Navarro	55,639
Palo Pinto	29,277
Parker	155,607
Rockwall	124,734
Somervell	9,899
Tarrant	2,188,951
Wise	70,159
Total 16-County NCTCOG Population	**8,284,890**

Note that the total NCTCOG 16-county population is larger than 36 states and the geographic extent of the NCTCOG region encompasses 12,800 square miles, which is larger than nine states. Thus, the scope of the DFW AQIP is comparable to the scope and scale of many state plans.

The scope of this plan includes a variety of measures across GHG emissions sectors, as outlined in Exhibit 2. These sectors were defined to mirror the scope of the emissions sectors included in the regional Greenhouse Gas Emissions Inventory (GHG EI) discussed in greater detail in **Section 3.**

[3] https://data-nctcoggis.opendata.arcgis.com/documents/2023-nctcog-population-estimates-publication/explore

Exhibit 2: Definition of Sectors for Emissions and Measures Included in the DFW AQIP

Sector	Description of Emissions	Description of Measures
Transportation	Includes emissions from on-road mobile (e.g., cars, trucks, buses), non-road mobile (e.g., landscape equipment, construction equipment), and off-road mobile (e.g., trains, aircraft) emissions sources.	Transportation measures are initiatives that are implemented in the transportation system or its right-of-way that reduce mobile source emissions through technologies or system efficiencies, improve energy efficiency associated with transportation system lighting, or create carbon sinks by enhancing use of vegetation or expanding green space.
Energy	Includes emissions from electricity, natural gas, and other energy generation consumed within the 16-county NCTCOG region.	Energy measures are initiatives that reduce electricity consumption in buildings owned by public sector agencies or residential buildings. Also includes measures that mitigate upstream emissions from power generation through mechanisms such as on-site solar, energy storage, and/or microgrids. Private sector commercial or industrial buildings are not within the scope of the DFW AQIP.
Materials Management (Solid Waste)	Includes emissions from landfills, waste collection, transport, and management, including emissions associated with waste diversion and alternative uses.	Materials Management measures are initiatives that would reduce the amount of greenhouse gases emitted from the landfill, or by organic materials diverted from the landfill to other beneficial use. These initiatives also include waste-to-energy efforts around renewable gas energy; and emissions reductions through utilizing more energy efficient waste hauling equipment, route selection, and scheduling.
Water, Wastewater, and Watershed Management	Includes emissions from water supply, stormwater management, wastewater collection, transport, and treatment. It also includes emissions associated with plant equipment and process residuals.	Water, Wastewater, and Watershed Management measures are those that would reduce the amount of energy used to manage, treat, collect, and/or disperse water and wastewater by supporting water conservation and storage, energy efficient plant practices, and both chemical and residual management efforts.

Sector	Description of Emissions	Description of Measures
Agriculture/Forestry/Land Use	Includes emissions from urban and rural agricultural practices, green space expansion, and temperature management within the built environment.	Agriculture, Forestry, and Land Use measures include efforts that will reduce urban stormwater runoff through landscape, expand local food supply, improve air quality, increase carbon capture, reduce urban heat island effects, and support responsible agriculture operations.
Cross-Sector	Varies	Cross-Sector measures include efforts that will in general improve air quality overall but may not wholly fit within one sector or another.

Approach to Developing the DFW AQIP

The NCTCOG approach to developing the DFW AQIP was driven by sources of air pollutants of concern in the region, as detailed in **Section 3**. A key objective was to be proportional in ensuring that proposed measures were aligned with the sectors and emissions sources with the greatest contribution of air pollutants. As the local emissions inventories indicate, the transportation sector contributes over 40 percent of regional GHG emissions and nearly two-thirds of ozone-forming emissions of nitrogen oxides (NO_X), with energy consumption producing just over half of regional GHG emissions and a smaller segment of local ozone precursors. To achieve meaningful air quality improvement, it will be critical to reduce air pollution from across all sectors and emissions sources. Thus, NCTCOG took a multisector approach to identifying measures.

Regional Engagement

Collaboration with the diverse Dallas-Fort Worth area population was integral to developing the DFW AQIP and began in March 2023 prior to NCTCOG applying to be the Lead Agency for the CPRG: Planning Grants on behalf of the DFW-Arlington MSA. Regional engagement consisted of two main efforts: (1) **Stakeholder/Intergovernmental Engagement** (primarily entities interested in implementing measures, such as local governments, private sector companies, etc.) and (2) **Public Engagement** (primarily those who may not be able to implement measures but would like to provide feedback, such as community members, nonprofits, community-based organizations, etc.).

Engagement was conducted through a variety of methods, including a project webpage (www.publicinput.com/dfwAQIP), surveys, e-blasts, and public meetings. A full inventory of outreach conducted is available in **Appendix 1: Outreach Inventory**.

Stakeholder/Intergovernmental Engagement

Stakeholder/Intergovernmental Engagement consisted of three focus areas: **Engagement with Collaborating Agencies, Stakeholder Engagement, and Committee Engagement.**

Engagement with Collaborating Agencies –
Collaborating agencies primarily consisted of public entities who provided a letter of support to NCTCOG stating they wished to support NCTCOG in applying to the CPRG Implementation Grants and participate in the development of the DFW AQIP. These collaborating agencies served as an “advisory” group and

were invited to regular meetings to discuss plan development, review potential measures, and added to a Microsoft Teams channel to assist with the development of the DFW AQIP.

Prior to submitting to the CPRG Planning Grants, NCTCOG staff began requesting letters of support from entities within the region. NCTCOG invited regional city managers, county administrators, and county commissioners to a meeting on March 30, 2023 to discuss the CPRG Planning Grants opportunity and request a letter of support. Information on the CPRG Planning Grants and a request for letters of support was also brought to committees in March and April 2023. These letters of support were provided to the EPA on April 28, 2023, along with NCTCOG's Notice of Intent to Participate. Collaborating agencies served as an "advisory" group and were invited to regular meetings to discuss plan development, review potential measures, and added to a Microsoft Teams channel to assist with the development of the DFW AQIP.

NCTCOG's formal workplan, which outlined how NCTCOG would use the CPRG Planning Grant funds to develop the required deliverables, was submitted to the EPA on May 31, 2023, and NCTCOG received an official award from the EPA in September 2023. Additional letters of support have been accepted throughout the development of the DFW AQIP and a full list of letters received is available in **Appendix 2: Letters of Support**.

Collaborating agencies were invited to a kick-off meeting on June 21, 2023 to discuss development of the DFW AQIP, as well as stakeholder workshops (detailed in the next section, **Stakeholder Engagement**) in August, September, and October to discuss potential measures to improve air quality. Following formal receipt of the CPRG Planning Grant award from the EPA in September 2023, NCTCOG began holding meetings on the topic of developing the DFW AQIP with collaborating agencies. Meetings were held from October 2023 to February 2024, with a total of seven meetings held with collaborating agencies. As of February 2024, 40 letters of support have been received, and the entities providing these letters represent over 70 percent of the population across the 16-county NCTCOG area.

Stakeholder Engagement –

Stakeholder engagement was conducted to allow for feedback opportunities from entities who wished to provide feedback but were unable to provide a letter of support or continuously participate in the development of the plan. Stakeholder engagement was conducted through both meetings and an online survey.

NCTCOG held a series of workshops open to all entities and the public in August, September, and October 2023 requesting feedback on potential measures to address emissions from the sectors defined in Exhibit 2. A summary of measures recommended during those meetings is available in **Appendix 3: Summary of CPRG Workshops**. Additionally, NCTCOG hosted a meeting in January 2024 for entities that may be subject to fees under Section 185 of the Clean Air Act if the region is unable to attain the 2008 National Ambient Air Quality Standard (NAAQS) for ground-level ozone by July 2027. During this meeting, NCTCOG staff discussed CPRG as an opportunity to implement measures to reduce emissions in the hopes of reaching attainment and avoiding Section 185 fees. Attendees were primarily industrial facilities but included local governments that own landfills, wastewater treatment facilities, and power plants.

An online survey was created to collect input from stakeholders interested in implementing measures included in the DFW AQIP. The survey consisted of 152 measures across five categories (transportation,

energy, water/wastewater/solid waste, agriculture/forestry/land use, and carbon removal) and requested respondents rank measures based on their interest in implementing them. The list of 152 measures was developed through the workshops mentioned above, the EPA's Quantified GHG Reduction Measures list,[4] Dallas' Comprehensive Environmental and Climate Action Plan,[5] toolkits created for NCTCOG by Environmental Defense Fund Climate Fellows, a 2006 Control Strategy Catalog developed for the Texas State Implementation Plan, and staff feedback. Respondents were able and encouraged to skip categories not relevant to their organization or expertise to minimize lack of knowledge or relevancy from impacting the survey results. Exhibit 3 lists the types of organizations who responded to each sector.

Exhibit 3: Summary of Responses Received by Organization Types and Topics for Stakeholder Survey

Number of Responses per Topic	**Organization Type**			**Total Responses**
	Local Governments	Nonprofits	Private Company	
Transportation	21	6	10	**47**
Energy	12	5	8	**27**
Water, Wastewater, and Solid Waste	13	4	3	**22**
Agriculture, Forestry, and Land Use	11	7	1	**17**
Carbon Removal	8	6	4	**18**

A summary of stakeholder survey responses is available in **Appendix 4: Stakeholder/Implementer Survey Results**, along with a blank version of the survey. Additionally, Appendices 11 through 16 list DFW AQIP measures and cross references feedback from the stakeholder survey to illustrate the degree to which that measure was supported.

Additionally, NCTCOG brought information regarding the DFW AQIP to meetings with external stakeholders, as detailed in **Appendix 1: Outreach Inventory**. A total of 30 stakeholder meetings were held and/or attended.

Committee Engagement –

Due to NCTCOG serving as the regional planning agency for North Central Texas, the agency has many committees and subcommittees comprised of members from the public and private sector that provide valuable input on regional planning and air quality issues. These committees were utilized to "screen" measures for feasibility and regional interest. A full list of NCTCOG committees is available at https://www.nctcog.org/nctcog-committees. The following committees approved the DFW AQIP:

[4] www.epa.gov/statelocalenergy/quantified-climate-action-measures-directory-local-directory
[5] https://www.dallasclimateaction.com/

- **Public Works Council (PWC)[6]**
  - The PWC provides expertise and support to the Executive Board and staff on a wide range of local public works issues. For example, the PWC provides continuing advice regarding the Public Works Construction Standards - North Central Texas, as well as such issues as managing right-of-way, comprehensive and consistent storm water management, and regional pavement design guidance, as well as identified subregional issues. The Public Works Council took action in support of the DFW AQIP on February 15, 2024.
- **Resource Conservation Council (RCC)[7]**
  - The RCC serves as the regional solid waste advisory council to the NCTCOG, formally delegated with developing and implementing the state-mandated Regional Solid Waste Management Plan (Regional Plan). The RCC also supports the process for formal disbursement of solid waste program implementation grants from the Texas Council of Environmental Quality (TCEQ) and provides support and advice to the NCTCOG Executive Board on methods to conserve, recover, and recycle available resources and to provide proper handling and disposal of non-recoverable waste materials. The Resource Conservation Council approved the plan on February 28, 2024.
- **Regional Integration of Sustainability Efforts (RISE) Coalition[8]**
  - The RISE Coalition, formerly the North Central Texas Stewardship Forum, works to engage interested local governments in peer-exchange opportunities to support sustainability and environmental initiatives. Staff presented the measures to the RISE Coalition on February 20, 2024, and they agreed to provide a letter of support.
- **Regional Transportation Council (RTC)[9]**
  - The RTC is the independent transportation policy body of the Metropolitan Planning Organization. The RTC consists of 45 local elected or appointed officials from the metropolitan area and representatives from each transportation provider in the region. The RTC oversees the metropolitan transportation planning process. The RTC approved transportation elements of the DFW AQIP on February 8, 2024.
- **Surface Transportation Technical Committee (STTC)[10]**
  - STTC reviews, comments on, and prepares recommendations regarding surface transportation planning and funding of transportation improvements in the Dallas-Fort Worth Metropolitan Area. STTC consists of approximately 80 members, predominantly engineers and other technical staff from local entities. STTC endorsed the transportation elements of the DFW AQIP on February 23, 2024.
- **Water Resources Council (WRC)[11]**
  - The WRC serves as the regional water quality planning council to the NCTCOG, formally delegated with developing and implementing the state-mandated Water Quality Management Plan (WQMP). The WRC advises NCTCOG's Executive Board on both technical and policy issues

[6] www.nctcog.org/envir/committees/public-works-council
[7] www.nctcog.org/envir/committees/resource-conservation-council
[8] www.nctcog.org/envir/committees/regional-integration-of-sustainability-efforts-ris
[9] www.nctcog.org/trans/about/committees/regional-transportation-council
[10] www.nctcog.org/trans/about/committees/surface-transportation-technical-committee
[11] www.nctcog.org/envir/committees/water-resources-council

related to water resources matters. The WRC also oversees the water resources planning process and performs technical review of water-related grant applications. The Water Resources Council approved the Water, Wastewater, Solid Waste, and Agriculture/Forestry/Land Use elements of the DFW-AQIP on February 7, 2024.

Appendix 5: Committee Rosters contains the committee rosters for these five committees, in addition to the NCTCOG Executive Board, which approved the full DFW AQIP on February 22, 2024.

Public Engagement

Public engagement was conducted through in-person and virtual meetings and surveys.

At the in-person meetings, all project materials were provided in English and Spanish, and an interpreter was present at each to assist with translation. Staff presented background information on CPRG, and attendees were able to visit several public input stations that included a paper map activity, a survey (discussed below), and display boards. The open houses were publicized via flyers, e-blasts, social media, and paid advertising. Participating local governments also promoted the meetings via their own communications channels. **Appendix 6: Public Meeting Materials** includes examples of open house visuals, as well as copies of promotional materials.

Two virtual listening sessions were held where attendees were provided information on the DFW AQIP and were able to provide feedback on their concerns and potential measures for inclusion in the DFW AQIP. In total, nine public meetings were held solely for the DFW AQIP, five of which were in person, two were virtual, and two were in person/virtual hybrid.

A summary of feedback received during the meeting is available in Exhibit 4.

Exhibit 4: Summary of Public Meeting Feedback

Public Meeting Feedback**		
Date	**Location**	**Summary**
11/14/2023	Virtual Listening Session*	Concerns were expressed regarding diesel/gasoline equipment (food trucks, lawn equipment, construction equipment), concrete batch plants, urban drilling, and idling vehicles. Attendees recommended adding more electric vehicle (EV) infrastructure and providing incentives for EVs. An attendee recommended holding meetings at different times (i.e., evening or during the weekend) to make the meetings more accessible. Two polls related to the Dallas-Fort Worth Air Quality Improvement Plan were taken during the meeting. Poll #1: Which of the following are you most concerned about? (Select top 3 priorities) - Public Health (45%) - Local Air Quality (73%) - Extreme Weather Events (36%)

Public Meeting Feedback**		
Date	**Location**	**Summary**
		- Rising Energy Costs (36%) - Lack of Access to Food (18%) - Lack of Public Transportation (27%) - Lack of Jobs (0%) - Climate Change (55%) - Urban Areas Warming Due to Human Activities (45%) Poll #2: Which sectors should be targeted in the DFW AQIP? (Select all that apply) - Transportation (100%) - Energy (63%) - Water (38%) - Wastewater (13%) - Solid Waste (63%) - Agriculture/Land Use (50%)
12/4/2023	City of Dallas	Attendees recommended the addition of more tree cover, the creation of "green" parking lots, adding solar to more buildings (the Dallas convention center was recommended), providing more weatherization rebates for residents, and adding pavement that can sequester carbon. Concerns were expressed regarding the lack of accessible sidewalks in parts of Dallas and lack of local technicians who are certified to do home weatherization.
12/12/2023	City of Aledo	Concerns were expressed regarding a rail crossing causing significant vehicle idling, lack of sidewalks in certain areas, and resiliency issues. Questions were asked about the CPRG and opportunity for grant funding for the region through the CPRG Implementation Grants.

Public Meeting Feedback**		
Date	**Location**	**Summary**
1/8/2024	City of Arlington/Virtual*	Concerns were expressed regarding urban drilling and associated local health issues (especially childhood asthma rates), food access, and bicycle accidents. Attendees recommended staff identify ways to create less carbon-intensive construction, electrify appliances/heating, ventilation, and air conditioning (H-VAC), add more high-density housing, provide free transit passes, add community solar and solar to parking garages, decarbonize airports, create a regional bus rapid transit network, add bike and bus only lanes, ensure diesel vehicles are meeting current emission standards, and add more electric vehicle charging stations. Attendees discouraged carbon trading and requiring electric vehicle owners to pay additional registration fees. NCTCOG was encouraged to reach out to younger community members through avenues such as TikTok, Instagram, Facebook; collect feedback by meeting people where they are (such as grocery stores, schools, etc.), focus on environmental justice, and host a community meeting in Spanish only.
1/9/2024	City of Granbury	Questions were asked regarding EV charging availability, current EV registration, time needed to charge an EV, and the appropriate amount of fees to charge an EV since they do not pay gas tax. Attendees suggested adding more public transit and recommended locations for electric vehicle charging stations.
1/16/2024	City of Fate	An attendee encouraged staff to include supporting the Property Assessed Clean Energy (PACE) Program in the Air Quality Improvement Plan. Attendees made recommendations on potential trails, sidewalks, and public transportation improvements.
1/18/2024	City of Fort Worth	Concerns were expressed regarding urban drilling, lack of public transit (including trains/subways), lack of sidewalks (especially in southern Fort Worth), poor internet access, and distribution centers impacting local residents due to noise and air pollution. Attendees recommended incentivizing developers to not cut down trees, add more trees near schools, and add more air quality monitoring, especially in low-income areas. Questions were asked regarding the low-income and disadvantaged communities' benefits analysis and the potential

Public Meeting Feedback**		
Date	**Location**	**Summary**
		for fees due to the region's nonattainment status for ground-level ozone.
1/24/2024	Virtual Listening Session*	Attendees suggested the addition of more transit, low-heat pavement, EVs and electric appliances, hydrogen refueling stations, native plants, and trees. They also recommended the preservation of existing green space, a reduction in parking lots, enforcement of idle reduction policies, and utilizing vehicle-to-grid technologies. Numerous comments were made regarding a need for more air quality monitoring, especially around gas wells. Two polls related to the development of the Dallas-Fort Worth Air Quality Improvement Plan were taken during the meeting. Poll #1: Which of the following are you most concerned about? (Select top 3 priorities) - Public Health (54%) - Local Air Quality (71%) - Extreme Weather Events (20%) - Rising Energy Costs (14%) - Lack of Access to Food (14%) - Lack of Public Transportation (20%) - Lack of Jobs (3%) - Climate Change (60%) - Urban Areas Warming Due to Human Activities (23%) Poll #2: Which sectors should be targeted in the DFW AQIP? (Select all that apply) - Transportation (81%) - Energy (81%) - Water (38%) - Wastewater (35%) - Solid Waste (38%) - Agriculture/Land Use (50%)
1/29/2024	City of Cleburne	Suggestions were made to have more incentives for decarbonization of fleet vehicles and the addition of more alternative fuel stations. An attendee suggested an EV trial vehicle for fleets. Concerns were expressed about needing training support for technology transitions, and recommendations made against projects that provide short-term incentives in exchange for future mandates/requirements.

Public Meeting Feedback**		
Date	**Location**	**Summary**
		An attendee suggested programs that retrofit and weatherize low-income and disadvantaged residential homes. There was interest in programs that would support energy improvements in city facilities. Attendees made suggestions on improving intersections to reduce idling and traffic congestion.

*Recording available at www.publicinput.com/dfwAQIP
**This effort was also taken to Transportation Public Meetings in June 2023, October 2023, and January 2024. Feedback was included with those comment reports provided to the Regional Transportation Council.

An online survey for the general public was published in November 2023 requesting input on the following:

- Community Concerns (i.e. Climate Change, Public Health, Local Air Quality, Extreme Weather Events, Rising Energy Costs, Food Access, Lack of Public Transportation, and Job Access)
- Level of Agreement on Specific Issues Occurring in Each Sector (Transportation, Energy Use and Industrial Operations, Water/Wastewater/Solid Waste, Agriculture/Forestry and Land Use)
- Ways NCTCOG Can Engage with Communities (Open Text Field)
- Other Feedback (Open Text Field)

As of February 9, 2024, 284 survey responses were received. Exhibit 5: illustrates where survey responses were received from, with 12 counties in the NCTCOG region represented.

Exhibit 5: Geographic Distribution of Survey Responses

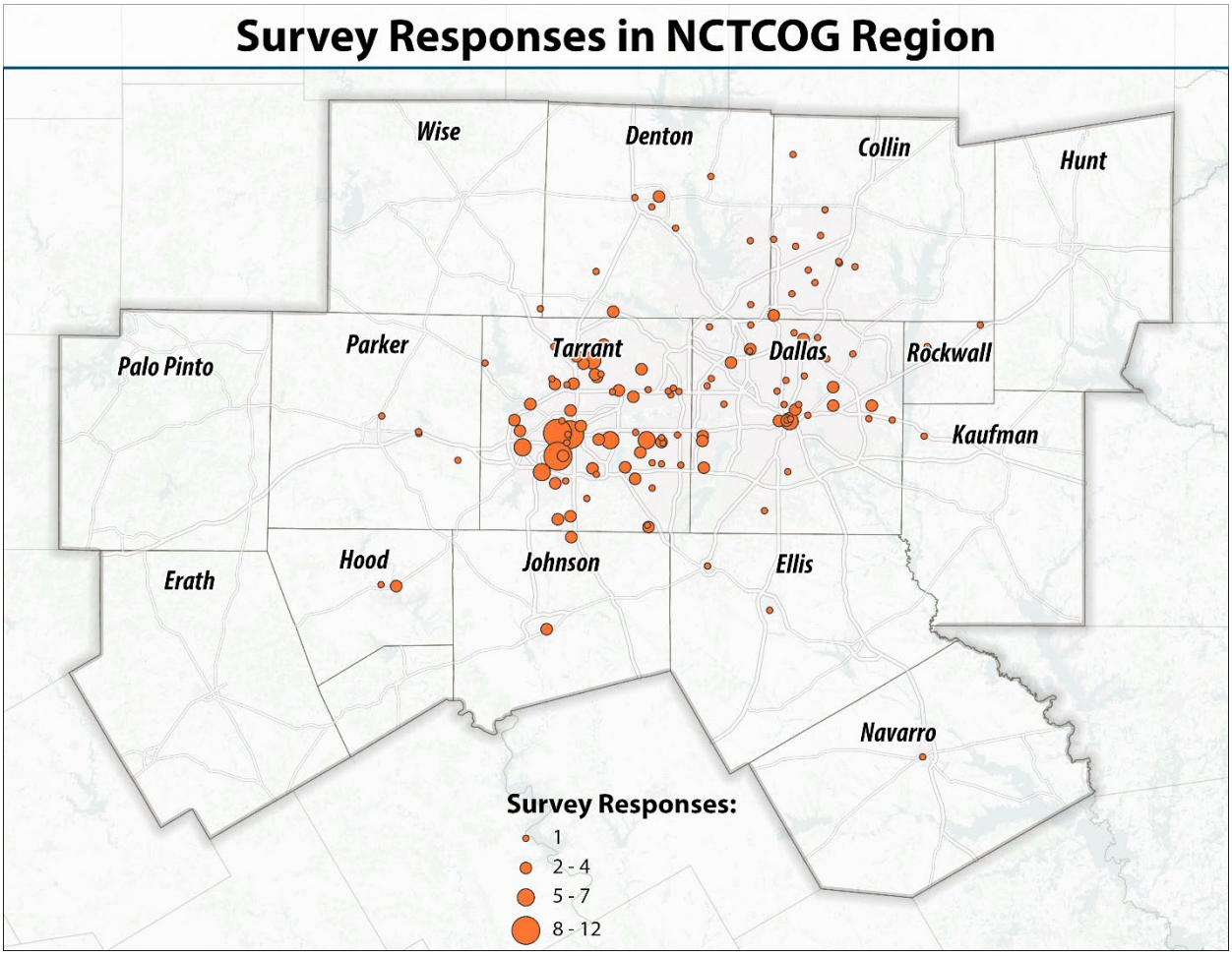
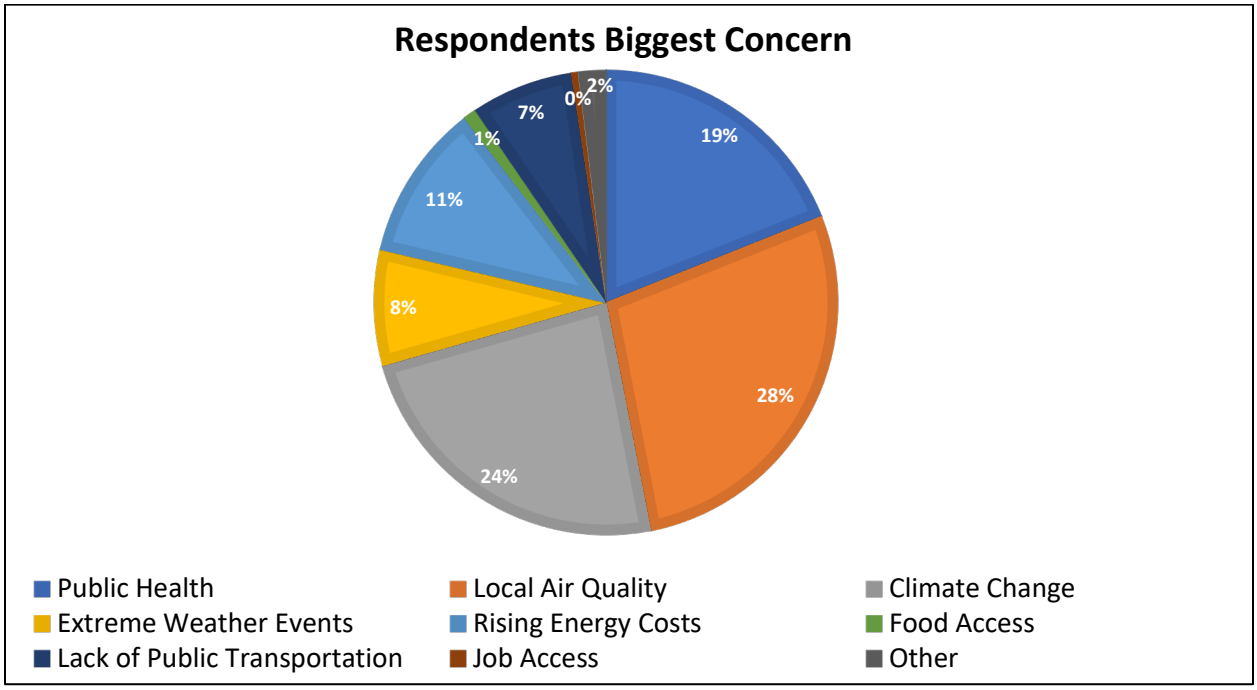


Exhibit 6 shows respondents' number one/biggest concern. Notably, the main concern of residents was local air quality, followed by climate change and public health as the second and third ranked issues, respectively. The number of respondents who ranked local air quality and public health as their biggest concern demonstrates regional demand for measures with significant criteria pollutant reduction, in addition to GHG reduction. **Appendix 7: Public Survey Results** contains a full summary of public survey responses.

Exhibit 6: ***Public Survey Respondents Biggest Concern***



Connection to Existing Regional Plans and Local Climate/Air Quality Plans

While no regional-level (e.g., county or MSA) or statewide "climate plans" have been developed to date, a variety of existing regional plans to incorporate elements related to climate change and/or air quality were referenced in development of this plan. These regional plans span multiple sectors, and each are developed by NCTCOG in collaboration with local governments, stakeholders, and other committees and incorporate their own respective stakeholder engagement and input processes. These plans were cross-referenced to ensure that relevant projects, strategies, or initiatives that fit the DFW AQIP criteria were encompassed in recommended measures. Relevant regional plans include:

- **Mobility 2045**,[12] the long-range transportation plan for the 12-county metropolitan planning area. It guides the spending of federal and state transportation funds based on regional goals. The plan recommends projects, programs, and policies that aim to meet the mobility plan goal themes of mobility, quality of life, system sustainability, and implementation.
- **Appendix E** of the most recent Proposed DFW Severe Area Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2008 Eight-Hour Ozone NAAQS.[13] This appendix, submitted by NCTCOG to the Texas Commission on Environmental Quality (TCEQ), outlines measures being implemented at the local level that achieve air quality benefits in the ozone nonattainment area.
- **The 2023 Update to the North Central Texas Water Quality Management Plan**[14] addresses regional water quality and water quantity concerns, as well as wastewater management issues. The plan is updated annually to report on NCTCOG's efforts to address impaired waterbodies and

[12] www.nctcog.org/trans/plan/mtp/mobility-2045-2022-update
[13] https://www.tceq.texas.gov/airquality/sip/dfw/dfw-latest-ozone
[14] www.nctcog.org/envir/natural-resources/water-resources

support regional water needs. The plan highlights NCTCOG's key initiatives in water management and planning.

- **The Regional Solid Waste Management Plan (2022-2042)**[15] examines various waste streams, addresses regional landfill capacity, and establishes goals for waste diversion, reduction, and safe handling of waste at permitted facilities. The plan looks at demand for solid waste infrastructure until 2042.

In addition, many municipalities in NCTCOG's region have created sustainability, clean air, or air quality improvement plans. Many of the measures included in the DFW AQIP are consistent with the objectives of those plans. **Appendix 8: Inventory of Local Government Regional Plans** contains relevant plans created by local governments.

Notably, the City of Dallas' Comprehensive Environmental and Climate Action Plan (CECAP)[16] is one of few climate plans officially adopted by a municipality across the NCTCOG area. NCTCOG staff served on the advisory committee during development of the Dallas CECAP. The Dallas CECAP includes participation in a variety of NCTCOG initiatives among the various actions the city intends to undertake to address climate change concerns, and staff leveraged knowledge gained during participation in Dallas CECAP engagement efforts to inform DFW AQIP development.

Greenhouse Gas Emissions Inventory

In 2023, NCTCOG created the first North Central Texas Regional Greenhouse Gas Emissions Inventory[17], which documented GHG emissions in the 12 counties (Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise) for which NCTCOG serves as the Metropolitan Planning Organization (MPO). During development of the DFW AQIP, this inventory was expanded to encompass all 16 counties within the NCTCOG area, which involved adding emissions inventories from Erath, Navarro, Palo Pinto, and Somervell counties. Thus, the scope of the GHG EI is now consistent with the scope of the DFW AQIP. Methodology and results of the GHG EI are detailed in **Section 3**.

Measure Selection and Quantification

Selecting Measures

As feedback from meetings and surveys was collected, NCTCOG began refining input into a preliminary list of measures for inclusion in the Plan. To refine these measures, NCTCOG cross-referenced the regional plans described in **Section 1** and reviewed the following:

1. Is there regional interest?
2. Is someone able and willing to implement it?
3. Can it be done in the next five years?
4. Does it provide broad, quantifiable greenhouse gas and criteria pollutant reductions?

As NCTCOG refined measures, staff requested entities interested in implementing measures submit a ***project scope*** indicating what measures they would like to implement, when it could be implemented, and cost estimates. **Appendix 9: Project Scope Summary** summarizes all project scopes received. This information was used to further refine the scope and scale of measures proposed for inclusion in the

[15] www.nctcog.org/envir/materials-management/materials-management-plan
[16] https://www.dallasclimateaction.com/
[17] https://www.nctcog.org/trans/quality/air/emissions-inventories/local-regional-greenhouse-gas-emission-inventory

DFW AQIP, so the measures included are inclusive of the types of projects that have been suggested for implementation.

Quantification

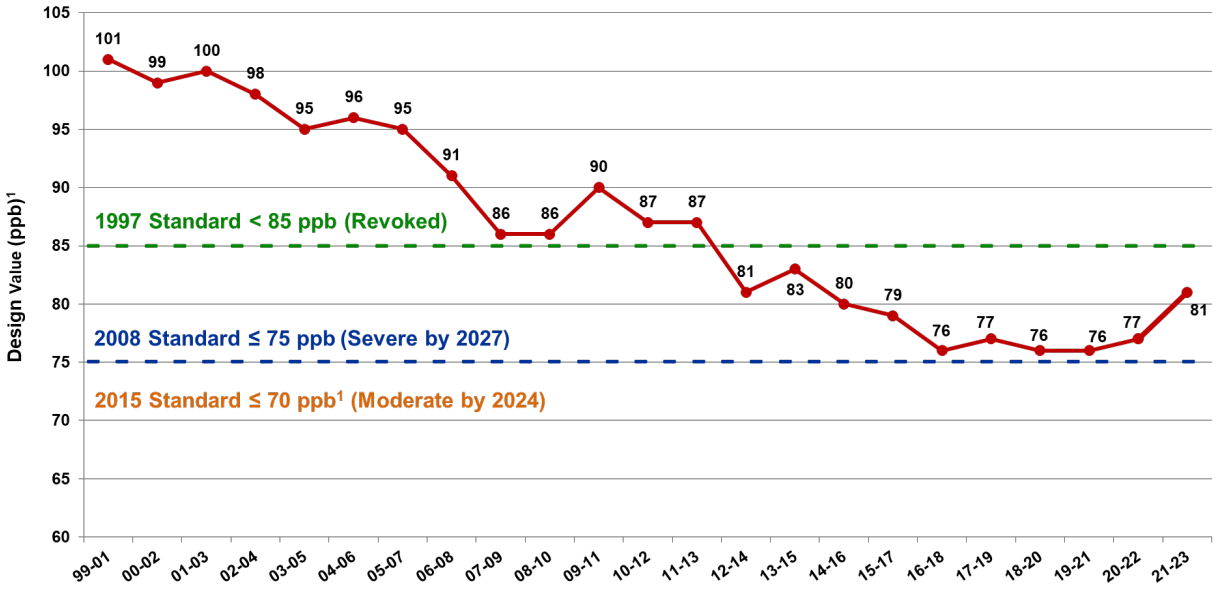
The quantification of projected GHG and co-pollutants reductions are estimates, with many measures including a range of potential reductions. In general, calculations were conservative as to not overestimate the benefits. Many different resources and tools were used to produce these qualifications, and when possible, EPA recommended tools and datasets were used. These tools, methods, assumptions, and references are documented in Appendix 9: Methodology for Quantifying Measures.

2- Regional Context

As noted, NCTCOG has a long history of working collaboratively with local governments (cities, counties, transit agencies, special districts, and school districts), and other local, state, and partners across the region on air quality issues. This collaboration was borne from long-standing ozone nonattainment issues but is expanding as other air quality concerns are becoming more urgent. These multipollutant air quality issues are the foundation for why NCTCOG has taken the lead in coordinating the DFW AQIP at the 16-county regional level, and why this plan is so important to advancing improvement across North Central Texas. Additionally, NCTCOG has been fostering collaboration among cities with TCEQ Municipal Texas Pollutant Discharge Elimination System Permits to provide joint water quality compliance water-quality monitoring efforts across the Trinity River Basin since about 2012, in addition to a long-standing tradition of supporting regional code development and adoption, and regional solid waste management cooperation.

Ozone nonattainment issues have plagued the NCTCOG region for over three decades, starting in the mid-1990s when only four counties were designated nonattainment. While there has been substantial improvement in ground-level ozone concentrations, reflected by the decreasing design value illustrated in Exhibit 8, the EPA has continued to lower the ozone NAAQS to reflect the latest data on ground-level ozone concentrations that are protective of human and environmental health. As these standards have become more stringent over time, the geographic scope of the nonattainment area has increased to now encompass 10 counties. Moreover, as multiple deadlines to meet the ozone standards have come and gone, the EPA has reclassified the region multiple times and now, for the first time, 10 counties have reached the “severe” nonattainment designation, which is the worst designation to be applied across the region to date.

Exhibit 7*:* Ozone Design Value Trendline 1999-2023



[1]Attainment Goal - According to the US Environmental Protection Agency National Ambient Air Quality Standards, attainment is reached when, at each monitor, the *Design Value* (three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration) is equal to or less than 70 parts per billion (ppb).

The NCTCOG Transportation Department, the RTC, and the NCTCOG Executive Board together serve as the MPO for 12 counties in the DFW region (Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise). As detailed in **Section 3**, 10 of these counties (Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise) have been designated by the EPA as nonattainment for the pollutant ozone. As the MPO in an ozone nonattainment area, NCTCOG has responsibility for incorporating air quality planning into transportation planning efforts at the regional level, specifically via Transportation Conformity and the Metropolitan Transportation Plan, which are two of the core functions of the MPO. The MPO works closely with regional, state, and federal partners to plan and recommend transportation projects that will improve mobility and encourage more efficient land use, all while minimizing the impact on the region's air quality.

Exhibit 8 also illustrates that the progress in reducing ozone concentrations has stalled. Until the last few years, the region was benefiting from improvements (that is, reductions) in ground-level ozone despite the fact that population, vehicle miles of travel, and levels of economic activity were all increasing. However, in the past few years, ozone levels have started to worsen again, with the design value creeping back up. The reasons for this are not yet understood, but the pervasiveness of the region's ozone nonattainment issues underscore the compelling need for widespread actions across all emissions sectors to achieve improvements.

Several other air quality developments have arisen recently that began extending NCTCOG air quality activities beyond ozone related MPO obligations. As discussed in **Section 3**, the revised NAAQS for fine particulate matter will likely trigger new nonattainment designations for the two most populous counties in the NCTCOG region – Dallas and Tarrant – under this pollutant. This means that approximately 4.9 million residents will be living in areas designated as nonattainment for two different air pollutants –

ozone and fine particulate matter – both of which cause respiratory issues and put this population at greater risk of health issues and other negative impacts. Local air quality has already been the most pressing local concern, as illustrated in the survey responses provided in **Appendix 7: Public Survey Results**. New nonattainment designations under a second pollutant will greatly exacerbate existing worries among residents.

In addition, new Federal Performance Measures[18] requirements related to greenhouse gases attributable to the transportation system will require that State Departments of Transportation (State DOTs) and MPOs establish declining CO_2 emissions targets for the GHG measure and report on progress toward achievement of those targets[19]. State DOTs will establish two- and four-year statewide emissions reduction targets, and MPOs will establish four-year emissions reduction targets for their metropolitan planning areas. In addition, the rule requires MPOs that have urbanized areas with populations of 50,000 or more to establish additional joint targets. State DOTs and MPOs have the flexibility to set targets that work for their respective climate change policies and other policy priorities, so long as targets are declining. State DOTs and MPOs are also required to report on their progress in meeting the targets. State DOTs established targets February 1, 2024. Subsequent targets will be established and reported no later than October 1, 2026.

While these air quality issues continue to pose challenges, the NCTCOG region faces constant population and economic growth. According to the 2010 and 2020 Decennial Censuses and the Mobility 2045 Update demographic forecast,[20] in recent years, the region has continued to add roughly 125,000 residents per year and is on track to exceed a population of 11 million by 2045. The population growth parallels an increase in economic activity, especially in the freight sector. The Federal Highway Administration (FHWA) estimates freight shipment tonnage will increase between 2015 and 2045 by 40 percent nationally,[21] and the value of freight shipments to and from the DFW area is estimated to increase by 67 percent in a low-growth scenario, according to the FHWA Freight Analysis Framework.[22] The NCTCOG Freight North Texas report details the extensive network of freight assets and impact of freight in the NCTCOG region.[23,24] Increases in population and economic activity lead to more activity in nearly every emissions sector for multiple pollutants: increased vehicle miles of travel, greater demand for electricity generation, more need for waste management resources, additional pressure on water and wastewater treatment facilities, and more land development that decreases the amount of available green space that absorbs or mitigates air pollutants.

The release of the EPA CPRG Program coincided with these issues and has presented a natural opportunity to weave the various concerns together into this comprehensive air quality plan. Leveraging its existing work, NCTCOG took the lead in coordinating stakeholders across the region to develop the DFW AQIP. Local governments were major contributors, along with stakeholder input contributed by NCTCOG committee members (which includes nonprofit and business entities), local nonprofits and other

[18] https://www.nctcog.org/trans/data/info/measures/system
[19] https://www.federalregister.gov/documents/2023/12/07/2023-26019/national-performance-management-measures-assessing-performance-of-the-national-highway-system
[20] https://www.nctcog.org/trans/plan/mtp/mobility-2045-2022-update
[21] https://www.transportation.gov/briefing-room/dot-releases-30-year-freight-projections
[22] https://faf.ornl.gov/faf5/dtt_total.aspx
[23] https://www.transportation.gov/briefing-room/dot-releases-30-year-freight-projections
[24] https://nctcog.org/getmedia/a3642652-f78b-4bbc-b33f-85fd13e599c3/Freight-North-Texas-2022-A-FREIGHT-Mobility-Plan.pdf

organizations, and residents. More detail on this engagement and input is provided in **Section 1: Regional Engagement.** The resulting DFW AQIP has been developed to achieve reductions in greenhouse gas, ozone precursors, and fine particulate matter emissions.

3- Emissions Inventory

Greenhouse Gas Inventory

Base Year

This inventory utilizes 2019 as its baseline year, because it is the most recent year for which the necessary data was available and best represents normative regional operations for the 16-county NCTCOG region before disruptions due to COVID-19.

Scope

The three greenhouse gases included in this inventory are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Most charts in this report represent emissions in "carbon dioxide equivalent" (CO_2e) values, calculated using the Global Warming Potentials (GWP) from the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report.[25] The GWP is an indicator describing the radiation impact of one unit of a greenhouse gas to one unit of CO_2. It indicates the degree of harm to the atmosphere.

Exhibit 8*:* Global Warming Potentials

Greenhouse Gas	Global Warming Potential
Carbon Dioxide (CO_2)	1
Methane (CH_4)	28
Nitrous Oxide (N_2O)	265

Inventory Methodology

The ICLEI Community Emissions Protocol

Version 1.2 of the U.S. Community Protocol for Accounting and Reporting GHG Emissions[26] was released by ICLEI in 2019 as a nationally recognized standard in guidance to help U.S. local governments develop effective community GHG emissions inventories by establishing reporting requirements for all community GHG emissions inventories.

The community inventory in this report includes emissions from the five Basic Emissions Generating Activities required by the Community Protocol:

- Use of electricity by the community
- Use of fuel in residential and commercial stationary combustion equipment

[25] https://www.ipcc.ch/assessment-report/ar5/
[26] https://icleiusa.org/us-community-protocol/

- On-road passenger and freight motor vehicle travel
- Use of energy in potable water and wastewater treatment and distribution
- Generation of solid waste by the community

The 2019 regional inventory also includes the following activities to be more comprehensive:

- Wastewater processing
- Off-road and non-road sectors
- Airport and aviation emissions
- Water/pleasure craft emissions

The ICLEI Local Government Operations (LGO) Protocol

In 2010, ICLEI, the California Air Resources Board (CARB), and the California Climate Action Registry (CCAR) released Version 1.1 of the LGO Protocol.[27] The LGO Protocol serves as the national standard for quantifying and reporting greenhouse emissions from local government operations. The purpose of the LGO Protocol is to provide the principles, approach, methodology, and procedures needed to develop a local government greenhouse gas emissions inventory.

The following activities are included in the LGO inventory:

- Energy and natural gas consumption from buildings and facilities
- Wastewater treatment processes
- On-road transportation from employee commute and vehicle fleet

Emissions Quantification Methods

Greenhouse gas emissions can be quantified in two ways:

- **Measurement-based methodologies,** which refer to the direct measurement of greenhouse gas emissions (from a monitoring system) emitted from a flue of a power plant, wastewater treatment plant, landfill, or industrial facility.
- **Calculation-based methodologies,** which calculate emissions using activity data and emission factors. To calculate emissions accordingly, the basic equation below is used:

Activity Data x Emission Factor = Emissions

Most emissions sources in this inventory are quantified using calculation-based methodologies. Activity data refers to the relevant measurement of energy use or other greenhouse gas-generating processes such as fuel consumption by fuel type, metered annual electricity consumption, annual vehicle miles traveled, etc.

Emission factors are used to convert energy usage or other activity data into associated quantities of emissions. Emission factors are usually expressed in terms of emissions per unit of activity data (e.g., lbs CO_2/kWh of electricity). For this inventory, calculation results are given in Carbon Dioxide Equivalent Emissions in Metric Tons ($MTCO_2e$).

[27] https://icleiusa.org/ghg-protocols/: https://s3.amazonaws.com/icleiusaresources/lgo_protocol_v1_1_2010-05-03.pdf

Community Emissions Inventory Results

Total communitywide $MTCO_2e$ for the regional 2019 inventory are shown in Exhibits 10 through 13. Exhibit 14 shows an overview of the relative distribution of communitywide emissions by sector. The Energy sector (comprised of residential, commercial, and industrial subsectors) makes up the largest portion of the regional inventory at 53 percent. Transportation & Mobile Sources is the second largest sector contributing to regional emissions at 43 percent, with the Waste and Wastewater sector making up the remaining emissions. Note that emissions from the water supply sector have been included in the Energy sector as water pumping is energy intensive.

Exhibit 9: Communitywide NCTCOG Area 16-County 2019 Annual CO_2e Emissions – Energy

Sector	Fuel or Source	2019 Usage	Usage Unit	2019 Emissions ($MTCO_2e$)
Residential Energy				
	Electricity	56,878,355	MWh*	22,506,452
	Natural Gas (Utility Fuel Combustion)	82,432,173	MMBtu*	4,384,279
	Kerosene and Distillate Fuel Oil (Non-Utility Fuel Combustion)	1,276	MMBtu	95
	Propane (Non-Utility Fuel Combustion)	3,774,980	MMBtu	234,271
	Wood (Non-Utility Fuel Combustion)	375,569	MMBtu	3,741
Residential Energy Total				**27,128,838**
Commercial Energy				
	Electricity	26,005,061	MWh	10,290,060
	Natural Gas	48,384,406	MMBtu	2,573,397
	Kerosene and Distillate Fuel Oil (Non-utility Fuel Combustion)	4,245,660	MMBtu	316,130
	Propane (Non-Utility Fuel Combustion)	2,977,516	MMBtu	184,781
	Wood (Non-Utility Fuel Combustion)	119,052	MMBtu	239
Commercial Energy Total				**13,364,607**
Industrial Energy				
	Electricity	17,419,413	MWh	6,892,766
	Natural Gas	1,672,497	MMBtu	88,767
	Distillate Fuel Oil (Non-Utility Fuel Combustion)	55,453,329	MMBtu	4,116,477
	Propane (Non-Utility Fuel Combustion)	66,350,347	MMBtu	4,103,339
Industrial Energy Total				**15,201,349**
Energy Total				**55,694,794**

Units: MMBtu - Metric Million British Thermal Unit; MWh - Megawatt Hour

Exhibit 10: Communitywide NCTCOG Area 16-County 2019 Annual CO_2e Emissions – Transportation

Sector	Fuel or Source	2019 Emissions ($MTCO_2e$)
Transportation		
On-Road	Gasoline	31,426,078
	Diesel	9,038,873
Aviation	Total Jet A (Jet Kerosene) and Aviation Gasoline	1,405,499
Off-Road/Non-Road	Total Off-Road/Non-Road Fuel Types	3,521,275
Pleasure Craft	Diesel	95
	Gasoline	1,760
Rail	Freight Diesel and Passenger Diesel	378,586
Transportation Total		**45,772,166**

Exhibit 11: Communitywide NCTCOG Area 16-County 2019 Annual CO_2e Emissions – Solid Waste, Water and Wastewater

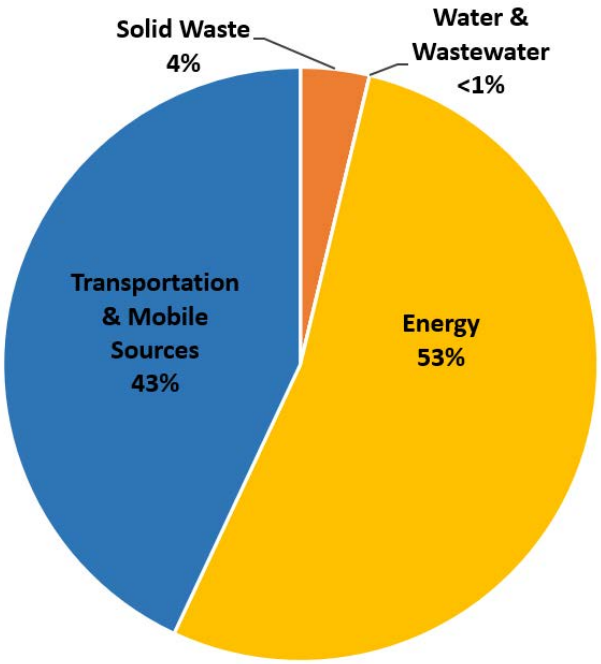
Sector	Fuel or Source	2019 Usage	Usage Unit	2019 Emissions ($MTCO_2e$)
Solid Waste				
Solid Waste	Waste Generation	10,486,236	MT*	3,911,496
	Flaring	20,505,666,550	cf/y*	56,010
Solid Waste Total				**3,967,505**
Water and Wastewater				
Water and Wastewater	Effluent Nitrogen Load	1,439	kg N/day*	1,093
Water and Wastewater total**				**1,093**

**Units: MT – Metric Tons; cf/y - Cubic Feet/Year; kg N/day Kilogram of Nitrogen Load/Day*
** Note that Water Supply emissions are included in the Commercial and Industrial Energy sector emissions.

Exhibit 12: Communitywide NCTCOG Area 16-County 2019 Annual CO_2e Emissions – Total

Sector	2019 Emissions ($MTCO_2e$)
Energy Total	55,694,794
Transportation Total	45,772,166
Solid Waste Total	3,967,505
Water and Wastewater Total	1,093
Total Communitywide NCTCOG Area 16-County [$MTCO_2e$]	**105,435,559**

Exhibit 13: Communitywide NCTCOG Area 16-County 2019 Annual CO_2e Emissions by Sector



Electricity

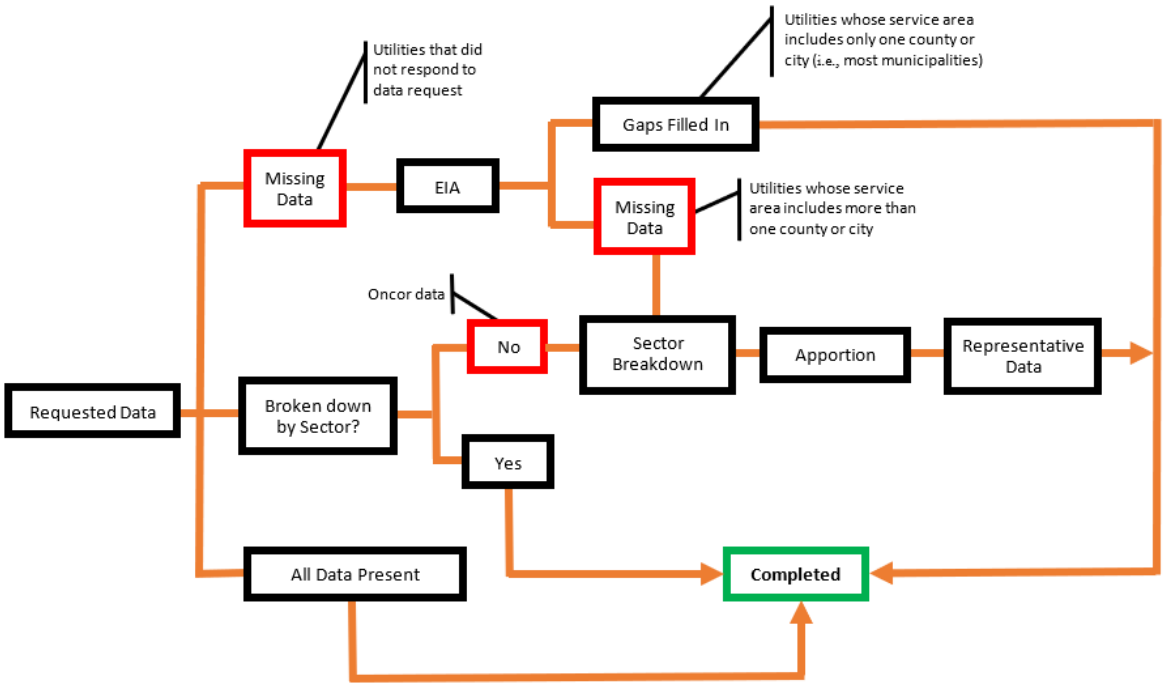
Electricity Data GHG Emissions Methodology

Electricity data activity was estimated using a combination of Energy Information Administration data (EIA-861)[28], NCTCOG GIS data, the National Land Cover Database,[29] GIS data, and electricity usage data from municipal owned utilities (MOU), cooperatives (CO-OP) and electric transmission providers. The data was categorized by residential, commercial, and industrial sectors for each county within the 16-county region.

Electricity usage for each county contained the summation of electricity usage from each electricity utility provider that served the county. Depicted below in Exhibit 15 is a process flow diagram describing the data gathering and representative data apportioning process for county electricity data.

[28] https://www.eia.gov/electricity/data.php
[29] https://www.usgs.gov/centers/eros/science/national-land-cover-database

Exhibit 14: County Electricity Data Methodology



Limitations

Limitations for the electricity sub-sector inventory primarily relates to data constraints due to data availability and the level of data granularity. Some data requests were not fulfilled by electricity utility providers. When this was the case, EIA-861 data was apportioned with GIS to supplement. Oncor data was aggregated regardless of energy sector and EIA data was not at a county level, which lead to data apportionment processing.

Assumptions

The following are assumptions made to complete the emissions inventory for the electricity sub-sector:

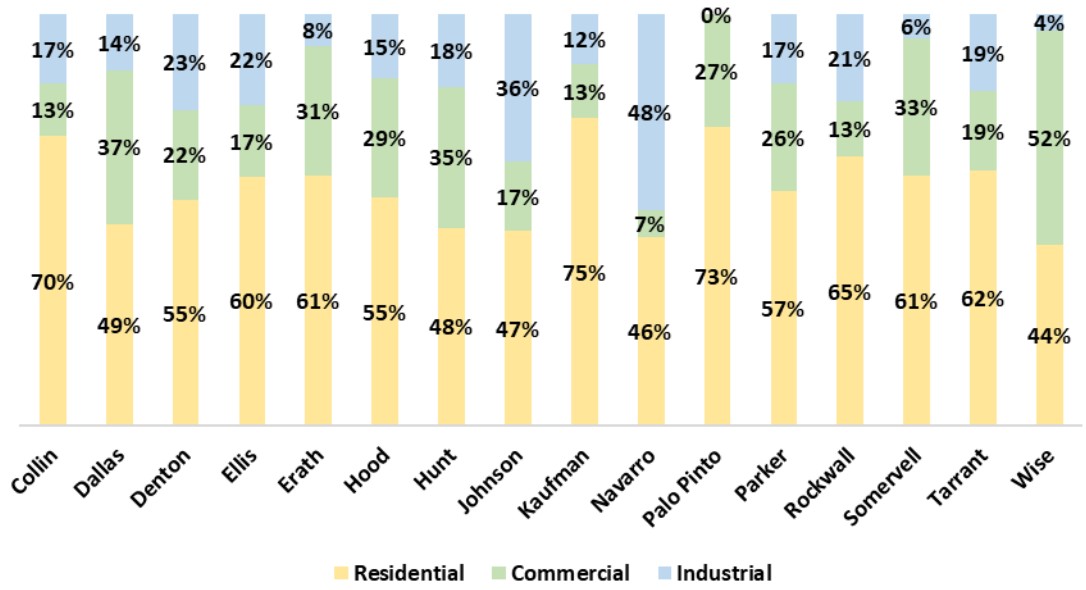
- There is no overlap between CO-OPS and MOUs in coverage and those in a MOU area are subject to using the MOU.
- Land-use data incorporation assumes that negligible electricity consumption occurred in areas that are not urbanized/incorporated.
- Apportioned data assumes equal amount of usage per area – counties with more urban developments, industrial, or commercial sectors are likely to have fluctuating electricity usages.

Electricity Data GHG Emissions Results

The energy sector is the largest contributor to CO_2e across the inventory, at 53 percent of regional emissions in 2019, with electricity being the bulk of the energy sector emissions – electricity from the residential, commercial, and industrial energy sub-sectors combined account for almost 38 percent of the regional inventory's CO_2e. Total electricity emissions for 2019 in the 16-county region were 39,689,277 metric tons of CO_2e, of which 57percent (22,506,452 $MTCO_2e$) were residential, 26 percent (10,290,060

$MTCO_2e$) were commercial, and 17 percent (6,892,766 $MTCO_2e$) were industrial. The sector percentage breakdown of the electricity consumption for each county can be seen in Exhibit 16.

Exhibit 15: NCTCOG Area 16-County 2019 Annual Electricity Usage by Sector



Natural Gas

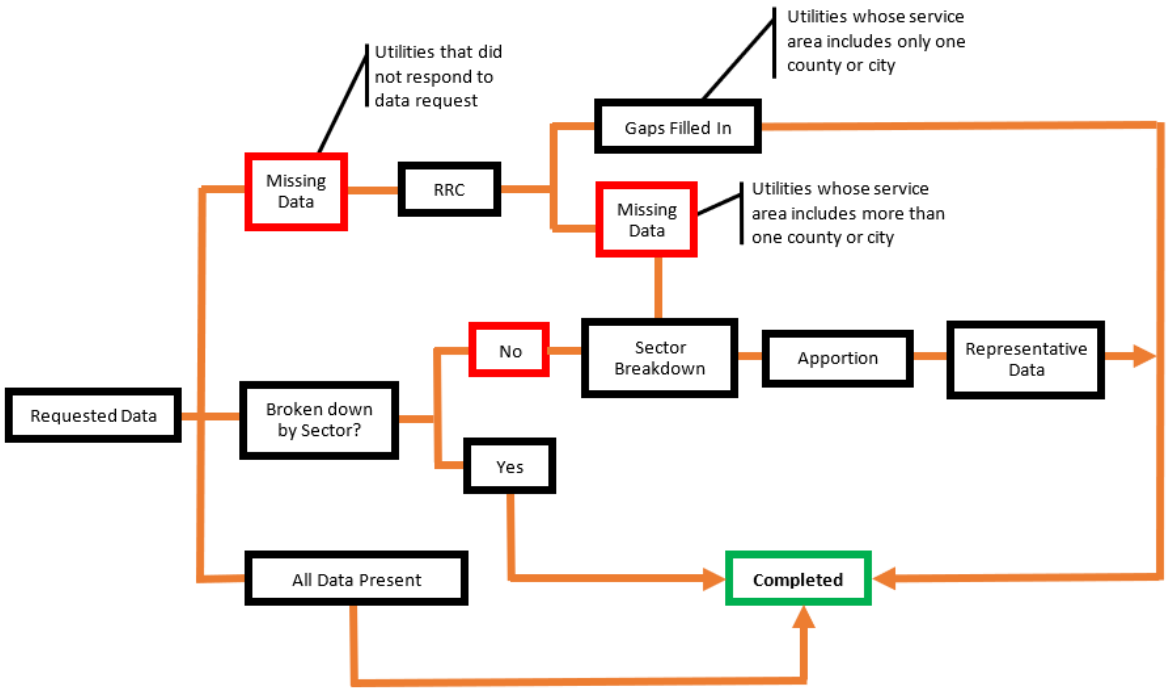
Natural Gas Data GHG Emissions Methodology

Natural gas data was collected either directly from utilities or indirectly as supplemental data from the Railroad Commission of Texas (RRC).[30] Data collected directly from utilities included division of natural gas by residential, commercial, and industrial sectors for each county in the NCTCOG region. Data collected indirectly from the RRC included only residential and a combined mix of commercial and industrial sectors, which would then need to be processed and attributed to cohort cities and counties (see Exhibit 17).

Creating the representative data from RRC was accomplished by first identifying if a city within the NCTCOG region was serviced by more than one utility. If a city was serviced by only one utility, it could be added into the data for that county. However, if a city was serviced by more than one utility or that city existed in multiple counties, natural gas consumption data was apportioned based on that city's urban land use from the 2019 National Land Cover Database. The percentage of urban territory for each county within the service areas was then attributed to the individual county.

[30] https://www.rrc.texas.gov/resource-center/

Exhibit 16: County Natural Gas Data Methodology



Limitations

Limitations for this emission inventory primarily come from the use of supplemental data from the RRC. Ideally, data for natural gas consumption would have come directly from each utility that serves the NCTCOG region. The RRC receives natural gas consumption data directly from utilities. However, the structure of RRC data limits the scope of this inventory as RRC data does not include any unincorporated areas within counties and is limited to the city level. Additionally, the RRC data does not differentiate between commercial and industrial.

Assumptions

The following are assumptions that were made to get the most wholistic view of natural gas consumption for the NCTCOG region:

- Commercial and industrial sector data from the RRC would only be included as commercial in the final product. This was done since data from Atmos Energy supported a more commercial heavy natural gas consumption.
- Data from Texas Gas Service included a “Public Authority” consumption. This sector was included as commercial in the final product since it included entities such as universities and government buildings.
- Most natural gas consumption is assumed to be in urban areas to help apportion data to different counties. However, this is not entirely true as numerous other land use areas consume natural gas.

Electricity Data GHG Emissions Results

Total natural gas consumption for 2019 in the region was 132,489,077 MMBtu: of which 82,432,173 MMBtu was residential, 48,384,406 MMBtu was commercial, and 1,672,497 MMBtu was industrial. A breakdown by natural gas consumption for each county can be seen in Exhibit 18.

Exhibit 17*:* NCTCOG Area 16-County 2019 Annual Natural Gas Usage by County, per Sector [MMBtu]

County	Residential	Commercial	Industrial
Collin	17,069,925	5,026,766	97,509
Dallas	28,237,312	22,366,973	278,197
Denton	11,976,048	3,947,603	20,518
Ellis	849,596	608,677	82,046
Erath	137,039	146,443	4,192
Hood	95,415	118,542	0
Hunt	484,158	452,233	151,925
Johnson	648,447	501,344	165,429
Kaufman	814,352	404,970	29,478
Navarro	306,134	258,106	13,622
Palo Pinto	171,300	198,130	5,759
Parker	384,276	440,237	6,869
Rockwall	1,404,920	449,868	0
Somervell	12,353	49,748	0
Tarrant	19,691,689	13,174,683	816,954
Wise	149,210	240,084	0

Stationary Non-Utility Fuel Combustion

Stationary Non-Utility Fuel Combustion GHG Emissions Methodology

Stationary Non-Utility Fuel Combustion is reported by each source to the U.S. EPA under 40 CFR Part 98 Subpart C – General Stationary Fuel Combustion Sources and is also collected by the U.S. EIA for usage in their State Energy Data System (SEDS).[31] Reported data was extracted for statewide usage and downscaled for each sector, with the industrial sector data also gathered via the EPA's Facilities Level Information on Greenhouse gases Tool (FLIGHT)[32] for regional guidance and comparative purposes. Data was then input into ICLEI's ClearPath tool to convert total consumption into metric tons of CO_2e using an emissions factor conversion for the corresponding fuel combusted.

Limitations

Limitations for this emission inventory primarily relate to data availability for accuracy and precision. Ideally, data for stationary non-utility fuel consumption would have come directly from each utility that serves the NCTCOG region. As the threshold for the federal GHG reporting program is 25,000 MT CO2e for any facility to appear in reporting, many smaller emitters are left out and may cumulatively be a

[31] https://www.eia.gov/state/seds/
[32] https://ghgdata.epa.gov/ghgp/main.do?site_preference=normal

significant number of emissions that are unaccounted. Additionally, EIA SEDS aggregates consumption of all types of distillate fuel oil into one number for the residential and commercial sectors. Therefore, custom emissions factors appropriate for general distillate fuel oil consumption of all types were used for ClearPath entry by using CO_2 emission factor from the EIA, and CH_4 and N_2O emission factors from EPA's emission factors in Appendix C of the U.S. Community Protocol.[33]

Assumptions

The following are assumptions that were made to get the most wholistic view of stationary non-utility fuel consumption for the NCTCOG region:

- FLIGHT data was used to highlight what large industrial facilities exist in the region and what fuel types were consumed in 2019. This information was used as an indicator for what are likely the only fuels with widespread use throughout the region's industrial sector and therefore what fuels would also be unlikely to be used at smaller facilities in a nonnegligible amount.
- Assumed electricity, natural gas, and district heating/cooling to all be delivered by utilities and included in other sectors of this emissions inventory.
- Commercial and industrial sectors are involved in downscaling non-local (i.e., statewide) data on fuel consumption to a local level using Census job counts.
- EIA assumes statewide residential coal consumption in 2008 and beyond to be zero/negligible.

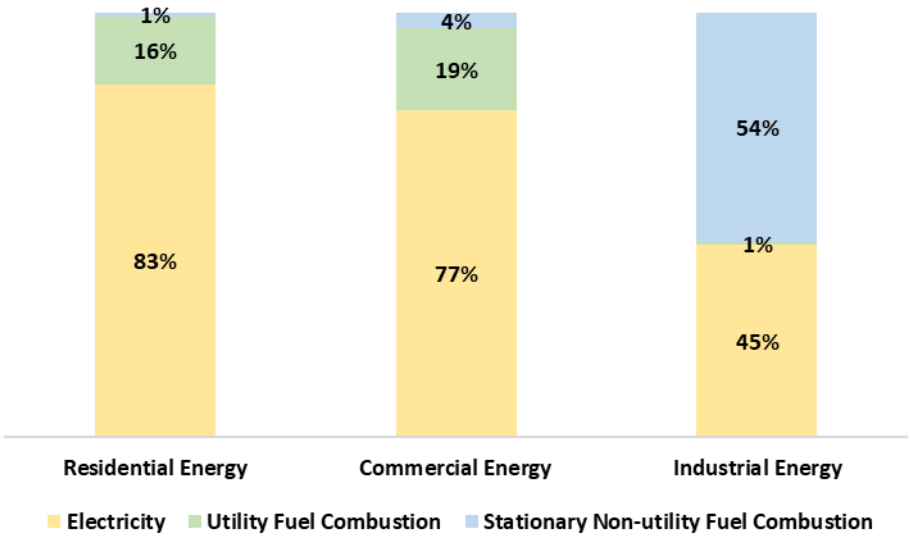
Stationary Non-Utility Fuel Combustion GHG Emissions Results

Total stationary non-utility gas consumption for 2019 in the region resulted in 8,959,074 $MTCO_2e$ of emissions of which 238,107 $MTCO_2e$ were residential, 501,150 $MTCO_2e$ were commercial, and 8,219,816 $MTCO_2e$ were industrial.

A sector-wide percentage comparison of the regional emission total is shown in Exhibit 19 below.

[33] https://icleiusa.org/us-community-protocol/

Exhibit 18: NCTCOG Area 16-County 2019 Annual Energy Emissions



Transportation: On-Road

On-Road GHG Emissions Methodology for the NCTCOG 12-County Metropolitan Planning Area (MPA)

Estimation of Vehicle Activity

The Dallas-Fort Worth Travel Model, Transportation Analytical Forecasting Tool (TAFT), serves as the source for forecasting vehicle miles of travel (VMT) and other travel characteristics for the North Central Texas nonattainment area. The network-based TAFT is executed in the TransCAD environment, which is a GIS-based commercial travel demand software package for transportation planning. The NCTCOG Transportation Department is responsible for executing TAFT and conducting various planning studies for the region. The forecasting technique of TAFT is based on a four-step sequential process designed to model travel behavior and predict the level of travel demand at regional, sub-area, or small area levels. These four steps are: Trip Generation, Trip Distribution, Mode Choice, and Roadway Assignment.

Estimation of Off-Network Activity

The non-roadway-based inventory estimates (e.g., from vehicle starts, parked vehicle evaporative processes, non-roadway-based vehicle idling, hoteling activity) were calculated as the product of the amount of associated activity and the mass per unit of activity. To estimate the source hours parked (SHP) and vehicle starts activity, vehicle population estimates were needed. Hoteling activity estimates (composed largely of the emissions-producing source hours extended idling (SHEI) and diesel auxiliary power unit (APU) hours) were based on county-specific actual estimates.

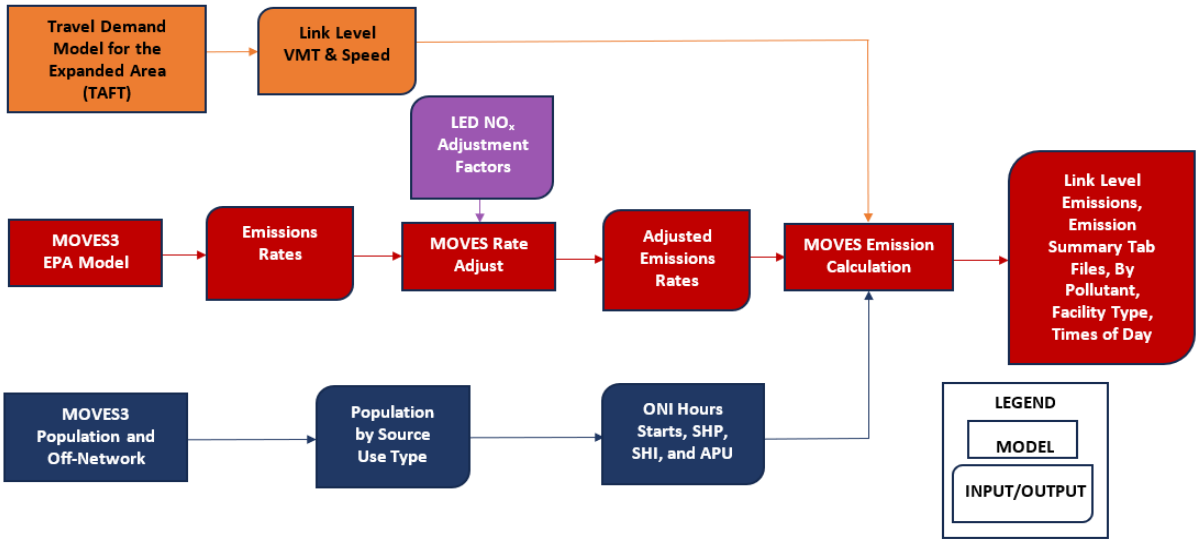
The methodology provided by the Texas A&M Transportation Institute (TTI), similar to the region's transportation conformity, was used to calculate the vehicle population and off-network activity estimates.

Emissions Estimation

Emissions were calculated using the EPA's MOtor Vehicle Emission Simulator (MOVES) 3 model (in the Rates mode) and the utilities developed by TTI. The utilities combine vehicle and off-network activity and emission rates to create emission estimates.

Exhibit 20 below outlines the emission calculation modeling process used to calculate the Dallas-Fort Worth Metropolitan Planning Area emissions estimates.

Exhibit 19: Emissions Modeling Process



On-Road GHG Emissions Methodology for the NCTCOG additional Four Counties (Erath, Navarro, Palo Pinto, and Somervell)

The emission estimates for the four counties of Erath, Navarro, Palo Pinto, and Somervell were calculated using the EPA's MOVES 3 model in the Inventory mode, utilizing the EPA's default activities.

On-Road GHG Emissions Results

The emissions for Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise counties were produced at a summer weekday level, and a conversion factor from the Texas Department of Transportation's (TxDOT) Automatic Traffic Recorder (ATR) data was used to annualize the estimates. The on-road annual CO_2e emissions for the analysis year 2019 are listed in Exhibit 21 below.

Exhibit 20: NCTCOG Area 16-County 2019 Annual On-Road CO_2e Emissions

County	$MTCO_2e$
Collin	4,386,731
Dallas	14,642,389
Denton	3,476,454
Ellis	1,384,734

County	$MTCO_2e$
Erath	347,899
Hood	346,761
Hunt	958,525
Johnson	965,320
Kaufman	1,214,645
Navarro	689,279
Palo Pinto	341,823
Parker	1,010,439
Rockwall	441,550
Somervell	79,864
Tarrant	9,479,378
Wise	699,160
Total	**40,464,951**

Transportation: Off-Road/Non-Road

Off-Road/Non-Road GHG Emissions Methodology

The off-road/non-road emissions include emissions from various equipment such as agricultural, airport, commercial, construction and mining, industrial, lawn and garden, logging, railroad, and recreational. The emissions estimates were developed using the TexN model, a tool for estimating Texas-specific emissions from off-road/non-road sources. TCEQ contracted with Easter Research Group (ERG) to develop the model. The TexN model uses EPA's Non-Road model to calculate emissions, as previously required by the EPA for developing emissions estimates for State Implementation Plan revisions, national emissions inventories, and reasonable further progress (RFP) analyses. Since TexN was developed, TCEQ has frequently updated the Texas-specific data within the tool and enhanced the tool's functionality. The recent version available, TexN 2.2, was utilized for this inventory.

Off-Road/Non-Road GHG Emissions Results

The TexN 2.2 model was set to the scenario year of 2019, an annual period, and was run for all 16 counties (Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise). The off-road/non-road annual CO_2e emissions for the analysis year 2019 are listed in Exhibit 22 below.

Exhibit 21: NCTCOG Area 16-County 2019 Annual Off-Road/Non-Road CO_2e Emissions

County	$MTCO_2e$
Collin	397,742
Dallas	1,418,388
Denton	290,817
Ellis	138,050
Erath	24,414
Hood	36,107

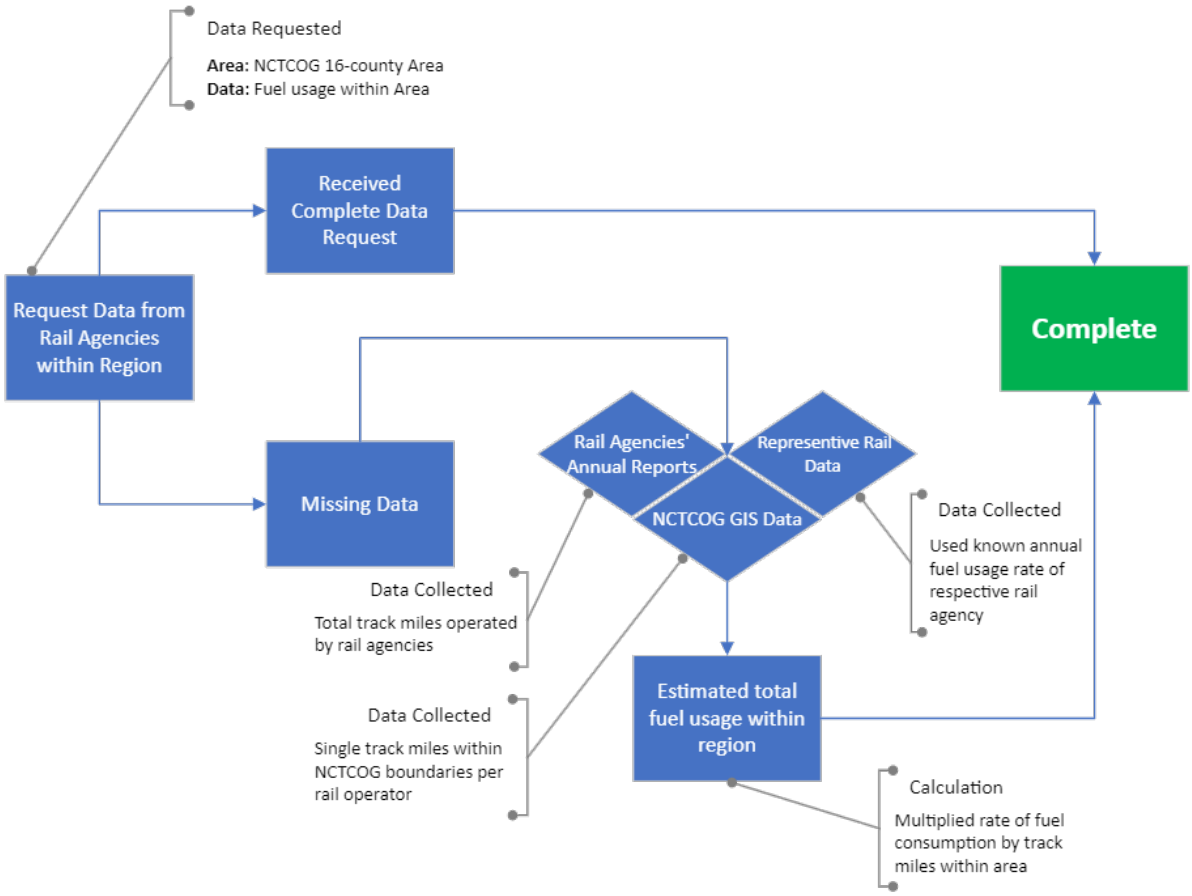
County	$MTCO_2e$
Hunt	38,465
Johnson	75,241
Kaufman	82,530
Navarro	34,333
Palo Pinto	20,748
Parker	65,856
Rockwall	51,097
Somervell	16,351
Tarrant	778,049
Wise	53,089
Total	**3,521,275**

Rail

Rail Data GHG Emissions Methodology

Rail data was collected from a combination of fuel usage data from regional rail agencies data requests, total rail track miles and annual fuel use from rail agencies' sustainability/annual reports, representative rail data (for rail entities that had no data available), and single rail track miles operated by rail agencies within the NCTCOG region from the NCTCOG GIS database (see Exhibit 22). The data was categorized as freight diesel, passenger diesel, and passenger electric.

Exhibit 22: County Rail Data Methodology



Rail emissions were estimated by calculating the rate of fuel consumption per single track mile for each rail agency and applying that rate to the number of single-track miles within the NCTCOG region.

$$Fuel\ Consumption_{Regional} = \frac{Fuel\ Consumption_{Total}}{Single\ Track\ Mile_{Total}} \times Single\ Track\ Mile_{Regional}$$

$$Emissions_{Regional} = Fuel\ Consumption_{Regional} \times ERCOT\ eGRID\ emission\ factor$$

Limitations

For this emissions inventory, the assumption that each track mile had the same emission rate was used to calculate emissions. Unless the rail agency solely operated within the NCTCOG region and provided their total fuel usage, this assumption did not account for the number of trips or number of locomotives for each track, which would invariably over or underestimate the emissions per track mile. Additionally, ICLEI's ClearPath tool used only the Emissions & Generation Resource Integrated Database (eGRID) for the rail transportation factor set. "The eGRID is a comprehensive source of data from EPA's Clean Air Markets Division on the environmental characteristics of almost all electric power generated in the United States."[34] However, eGRID may not accurately estimate the emissions from rail diesel as its focus

[34] www.epa.gov/egrid

is related to electricity generation and those associated emissions. This would work for electric rail transportation but may not as accurately calculate emissions for diesel rail transportation.

Assumptions

The following are assumptions that were made to complete the emissions inventory for the rail sector:

- Each track mile was assumed to have the same emission rate for all rail agencies.
- Fuel consumption from the Trinity Rail Express (TRE) was estimated using fuel consumption rates from Dallas Area Rapid Transit (DART) and Trinity Metro because both operate part of the TRE.
- There was no fuel consumption attributed to the Northeast Texas Rural Rail Transportation District because no trains were likely to run on the tracks located within the NCTCOG region.
- The rate of fuel consumption for Dallas, Garland & Northeastern Railroad (DGNO) was used to estimate Fort Worth & Western Railroad (FWWR) fuel consumption because no fuel data was available for FWWR and DGNO was a known representative data source.
- DART Light Rail electricity consumption is already accounted for in the electricity emissions inventory.

Rail Data GHG Emissions Results

The total CO_2e region associated with the rail sector in the region for 2019 was 378,586 metric tons. Tarrant County freight rail is shown to have contributed the highest amount ofCO_2e with 68,507 metric tons followed by Dallas County freight rail with 54,697 metric tons of CO_2e. The electricity use associated to the rail sector is already accounted for in the electricity sector in the emissions inventory.

Exhibit 23: NCTCOG Area 16-County 2019 Annual Rail Sector (Passenger and Freight) CO_2e Emissions

County	$MTCO_2e$
Collin	20,383
Dallas	69,179
Denton	42,902
Ellis	38,111
Erath	2,021
Hood	1,492
Hunt	10,212
Johnson	32,728
Kaufman	5,808
Navarro	25,839
Palo Pinto	6,916
Parker	6,597
Rockwall	667
Somervell	0
Tarrant	86,880
Wise	28,851
Total	**378,586**

Pleasure Craft

Pleasure Craft Data GHG Emissions Methodology

Pleasure craft data was provided as a regional annual estimate based on data from the Texas Parks and Wildlife (TPW) Boat Registration inventory.[35] The pleasure craft inventory was filtered down to the boats in the 16-county region that were built by 2019 and fuel description was processed to count all pleasure craft that may use diesel or gasoline. Pleasure craft emissions were estimated by establishing hours of pleasure craft operation and applying the number of boats in each speciated category against a conservative estimate for annual hours of boating per pleasure craft, then applying the hours against the corresponding emission factors from EPA's MOVES 3 model.

The EPA's MOVES 3 emission factors were for the scenario year of 2019 and for 16 counties (Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise).

Limitations

Limitations for this section of the emissions inventory include having to rely on TPW boat registration data accuracy. Fuel description was a vital column for being able to fully speciate pleasure craft emissions, and inconsistencies generally required manual edits for dataset manipulation. An additional limitation pertains to the location of pleasure craft usage and the number of hours operated, which were estimated using data on registered boats in Texas from the 2012 National Recreational Boating Survey[36] and the corresponding exposure hours. There are also limitations on emission quantification due to the usage of summer weekday averages for each class of craft for emission rates.

Assumptions

The following are assumptions that were made to complete the emissions inventory for regional pleasure craft emissions:

- Pleasure craft registered within the 16-county region that also had a year built of 2019 or earlier were included in estimates.
- All pleasure craft were assumed to operate, and to operate an equal amount within the region.
- TPW data post-processing occurred to superimpose corresponding fuel descriptions and emission factors. The following occurred:
    - Boats registered as sail propulsion that did not have an engine or fuel description were superimposed as "NONE/NA" fuel description.
    - Boats registered as sail propulsion that did not have an engine but were listed with a diesel fuel description were assumed to be inboard/sterndrive as a conservative estimate.
    - Fuel description "NONE/NA" was not included for emission estimates.
    - Fuel description as electric were not included for emission estimates to avoid potential double counting.
    - Fuel description "OTHER" that also had no engine were not included for emission estimates.
    - Pleasure craft with a blank fuel description and no engine were not included for emission estimates.

[35] https://tpwd.texas.gov/
[36] 2012 NRBS State-Level Data_Boat Numbers_Exposure Hrs_tables 020615.pdf

- Combined engine types of NONE/NA, OTHER, (Blanks), & POD DRIVE were assumed to use the most conservative gasoline emission factor.
- Summer weekday activity is consistent across the region and representative of activity levels.

Pleasure Craft Data GHG Emissions Results

The estimated regional pleasure craft $MTCO_2e$ emissions for the analysis year 2019 are listed in Exhibit 25 below.

Exhibit 24: NCTCOG Area 16-County 2019 Annual Pleasure Craft CO_2e Emissions

County	$MTCO_2e$
Collin	229
Dallas	360
Denton	296
Ellis	65
Erath	12
Hood	87
Hunt	30
Johnson	67
Kaufman	52
Navarro	25
Palo Pinto	25
Parker	95
Rockwall	49
Somervell	3
Tarrant	419
Wise	41
Total	**1,855**

Aviation

Aviation Data GHG Emissions Methodology

To maintain consistency with the state, regional aviation data emissions were sourced from the 2019 and 2020 data used in development of the SIP through a recent airport emissions inventory ("2020 Texas Statewide Airport Emissions Inventory and 2011 through 2050 Trend Inventories")[37] provided by TTI for TCEQ. The report is required every three years by the EPA to fulfill Air Emissions Reporting Requirements (AERR) for usage in the EPA's National Emissions Inventory (NEI).

The emissions estimates were modeled using average summer weekday emissions from airport (APU and ground support equipment) and aircraft emissions through the Federal Aviation Administration's Aviation Environmental Design Tool (AEDT). The most recent version of AEDT, AEDT 3d, was used for modeling

[37] https://www.tceq.texas.gov/downloads/air-quality/research/reports/emissions-inventory

and emission estimates and are listed in Exhibit 26 below. As noted within the study, aircraft emissions were based on calculations for taxi-in, taxi-out, climb, and landing.

Limitations

Limitations for this emissions inventory primarily come from the use of an external report. As the report is only required every three years by the AERR, there may be times that data may be unavailable or that required years may not align with desired/horizon years. Additionally, the COVID-19 pandemic may have had some impact on this study.

Assumptions

The following assumptions were made:

- All commercial, military, and turbine engines use Jet A (Jet Kerosene), are domestic passenger flights, and are between jurisdictions (scope 3).
- All piston engines use Aviation Gasoline, are domestic passenger flights, and are within jurisdictions (scope 1).
- The model assumes a maximum mixing height of 3,000 feet for emissions, so emissions at/above cruising altitude are not included in results.

Aviation Data GHG Emissions Results

Exhibit 25: NCTCOG Area 16-County 2019 Annual Aviation CO_2e Emissions

County	$MTCO_2e$
Collin	47,474
Dallas	213,161
Denton	24,020
Ellis	8,748
Erath	941
Hood	1,994
Hunt	7,529
Johnson	3,902
Kaufman	3,786
Navarro	2,349
Palo Pinto	137
Parker	5,799
Rockwall	1,656
Somervell	23
Tarrant	1,081,707
Wise	2,273
Total	**1,405,499**

Solid Waste

Solid Waste GHG Emissions Methodology

Greenhouse gas emissions from the Solid Waste sector were calculated using methane generation and flaring data from federal regulatory reporting for the 26 registered landfills within the inventory area for the year 2019. Methane is generated from the breakdown of organic material within landfills and may either be released directly into the atmosphere, captured for flaring, or converted into compressed natural gas (CNG). Flaring is the process of combusting landfill gas to reduce methane and other harmful compounds emitted.

Landfill methane generation is reported by landfills to the U.S. EPA under 40 CFR Part 98 Subpart HH – Municipal Solid Waste Landfills. This data was extracted for each landfill in the inventory area via the EPA's FLIGHT tool and totaled for the entire region. Data was input into ICLEI's ClearPath tool to convert total methane generated into metric tons of CO_2e.

Landfill gas flaring emissions data was extracted using the EPA's FLIGHT tool. Landfills are required to report the amount of landfill gas flared, the fraction of methane in the landfill gas, and the equipment destruction efficiency. The amount of gas flared was totaled for the inventory area, and averages were calculated for the fraction of methane and equipment destruction efficiency. Data was entered into ICLEI's ClearPath tool to convert the total amount flared into metric tons of CO_2e.

The waste characterization factor set used was from the 2019 North Central Texas Waste Characterization Study.[38]

Limitations

Since landfill methane is a Scope 1 emission, all methane emissions from each landfill are attributed to the county in which the landfill is located. All generation and disposal data are assumed to be from within the same county for ease of attribution. Hood, Kaufman, Rockwall, and Wise counties have no landfills reporting through EPA FLIGHT or TCEQ.

Data on emissions associated with compost facilities is not included in the Solid Waste sector as these facilities are not currently reporting emissions to EPA or TCEQ. Emissions from the collection and transportation of solid waste are included in the on-road transportation sector.

Solid Waste GHG Emissions Results

As to be expected, compared to the vast emissions from the energy and transportation sectors in the area, emissions generated from solid waste are comparingly small, see Exhibit 27, below.

[38] https://www.nctcog.org/getmedia/d9a1bc1c-40fd-4acf-8029-d17c250c5f37/Final-Waste-Characterization-Memo_For-Distribution.pdf

Exhibit 26: NCTCOG Area 16-County 2019 Annual Solid Waste CO_2e Emissions

Solid Waste Sector Emissions [MT CO_2e]	
Waste Generation Emissions	3,911,496
Landfill Gas Flaring Emissions	56,010
Total	**3,967,505**

Wastewater and Water Treatment

Wastewater and Water Treatment GHG Emissions Methodology

Greenhouse gas emissions from the Water Supply sector were calculated based on the total volume of water intake for water providers within the inventory area. Water intake data is reported by water providers to the Texas Water Development Board (TWDB) and published in TWDB's Water Use Survey.[39] Total intake volume was converted to kWh of electricity usage using the ICLEI U.S. Community Protocol, Appendix F, Method WW.14: Calculation of Upstream Emissions Associated with Water Supply, Conveyance, Treatment and Delivery.[40] The data was then entered into ICLEI's ClearPath tool to convert total electricity usage into metric tons of CO_2e.

Emissions from wastewater effluent discharge were calculated based on data available through the EPA's Enforcement and Compliance History Online (ECHO)[41]. Daily nitrogen load was estimated via monthly averages reported to the EPA's National Pollutant Discharge Elimination System (NPDES)[42] by wastewater facilities, based on nitrogen readings taken at effluent discharge sites. Daily averages are reported by facilities in lbs/day, so they were converted to kg/day. County data was calculated and entered into ICLEI's ClearPath tool to convert daily nitrogen load to annual metric tons CO_2e. For ease of calculation and to properly assign Scope 1 emissions at the point of source, all wastewater effluent is assumed to be generated and treated in-boundary.

Limitations

Not all wastewater treatment facilities in the region have reported their nitrogen emission in the NPDES database. Facilities that were not present were omitted in this inventory.

Data on emissions associated with the supply of potable water is included in this report as information only. All emissions associated with water supply are related to the electricity used in water conveyance, treatment, and distribution, which is captured by the Commercial and Industrial Energy sectors.

In the absence of site-specific data, the energy intensities used in the calculations of electricity usage for each stage in the water supply process come from national averages and may have varying degrees of reliability.

Data on emissions associated with anaerobic digestion of wastewater biosolids is not included as this data is not currently reported to EPA or TCEQ. Only six of the 130 wastewater treatment facilities in the

[39] https://www.twdb.texas.gov/waterplanning/waterusesurvey/index.asp
[40] https://icleiusa.org/us-community-protocol/
[41] https://echo.epa.gov/
[42] https://www.epa.gov/npdes

inventory area currently have onsite anaerobic digesters. There are no emissions associated with the combustion of wastewater biosolids as no wastewater treatment facilities in the inventory area engage in biosolid combustion. Process methane and nitrous oxide emissions from wastewater treatment lagoons and nitrification/denitrification are not included as this data is not currently reported to EPA or TCEQ. Emissions from septic systems are not included as there is no regional database for on-site sewage systems, so the total number of septic systems in the inventory area is unknown.

Wastewater, and Water Treatment GHG Emissions Results

Compared to the emissions from the energy and transportation sectors in the area, emissions generated from wastewater are small. The results of the wastewater effluent discharge emission calculation are shown in Exhibit 28 below. Note that water supply emissions are displayed for information only; these emissions are included in the inventory of the energy sector.

Exhibit 27: NCTCOG Area 16-County 2019 Annual Water and Wastewater CO_2e Emissions

Water and Wastewater Sector Emissions [MT CO_2e]	
Water Supply Emissions*	500,669*
Wastewater Effluent Discharge Emissions	1,090
Total (Emissions from Water and Wastewater Including the Emissions part of Energy Sector)	501,759

*Water Supply Emissions data is included in this section for information only. These emissions are included within the Commercial and Industrial Energy sector emissions.

Emissions Inventories for Criteria Pollutants of Regional Concern

The EPA's NAAQS are designed to protect human and environmental health and establish regulations for six criteria pollutants. For air quality to be considered "good" or comply with NAAQS, air pollutant concentrations need to be measured at levels below the NAAQS – levels that are higher than the NAAQS are considered to "violate" or "exceed" the standard. Exhibit 29 illustrates the current status of attainment designations (meaning the designated area meets or is in compliance with NAAQS) versus nonattainment designations (meaning the designated area violates or exceeds the NAAQS).

Exhibit 28: NAAQS Criteria Pollutants

Air Pollutant	Abbreviation	DFW Region Status
Carbon Monoxide	CO	In attainment
Lead	Pb	In attainment
Nitrogen Dioxide	NO_2	In attainment
Particulate Matter	PM_{10}	In attainment
Ground-Level Ozone	O_3	10 counties (Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise) designated nonattainment for the 2008 standard 9 counties (Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Tarrant, and Wise) designated nonattainment for the 2015 standard

Air Pollutant	Abbreviation	DFW Region Status
Particulate Matter	$PM_{2.5}$	2 counties (Dallas and Tarrant) likely to be designated nonattainment under NAAQS rules finalized February 7, 2024
Sulfur Dioxide	SO_2	Partial nonattainment in Navarro County due to an aggregate plant

Ozone (O_3)

Portions of the NCTCOG area continue to exceed NAAQS for ground-level ozone. Ten counties in North Texas (Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant and Wise) violate federal standards for having high concentration of ground-level ozone under the 2008 8-hour ozone standard of 0.075 ppm and 9 counties (excluding Rockwall) are in nonattainment for the 2015 8-hour ozone standard of 0.07 ppm. Since ozone is not emitted directly, efforts to improve air quality and reduce ozone focus on sources of ozone precursor pollutants NO_X and VOCs. There are many more VOCs in the atmosphere than NO_X. The large ratio of VOCs to NO_X means that North Central Texas is "NO_X limited," which results in ozone formation being much more sensitive to changes in NO_X than VOCs, and the primary efforts to address ozone in the region focus on NO_X reduction.

Significance of Ground-Level Ozone

Clinical studies indicate prolonged exposure to elevated concentrations of ground level ozone may reduce lung function, increase the frequency of asthma episodes, and reduce the body's ability to resist respiratory infections. In addition to threatening human health, high ground-level ozone concentrations pose a risk to the environment, wildlife, and agriculture. Although ground-level ozone is monitored year-round, the EPA designated ozone season for the DFW region is from March 1 through November 30 when high ozone concentrations are most common.

Economic impact of Ozone pollution

Failure to meet federal standards for air quality could result in additional emission-control requirements or fee-based penalties that can unfavorably affect local businesses and also result in a freeze on federal transportation funding. This would ultimately affect jobs in the region and cost money in lost productivity due to traffic congestion delays.

Emissions Inventory

With ground-level ozone being a secondary pollutant, emissions estimates of ozone precursors (NO_X and VOCs) are part of TCEQ's SIP revisions available at the Texas SIP Revisions.

Particulate Matter

On February 7, 2024, EPA strengthened the NAAQS for fine Particulate Matter ($PM_{2.5}$). Specifically, the annual $PM_{2.5}$ standard has been lowered from 12.0 micrograms per cubic meter to 9.0 micrograms per cubic meter. The two most populous counties in the NCTCOG region – Dallas and Tarrant – could be designated as nonattainment under this revised standard[43] due to having a $PM_{2.5}$ monitor in each county with an annual reading above the 9.0 micrograms per cubic meter limit.

[43] https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm

Significance of Particulate Matter

Exposure to Particulate Matter can affect the lungs and heart. It has been associated with premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms. Besides people with heart or lung diseases, children and older adults will most likely be affected by exposure to particle pollution.

Environmental effects consist of haze, which is often a result of particle pollution, and environmental and material damage. Since particles can be carried over long distances, the source and deposition region can vary significantly. When settling, the effects depend on the chemical composition of the particles but may make lakes and streams acidic, change the nutrient composition in coastal waters and river basins, as well as in soil which can lead to damage to forests and farm crops, contribute to acid rain, and affect the diversity of ecosystems.[44]

Economic impact of Particulate Matter Pollution

The impacts on the environment and existing ecosystems also have an impact on agriculture, including the food industry, and the local price and job landscape. In addition, they can affect seemingly unrelated industries such as the condition of construction materials and tourism, leading to widespread effects on local health conditions and the economy.

Emissions Inventory

$PM_{2.5}$ emissions estimates are available on the EPA's comprehensive and detailed estimate of air emissions of criteria pollutants, criteria precursors, and hazardous air pollutants from various air emissions sources, https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei.

GHG Emissions Projections

NCTCOG has not developed GHG emissions projections as part of the DFW AQIP-PCAP. These projections will be developed as part of the CCAP to be submitted in summer 2025.

GHG Reduction Targets

NCTCOG has not developed GHG emissions reduction targets as part of the DFW AQIP- PCAP. These targets will be developed as part of the CCAP to be submitted in summer 2025.

[44] https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm

4- DFW AQIP Measures

As detailed in **Section 1: Regional Engagement**, NCTCOG collaborated with local governments, residents of North Texas, and other stakeholders to develop the following list of priority measures to reduce greenhouse gases and criteria pollutants of local concern. This list is not intended to be inclusive of all efforts to reduce GHGs and improve air quality being made in the region, but rather is a focused list of near-term, high-priority, implementation-ready measures, as required by the EPA in the PCAP Planning Guidance.[45] Additional measures will be added to the CCAP.

This section provides a narrative discussion of:

- Sector in which measures would be implemented, as defined in Exhibit 2 (including Transportation; Energy; Water/Wastewater; Materials Management (Solid Waste); and Agriculture, Forestry, and Land-Use)
- Program area (a high-level description on existing efforts in the region which are related to this measure, including efforts that are not quantifiable or cannot be done during the scope of the PCAP (2025-2030))
- PCAP measure (a description of related project(s) that cumulatively result in emissions reductions), and
- Projects (a specific, quantified effort) within each measure.

All measures will be implemented within the NCTCOG 16-county area. Except for the rail projects within the Clean Vehicle and Equipment Program measure (Replace/Improve Diesel Locomotives and Add Wayside Power for Rail Operations), specific sites are not yet determined and will be confirmed as funding for implementation is secured. The accompanying Appendices 11 through 16 provide additional detail on each measure, including:

- Applicable sector
- Estimate of the quantifiable GHG emissions reductions
- Estimate of criteria pollutant reductions (when applicable)
- Implementing agency or agencies
- Implementation schedule and milestones
- Metrics for tracking progress
- Expected community benefits (additional details on community benefits is available in **Section 5**)

All measures included in the DFW Air Quality Improvement Plan are either voluntary in nature (e.g., an incentive) or are actions that would be performed by an implementing agency with regard to its own assets (e.g., a municipality installing solar panels on its own buildings). Thus, all measures are within the authority of the implementing agency. No regulatory measures are proposed.

Transportation Sector Measures

NCTCOG and collaborating agencies have developed this list of measures to comprehensively improve air quality for all modes of transportation. Historically, he NCTCOG Transportation department has

[45] https://www.epa.gov/system/files/documents/2023-02/EPA%20CPRG%20Planning%20Grants%20Program%20Guidance%20for%20States-Municipalities-Air%20Agencies%2003-01-2023.pdf

administered programs, made policy recommendations, participated in partnerships, educated the region, and supported other stakeholders in their own emission-reducing activities, with the primary goal of these efforts has been to reach ozone attainment. However, many of these efforts also reduce emissions of particulate matter and GHG; thus, supporting efforts to improve air quality comprehensively. Through multipollutant emissions reductions, these measures will both improve air quality and protect public health and provide other benefits to the community as detailed in **Section 5**.

Transportation measures are organized within the following program areas: **Clean Vehicles and Transportation Energy Efficiency, Congestion Management, Sustainable Development, and Transit**. **Appendix 10: DFW AQIP- Transportation Measures**, contains a full list of measures and projects, feedback received from surveys described in **Section 1: Regional Engagement**, and information on air quality and community benefits.

Program Area: Clean Vehicles and Transportation Energy Efficiency

Efforts have been ongoing in the region to reduce emissions produced from vehicles through changes in vehicle technology or emission rates at the individual vehicle level. To meet the federal ozone standard, it is necessary to address the major contributing factors to mobile emissions. These efforts have been focused in three main areas: (1) Adoption of alternative fuels and electric vehicles, (2) Adoption of strategies to reduce fuel consumption (i.e., idling, cold starts, hard accelerations, etc.), and (3) Ensuring compliance of existing vehicle engine standards and regulations. Additionally, NCTCOG has developed a Clean Fleet Policy template, which provides a framework for local fleets to reduce emission and fuel consumption (www.nctcog.org/fleetpolicy). One hundred eleven entities have adopted the Clean Fleet Policy, with 17 of the adoptees representing a Collaborating Agency, showing their broad commitment to improving air quality in the region.

Additionally, as transportation electrifies and integrates with the power grid, there is an increasing need to improve energy efficiency in transportation to help offset additional load placed on the grid by electric vehicles.

Alternative Fuel and Electric Vehicle Adoption

NCTCOG is designated by the Department of Energy as the host agency of the Dallas-Fort Worth Clean Cities Coalition (DFWCC). This Coalition works to reduce transportation energy use and improve air quality by increasing the use of alternative fuel and advanced technology (e.g., hybrids) vehicles and equipment. The Coalition provides technical support, resources, and guidance to fleets and other drivers to facilitate transition of the vehicle fleet; coordinates infrastructure planning and readiness; facilitates best practices around transportation-energy integration; and promotes increased awareness of these technologies and projects throughout the region through a website, e-newsletter, and local events. More information is available at the Coalition website: www.dfwcleancities.org.

Due to local air quality issues, this program first prioritizes use of zero-tailpipe emissions fuels (e.g., battery electric and hydrogen fuel cell electric vehicles), with a secondary focus on fuels that can reach California Air Resources Board Low-NO_X certifications (e.g., natural gas, with an emphasis on renewable natural gas, and propane), followed by other alternative fuels (biofuels). Substantial effort is directed toward transportation electrification through the Electric Vehicles North Texas initiative within DFWCC (www.dfwcleancities.org/evnt).

An Annual Report to the Department of Energy documents use of these fuels and other clean vehicle technologies throughout DFW, reflecting the work of dozens of local fleets. The National Renewable Energy Laboratory uses this data to quantify emissions benefits and petroleum displacement. This report shows that in a typical year, fleets in the region are already achieving a reduction of over 29 million gasoline gallon equivalent (GGE) of conventional fuel, 100,000 tons of GHG emissions, 50 tons of NO_X emissions, 60 tons of VOC emissions, and 3.5 tons of $PM_{2.5}$ emissions, through use of cleaner-burning alternative fuels, idle reduction, or other fuel efficiency measures.[46] According to the Annual Report, 19 of the Collaborating Agencies have already adopted alternative fuels vehicles.

The region has shown significant interest in EVs, as shown through significant increase in EV adoption. From January 2023 to January 2024, The North Texas region saw a 56 percent increase in EV registration, going from 58,609 to 91,322.[47] An annual National Drive Electric Week event, organized by DFWCC, provides a hands-on opportunity for area residents to learn about EVs, and DFWCC works to integrate EV education and other hands-on opportunities into events throughout the year. Robust investment in EV charging station infrastructure is underway and will support continued growth in EV adoption. This includes over $83 million in EV charging station funding already secured for the NCTCOG area through several key initiatives: approximately $65 million in new charging sites through the Texas EV Charging Plan,[48] approximately $15 million in new sites through a grant award to NCTCOG under the Charging and Fueling Infrastructure Program,[49] and approximately $3.7 million through a grant award to NCTCOG to repair/replace/upgrade existing chargers that are not operational.[50]

[46] https://www.dfwcleancities.org/_files/ugd/df5b3b_09e671e4e35c4e4c9c2c1a96bc5b22e7.pdf
[47] https://www.dfwcleancities.org/evsintexas
[48] https://www.txdot.gov/projects/projects-studies/statewide/texas-electric-vehicle-planning-03-22-22.html
[49] https://www.fhwa.dot.gov/environment/cfi/grant_recipients/
[50] https://www.fhwa.dot.gov/environment/nevi/evc_raa/ev-charger-raa-prog-grant.cfm?_gl=1*13n3eei*_ga*MTY4MDczNjczLjE2OTYzNjU5MTU.*_ga_VW1SFWJKBB*MTcwNTU4ODU1NS4yNy4xLjE3MDU1ODg1NjUuMC4wLjA.

Measure: Clean Vehicles and Equipment Program

The adoption of "cleaner" vehicles, such as electric, propane, natural gas, and biofuels is an essential step to reduce emissions from the transportation sector. Collaborating agencies and NCTCOG have identified various fuels and vehicle types to target for transition to comprehensively address emissions from all vehicle types while acknowledging the need for technological advancements for some fuel types to meet operational needs.

Estimated Annual Greenhouse Gas Benefits:

553.31-711.23 metric tons

Expected Community Benefits:

Economic Development and Job Creation; Improved Health and Well-Being; Increased Resiliency/Ability to Adapt; Reduced Noise Pollution; Reduced Costs

Estimated Annual Criteria Pollutant Reduction:

NO_X: 25.18-26.56 metric tons

VOCs: 0.02-0.06 metric tons

$PM_{2.5}$: 1.11-1.12 metric tons

This measure consists of several key projects:

Project: Heavy-Duty Hydrogen Pilot Program

Fuel cell electric vehicles (FCEVs), powered by hydrogen, offer zero tailpipe emissions, similar to battery electric vehicles. However, FCEVs are likely to offer key benefits compared to battery electric vehicles – most notably:

- Weight: Batteries are heavy, so trucks and routes that are weight-constrained may find a FCEV to be a better solution to avoid loss of payload.
- Range: To date, batteries have a shorter range, whereas FCEVs are anticipated to be more closely comparable to ranges of diesel trucks for how far one can drive in a single day.
- Fueling Time: Hydrogen fueling is expected to be completed in approximately five minutes,[51] which is similar to the time it takes to fuel a conventional internal combustion engine, which can help avoid changes in operational patterns that might be needed to accommodate the longer charging times for EV trucks.

These benefits are most pronounced in the medium- and heavy-duty vehicle sectors, where demanding duty cycles to serve freight needs or intense passenger transit needs may have difficulty accommodating the downtime needed to charge a battery electric vehicle. NCTCOG recently received

[51] https://afdc.energy.gov/fuels/hydrogen_basics.html

an award[52] to build hydrogen fueling stations around the Texas Triangle (the highways connecting DFW, Houston, and San Antonio), which will jump-start availability of refueling infrastructure for longer-haul freight applications. Transition of these freight vehicles to zero emissions technology is critical to improving regional air quality, as heavy-duty diesel vehicles contribute a disproportionately high fraction of ozone-forming pollution in the DFW ozone nonattainment area.

A localized pilot project completed in the next few years will provide critical lessons learned and helpful case study information to inform broader adoption of FCEV technology as the network of fueling stations is built. NCTCOG will coordinate with local fleets to identify near-term pilot project applications and seek incentive funding needed to complete a deployment, with emphasis on the medium- and heavy-duty vehicle segments.

Project: Zero- and Near-Zero Freight and Work Truck/Bus Program

Many "working" vehicle and equipment sectors (e.g., utility trucks, public works trucks, contractor pickup truck fleets, police vehicles, cargo handling cranes, etc.) cannot readily be electrified because the duty cycles of these fleets require nearly continuous operations that preclude the downtime needed to charge or are otherwise difficult to electrify. However, substantial benefits can be gained through specific strategies that are often not eligible under existing grant programs:

- Hybridization, particularly in operations that require power take-off functionality, resulting in substantial idle time.
- Electrification in vehicle sectors that are often not included in other grant programs (e.g., light-duty pickup trucks operating in fleets, which often fall under the minimum gross vehicle weight rating needed to be eligible for grant programs).
- Replacement of old, high-emitting gasoline, natural gas, or propane vehicles (most grant programs only fund replacement of old diesel, leaving old vehicles powered by other fuel types on the road despite their inefficiencies and high pollution rates).

Through this project, incentives can be provided to cover the incremental cost of purchasing hybrid, plug-in hybrid, or electric drivetrain vehicles in the "working vehicle" or sectors, and associated infrastructure, if needed. The project will provide preference for replacement projects that also scrap existing vehicles, but will not require scrappage of existing vehicles, which is a major barrier for many fleets' participation in existing grant programs.

The scope and quantification of this program encompasses conversion of waste trucks to lower emissions vehicles, which is a project listed also in the Materials Management (Solid Waste) Sector.

Additionally, to increase the rate of transportation decarbonization, it is essential to develop infrastructure capable of supporting medium- and heavy-duty vehicles. Substantial investment is being made in EV charging infrastructure but much of that is focused on light-duty passenger vehicle EV use. Medium- and heavy-duty vehicles require different site configurations and power needs and may require different build-out strategies.

Project: Low-Emission Non-Road Equipment Program

[52] https://www.fhwa.dot.gov/environment/cfi/grant_recipients/

Non-road vehicles/equipment, such as lawn equipment, ground support equipment, construction equipment, cargo-handling equipment, and even airplanes, can produce a significant number of emissions despite only representing a small amount of vehicles/equipment operating in Texas. This is due to different regulations for non-road and on-road vehicles/equipment and differences in operating hours. Providing incentives for non-road vehicle equipment to transition to alternative fuels (propane, compressed natural gas, etc.) or zero-emission (electric or hydrogen) can significantly reduce emissions. Through this project, NCTCOG intends to work with fleet operators around the region to secure incentives for the transition of fleet-owned non-road equipment.

Project: Public Sector Fleet Transition Program

Many public entities in DFW have begun adoption of alternative fuel and electric vehicles and have seen success. According to the Annual Report, 19 of the collaborating agencies have already adopted alternative fuels vehicles. However, as vehicle technologies advance, there are many opportunities to test new technologies and reduce emissions. Providing incentives for public entities to transition or pilot new vehicles can help further develop the market and demonstrate the feasibility of adoption to the rest of the region.

Project: Replace/Improve Diesel Locomotives

The replacement, upgrading, and improvement of older, high-emitting diesel locomotives is an opportunity for substantial emissions reductions in the NCTCOG area. Three Class I railroads (BNSF Railway, Kansas City Southern Railway, and Union Pacific Railroad) and two regional railroads (Dallas, Garland and Northeastern Railroad and the Fort Worth and Western Railroad) operate within the region, with over one million container lifts occurring each year across three intermodal facilities.[53] These intermodal facilities are home to "switcher" locomotives, which are often the oldest locomotives owned by a railroad, placed into switchyard service where age and reliability issues are less impactful than in cross-country line-haul service. Consequently, communities living in proximity to rail switchyards are exposed to particularly high, constant levels of particulate matter and diesel exhaust from these locomotives, which triggers negative health impacts. These switcher locomotives also consume a very high quantity of fossil fuels. NCTCOG has coordinated with several freight railroads in the past on projects to replace older locomotives with newer technologies, and staff is involved in the EPA Mobile Source Technical Review Subcommittee, which is evaluating locomotive technology options for the future. NCTCOG will work with freight rail operators to identify opportunities to introduce cleaner locomotive technology to the region, ranging from Tier 4 to zero emissions options.

Beyond freight rail activity, the NCTCOG region includes three diesel-powered passenger rail systems that operate daily service. One of these systems, the TRE, connects downtown Fort Worth and Downtown Dallas, serving commuters across the region. The route is completely contained within Dallas and Tarrant counties. TRE operations are comprised of 11 aging diesel locomotives that range from uncontrolled emissions to Tier 2 emissions standards. These locomotives need replacement to improve efficiency, reduce operating and maintenance costs, and reduce emissions. Through the PCAP, NCTCOG will work with DART and Trinity Metro, who co-own and operate the TRE, to secure

[53] https://nctcog.org/getmedia/a3642652-f78b-4bbc-b33f-85fd13e599c3/Freight-North-Texas-2022-A-FREIGHT-Mobility-Plan.pdf

funding for full fleet replacement to a minimum of Tier 4 emissions standard that will substantially reduce all air pollutants.

Project: Add Wayside Power for Rail Operations

Each of the TRE locomotives has an auxiliary engine dedicated to generating Head-End Power for lighting, climate control, and communications in passenger cars and coaches. These engines run continuously, even during layover periods when the commuter rail is not in service. This consumes a large amount of diesel fuel and generates substantial air pollution, particularly for the communities living in close proximity to the layover facility. Through this project, electrical cabinets will be installed to allow these engines to "plug in" to the electric grid to provide Head-End Power rather than running the auxiliary diesel engines, thus reducing fuel consumption, GHG emissions, criteria pollutant emissions, exposure to diesel exhaust, less engine wear and tear, and reduced noise pollution.

Other Available Funding:

A variety of funding initiatives are available from federal and state sources to replace or purchase alternative fuel and electric vehicles. NCTCOG has identified over 30 different funding opportunities for vehicle and equipment technology improvements (e.g., vehicle replacement funding, purchase of alternative fuels, etc.) and maintains a comprehensive list at www.nctcog.org/trans/quality/air/funding-and-resources/fundingvehicle. This list includes programs from TCEQ's Texas Emissions Reduction Plan, the EPA's Diesel Emission Reduction Act, and more. However, many of these funding opportunities have constraints, resulting in funding "gaps" where technologies are not available, or there is not an adequate amount of funding to support the need of the DFW region. The projects outlined above are focused on filling the "gaps" and ensuring the region has adequate funding available to successfully transition to these new technologies.

Measure: Low Carbon Liquid Fuels Program

Low carbon liquid fuels include ethanol, biodiesel, renewable diesel, sustainable aviation fuel, and/or renewable gasoline. These fuels are considered "drop-in" fuels, meaning they do not require the purchase of a new vehicle or conversion of an old vehicle to utilize the fuel. Typically, the GHG reductions from the utilization of these fuels are received "up-stream," meaning the GHG reduction is received during the creation of the fuel, not at the "tailpipe," or when the fuel is used. However, these fuels are an essential "transitional step" to reach full decarbonization of the transportation sector as not all use cases are applicable to electrification within the PCAP timeframe.

Estimated Annual Greenhouse Gas Benefits:

92.4-1113.7 metric tons

Expected Community Benefits:

Economic Development and Job Creation; Increased Resiliency/Ability to Adapt; Reduced Costs; Increased Access to Service and Amenities; Improved Health and Well Being

Estimated Annual Criteria Pollutant Reduction:

NO_X: N/A

VOC: 0.01-0.04 metric tons

$PM_{2.5}$: 0.0-0.003 metric tons

This measure consists of several key projects:

Project: Build Infrastructure to Enable Use of Low-Carbon Liquid Fuels

Currently, there are 62 ethanol stations, three biodiesel stations, zero renewable diesel, and zero renewable gasoline stations in North Texas.[54] Building additional stations will ensure stakeholders in the region have the opportunity to pick the best fuel for both the environment and their operational needs.

Project: Provide Incentives for Utilizing Biofuels in Locomotives/Non-Road Equipment

While biofuels can typically be used without any vehicle conversion, the fuels themselves can sometimes be more expensive, as shown in the Department of Energy's Alternative Fuel Price Report.[55] Paying the difference between a conventional fuel (diesel and gasoline) and a biofuel can help remove barriers to utilization and improve air quality.

[54] https://afdc.energy.gov/states/tx
[55] https://afdc.energy.gov/fuels/prices.html

Other Available Funding:

Funding for low-carbon liquid fuel station development through the U.S. Department of Agriculture's Higher Blends Infrastructure Incentive Program: Rural Development Program.[56] This program offers $90 million each quarter. Additionally, the IRS provides funding for the production of alternative fuels and biodiesel producers (40A, 6426, 6427) and funding for the investment in refueling property through the Alternative Fuel Refueling Property Credit (30C).

At this time, NCTCOG is unaware of funding to offset the for the utilization of biofuels in locomotives/non-road equipment in Texas.

Adoption of Strategies to Reduce Fuel Consumption
As discussed above, NCTCOG coordinates regional efforts to optimize the operations of conventional fuel vehicles (i.e., diesel and gasoline) and improve air quality. These efforts include the following:

- **Engine Off North Texas**
  Engine Off North Texas addresses vehicle idling through a comprehensive anti-idling campaign that includes promotion of idling restrictions for heavy-duty vehicles, educational and awareness materials available for distribution regionally, and partnerships with local governments and businesses to develop and improve idle reduction policies. More information is available at www.engineoffnorthtexas.org.
- **Saving Money and Reducing Truck Emissions (SMARTE)**
  SMARTE builds relationships with truck drivers, fleet managers, and vendors to educate and engage the freight industry regarding strategies and opportunities to reduce diesel fuel consumption and improve air quality, promote the use of EPA SmartWay verified technologies, highlight applicable initiatives like DFWCC, Clean Fleet Policy, and EPA SmartWay Transport Partnership Program, and passing along funding opportunity information. More information is available at www.nctcog.org/SMARTE.

No measures are included under this focus area for the PCAP. Measures may be considered for inclusion in the CCAP.

Compliance of Existing Vehicle Engine Standards and Regulations
As discussed above, NCTCOG coordinates regional efforts to ensure vehicles meet federal and state designated emission standards and regulations. These efforts include the following:

- **Regional Emissions Enforcement Program**
  The Regional Emissions Enforcement Program (REEP) is an initiative to help identify and remove high-emitting vehicles with expired, fraudulent, and improper state emissions inspections and temporary paper tags from Texas roadways. Participating law enforcement officers can enter citations issued for fraudulent registration certificates, as well as violations of the smoking vehicle policy, truck lane restrictions, and anti-idling ordinances into a centralized database, thus providing officers access to tickets written across multiple jurisdictions. More information is available at www.nctcog.org/REEP.
- **Regional Smoking Vehicle Program**
  The Regional Smoking Vehicle Program (RSVP) encourages drivers to voluntarily repair and maintain their vehicles through public awareness. Smoking vehicles can be reported anonymously. The owners will be mailed information regarding possible causes and solutions to vehicle emissions

[56] https://www.rd.usda.gov/programs-services/energy-programs/higher-blends-infrastructure-incentive-program

problems. The outreach includes information on financial assistance that may be available for vehicle replacement. More information is available at www.smokingvehicle.net.

- **Car Care Awareness**
  NCTCOG partners with nonprofit and community organizations, and auto repair facilities at clinics, workshops, and events to educate North Texans about proper vehicle maintenance and what to do when the check engine light illuminates. NCTCOG staff will also provide information and resources related to keeping vehicles compliant through the state's vehicle inspection program and reducing emissions in the DFW region. More information is available at www.ntxcarcare.org.

Measure: Regional Emissions Compliance Program

The Regional Emissions Compliance Program is designed to ensure vehicles operating on the roads are doing so within the guidelines of the law. In recent years, there has been an increase of fraudulent behavior concerning vehicle registrations, inspections, and emissions component tampering. Other areas of compliance include citations for excessive tailpipe smoking and vehicle idling restriction ordinance violations.

Estimated Annual Greenhouse Gas Benefits:

Not quantifiable as existing rates of violation are unknown. However, enforcement of idling restrictions, in particular, reduces fuel consumption and GHGs.

Expected Community Benefits:

Improved Health and Well-Being; Increased Engagement/Awareness, Increased Safety; Reduced Noise Pollution

Estimated Criteria Pollutant Reduction:

Not quantifiable as existing rates of violation are unknown. However, enforcement of existing emissions standards and idling restrictions does achieve multipollutant reductions.

Project: Fund Emissions Compliance Activities and Operations

Funding to cover law enforcement personnel hours as part of a dedicated emissions compliance task force to investigate and monitor methane emissions from industrial, energy and transportation sectors, as well as combat fraudulent vehicle emissions inspections, registrations, and vehicle engine tampering; ensure compliance and cite violations associated to visibly smoking vehicle tailpipes, heavy-duty truck highway lane restrictions, and vehicle idling restriction ordinances.

Other Available Funding:

Approximately $176 million was collected in air quality fees associated with vehicle inspections. These funds were collected for a dedicated purpose, to improve air quality. These funds continue to be held by the State of Texas in a special account, and legislative efforts continue to have those funds reappropriated to those counties that paid into it.

This funding would allow for law enforcement efforts such as combating fraudulent vehicle inspections and registrations, vehicle emissions component tampering, ensuring compliance by citation of violations associated to visibly smoking vehicle tailpipes, local idling ordinances and heavy-duty truck highway lane restrictions.

Energy Efficiency in Transportation

Transportation infrastructure consumes a substantial amount of energy, not only in the fuel used in vehicles but also in the power systems required to operate lighting, traffic management facilities and camera systems, transportation facilities (e.g., passenger shelters, bus stations, train stations, and airports), and in the case of electrified transportation, the systems themselves (e.g., DART Light Rail systems). Thus, there are opportunities to reduce emissions through the adoption of more energy efficient measures and the purchase of renewable energy.

Measure: LED Streetlighting Program

Many streetlights are still powered by older, inefficient, high-pressure sodium (HPS) technology, which could be replaced with light-emitting diodes (LEDs) that would consume far less electricity. This older lighting also often requires more frequent maintenance, provides less lighting, and causes glare and light pollution. As the region faces pressing needs to offset increased energy consumption associated with growth, retrofitting older technologies with high efficiency fixtures is a readily available strategy to mitigate increased grid load and minimize emissions.

Estimated Annual Greenhouse Gas Benefits:

0.0002 metric tons per light

Expected Community Benefits:

Economic Development and Job Creation; Increased Resiliency/Ability to Adapt; Reduced Costs; Increased Access to Service and Amenities; Improved Health and Well-Being

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.0002 metric tons per light

VOCs: N/A

$PM_{2.5}$: N/A

<u>Project: Retrofit Streetlights with LEDs</u>

Streetlighting owned by local governments is a prime candidate for retrofits as it is within the jurisdiction of the local government and can reduce emissions from the energy sector by reducing electricity demand. Notably, the electrical load associated with nighttime street illumination “turns on” as the sun starts to set in the evening, which is now the time of day that the Texas electrical grid faces the most capacity constraint due to declining solar output. Efforts to shave the grid load associated with streetlighting is thus complementary to the latest daily capacity and demand curves.

NCTCOG will coordinate with local governments that own streetlights to provide an LED streetlight retrofit program for lighting owned and operated by local governments. NCTCOG will also facilitate peer exchange opportunities between local governments and Oncor Electric Delivery, which owns and operates much of the streetlighting in the NCTCOG region, to increase awareness among local governments about options available to transition lighting owned by Oncor to LED technology.

Other Available Funding:

A variety of energy efficiency related funding initiatives are available from federal and state sources, including Energy Efficiency and Conservation Block Grants (EECBG) and Texas State Energy Conservation Office LoanSTAR funding, but the demand for energy efficiency projects far exceeds available funding. In addition, streetlighting, which is not connected to a specific building facility, sometimes falls outside the scope of programs that focus on facility efficiencies.

Green Airport Planning

The 16-county region of North Central Texas is home to a variety of public and private aviation facilities. Of the more than 600 aviation facilities, 41 are public-use airports, with 30 included in the Federal Aviation Administration's National Plan of Integrated Airport Systems. NCTCOG has created and nurtured relationships with the general aviation airports in the Dallas-Fort Worth region through the Air Transportation Advisory Committee (ATAC), which provides a pathway for information, guidance, and best practices. With the numerous amounts of facilities in the region, efforts are being made to increase the airport's sustainability practices. Notably, the two large commercial airports in the region have already developed plans to reduce emissions: Dallas-Fort Worth International Airport, which was the first airport in North America to receive Carbon-Neutral Airport Accreditation and has a sustainability management plan,[57] and Dallas Love Field Airport, which has received Level 3-Optimisation status under the Airport Carbon Accreditation Program and has a carbon management plan.[58]

Measure: Green Airport Planning Program

Airports are known producers of emissions. Green airport planning initiatives can mitigate various emissions and pollutants. Airports that pursue Carbon-Neutral Airport Accreditation, integrate environmental sustainability into airport contracts, and implement industry best practices will reduce emissions. Green airport planning is essential for promoting sustainable development, protecting the environment, and improving the quality of life of communities in the region.

[57] https://www.dfwairport.com/business/community/sustainability/
[58] https://www.dallas-lovefield.com/Home/Components/News/News/263/

Estimated Annual Greenhouse Gas Benefits:

39-57,500 metric tons

Expected Community Benefits:

Economic Development, Job Creation, Increased Safety, Increased Resiliency, and the Ability to Adapt

Estimated Annual Criteria Pollutant Reduction:

Not Currently Quantifiable

Project: Increase Education/Best Practices for Green Airports

Through the ATAC, NCTCOG will coordinate with North Texas airports on implementing green planning initiatives and best practices. NCTCOG staff will also provide information and resources relating to other green initiatives and sustainability efforts at airports to help reduce emissions in the Dallas-Fort Worth region.

Other Available Funding:

A significant source of funding for airports to implement measures to improve air quality is the Airport Improvement Program (AIP) Supplemental Grant Program. Provided through the Federal Aviation Administration (FAA), this program funds a network of 3,300 eligible airports. The purpose of the supplemental discretionary grant program is to make grants to eligible airports for construction projects, associated airport capital planning, noise planning and noise mitigation projects, and energy and environmental sustainability projects. At least $25,000,000 will be made available for the Voluntary Airport Low Emissions Program (VALE) and the Zero-Emission Vehicle and Infrastructure Program (ZEV), according to the Joint Explanatory Statement (JES). The JES also directs the FAA to ensure that funds are made available to reduce the impact of noise on local communities, including funding grants for noise planning and noise mitigation.

Program Area: Transit

NCTCOG collaborates with regional transportation providers on public transportation planning, funding, and operations to identify opportunities to enhance services and improve the efficiency and effectiveness of the current transit system in the region for all transit users. Transit modes may include rail, fixed route, paratransit, and demand response service. Improving regional transit systems through enhancements to existing service or establishment of new service will incentivize new passengers to shift modes to use transit, decreasing emissions and congestion. Key strategies that NCTCOG is prioritizing include service expansion projects, system planning studies, and operational improvements.

NCTCOG currently works with several regional transportation providers, including the Dallas Area Rapid Transit System, Trinity Metro (dba Fort Worth Transportation Authority), Denton County Transportation Authority, Span Inc., STAR Transit, Public Transit Services, City County Transportation, and Community Transit Service, along with many other local city governments and other transit-related organizations. At NCTCOG, the Transit Management and Planning area's current projects include vanpool coordination, transit planning studies, regional planning coordination, and coordinating funding for transit

implementation and operation. For more information go to www.nctcog.org/trans/plan/transit-management-and-planning.

Measure: Transit Enhancement Program

Public transportation provides people in North Central Texas with access to essential opportunities, reduces the number of cars on the roads, relieves congestion for those who drive, and improves air quality. From passenger amenities and alternative transportation modes to raising awareness of available transit, transit enhancements will help optimize existing transit assets and increase ridership.

Estimated Annual Greenhouse Gas Benefits:

3,193.13-6,571.30 metric tons

Expected Community Benefits:

Economic Development and Job Creation; Improved Health and Well-Being, Increased Access to Service and Amenities, Increased Resiliency/Ability to Adapt; Increased Awareness/Engagement; Reduced Costs

Estimated Annual Criteria Pollutant Reduction:

NO_X: 1.41-2.90 metric tons

VOCs: 0.77-1.58 metric tons

$PM_{2.5}$: 0.01-0.02 metric tons

This measure consists of several key projects:

Project: Enhance Existing Transit Service

Improving and enhancing existing transit service will assist in increasing ridership and removing barriers to transit use by upgrading select passenger amenities (e.g., passenger shelters, ADA improvements) and expanding service (e.g., higher frequencies or additional routes). Improvements in underserved areas and on services that improve transit access to medical appointments, education, work opportunities, or job training will be prioritized.

Project: Expand Vanpool Program

Vanpool is a shared commuter transportation service that offers an alternative transportation option for people to commute to work. With anticipated growth in the North Central Texas Regional Vanpool Program, the integration of electric vehicles into the program would provide an opportunity to explore effectiveness and reduce emissions.

Project: Subsidize Transit Passes

Funding provided to local governments and transit agencies can be used to subsidize transit passes, potentially during periods of the year with historically high emissions or poor air quality. These passes could be provided to individuals or businesses and be tied into larger educational outreach efforts to encourage transit use in the region.

Project: Develop Mobility Hubs & Transit-Oriented Developments

The region has 83 light and commuter rail stations, six streetcar stops, and over 4,500 bus stops. Coordinated land use in transit-oriented development around these transit facilities encourages transit trips and reduces automobile emissions. Each transit location offers the chance to leverage micro-mobility and active transportation supportive amenities as a mobility hub.

Other Available Funding:

Funding for transit services and infrastructure is typically available to NCTCOG through the following federal sources:

- Federal Transit Administration (FTA) Section 5307 Urbanized Area Formula Grant Program
- Federal Transit Administration Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities Grant Program
- Surface Transportation Block Grant (STBG)
- Congestion Mitigation and Air Quality (CMAQ)

Availability of operating funds are limited through these funding programs for larger transit systems. The additional funding (CMAQ and STBG) only supports initial service costs and would likely not encompass the transit enhancements the aforementioned projects would include.

Funding for transit passes is not typically available from federal funding sources. However, NCTCOG may be able to support this project through the following local sources:

- Regional Toll Revenue (RTR) Funds
- Regional Transportation Council Local Funds

Measure: Transit Planning Program

Future transit service options and system improvements are developed through a combination of technical analysis and feedback gathered through outreach efforts. These planning efforts and their associated recommendations are essential to making sure that service and system enhancements do not interfere with one another and are in line with regional and interagency goals. This results in a more efficient and connected transportation network, which will potentially reduce congestion and emissions, encourage local stakeholders to continue investing in transit, and bring in new transit users.

Project: Develop Regional Transit Plan

NCTCOG develops regional transportation plans to improve mobility across the North Central Texas region. These plans would identify service gaps, offer recommendations to enhance existing transit systems, and expand transportation options and funding. This project includes regional planning efforts such as Mobility 2050, anticipated completion date in 2025, and North Central Texas Regional Transit 2.0: Planning for Year 2050, anticipated completion date in 2025, and can be used to support initiatives to address air quality concerns in North Central Texas.

Estimated Annual Greenhouse Gas Benefits:

Not Quantifiable; but planning is a foundational step to enabling implementation of transit measures that do achieve emissions benefits.

Expected Community Benefits:

Economic Development and Job Creation; Improved Health and Well-Being, Increased Access to Service and Amenities, Increased Resiliency/Ability to Adapt; Increased Awareness/Engagement; Reduced Costs

Estimated Annual Criteria Pollutant Reduction:

NO_X: N/A

VOCs: N/A

$PM_{2.5}$: N/A

Other Available Funding:

Funding for transit planning is typically available to NCTCOG through the following federal sources:

- FTA Section 5307 Urbanized Area Formula Grant Program
- FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities Grant Program
- Surface Transportation Block Grant
- Congestion Mitigation and Air Quality

Funding for regional transit planning assistance specifically is typically available to NCTCOG through the following federal sources:

- Transportation Planning Funds (TPF)/FTA Section 5303 Metropolitan Transportation Planning Program

NCTCOG may also be able to support this project through the following local sources:

- Regional Transportation Council Local Funds

Program Area: Sustainable Development

NCTCOG has continually supported sustainable development in the region for over two decades through the Sustainable Development Program in the Transportation Department and Environment & Development Department. The Transportation Department Sustainable Development Program works with local governments to plan and fund active transportation (bicycle and pedestrian) trips and transit-oriented development. More information is available at https://nctcog.org/trans/plan/land-use. These programs help reduce growth in vehicle miles traveled by shifting trips away from traditional vehicle modes, leading to reduced transportation-related emissions.

Measure: Active Transportation Program

The Active Transportation Program includes creating and/or enhancing pedestrian and bicycle facilities, including sidewalks, off-street shared-use paths, and on-street bikeways throughout the region, including around the transit network, to link individuals to other modes of transportation as an alternative to driving a vehicle. These active transportation facilities promote a shift to non-motorized travel in lieu of motor vehicle trips with associated automobile emissions.

Estimated Annual Greenhouse Gas Benefits:

12,527.66 metric tons

Expected Community Benefits:

Economic Development and Job Creation; Improved Health and Well-Being, Increased Access to Service and Amenities, Increased Resiliency/Ability to Adapt, Increased Safety; Increased Awareness/Engagement

Estimated Annual Criteria Pollutant Reduction:

NO_X: 4.33 metric tons

VOCs: 2.85 metric tons

$PM_{2.5}$: 0.07 metric tons

Project: Improve/Expand Bicycle and Pedestrian Facilities

North Texas has over 8,618 miles of existing and planned on-street bikeways and shared-use paths for pedestrians and bicyclists which are intended to be used as a means of transportation. North Texas residents highly prefer these dedicated on-street and off-street bikeways separated from vehicle traffic. In addition, studies have also shown thousands of miles of sidewalks are missing along streets throughout the region. Extending these facilities to transit stops and major destinations, including schools and major commercial and employment centers, will encourage more active transportation trips and reduce vehicle emissions.

Dedicated on-street bike lanes and protected bikeways separated from vehicular traffic are critical infrastructure elements to connect cyclists with destinations in lieu of driving. Restriping streets, installing buffer separations from traffic, and deploying other safe designs for on-street bikeways will complement and extend the reach of the regional off-street trail network, and help shift trips to non-motorized travel resulting in reduced motor vehicle trips and their associated emissions.

Other Available Funding:

Funding for active transportation infrastructure is typically available to NCTCOG and the region through the following Federal sources:

- Surface Transportation Block Grants
- Congestion Mitigation and Air Quality

- Transportation Alternatives Set-Aside Program

Measure: Green Purchasing/Green Construction Program

For sustainable development to meet its greatest potential, efforts to balance environmental stewardship with economic development and social well-being should extend into how the consumption, processing, and management of specific natural resources and construction materials can affect greenhouse gas emissions and/or resiliency to climate change. Creation of a Green Purchasing/Green Construction Program can establish a market preference for the affirmative selection and acquisition of products and/or services most effective in minimizing negative environmental impacts over their lifecycle of extraction, manufacturing, transportation, utilization, recycling, and/or disposal. Consistent with the Biden Administration's recent launch of the federal Buy Clean Initiative, examples of such environmentally preferable characteristics include products and services involving the conservation of energy and/or water, optimized use of renewable energy resources, reduced or minimal generation of waste and releases of harmful pollutants, integration of reusable and/or recycled materials, and/or alternatives to the use of toxic chemicals and biohazardous agents.

Estimated Annual Greenhouse Gas Benefits:

8.04 metric tons per 5000 ft length

Expected Community Benefits:

Economic Development and Job Creation; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.09 metric tons per 5000 ft length

VOCs: Not Currently Quantifiable

$PM_{2.5}$: Not Currently Quantifiable

<u>Project: Green Purchasing/Green Construction Program</u>

Through this project, the region would increase the use of low-embodied carbon, recycled content, and/or high-efficiency materials (e.g., materials that extend the life of projects and reduce the frequency of necessary construction/maintenance), and employ reduced-emission construction methods (e.g., low-emission equipment), materials (e.g., low-emission or high-albedo coatings/surfaces), or management practices (e.g., tools/field work improving oversight and efficiency). It would also encourage opportunities to lower "embodied" GHG emissions within operations and maintenance (O&M) activities and the promotion of more sustainable "end-of-lifecycle" actions such as reuse, salvage/deconstruction, and disassembly. Finally, while the program would ensure these innovative products/services satisfy long-term performance and durability requirements, they would additionally aid in increasing permeability of the built environment to enhance stormwater management, reduce stormwater runoff, and decrease flooding risks.

This project can be implemented regionally through the North Texas Share (TXShare) Cooperative Purchasing Program, administered by NCTCOG. This cooperative engages local governments in identifying and streamlining common purchasing needs, which NCTCOG then competitively procures in a manner that is compliant with Uniform Guidance (2 CFR 200) and Texas Local Government code procurement policies and procedures so that local governments can readily use TXShare contracts without having to conduct their own competitive procurements. This makes products and services available through TXShare attractive for local government purchase. New contracts for no-/low-carbon products and processes can be added, and consideration of the social costs of GHGs could be incorporated into new selections of existing products or processes.

Other Available Funding:

Like other sustainable development program measures, funding is generally accessible to NCTCOG through the following Federal sources:

- Surface Transportation Block Grants
- Congestion Mitigation and Air Quality
- Transportation Alternatives Set-Aside Program

In addition, at the state level, the Green Project Reserve from the Texas Water Development Board Clean Water State Revolving Fund may be an option.

Measure: Urban Heat Island and Green Spaces Program

A new generation of infrastructure projects that harness or integrate the power of nature can help achieve development goals and improve air quality. Incorporating nature-based solutions into mainstream infrastructure systems can result in lower lifecycle costs and increased resilience. This project seeks to break the silos between water infrastructure, the environment, and transportation infrastructure to help create and fund innovative spaces that integrate these components throughout the composition of urban development patterns to effectively tackle challenges of energy consumption, elevated GHG emissions, and compromises to the health, comfort, and quality of the human and natural environment. Because urban areas are highly concentrated with structures like buildings, roads, and other infrastructure that absorb and re-emit the sun's heat more than natural landscapes, if vegetation is limited, they can become "islands" of higher temperatures relative to outlying areas. Compounded with the effects of climate change, increased human health and energy grid instability risks due to prolonged extreme heat exposure can result.

This measure will mitigate this increased heat and reduce GHG through implementation of green spaces and vegetation associated with transportation infrastructure, which can lower urban heat island effects or ambient temperatures in transportation rights-of-way and near major transportation facilities. Simultaneously, such measures can help communities become more resilient to severe weather events and serve to reconnect communities in situations where green spaces or parks are added above or below transportation corridors that previously divided neighborhoods. The Klyde Warren deck park in downtown Dallas is an example of this type of project.

Estimated Annual Greenhouse Gas Benefits:*

1,183.97 metric tons

Expected Community Benefits:

Economic Development and Job Creation; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being

Estimated Annual Criteria Pollutant Reduction:*

NO_X: 0.47 metric tons

VOCs: 0.05 metric tons

$PM_{2.5}$: 0.05 metric tons

***Not all benefits currently quantifiable**

This measure consists of several key projects:

Project: Expand Use of Landscaping, Vegetation, and Tree Cover

A comprehensive heat response plan generally involves an expanded use of landscaping and vegetation as cooling strategies to mitigate extreme heat island effects. This program would integrate the planting of trees and other vegetation cover within transportation projects and in transportation rights-of-way by providing shade and cooling through increased evaporation/transpiration. The increased greenery would provide the added benefits of reduced stormwater runoff and erosion protection to alleviate increased performance degradation. The program would also encourage the use of cool paving materials on streets, sidewalks, parking lots, and other assets that remain cooler than conventional pavements by reflecting more solar energy and/or enhancing evaporation and permeability. These actions would help not only in cooling both the paved surfaces and surrounding air masses, but they can also improve nighttime visibility and provide an extra increment of stormwater runoff reduction.

Project: Develop Parks/Plazas/Open Spaces

New parks and plazas are programmed gathering spaces that offer increased capacity for trees and vegetation and support active transportation. Regional examples include Klyde Warren Park and the planned Harold Simmons Trinity Park in Dallas. Additionally, new green spaces could arise through the growth of vegetative layers on the rooftops of buildings such as “rooftop gardens” or “eco-roofs.” These increased green/open spaces provide greater surface/volume areas for shade and removing heat from the air through evaporation/transpiration.

Project: Preserve Existing Green Spaces

The preservation of existing agricultural, open, forested, and/or wetland spaces should be encouraged via a comprehensive range of development and conservation strategies that help protect and bolster the natural environment, while simultaneously making the surrounding communities more attractive, livable, adaptable, and economically/ environmentally stronger. The Preserve

Existing Green Space Measure supports the Expansion of Green Space Measure in the Agriculture, Forestry, and Land-Use Sector.

Other Available Funding:

Traditional transportation funds are not typically eligible for items in the urban heat island and green spaces section. For example, Surface Transportation Block Grants can be used in the structural elements of projects such as deck parks but cannot extend to the landscaping of the parks on top. Typically, local funds must be used for green space, parks, and trees.

Program Area: Congestion Management

Efforts in the region to reduce emissions from vehicles via the Congestion Management Program involves optimizing transportation systems to enhance traffic flow and minimize congestion-related delays. Key strategies encompass the development of comprehensive congestion management plans, deployment of advanced traffic signal control systems and signal retiming, implementation of intelligent transportation systems (ITS) technologies, promotion of ridesharing and carpooling initiatives, and adoption of innovative traffic management solutions. These efforts are complemented by ongoing collaboration with local jurisdictions, transportation agencies, and stakeholders to identify and address congestion challenges effectively. For more information go to https://www.nctcog.org/trans/manage/congestion-management-process.

Measure: Enhanced Regional Traffic Signal Timing Program

GHG and criteria pollutants can be reduced by optimizing traffic flow and reducing congestion. This is due to vehicles idling producing additional emissions than vehicles driving normally.[59] By implementing advanced technology and data-driven strategies to synchronize traffic signals, this measure seeks to minimize vehicle idling and improve overall traffic efficiency. By reducing delays and streamlining traffic movements, the program aims to decrease fuel consumption and emissions associated with stop-and-go

Estimated Annual Greenhouse Gas Benefits:

602.39 - 801.64 metric tons

Expected Community Benefits:

Increased Access to Service and Amenities; Economic Development and Job Creation, Increased Safety, Reduced Costs; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being; Reduced Costs

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.28-0.36 metric tons

VOCs: 0.16-0.20 metric tons

$PM_{2.5}$: < 0.01 metric tons

[59] https://www.energy.gov/sites/default/files/2021-12/ES-ConsumerGuide-Vehicle-Idling-508.pdf

traffic patterns. This proactive approach to traffic management contributes to a reduction in GHG, promoting a more sustainable and environmentally friendly transportation system.

This measure consists of several key projects:

Project: Upgrade Traffic Signal Equipment

NCTCOG has recently developed a Phase 1 Signal Needs Assessment, which surveyed 6,800 traffic signals across the region to develop an inventory of traffic signals that do not meet the regional minimum traffic equipment standard. Upgrading these signals will enhance travel efficiency by enabling the traffic signals to perform more optimally over time, including retaining proper signal timing.

Project: Improve Signal Timing in the Region

Arterial congestion contributes significantly to the total congestion in the region, especially due to inefficient traffic patterns and unnecessary idling. The region has a continuous program called the Regional Traffic Signal Program (RTSP), which retimes traffic signals in the region to improve traffic flow and reduce vehicular emissions. Proper signal timing ensures a more consistent speed and reduces delays. Consequently, this reduces vehicular emissions by minimizing frequent starts and stops, unnecessary idling, and minimizing slow vehicle speeds where tailpipe emission rates of all pollutants are at their highest. Typically, these traffic signal retiming activities take 9 to 12 months, and the signals can be retimed every four years.

In November 2023, NCTCOG was awarded a contract to implement a Regional Traffic Signal Performance Measures Platform for Signalized Intersections in the 10-County DFW nonattainment area, which will enable NCTCOG and regional agencies to monitor traffic signal performance, enabling prioritization of traffic signal improvement and investment to optimize the performance of the entire traffic signal system across the region. Timing recommendations can be mapped against the Phase 1 Signal Needs Assessment to ensure that equipment upgrades necessary to retain proper timing are completed prior to retiming investments, where equipment is substandard, to best leverage available resources. Initial retiming recommendations are expected to be available across the entire region by mid-2024, enabling the roll-out of timing improvements in a strategic manner at the outset of the PCAP timeframe.

Project: Bus Signal Prioritization

The efficiency of public transportation can be improved by implementing signal prioritization for buses. This initiative seeks to enhance the reliability and timeliness of bus services by giving buses priority at traffic signals, allowing them to move more swiftly through intersections. For example, communication between a traffic signal software and a sensor or software on a bus will prompt the traffic light to stay green, or turn green, to allow the bus to move through the corridor seamlessly without stopping at a red light. Through the project, NCTCOG communities can expect to see improvements in public transit reliability and reduced travel times for bus passengers, which may prompt increased ridership by making transit service more reliable. This will contribute to a more

efficient and environmentally friendly urban transportation network, while also providing improved service to transit users.

Other Available Funding:

Current funding for the Regional Traffic Signal Program is sourced from CMAQ funds allocated by the RTC in the Transportation Improvement Program (TIP). Funding to upgrade traffic signal equipment has just started to be allocated through STBG funds. However, the available funding cannot fund all upgrades needed, and additional funding is needed to complete the upgrading and optimization of the system.

Measure: Transportation System and Truck/Rail Optimization Program

Transportation systems are most vulnerable to safety, congestion, and connectivity deficiencies when links in the freight supply chain are not functioning optimally, and this can contribute greatly to unwarranted pollutant emissions. Safely and efficiently linking critical commodity flows to/from businesses and households within the region, across the country, and around the world requires blending of technological innovation and meaningful traditional transportation infrastructure investments. For connected and automated vehicles (CAVs), the potential effects of congested and poor condition facilities can become more acute as unpredictable driver behaviors, natural or human-caused incidents, defective signage/signals/markings, and various changes to the built environment can increase complexity of the operational design domain and introduce risks to reliable fleet operations. A combined digital/physical infrastructure solution can enhance safety, while also creating an enabling ecosystem for at-scale CAV development to further improve supply chain performance and simultaneously lower GHG emissions.

Estimated Annual Greenhouse Gas Benefits:

1,158.64 metric tons

Expected Community Benefits:

Increased Access to Service and Amenities; Economic Development and Job Creation, Increased Safety, Reduced Costs; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being; Reduced Noise Pollution

Estimated Annual Criteria Pollutant Reduction:

NO_X: 1.28 metric tons

VOCs: 0.54 metric tons

$PM_{2.5}$: 0.03 metric tons

This measure consists of several key projects:

Project: Roadway Improvements

While a fully integrated technology platform is central to the success of the Freight Flow Optimization Program, some distinct physical improvements to the roadway network are essential to ensure remote sensing and communications apparatus are well positioned for seamless integration over the

entire DFW MPA. Those physical infrastructure needs are comprised of specific capacity deficiencies, missing or insufficient direct connector ramps, poor alignments, and/or the repair/replacement of assets vulnerable to rapid deterioration due to conditional or environmental stressors. This innovative integration of physical infrastructure and technology applications will greatly reduce freight movement inefficiencies, enable further propagation of CAV testing/deployment, and ensure improved capacities of detecting and addressing state of good repair.

Project: Technology and Multimodal Connectivity Improvements

The Freight Flow Optimization Program will unlock a fully integrated logistics ecosystem, with (1) optimized physical infrastructure at key locations for freight activities, (2) full roadway instrumentation to generate real-time insights on traffic and road surface conditions, and (3) an associated software platform to deliver these insights to both road users and operators, with the capacity/compatibility for future integration/expansion deeper into the public roadway network as more effective/comprehensive management may ultimately permit. This project can improve safety via improved traffic/asset management, automated incident detection, notifications to shift vehicular movements during times of high congestion, and optimized signalization. This increased efficiency would translate into significant travel time and operational cost savings well beyond the limits of regional freight-oriented developments, which would then elicit improved air quality and resiliency to changing environmental conditions.

The U.S. DOT Area of Persistent Poverty (APP)/Historically Disadvantaged Community (HDC) Status Tool has highlighted how the lack of multimodal transportation access around freight-oriented developments is a traditional community indicator of disadvantage. While land uses and travel patterns associated with freight logistics centers have customarily been less conducive or context-sensitive to widespread non-motorist uses, the needs to attract and retain a larger base of labor/business activity, provide healthy contributions to work-life balance, and encourage greater convenience/flexibility for mixed, and less auto-centric, development options are starting to reverse those trends. This project will build on this impetus to support more inclusive, affordable, and sustainable travel options for workers, residents, and visitors alike in the transitional areas to/from freight-oriented developments. Such products/outcomes will ensure more major employment/activity locations are more within reach of numerous new users/customers, and these increased opportunities will result in substantive emission reductions regionwide.

Project: Grade Separations

Within the 12-county transportation planning area, there are 2,442 at-grade rail-highway crossings, including 1,384 across the two most densely populated counties (Dallas and Tarrant).[60] These locations present substantial safety risks for train-vehicle collisions, but also result in air pollution associated with queues of vehicles stopped and idling as a train crosses. A rail grade separation eliminates the interaction between rail and automobile traffic. This can be done with the road being moved below or above the rail line. This allows for safer and efficient automobile and rail movements as they no longer interact with each other and reduce emissions of both GHGs and criteria pollutants by minimizing vehicle idling. NCTCOG and local jurisdictions are constantly collaborating to plan,

[60] https://nctcog.org/getmedia/a3642652-f78b-4bbc-b33f-85fd13e599c3/Freight-North-Texas-2022-A-FREIGHT-Mobility-Plan.pdf

design, and construct additional road-rail grade separations, and several locations can be constructed within the PCAP timeframe.

Other Available Funding:

These types of projects can often be funded by traditional transportation funding, including STBG and CMAQ funds available to NCTCOG as formula funding due to its role as the MPO. However, regional funding needs far outstrip available funds, and certain elements – especially technology elements associated with freight flow optimization – often fall outside the scope of traditional transportation funding and, at times, the absence of these "nontraditional" project elements makes a high impact on project effectiveness. Discretionary grant programs and local funds (including bond programs) can also support implementation.

Measure: Vehicle Miles Traveled Reduction Program

This measure seeks to reduce the amount of VMT across the region, which consequently reduces fuel consumption and vehicular emissions, through a variety of projects that may either reduce the length of trips or eliminate trips altogether. This measure is related to the Active Transportation Program and Transit Enhancement Program, both of which also seek to eliminate or shorten single-occupant vehicle trips.

Estimated Annual Greenhouse Gas Benefits:

717,888.09 metric tons

Expected Community Benefits:

Economic Development and Job Creation; Improved Health and Well-Being; Increased Access to Service and Amenities; Increased Resiliency/Ability to Adapt; Increased Awareness/Engagement; Increased Safety

Estimated Annual Criteria Pollutant Reduction:

NO_X: 355.66 metric tons

VOCs: 59.85 metric tons

$PM_{2.5}$: 4.79 metric tons

This measure consists of several key projects:

<u>Project: Improve Job-Housing-Transportation Balance</u>

The concept to job-housing balance aspires to locate complementary employment and housing opportunities close together to reduce commute distances or encourage non-single occupant vehicle trips. Rather than a literal "balance" of jobs and housing, strategies to achieve this typically focus on increasing the mix of job types and housing types in a given area. An example would be that NCTCOG has focused on increasing the mix of jobs and housing on its rail transit corridors to increase transit ridership. Efforts to further encourage this would include studies of areas of interest to analyze data on existing jobs and housing options and suggest land use policy changes to increase a mix of options.

Project: Provide Incentives to Encourage Commuting During Off-Peak Times or Working Remote

The NCTCOG Employer Trip Reduction (ETR) Program is an educational program designed to reduce work-related drive alone commute trips through the marketing and implementation of Travel Demand Management strategies such as rideshare programs (carpooling and vanpooling), telecommuting and flexible work-hour programs, transit, bicycling, and walking. Through the ETR Program, employers are assisted with the formation of company-specific Trip Reduction Programs which may include program education and recruitment, program setup and maintenance, and data collection and reporting of results. An essential tool used within the Regional Trip Reduction Program is www.TryParkingIt.com, the regional commute tracking, ride-matching, and commuter reward system. The website enables commuters to locate carpool and vanpool ride matches, along with transit and bicycle matches. When users enter their alternative commute trips, the website generates a summary of miles saved, trips reduced, and harmful emissions reduced. Try Parking It users also earn reward points towards G.R.E.E.N. (Give, Receive, Expand, Effect, North Texas) Rewards and Entertainment Book Rewards for recording their alternative commute trips. Registered employer administrators may also contribute their own rewards to www.TryParkingIt.com, which can be viewed and obtained by the specific company's employees only.

Project: Utilize Smart Infrastructure to Improve Operations

Drone operations can be added or improved by utilizing smart infrastructure technologies. In addition to existing weather information, deploying ground-based sensors that integrate into a public network allows for drone operations and services to be viable and scalable. These drone-based operations can reduce both consumer and delivery vehicles on the road, reducing pollution and potential safety hazards while creating resilient services.

Other Available Funding:

Currently, NCTCOG utilizes STBG funding, local funds, and Transportation Development Credits to administer the Try Parking It Program. CMAQ funds could potentially be eligible as well.

Energy Sector Measures

NCTCOG and collaborating agencies have developed a list of measures to comprehensively improve air quality to address the Energy Sectors. These measures will reduce GHGs, of which the energy sector is responsible for approximately 53 percent, as discussed in **Section 3**. However, this 53 percent includes GHGs associated with power consumed in the Water, Wastewater, and Watershed Management Sectors, as water pumping is very energy-intensive. They will also reduce criteria pollutants by reducing upstream demand for power generation from conventional power sources.

Appendix 11: DFW AQIP-Energy Measures, contains a full list of measures and projects, feedback received from surveys described in **Section 1: Regional Engagement**, and information on air quality and community benefits.

Program Area: Energy Demand Management Program

This program focuses on facilitating energy management and efficiency education, activities, and partnerships with emphasis on the public sector. By conserving energy through efficiency measures and expanding use of renewable generation, air pollution associated with conventional power generation can

be reduced while increasing resiliency and reliability of the grid. Additionally, the Regional Integration of Sustainability Efforts Coalition was established by NCTCOG to foster peer exchange and collaboration among local governments supporting sustainability and environmental initiatives across the region. Resources are compiled on the Conserve North Texas website at https://www.conservenorthtexas.org. Key existing efforts include:

- **Local Government Energy Reporting:** All political subdivisions, state agencies, and institutes of higher education in a nonattainment area or an affected county are required to reduce electricity consumption by at least 5 percent each year, based on a 2019 baseline, and report their progress.[61] NCTCOG and the South-Central Partnership for Energy Efficiency as a Resource (SPEER) provide support to improve data quality and reporting rates through workshops, white papers, and case studies, all of which are posted on the Conserve North Texas website https://www.conservenorthtexas.org in the Local Government Energy Reporting Toolkit.
- **Building Codes:** NCTCOG conducts surveys under the support of its Regional Codes Coordinating Committee (RCCC), to help the region identify cities operating under outdated energy codes (i.e., 2012 and older) and connect them with SPEER for assistance in updating their codes. The updates can greatly impact the degree of energy consumption of buildings in their city. Energy code survey results over the past five years are posted on the NCTCOG Code Adoption Survey webpage (https://www.nctcog.org/envir/regional-building-codes/code-adoption-surveys). NCTCOG has also worked with local governments to integrate code elements that exceed standard code requirements. A statement supporting solar-ready code appendices was approved by the RCCC in October 2021.[62] NCTCOG has begun providing information to local stakeholders about the amount of EV charging that could be integrated into new or reconstructed parking areas. Through new projects like Charging Smart, NCTCOG will assist in preparing municipalities to set EV-friendly building codes.
- **Property Assessed Clean Energy (TX-PACE)**: This financial tool incentivizes commercial and industrial property owners to upgrade their infrastructure for energy efficiency or water conservation. NCTCOG works to expand adoption of and use of PACE financing due to its ability to reduce energy and water consumption within commercial buildings, improve regional air quality by reducing the need for electricity generation, and provide economic benefits by spurring investment in communities.
- **Solar Technologies:** Key efforts to advance solar adoption across the region include supporting local governments in pursuing SolSmart designation; achieving a SolSmart designation for the region; maintaining a central website at https://www.gosolartexas.org/ to house Texas-specific information; development of regional template materials for permitting, zoning, and building codes; and hosting trainings for first responders, inspectors, permitting officials, and other staff to increase local governments' knowledge of solar technology. NCTCOG goals include drafting a plan for increased solar deployment, securing SolSmart designation for at least 10 additional municipalities, and increasing deployment of solar across all sectors while leveraging the connections between solar deployment and other regional goals such as emergency preparedness and grid resiliency.

Measure: Public Sector Energy Efficiency and Refrigerant Transition Program

Updating and replacing various systems, appliances, and lighting in public buildings can lead to substantial energy efficiency improvements, aligning with efforts to reduce carbon emissions and

[61] https://statutes.capitol.texas.gov/Docs/HS/htm/HS.388.htm#388.005
[62] Aug2021_DRAFT-NCTCOG-Solar-Ready_Support-Statement_V-3.pdf

decrease electricity consumption. For example, LED lights in buildings offer significant energy savings compared to traditional lighting technologies, with studies showing up to a 90 percent reduction in energy consumption and a lifespan up to 25 times longer than incandescent bulbs.[63]

Updating the heating and cooling systems of a building to newer, more efficient systems of heat pumps, chillers, HVAC, and boilers is part of the effort needed to ensure this energy efficient transition. It should be noted that updating certain HVAC or chiller equipment may also enable transition of refrigerants to newer refrigerants with lower global warming potential, thus reducing GHGs not only from the energy sector through improving efficiency of the equipment itself, but also by reducing hydrofluorocarbons from refrigerant chemicals. Hydrofluorocarbon emissions are not currently captured in the GHG EI, thus, to be conservative, reductions from refrigerants have not been calculated and all quantification is based strictly on energy efficiency.

Additionally, promoting available financial incentives for technology upgrades can further increase the adoption of more energy efficient technologies in buildings.

Estimated Annual Greenhouse Gas Benefits:

0.00002-0.004 per metric ton per retrofit

Expected Community Benefits:

Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.00000001-0.000002 metric ton per retrofit

VOCs: 0.0000000004-0.0000001 metric ton per retrofit

$PM_{2.5}$: 0.000000001-0.0000002 metric ton per retrofit

This measure consists of several key projects:

Project: Increase Energy Efficiency of Existing Buildings

Entities can replace older, inefficient appliances and systems, such as HVAC, heat pumps, meters, chillers, and boilers to reduce GHG and criteria pollutants. For the PCAP, NCTCOG expects to focus on replacing these appliances with the most efficient EnergyStar-certified units. Public entities are expected to be the focus of the PCAP.

Project: LED Lighting Retrofits

NCTCOG will support public agencies will in replacing lighting technology with LED lighting technology. These replacements will be focused on facilities, rather than the replacement of LED-Streetlighting, which is included in the Transportation Sector.

[63] https://www.energy.gov/energysaver/lighting-choices-save-you-money

Other Available Funding:

A variety of energy efficiency related funding initiatives are available from federal and state sources, including Energy Efficiency and Conservation Block Grants (EECBG) and Texas State Energy Conservation Office LoanSTAR funding, but the demand for energy efficiency projects far exceeds available funding.

Measure: Residential Efficiency Rebate Program

To aid in the improvement of the region's air quality, energy efficiency improvements to residential homes must also be addressed. Developing a streamlined process and encouraging residents to participate in a free energy audits/assessment, akin to the Preliminary Energy Assessment provided to public agencies by the State Energy Conservation Office, would be a first step in a process to reduce energy costs and energy consumption. Combining the audit/assessment with a rebate for home weatherization and group-purchase solar would further incentivize residents to implement energy improvements.

Estimated Annual Greenhouse Gas Benefits:

0.000001 per metric ton per household

Expected Community Benefits:

Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being; Reduced Costs; Increased Awareness and Engagement

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.000000001 metric ton per household

VOCs: 0.00000003 metric ton per household

$PM_{2.5}$: 0.00000000005 metric ton per household

This measure consists of several key projects:

Project: Conduct Residential Energy Audits and Weatherization Rebate Program

Local governments are interested in offering opportunities for residents to obtain free residential energy audits or preliminary energy assessments to identify potential energy or water efficiency improvements. In addition, some local governments are interested in providing rebates for residential energy efficiency and weatherization improvements.

Project: Provide Incentives for Residential Solar

Local governments can provide incentives for residential solar installations, facilitate community solar opportunities, and/or support "Solarize" group-purchase options to reduce residential solar costs.

Other Available Funding:

The Residential Clean Energy Credit is available through Internal Revenue Service Form 5695 and includes home energy audits, qualified solar electric property costs, insulation material or air sealing material or systems, and other energy saving improvements. The annual credit equals 30 percent of the costs of new, qualified clean energy property for homes installed between 2022 through 2032. The credit percentage rate phases down to 26 percent for property placed in service in 2033 and 22 percent for property placed in service in 2034. The energy efficient home improvement credit has a maximum of $1,200 annual credit limit, which may not provide enough of an incentive for residents whose housing needs a substantial amount of work. Also, there are limits for each category of qualified energy efficiency improvements. Renters can claim the credit, however, are not likely to make energy saving improvements to a home they do not own. Landlords or other property owners that do not live in the home cannot claim the credit.

Incentives may be available from utilities, but awareness is often lacking and there may be other barriers to obtaining the financial assistance. For example, a large proportion of NCTCOG regional residents live in the deregulated part of the ERCOT market for which Oncor Electric Delivery serves as the transmission and distribution service provider. Oncor offers a variety of incentives through the Take a Load Off Texas Program,[64] but Oncor is not allowed to provide the incentive directly to a homeowner and must instead provide the incentive through an approved contractor. This puts the burden of finding and selecting a reputable vendor on the homeowner and creates uncertainty about whether the full value of the incentive was actually realized by the resident.

Measure: Energy Plans/Audits/Policies

Public and commercial buildings and industrial facilities can increase energy efficiency and reduce GHGs by conducting an energy audit/preliminary energy assessment to identify energy and water efficiency improvements. In addition, using a tool such as the Energy Star Portfolio Manager to compare a building's energy consumption to similar buildings can identify opportunities for improvements.

Estimated Annual Greenhouse Gas Benefits:

Not Quantifiable but is a critical step to enabling implementation of emissions-reducing retrofits or other measures.

Expected Community Benefits:

Increased Awareness and Engagement; Increased Resiliency and Adaptability Engagement

Estimated Annual Criteria Pollutant Reduction:

Not quantifiable but is a critical step to enabling implementation of emissions-reducing retrofits or other measures.

This measure consists of several key projects:

[64] https://www.oncor.com/takealoadofftexas/

Project: Implement Building Energy Performance Management Program/Plan/Policy

Building owners can utilize the Energy Star Portfolio Manager to benchmark and track a building's performance. Benchmarking energy consumption can help a building owner or facility manager understand whether their building is consuming energy at a rate that is higher, lower, or about average relative to similar buildings, which can help identify whether there are "low-hanging" opportunities for greater improvements. Building owners can then establish an energy performance management plan and/or policy using resources such as the Energy Star Guidelines for Energy Management.

Project: Conduct Energy Audits for Organizations

Local governments and owners of commercial buildings/facilities in the region are interested in reducing the energy consumption of buildings. Conducting a comprehensive energy audit/preliminary energy assessment for public and commercial buildings will identify potential energy or water efficiency improvements and is a critical first step toward these improvements. Energy audits are a valuable tool to support the business case for energy conservation projects at a facility and can be used as the foundation for a long-range plan. In addition, an energy audit is often a necessary step for obtaining third-party financing for a project, such as Property Assessed Clean Energy (PACE) financing and utility incentives. This measure will have a larger effect on air quality for the area surrounding these facilities due to the large carbon footprint of these facilities.

Other Available Funding:

Owners of qualified commercial buildings who place in service energy-efficient commercial building property may be able to claim a tax deduction, however, an energy audit is not an eligible project. Incentives or rebates for energy audits for commercial buildings or industrial facilities are generally not available. The Rural Energy for America Program Energy Audit and Renewable Energy Development Assistance Grant assists rural small businesses and agricultural producers by conducting and promoting energy audits and providing Renewable Energy Development Assistance, however, small businesses are not eligible to apply directly to this program and must be in an eligible rural area.

Public agencies in Texas can secure Preliminary Energy Audits at no cost through the Texas State Energy Conservation Office through either the Local Governments Program or Schools Program.[65]

Measure: Green/Cool Roof Replacements

Cool roofs reflect more sunlight than a conventional roof, absorbing less solar energy and lowering the temperature of a building, saving energy and money. Additional benefits can be realized when cool roofs are installed on many buildings in a community, such as reduction of the urban heat island effect, slowing the formation of smog from air pollutants, and reducing peak electricity demand. Green (vegetative) roofs are cooled by the evaporation of water from plant surfaces rather than by the reflection of sunlight but must be designed with respect to the structural capacity of the roof.

[65] https://comptroller.texas.gov/programs/seco/programs/

Estimated Annual Greenhouse Gas Benefits:

0.0002-0.01 metric tons per building roof

Expected Community Benefits:

Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well Being

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.00000006-0.000004 metric tons per building roof

VOCs: 0.000000002-0.0000002 metric tons per building roof

$PM_{2.5}$: 0.000000007-0.0000005 metric tons per building roof

Project: Implement Cool/Green Roofs

NCTCOG will collaborate with public entities to replace or improve existing roofs with cool and green roofs on government buildings. Cool roof projects may include white paint for reflectivity and green roofs with planted vegetation, and other projects.

Other Available Funding:

A variety of energy-efficiency-related funding initiatives for public sector agencies are available from federal and state sources, including Energy Efficiency and Conservation Block Grants (EECBG) and Texas State Energy Conservation Office LoanSTAR funding, but the demand for energy efficiency projects far exceeds available funding.

Measure: Distributed Energy and Resilience for Public Entities

Improving energy resilience for communities and public buildings can increase public safety and the continuity of critical services to communities. For instance, a public building with adequate energy resilience elements and space can be used as an emergency shelter in the event of a power outage. Resiliency elements can include battery or hydrogen fuel cell energy storage, solar, microgrids, cleaner burning generators (propane, natural gas), and electric vehicles. Developing community-scale microgrids can reduce the demand for power

Estimated Annual Greenhouse Gas Benefits:

30.66-101.99 metric tons

Expected Community Benefits:

Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.67-0.89 metric tons

VOCs: negligible – 0.05 metric tons

$PM_{2.5}$: 0.02 metric tons

generated from large power plants and lessen grid demand spikes when the grid is available, as well as provide electrical power in the event of a power outage.

This measure consists of several key projects:

Project: Resilient Building Improvements

Public entities can safeguard against power outages by adding resiliency elements, such as battery or hydrogen fuel cell energy storage, solar, microgrids and cleaner burning generators (propane, natural gas).

Project: Increase Grid Resiliency for Communities

Public entities and utilities will collaborate to develop community-scale renewable energy (wind, solar), microgrids, battery storage, and/or hydrogen fuel cell storage, or vehicle-to-grid facilities to provide power to communities in the event of a power outage.

Project: Develop Emergency Shelters

Public entities will identify and retrofit appropriate buildings to include resiliency elements to accommodate sheltering of the public in the event of a power outage. These buildings would accommodate many people and include building types such as community centers, large libraries, and schools.

Other Available Funding:

The Federal Emergency Management Agency's (FEMA) Building Resilient Infrastructure and Communities (BRIC) Grant Program provides proactive investment in resilience for communities, so they are better prepared and remain resilient prior to a natural disaster, including utility/infrastructure protection. For fiscal year 2022, BRIC funding requests exceeded the amounts available for Hazard Mitigation Assistance grant programs showing the need for more funding to reduce hazards.

Measure: Advancing Energy Elements in Building Codes

With the increased adoption of EVs, EV chargers, and solar, a regional codes program addressing these technologies becomes important for the cost effective and expeditious deployment of these technologies. A program to provide additional training, resources, and outreach is needed to expand

adoption across the region of the most recent building codes to include solar-ready, as well as EV-friendly codes or standards.

Estimated Annual Greenhouse Gas Benefits:

Not Quantifiable

Expected Community Benefits:

Increased Awareness and Engagement; Increased Resiliency and Adaptability; Increased Safety

Estimated Annual Criteria Pollutant Reduction:

Not Quantifiable

Project: Expand Regional Codes Program to Support EVs, Solar, and Energy-Efficient Buildings

NCTCOG will work with local governments to enhance and expand the regional codes program with additional training and outreach to expand adoption of the most recent building codes, including solar-ready provisions supported by the RCCC and energy efficiency. NCTCOG will also collaborate with cities to promote adoption of the 2021 International Energy Conservation Code, and future revisions of this code, to the extent allowed by state law. In addition, staff will work with local governments to develop resources to guide regional adoption of EV-friendly (e.g., EV-ready, EV-capable, and/or EV-installed) building codes or standards.

Other Available Funding:

Through the Inflation Reduction Act, funding was made available to adopt the latest building energy code for residential buildings (2021 International Energy Conservation Code (IECC)) and commercial buildings (ANSIASHRAE/IES Standard 90.1-2019) or other codes and standards that achieve equivalent or greater energy savings, as well as adopt a building energy code that meets or exceeds the zero energy provisions in the 2021 IECC code or other codes and standards with equivalent or greater energy standards. In addition, the Federal Emergency Management Agency's (FEMA) Building Resilient Infrastructure and Communities (BRIC) Program provides funding specifically for building code activities under a new "Codes Plus Up" Program.

Water, Wastewater, and Watershed Management Sectors

While the water, wastewater, and watershed management sectors together comprise a very small percentage of the overall GHG emissions, and do not form a significant generator of priority pollutants, access to clean water is foundational to public health and quality of life. And more critically, this sector, more than any other, faces the greatest risk of impact from a changing climate. Periods of low precipitation disrupted by single high-intensity storm events will increase, along with more extreme degree days (100˚F+), and the frequency and intensity of severe thunderstorms will increase.[66] These projections will have a significant impact on the rapidly growing NCTCOG region. For this area to be able

[66] Fifth National Climate Assessment (globalchange.gov)

to protect water resources and actively plan for the future, appropriate actions will need to be taken by private entities, residents, business members, and our participating local governments. Continuing collaboration with water agencies will be essential for successful long-range resource planning.

NCTCOG and collaborating agencies have developed a list of measures to comprehensively improve local resilience within four primary program areas: **Watershed Management, Water and Wastewater Infrastructure, Wastewater Infrastructure, and Water Resources**. Measures in these program areas are focused on comprehensively addressing water resources in the NCTCOG region by addressing water quality and supply, wastewater collection, treatment and reuse, and effective watershed management to address both flooding and drought. The sector addresses both the important nexus between water and energy, and the need to build infrastructure resilience to address flooding, drought and critical water supply. These measures will reduce GHGs and criteria pollutants.

Appendix 12: DFW AQIP-Water, Wastewater, and Watershed Management Measures, contains a full list of measures and projects, feedback received from surveys described in **Section 1: Regional Engagement**, and information on air quality and community benefits.

Program Area: Watershed Management

NCTCOG's Watershed Management programs are designed to maintain and improve water quality, support flood reduction, and enrich habitats in the watersheds of North Central Texas. The NCTCOG region has 73 waterways, comprised of stream segments and reservoirs. Fifty-nine of those 73 segments are considered impaired, according to the 2022 Integrated Report of Surface Water Quality and Texas 303(d) List.[67] The largest regional source of water is the Trinity River, and protection of this resource remains one of the highest priorities across all water-related efforts. When the water quality in the river is compromised due to contamination from stormwater runoff, bacteria loading, and invasive species, water treatment facilities must expend more energy to rectify the problem, contributing to additional GHG. To mitigate this concern, NCTCOG coordinates with local governments and other stakeholders to identify opportunities to improve watershed protection. Several relevant NCTCOG programs that exist to address watershed challenges in North Central Texas include:

- **Trinity River COMMON VISION:** The Trinity River COMMON VISION is a regional initiative designed to support the Trinity River watershed and its residents, by addressing common concerns for the river, such as flood management, contamination prevention, low flow, and other issues. A coordinated effort to address these concerns has been in place since the 1980s. In 1990, nine local governments, three counties, and two special districts established a formal agreement with NCTCOG for cooperative planning for stewardship of the Trinity River. Since its foundation, COMMON VISION has conducted a feasibility study and completed multiple projects to restore native habitats and preserve the riparian corridor.
- **Flood Management Task Force:** The Flood Management Task Force (FMTF) is a work group comprised of 10 cities and 4 counties, in addition to other governmental entities, who work to support the Trinity River COMMON VISION Program. Members of the FMTF provide advisement and guidance on technical matters related to the COMMON VISION initiative.
- **Corridor Development Certificate (CDC) Program:** Since the 1990s, the CDC has provided further regulation of development within the Trinity River corridor to reduce flood risk. The certification program allows for floodplain development, while ensuring that floodplain construction and development will not present increased flood risks. Extensive analyses of new development to confirm a "no-rise" condition for river flood elevations is required for developments occurring in

[67] 2022 Integrated Report of Surface Water Quality and Texas 303(d) List

the Trinity River watersheds along this corridor. In 2020, NCTCOG developed a CDC tracking system, trinityrivercdc.com, where users can view all CDC permits within the region.

- **Regional Stormwater Coordinating Council (RSCC):** The Regional Stormwater Coordinating Council provides oversight and guidance regarding the execution of NCTCOG's Regional Stormwater Management (RSWM) Program to support regional compliance under community Phase 1 and Phase 2 Texas Pollutant Discharge Elimination System (TPDES) Municipal Separate Storm Sewer System (MS4) permits. In the RSWM Program, NCTCOG collaborates and coordinates multiple initiatives to support appropriate stormwater management under these permits:
    - **Regional Water Quality Monitoring,** one of the more critical efforts is the regional water quality characterization effort that coordinates wet weather-, dry weather-, Rapid Bio-assessment protocol, and other water quality monitoring for the Trinity River and primary tributaries.
    - **The Integrated Stormwater Management (iSWM) Program (**www.iswm.nctcog.org), is a cooperative initiative specifically aimed at promoting guidelines for more sustainable construction and development by participating cities, counties, and transportation agencies towards greater use of post-construction controls, such as low impact development or nature-based solutions, to provide local hydrologic storage, water quality improvements, water quality protection, streambank protection, and flood mitigation.
    - **The Regional Stormwater Coordinating Council** also supports the Texas SmartScape (http://www.txsmartscape.com/) outreach and education initiative. Texas SmartScape seeks to educate the public on best landscape management practices, including the benefits of using plants that are native or adapted to the regional climate and local conditions. Other program efforts include conserving local water supplies, improving stormwater runoff quality, and reducing pesticide, fertilizer, and herbicides use.
    - **The Illicit Discharge Detection and Elimination (IDDE)** Roundtable (https://www.nctcog.org/envir/committees/regional-stormwater-management-coordinating-counci/illicit-discharge-detection-elimination-task-for) supports the RSWM Program by developing best practices related to illicit discharge and contamination prevention.
- **Water Resources Council**
  As defined above, the Water Resources Council works to support the NCTCOG regulatory role in developing and implementing the Regional Water Quality Management Plan (WQMP). This plan helps to identify potential needs and priorities for improving water quality in the region. Every year, the WRC reviews and votes to approve the WQMP prior to submittal to TCEQ.

Measures under this program area include implementation of integrated stormwater management and low-impact developments, expanding pollution prevention measures, updating water conveyance infrastructure, and increasing available stormwater detention volumes.

Measure: Implement Integrated Stormwater Management, Low-Impact Development, Green Stormwater Infrastructure, and Other Nature-Based Solutions

Green infrastructure, in the form of rain gardens, bioswales, and other low-impact stormwater management tools support carbon sequestration and decrease the amount of impervious surface in the built environment. The soil in these structures filters rainwater to remove any bacteria and other pollutants present on roads and other hard surfaces, improving runoff water quality in the process.

These measures also can provide additional hydrologic storage in a watershed to reduce both the peak flow rates and volumes associated with urban runoff.

Estimated Annual Greenhouse Gas Benefits:

2,367,80.2 metric tons per installment

Expected Community Benefits:

Green Spaces and Community Beautification, Job Creation and Economic Development, Increased Safety; Improved Health and Well-Being; Increased Resiliency and Adaptability

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.94 metric tons per installment

VOCs: Unspecified

$PM_{2.5}$: 0.10 metric tons per installment

Key projects associated with this measure are:

Project: Provide Economic Rebates for Green Infrastructure and Water Efficient Landscaping

Rebates incentivize business owners to add green infrastructure to commercial properties. Property owners can anticipate a water use reduction through efficient landscaping, which reduces energy use at the water treatment plant level.

Project: Update Local Policy, Codes, Drainage Criteria and Ordinances

Updating local policy, codes, drainage criteria, and ordinances as necessary encourages wider adoption of nature-based solutions, resulting in reduced stormwater peaks and volumes, improved water quality, and associated green space benefits.

Project: Implement Bioswales and Other Organics Stormwater Collection Areas to Increase Local Storage

Implementing bioswales and other organic stormwater collection areas provides extra storage and treatment for runoff during extreme storm events. This project would also support urban heat island mitigation.

Project: Install Smart Controls and Sensors to Low Impact Developments and Green Infrastructure to Analyze and Quantify Stormwater Collection Efforts

Smart Controls and sensors for green infrastructure connect with existing irrigation systems to prevent overwatering and support the efficiency of rain capture. This reduces energy expenditure resulting from irrigation.

Project: Restore, Protect, and Maintain Riparian Corridor Ecosystems

Riparian areas are the margin of space that runs alongside rivers and streams where significant amounts of vegetation can be found. This vegetation slows stormwater runoff and provides filtration for pollutants that would otherwise enter the water body. Projects of this kind would also restore damaged and degraded ecosystems to their previously held function.

Other Available Funding:

Funding may be available through the Texas Water Development Board's Green Project Reserve. Entities submitting projects must be eligible for Clean Water State Revolving Funds. While partial loan forgiveness is potentially available for qualifying entities, all funding through the Texas Water Development Board requires a form of repayment.

Measure: Expand Contamination Detection and Pollution Prevention Measures

A key part of reducing GHG is preventing pollution before it enters the atmosphere. NCTCOG works with entities in possession of Municipal Storm Sewer System (MS4) permits to support their efforts related to illicit discharge detection and prevention. Activities under this measure would enhance field investigations to quickly cease contamination and increase response time.

Estimated Annual Greenhouse Gas Benefits:

Not Quantifiable

Expected Community Benefits:

Improved Health and Well-Being; local MS4 compliance

Estimated Annual Criteria Pollutant Reduction:

Not Quantifiable

Key project associated with this measure:

Project: Provide Discharge Detection and Sampling Kits for Illicit Discharge Detection and Elimination (IDDE) Investigations

This project would outfit IDDE field investigators with discharge detection kits to support increased sampling and provide quicker detection for pollution to MS4 facilities. Increased sampling can eliminate pollution in water bodies, through source identification and elimination, to prevent requiring a lengthy and energy-consumptive treatment processes.

Other Available Funding:
Local stormwater utility fees can be used to support these programs; Texas Water Development Board offers funding for sampling and analysis of contaminants, but repayment is required.

Measure: Update Stormwater and Wastewater Conveyance Infrastructure

Upgrades to conveyance infrastructure (pipes, storm drains, manhole covers, etc.) lessen the resources required to capture and convey stormwater runoff and wastewater. These updates reduce common operations and maintenance (O&M) challenges, such as sanitary sewer overflows, that can involve time-

consuming cleanups and be resource intensive. Using efficient practices in the construction of this infrastructure can also reduce energy consumption, eliminating GHG.

Estimated Annual Greenhouse Gas Benefits:

52.46 metric tons

Expected Community Benefits:

Improved Health and Well-Being; Water Conservation; Increased Resiliency and Adaptability

Estimated Annual Criteria Pollutant Reduction:

NO_X: N/A

VOCs: 0.38 metric tons

$PM_{2.5}$: N/A

Key projects associated with this measure are:

Project: Install Smart Manhole Covers

Smart manhole covers are remote field units that utilize sensors to detect leaks. This alerts utility technicians to potential sewer blockages/overflows before the contaminated water reaches lakes, rivers, and streams.

Project: Utilize Trenchless Pipe Rehabilitation

This project prioritizes using trenchless construction methods in pipe rehabilitation tasks. Using trenchless rehabilitation methods would limit the traffic impacts from construction and reduce waste when compared to remove and replace construction methods.

Other Available Funding:

Funding may be available through the Texas Water Development Board, U.S. Department of Housing and Urban Development, EPA/TCEQ/TWDB Clean Water Revolving Fund, and through US Department of Agriculture. Local budgets, utility fees, and Capital Improvement Bond Programs can also be used to finance appropriate infrastructure upgrades.

Measure: Increase Available Stormwater Detention Volumes

Developing areas with increased impervious cover, the increased occurrence in higher intensity and duration rainfall events, and condition of aging and undersized drainage infrastructure all require additional storage to prevent flooding across the watershed. Additional storage is required either by localized storage such as LID, Green Infrastructure, and nature-based solutions, or through implementation of larger engineered detention and retention basins.

Detention basins are typically wet or dry. Dry detention ponds can be used for multiple purposes such as parks or recreational fields; these facilities fill with excess runoff and then typically are drained within about 24 to 72 hours. Wet ponds, or retention ponds, maintain a normal maintenance pool, and include

additional storage for rain events; wet ponds with aeration can provide limited water quality improvement. There is an identified need to expand available stormwater detention capacity in several

Estimated Annual Greenhouse Gas Benefits:

Not Quantifiable

Expected Community Benefits:

Increased Safety; Improved Health and Well-Being; Increased Resiliency and Adaptability

Estimated Annual Criteria Pollutant Reduction:

Not Quantifiable

areas of the NCTCOG region to help address increased runoff with associated flood risks.

Key project associated with this measure:

Project: Augment Stormwater Detention Basin Storage

The construction and maintenance of stormwater detention basins supports flood management practices, especially in at-risk communities. Detention basins temporarily store water from heavy rainfall where it is then allowed to drain slowly over time through underground systems. The addition of this infrastructure would reduce local flood potential. These also save on land acreage used, as they are temporary and tend to be smaller than retention ponds.

Other Available Funding:
Funding may be available through the Texas Water Development Board, U.S. Department of Housing and Urban Development, FEMA, and the Texas Water Development Board through the FIF and SWIFT programs and through the U.S. Department of Agriculture. Local stormwater utility fees and/or Capital bond programs may also be used to implement stormwater infrastructure projects.

Program Area: Water and Wastewater Treatment Infrastructure

Currently, North Central Texas is serviced by six major utility providers, in addition to municipal water utility companies. NCTCOG collaborates with water and wastewater utility providers to assist in long-term water utility planning, including the continuous analysis and revision of treatment processes to support efficient and cost-effective productivity. These efforts seek to increase the longevity of treatment systems, while addressing new challenges present in the growing region. Existing related NCTCOG programs include:

- **Wastewater and Treatment Education Roundtable (WATER):** NCTCOG advocates for and supports efficient wastewater treatment by providing public education on the proper care of plumbing systems. Aiming to reduce potential damage to the region's household plumbing systems and wastewater treatment systems and decrease hazards to water quality, the Wastewater And Treatment Education Roundtable supports educational efforts related to the proper disposal of items such as wipes, paper towels, feminine hygiene and personal care products, medicines, household hazardous waste, and fats, oil, and grease (FOG). The program creates educational materials such as videos, social media, and print items to support the message of responsible plumbing practices. Those materials are available on the Defend Your Drains North Texas website

(www.defendyourdrainsnorthtexas.com). As part of this effort, WATER supports a regional FOG collection, the Holiday Grease Roundup, during the holidays through the Cease the Grease Program, which encourages residents to bring their grease and used cooking oils to collection sites where it is recycled into biodiesel or biogas.

- **Water Resources Council:** Since 1979, the Water Resources Council (WRC) has advised on technical and regulatory issues related to water quality and quantity. The WRC is made up of utility providers and public interest groups. The council provides guidance on all activities under the Water Quality Management Plan, a program funded through the EPA in response to Section 604(b) of the Clean Water Act. The program responds to water-related concerns within the North Central Texas region by hosting workshops and webinars quarterly on water issues in the region. Under this grant, NCTCOG also acts as the designated water quality planning agency for the North Central Texas region and is responsible for developing the Water Quality Management Plan (WQMP) and updating it annually. This plan helps to identify potential needs and priorities for improving water quality in the region. Every year, the WRC reviews and votes to approve the WQMP prior to submittal to TCEQ.

Measures under this program area include improvements to water and wastewater treatment procedures to increase energy efficiency and promote equipment longevity.

Measure: Improve Water and Wastewater Treatment Process Efficiency

The bulk of the region's GHG from the water sector come from the energy required to acquire and treat the regional water supply. This process involves the intake and extraction, conveyance, treatment, and distribution of water for potable and non-potable uses such as industrial operations, irrigation, and commercial and domestic uses. Revising this process to be more mindful of energy consumption will reduce emissions and support energy supply needs well into the future.

Estimated Annual Greenhouse Gas Benefits:

1639.27 metric tons per utility plant

Expected Community Benefits:

Increased Resiliency and Adaptability; Improved Health and Well-Being; Job Creation and Economic Development; Increased Awareness and Engagement

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.72 metric tons per utility plant

VOCs: 0.06 metric tons per utility plant

Key projects associated with this measure are:

Project: Develop and Implement a Strategic Energy Management and Conservation Plan for Water Utilities

Developing best management practices regarding efficient treatment demonstrates a plant's commitment to reducing GHGs in practice. These efforts could include the formulation of an on-site energy policy, participating in an energy audit, and establishing energy conservation and usage goals. These are accomplished through a thorough data and process analysis to identify strategies to achieve emissions reductions, establish key performance indicators, and publish annual reports.

Project: Update Aging Water/Wastewater Treatment Plant Infrastructure

As the region grows, demands placed on treatment equipment increases, wearing out aging systems faster. Water and wastewater treatment plants experiencing struggles due to aging infrastructure benefit from energy-efficient upgrades and retrofits such as new pumps, filtration systems, etc.

Project: Increase On-Site Renewable Energy into Wastewater Treatment Plant Site

Diversifying energy sources not only reduces emissions, it also lessens the demand on the state's energy grid. The installation of renewable energy resources at water and wastewater treatment plants supports the use of co-generation, combined heat & power, solar, hydroelectric, and wind energy in the treatment process.

Project: Pursue Energy-Efficient Disinfection Processes

Supporting energy-efficient disinfection processes, such as chlorination, reduces energy expenditures from biomass cookstoves and reduces the energy required to the disinfection stage of the water treatment process.

Project: Install Water-Source Heat Pumps at Water and Wastewater Treatment Plants

Heat pumps generally fall into one of three types of systems – air, water-source, or geothermal – and collect heat from the air, water, or land around it to provide heating and cooling. Utilizing water that is readily available in treatment plants to operate water-source heat pumps saves energy expenditure at the plant level.

Project: Support Bio-Gas Capture and Reuse in Wastewater Treatment Plants

Biogas is a byproduct of wastewater treatment after the biosolids have been separated out of the water being treated. Given the right infrastructure for capture and storage, this gas can be sold to a third party, or used on-site as an energy source. Effective capture of this gas can reduce the GHG emissions from wastewater treatment.

Other Available Funding:

Funding may be available through the Texas Water Development Board or U.S. Department of Agriculture, but repayment is required. Low-income communities with populations under 20,000 may seek funding through Communities Unlimited's Water and Wastewater Loan fund, but repayment is required. Additional funding may be available through the EPA Clean Water Revolving Fund, as administered by the Texas Water Development Board.

Program Area: Wastewater Infrastructure

Improving wastewater infrastructure requires a range of strategies that promote sustainable use of water resources, protect public health, and support economic growth. This typically includes wastewater

conveyance infrastructure, as discussed above, in addition to localized on-site sewage treatment facilities, ways of addressing bio-solids from treatment, and ways of supporting wastewater reuse. Existing related NCTCOG programs include the WATER Roundtable and Water Resources Council, described in preceding paragraphs.

Measures under this program area include addressing on-site sewage facility systems, improving biosolid management, and supporting effluent reuse.

Measure: Address On-Site Sewage Facility Systems

On-site sewage facility (OSSF) systems, often known as septic systems, store and treat wastewater at the site of generation before release. These systems, typically consisting of a tank and drain field, are generally found in rural areas and in locations without access to public wastewater infrastructure. In Texas, all OSSF systems installed after 1989 must be permitted by an authorized authority, under the direction of TCEQ. NCTCOG is working to develop a regional database that would display permitted and non-permitted systems within the region. OSSF systems that fail due to aging materials or improper maintenance release waste and pathogens into surface and groundwater, increasing the presence of nitrogen and other nutrients into the water supply.

Estimated Annual Greenhouse Gas Benefits:

0.0148 metric tons per system

Expected Community Benefits:

Improved Health and Well-Being; Increased Resiliency and Adaptability; Job Creation and Economic Development; Reduction in Bacteria-Related Discharges in Areas with Related Total Maximum Daily Loads

Estimated Annual Criteria Pollutant Reduction:

NO_X: <.01 metric tons per system

VOCs: 0.0087 metric tons per system

$PM_{2.5}$: <0.01 metric tons per system

Key projects associated with this measure are:

Project: Identify and Repair Aging On-Site Sewage Facility Systems

Often, Authorized Permitting Authorities do not have contact with existing OSSF systems until the system fails and contamination has already occurred. The project would provide Authorized Permitting Authorities with software upgrades to better track systems for more efficient and timely repairs.

Project: Provide Sanitary Sewage Upgrades in Developing Areas with Existing On-Site Sewage Facility Systems

Upgrading existing OSSF systems to connect with sanitary sewer systems will eliminate the problems of system failure and the subsequent pollution that follows the failure. This project invests in providing treatment to communities previously without public wastewater infrastructure.

Project: Provide Financial Rebates to Upgrade OSSF

This project provides homeowners with financial incentives to upgrade septic systems prior to a system failure. Repairs and system maintenance can be costly, especially in the rural LIDAC communities where these systems are present, and these rebates would reward homeowners for making timely and necessary repairs.

Other Available Funding:

Funding may be available through the U.S. Department of Agriculture's Decentralized Water Systems Grant Program, the U.S. Department of Agriculture's Water and Waste Disposal Loan and Grant Program, and the Texas Water Development Board's Rural Water Assistance Fund, but repayment is required.

Measure: Improve Biosolids Management

Biosolids management involves addressing the process residuals, that is discarding solids, or sewage, from wastewater during treatment to effectively manage the organic waste present from the in-flow to the treatment plant. While current quantification tools were not able to specify a methane reduction expected from enacting these measures, methane generation occurs during biosolid treatment. The correct management of this generation allows for appropriate methane capture before it is released into the atmosphere.

Estimated Annual Greenhouse Gas Benefits:

22.04 metric tons per utility capture

Expected Community Benefits:

Green Spaces and Community Beautification; Increased Resiliency and Adaptability; Improved Health and Well-Being

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.00001 metric tons per utility capture

VOCs: Unspecified

$PM_{2.5}$: 0.0001 metrics tons per utility capture

Key projects associated with this measure are:

Project: Divert Biosolids from Wastewater Treatment into Thermal Waste-to-Energy Facilities

Biosolids are the remnants of organic material left after domestic wastewater treatment. After removal from the water, biosolids transferred to waste-to-energy facilities can be digested via anaerobic digesters to create biogas, an energy source. This project explores implementing thermal

treatment processes, like gasification and pyrolysis, to effectively reduce the water portion of the biosolid, and create an inert residual that has less volume, and is less problematic for disposal. This effort would reduce GHG from treatment processes, and reduce biosolids waste volumes, but depending on the process used, may have high energy needs to support the process, and may not result in full air quality improvements for all constituents.

Project: Divert Biosolids from WWTP into Waste-to-Energy Facilities

Biosolids are the remnants of organic material left after domestic wastewater treatment. After removal from the water, biosolids are transferred to anaerobic digesters, or other go-generation processes to create biogas, a renewable energy source. This project would develop processes and necessary infrastructure for waste transfer, in addition to implementing additional anaerobic digestion and/or co-generation units to convert organic waste to energy.

Project: Update Biosolids Management from WWTP for Placement into Low-Carbon Soils to Sequester Carbon Through Landfarming

Due to their organic nature, biosolids are rich in nutrients such as nitrogen. Once separated out from treated wastewater, biosolids applied to soils, particularly soil in need of restoration, provide agricultural benefits, in addition to supporting domestic gardening and forestry. When used in reclamation sites, applied biosolids regenerate soil previously damaged by development and can prevent further erosion. We note recent concerns related to the potential for per- and polyfluoroalkyl substances (PFAS) in water treatment residuals, and evaluation of this risk will be required.

Other Available Funding:

Funding may be available through the Texas Water Development Board's Clean Water State Revolving fund and their Economically Distressed Areas Program, but repayment is required.

Measure: Support Effluent Reuse

Wastewater reuse is another effective strategy for improving wastewater management. Wastewater reuse involves using treated wastewater for beneficial purposes such as irrigation, industrial processes, or toilet flushing. In water-scarce regions, wastewater reuse is an essential source of water supply. Recycling and resource recovery from wastewater is another innovative strategy for improving wastewater management.

Effluent reuse occurs in two separate ways: direct and indirect. Direct effluent reuse is a process that allows for the reuse of treated water for non-potable purposes without first being discharged to waters of the state. Indirect reuse occurs when water is discharged first into a reservoir or stream to mix with ambient waters already present. While both options present vastly different requirements, they are both viable options to supporting regional water needs during dry months. Direct reuse, in particular, streamlines the process, reducing energy use along the way.

Estimated Annual Greenhouse Gas Benefits:

1,012.28 metric tons per utility

Expected Community Benefits:

Improved Health and Well-Being; Increased Resiliency and Adaptability; Water Conservation

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.46 metric tons per utility

VOCs: 0.02 metric tons per utility

$PM_{2.5}$: 0.05 metric tons per utility

Key projects associated with this measure are:

Project: Reduce Chemical Use Affecting Reuse Options

Water reuse practices allows treatment plants to engage in "fit-for-purpose" treatment,[68] a process that determines the use and destination of the water and treats it accordingly. Certain uses, such as industrial heating and cooling, irrigation, and certain agricultural practices, do not require as much chemical intervention as potable drinking water, saving on chemical and energy expenditure. Decrease the amount of energy/chemicals utilized at water treatment plants by upgrading and expanding the current reuse program, which distributes non-potable reclaimed water for irrigation and industrial processes.

Project: Implement Methods for Non-Potable Water Reuse

Effluent reuse programs involve retrofitting plants with conveyance infrastructure to reroute treated, non-potable water to its final destination. Fit-for-purpose treatment reduces energy consumed in the treatment process and invites plants to think intentionally about required energy use for non-potable water.

Other **Funding Available:**

Funding may be available through the Bureau of Reclamation's WaterSMART Water and Energy Efficiency Grant. Funding that requires repayment may be available through EPA's Water and Infrastructure Finance and Innovation Act Program.

Program Area: Water Resources

Water resources in Texas, and in the NCTCOG region, are increasingly vulnerable to changes in climate. Climate change will continue to cause profound changes in the hydrologic cycle, increasing the risk of flooding, drought, and degraded water supplies for both people and ecosystems. These impacts will disproportionately impact LIDAC communities. Climate change is intensifying rainfall and floods, deepening droughts, and shifting weather patterns causing profound effects on freshwater supplies and

[68] https://www.epa.gov/waterreuse/basic-information-about-water-reuse

quality. Shrinking rivers and declining groundwater threaten cities and rural communities and endanger forest, riverine, and other ecosystems across the United States.[69]

The above sections show the many ongoing efforts by NCTCOG towards effectively managing water resources in the NCTCOG region. This program area focusses on improving water conservation efforts.

Measure: Improve Local Water Conservation

While Texas continues to experience dry summers, water conservation strategies are especially crucial for NCTCOG's 16-county region, where population growth is projected to increase exponentially in the coming decades. The Texas Water Development Board is responsible for carrying out the state's regional water planning process and addressing water supply concerns in its State Water Plans. The Texas Water Development Board classifies most of the NCTCOG region under the Region C Planning group, with some counties existing in Regions G and D. NCTCOG hosts and collaborates with Region C water planners as they plan for the water supply needs in most of the counties in North Central Texas. Accessing water through storage and harvesting techniques would lessen the burden on water treatment facilities during the times of year when water is already in short supply. This, in turn, releases the energy expended to capture, treat, and distribute surface and ground water. Aside from storage, promoting smart use among utility customers helps bolster water conservation efforts.

Estimated Annual Greenhouse Gas Benefits:

217.72 metric tons per utility

Expected Community Benefits:

Increased Resiliency and Adaptability; Improved Health and Well-Being; Water Conservation; Reduced Costs; Increased Awareness and Engagement

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.04 metric tons per utility

VOCs: Not Quantifiable

$PM_{2.5}$: 0.009 metric tons per utility

Key projects associated with this measure are:

Project: Utilize Automated Metering Infrastructures (Water Meters)

Automated metering infrastructure allows the customer and utility to proactively locate continuous water usage, which indicates a potential leak, on the city and private side. This early detection saves energy on extraction and treatment.

[69] Water (globalchange.gov)

Project: Explore Aquifer Storage and Recovery (ASR)

In looking at options for long-term water supply, there is considerable interest in finding ways of storing water from wetter periods, for use in times of drought, and as a means for augmenting surface water drinking water supply.[70]

Aquifer storage and recovery (ASR) is the use of an aquifer to store water from a different source or location for later use. Aquifer recharge (AR) is the intentional recharge of an aquifer by injection well or other enhanced infiltration. The ability to use ASR or AR facilities depend on several factors, including: (1) a source of water to store or recharge, (2) an aquifer nearby that is physically able to store your desired volumes, and (3) capacity to treat the source water to ensure it is chemically compatible with the aquifer and does not degrade its quality. Sources of water to store may include surface water, groundwater, or reclaimed water and may only be available seasonally. Ideally, the candidate aquifer is nearby to reduce pipeline costs. The aquifer must be able to physically receive the volume of water to be stored. Different aquifers can receive different amounts of water and infrastructure will need to be designed to meet the physical capabilities of the aquifer. Water that is stored underground cannot degrade the native water in the aquifer. So, assessing chemical compatibility between the stored water and the aquifer— both the aquifer's water and the host rock— is necessary. Chemically incompatible water could cause clogging or liberate unwanted constituents, such as arsenic, iron, and manganese, into the water. Source water for an ASR or AR facility may need treatment to ensure compatibility with the aquifer and this pretreatment may increase project costs.

In 2020, the TWDB performed an inventory of ASR projects across the state, and portions of the western NCTCOG region were identified as having the physical aquifer conditions that may support consideration of this type of project.[71] The Tarrant Regional Water District (TRWD) is piloting this technology by drilling one full-scale demonstration ASR well and one monitoring well at the Trinity River Authority (TRA) water treatment plant in Fort Worth. The water that will be stored through the well will be treated, potable water. The process, thus far, from inception to pilot well has taken eight years. So, while an important option for consideration as the region faces increasingly limited water, there is a relatively long timeline associated with implementation.

The project includes providing funding to further explore Aquifer Storage and Recovery (ASR) projects, to establish redundant water supply, and as a potential storage option.

Project: Develop Aquifer Protection and Land Preservation Efforts

Aquifer protection increases water storage during times of drought and other lengthy dry conditions. Projects of this type establish protected land to be solely designated for aquifer storage. This land establishment supports Aquifer Storage and Recovery (ASR) projects, lessening the energy expenditure of treatment infrastructure.

[70] Texas Water Development Board information - Aquifer Storage and Recovery & Aquifer Recharge
[71] Texas Water Development Board. 2020. Statewide Survey of Aquifer Storage Suitability for Aquifer Storage and Recovery Projects or Aquifer Recharge Projects. Available at: 2000012405.pdf

Project: Implement Building-Scale Rainwater Harvesting for Commercial and Municipal Buildings

Like ASR, rainwater harvesting is a storage technique that captures water when it is in abundance to support future dry conditions. At the building level, this rainwater is collected in rain barrels, and above or below ground cisterns, for use in irrigation and other non-potable water uses.

Project: Establish Home Water Conservation Audits and Smart Water Meter Rebate Programs

Audit programs help utility customers assess their own water use and identify potential conservation opportunities. This increases customer education and engagement, while simultaneously helping to lower the energy needed to supply water to residents.

Project: Implement Municipal and Commercial Water Conservation Audits with Irrigation Repair Programs

Irrigation systems are infamous for water leaks through equipment issues that result in water system losses. This project implements irrigation system audit programs to help municipal and commercial system operators identify opportunities to conserve water by identifying equipment components that need repair. Opportunities for irrigation system conversion to non-potable, or cooling tower discharge for irrigation system makeup water should also be explored. The project can include contract opportunities for implementing irrigation system repairs. This can help reduce excess water use, and conceivably lower the energy needed to supply this water.

Other Funding Available:

Funding may be available through the Texas Water Development Board, U.S. Department of Housing and Urban Development, EPA/TCEQ/TWDB Clean Water Revolving Fund, and through the U.S. Department of Agriculture. Local budgets, utility fees, and Capital Improvement Bond Programs can also be used to finance appropriate infrastructure upgrades.

Materials Management (Solid Waste) Sector

NCTCOG and collaborating agencies have developed a list of measures to effectively address solid waste material management within North Texas. Programs within this area include recycling, composting, and augmenting existing waste collection, reduction, diversion, and disposal efforts. These measures will reduce GHGs and criteria pollutants.

The NCTCOG Materials Management Program works together with the RCC, cities, counties, school districts, and other entities to implement the Regional Solid Waste Management Plan[72] and to enact programs to address specific waste management issues. The Regional Solid Waste Management Plan that was adopted in August 2023 addresses emerging waste streams and evolving goals, while continuing to promote the reduction of waste and illegal dumping, the recycling and reuse of materials whenever possible, and the handling of waste safely at permitted facilities. Measures included in the PCAP reflect the recommendations of the RCC, and the current Regional Solid Waste Management Plan. Related current efforts include:

- **RCC:** Serves as the region's solid waste advisory committee, with the primary responsibility of advising NCTCOG on methods to conserve, recover, and recycle valuable resources and to provide proper handling and disposal of non-recoverable waste materials. The council also guides the

[72] https://www.nctcog.org/getmedia/4bfbf45a-2bd2-4222-ae30-b0840015b7a3/Final-RSWMP-11-18-2022_1.pdf

development of the current Regional Solid Waste Management Plan and advises on procurement and disbursement of available grant funding from the TCEQ.

- **Time to Recycle**: NCTCOG, with the RCC, launched its Regional Recycling Survey and Campaign in August 2018. The objective of this project is to better understand the quantity and quality of materials in communities' recycling systems, and to develop a regional public educational campaign focused on increasing recycling participation and decreasing contamination. The Recycle Roundtable Subcommittee oversees the *Know What To Throw* campaign activities through a regional collaborative effort to improve the quality of recycled materials and decrease contamination. The campaign utilizes social media to drive traffic to the Time to Recycle website (http://www.timetorecycle.com/) where users can explore the recycling drop-off locator map to identify recycling drop-off locations near them.
- **Report DFW Dumping:** Illegal dump sites are unsightly; they are a public health hazard and have great economic impact. Waste that is improperly disposed of is at risk for open burning, producing dioxin compounds. Additionally, illegally dumped hazardous waste, such as asbestos, threatens public health when these fibers are released into the air. NCTCOG addresses illegal dumping by monitoring the Report DFW Dumping hotline and website. NCTCOG also hosts workshops with the Texas Illegal Dumping Resource Center. These workshops educated code enforcement on preventing and eliminating illegal dumping in their jurisdiction.

Additional measures that are included in the Materials Management program area include expanding local compost opportunities, diverting construction and demolition debris, upgrading waste disposal facilities, implementing recycling and transfer facilities, and improving waste collection.

Appendix 13: DFW AQIP-Materials Management (Solid Waste) Measures contains a full list of measures and projects, feedback received from surveys described in **Section 1: Regional Engagement**, and information on air quality and community benefits.

Measure: Expand Local Compost Opportunities to Reduce Organic Disposal

Organic waste forms about 27 percent of the waste stream going to area landfills and comprises a key component driving methane generation from these facilities. There are at least 27 composting/ mulching facilities identified in the region, across Collin, Dallas, Denton, Erath, and Tarrant counties, including large-scale commercial composters, municipal composting and mulching programs, and composting operations that are co-located at landfills. However, 2021 data from TCEQ indicates that composting/mulching facilities in the region recovered an estimated 1.5 million tons of organics from residential and commercial sources, or less than 1 percent of this waste stream. Expanding local compost opportunities through concierge residential services, restaurant, and special events food diversion, working with multi-family facilities to support compost options, and expanding regional compost facilities should result in a significant increase in organics diversion, with resultant drops in GHG, and priority pollutants associated with this waste stream.

Estimated Annual Greenhouse Gas Benefits:

91,371 metric tons depending on level of deployment

Expected Community Benefits:

Improved Health and Well-Being; Increased Resiliency and Adaptability; Increased Awareness and Understanding; Limited Impacts in Other Areas (See Appendix 13).

Annual Criteria Pollutant Reduction:

NO_X: Negligible

VOCs: Negligible

$PM_{2.5}$: Negligible

Key projects associated with this measure are:

Project: Implement Concierge-Type Residential Organics Pickup with Diversion to Commercial Compost Operations

Several cities in the region currently offer commercial food waste diversion, residential valet, or concierge organic pick-up programs, and subscription-based residential food scrap composting programs for their residents. Because organic materials form about 46 percent of the residential waste stream, it may make sense to expand this program within the region. Funding would support third party contracts for residents of the participating cities to pick up organics (food waste, yard waste, and storm debris). The proposed program can also include food waste collection sites throughout the region, where participants can drop off food waste for collection and composting by a selected service provider.

Project: Incentivize Multifamily Residential Developers to Incorporate Space for Community Compost and Recycling

Over 50 percent of the regions' residents reside in multifamily homes and some, but not all, facilities offer recycling and compost options. Providing compost and recycling services to multifamily facilities expands the potential to more fully capture this waste stream and helps to ensure equitable access to these services. Funding would be used to incentivize multifamily developers to provide space in their facilities to support greater recycling and composting by residents, including the above residential organics pickup options.

Project: Develop Regional Compost Facilities to Support Organic Diversion from Landfills

While there is strong public support for measures related to greater implementation of organics diversion and composting, a very small percentage of these materials is currently captured. Implementing regional compost facilities would reduce landfill GHG from organic waste streams and the GHG and priority pollutants associated with their haul. Funding would be used to implement and

expand existing and new compost facilities. End-product use and marketing can also be explored relative to commercial and other uses.

Other Available Funding:

Funding may be available through EPA Solid Waste Grants, as administered through TCEQ; projects may qualify for public-private partnership; other funding may include establishment of a Special Waste District or use of General Obligation or Revenue-Based Capital Improvement bonds. Green Bank low-interest loans may also be available to support this type of project.

Measure: Divert Organic Waste into Waste-to-Energy Systems

Organic waste forms about 27 percent of the waste stream going to area landfills and comprises a key component driving methane generation from these facilities. There are at least 27 composting/ mulching facilities identified in the region across Collin, Dallas, Denton, Erath, and Tarrant counties, including large-scale commercial composters, municipal composting and mulching programs, and composting operations that are co-located at landfills. The EPA food waste pyramid prioritizes diversion to people, then animals, then energy generation, with composting as the last resource. While there are several active food waste gleaning operations, in recognition that not all waste is suitable for humans or animals, a recent study by the University of Texas at Arlington assessed feasibility of diverting organic waste to anaerobic digestion, as a waste-to-energy opportunity.[73]

Estimated Annual Greenhouse Gas Benefits:

Approximately 85,052.84 metric tons depending on level of deployment

Expected Community Benefits:

Increased Resiliency and Adaptability; Job Creation and Economic Development, Other Benefits in Appendix 13

Estimated Annual Criteria Pollutant Reduction:

NO_X: Negligible

VOCs: Negligible

$PM_{2.5}$: Negligible

Project: Implement Organic Waste to Energy Through Anaerobic Digestion

This project basically entails implementing the process piloted in the UTA Fuel to Energy study of identifying areas with high waste density (multiple restaurants or other food sources), arranging to collect that waste on a regular basis, and deliver to one or more wastewater treatment plants as part of the feed stock. Process adjustments may be required. Funding would support third-party contracts

[73] (Sattler. 2022. https://www.nctcog.org/getmedia/1dff458f-1b49-4e3c-b8a2-58760589b601/North-Central-Texas-Organic-Waste-to-Fuel-Feasibility-Study.pdf

for the participating cities, to pick up commercial food waste. Alternatively, the proposed program can also include food waste collection sites throughout the region, where participants can drop off food waste for collection and delivery to the wastewater treatment facility by a selected service provider.

Other Available Funding:

Funding may be available through EPA Solid Waste Grants, as administered through TCEQ; other funding may be available from the U.S. Department of Energy; projects may qualify for public-private partnership; other funding may include establishment of a Special Waste District or use of General Obligation or Revenue-Based Capital Improvement bonds. Green Bank low-interest loans may also be available to support this type of project.

Measure: Divert Construction and Demolition Debris (C&D)

There is one construction and demolition debris (C&D) recycling facility in the region (Champion Waste & Recycling's Town & Country Recycling facility in Celina), which opened in 2015 as a single-stream construction MRF in North Texas. The facility separates construction material using a combination of processing equipment and sorting labor. Materials recycled throughout the process include cardboard, wood, concrete, metal, plastics, wallboard, paper, and aluminum. In addition to the C&D MRF, there are several material-specific processors throughout the region processing materials such as concrete/ aggregate and scrap metal. Disposal facilities in the region may manually sort mixed C&D loads to divert high-value materials such as scrap metal. The exact number of material-specific C&D recycling facilities in the region is unknown. Based on available data, in 2021, C&D recycling facilities recovered at least 1,110,000 tons of recyclables. Projects to help divert a greater percentage of inert C&D materials are measures to expand regional C&D material recycling sites, partner with construction companies to adopt low-waste construction techniques and adopt construction specifications to prioritize deconstruction and salvage over demolition practices, where feasible.

Estimated Annual Greenhouse Gas Benefits:

Negligible

Expected Community Benefits:

Increased Resiliency and Adaptability; Job Creation and Economic Development, Other Benefits in Appendix 13

Estimated Annual Criteria Pollutant Reduction:

NO_X: Anticipated, but not quantifiable

VOCs: Anticipated, but not quantifiable

$PM_{2.5}$: Anticipated, but not quantifiable

Key projects associated with this measure are:

Project: Expand Regional Construction Material Recycling Efforts

While several regional C&D efforts are in planning, thus far, there has not been sufficient funding identified to allow implementation. Expansion is anticipated to extend landfill life and help support more sustainable construction practices in the region. Funding would be used to expand the number and capacity of C&D recycling facilities to encourage greater diversion of this waste stream from the local landfills.

Project: Partner with Construction Companies that Prioritize Low-Waste Techniques into Their Projects

With the rise in local commercial and municipal commitments around net-zero carbon construction, there are related project requirements to increase the reuse of recycled materials, and to reduce ancillary construction waste. This project includes partnering with local construction companies and trade associations, such as contractors' associations, to prioritize low-waste construction techniques. The effort consists of accelerating acceptance of low-waste construction techniques through education, incentives, and partnerships, and continuing to pursue zero-landfill waste practices for all construction projects.

Project: Adopt Contract Requirements to Prioritize Deconstruction Methods Over Demolition Practices Where Feasible

With the rise in local commercial and municipal commitments around net-zero carbon construction, there are related project requirements to increase the reuse of recycled materials, and to reduce ancillary construction waste. This project includes developing and incorporating contract requirements to prioritize deconstruction methods over traditional demotion processes. While deconstruction may be more costly due to the time requirements to salvage materials; this process does result in a greater percentage of the materials being reused. The NCTCOG Public Works Council (PWC) provides continuing advice regarding the regionally adopted Public Works Construction Standards – North Central Texas, as well as such issues as managing right-of-way, regional pavement design guidance, and identifying subregional issues. The Construction Standards Subcommittee of the PWC Council and the Regional Codes Coordinating Committee may help implement this project.

Other Available Funding:

Funding may be available through EPA Solid Waste Grants, as administered through TCEQ; projects may qualify for public-private partnership; other funding may include establishment of a Special Waste District or use of General Obligation or Revenue-Based Capital Improvement bonds. Green Bank low-interest loans may also be available to support this type of project.

Measure: Upgrade Waste Disposal Facilities

Municipal Solid Waste (MSW) landfills in Texas are classified as either Type I or Type IV facilities: a Type I landfill can accept a range of putrescible (organic waste that decomposes) and non-putrescible wastes, including typical household and commercial wastes, brush, C&D, nonhazardous industrial solid waste, and other wastes (e.g., wastewater treatment plant sludge, special waste). A Type IV landfill only accepts brush, C&D debris, and other similar non-household or non-putrescible waste. There are presently 18

active Type I landfills (landfills that accept all types of MSW, including C&D materials and special waste) in the North Central Texas region, located among Collin, Dallas, Denton, Ellis, Johnson, Navarro, Parker, and Tarrant counties. An estimated 11 million tons of solid waste was disposed in Type I landfills in the region in 2020, and there is an estimated 377 million cubic yards of capacity remaining at these sites. This provides a remaining landfill life of about 27 years for the region (from 2020, so about 23 years from 2024). Given the typical time needed to appropriately site, design, permit, and construct MSW disposal facilities, time is of the essence. Additionally, a properly designed, state-of-the-art disposal facility can effectively operate as an in-situ bioreactor, allowing for material decomposition to enhance longevity of the facility, in addition to enhanced ability to collect and use the related landfill gases as renewable energy. Siting of any new facility will need to consider and effectively address the potential for LIDAC community impacts, however, there is also the potential to create local jobs.

Estimated Annual Greenhouse Gas Benefits:

122,992 metric tons depending on the level of deployment

Expected Community Benefits:

Improved Health and Well-Being; Increased Resiliency and Adaptability; Job Creation and Economic Development; Increased Awareness and Understanding, Other Benefits in Appendix 13

Annual Criteria Pollutant Reduction:

NO_X: Anticipated, but not quantifiable at this time.

VOCs: Anticipated, but not quantifiable at this time.

$PM_{2.5}$: Anticipated, but not quantifiable at this time.

Project: Implement Western Region Resource Management Center

While the North Central Texas region is experiencing disposal challenges as landfills in the region reach capacity and close, this challenge is more pronounced in the western region. The western region has an estimated 15 years of remaining capacity, with two major landfills having less than 10-year effective capacity.

NCTCOG, in coordination with the RCC, initiated the Western Region Solid Waste Capacity Study[74] in July 2020 and completed it in July 2021. The study's objective was to gain a better understanding of the long-term solid waste management needs in the western eight counties of the North Central Texas region, which consists of Erath, Hood, Johnson, Palo Pinto, Parker, Somervell, Tarrant, and Wise (hereafter referred to as the western region) and to determine potential opportunities to address future landfill capacity challenges.

[74] NCTCOG.2021. https://www.nctcog.org/getmedia/7beb5bef-f78e-451e-9748-ac7b880b1d2a/Alternatives-Analysis-FINAL-9-8-21.pdf

The eight-county western region generates approximately three million tons of municipal solid waste (MSW) per year. For the period from 2022 to 2042, an estimated 69.6 million tons of waste are projected to be generated if waste generation rates remain constant and the region grows in population as anticipated. This waste is processed at one of 24 recycling facilities or 13 mulch/compost facilities or landfilled at one of the five MSW or two C&D landfills. The five MSW landfills in the region have approximately 63 million tons, or 15 to 20 years, of remaining capacity. Most of this available capacity is at the Arlington Landfill in the extreme eastern part of the western region.[75]

Based on the study's results, NCTCOG has undertaken steps to establish a Western Region Solid Waste Management Authority (WRSWMA) and coordinate efforts to establish needed disposal capacity in the region. A Policy Advisory Group (PAG), which includes representatives of communities in the six western-most counties in the region, meets to determine how to move forward with recommendations from the Western Region Study.[76]

The Western Region Resource Management Center (WRRMC) is designed to provide NCTCOG's western region with critically needed solid waste management infrastructure that provides lasting environmental benefits and GHG mitigation. The WRRMC is specifically designed to provide local governments and businesses in the western region with (1) options to recover materials, including recyclables, construction debris, and organics; (2) provide the private sector with resources to develop emerging technologies designed to reduce waste; and (3) options for better managing waste generated. This project would provide a template for similar facilities in other locations.

Implementing the Western Regional Material Resource Management Center (WRMRMC) is the strong recommendation of this work group. This project includes siting, planning, design, permitting, and construction of a comprehensive material resource (waste) management facility to serve the needs of the rapidly developing western areas of the NCTCOG region. The project would incorporate compost operations, recycling, C&D diversion, and state-of-the-art disposal infrastructure that is designed to reduce wind-blown debris, as well as GHG emissions. GHG emissions and priority pollutants associated with cross-regional hauling to existing landfills will also be reduced through project implementation. Siting of any new facility will need to consider and effectively mitigate the potential for LIDAC community impacts, however, this project carries the strong potential for local job creation.

<u>Project: Implement Landfill Gas Collection and Management Systems</u>

There are presently several landfill gas-to-energy (LFGTE) projects at 10 landfills in the region, located among Collin, Dallas, Denton, Ellis, Johnson, and Tarrant counties. Half of these projects produce high-British thermal unit (BTU) Renewable Natural Gas (RNG) for distribution off-site and half are power generation electric. Based on data from the TCEQ MSW Annual Reports and the USEPA Greenhouse Gas Reporting Program, these projects result in more than half of the landfill gas collected in the region going to beneficial use through resource recovery (RSWMP, 2023). In 2021, resource recovery activities produced 255 gigawatt-hours of electricity for sale to the grid (Regional Solid Waste Management Plan Volume II Attachments, North Central Texas Council of Governments,

[75] https://www.nctcog.org/getmedia/3cd0d323-1983-436d-940b-4aabc2247c3a/Final-Matrix.pdf
[76] https://www.nctcog.org/getmedia/7beb5bef-f78e-451e-9748-ac7b880b1d2a/Alternatives-Analysis-FINAL-9-8-21.pdf

80 Burns & McDonnell). However, during development of the PCAP, several local municipalities have indicated the need to upgrade or augment existing systems, and the desire to install new systems in other landfills. The project includes implementation of new equipment, and/or upgrading existing equipment to optimize GHG diversion and reuse as renewable energy and to reduce the practice of GHG flaring.

Project: Utilize Efficient Landfill Seals and Cover

Landfill design, including performance-based seals and covers, are developed by professional engineers with waste management expertise, approved for this intended use by the permitting process through TCEQ, and installed by contractors, and municipal staff. Using efficient landfill seals and covers can help to prevent runoff from the landfill from entering the local environment, including sensitive water systems. Related issues may require appropriate permit compliance assistance.

Project: Consider Buffers and More Appropriate Zoning for Landfills Near Residential Areas

This project relates to implementing deed restrictions, or zoning changes, in areas zoned for industrial or landfill use near residential areas. Explore buffers to extend a safe distance from landfills and other toxic waste sites, particularly those near residential land uses. Implement organic or structural exposure reduction measures to reduce residential exposure. Consider implementing vegetative screening, berms, open green space, and other measures to mitigate potential human health exposures in areas with existing pollutant burden. This is an environmental justice concern for residents in areas impacted by existing landfills, and for strong consideration in the design of new facilities.

Other Available Funding:

Funding may be available through EPA Solid Waste Grants, as administered through TCEQ; projects may qualify for public-private partnership; tipping fees from landfills may help defray overall costs; other funding may include establishment of a Special Waste District, or use of General Obligation or Revenue-Based Capital Improvement bonds. Green Bank low-interest loans may also be available to support this type of project.

Measure: Implement Recycling and Transfer Facilities

In 2021, resource recovery activities in the region resulted in an estimated total of 4.1 million tons of recycling (including single-stream, organics, C&D, tires, HHW, industrial, and other materials) equivalent to an approximate 27 percent recycling rate. (Regional Solid Waste Management Plan Volume II Attachments, North Central Texas Council of Governments, 80 Burns & McDonnell). There are 11 active MRFs in the North Central Texas region within Collin, Dallas, Denton, and Tarrant counties. Across the North Central Texas region, there is a reported total of nearly 600,000 tons per year of MRF processing capacity currently installed. In 2021, MRFs in the region recovered an estimated 493,000 tons of single-stream recycling.

However, while the North Central Texas region includes an extensive network of many sophisticated facilities, the RSWMP concluded that the facilities overall are inadequate based on the changing landscape of solid waste management and resource recovery in the region. Additionally, as the population and economic activity continue to grow, coupled with increasing demand for diversion

programs, there will be an increased need going forward for all the related recycling facility types. The continued population growth of the region will further strain the materials management infrastructure and facilities in the region, including MRFs and organics processing facilities (e.g., composting/mulching facilities). The majority of MRFs currently operating in the region are at or near capacity, meaning there is significantly more material potentially available for processing from both residential and commercial sources than there is processing capacity. Increases in recycling participation (through expanded access in rural areas of the region and/or increased capture of material from established or new programs) could quickly exceed existing capacity. Further, the level of technology installed at MRFs in the region varies. While several of the MRFs have "state of the art" processing equipment, there are a few facilities that have older, less technologically advanced processing systems.

Measures to implement recycling and transfer facilities, including upgrading existing facilities to optimize load weights, constructing additional new recycling centers in the region, and constructing bulking transfer stations at existing landfills, are being included. These measures are anticipated to help reduce VMT by waste haulers, thus improving both GHG and priority pollutants and improve local waste management operational efficiency.

Estimated Annual Greenhouse Gas Benefits:

N/A

Expected Community Benefits:

Improved Health and Well-Being; Increased Resiliency and Adaptability; Other Benefits Detailed in Appendix 13

Estimated Annual Criteria Pollutant Reduction:

NO_X: Negligible

VOCs: Negligible

$PM_{2.5}$: Anticipated, but not quantifiable at this time.

Key projects associated with this measure are:

<u>Project: Upgrade Existing Facilities to Optimize Load Weights</u>

This project proposes operational improvements at existing transfer stations to optimize the time required for loading and unloading operations (along with truck emissions associated with idling during these efforts). Efforts to renovate existing transfer stations to re-configure them to better accommodate current equipment will help with operational station efficiency. This measure extends the useful life of existing transfer stations to reflect current and future loading and capacity needs.

Project: Construct Additional Recycling Centers in the Region

This project proposes constructing additional regional recycling centers to meet the area's existing and future needs. This measure is important towards meeting regional waste diversion goals, extending landfill life, and the publics' desire to increase recycling options. While curbside recycling is available in some urban areas within the region, it is not universally available everywhere. Some residents travel more than 30 minutes to the closest recycling center. Providing more convenient recycling options can increase area diversion rates and reduce GHG emissions associated with residential haul to recycle.

Project: Construct Bulking Transfer Station at Landfills

This project enhances daily landfill operations by constructing a bulking station at the landfill entrance to bulk waste, thus optimizing trips from the entrance to the landfill face. It is estimated that, depending on average daily loading, this could reduce round trips by 2.5 to 3 times the current rate at some landfills. This operational element can reduce VMT at the landfill and thus reduce related GHG emissions and priority pollutants from the equipment.

Other Available Funding:

Funding may be available through EPA Solid Waste Grants, as administered through TCEQ; projects may qualify for public-private partnership; other funding may include establishment of a Special Waste District or use of General Obligation or Revenue-Based Capital Improvement bonds. Green Bank low-interest loans may also be available to support this type of project.

Measure: Improve Waste Collection

Waste collection is currently one of the most important, most challenging, and most maligned services in the region, with both municipalities and private vendors providing this service. Equipment, and form-based development codes make physical access by the equipment challenging. Projects to help improve efficiency in waste collection include expanding waste collection to multifamily facilities, implementing local policy to encourage effective route planning, and converting waste trucks to lower-emission vehicles.

Estimated Annual Greenhouse Gas Benefits:

1,500 metric tons depending on level of deployment

Expected Community Benefits:

Improved Health and Well-Being; Increased Resiliency and Adaptability; Job Creation and Economic Development; Increased Awareness and Understanding, Other Benefits in Appendix 13

Estimated Annual Criteria Pollutant Reduction:

NO_X: Anticipated, but not quantifiable at this time.

VOCs: Anticipated, but not quantifiable at this time.

$PM_{2.5}$: Anticipated, but not quantifiable at this time.

Key projects associated with this measure are:

Project: Expand Waste Diversion Collection Networks to Support Multifamily Dwellings

Over 50 percent of the regions' residents reside in multifamily homes and some, but not all, facilities offer recycling and compost options. Providing compost and recycling services to multifamily facilities expands the potential to more fully capture this waste stream and helps to ensure equitable access to these services. Funding would be used to incentivize local waste management programs to extend services to multifamily facilities to support greater recycling and composting by residents.

Project: Implement Local Policy to Require Trip Planning to Reduce VMT from Waste-Hauling Processes

One of the challenges faced by many communities is that of providing timely efficient waste collection while juggling equipment, barriers to access, and other challenges. Many provide multiple trips per week to address solid waste, recycling and bulky items, and yard waste set-out. Enacting local policy to require trip planning by public and private haulers can support reduced VMT, thus reducing associated GHG emissions and priority pollutants from these processes. Trip planning may entail fewer routes, more efficient routes, and potential reduced route frequency as appropriate. This is a local policy decision that, if properly implemented, may save on fuel costs and VMT – but will require careful collaboration with stakeholders.

Project: Convert Waste Trucks to Lower-Emission Vehicles

This project would use grants from TCEQ's Texas Emission Reduction Program, or similar programs, to purchase lower-emission waste hauling vehicles and replace existing waste trucks with lower-emission vehicles like those using RNG. Note that this project, and associated emission reductions, is included under a Transportation Measure for "Clean Vehicle & Equipment Program."

Other Available Funding:

Funding may be available through EPA Solid Waste Grants, as administered through TCEQ; projects may qualify for public-private partnership; other funding may include establishment of a Special

Waste District or use of General Obligation or Revenue-based Capital Improvement bonds. Some improvements may be possible to implement using local budget outlays. Green Bank low-interest loans may also be available to support this type of project.

Agriculture, Forestry, and Land Use ("AGFOLU") Sectors

The benefits of conserving, preserving, protecting, and expanding our natural world are increasingly recognized as critical to local resilience, supporting a wealth of ecologically important services to the region. NCTCOG and collaborating agencies have developed this list of measures to comprehensively improve Agriculture, Forestry, and Green Space Land-Use sectors in North Central Texas as an important way of effectively increasing green space, local food production, and residuals management associated with agriculture, and the air quality improvements, public health benefits, flood-pulse reduction, heat island reduction, and carbon sequestration through trees, native grasses, and other green space elements associated within these sectors. Ancillary measures around park acquisition and maintenance and related codes and zoning are also included. These measures will reduce both GHGs and criteria pollutants, primarily through ongoing carbon sequestration within the more natural environment.

Implementing the measures in this section is very much a multi-disciplinary effort that incorporates efforts within the Water Resources Council, Natural Resources Program, Public Works Council, Regional Codes Coordinating Council, and Center for Development Excellence program areas at NCTCOG (in addition to the previously mentioned sustainability measures included in transportation programs).

- **WRC:** As described above, the WRC advises on both technical and policy issues related to water resources matters. The WRC also oversees the Texas Water Development Board water resources and flood management planning processes, and performs technical review of water-related grant applications. Two recent efforts include the Water Quality Management Grant that supports NCTCOG efforts around water quality compliance, including local coordination around urban forestry efforts, and the Region 3 Flood Management Program Grants that include a project to allow comprehensive green space planning in Region 3 that covers North Texas.
- **Center for Development Excellence:** NCTCOG, together with private and public partners, works to help create a sustainable North Texas that is recognized nationwide as a center of development excellence. The Center for Development Excellence is for North Texas to be a region where residents, businesses, and visitors enjoy a built environment that creates a true sense of place; uses water, energy, and environmental resources effectively and efficiently; protects a diversity of habitats; reduces vehicle miles traveled; and supports public health and quality of life.
- **Public Works Council:** PWC supports the region on a wide range of local public works issues. For example, the PWC provides continuing advice regarding the Public Works Construction Standards – North Central Texas, as well as such issues as managing right-of-way, comprehensive and consistent stormwater management through iSWM, and implementing regional pavement design guidance, as well as other identified subregional issues. Two PWC subcommittees are actively involved with measures in this section of the plan:
    - **Sustainable Public Rights-of-Way (SPROW)**: This PWC subcommittee supports efforts around sustainability issues associated with public works infrastructure. The goals of the program are to compile best practices for sustainable public rights-of-way, review real examples of best practices within the region, and share them. The goals of SPROW are to improve infrastructure within public rights-of-way, including, but not limited to:
        - Promote multimodal forms of transportation.
        - Improve air and water quality.

        - Provide walkable communities.
        - Provide safer and healthier neighborhoods, improving quality of life.
        - Improve infrastructure life cycle and performance.
        - Streamline construction.
        - Ensure regulatory compliance.
        - Promote economic development.
        - Promote integration of rights-of-way and surrounding land use.
        - Promote context-sensitive design.
        - Balance environmental, scenic, aesthetic, cultural, and natural resources, with community and transportation needs.
    - **Integrated Stormwater Management:** As described above, the iSWM Program (https://www.nctcog.org/envir/public-works/iswm) is a cooperative initiative aimed at developing guidelines for more sustainable construction and development to guide cities and counties to achieve goals of water quality protection, streambank protection, and flood mitigation. This program has been supporting implementation of low-impact design and nature-based solutions in the NCTCOG region for over 15 years.
- **Regional Implementation of Sustainability Efforts Coalition (RISE):** As described above, the RISE Coalition continues to coordinate and collaborate around shared sustainability goals such as completing the initial regional GHG Emissions Inventory that forms the basis of this plan.
- **Regional Codes Coordinating Council (RCCC):** The **Regional Codes Coordinating Committee** has been in place since 1967 and provides ongoing expertise relating to building construction and the standardization of regional building codes. Code-related efforts include regular review and update to the Building and Residential, Electrical, Energy and Green Construction, Fire, and Plumbing and Mechanical codes. Several codes and ordinances have been identified in this PCAP that may require review and input from the RCCC.

These sectors also invoke enormous current interest from the public, governmental agencies, non-governmental organizations, educational institutions, and numerous private trusts, businesses, and foundations. NCTCOG anticipates building upon and continuing to collaborate with recent and related efforts by the Trust for Public Lands, The Nature Conservancy, The Texas Trees Foundation, Constellation Project, Dallas Innercity Growers (DIGS), and many others.

- **Trust for Public Land:** The local office of the Trust for Public Land has been working with several cities in the region to implement green space under an equity lens, so that a higher percentage of all residents have a park, trail, or green space within one-half mile of their home. The TPL project along Five Mile Creek Greenbelt,[77] in particular, includes riparian restoration, park development, 17 miles of trail in an area with limited recreation, and green space preservation, showing how it is possible to connect communities. The Smart Cities Decision Tool[78] provides insights on where additional green space can be used to reduce heat island impacts, provide additional hydrologic storage, and connect communities. TPL worked with Fort Worth to identify a Conservation Plan[79] to preserve critical green space. Additionally, they have developed a park score [80] for most major cities in Texas that can be used to identify optimal park space moving forward.

[77] https://www.tpl.org/our-work/five-mile-creek-greenbelt
[78] https://web.tplgis.org/Smart_Growth_Dallas/
[79] https://www.fortworthtexas.gov/departments/tpw/stormwater/open-space
[80] https://www.tpl.org/parkscore/rankings

- **The Nature Conservancy:** The Nature Conservancy (TNC) has been working with NCTCOG for several years in support of greater adoption of nature-based solutions such as iSWM, and Low Impact Development (LID) projects. TNC was a partner with TPL on the Five Mile Creek Project and others. A recent effort included storm system modelling to demonstrate to local officials that Green Stormwater Infrastructure[81] could effectively augment grey to ameliorate local flooding from the increased rainfall intensities due to climate change. Lastly, they are currently working under contract with the Texas Water Development Board,[82] along with Freese & Nichols, to develop a set of standards to guide nature-based solution implementation in Texas.
- **Texas Trees Foundation:** The Texas Trees Foundation has also been actively working throughout the region to advance a cooler, greener landscape in North Texas. Efforts include, but are not limited to, the Dallas Heat Island Study;[83] efforts to transform the Southwest Medical District;[84]the Cool Schools Program;[85] the Dallas Tree Equity;[86] and mapping efforts and Urban Forest Master Plans for the cities of Argyle,[87] Dallas,[88] Denton,[89] Fort Worth,[90] Mesquite,[91] and Rowlett.[92] Additional Forest Plans have been developed for the University of North Texas (UNT), Southern Methodist University (SMU), and Abilene Christian University campuses. Lastly, considering pending compliance concerns around particulate pollution, the Particulate Matter Filtration by Urban Vegetation Study[93] demonstrates how vegetation can help mitigate related public health concerns.
- **Constellation of Living Memorials Project**: The Constellation of Living Memorials[94] project is a 5013(c) nonprofit that is working with community members to revive historic and forgotten cemeteries by removing invasive non-native vegetation and re-wilding with native plants to create wildlife havens and conserve these historic properties at the same time. They are completing a pilot project with eight cemeteries in Dallas and hope to expand the program regionally to other historic cemeteries.
- **Dallas Inner-city Growers (D.I.G.S.):** The Dallas Inner-City Growers[95] is a public-private organization that is convened to coordinate area implementation of the efforts under the City of Dallas Comprehensive Urban Agriculture Plan.[96] This plan includes documentation of optimal growing sites in Dallas that may be considered for agricultural uses.

Appendix 14: DFW AQIP-Agriculture, Forestry, and Land-Use ("AGFOLU") Measures contains a full list of measures and projects, feedback received from surveys described in **Section 1: Regional Engagement**, and information on air quality and community benefits.

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[81] https://www.nature.org/content/dam/tnc/nature/en/documents/GSIanalysisREVFINAL.pdf?vu=dallasgsi
[82] https://www.twdb.texas.gov/flood/research/Nature-based-Solutions-2022/index.asp
[83] https://texastrees.org/urban-heat-island-management-study/
[84] https://www.texastrees.org/wp-content/uploads/2019/07/SWMD-Final-Project-Book-2016.pdf
[85] https://texastrees.org/cool-schools/
[86] https://texastrees.org/dallas-tree-equity-planting-map/
[87] https://www.texastrees.org/wp-content/uploads/2019/07/Argyle-Report_Final-1.pdf
[88] https://www.texastrees.org/wp-content/uploads/2021/07/TTF_UFMP2020_05-30-21_MECHANICAL_spreads.pdf
[89] https://www.texastrees.org/wp-content/uploads/2019/07/2016-State-of-the-Denton-Urban-Forest.pdf
[90] https://texastrees.org/fortworthufmp/
[91] https://www.texastrees.org/wp-content/uploads/2019/07/2012-Mesquite-Eco-Study.pdf
[92] https://www.texastrees.org/wp-content/uploads/2019/07/2018-Rowlett-Eco-Report.pdf
[93] https://texastrees.wpengine.com/wp-content/uploads/2023/05/Texas-Trees-Report_02Mar2023-1-1.pdf
[94] https://www.constellationoflivingmemorials.org/
[95] https://digsummit.org/
[96] https://www.dallasclimateaction.com/_files/ugd/349b65_f635d04a85974466bc9b7f5e281cf896.pdf

Program areas under the "AGFOLU" Sector include Green Space/Land Use, Forestry, Agriculture, and Regional Codes.

Program Area: Green Space and Land Use

As the DFW region develops, available green space becomes a premium, particularly when faced with competing local concerns of drainage, parks, local agriculture, economic development, and housing. There is a prevailing mindset that there is "developed" and "vacant land" that is yet to be developed. As more communities struggle with the costs of and need for additional drainage infrastructure required to offset the increased runoff from that development, there is a greater understanding that more green space needs to be preserved to slow the increased urban flood response and make the community more resilient to flooding. Moving forward, there is a strong need for effective land use planning, particularly as it relates to strategic placement of greenspace.

Existing related NCTCOG programs that address these issues include the Development Excellence Program, and the Sustainability Program. Increasingly, project development efforts at NCTCOG involve collaboration between the Transportation, Economic Development, and the Environment and Development Departments to better integrate these efforts moving forward. Measures under this program area include efforts to promote the expansion of green space, and those related to park and green space maintenance.

Measure: Promote the Expansion of Green Space

Open spaces, including parks, urban forests, wetlands, and prairies, can deliver multiple benefits, including reducing the urban heat island effect, improving air and surface water quality, sequestering carbon, and managing flooding, as well as providing habitat benefits to urban and migrating species in the form of habitat protection and diversity. Ecosystem health, in turn, protects human health by providing benefits like activities to reduce stress and increase mental and physical wellness. Projects to help expand greenspace include development of a Comprehensive Greening Plan, incentivizing green space on commercial property, installing minimally resource intensive landscape design, preserving and re-wilding historic cemeteries, upgrading governmental buildings to utilize biophilia by adding green walls, rooftops, and other site surfaces, increasing green neighborhood spaces, and acquiring/preserving high quality green space.

Estimated Annual Greenhouse Gas Benefits:

4,666.09 metric tons depending on level of deployment

Expected Community Benefits:

Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Additional Benefits in Appendix 14

Estimated Annual Criteria Pollutant Reduction:

NO_X: Negligible

VOCs: Negligible

$PM_{2.5}$: Anticipated, but not quantifiable at this time.

Key projects associated with this measure are:

Project: Comprehensive Regional Green Space Project

This project reflects a collaborative regional effort by public, nonprofit, and private partners to develop a plan to significantly increase green space within the region, providing associated drainage, air quality, carbon sequestration, aesthetics, and public health benefits. This project entails applying for the TWDB Grant to perform the identified green space planning project from the State Flood Management Plan Region 3 sector. This planning effort would use the above-referenced prior green space planning and identification efforts to establish the overall parameters and priorities for site acquisition, conservation, preservation, and protection. Additional funding would be used to purchase areas to protect, enhance, and create green space to support healthy prairie, riparian, road rights-of-way, agricultural, historic cemeteries, parklands, and other locally appropriate vegetation, including plant nurseries and planting materials, necessary access controls and site security, and the initial irrigation infrastructure necessary to establish plant materials.

Project: Develop Financial Incentives for Commercial Property Owners to Maintain or Create Green Space

Provide tax rebates, density/height allowances, green-lined approvals, or other incentives to businesses who develop/maintain green spaces on their property. This may be similar to the "Greening Factors"[97] efforts currently under consideration by the Dallas Zoning Advisory Committee that are being used to incentivize reduced onsite parking minimums. Because more facilities are adopting Environmental-Social- Governance goals as part of their portfolio, this may serve as an additional impetus for reserving onsite greenspaces on commercial property.

[97] https://dallascityhall.com/departments/sustainabledevelopment/planning/DCH%20Documents/code%20amendments/parking%20code/Design%20Standards%20Options_Case%20Report_ZOAC_2021.8.12_ZOAC_Final.pdf

Project: Install Minimally Resource-Intensive Landscape Design

Update landscaping to increase the amount of drought-tolerant, low-maintenance landscaping versus high-intensity turf or maintenance-intensive species, which is addressed in Water Conservation defined measures. Funding would be used to incentivize landscape makeovers.

Project: Preserve and Rewild Historic Cemeteries

This project builds on the work of the Constellation Project: Implement Program with public, private, and neighborhood community partners to restore historic cemeteries by removing invasive species and planting native drought-tolerant species as a way of preserving history and enhancing and protecting local green spaces. This project is particularly important for implementation in LIDAC communities.

Project: Upgrade Governmental Buildings to Utilize Biophilia Through Green Walls, Rooftops, and other Site Surfaces

Biophilic design is a design concept used within the building industry to increase occupant connectivity to the natural environment. It is the practice of integrating natural elements and processes into the built environment and communities. Funding would support projects that implement planted surfaces and support water irrigation systems to promote a greener built environment. This project provides funding for design, implementation, and initial care to ensure plant establishment.

Project: Increase Neighborhood Green Space

Incentivize local planting by providing rebates and other incentives to residents to plant trees and other vegetation. This would help to green up neighborhoods located in or near urban heat islands, or in areas identified in the Texas Trees Tree Equity Plan as needing additional tree canopy.

Project: Acquire/Preserve High-Priority Greenspace

Support land acquisition and the development of land management plans, and support ecosystem restoration projects. These efforts follow the above Comprehensive Green Space Plan to preserve high-priority greenspace that establishes effective wildlife corridors, supports pollinators, and provides a broad range of ecological services. This may use a combination of public, nonprofit, and other funding.

Other Available Funding:

Funding may be available through EPA Environmental Justice or Community Grant funds. The Texas Water Development Board (TWDB) may offer competitive grants through either the State Water Infrastructure Fund of Texas (SWIFT), or the Flood Infrastructure Funds (FIF). Both grant programs include measures for planning and both rural and urban flood abatement. It is noted that the State Flood Management Plan for Region 3 includes a project for green space planning that may support projects and follow-on actions in this plan. Private organizations and/or foundations may partner for these types of projects, particularly to protect and preserve property providing prime habitat. Other funding may include the use of General Obligation or Revenue-Based Capital Improvement bonds.

Some improvements may be possible to implement using local budget outlays. Green Bank low-interest loans may also be available to support this type of project.

Measure: Support Park Management and Maintenance

While parks and greenspace are popular and necessary for healthy community support, funding to support ongoing park management and maintenance is sometimes a challenge. Funding would be used to develop parks and recreation plans to increase the acreage of parkland per resident. By using other funds for park acquisition and planning, the base budget can be freed up to support an appropriate level of management and maintenance of these properties. Projects include municipal park and recreation plan development and lawn care equipment replacement.

Estimated Annual Greenhouse Gas Benefits:

36.3 metric tons depending on level of deployment

Expected Community Benefits:

Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Reduced Costs; Reduced Noise Pollution; Increased Access to Service and Amenities; Additional Benefits in Appendix 14

Estimated Annual Criteria Pollutant Reduction:

NO_X: 0.014

VOCs: Negligible

$PM_{2.5}$: Anticipated, but not quantifiable at this time.

Key projects associated with this measure are:

Project: Municipal Park and Recreation Plan Development

While parks and greenspace are popular and necessary for healthy community support, funding to support ongoing park management and maintenance is sometimes a challenge. Funding would be used to develop parks and recreation plans to increase the acreage of parkland per resident.

Project: Lawn Care Equipment Replacement Program

The project supports replacing gas powered lawn equipment with electric and battery powered models for municipal Parks and Recreational Departments. This effort reduces noise exposure, particulates, petroleum aerosols, and other pollutants associated with this equipment. Adopting electric landscape equipment reduces potential health risks associated with operating this equipment that may affect both the operator and any adjacent community members.

Other Available Funding:

Funding may be available through EPA Environmental Justice, or Community Grant funds. Private organizations and/or foundations may partner for these types of projects, particularly to protect and preserve property providing prime habitat. Other funding may include the use of General Obligation or Revenue-Based Capital Improvement bonds. Some improvements may be possible to implement using local budget outlays. Green Bank low-interest loans may also be available to support this type of project.

Program Area: Forestry

North Texas is blessed with an impressive, yet underappreciated, resource in its trees, forests, and greenspace, known collectively as the urban forest. The urban forest is a capital infrastructure asset and, like any other capital infrastructure asset, requires management and sustained action to maintain value. However, unlike most other capital assets, the forest's value increases over time, returning on average $2.25 dollars per dollar spent.[98] These benefits include cooling, hydrologic improvement, air and water quality regulation, improved human health and well-being, and ecological habitat services. As summarized above, there are numerous stakeholders in the North Central Texas forest ecosystem. Coordinating urban forest actions is included in the NCTGOG Water Quality Management Grant from TCEQ. The primary measure in this sector is to increase the amount of forest canopy (cover) across the metroplex.

Measure: Increase Forest Canopy

Because of the multiple benefits that a healthy tree canopy can provide, there is extraordinarily strong local interest in maintaining and expanding tree canopy within the region. As noted above, there are multiple public, private, and non-governmental entities actively working to expand tree coverage in the region. This measure's efforts are based on the extensive foundational work in this area by the Texas Forest Service, local municipalities and water districts, and the Texas Trees Foundation. Assuming ongoing implementation within the current area Urban Forest Master Plans, additional projects to help increase the forest canopy in the region include developing tree canopy assessments, establishing tree canopy goals and benchmarks, and developing an urban forestry floodplain and floodway initiative to enhance and protect riparian areas of the Trinity River system.

[98] https://texastrees.org/dallas-urban-forest-master-plan/

Estimated Annual Greenhouse Gas Benefits:

6.07 metric tons depending on level of deployment

Expected Community Benefits:

Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Reduced Costs; Other Benefits in Appendix 14

Estimated Annual Criteria Pollutant Reduction:

NO_X: Negligible

VOCs: Negligible

$PM_{2.5}$: Anticipated, but not quantifiable at this time.

Project: Establish Tree Canopy Goals and Benchmarks

With the baseline tree canopy established, considering ecosystem biomes, tree equity, and urban heat island challenges, tree canopy goals and benchmarks can be established. This provides a good foundation for local municipal and other planning to expand, implement, and maintain the local urban canopy. Funding supports municipal forest canopy planning and implementation efforts to include plant materials, planting, irrigation, and tree maintenance over a limited time.

Project: Develop Urban Forestry Floodplain and Floodway Initiative

Protecting a healthy riparian area along the Trinity River mainstem and tributaries is critical to maintaining water quality, providing effective flood conveyance, moderating local temperatures, and providing critical habitat for a multitude of local species. The local cities and water districts have an interest in developing a comprehensive urban forestry floodplain and floodway initiative to develop a comprehensive way of addressing the important riparian areas and wetlands along the Trinity River corridor. Funding would support development of the Trinity River Floodway Management Area Plan and would advance riparian and wetland planting across the metroplex within publicly held lands. This effort includes, but is not limited to, the Dallas Floodway Extension and Great Trinity Forest operations and maintenance plan updates.

Project: Develop Tree Canopy Assessments

Developing an updated urban tree canopy assessment can help establish priorities and goals for implementing a comprehensive effort towards expanding the canopy and, more critically, towards effectively managing this important natural resource. Texas Trees Foundation initiated a tree canopy assessment in 2018 as part of the Urban Tree Canopy Assessment Update.[99]

[99] https://toolkit.climate.gov/tool/urban-tree-canopy-assessment

Exhibit 29, as excerpted from the Dallas Urban Forest Master Plan,[100] shows overall existing canopy across the metroplex at about 28 percent, with significant variance between local cities in the DFW region. There is also a comparison of Dallas with other national cities. To address local development and other changes in the canopy since this estimate was developed, this project updates this canopy assessment to the level necessary to support regional planning to grow the local canopy, particularly considering equity and heat island impacts.

Urban tree canopy assessments can aid local cities in developing an effective tree inventory, a critical step in effective urban forest management planning. Funding would include resources for field assessment and software purchases to make inventory building easier.

Other Available Funding:

Funding may be available through EPA Environmental Justice or Community Grant funds. The USDA may have funds that could be used for these purposes. The Texas Water Development Board (TWDB) may offer competitive grants through either the State Water Infrastructure Fund of Texas (SWIFT) or the Flood Infrastructure Fund (FIF). Both grant programs include measures for planning both rural and urban flood abatement. It is noted that the State Flood Management Plan for Region 3 includes a project for green space planning that may support projects and follow on actions in this plan. Private organizations and/or foundations may partner for these types of projects, particularly to protect and preserve property providing prime habitat. Other funding may include the use of General Obligation or Revenue-Based Capital Improvement bonds. Some improvements may be implementable by using local budget processes. Green Bank low-interest loans may also be available to support this type of project. With quantification of the urban forest timber assets and documentation of appropriate management of these critical assets, funding for ongoing forest management may be available through public-sector focused carbon banks.

[100] TTF. 2021. https://www.texastrees.org/wp-content/uploads/2021/07/TTF_UFMP2020_05-30-21_MECHANICAL_spreads.pdf,

Exhibit 29: Comparative Urban Tree Canopy Information

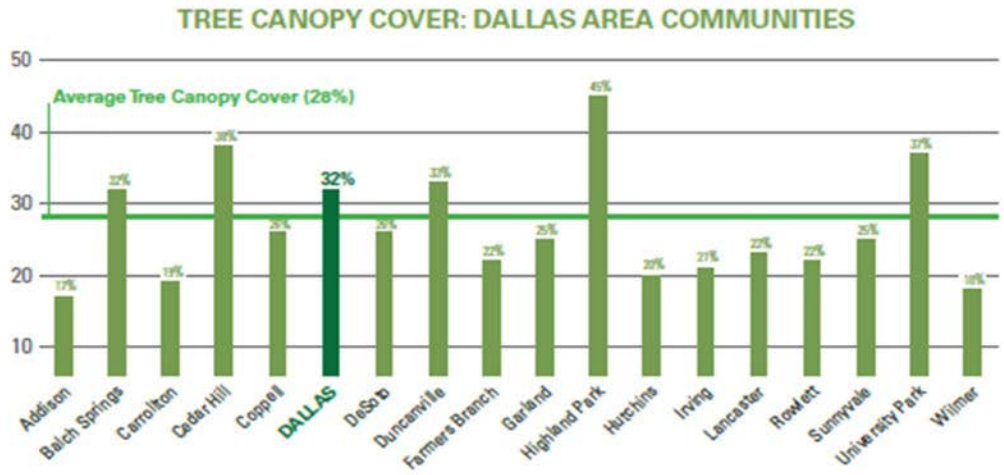


Figure 7. Tree canopy cover in Dallas area communities
Source: Texas Trees Foundation Urban Tree Canopy Assessment Update (2019)

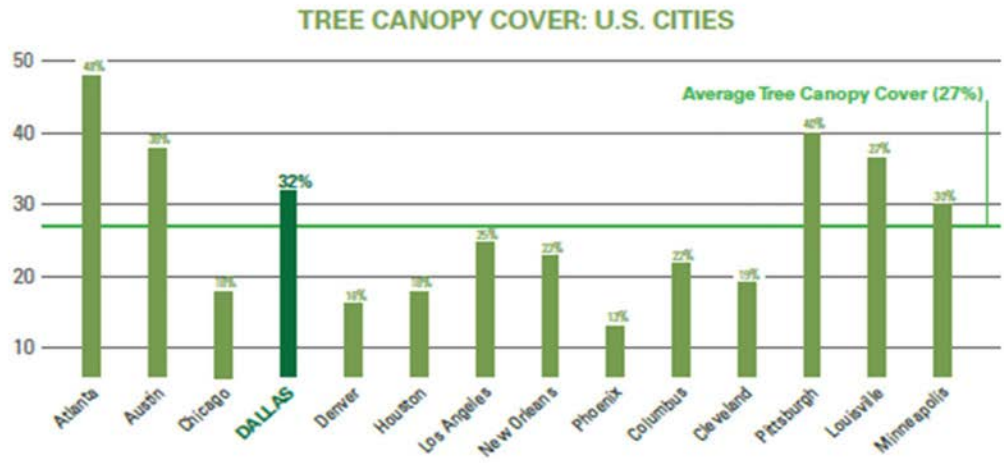


Figure 8. Tree canopy cover in select U.S. cities
Sources: Davey Resource Group and publicly available city data

Program Area: Agriculture

The North Texas region is increasingly at risk for more severe and frequent wildfires, droughts, floods, freezes and tornados. These events will disrupt crop production on conventional farms and in food supply chains from other food-producing locations that are also facing these threats. Additionally, extreme weather events, such as winter storm Uri in 2021, illustrate just how vulnerable the Texas food system is to dangerous weather events. These risks, along with supply chain shocks, point to the need to increase and diversify the sources of local food production, including both local commercial and community efforts. The USDA funds several different programs that can support traditional and urban agriculture. For this planning effort, the focus in the agriculture sector is a measure that focusses on updating current agricultural management practices.

Measure: Update Agricultural Management Practices

When the increased risk of extreme weather events is combined with supply chain issues, and fiscal challenges such as the rise in energy and other costs, are considered, there is a strong need for local government to support agriculture in streamlining operations and enhancing local food production. As identified by local communities, the agriculture measure in this plan focuses on projects that can update agricultural management practices that can reduce methane, electrify pumps used for farm applications, and expand urban growing opportunities.

Estimated Annual Greenhouse Gas Benefits:

20.11 metric tons depending on level of deployment

Expected Community Benefits:

Increased Resiliency and Adaptability; Improved Health and Well-Being; Water Conservation; Reduced Costs; Increased Awareness and Engagement; Green Spaces and Community Beautification

Estimated Annual Criteria Pollutant Reduction:

NO_X: Negligible

VOCs: Negligible

$PM_{2.5}$: Negligible

Projects under this measure include:

Project: Implement Manure and Livestock Management to Reduce Methane

Nationally, livestock form about 43 percent of the GHG emissions[101] associated with agriculture, and both the US Dairy Council [102] and the EPA[103] have developed opportunities for reducing methane from livestock sources. There are several common manure management practices that can reduce methane emissions, including anaerobic digestion as a wet method, and dryer methods that can sequester carbon. Current manure management practices consider impacts on GHGs (such as nitrous oxide) or sinks (such as carbon sequestration). In general, liquid manure management systems lead to anaerobic conditions and increased methane production, and switching to practices that manage manure in drier, aerobic conditions reduces methane emissions. Funding will be used to integrate anaerobic digester systems, and other techniques as appropriate into current agricultural practices.

[101] https://cfpub.epa.gov/ghgdata/inventoryexplorer/#agriculture/entiresector/allgas/category/current
[102] https://nationaldairyfarm.com/wp-content/uploads/2018/10/ES-Reference-Manual.pdf
[103] https://www.epa.gov/agstar/practices-reduce-methane-emissions-livestock-manure-management#:~:text=In%20general%2C%20liquid%20manure%20management%20systems%20lead%20to,manure%20in%20drier%2C%20aerobic%20conditions%20reduces%20methane%20emissions.

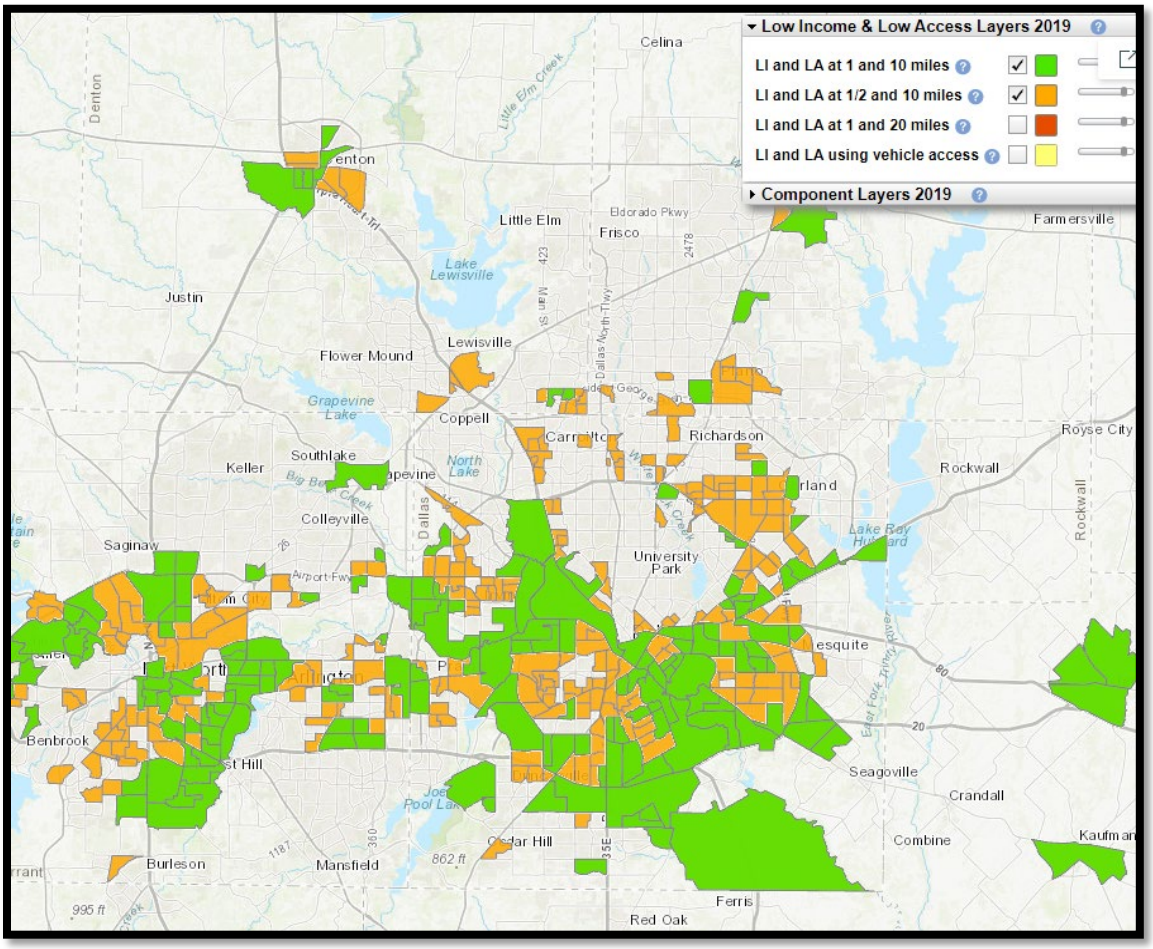
Project: Electrify Irrigation and Other Farm Equipment

Most irrigation and other farm equipment is currently powered by diesel or propane. This project supports converting this equipment to electric irrigation pumps in large landscaping operations (golf course, etc.) and farms, as appropriate.

Project: Increase/Promote Neighborhood and Community Growing Practices

While the NCTCOG region includes all forms of agricultural practice, the local average distance from farm-to-table is about 2,500 miles, as the dominant sources for food come from out of state. **Exhibit 30** is from the 2019 USDA Mapping of Low-Income households with Low Access to Food, showing large portions of the metroplex that may be at risk for food accessibility.

Exhibit 30: USDA Regional Mapping of Low-Income Areas with Limited Food Access[104] (2019)



This project supports local efforts to address food vulnerability, as well as the emissions associated with food transport, by increasing and promoting neighborhood and community growing practices,

104 https://gisportal.ers.usda.gov/portal/apps/experiencebuilder/experience/?id=a53ebd7396cd4ac3a3ed09137676fd40&page=Introduction

particularly in underserved areas with food accessibility challenges. This project supports the planning, implementation, operation, and maintenance of urban agriculture, including commercial growing, community gardens, and other local efforts to boost resilience of local food supply. This effort includes promotion of community selling at farmers markets and opening commercial markets to local growers once sufficient supply is attained.

Other Available Funding:

Funding may be available through EPA Environmental Justice or Community Grant funds, through EQIP: Environmental Quality Incentives Program, USDA Rural Development Programs, Clean Water State Revolving Funds (CWSRF), and U.S. Department of Energy grants. These grant programs include measures for planning and implementing both traditional rural and urban agricultural projects. Some improvements may be possible to implement using local budget outlays. Green Bank low-interest loans may also be available to support this type of project.

Program Area: Regional Codes

Zoning codes and regulations are established by local governments to guide land use and development within specific areas. These laws help maintain the character and functionality of communities and protect the interests of property owners and the public. Periodically, as land use priorities and prevailing views on the built landscape change, these codes and regulations are updated to reflect these changes. Since 1967, the NCTCOG RCCC has worked as a group composed of local government officials, architects, engineers, contractors, educators, property management professionals, insurance representatives, builders, and developers to develop these regular regional code updates. With a better understanding of the critical environmental services that green spaces, including parks, trees, prairies, grasslands, and forest provide in an urban setting, consideration of appropriate updates to these codes to promote green space conservation and preservation is warranted, to support many of the projects in this PCAP. The only measure in this sector is that effort to update codes and zoning regulations to promote green space preservation and preservation.

Measure: Update Codes and Zoning Requirements to Promote Green Space Conservation and Preservation

Projects to update the codes and zoning requirements to promote green space conservation and preservation include integrating air quality reviews into zoning and permit review process, updating landscaping ordinances and other requirements, adopting tree ordinances that promote urban forestry in the built environment, and utilizing Smart Growth and/or transect-based codes to promote incorporating environmental analyses into the development process.

Estimated Annual Greenhouse Gas Benefits:

Anticipated, as these updates support other plan measures, but not independently quantifiable

Expected Community Benefits:

Green Spaces and Community Beautification; Increased Resiliency and Adaptability

Estimated Annual Criteria Pollutant Reduction:

NO_X: Anticipated, but not quantifiable at this time

VOCs: Anticipated, but not quantifiable at this time

$PM_{2.5}$: Anticipated, but not quantifiable at this time.

Project: Integrate Air Quality Review into Zoning and Permitting Review

Through integrating air quality review into zoning and permitting review, the region can integrate climate mitigation and adaptation into existing land development review and permitting processes, with a end goal of maximizing the benefits of natural geographic and watershed features.

Project: Update Landscaping Ordinances/Requirements

Many local development codes and ordinances contain outdated requirements around turf-based residential landscaping. Additionally, there are minimal requirements to protect and conserve trees and other native vegetation. This project is basically one of updating codes and ordinances, to allow greater use of the NCTCOG-promoted Smart-scape™ principles.[105] Updating zoning and landscaping requirements to remove barriers to installing xeriscaping and other low-maintenance landscapes (e.g., relax height restrictions on turf grasses), can help to encourage the use of more drought-tolerant plants and pollinator-friendly plants.

Project: Adopt Tree Ordinances that Promote Urban Forestry in the Built Environment

Many local development codes and ordinances contain outdated requirements around turf-based residential landscaping, and limited measures to protect existing trees and other vegetation. This project is basically one of updating codes and ordinances, to promote urban forestry in the built environment. Tree ordinances can set standards for tree planting, care, preservation, and maintenance to ensure longevity in the developed environment. Additionally, such ordinances can include measures to protect existing established trees.

[105] North Central Texas Council of Governments - Texas SmartScape (nctcog.org)

Project: Utilize Smart Growth and/or Transect-Based Codes to Promote Environmental Analysis in Development

This project recommends revising existing codes as necessary to utilize Smart Growth methodology. Smart Growth and transect-based codes allow communities to incorporate environmental considerations into the development process, while separating new development from Euclidean-type zoning codes.

Euclidean zoning is a zoning system where a town or community is divided into areas where specific uses of land are permitted. The system is based on the separation of land uses by type such as residential, commercial, retail, industrial, etc. Euclidean zoning is the most common form of zoning in the United States, including the NCTCOG region. That said, it does not necessarily allow for multi-use land uses such as street-level commercial units with upstairs residential units.

Transect codes are rooted in the physical form of both built and natural environments. They organize elements of urbanism – such as buildings, lots, land use, and streets – along a continuum from less intense (rural) to high intensity (urban). Transect-based codes seek to promote connectivity rather than separation by land use type. This type of zoning may make sense for a community that is developing into a new urban landform from formerly rural land use types.

Smart Growth evolved out of transect codes as an overall approach of development and conservation strategies that can help protect our health and natural environment and make our communities more attractive, economically stronger, socially diverse, and resilient to climate change. Based on the experience of communities around the nation, the Smart Growth Network[106] developed a set of 10 basic principles to guide smart growth strategies:

- Mix land uses.
- Take advantage of compact building design.
- Create a range of housing opportunities and choices.
- Create walkable neighborhoods.
- Foster distinctive, attractive communities with a strong sense of place.
- Preserve open space, farmland, natural beauty, and critical environmental areas.
- Strengthen and direct development towards existing communities.
- Provide a variety of transportation choices.
- Make development decisions predictable, fair, and cost effective.
- Encourage community and stakeholder collaboration in development decisions.

Adopting these zoning methods can help with implementing denser, more climate-resilient communities moving forward. The project would need funds to engage certified planners with both rural and urban experience to help develop a model code for local consideration by the region's cities and towns.

[106] https://www.epa.gov/smartgrowth/about-smart-growth

Other Available Funding:

Most of the projects identified in this measure can be implemented through coordination of the RCCC with the participating cities and affected stakeholders. No additional costs outside of regular salaried public staff are anticipated.

Cross-Sector Measures

Several initiatives span across multiple sectors. **Appendix 15: DFW AQIP- Cross-Sector Measures** contains a full list of measures and projects, feedback received from surveys described in **Section 1: Regional Engagement** and information on air quality and community benefits.

Measure: Carbon Footprint App

As part of education and outreach, development of a smartphone application or other tool that helps "gamify" responsible personal choices may be impactful in motivating behavior change on the part of individual residents. Given the magnitude of the region's population, population growth, and the number of emissions associated with individual resident behavior (e.g., residential energy consumption or light-duty gasoline vehicle miles of travel), changes to individual habits are a critical part of ensuring progress toward emissions reductions. Such tools may include rewards programs or point trackers to serve as motivational elements.

Estimated Annual Greenhouse Gas Benefits:

Not Quantifiable

Expected Community Benefits:

Increased Awareness/Engagement; Increased Resiliency/Ability to Adapt

Estimated Annual Criteria Pollutant Reduction:

NO_X: Anticipated, but not quantifiable at this time

VOCs: Anticipated, but not quantifiable at this time

$PM_{2.5}$: Anticipated, but not quantifiable at this time.

Project: Carbon Footprint Smartphone Application and Rewards Program

This project would encourage residents to make more "green" decisions, such as carpooling or installing solar panels, through a mobile game or app. NCTCOG will survey the market to identify existing available smartphone applications that may already serve this purpose. Existing NCTCOG programs, such as TryParkingIt.com and AirNorthTexas.org, already contain some of these types of elements – in TryParkingIt.com, commuters submit alternative commute trips (e.g., transit, carpool, walk, or bike) to earn points toward rewards, and in AirNorthTexas.org, users can make personal pledges. Both initiatives consist of partnerships with stakeholders around the region, including major employers and public sector entities. NCTCOG will work with stakeholders to identify opportunities to enhance, coordinate, and/or amplify these existing campaigns with additional functionality and behavior choices.

Other Available Funding:

Other funding sources are uncertain; EPA Pollution Prevention grants or CMAQ funding may be a possibility.

Measure: Regional Air Quality Monitoring Program

As evidenced by survey responses in Exhibit 6 indicating that local air quality is the area of greatest concern among NCTCOG area residents, requests have been made for more local air quality monitoring throughout development of the DFW AQIP. Residents have cited concerns over the relatively small number of regulatory air quality monitors (across the 16-county region, there are 20 ozone monitors and 9 fine particulate monitors used for regulatory air quality monitoring by TCEQ).[107] In addition, residents have expressed a desire for monitoring of emissions from industrial and oil and gas facilities in proximity to sensitive receptors (like their homes), which may entail air quality monitoring designed to identify source-specific hazardous air pollutants or GHGs versus ambient concentrations of criteria pollutants. Additional monitoring data can enable more nuanced identification of emissions sources and consequently help identify appropriate emissions-reduction strategies. It can also help residents feel more confident about the types of outdoor activities they feel safe doing, can help public health practitioners in appropriate interventions as necessary for patients, and can provide data to support and communicate additional concerns to local and state regulators who are in a position to take action related to specific emissions sources.

Estimated Annual Greenhouse Gas Benefits:

Not Quantifiable, but monitoring can be critical in enabling more accurate identification of emissions sources which then allows for implementation of the most effective emissions-reductions activities.

Expected Community Benefits:

Increased Awareness/Engagement; Improved Health and Well Being; Increased Safety; Increased Resiliency/Ability to Adapt

Estimated Annual Criteria Pollutant Reduction:

Not Quantifiable, but monitoring can be critical in enabling more accurate identification of emissions sources which then allows for implementation of the most effective emissions-reductions activities.

Project: Deploy Air Quality Monitors

Various organizations, including local governments and nonprofits across the region, have started to deploy non-regulatory networks of air quality monitors to help collect additional information at a more granular level than that currently being measured by the regulatory monitoring network under oversight of TCEQ. For example, the city of Dallas has deployed a network of neighborhood air monitors as part of their Breathe Easy Dallas project, with a purpose to advance scientific

[107] https://www.tceq.texas.gov/cgi-bin/compliance/monops/monitors.pl

understanding and application of local air monitoring for improved public health outcomes among high-risk populations. NCTCOG continues to evaluate results of these projects and consider how to integrate data from these non-regulatory systems with those available from regulatory monitors, given the wide variation in technology, calibration, and industry acceptance of device validity across the various efforts. NCTCOG leads an effort through the Air Quality Health Monitoring projects and Task Force to facilitate peer exchange and consistency across local monitor project and associated results. NCTCOG has and will continue to pursue deployment of additional monitoring in conjunction with local governments where funds are available to support such efforts.

Other Available Funding:

Funding is available to support additional monitoring in certain areas within the NCTCOG region through Rider 7, which is a Legislative appropriation to TCEQ that is made available for monitoring and emissions inventories in "near-nonattainment" areas. Within the NCTCOG region, this funding can support ozone monitoring in Hood, Hunt, and Navarro counties, and particulate matter monitoring in Dallas and Tarrant counties. For each appropriation bi-annum cycle, NCTCOG collaborates with local entities on most critical needs suitable for funding that will aid in efforts to minimize emissions. Deployment of non-regulatory air quality monitors in these areas can help address local concerns or assist with filling data gaps. The EPA Environmental Justice Program, Community Change grants, Federal Highway Association Grants, and other community-based programs offer grants that can be leveraged to deploy appropriate local neighborhood level air quality monitoring that typically includes EPA-complaint data quality assurance and transparency.

Measure: Tire Recycling Initiatives

With a continual increase in population growth, city densification, and urban sprawl, the DFW region has become one of the largest metroplexes in the USA. Population growth and the prevalence of reliance on automobile travel contribute to ongoing growth in vehicle-related waste, including discarded tires. Several cities, water utilities and conservation districts have been challenged to address inappropriate disposal of waste tires, including tire dumps and riverine disposal. The 2023 Regional Resource Management Plan for the region indicates that, "There are presently 20 registered scrap tire facilities involved in tire resource recovery in the North Central Texas region, located across Collin, Dallas, Ellis, Hunt, Kaufman, Palo Pinto, Tarrant, and Wise counties. Registered scrap tire resource recovery activities include processing (i.e., cutting, grinding, shredding, baling, crushing, splitting, and recapping or retreading), recycling (i.e., preparation of used or scrap tires for re-use), and energy recovery (i.e., tired derived fuel). In 2021, tire processing and recycling facilities recovered an estimated 30,000 tons of tires for recycling."[108]

Illegally dumped tires pose environmental and health hazards by polluting waterways with contaminated runoff, attracting rodents and mosquitos which carry disease, and increase potential for dangerous fires due to high flammability. This program will help minimize these issues that will benefit the community by reducing the hazards posed by waste tires and improving public safety and health.

This measure will include a phased approach to addressing this issue that involves highlighting and exploring scrap tire issues impacting the region, identifying and evaluating what other areas are doing to

[108] https://www.nctcog.org/getmedia/4bfbf45a-2bd2-4222-ae30-b0840015b7a3/Final-RSWMP-11-18-2022_1.pdf

address scrap tires, and developing a streamlined plan to strategically mitigate the issues. The project entails evaluating the true size and breadth of the current scrap tire problem in the region, to the extent of allowing quantification of measures necessary to effectively address the issue through combined policy, ordinance, and physical cleanup. The resulting regional Scrap Tire Abatement Program expansion and evaluation can be effectively implemented.

It should be noted that an existing statewide program focused on scrap tires includes regulated activities such as: scrap tire transportation, storage, processing, recycling, energy recovery from tires, and land reclamation using tires.[109] TCEQ administers this program under 30 Texas Administrative Code 328 Subchapter F that specifically addresses Rules for Management of Used and Scrap Tires.[110] Appropriate regional efforts may entail collaborating with the state to amend, enhance ,and enforce current regulations as required to more effectively address this challenge.

Estimated Annual Greenhouse Gas Benefits:

Not currently quantifiable

Expected Community Benefits:

Improved Health & Well-Being, Increased Safety, Green Spaces and Community Beautification

Estimated Annual Criteria Pollutant Reduction:

Not currently quantifiable

Project: Adopt Tire Recycling Policy

Adoption and implementation of an ordinance (cities) and guidelines similar to an ordinance (counties) that promotes sustainable tire disposal practices, including recycling.

Other Available Funding:

The majority of funding for scrap tire management, recycling programs, and market development is at the state level. However, some federal research funding is available for small businesses doing innovative research. EPA does not provide funding for businesses using established technologies, however, the EPA's Small Business Innovation Research (SBIR) Program[111] is administered by the Agency's National Center for Environmental Research and Quality Assurance (NCERQA) in the Office of Research and Development. The Agency's SBIR Program solicits and funds research proposals that address EPA priority needs, including solid waste management techniques. Several other states have developed programs to effectively address waste tire disposal and recycling efforts. Grants from local water conservation districts and private foundations have been used in the past to support appropriate waste tire cleanups in the NCTCOG region, particularly for tires in water bodies. Some cities with TPDES MS4 permit requirements have also leveraged stormwater utility fees to support related cleanups.

[109] https://www.tceq.texas.gov/permitting/waste_permits/tires
[110] https://texreg.sos.state.tx.us/public/readtac%24ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=328&sch=F&rl=Y
[111] https://www.epa.gov/sbir

The Regional Transportation Council has set aside approximately $700,000 to develop and initiate a regional scrap tire abatement program. In addition, efforts will be pursued at the 89th Texas Legislative Session in 2025 for rule updates and future funding sources.

Measure: Workforce Development

The need for an educated, trained, and ready workforce is necessary for the continued efficiency and maintenance of the new technologies being adopted in the realms of clean energy, energy efficiency, transportation electrification, and more advanced technologies related to waste management and water treatment. This will require working with high schools, technical colleges, community colleges, universities, and industry partners to create curricula, trainings, career awareness, apprenticeships, and internships to provide the needed workforce for electric vehicles, electric vehicle charging stations, solar, wind, microgrids, weatherization services, and energy efficiency technologies. Additionally, there is also a strong need for National Institute of Certification in Engineering Technologies (NICET)-certified operators for water and wastewater systems, roadway infrastructure, urban agriculture and forestry, and the telematics necessary to effectively and efficiently manage these systems. Properly trained instructors will be needed, whether from industry or from academia, to support this effort.

Estimated Annual Greenhouse Gas Benefits:

Not Quantifiable, however, this is a necessary hurdle that needs to be addressed to allow effective deployment of these proposed measures that do reduce GHG emissions.

Expected Community Benefits:

Job Creation and Economic Development; Increased Resiliency and Adaptability; Increased Awareness and Engagement

Estimated Annual Criteria Pollutant Reduction:

Not Quantifiable; however, this is a necessary hurdle that needs to be to be addressed to allow effective deployment of these proposed measures that do reduce GHG emissions.

Project: Develop Local Workforce to Enable Clean Energy Adoption and Resilience

Through collaboration among NCTCOG Transportation, Environment and Development, and Workforce Solutions departments, programs to develop workforce to support implementation of PCAP measures will be developed, including electricians and technicians, for solar installations, microgrids, battery storage, and community-scale renewable energy, service providers for telematics and controls, weatherization, energy audits, and energy management for residences and buildings. This can include assisting local communities or technical colleges in launching, expanding, and amplifying curricula/certification testing to expand local workforce with necessary certifications (e.g., Building Performance Institute/ NICET certifications).

Project: Develop Local Workforce to Enable Water, Wastewater, and Drainage System Upgrades

Through collaboration among NCTCOG Transportation, Environment and Development, and Workforce Solutions departments, programs to develop workforce to support implementation of PCAP measures will be developed, including certified operators for water, wastewater, and stormwater infrastructure. This can include assisting local communities or technical colleges in launching, expanding, and amplifying curricula/certification testing to expand local workforce with necessary certifications (e.g., Building Performance Institute/ NICET, AWWA and TCEQ certifications).

Project: Develop Local Workforce to Enable "Green Space" Implementation, Wastewater, and Drainage System Upgrades

Through collaboration among NCTCOG Transportation, Environment and Development, and Workforce Solutions departments, programs to develop workforce to support implementation of PCAP measures for advancing green space development, implementation, operations, and maintenance will be developed, including certified arborists and horticulturists, farm managers, and other appropriate certifications. This can include assisting local communities or technical colleges in launching, expanding, and amplifying curricula/certification testing to expand local workforce with necessary certifications (e.g., Building Performance Institute/ NICET, Tx Department of Forestry certifications).

Other Available Funding:

EPA, Economic Development Administration, Department of Energy, and others have funding that can be used to support implementation of this measure to ensure development of green jobs to support the energy transition, as well as adaptive measures of this plan that support greater local resilience.

Measure: Education and Outreach

Educating residents and building occupants about energy conservation, efficiency, and renewable energy is crucial for promoting sustainable practices and reducing energy consumption. Encouraging communitywide adoption of renewable energy through group purchase options can lower electricity rates and improve air quality while bolstering grid resilience. Collaborating with utilities to incentivize renewable energy adoption among residents fosters a sustainable energy ecosystem, ultimately reducing demand and enhancing environmental outcomes.

Estimated Annual Greenhouse Gas Benefits:

Not Quantifiable, but critical to measure adoption

Expected Community Benefits:

Increased Resiliency and Ability to Adapt, Increased Awareness and Engagement, Improved Health, and Well-Being

Estimated Annual Criteria Pollutant Reduction:

Not Quantifiable, but critical to measure effective measure implementation

Project: Lower Electricity Rate through Group Renewable Energy Purchase

Develop or implement programs that allow residents or other customers to join together to get a lower rate for 100 percent renewable energy.

Project: Promote Renewable Energy and Energy Efficiency

Increase energy efficient behaviors among residents and building occupants through education on renewable energy, energy efficiency, and energy conservation.

Other Available Funding:

Several divisions of EPA, U.S. DOE, Department of Interior, and several state agencies and private foundations provide regular grants around appropriate education and outreach for electrification, vehicle transition, transit programs, water conservation, and other related programs may be available to help support this work. Additionally, working with nonprofits may also provide opportunities to expand the market for related messaging.

5- Benefits Analysis

Substantial benefits will be achieved for a broad, diverse population due to improved air quality resulting from co-pollutant emissions reductions achieved through implementation of selected measures. As discussed, 10 counties are designated as nonattainment under the 8-hour NAAQS, with the region recently having been reclassified by the EPA as a severe nonattainment area for the first time under the 2008 ground level ozone standard. In addition, with the finalization of the revised fine particulate matter standard, EPA has indicated that the two most populous counties in the region – Dallas and Tarrant, home to over four million residents – will likely be classified as nonattainment under the revised particulate standard. These local, criteria pollutant-related air quality issues have always been of concern for residents in the area, and the voices calling for improvements in local air quality to improve public health are growing increasingly louder and urgent. Many of the most impacted communities are those in the urban core, many of whom live near high-traffic or highly industrialized areas.

Because of these concerns, the DFW AQIP emphasizes measures that not only achieve GHG reductions, but also achieve reductions in ozone precursors (NO_X and VOCs, with NO_X as the pollutant of greater concern), as well as fine particulate matter. In total, the measures listed are estimated to reduce a minimum of 391.52 metric tons NO_X annually and 6.58 metric tons $PM_{2.5}$ per year, which will result in improved air quality for the entire region. Note that these numbers are conservative as they are only considering per unit benefits, where multiple units are planned. Additional criteria pollutant benefits are anticipated, especially in the Agriculture, Forestry, and Land Use Sector which were not quantifiable then. In the Ttransportation sector, substantial funding is dedicated to the Clean Vehicle & Equipment Program, through which NCTCOG anticipates a significant reduction in diesel fuel consumption, which will also lead to reduced exposure to diesel exhaust, which is classified as an air toxic. The improvements in air quality will most prominently benefit vulnerable populations, including children, the elderly, and those already suffering from respiratory complications.

Low Income Disadvantaged Communities Benefits Analysis

Consistent with requirements outlined in the CPRG: Planning Grants Notice of Funding Opportunity,[112] NCTCOG has developed this Low-Income and Disadvantaged Communities (LIDAC) Benefits Analysis to identify the potential benefits which could occur in LIDAC through the implementation of proposed measures. The EPA requires the LIDAC Benefits Analysis contain the following:

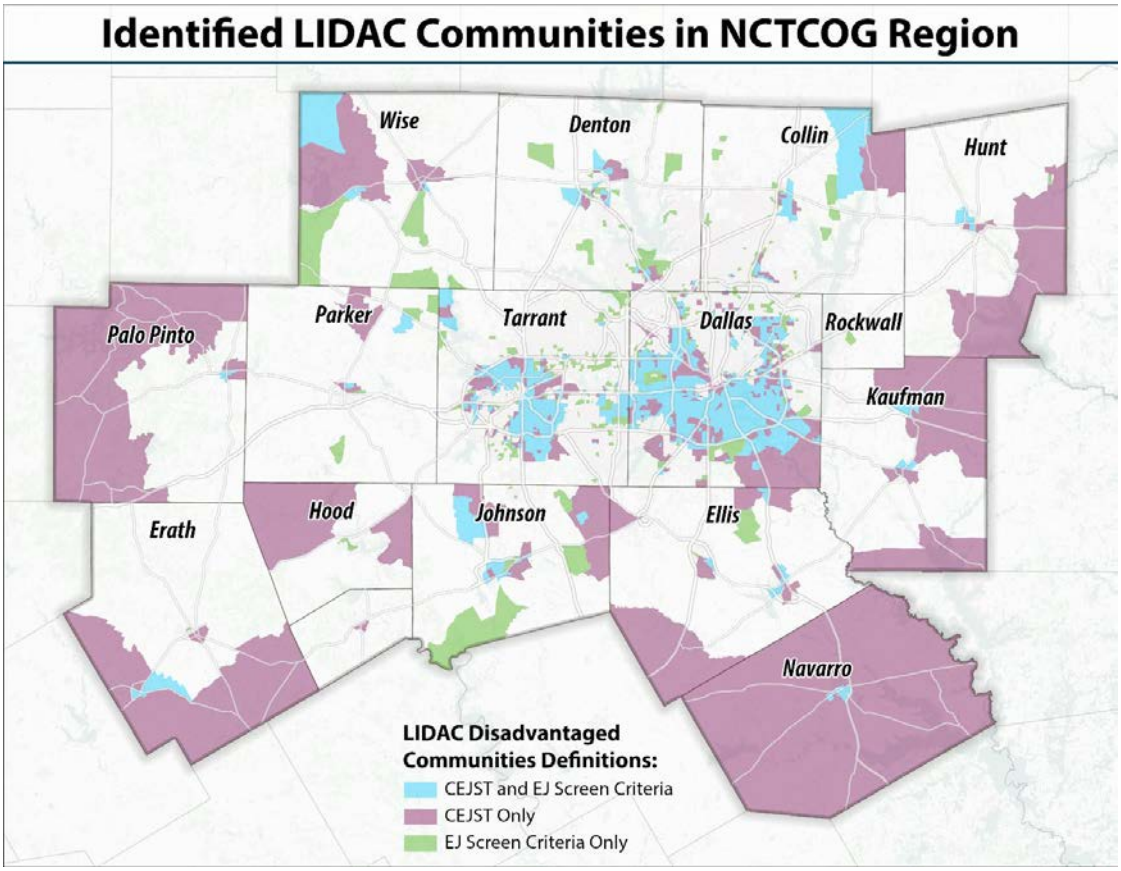
- Identification of LIDAC
- Engagement with LIDAC in Planning Process
- Identification of Potential Climate Risks
- Identification and Description of Benefits of Measures[113]

Identification of LIDAC

The EPA recommends utilizing the Climate and Economic Justice Screening Tool and the Environmental Justice Screening and Mapping Tool to identify LIDACs. These tools identify LIDACs by assessing indicators for the following categories of burden: air quality, climate change, energy, environmental hazards, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. Overall, 1,669 out of the 4,496 Census blocks (~37 percent) in the NCTCOG region are identified as a LIDAC. Exhibit 31 illustrates LIDAC communities based on a combination of both tools per EPA guidance.

[112] https://www.epa.gov/inflation-reduction-act/about-cprg-planning-grant-information
[113] *https://www.epa.gov/system/files/documents/2023-05/LIDAC%20Technical%20Guidance%20-%20Final_2.pdf*

Exhibit 31: Low-Income and Disadvantaged Communities in NCTCOG Region



Additionally, **Appendix 16: Low-Income and Disadvantaged Communities in North Texas** provides a list of the above LIDACS with Census Tract or Census Block ID numbers.

Engagement with LIDAC in Planning Process

Engagement conducted for the DFW AQIP is detailed in **Section 1: Regional Engagement.** The engagement primarily consisted of meetings (in person, virtual, and hybrid) and a public survey. To help ensure LIDAC opportunity for engagement NCTCOG ensured the following:

Public Meetings:

- All materials brought to public meetings (presentation, surveys, and posters) were translated to Spanish and a Spanish translator was present at the meetings.
- If a facility was available in a LIDAC community that met the site requirements, the meeting was held at that location.
- Ads for public meeting were run in both English and Spanish.
- Several opportunities for engagement were conducted at various times (morning and evening), locations, and modes (virtual, in person, and hybrid).

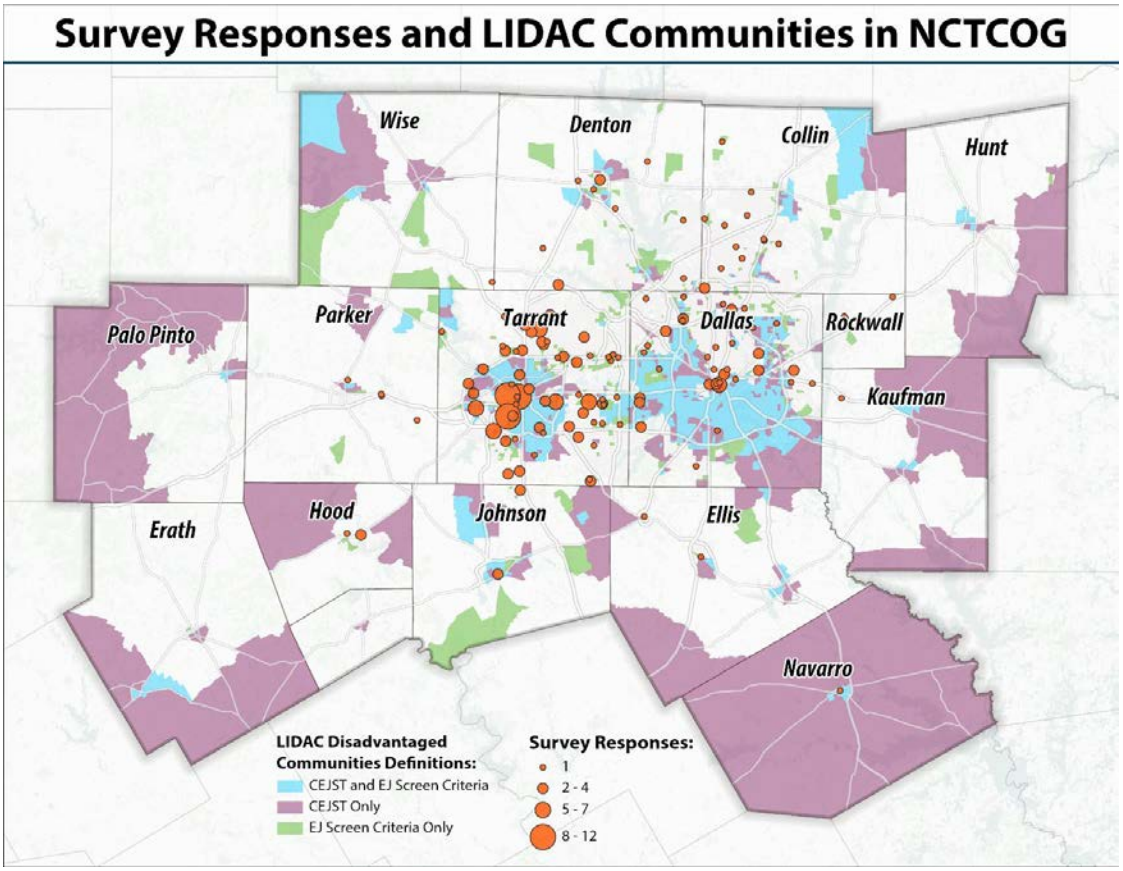
Online Survey:

- The online survey (www.publicinput.com/dfwAQIP-survey) was translated into Spanish.
- Feedback for the DFW AQIP-PCAP was accepted for 12 weeks (November 17, 2023, to February 8, 2024). All feedback received after February 9, 2024 will be incorporated into the DFW AQIP-CCAP.

Exhibit 32 shows survey responses overlayed with LIDAC. Note that survey responses are based on self-reported addresses, and it is possible the address provided does not identify that respondent as a representative of a LIDAC, but that person could work in a disadvantaged community, represent a disadvantaged community, or be a member of a community that has historically been underrepresented in air quality planning efforts, despite not living in that community at this time. As of February 8, 2024, survey responses show that 45 percent of survey respondents represent a LIDAC.

Additionally, NCTCOG conducted outreach through the NCTCOG's Enhanced Community Engagement Program, which reached out to neighborhood associations, nonprofit organizations, local governments, local elected officials, and religious institutions to seek engagement. Community members already interact with these organizations, whereas NCTCOG may be unknown, so NCTCOG sought to partner with the community organizations to help spread the word regarding the DFW AQIP.

Exhibit 32: Online Survey Responses and LIDAC Communities in NCTCOG



Identification of Potential Climate Risks

By midcentury, it is expected the Southern Great Plains (Texas, Kansas, and Oklahoma) will experience an increase in average annual temperature, as outlined in **Exhibit 33**,[114] and this change is expected to result in an associated increase in the frequency, severity, and cost of extreme weather-related events. This is

[114] https://nca2023.globalchange.gov/chapter/26/#fig-26-2

already beginning to be seen, as from 2018 to 2022, the National Oceanic and Atmospheric Administration (NOAA) reported 52 individual billion dollar disasters affected all or part of the Southern Great Plains (Kansas, Oklahoma, and Texas) region.[115] **Exhibit 34: U.S. Climate Vulnerability Index: Overall Climate Vulnerability** shows the region's overall climate vulnerability as scored by combining the expected impact on environmental, social, economic, and infrastructure effects on neighborhood-level stability. Eight counties (Wise, Palo Pinto, Hood, Erath, Johnson, Navarro, Kaufman, and Hunt) score in the top 50th percentile of Climate Vulnerability. It is expected LIDAC will disproportionally feel the impact of these changes due to a limitation in resources and proximity to high-risk areas.[116]

Exhibit 33: Historical and Projected Changes in Air Temperature[117]

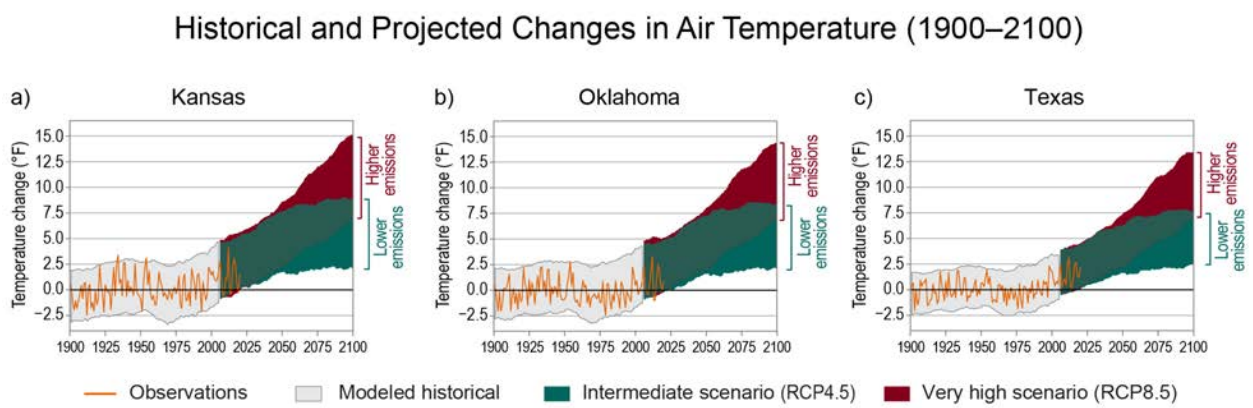
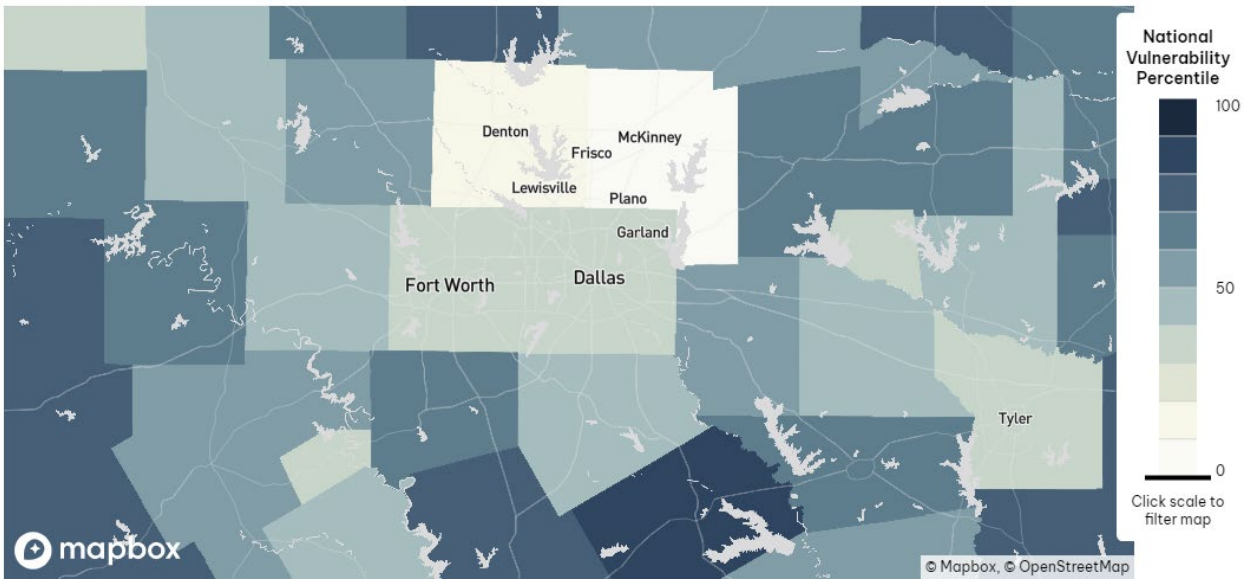


Exhibit 34: U.S. Climate Vulnerability Index: Overall Climate Vulnerability [118]



[115] https://nca2023.globalchange.gov/chapter/26/#fn:17
[116] https://nca2023.globalchange.gov/chapter/15/#key-message-2
[117] https://nca2023.globalchange.gov/chapter/26/#fig-26-2
[118] https://map.climatevulnerabilityindex.org/map/cvi_overall/usa?mapBoundaries=County&mapFilter=0&reportBoundaries=County&geoContext=State

Specific risks which may impact the North Texas region include, but are not limited to:

Extreme Heat and Creation of Urban Heat Islands –

As outlined in Exhibit 33, it is expected the Southern Great Plains region will experience more **Extreme Heat and Creation of Urban Heat Islands** as time passes. With each degree increase of temperature, there is an expected associated increase in mortality, as outlined in Exhibit 35.

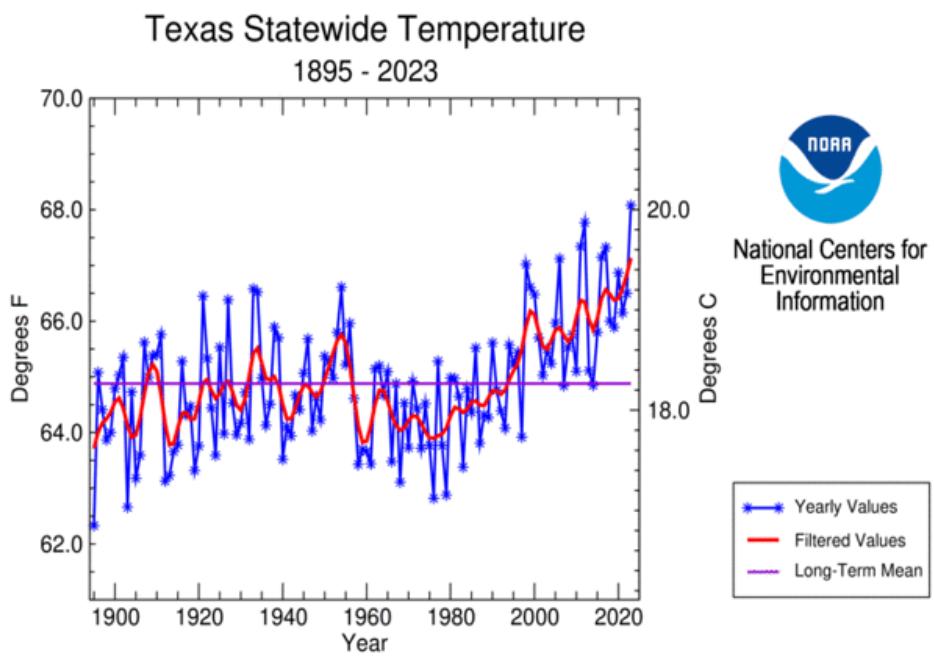
Exhibit 35: Increase in Baseline Mortality[119]

City	Baseline Mortality Per 100,000	Excess (Above Baseline) Mortality Per 100,000				
	0°C*	1°C	2°C	3°C	4°C	5°C
Dallas, TX	1.14	0.54	1.69	3.58	5.25	7.07

*0°C references deaths per 100,000 attributable to extreme temperature in the baseline climate (1986-2005). All other columns represent the change in mortality rates incremental to the baseline due to global temperature change.

Texas has already seen an increase in Statewide Temperature, as shown in **Exhibit 36.**

Exhibit 36: Texas Statewide Temperature[120]



Increased temperatures can significantly impact metropolitan areas, as they are at risk for urban heat islands. Urban heat islands result when the heat created by people, cars, buses, trains, and infrastructure has nowhere to escape due to high density in metropolitan areas. Work by the Texas

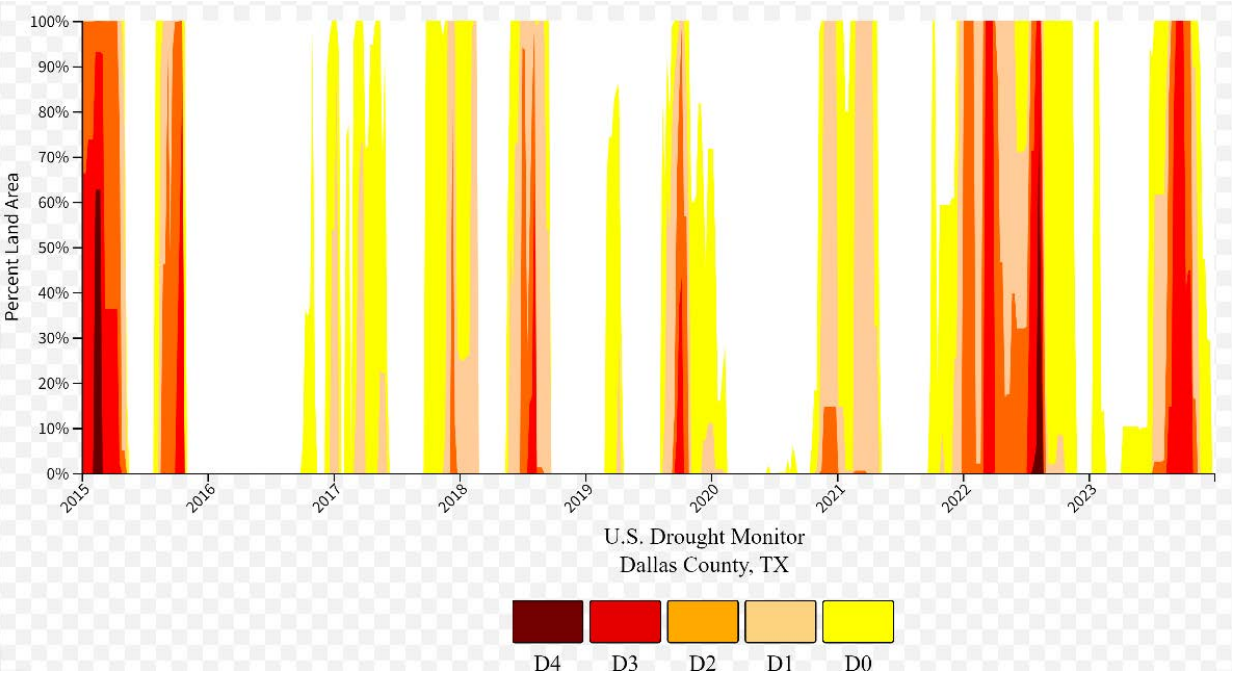
[119] https://www.epa.gov/system/files/documents/2021-09/appendix-e_temp-mortality.pdf
[120] https://www.ncei.noaa.gov/access/monitoring/monthly-report/drought/202313#so-plains-sect

Trees Foundation[83] and the Trust for Public Lands[78] has already identified the presence of Urban Heat Islands in the larger cities of the region.

Extreme Drought –

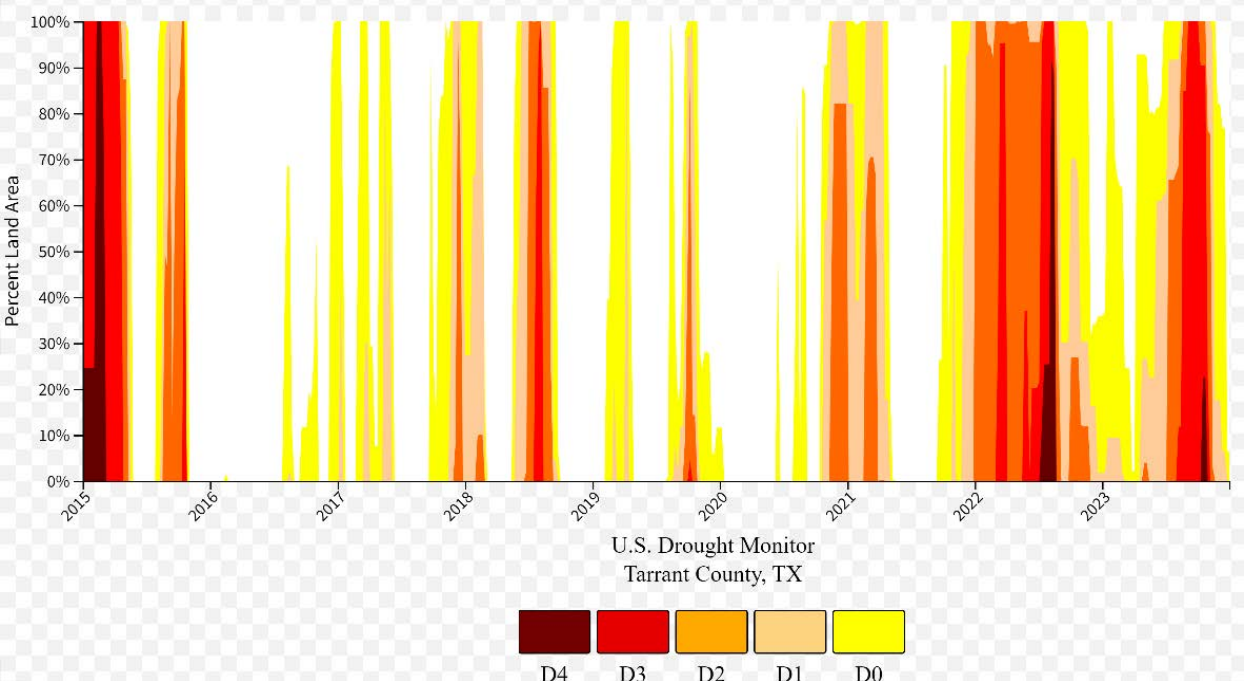
A side effect of increased heat and changes in weather patterns is **Extreme Drought**. Drought does not necessarily mean there is no water on the surface, rather it is an assessment of conditions such as dryness and water availability compared to the average amount. Texas has already experienced extreme heat for most of 2023,[121] and extreme drought has been occurring in Dallas and Tarrant counties for several years, as shown in **Exhibits 37 and 38**.

Exhibit 37: National Integrated Drought Information System, Historical Conditions for Dallas County*



[121] https://www.ncei.noaa.gov/access/monitoring/monthly-report/drought/202313#so-plains-sect

Exhibit 38: National Integrated Drought Information System, Historical Conditions for Tarrant County*



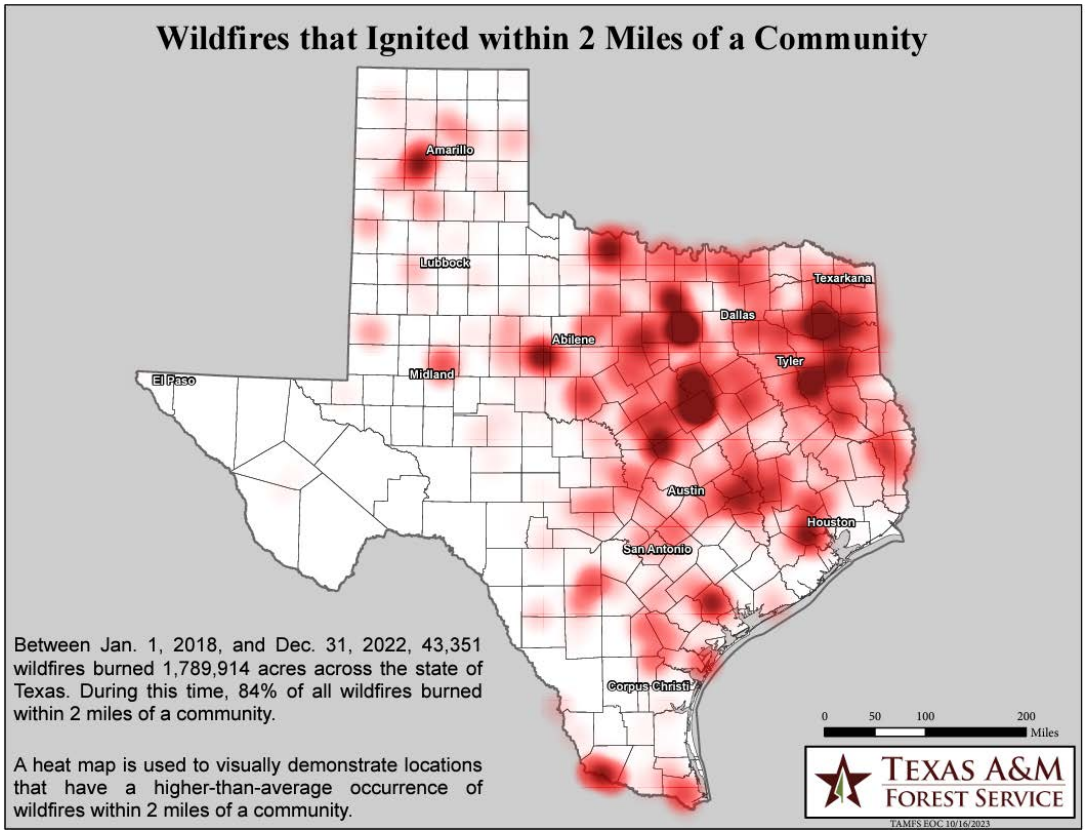
*The U.S. Drought Monitor (2000-present) depicts the location and intensity of drought across the country. Every Thursday, authors from NOAA, USDA, and the National Drought Mitigation Center produce a new map based on their assessments of the best available data and input from local observers. The map uses five categories: Abnormally Dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought (D1-D4).[122]

Wildfires –

As extreme heat and drought occurs, the risk for wildfires, or an uncontrolled fire that destroys structures and vegetation in its path, increases. The Texas A&M Forest Service reported 43,351 wildfires in Texas that ignited within a two-miles of a community from 2018 to 2022,[123] At the time of this plan, over one million acres are burning in the Texas Panhandle, thought to be one of the largest wildfires in Texas history.[124] As shown in **Exhibit 39**, many of these fires were ignited within Tarrant County. Wildfires provide both a safety and health risk, as wildfires often result in criteria pollutants such as fine particulate matter, carbon monoxide, and ground-level ozone.[125]

[122] https://www.drought.gov/states/texas/county/Tarrant
[123] https://fire-information-tfsgis.hub.arcgis.com/pages/historical-fire-statistics
[124] Txtxs Smokehouse Creek Fire Information | InciWeb (nwcg.gov)
[125] https://www.airnow.gov/sites/default/files/2021-09/wildfire-smoke-guide-chapters-1-3.pdf

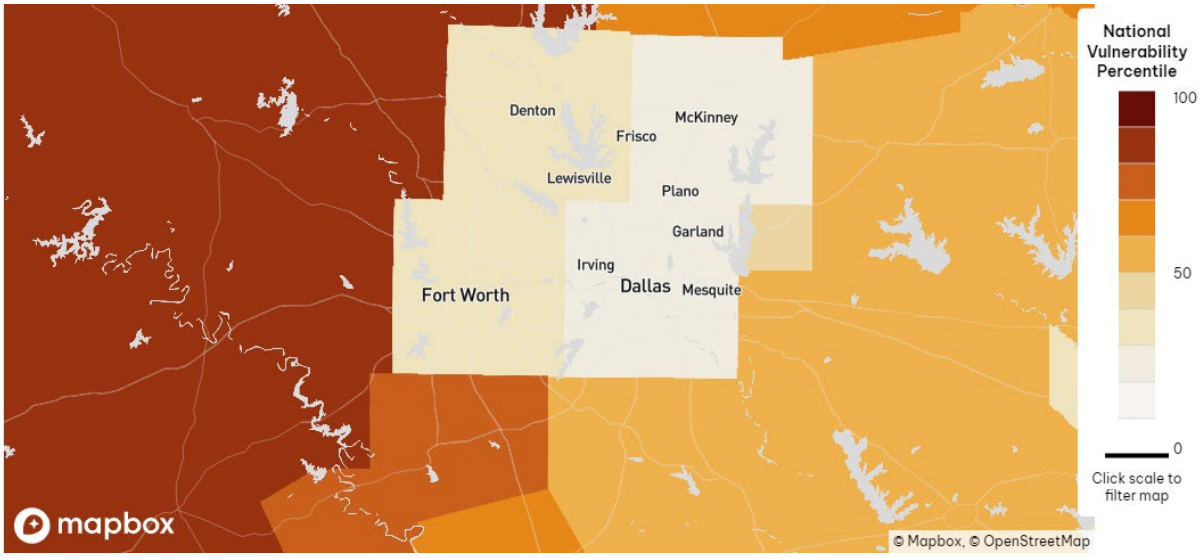
Exhibit 39: Wildfires Within Two Miles of a Community



Rural counties have higher risks of wildfires and their impacts, with Parker, Wise, Hood and Erath ranking in the top 80 percent in the U.S. Climate Vulnerability Index, as shown in **Exhibit 40: U.S. Climate Vulnerability Index: Wildfires**. [126]

126 https://map.climatevulnerabilityindex.org/map/cc_extreme_events_wildfires/usa?mapBoundaries=County&mapFilter=0&reportBoundaries=County&geoContext=State

Exhibit 40: U.S. Climate Vulnerability Index: Wildfires



Potential Benefits of Measures to LIDACs

In addition to a reduction in GHGs, LIDAC are expected to experience the following community benefits through the implementation of measures:

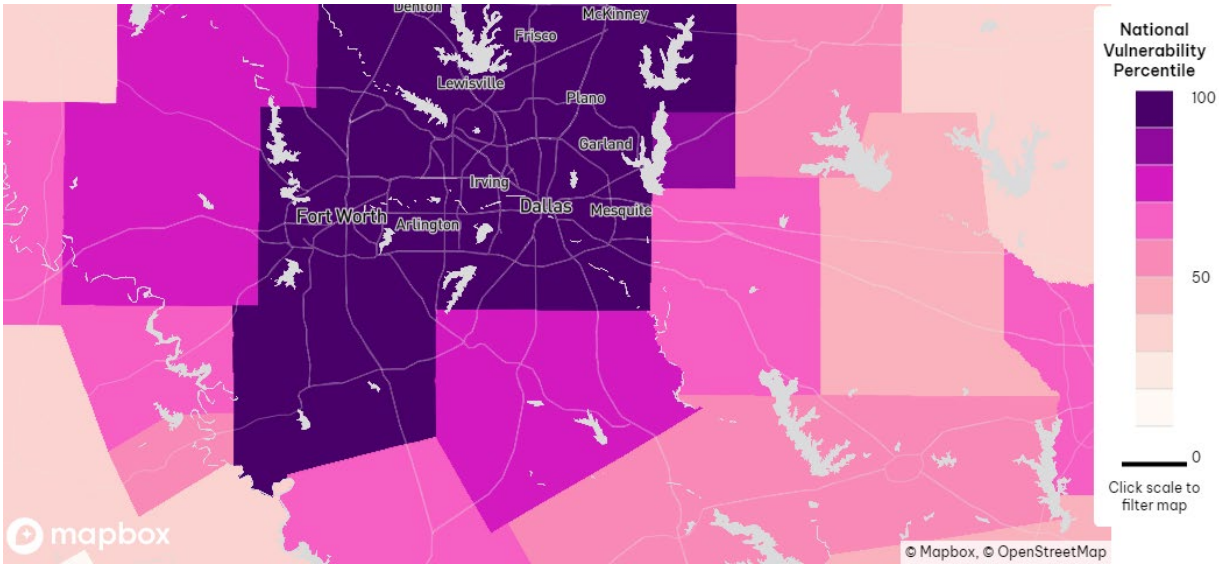
<u>Improved Health and Well-Being –</u>

Proposed measures in the DFW AQIP can result in **Improved Health and Well-Being** through the reduction of criteria pollutants, which can reduce respiratory health issues, as detailed in **Section 3: Emissions Inventories for Criteria Pollutants of Regional Concern. Exhibit 41** shows 15 counties in the NCTCOG region are in the top 50 percent of vulnerability, with seven counties in the top 10 percent.[127] LIDACs are disproportionally impacted by poor air quality, with 8 percent to 9 percent of the population that utilizes Medicare in Collin, Denton, Erath, Johnson, Somervell, Tarrant, Hood, and Parker counties having asthma.[128] Anecdotal evidence conveyed to NCTCOG from health care providers around the region indicates that they do notice an increase in emergency room visits on high ozone days, and many of these additional patients are from LIDAC communities.

[127] https://map.climatevulnerabilityindex.org/map/environment_criteria_air_pollutants/usa?mapBoundaries=County&mapFilter=0&reportBoundaries=County&geoContext=State

[128] https://www.healthyntexas.org/indicators/index/view?indicatorId=2052&localeTypeId=2&periodId=246

Exhibit 41: U.S. Climate Vulnerability Index: Criteria Air Pollutants[129]



Additionally, several measures are expected to increase **Improved Health and Well-Being** through providing more access to walkable, dense communities and green space and parks, which can result in improved physical[130] and mental health.[131]

Economic Development and Job Creation –

Many proposed measures in the DFW AQIP are expected to provide **Economic Development and Job Creation** to the region through expansion of local workforce and investments in new or upgraded infrastructure. On average, two to five years' investment in public infrastructure results in 1.5 times the benefit than the initial investment.[132] Many of the measures, such as solar installation, addition of sidewalks, and more, will require local technicians to build and service the infrastructure. NCTCOG expects to work with community colleges and universities to develop the local workforce and provide more opportunities to the region.

Many measures are expected to be funded using federal funding, which would provide competitive pay and benefits, as federal investment in infrastructure will need to meet Davis Bacon Federal wage rates.[133] Additionally, federal funding will be required to meet the Justice 40 Initiative,[134] which requires 40 percent of the overall benefits of federal investments to flow to disadvantaged communities. Finally, many measures will be implemented by NCTCOG, which has a well-established Disadvantaged Business Enterprise (DBE) Program[135] with a current overall DBE participation goal of 17 percent. As part of the DBE Program NCTCOG hosts outreach events to facilitate networking

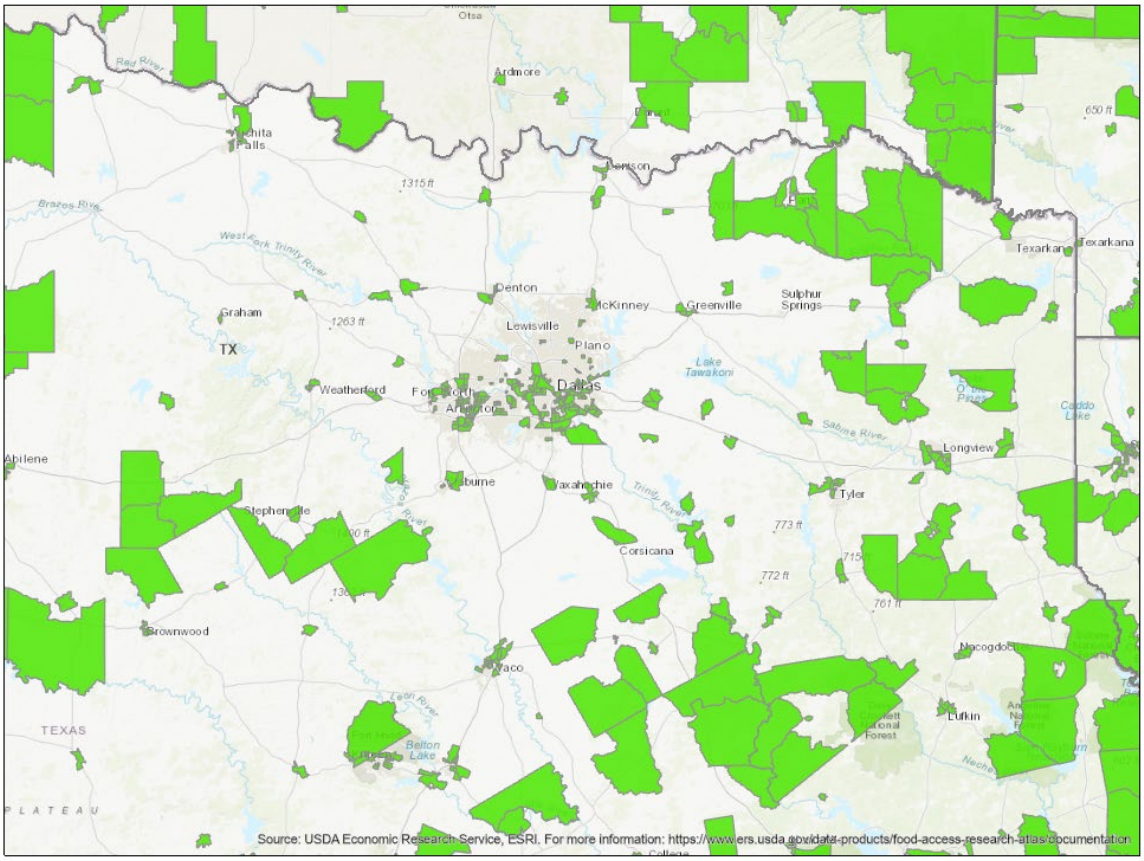
[129] https://map.climatevulnerabilityindex.org/map/environment_criteria_air_pollutants/usa?mapBoundaries=County&mapFilter=0&reportBoundaries=County&geoContext=State
[130] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9326484/
[131] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5663018/
[132] https://www.gihub.org/articles/the-vital-role-of-infrastructure-in-economic-growth-and-development/
[133] https://www.dol.gov/agencies/whd/government-contracts/construction/faq/conformance
[134] https://www.whitehouse.gov/environmentaljustice/justice40/
[135] https://www.nctcog.org/trans/involve/disadvantaged-business-enterprise-dbe-program

opportunities between DBE firms and non-DBE firms and help prepare DBEs for upcoming calls for projects.

Increased Access to Service and Amenities –

Many measures will result in **Increased Access to Service and Amenities**, or the ability of residents to access new areas and/or reach services/amenities (healthcare, healthy food, jobs) more easily. Food deserts, or communities which do not have access to fresh food, can be mitigated through the addition of new transportation options such as buses, and vanpools, and the addition of community gardens. **Exhibit 42** highlights low-income Census tracts where a significant number or share of residents is more than one mile (urban) or 10 miles (rural) from the nearest supermarket.[136]

Exhibit 42: Low Income and Low Access Census Tracts



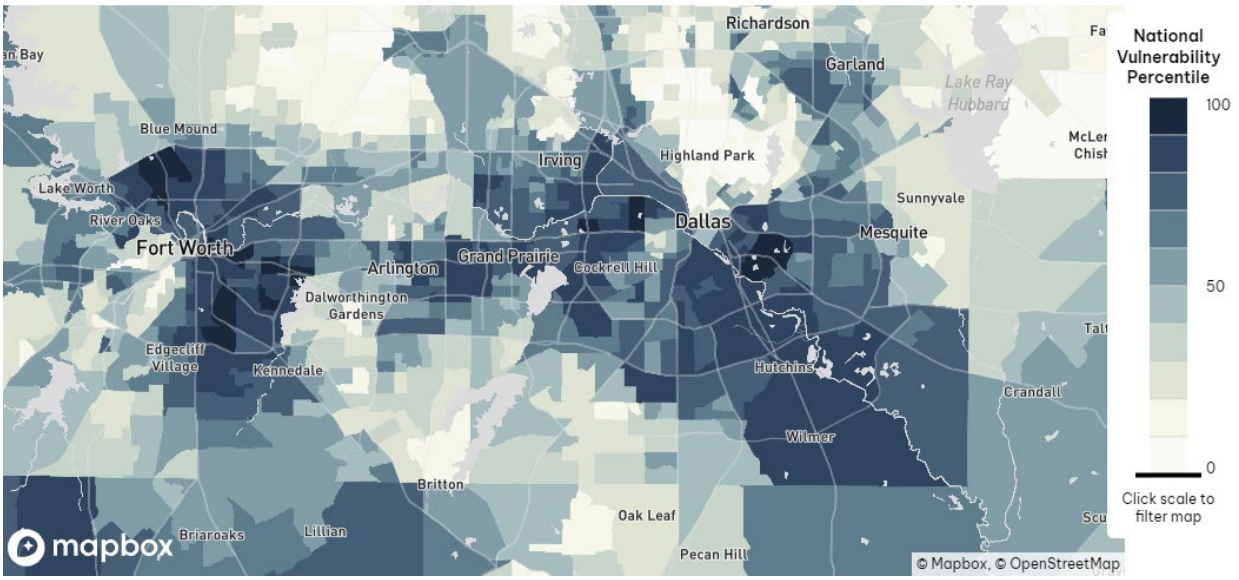
Increased Resiliency/Ability to Adapt –

As detailed in **Section 5: Identification of Potential Climate Risks**, as additional GHGs are added to the atmosphere, it is expected the region will continue to experience extreme weather, and the region needs to deploy measures which result in **Increased Resiliency/Ability to Adapt.** As discussed above, eight counties (Wise, Palo Pinto, Hood, Erath, Johnson, Navarro, Kaufman, and Hunt) in the NCTCOG region score in the top 50th percentile of Climate Vulnerability. Overall, the counties of Dallas and Fort Worth do not rank high for vulnerability, with Dallas being in the 38th percentile and

[136] https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas/

Fort Worth in the 36th percentile. ***<u>However, several Census tracts in these counties are ranked in the top 90 percent in Overall Climate Vulnerability, as illustrated in Exhibit 43.</u>***[137] LIDAC communities are particularly vulnerable as they often live in homes that are older or have poor insulation/weatherization. Additionally, more extreme rain events and increased development of impermeable surface cover has increased the frequency and severity of flooding events. Measures that result in **Increased Resiliency/Ability to Adapt** will help the region mitigate these impacts through benefits such as water/flood mitigation (e.g., bioswales that can help absorb runoff, increased use of permeable surfaces, etc.), improved weatherization to mitigate impacts of extreme temperatures, etc.

Exhibit 43: Dallas and Fort Worth: Overall Climate Vulnerability.



<u>Reduced Costs –</u>

Several measures in the DFW AIQP will directly result in **Reduced Costs** for communities, such as rebates for home weatherization, installation of solar, or adoption of newer, cleaner burning fuel vehicles. NCTCOG intends to target LIDAC as the recipients of these measures and expects to see significant benefits as federal weatherization programs and incentives targeted to LIDAC have seen an average of $372 or more every year.[138]

Note there are indirect cost savings possibilities associated with many measures – for example, measures that reduce costs of a local government could eventually reduce taxes or other fees charged to its residents. However, NCTCOG has limited identification of "reduced cost" benefits to those measures where LIDAC residents can reasonably be expected to experience cost savings directly, such as residential energy efficiency improvements.

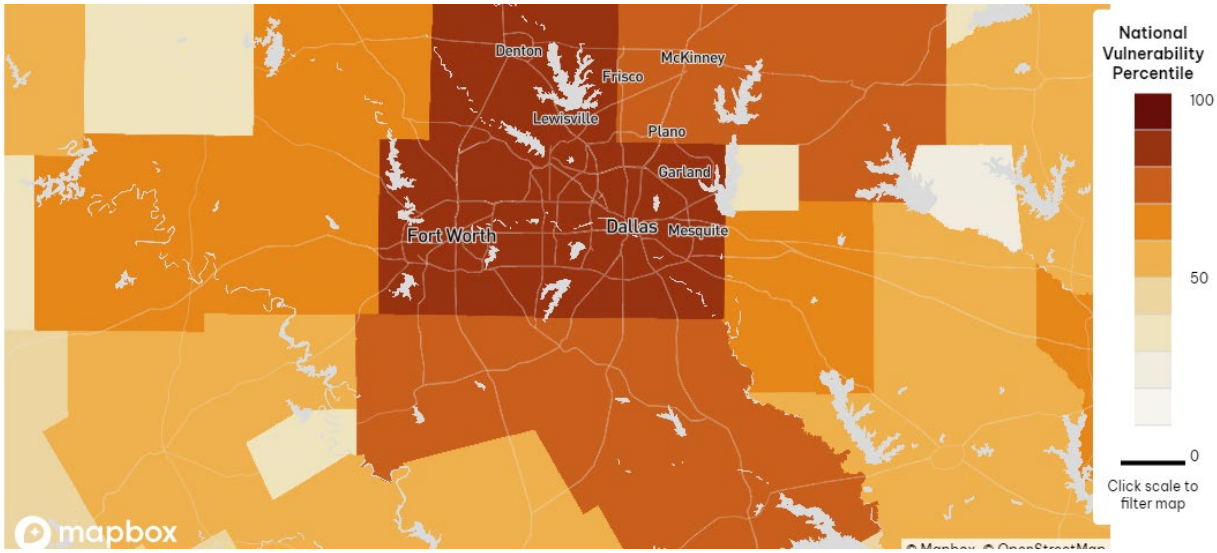
137 https://map.climatevulnerabilityindex.org/map/cvi_overall/usa?mapBoundaries=Tract&mapFilter=0&reportBoundaries=Tract&geoContext=State

138 https://www.energy.gov/scep/wap/weatherization-assistance-program

Increased Safety –

Several measures in the DFW AQIP will result in **Increased Safety** through reduced risk to pedestrians and car operators, decreased flooding, improved housing quality, and more. There are needs for improvements in transportation safety; in 2022, there were 864 motor vehicle traffic fatalities in 206 pedestrian fatalities, and 23 pedal cyclist fatalities.[139] Transportation safety improvements can occur through adding protected bike lanes and sidewalks to protect pedestrians, and improving safety for drivers through removing forced mergers, adding roundabouts, and more. Additionally, several measures can result in **Increased Safety** through reducing the risk for flooding. As shown in **Exhibit 44: U.S. Climate Vulnerability Index: Flooding**, Denton, Fort Worth, and Dallas are in the 80th vulnerability percentile for extreme flooding events. Measures that improve weatherization of homes occupied by residents in the LIDAC communities can improve the safety and quality of housing – it is well known that during extreme heat and cold, poorly weatherized homes can literally become unsafe for their residents by exposing them to unhealthy temperatures.

Exhibit 44: U.S. Climate Vulnerability Index: Flooding



Reduced Noise Pollution –

Noise Pollution can have negative physical and mental health.[140] Several proposed measures in the DFW AQIP would reduce noise pollution, primarily through the reduction of vehicles on the road (i.e., transit expansion, incentives for commuting or carpooling) and through incentivizing the purchase of quieter vehicles (i.e., zero-emission vehicles) and small off-road equipment such as gas-powered landscape equipment.

[139] https://www.nctcog.org/getmedia/89364a67-6791-4c70-b04e-12513742791f/2022_CrashFactSheet.pdf
[140] https://www.medicalnewstoday.com/articles/noise-pollution-health-effects

New Green Space/Community Beautification –

Measures that result in **New Green Space/Community Beautification** can improve mental and physical health. A study done by the University of Dallas shows about 25 percent of the urban land area in the U.S. is covered in impermeable surfaces, while Dallas averages at around 35 percent,[141] showing a need for additional greenspace in the region. Additionally, greenspaces can absorb CO_2 from the atmosphere and aid in absorbing stormwater and reducing flooding.

Increased Awareness/Engagement –

Increased Awareness/Engagement can include increased community engagement/awareness (i.e., members of the general public) and increased entity (public or private organizations) awareness/engagement. Measures expected to result in increased community engagement include residential home audit/weatherization programs and educational campaigns. Measures which can result in more entity awareness/engagement include training for employees, development of plans, and more.

Water Conservation -

As droughts increase in the region, it is essential to deploy more measures resulting in effective water conservation. Potential measures include adding automated metering infrastructure, harvesting rainwater, providing home conservation audits, repairing irrigation infrastructure and more.

6- Review of Authority to Implement

All measures included in the DFW AQIP are either voluntary in nature (e.g., an incentive) or are actions that would be performed by an implementing agency with regard to its own assets (e.g., a municipality or private company installing solar panels on its own buildings). Any code and ordinance updates would be developed by the Regional Codes Coordinating Committee that develops local codes through a consensus-based process that includes appropriate stakeholder participation; these are then available for local communities to adopt if they wish. Thus, all measures are within the authority of the implementing agency. No regulatory measures are proposed.

NCTCOG will serve as regional administrator and project manager of the DFW AQIP, guiding local governments to and through implementation of measures within their jurisdiction to implement. As a regional planning agency and MPO, NCTCOG has a long history of coordinating these types of activities through collaboration and committee structures. As the letters of support illustrate, NCTCOG has the support of entities across the region to serve in this role. Existing NCTCOG committees and programs will be leveraged where appropriate to expand or institute measures identified for implementation. Implementation will be coordinated by the NCTCOG Transportation and Environment and Development departments.

[141] https://magazine.utdallas.edu/2023/08/02/timely-topic-physicist-explains-urban-heat-islands-ways-to-cool-down-effects/

NCTCOG has frequently pursued and been awarded competitive grant funding on behalf of the region, which it has then passed through to local governments and private entities as implementing agencies within the region via subawards, subcontracts, and participant support cost agreements. These same mechanisms will be utilized to implement some measures for the DFW AQIP.

7- Workforce Planning Analysis

NCTCOG has not completed a Workforce Planning Analysis as part of the PCAP. These projections will be developed as part of the CCAP to be submitted in summer 2025.

8- Next Steps

This document will be submitted to EPA to fulfill the PCAP deliverable as required by the CPRG: Planning Grants award and will be posted for review and feedback by stakeholders in the region to start soliciting responses and input on the PCAP immediately upon completion. NCTCOG will then turn attention toward development of a CCAP to be submitted in summer 2025. Key steps in developing the CCAP will include:

GHG Inventory

NCTCOG plans to utilize the EPA's MOVES model and ICLEI's ClearPath software to conduct an updated comprehensive 16-county regional GHG inventory. This updated inventory would include all GHG emissions and sinks by emission source. The inventory is expected to utilize 2022/2023 data, unless this data is not available, in which case, NCTCOG will use the latest available data. NCTCOG will ensure consistency in the development of this updated GHG EI.

GHG Emissions Projections

As NCTCOG updates and expands the GHG EI for the CCAP, NCTCOG intends to concurrently develop comprehensive sector-based (industry, electricity consumption, transportation, commercial and residential buildings, agriculture, natural and working lands, and waste and materials management) emission projections for a near- and long-term years, 2030/2035 and 2050, respectively. In addition, the projections of GHG emissions (and sinks, if feasible) would include a comparison of a current "business-as-usual" scenario to a scenario where the CCAP is fully implemented.

GHG Reduction Targets

The updated GHG EI and comprehensive sector-based emission projections would be used by NCTCOG and coordinating entities to establish quantitative GHG emissions reduction targets for the near-term (2030/2035) and long-term (2050) years. These reduction targets would be consistent with the U.S. commitments to reduce emissions by 50 to 52 percent relative to 2005 levels by 2030, and reach net zero by 2050.[142] NCTCOG expects to identify at a minimum specific GHG reduction target for the energy and

[142] https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/

transportation sectors, as these sectors are responsible for the majority of GHGs produced in the region. Requirements for Federal Highway Administration GHG performance measures in the transportation sector will be considered to ensure that CCAP targets and FHWA performance measure targets are complementary.

Quantified GHG Reduction Measures

Many short-term measures have been identified during the development of the PCAP, but NCTCOG has been very deliberate in coordination with regional stakeholders to focus on measures that can be implemented within five years. To develop the CCAP, NCTCOG will coordinate with stakeholders to identify longer-term strategies that were removed from consideration during the PCAP development phase. As part of this evaluation, NCTCOG will review any new federal guidance for selecting measures and feedback from communities and other stakeholders regarding PCAP measures. NCTCOG will also coordinate stakeholders in evaluating the effectiveness of measures as compared to near- and long-term targets. NCTCOG will continue prioritizing measures that reduce emissions of ozone precursors and $PM_{2.5}$. Coordinating entities who wish to implement measures will be asked to identify how each measure will support regional priorities, benefits to near- and long-term targets, and the feasibility of implementation based off topography, air quality, climate, community characteristics, and benefits to the disadvantaged communities.

After identifying the full suite of measures, NCTCOG will quantify GHG and criteria pollutants reduced for each proposed measure and the potential reduction if the CCAP was fully implemented. To ensure consistency with the EPA and with other lead organizations for the CPRG, NCTCOG will primarily use tools recommended by the EPA to quantify the GHG reduction measures. When possible, NCTCOG will use the same tools used during the PCAP to ensure consistency in the evaluation of GHG reduction measures.

Benefits Analysis

This step was started during development of the PCAP, but due to the broad geographic scope of the DFW AQIP and the number of local governments involved in PCAP measures, specific sites for project implementation are not yet known and a full benefits analysis could not be completed. As specific project sites are identified, the region will be better able to specify the types of benefits or disbenefits of PCAP measures, and the communities who will be most directly impacted, to conduct a more robust benefits analysis for PCAP measures already identified.

Additional benefits analysis will be conducted on longer-term measures newly identified for CCAP purposes. Staff will assess the qualitative and quantitative benefits and disbenefits for each CCAP measure. Quantified benefits will include the expected reduction in criteria pollutants for each individual GHG measure and the total reduction of criteria pollutants if all measures in the CCAP were implemented. The tools used and processes for identifying the benefits of measures will be selected after reviewing any EPA and stakeholder recommendations and feedback on the PCAP.

NCTCOG and coordinating entities will evaluate the public engagement conducted and feedback received during the PCAP to determine the exact outreach needed for the CCAP. However, it is expected the feedback collected during the development of the PCAP will be incorporated into the CCAP and there will be additional feedback collected via virtual meetings and other engagement opportunities. NCTCOG will

make the list of proposed measures for the CCAP available to the public and provide at least 30 days to submit comments on any benefits and disbenefits.

Low-Income/Disadvantaged Communities Benefits Analysis

NCTCOG and coordinating entities will assess the use of the EJ Screen Tool and the CEJST (https://screeningtool.geoplatform.gov/en/) to identify DAC and determine if the tools have comprehensively identified DAC across the region. Updates will be made as needed to create a final DAC identification. NCTCOG will then provide each collaborating entity with a list of DACs (in the format of Census Tract ID) within their jurisdiction.

Community priorities have been collected as part of PCAP engagement, but the online surveys will remain posted throughout CCAP development to continue gathering input. Staff will identify qualitative and quantitative benefits of each potential GHG reduction measure in relation to reported priorities. As expected, the primary concern expressed was related to local air quality. Thus, staff has assessed criteria pollutant reductions of PCAP measures with a focus on NO_X and $PM_{2.5}$, and will conduct this evaluation for additional CCAP measures as they are identified. When possible, both the direct (within the DACs) and indirect (outside the DACs) benefits will be estimated. NCTCOG will evaluate the possibility of creating a publicly-available Geographic Information System (GIS) map to show the correlation between the location of DACs as compared to proposed measures or integrating this information into other existing NCTCOG-managed publicly-available mapping resources.

Upon quantification of benefits, NCTCOG will identify the proportion of the benefits received by DAC. NCTCOG will make the list of proposed measures for the CCAP available to the public and ensure the public has at least 30 days to submit comments on the benefits and disbenefits. The virtual engagement opportunities used for the Benefits Analysis will be the same virtual engagement opportunities used for the DAC benefits analysis. NCTCOG will request zip codes from respondents to identify whether they represent a DAC. Results of these comments will be used to finalize the list of measures in the CCAP.

Review of Authority to Implement

NCTCOG anticipates retaining a focus on voluntary and incentive measures in developing the CCAP, just as with the PCAP. Certain measures, such as code adoption, are initiatives for which municipal authority is codified in state statute, and NCTCOG will identify what other measures may be under the scope of local control.

Intersection with Other Funding Availability

NCTCOG will update the funding availability analysis from the PCAP and assess federal, state, and local funding availability for each new proposed implementation measure in the CCAP. NCTCOG will also report on any funding currently available to the region to implement measures and any funding that has been obtained for the implementation of the PCAP. NCTCOG will continue supporting coordinating entities in applying for funding and, if appropriate and supported by local governments, NCTCOG will consider applying on behalf of the region funds.

Workforce Planning Analysis

Workforce Solutions for North Central Texas (WSNCT) will develop a workforce analysis to identify opportunities and shortages resulting from the potential implementation of GHG reduction measures.

Data from the 16-county region will be accessed and analyzed to determine what workforce gaps exist, training programs to be developed, and the availability of workers. WSNCT has access to labor market tools, such as Chmura JobsEQ, Lightcast, and Sites on Texas. These tools can provide various reports to help compiling and completing a workforce analysis. The results of this analysis will be presented to coordinating agencies and posted online for stakeholders to view.

Once the analysis is complete, WSNCT will convene community college partners to present the data and devise a strategy to develop training programs to provide the skills needed for the occupations. The types of occupations needed will emerge as GHG reduction measures are identified and analysis of the current job market is completed, and could vary amongst the counties based on location.

Regional Engagement

NCTCOG will integrate feedback received as part of PCAP development to inform CCAP development. NCTCOG will also consider input received on the PCAP upon posting the document, including comments received from EPA, the public, collaborating agencies, or other regional stakeholders. Once the PCAP is posted (at www.publicinput.com/dfwaqip), the document will remain available for review and commenting through December 2024, when preliminary GHG reduction measures are expected to be posted. NCTCOG and coordinating entities will evaluate engagement efforts undertaken as part of the PCAP process to determine strengths and opportunities.

All stakeholders and members of the public who participated in the development of the PCAP will be notified when it is published and will be kept up to date on the development of the CCAP via quarterly e-blasts via the Public Input engagement platform. At a minimum, virtual engagement opportunities, to allow for community feedback, will occur. New engagement opportunities will also be sought out, if necessary, after analyzing the PCAP outreach. NCTCOG will make the list of proposed measures for the CCAP available to the public and provide at least 30 days to submit comments on the qualitative and quantitative benefits, and any potential disbenefits. Additional plans for further engagement with each of the two major stakeholder groups are:

Stakeholder/Intergovernmental Engagement

NCTCOG will work with stakeholders to assess the coordination process and determine if there are opportunities for improvement to ensure the successful development of the CCAP. NCTCOG expects the coordination conducted during the development of the PCAP to continue, which will include:

- Monthly or bimonthly meetings with coordinating entities.
- Collaboration via a Microsoft Teams channel.
- Presentations and discussion items at NCTCOG committee meetings.
- Collaboration with other lead organizations for the CPRG.

Also, if coordinating entities have conducted any relevant and recent outreach for local air pollution or climate action plans, this feedback will also be incorporated into the CCAP. As feedback on GHG reduction measures is received from the community, the feedback will be made available to coordinating entities to help finalize the list of implementation measures for the CCAP.

Public Engagement

NCTCOG and coordinating entities will evaluate the public engagement conducted during the PCAP to determine what outreach was successful and where there are opportunities to improve public

engagement strategies used for developing the CCAP. This evaluation will inform additional public engagement, which may include public meetings and open house forums, and virtual listening sessions. Particular attention will be given to the degree to which PCAP successfully engaged DACs. NCTCOG had set a goal that at least 50 percent of the participants from PCAP public engagement would represent a DAC, based on the zip code that the attendee is representing. Preliminary results show that 45 percent of respondents represent a LIDAC. NCTCOG will continue outreach efforts to LIDAC for the CCAP to reach the 50 percent goal.

NCTCOG anticipates focusing additional attention on stakeholder engagement with organizations representing DACs as part of CCAP development, as the compressed schedule for PCAP development did not allow as much direct engagement with community-based organizations representing or working on behalf of DACs as had originally been envisioned.

Another large long-range regional plan – the long-range Metropolitan Transportation Plan – is also slated for development throughout 2024, and NCTCOG may look for opportunities to combine CCAP and Metropolitan Transportation Plan development in outreach to cross-pollinate stakeholder engagement and prevent “community fatigue.”

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 1 - OUTREACH INVENTORY

Inventory of Outreach for Dallas-Fort Worth Air Quality Improvement Plan

Event/Meeting	Date	Item Type (Presentation, Email Blast, Workshop, Flyer Distribution, Open House, Announcement, Media Coverage)	Public, Committee, Collaborating Agency, or Stakeholder Meeting	Address	Held in a Disadvantage Communities (DAC)?	Hybrid Option
Regional Integration of Sustainability Efforts Presentation	21-Jan-23	Presentation	Committee	Virtual	Virtual; Unknown if DAC represented on committee	N/A
Surface Transportation Technical Committee Meeting	24-Mar-23	Presentation	Committee	NCTCOG Office (616 Six Flags Dr Arlington, TX 76005)	Not in a DAC; Unknown if DAC represented on committee	Yes
Regional Opportunity for Environmental Protection Agency's Climate Pollution Reduction Grants Program	30-Mar-23	Presentation	Stakeholder	Hybrid at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	Yes
Intelligent Transportation System Stakeholder Task Force	5-Apr-23	Presentation	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
Regional Transportation Council Meeting	13-Apr-23	Presentation	Committee	NCTCOG Office (616 Six Flags Dr Arlington, TX 76005)	Not in a DAC; Unknown if DAC represented on committee	Yes
Executive Board Meeting	27-Apr-23	Presentation	Committee	NCTCOG Office (616 Six Flags Dr Arlington, TX 76005)	Not in a DAC; Unknown if DAC represented on committee	Yes
Regional Integration of Sustainability Efforts Presentation	12-May-23	Announcement	Committee	Virtual	Virtual; Unknown if DAC represented on committee	N/A
June Transportation Public Meeting	12-Jun-23	Presentation	Public	NCTCOG office (616 Six Flags Dr Arlington, TX 76005) with Hybrid Option	Not in DAC; Unknown if DAC represented	Yes
Climate Pollution Reduction Grants Kick Off Meeting with Collaborating Agencies	21-Jun-23	Presentation	Collaborating Agencies	Virtual	Virtual; Unknown if DAC represented	N/A
Transportation Sector Strategies to Improve Air Quality in North Texas	14-Aug-23	Presentation and Workshop	Stakeholder	Hybrid at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	Yes
Energy Sector Strategies to Improve Air Quality in North Texas	18-Sep-23	Presentation and Workshop	Stakeholder	Hybrid at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	Yes
The University of Texas at Dallas	28-Sep-23	Presentation	Stakeholder	2830 Rutford Ave, Richardson, TX, 75080	Not in DAC; Unknown if DAC represented	No
Water, Wastewater, and Solid Waste Strategies to Improve Air Quality in North Texas	2-Oct-23	Presentation and Workshop	Stakeholder	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	No
October Public Meeting Press Release	5-Oct-23	Press release	Public	N/A	N/A	N/A
October Transportation Public Meeting	9-Oct-23	Presentation	Public	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	Yes
Climate Pollution Reduction Grants Update - Overview of Climate Pollution Reduction Grants: Implementation Grants and Summary of Workshops	11-Oct-23	Presentation	Collaborating Agencies	Virtual	Virtual; Unknown if DAC represented	N/A
Electric Vehicle Infrastructure Working Group Presentation	18-Oct-23	Presentation	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
Land Use Task Force Presentation	19-Oct-23	Presentation	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
Regional Integration of Sustainability Efforts Presentation	20-Oct-23	Presentation	Committee	Virtual	Virtual; Unknown if DAC represented on committee	N/A
Annual Fleet Recognition Awards	25-Oct-23	Announcement	Stakeholder	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	No
Rider 7 Presentation with City of Commerce	26-Oct-23	Announcement	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
Surface Transportation Technical Committee Meeting	27-Oct-23	Presentation	Committee	In person at NCTCOG office	Not in a DAC; Unknown if DAC represented on committee	No
Dallas College Symposium	1-Nov-23	Announcement	Stakeholder	5001 N MacArthur BLVD, Irving, TX, 75038	Not in DAC; Unknown if DAC represented	N/A
Rider 7 Presentation with Hunt County	8-Nov-23	Announcement	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
Rider 7 Presentation with City of Quinlan	8-Nov-23	Announcement	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
Resource Conservation Council	8-Nov-23	Announcement	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in a DAC; Unknown if DAC represented on committee	No
City of Fort Worth Urban Strategies, and North Central Texas Council of Governments presentation on Climate Pollution Reduction Grants and Greenhouse Gas Emissions Inventory	10-Nov-23	Presentation	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
Irving Environmental Symposium	11-Nov-23	Flyer distribution	Public	6555 Sierra Dr, Irving, TX 75039	Not in DAC; Unknown if DAC represented	No
Regional Stormwater Management Coordinating	15-Nov-23	Announcement	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in a DAC; Unknown if DAC represented on committee	No
City of Denton Committee on the Environment	14-Nov-23	Announcement	Stakeholder	Denton City Hall, 215 E Mckinney St, Denton, TX 76201	Not in DAC; Unknown if DAC represented	No
Regional Freight Advisory Committee	14-Nov-23	Announcement	Committee	Hybrid at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in a DAC; Unknown if DAC represented on committee	Yes
Dallas-Fort Worth Air Quality Improvement Plan: Enhanced Community Engagement Listening Session*	14-Nov-23	Workshop	Public	Virtual	Virtual; Unknown if DAC represented	No
SmartWay enewsletter	15-Nov-23	Enewsletter	Stakeholder	N/A	N/A	N/A
SMARTE enewsletter	16-Nov-23	Enewsletter	Stakeholder	N/A	N/A	N/A

Public Works Council Meeting	16-Nov-23	Announcement	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in a DAC; Unknown if DAC represented on committee	No
E-blast to Environment and Development Department's Energy and Regional Integration of Sustainability Efforts Coalition Contacts	17-Nov-23	Enewsletter	Stakeholder	N/A	N/A	N/A
Climate Pollution Reduction Grants Virtual Workshop with Collaborating Entities	29-Nov-23	Presentation and Workshop	Collaborating Agencies	Virtual	Virtual; Unknown if DAC represented	N/A
Oncor	1-Dec-23	Announcement	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
YES Conference	2-Dec-23	Announcement	Public	305 W. Warrior Trail, Grand Prairie, TX, 75052	Not in DAC; Unknown if DAC represented	No
Sick of seeing, smelling smog in DFW? Here's your chance to do something about it	3-Jan-24	Media Coverage	Public	N/A	N/A	N/A
Sick of seeing, smelling smog in DFW? Here's your chance to do something about it	3-Jan-24	Media Coverage	Public	N/A	N/A	N/A
Sick of seeing, smelling smog in DFW? Here's your chance to do something about it	3-Jan-24	Media Coverage	Public	N/A	N/A	N/A
North Texas Master Naturalists	3-Jan-24	Media Coverage	Public	N/A	N/A	N/A
Dallas Fort Worth Air Quality Improvement Plan: Public Meeting with City of Dallas*	4-Dec-23	Presentation and Workshop	Public	2828 Fish Trap Rd. Dallas, TX 75212	Yes	No
Interview with Community Impact/Articles	6-Dec-23	Media Coverage	Public	N/A	N/A	N/A
Meeting with City of Plano	6-Dec-23	Meeting and Presentation	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
North Texas Renewable Energy Group	9-Dec-23	Presentation	Stakeholder	2000 W. Walnut Hill Ln, Irving, TX 75038	Not in DAC; Unknown if DAC represented	No
Green Source DFW Calendar	12-Jan-24	Media Coverage	Public	N/A	N/A	N/A
Dallas-Fort Worth Air Quality Improvement Plan: Public Meeting with City of Aledo*	12-Dec-23	Presentation and Workshop	Public	104 Maverick St. Aledo, TX 76008	Not in DAC; Unknown if DAC represented	No
Regional Mobility Manager Meeting	12-Dec-23	Presentation	Stakeholder	Hybrid at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	No
CoServ Meeting	13-Dec-23	Announcement	Stakeholder	Virtual	Virtual; Unknown if DAC represented	N/A
Climate Pollution Reduction Grants Workshop w/Collaborating Entities	13-Dec-23	Presentation and Workshop	Collaborating Agencies	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	No
Dallas Environmental Commission Presentation	13-Dec-23	Presentation	Stakeholder	1500 Marilla St, Dallas, TX 75201	Not in DAC, but DAC Representation on Commission	Yes
Regional Transportation Council	14-Dec-23	Presentation	Committee	Hybrid at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented on Committee	Yes
Western Regional Solid Waste Policy Group	19-Dec-23	Presentation	Committee	Virtual	Virtual; Unknown if DAC represented on Committee	N/A
Press Release - Dallas-Fort Worth Air Quality Improvement Plan Public Meetings	5-Jan-24	Press release	Public	N/A	N/A	N/A
January Local Motion Article	8-Jan-24	Local Motion article	Public	N/A	N/A	N/A
Dallas-Fort Worth Air Quality Improvement Plan: City of Arlington/City of Grand Prairie Public Meeting*	8-Jan-24	Presentation and Workshop	Public	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	Yes
Dallas-Fort Worth Air Quality Improvement Plan: Public Meeting with Hood County/City of Granbury*	9-Jan-24	Presentation and Workshop	Public	116 West Bridge St. Granbury, TX 76048	Not in DAC; Unknown if DAC represented	No
Water Resources Council Meeting	10-Jan-24	Presentation	Committee	Virtual	Virtual; Unknown if DAC represented on Committee	N/A
Regional Transportation Council Info Item: Regional Air Quality Update and Air Quality Improvement Plan	11-Jan-24	Presentation	Committee	Hybrid at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented on Committee	Yes
Dallas-Fort Worth Air Quality Improvement Plan: Public Meeting with City of Fate*	16-Jan-24	Presentation and Workshop	Public	1900 Cd Boren Fate, TX 75087	Not in DAC; Unknown if DAC represented	Yes
Dallas-Fort Worth Air Quality Improvement Plan Workshop with Section 185 Organizations	16-Jan-24	Presentation and Workshop	Stakeholder	Hybrid at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	Yes
Regional Codes Coordination	16-Jan-24	Presentation	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented on Committee	No
Climate Pollution Reduction Grants Workshop with Collaborating Entities	17-Jan-24	Presentation and Workshop	Collaborating Agencies	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	No
Dallas Fort Worth Air Quality Improvement Plan: Public Meeting with City of Fort Worth*	18-Jan-24	Presentation and Workshop	Public	818 Missouri Ave Fort Worth, TX 76104	Yes	No
DFW must clean up its dirty air	18-Jan-24	Article	Public	N/A	N/A	N/A
Show Up and Ask: Community Climate Action Starts Here	19-Jan-24	Texas Impact Podcast/YouTube	Public	N/A	N/A	N/A
Surface Transportation Technical Committee	23-Jan-24	Presentation	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented on Committee	
Dallas-Fort Worth Air Quality Improvement Plan: Community Listening Session*	24-Jan-24	Presentation and Workshop	Public	Virtual	Virtual; Unknown if DAC represented	N/A
Dallas 2030 District Meeting	25-Jan-24	Presentation	Stakeholder	1801 Royal Ln Ste 400, Dallas, TX 75229	Yes	N/A
Society of Texas Environmental Professionals Meeting	26-Jan-24	Presentation	Stakeholder	Dallas, TX	Unknown	N/A
Dallas-Fort Worth Air Quality Improvement Plan: Public Meeting with City of Cleburne*	29-Jan-24	Presentation and Workshop	Public	1501 W Henderson St. Cleburne, TX 76033	Yes	No
Air Transportation Advisory Committee Meeting	1-Feb-24	Presentation	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	Yes
CPRG Workshop with Collaborating Entities	6-Feb-24	Presentation	Collaborating Agencies	Virtual	Virtual; Unknown if DAC represented	N/A
Water Resources Council Meeting	7-Feb-24	Presentation	Committee	Virtual	Virtual; Unknown if DAC represented	N/A
Regional Transportation Council	8-Feb-24	Presentation	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented	Yes

SAME Infrastructure Presentation	9-Feb-24	Announcement	Stakeholder	300 W 1st St, Arlington, TX, 76010	Yes	No
NCTCOG and RCE North Texas Regional Climate Action Plan Symposium	15-Feb-24	Presentation and Workshop	Stakeholder	300 West 1st Street, Arlington, TX, 76010	Yes	No
Public Works Council Meeting	15-Feb-24	Presentation	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented on Committee	No
Regional Integration of Sustainability Efforts Presentation	20-Feb-24	Presentation	Committee	Virtual	Virtual; Unknown if DAC represented	N/A
Dallas-Fort Worth Air Quality Improvement Plan/Climate Pollution Reduction Grants Workshop with Collaborating Entities	21-Feb-24	Presentation and Workshop	Collaborating Agencies	Virtual	Virtual; Unknown if DAC represented	N/A
Executive Board Meeting	22-Feb-24	Presentation	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented on Committee	Yes
Surface Transportation Technical Committee	23-Feb-24	Presentation	Committee	In person at NCTCOG office (616 Six Flags Dr Arlington, TX 76005)	Not in DAC; Unknown if DAC represented on Committee	No
Resource Conservation Council	28-Feb-24	Presentation	Committee	Virtual	Virtual; Unknown if DAC represented	N/A
Dallas-Fort Worth Clean Cities E-blast	2/13/23; 2/20/23; 2/28/23; 3/6/23; 3/13/23; 3/21/2023; 3/28/2023; 11/9/2023; 11/15/2023; 11/21/2023; 11/29/2023; 12/22/2023; 1/4/2024; 1/17/2024	E-Newsletter	N/A	N/A	N/A	N/A
AQ Funding E-blast	2/13/2023; 2/20/2023; 2/28/2023; 3/6/2023; 3/13/2023; 3/21/2023; 3/28/2023; 12/22/2023	E-Newsletter	N/A	N/A	N/A	N/A
Clean School Bus E-blast	4-Jan-24	E-Newsletter	N/A	N/A	N/A	N/A
Aledo (Facebook)	12-Dec-23	social media post	Public	N/A	N/A	N/A
Aledo (Instagram)	12-Dec-23	social media post	Public	N/A	N/A	N/A
Aledo (Twitter/X)	12-Dec-23	social media post	Public	N/A	N/A	N/A
Arlington/GP & Granbury (Facebook)	3-Jan-24	social media post	Public	N/A	N/A	N/A
Arlington/GP & Granbury (Instagram)	3-Jan-24	social media post	Public	N/A	N/A	N/A
Arlington/GP & Granbury (Twitter/X)	3-Jan-24	social media post	Public	N/A	N/A	N/A
Fate & Fort Worth (Facebook)	11-Jan-24	social media post	Public	N/A	N/A	N/A
Fate & Fort Worth (Instagram)	11-Jan-24	social media post	Public	N/A	N/A	N/A
Fate & Fort Worth (Twitter/X)	11-Jan-24	social media post	Public	N/A	N/A	N/A
Fate (Facebook update)	16-Jan-24	social media post	Public	N/A	N/A	N/A
Fate (Twitter/X update)	16-Jan-24	social media post	Public	N/A	N/A	N/A
Cleburne (Facebook)	24-Jan-24	social media post	Public	N/A	N/A	N/A
Cleburne (Instagram)	24-Jan-24	social media post	Public	N/A	N/A	N/A
Cleburne (Twitter/X)	24-Jan-24	social media post	Public	N/A	N/A	N/A

*Meeting was held specifically for Dallas-Fort Worth Air Quality Improvement Plan

DALLAS-FORT WORTH
AIR QUALITY
IMPROVEMENT PLAN

SOCIAL MEDIA REPORT

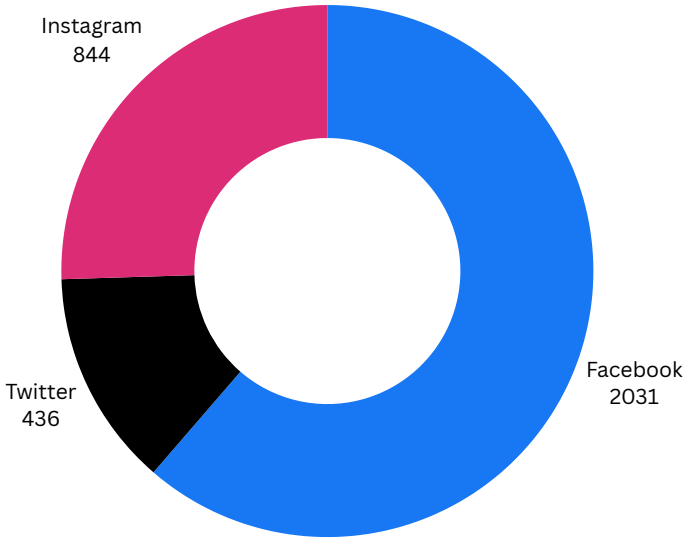
AQIP MEETINGS

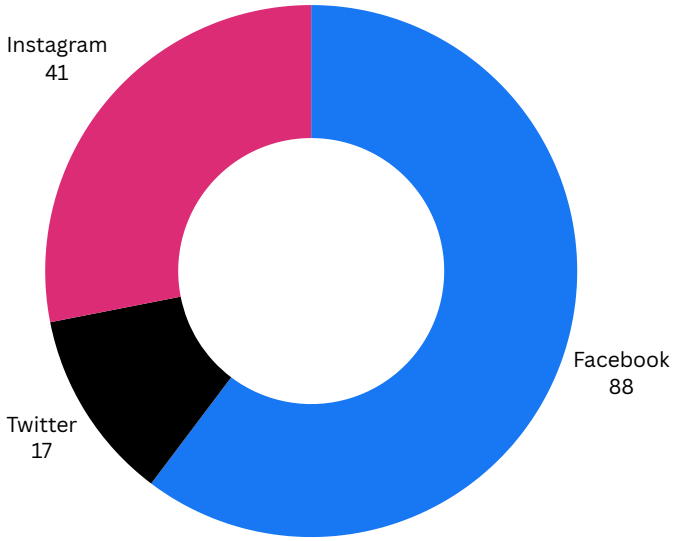
December 2023 - January 2024

North Central Texas
Council of Governments

SUMMARY

# of posts: 14 **Facebook: 5** **Twitter/X: 5** **Instagram: 4**





total impressions: 3311 **total engagements: 146**

CAMPAIGN ENGAGEMENT RATE: 4.41%

Facebook: 4.33% **Twitter/X: 2.01%** **Instagram: 9.4%**

TOP POSTS:

DATE	POST	LINK	PLATFORM	IMPRESSIONS	ENGAGEMENTS	ER
Most engagements:						
1/3/24	Arlington/GP & Granbury	link	Facebook	546	53	9.71%
Highest ER:						
1/3/24	Arlington/GP & Granbury	link	Instagram	102	17	16.67%
Most impressions:						
1/24/24	Cleburne	link	Facebook	1117	23	2.06%

FOLLOWERS: 3,223 *as of 2/20/24*

★ **BEST ENGAGEMENT RATE**

★ **BEST OVERALL REACH**

SUMMARY

of posts: **5** average impressions per post: **406.2** engagement rate: **4.33%**

		Impressions	Engagements	Engagement Rate
12/12/2023	permalink	95	3	3.16%
★ **1/3/2024**	permalink	546	53	9.71%
1/11/2024	permalink	110	2	1.82%
1/16/2024	permalink	163	7	4.29%
★ **1/24/2024**	permalink	1,117	23	2.06%

FOLLOWERS: 689 *as of 2/20/24*

SUMMARY

total # of posts: **4** average impressions per post: **87** engagement rate: **9.4%**

		Impressions	Engagements	Engagement Rate
★ **12/12/2023**	permalink	165	6	3.64%
★ **1/3/2024**	permalink	102	17	16.67%
1/11/2024	permalink	96	13	13.54%
1/24/2024	permalink	73	5	6.85%

FOLLOWERS: 2,487 *as of 2/20/24*

SUMMARY

total # of posts: **5** average impressions per post: **168.8** engagement rate: **2.01%**

		Impressions	Engagements	Engagement Rate
12/12/2023	permalink	70	2	2.86%
1/3/2024	permalink	187	2	1.07%
★ **1/11/2024**	permalink	166	6	3.61%
1/16/2024	permalink	170	5	2.94%
★ **1/24/2024**	permalink	251	2	0.80%

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 2 - LETTERS OF SUPPORT

ADDISON

January 26, 2024

The Honorable Michael Regan
Administrator Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The Town of Addison, Texas is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The Town of Addison, Texas understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The Town of Addison, Texas looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, The Town of Addison, Texas fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Passion Hayes
Deputy City Manager

PARKS, RECREATION & LANDSCAPE DEVELOPMENT | P.O. Box 9010 Addison, TX 75001 | phone: 972.450.2851 fax: 972.450.2834 | ADDISONTEXAS.NET | IT ALL COMES TOGETHER.

City of ALEDO
Rich Heritage, Dynamic Future

April 11, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

City of Aledo is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. *City of Aledo* understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

City of Aledo looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, City of Aledo fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Nick Stanley
City Mayor

CITY OF ALLEN

Mayor
Baine L. Brooks

Mayor Pro Tem
Chris Schulmeister

Councilmembers
Daren Meis
Tommy Baril
Dave Cornette
Dave Shafer
Ben Trahan

City Manager
Eric Ellwanger

November 6, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Allen is writing to express our support for the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Allen understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

Efforts in this regard are especially important to the Dallas-Fort Worth area, which was recently reclassified as severe nonattainment with respect to certain federal air quality standards. Consequently, it stands to reason that the NCTCOG would lead such mitigating initiatives on our collective behalf, made possible with these new federal resources.

The City of Allen remains ready to collaborate with NCTCOG staff and other interested parties on developing a reliable and workable plan, as well as implementing projects that achieve comprehensive air quality improvement for the betterment of the region.

Thank you in advance for your time and consideration of our perspective on the assignment of potential funds for the DFW MSA and neighboring jurisdictions.

Sincerely,

Baine L. Brooks
Mayor

305 Century Parkway · Allen, Texas 75013-8042 · 214.509.4100
CityofAllen.org · coa@cityofallen.org

ARLINGTON
Office of the Mayor

MAYOR
JIM R. ROSS

THE AMERICAN DREAM CITY

101 W. Abram St.

P.O. Box 90231, MS 01-0310
Arlington, Texas 76004-3231

Office 817-459-6121

Jim.Ross@arlingtontx.gov

April 13, 2021

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Arlington is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Arlington understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Arlington looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, we fully support the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Jim R. Ross
Mayor

THE CITY OF

BALCH SPRINGS

GROWING COMMUNITY

April 4, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Balch Springs is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. *The City of Balch Springs* understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Balch Springs looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, The City of Balch Springs fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Susan Cluse, City Manager

13503 Alexander Road | Balch Springs, Texas 75181 | 972-286-4477

CITY OF
BEDFORD
2000 Forest Ridge Drive - Bedford, TX 76021
(817)952-2100 www.bedfordtx.gov

February 9, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Bedford is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Bedford understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Bedford looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Bedford fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Andrea Roy
Interim City Manager

CARROLLTON
TEXAS

November 27, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Carrollton, Texas is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Carrollton understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – including greenhouse gases and ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Carrollton looks forward to collaborating with the NCTCOG and other interested parties to develop a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Carrollton fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Erin Rinehart
City Manager

CITY MANAGER'S OFFICE
1945 Jackson Road, Carrollton, Texas 75006 | 972-466-3001
P.O. Box 110535, Carrollton, Texas 75011-0535 | cityofcarrollton.com

cleburne
this is texas

Branded 1867
re-established daily.

Mayor
Scott Cain

Mayor Pro Tem
Mike Mann

Councilmembers
Derek Weathers
John Warren

City Manager
Steve Polasek

April 12, 2023

The Honorable Michael Regan Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Cleburne is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Cleburne understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental enhancements, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Cleburne looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Cleburne fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Steve Polasek
City Manager

10 N Robinson St • PO Box 677 • Cleburne, Texas 76033
817-645-0900 • www.cleburne.net • ADA/EOE/ADEA • TDD 800-735-2989

COLLIN COUNTY

Engineering
4690 Community Avenue
Suite 200
McKinney, Texas 75071
972-548-3727
www.collincountytx.gov

June 27, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Collin County is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Collin County understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives, which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

Again, Collin County supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Clarence Daugherty

Clarence Daugherty, P.E.
Director of Engineering

ERIC L. JOHNSON

MAYOR OF DALLAS

April 20, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, D.C. 20004

Dear Administrator Regan:

The City of Dallas is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant for the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) program on behalf of the Dallas - Fort Worth - Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Dallas understands that as the lead applicant, the NCTCOG accepts responsibility for the management of grant funds and coordination of deliverables pertaining to the CPRG program.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We are confident that plans developed through the CPRG will help the DFW MSA identify and implement initiatives that reduce air pollutants, including greenhouse gases and ozone precursors. This endeavor is especially important to the Dallas-Fort Worth area because it was recently reclassified as "severe nonattainment" per the 2008 8-Hour Ozone National Ambient Air Quality Standards.

The City of Dallas looks forward to collaborating with the NCTCOG and other stakeholders to develop a plan in Phase 1 of the CPRG program and then implementing initiatives that achieve comprehensive air quality improvement during Phase 2.

The City of Dallas fully supports the NCTCOG as the lead applicant for the CPRG program on behalf of the DFW MSA. Thank you for your time and consideration.

Sincerely,

Eric L. Johnson
Mayor

OFFICE OF THE MAYOR CITY HALL 1500 MARILLA ST., 5EN DALLAS, TEXAS 75201 TELEPHONE 214.670.3301

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City Manager's Office
215 E. McKinney St., Denton, TX 76201 • (940) 349-8307

The Honorable Michael Regan

Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Denton is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Denton understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Denton looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2. The City of Denton fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

DocuSigned by:
Sara Hensley
5236DB296270423...

City Manager

DENTON COUNTY TRANSPORTATION AUTHORITY

February 21, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Denton County Transportation Authority (DCTA) is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. DCTA understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

DCTA looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, DCTA fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Austin Frith
Vice President
Planning and Development

Duncanville
City of Champions

January 17, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Duncanville is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Duncanville understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Duncanville looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Duncanville fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Barry Gordon
Mayor

THE CITY OF
EULESS

February 27, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Euless is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Euless understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Euless looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Euless fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Linda

Linda Martin
Mayor

201 N. Ector Drive, Euless, Texas 76039-3595
817/685-1400 • Metro 817/267-4403 • Fax 817/685-1416
www.eulesstx.gov

FARMERS BRANCH

City of Farmers Branch
13000 William Dodson Parkway
Farmers Branch, Texas 75234

February 20, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Farmers Branch is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Farmers Branch understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Farmers Branch looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Farmers Branch fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Terry Lynne
City of Farmers Branch Mayor

April 3, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Fate is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Fate's leadership understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Fate looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, Fate fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Michael Kovacs
City Manager

February 7, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The Town of Flower Mound is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The Town of Flower Mound understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The Town of Flower Mound looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the Town of Flower Mound fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Regards,

James W. Childers
Town Manager
Town of Flower Mound

2121 Cross Timbers Road • Flower Mound, Texas 75028 • Phone: 972-874-6000

FORT WORTH®

April 3, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Fort Worth is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Fort Worth understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Fort Worth looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Fort Worth supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Valerie Washington
Assistant City Manager

CITY MANAGER's OFFICE
City of Fort Worth * 200 Texas Street * Fort Worth, Texas 76102
(817) 392-6111 * Fax (817) 392-6134

FRISCO

PROGRESS IN MOTION

November 20, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan,

The City of Frisco is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Frisco understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to improve air quality in the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Frisco looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Frisco fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Wesley S. Pierson
City Manager
City of Frisco, Texas

CITY MANAGER'S OFFICE
CITY OF FRISCO · GEORGE A. PUREFOY MUNICIPAL CENTER
6101 FRISCO SQUARE BLVD · 5TH FLOOR · FRISCO, TX 75034 · 972.292.5106 · FAX 972.292.5122 · WWW.FRISCOTEXAS.GOV

April 18, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Granbury is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Granbury understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Granbury looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Granbury fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Jim Jarratt
Mayor
City of Granbury

116 West Bridge Street • Granbury, Texas 76048 • 817-573-1114

Grand Prairie
TEXAS

April 14, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Grand Prairie, Texas supports the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Grand Prairie, Texas understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Grand Prairie looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Thank you in advance for your time and consideration.

Respectfully,

Cheryl DeLeon
Deputy City Manager

Office of the City Manager • P.O. Box 534045 • Grand Prairie • Texas • 75053-4045 • Office: 972-237-8012 • Fax: 972-237-8088

JUSTIN
1887

April 20, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Justin is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Justin understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Justin looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Justin fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Elizabeth Woo (Apr 20, 2023 13:45 CDT)

Elizabeth Woodall, Mayor
City of Justin

MANSFIELD
TEXAS
1200 E. Broad St.
Mansfield, Texas 76063
817-276-4200
www.mansfieldtexas.gov

01/26/2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Mansfield is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Mansfield understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Mansfield looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Mansfield fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Joe Smolinski
City Manager

MESQUITE
TEXAS.
Real. Texas. Flavor.

Daniel Alemán Jr.
Mayor

Jeff Casper
District 1

Kenny Green
District 2

Elizabeth Rodriguez-Ross
District 3

Tandy Boroughs
District 4

B.W. Smith
District 5

Brandon Murden
District 6

Cliff Keheley
City Manager

January 25, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Mesquite is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Mesquite understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Mesquite looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Mesquite fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Cliff Keheley, ICMA-CM
City Manager

P.O. Box 850137 ▪ Mesquite, Texas 75185-0137 ▪ 972.288.7711

Midlothian
DFW's Southern Star

April 11th, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Midlothian is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Midlothian understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

Midlothian looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, Midlothian fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Chris Dick
City Manager

City of Oak Ridge
POLICE DEPARTMENT

8450 N State Hwy 34 Oak Ridge, TX 75161
P.O. Box 458 Kaufman, TX 75142 * 972-551-0345 * 972-551-0343
www.cityofoakridgetx.com

04-05-2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Oak Ridge is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Oak Ridge understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Oak Ridge looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, The City of Oak Ridge fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Billy C Weatherly

Billy C. Weatherly
Chief of Police

Plano
City of Excellence

City of Plano
1520 K Avenue
Plano, TX 75074

P.O. Box 860358
Plano, TX 75086-0358
Tel: 972-941-7000
Plano.gov

December 1, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Plano is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Plano understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Plano looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Plano fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Rachel C. Patterson

Rachel C. Patterson
Director, Environmental Health & Sustainability

John B. Muns	Kayci Prince	Maria Tu	Anthony Ricciardelli	Rick Horne	Shelby Williams	Julie Holmer	Rick Smith	Mark D. Israelson
Mayor	*Mayor Pro Tem*	*Deputy Mayor Pro Tem*	*Place 2*	*Place 3*	*Place 5*	*Place 7*	*Place 8*	*City Manager*

RICHARDSON
TEXAS

December 1, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The City of Richardson is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The City of Richardson understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The City of Richardson looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the City of Richardson fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Charles Goff
Assistant City Manager

P.O. Box 830309
Richardson, TX
75083-0309
972.744.4100 Tel
972.744.5803 Fax
www.cor.net

DALLAS COUNTY JUDGE CLAY LEWIS JENKINS

April 5, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Dallas County is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Dallas County understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

Dallas County looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, Dallas County fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration

Sincerely,

Clay Lewis Jenkins
Dallas County Judge

COMMISSIONER DR. THERESA M. DANIEL
ROAD & BRIDGE DISTRICT 1

April 11, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

As a Dallas County Commissioner and its representative to the SharedAirDFW.com monitoring network, I am pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. We understand and support that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

Dallas County looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, Dallas County fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Dr. Theresa M. Daniel
Dallas County Commissioner
District 1

500 Elm Street, Records Building,
7th Floor, Dallas, Texas 75202
(214) 653-6668

Dallas Area Rapid Transit
PO Box 660163
Dallas, Texas 75266-0163
214-749-3278

December 1, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Dallas Area Rapid Transit (DART) is pleased to support the North Central Texas Council of Governments (NCTCOG) as the lead applicant for the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. DART understands that the NCTCOG will be responsible for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. At DART, sustainability is central to what we do every day. We believe the plans developed through this program will help the DFW MSA identify initiatives that comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

DART looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, DART fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you for your time and consideration.

Sincerely,

Nadine S. Lee
President & Chief Executive Officer

c: Dee Leggett, DART, Executive Vice President/Chief Development Officer
Jeamy Molina, DART, Executive Vice President/Chief Communications Officer

January 30, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Dallas-Fort Worth International Airport (DFW Airport) is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Dallas-Fort Worth International Airport understands and supports that, as the lead applicant, NCTCOG accepts responsibility and oversight for managing grant funds and coordinating activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives that comprehensively address air pollutants – not only greenhouse gases but also ozone precursors. These plans are critical to the Dallas-Fort Worth ozone nonattainment area, recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

DFW hopes to work with NCTCOG on several critical Airport projects in the coming years, such as our transition to a zero-emission vehicle fleet, construction of an anaerobic digester to convert organic waste into biogas and/or renewable electricity, transition to refrigerants with a lower global warming potential (GWP) in our Central Utility Plant, and rehabilitation of Central Utility Plant chillers to improve energy efficiency and ensure resilient cooling capacity during hot weather. These landmark projects will reduce emissions to support DFW's goal of achieving net zero carbon by 2030 and signify our commitment to improving regional air quality.

DFW Airport looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and the opportunity to implement initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Thank you in advance for your time and consideration.

Sincerely,

Sean Donohue
Chief Executive Officer
Dallas Fort Worth International Airport

April 14, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

The Hood County Clean Air Coalition is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. The Hood County Clean Air Coalition understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

The Hood County Clean Air Coalition looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, the Hood County Clean Air Coalition fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Mark Franco
Chairman, Hood County Clean Air Coalition

301 North Hannaford Street P.O. Box 743 Granbury, Texas 76048
www.hoodcountycleanair.com

HOOD COUNTY JUDGE
RON MASSINGILL
100 E. Pearl Street
Granbury, Texas 76048
817-579-3200 • FAX: 817-579-3213

April 5, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Hood County is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Hood County understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

Hood County looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, Hood County fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Ron Massingill
Hood County Judge

HUNTCOUNTY
★ TEXAS ★

Bobby W. Stovall
Hunt County Judge

Jessica R. Sims
Executive Assistant

903.408.4146
903.408.4299 Fax

Post Office Box 1097
Greenville, TX
75403-1097

June 13, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Hunt County is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Hunt County understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

Hunt County looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, Hunt County fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Bobby W. Stovall
Hunt County Judge

27 November 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

On the Road Companies is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. On the Road Companies understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

On the Road Companies looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, On the Road Companies fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Michelle A Corson
Founder + CEO

OFFICE OF PARKER COUNTY JUDGE PAT DEEN

1 Courthouse Square | Weatherford, TX 76086 | Office: 817.598.6148 | Fax: 817.598.6199 | parkercountytx.com

January 22, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Parker County is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Parker County understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

Parker County looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, Parker County fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Parker County Judge

Regional Transportation Council

The Transportation Policy Body for the North Central Texas Council of Governments
(Metropolitan Planning Organization for the Dallas-Fort Worth Region)

April 3, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

On behalf of the Regional Transportation Council (RTC), the Metropolitan Planning Organization for the Dallas-Fort Worth area, I am pleased to support designating the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grant (CPRG) on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions.

The RTC understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

This project is consistent with the policies and programs of Mobility 2045: The Metropolitan Transportation Plan for North Central Texas – 2022 Update. If the project receives funds, the RTC will support its inclusion in the 2023 - 2026 Transportation Improvement Program for North Central Texas, as needed.

Again, the RTC supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you for your time and consideration of this proposal. If you have any questions about this project, please contact Michael Morris at (817) 695-9241 or mmorris@nctcog.org.

Sincerely,

Duncan Webb, Chair
Regional Transportation Council
Commissioner, Collin County

NA:kw

cc: Michael Morris, P.E., Director of Transportation, NCTCOG

P.O. Box 5888 • Arlington, Texas 76005-5888 • (817) 695-9240 • FAX (817) 640-3028
http://www.nctcog.org/trans

MANNY RAMIREZ

TARRANT COUNTY COMMISSIONER

PRECINCT FOUR

April 11, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Tarrant County is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Tarrant County Precinct 4 understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

Tarrant County looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program, and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, Tarrant County fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Manny Ramirez

6713 TELEPHONE ROAD, FORT WORTH, TX 76135
Administrative Office: (817) 238-4400 Fax: (817) 238-4403
Maintenance Facility: (817) 306-4000 Fax: (817) 306-4003

TARRANT COUNTY

GARY FICKES
COUNTY COMMISSIONER
PRECINCT NO. 3

Northeast Courthouse
645 Grapevine Hwy., Suite 200
Hurst, TX 76054
(817) 248-6295
(817) 581-3603 - Fax

Southlake Town Hall
1400 Main Street, Suite 410
Southlake, TX 76092
(817) 481-8234
(817) 481-8053 - Fax

April 10, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

I am writing to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. *I* understand and support NCTCOG, as the lead applicant, the NCTCOG would accept *the* responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

I look forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and look forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, *I* fully support the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Gary Fickes
Tarrant County Commissioner, Precinct 3

ggfickes@tarrantcountytx.gov

February 21, 2024

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1301 Constitution Avenue NW
Washington, DC 20004

Dear Administrator Regan:

Trinity Metro, the public transportation authority for Tarrant County, is pleased to support the designation of the North Central Texas Council of Governments (NCTCOG) as the lead applicant to the United States Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) planning grants on behalf of the Dallas-Fort Worth-Arlington Metropolitan Statistical Area (DFW MSA) and neighboring jurisdictions. Trinity Metro understands and supports that, as the lead applicant, the NCTCOG accepts responsibility and oversight for managing grant funds and coordination of activities and deliverables pertaining to the CPRG planning grants.

The CPRG program provides an unprecedented opportunity to advance environmental justice, increase energy security, and improve air quality. We believe the plans developed through this program will help the DFW MSA identify initiatives which comprehensively address air pollutants – not only greenhouse gases, but also ozone precursors. This is especially important to the Dallas-Fort Worth ozone nonattainment area, which was recently reclassified as severe nonattainment for the 2008 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).

Trinity Metro looks forward to collaborating with the NCTCOG and other interested parties on developing a plan through Phase 1 of the CPRG program and looks forward to the opportunity to consider implementing initiatives and projects that achieve comprehensive air quality improvement during Phase 2.

Again, Trinity Metro fully supports the NCTCOG as the lead applicant for the application to the CPRG planning grants on behalf of the DFW MSA. Thank you in advance for your time and consideration.

Sincerely,

Chad Edwards

Chad Edwards
Executive Vice President
Strategy, Planning & Development

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 3 - SUMMARY OF CPRG WORKSHOPS

Summary of CPRG Workshop Strategies

North Central Texas Council of Governments

CPRG Transportation Workshop Measures

Focus Area	Measures
Clean Fuels and Fuel Efficiency	- Installation of monitors to show emissions produced when idling in areas with high idling (EX: school zones) - Incentives for electric vehicles (EV) and e-bikes with rebates - Installation of EV and alternative fuel infrastructure - Identify and designate “low-emission corridors”
Sustainable Development	- Implement the 15-minute city - Improve sidewalks by adding solar panels or native trees - Add more bike lanes and add barriers to bike lanes - Expand the Safe Routes to Schools program - Deploy “park once” programs - Invest in cool/smart pavement

CPRG Transportation Workshop Measures

Focus Area	Measures
Congestion Management	- Encourage/incentivize flexible start/stop times and hybrid work - Encourage/incentivize delivery drivers to drive during off-peak times - Education campaign on autonomous vehicles - Install roundabouts - Add dedicated turn lanes to reduce congestion - Utilize unused lanes (such as service roads) during times of high congestion, or explore the use of contraflow lanes - Identify and update unsafe forced merges leading to accidents - Installation of smart traffic light controllers - Improve existing railway crossings to minimize vehicle idling
Transit Planning & Operations	- Subsidize the cost of public transportation - Increase 511 DFW public awareness through public awareness campaign - Implementation of higher capacity on-demand vehicles (micro transit) - Creation of bus/transit only lanes - Improve access to transit stops and minimize wait times - Implement parking maximums to encourage public transportation - Reduce or eliminate toll fees for first/last mile services - Identify and implement transit options for rural areas

Summary of Energy Workshop Strategies

North Central Texas Council of Governments

Energy Workshop Measures

Focus Area	Measures
Municipal Improvements	- Incentivize tree planting, install trellises along walls, add landscape islands in parking lots, reduce concrete - Retrofit old industrial facilities to community gardens - Create an energy management plan and conduct energy benchmarking/audits - Install renewable energy sources and energy efficient equipment (double paned windows, insulation, etc.) - Create a regional marketing campaign encouraging energy efficiency strategies
Electricity Generation and Industrial Facilities and Operations	- Implement more renewable energy projects including enhanced geothermal and solar - Utilize more battery storage for resiliency - Incentivize local industrial facilities to conserve energy - Target industrial facilities utilizing refrigerant buildings
Commercial and Residential Buildings	- Update building codes - Create community solar projects - Incentivize residents to purchase renewable or zero-emission electricity from contractors vetted by local governments - Fund the retrofits of older, energy inefficient homes

Summary of Water, Wastewater, and Solid Waste Workshop Strategies

North Central Texas Council of Governments

Water, Wastewater, and Solid Waste Workshop Measures

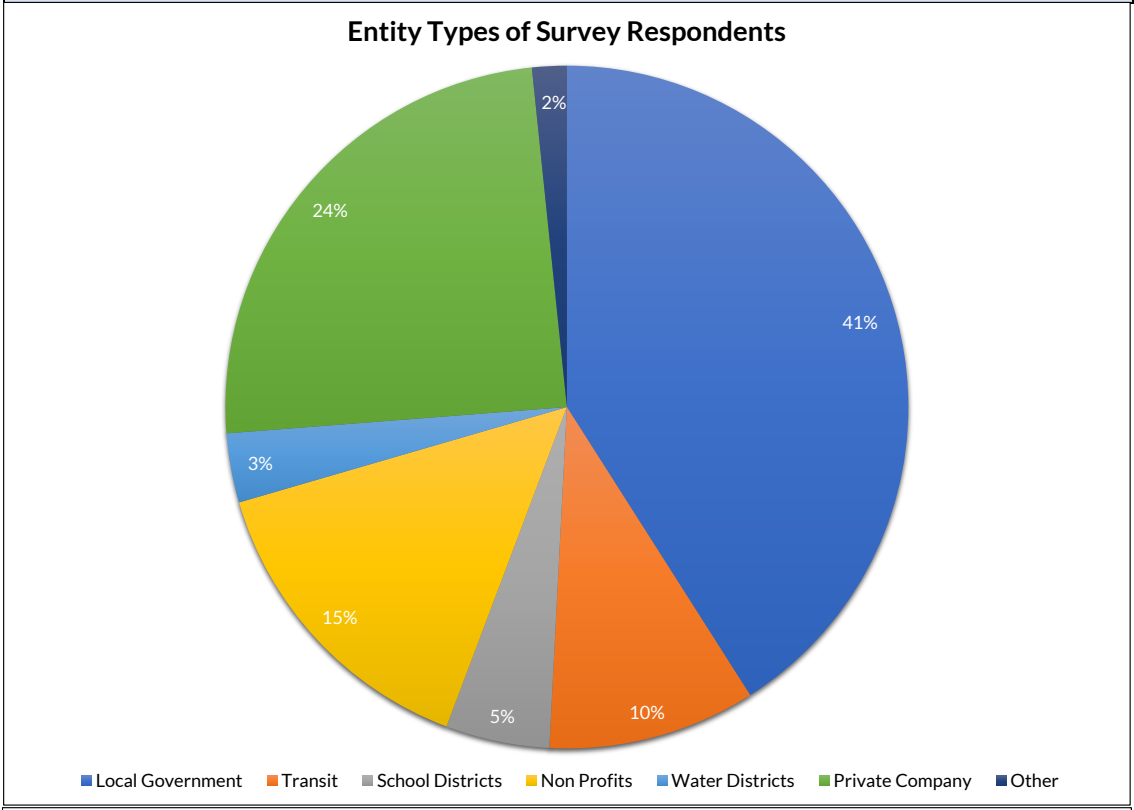
Focus Area	Measures
Solid Waste Facilities & Operations	- Burn waste to keep it from going to landfill and convert it to energy* - Create a regional composting program - Create more, smaller landfills to minimize miles driven by refuse trucks - Utilize brush/tree waste to create bark for parks
Water Supply and Treatment Facilities and Operations	- Encourage/incentivize xeriscaping and green infrastructure - Utilize gray water for lawns - Create a policy to mandate gray water systems be installed for irrigation - Install automated metering infrastructure/smart water meters
Wastewater Treatment Facilities and Operations	- Implement more energy efficient blowers/motor/pumps to reduce energy consumption at treatment facilities - Consider Combined Heat-to-Power technologies for large pumps & motor systems - Consider energy co-generation for sludge process train to utilize available onsite energy resources - Install smart manhole covers to quickly be updated on potential blockages

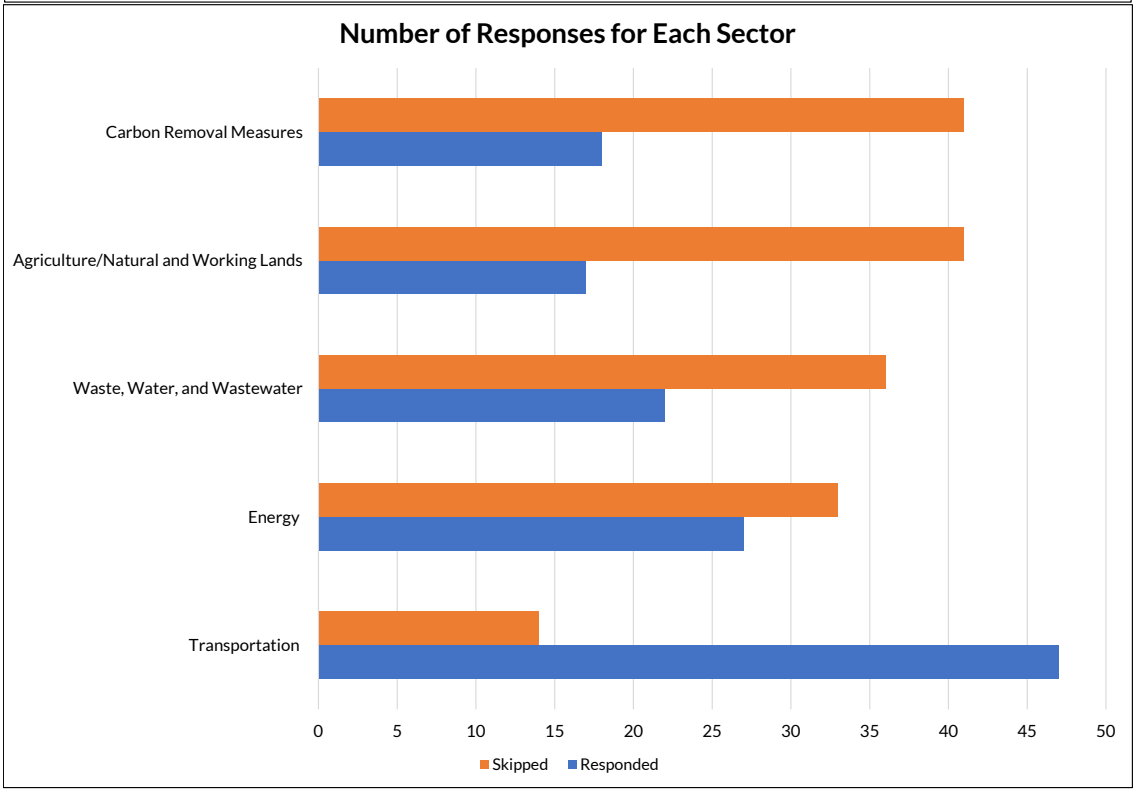
North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

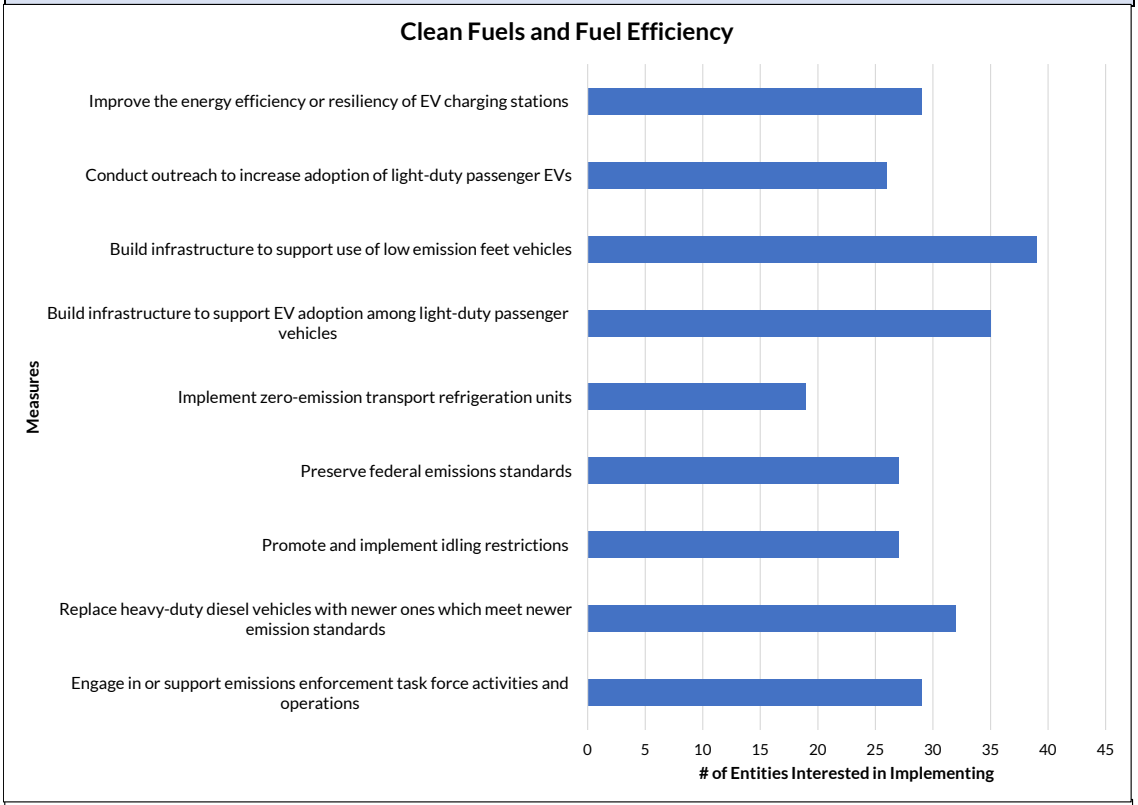
APPENDIX 4 - STAKEHOLDER SURVEY RESULTS AND QUESTIONS

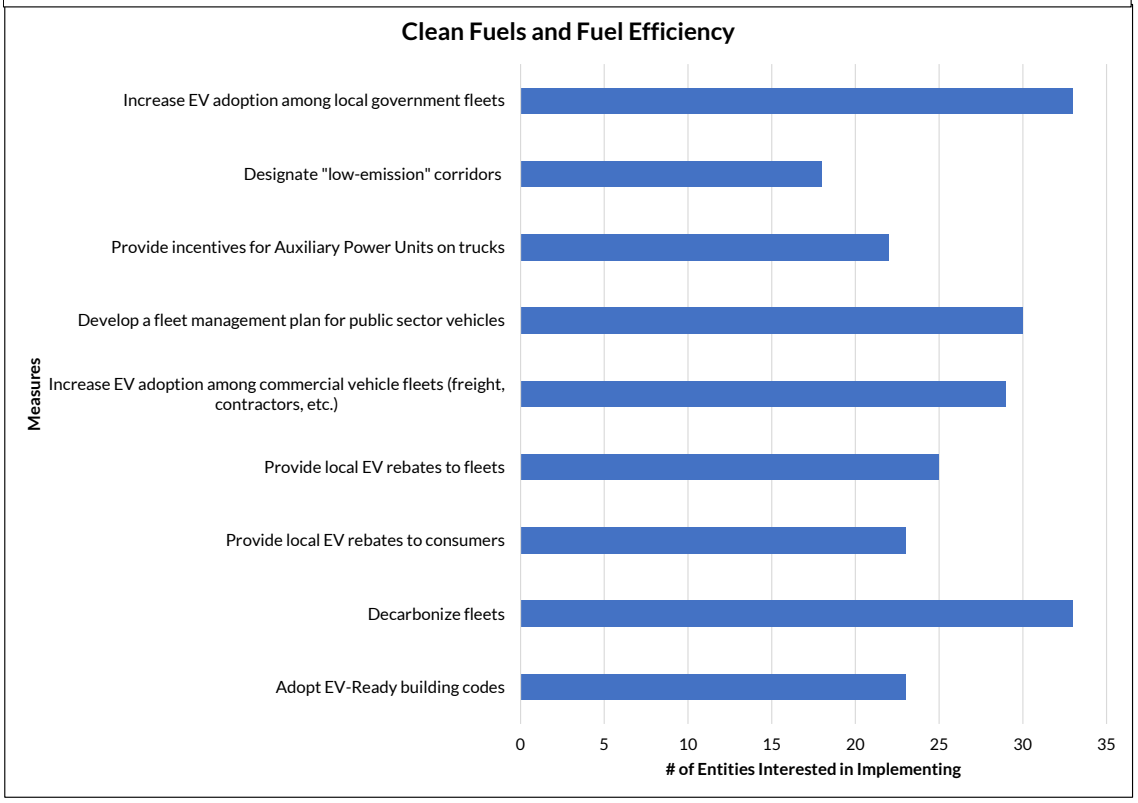
Dallas-Fort Worth Air Quality Improvement Plan: Results From Online Survey for Implementers
As of February 9, 2024

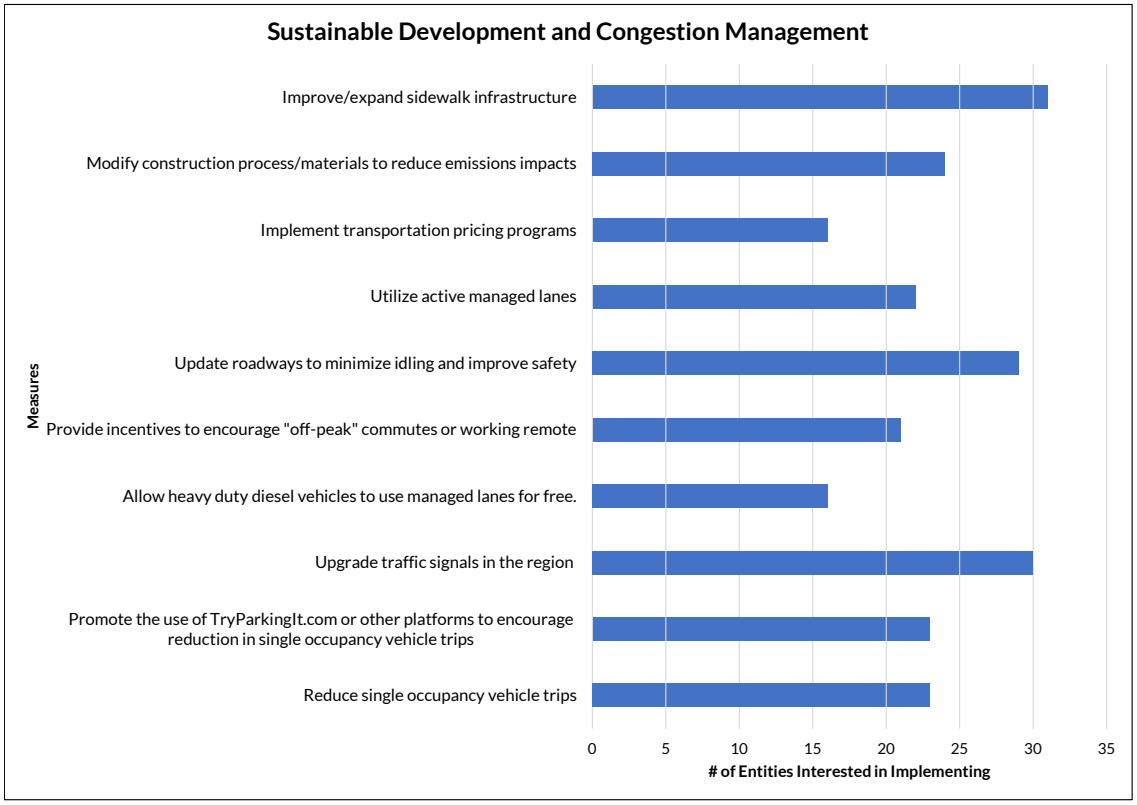




Transportation Measures Feedback Summary
Measures That Respondants Would Like to Implement






Sustainable Development and Congestion Management
Improve/expand sidewalk infrastructure
Modify construction process/materials to reduce emissions impacts
Implement transportation pricing programs
Utilize active managed lanes
Update roadways to minimize idling and improve safety
Provide incentives to encourage "off-peak" commutes or working remote
Allow heavy duty diesel vehicles to use managed lanes for free.
Upgrade traffic signals in the region
Promote the use of TryParkingIt.com or other platforms to encourage reduction in single occupancy vehicle trips
Reduce single occupancy vehicle trips
Measures
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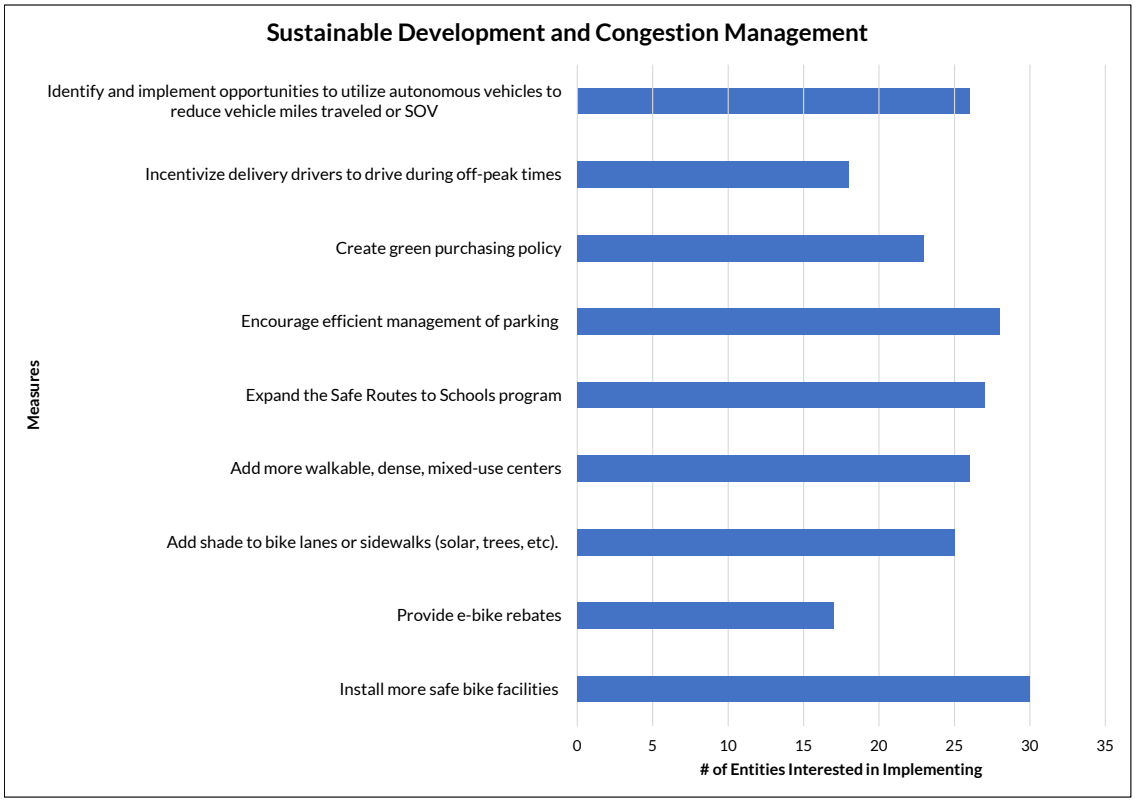
# of Entities Interested in Implementing


Sustainable Development and Congestion Management
Identify and implement opportunities to utilize autonomous vehicles to reduce vehicle miles traveled or SOV
Incentivize delivery drivers to drive during off-peak times
Create green purchasing policy
Encourage efficient management of parking
Expand the Safe Routes to Schools program
Add more walkable, dense, mixed-use centers
Add shade to bike lanes or sidewalks (solar, trees, etc).
Provide e-bike rebates
Install more safe bike facilities
Measures
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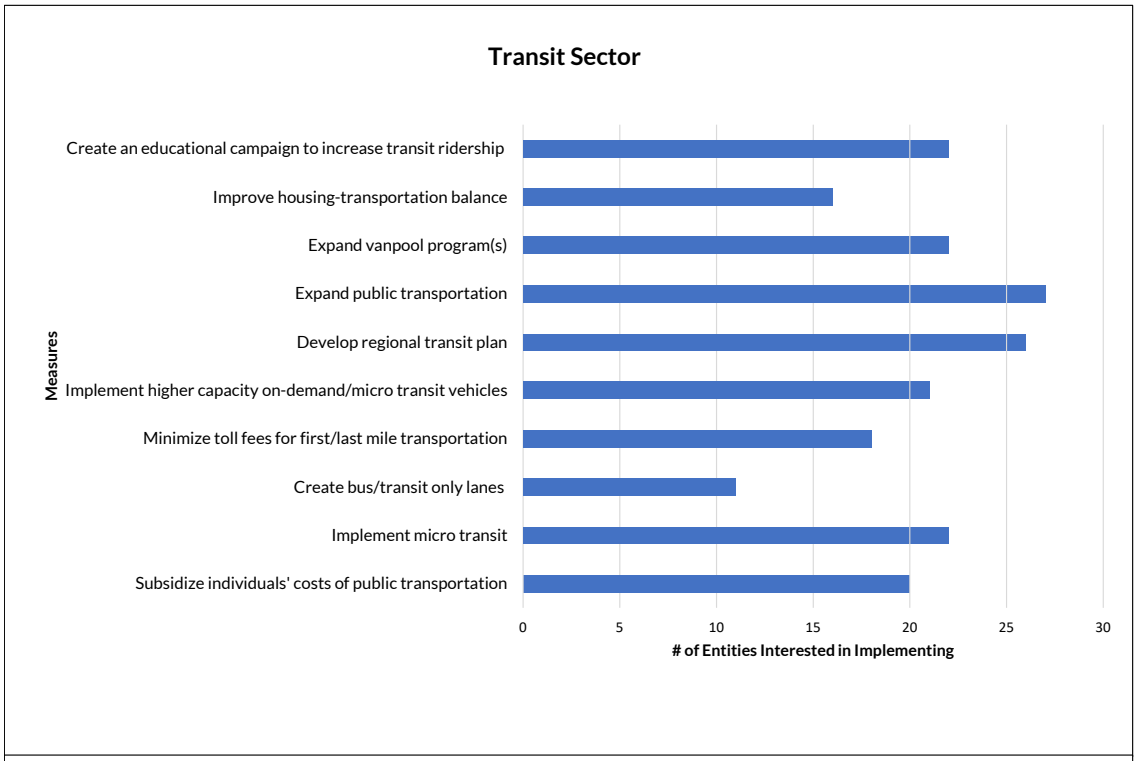
# of Entities Interested in Implementing


Transit Sector
Create an educational campaign to increase transit ridership
Improve housing-transportation balance
Expand vanpool program(s)
Expand public transportation
Develop regional transit plan
Implement higher capacity on-demand/micro transit vehicles
Minimize toll fees for first/last mile transportation
Create bus/transit only lanes
Implement micro transit
Subsidize individuals' costs of public transportation
Measures
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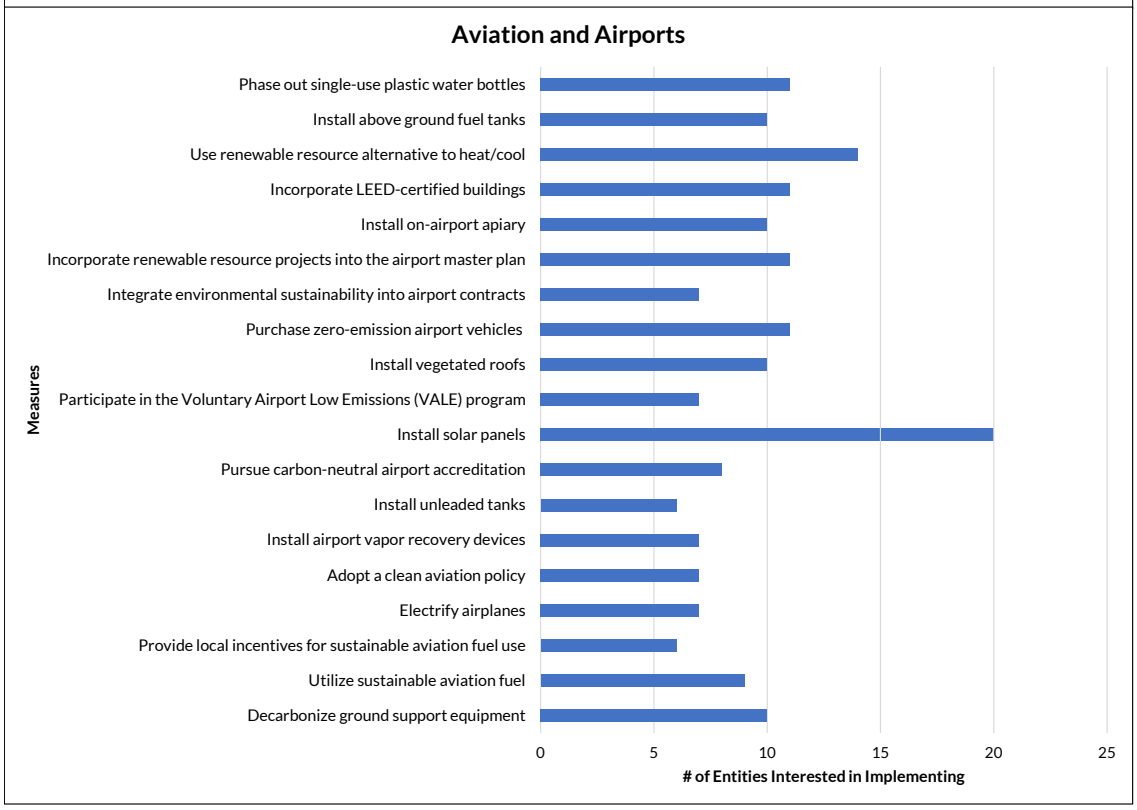
# of Entities Interested in Implementing


Aviation and Airports
Phase out single-use plastic water bottles
Install above ground fuel tanks
Use renewable resource alternative to heat/cool
Incorporate LEED-certified buildings
Install on-airport apiary
Incorporate renewable resource projects into the airport master plan
Integrate environmental sustainability into airport contracts
Purchase zero-emission airport vehicles
Install vegetated roofs
Participate in the Voluntary Airport Low Emissions (VALE) program
Install solar panels
Pursue carbon-neutral airport accreditation
Install unleaded tanks
Install airport vapor recovery devices
Adopt a clean aviation policy
Electrify airplanes
Provide local incentives for sustainable aviation fuel use
Utilize sustainable aviation fuel
Decarbonize ground support equipment
Measures
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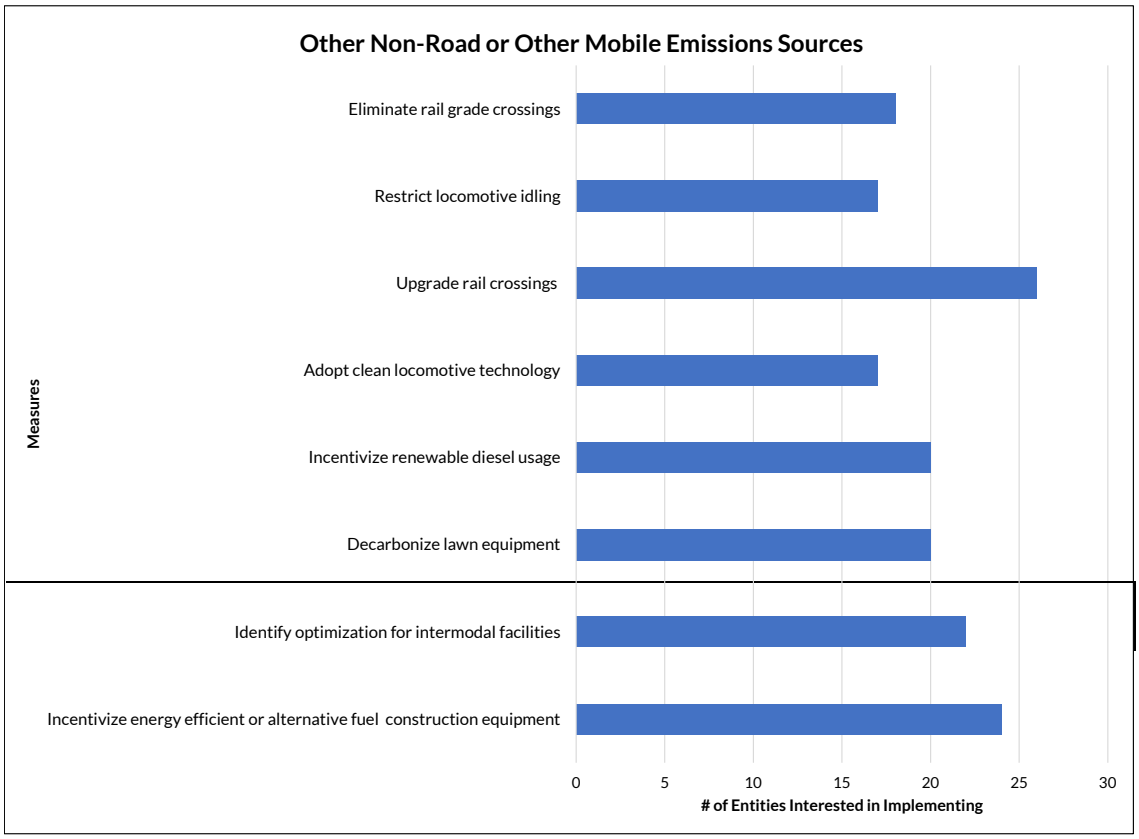
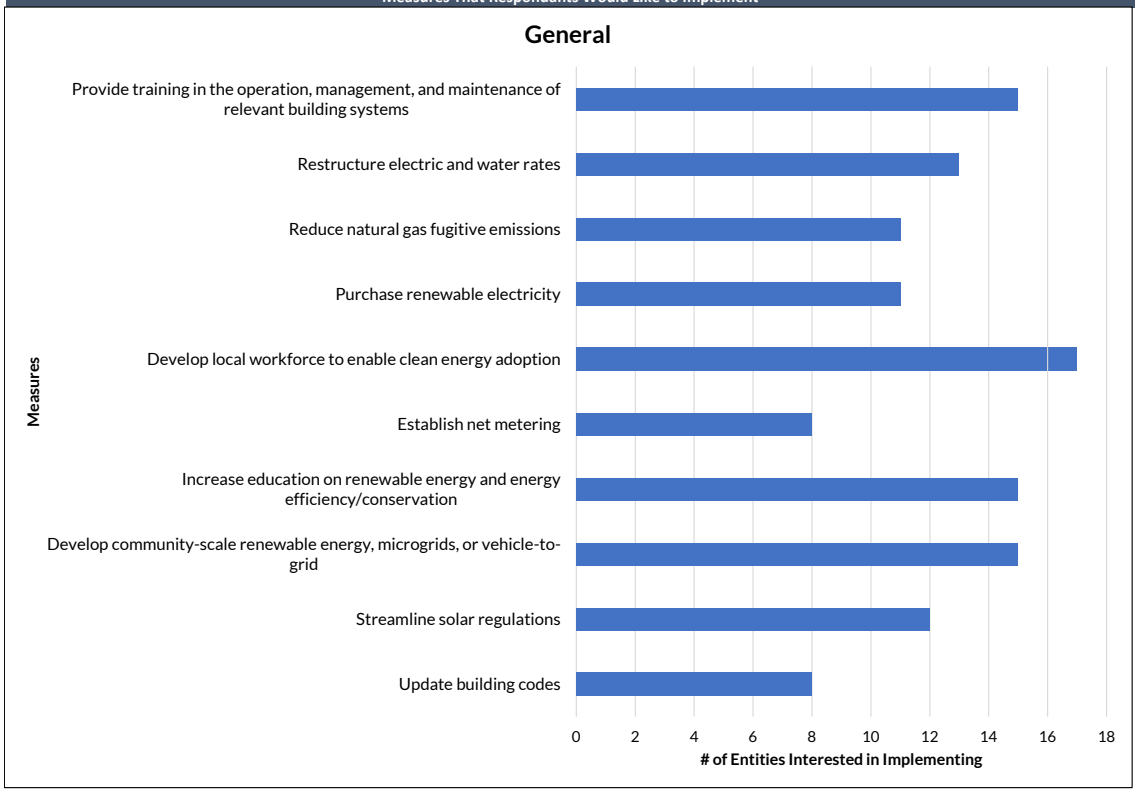
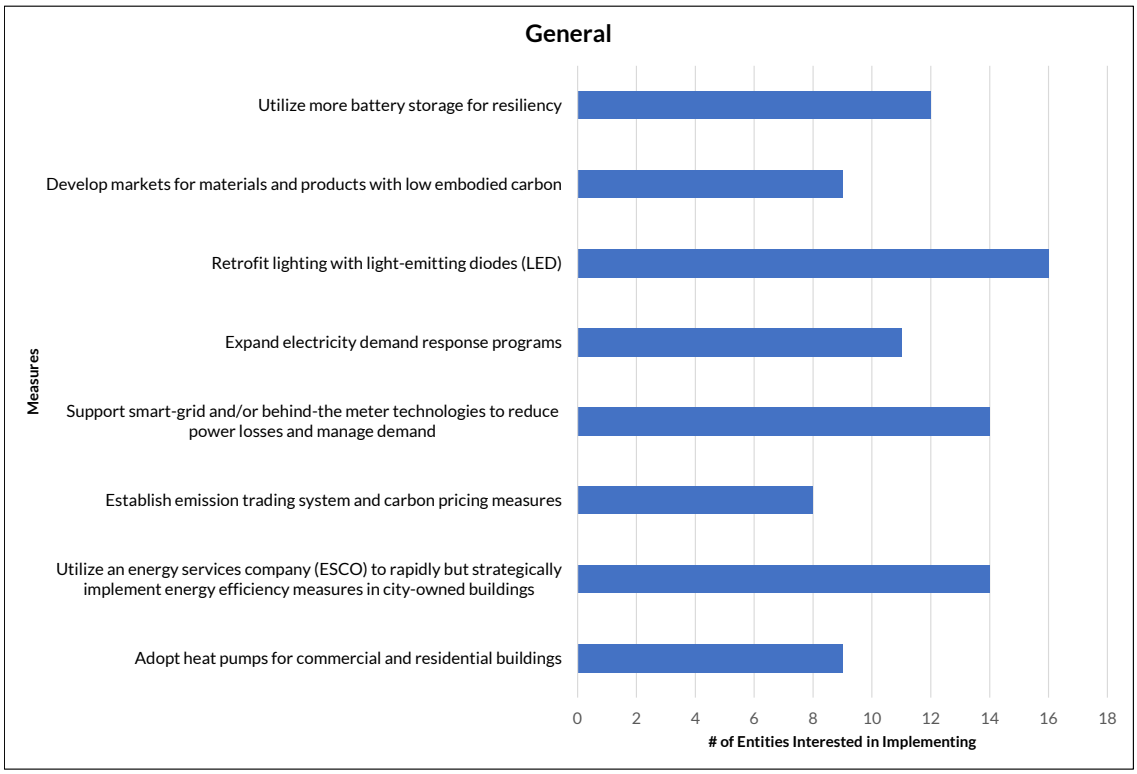
# of Entities Interested in Implementing



Energy Measures Feedback Summary
Measures That Respondants Would Like to Implement




General
Utilize more battery storage for resiliency
Develop markets for materials and products with low embodied carbon
Retrofit lighting with light-emitting diodes (LED)
Expand electricity demand response programs
Support smart-grid and/or behind-the meter technologies to reduce power losses and manage demand
Establish emission trading system and carbon pricing measures
Utilize an energy services company (ESCO) to rapidly but strategically implement energy efficiency measures in city-owned buildings
Adopt heat pumps for commercial and residential buildings
Measures
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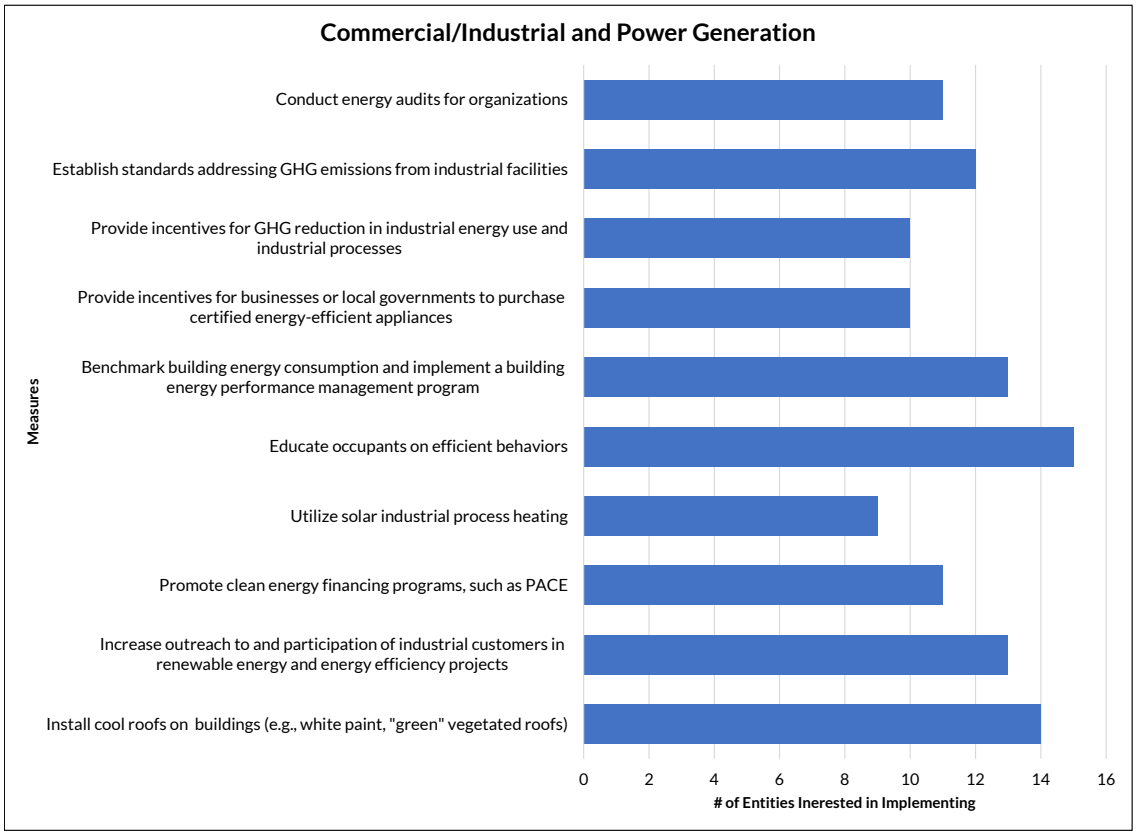
# of Entities Interested in Implementing


Commercial/Industrial and Power Generation
Conduct energy audits for organizations
Establish standards addressing GHG emissions from industrial facilities
Provide incentives for GHG reduction in industrial energy use and industrial processes
Provide incentives for businesses or local governments to purchase certified energy-efficient appliances
Benchmark building energy consumption and implement a building energy performance management program
Educate occupants on efficient behaviors
Utilize solar industrial process heating
Promote clean energy financing programs, such as PACE
Increase outreach to and participation of industrial customers in renewable energy and energy efficiency projects
Install cool roofs on buildings (e.g., white paint, "green" vegetated roofs)
Measures
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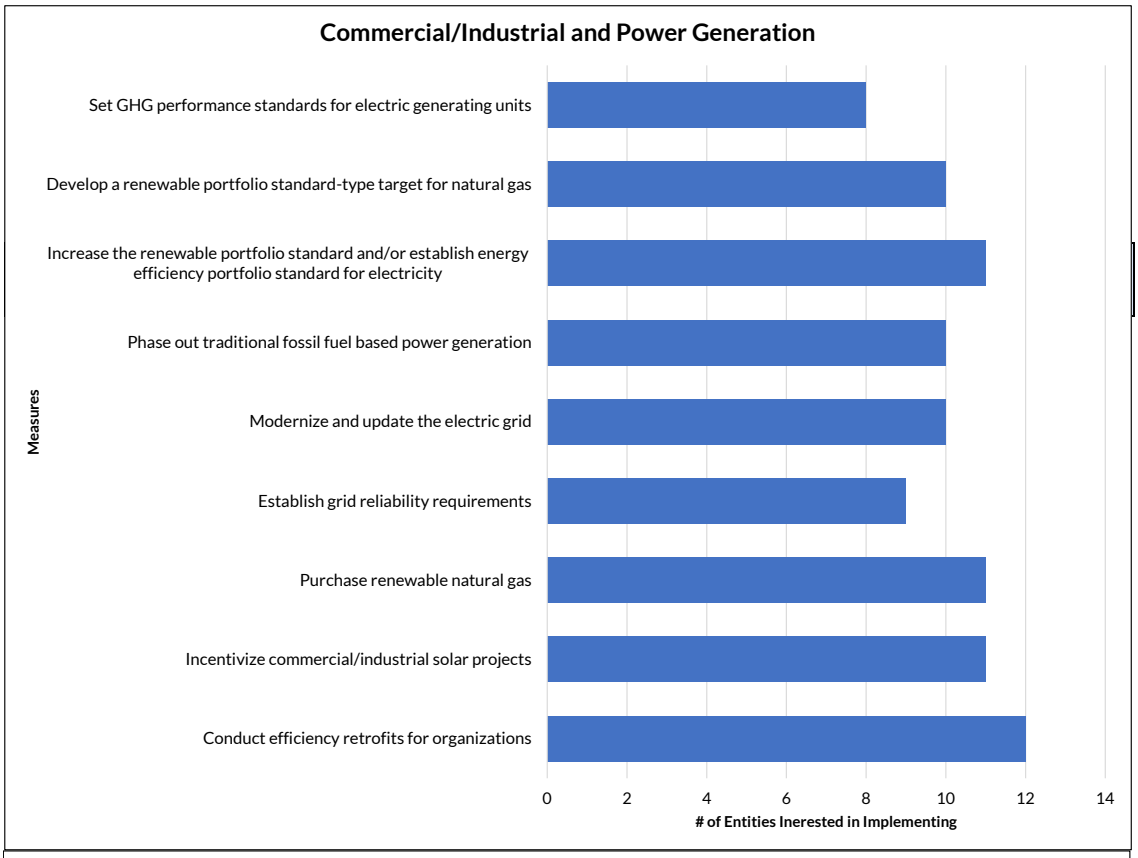
# of Entities Inerested in Implementing


Commercial/Industrial and Power Generation
Set GHG performance standards for electric generating units
Develop a renewable portfolio standard-type target for natural gas
Increase the renewable portfolio standard and/or establish energy efficiency portfolio standard for electricity
Phase out traditional fossil fuel based power generation
Modernize and update the electric grid
Establish grid reliability requirements
Purchase renewable natural gas
Incentivize commercial/industrial solar projects
Conduct efficiency retrofits for organizations
Measures
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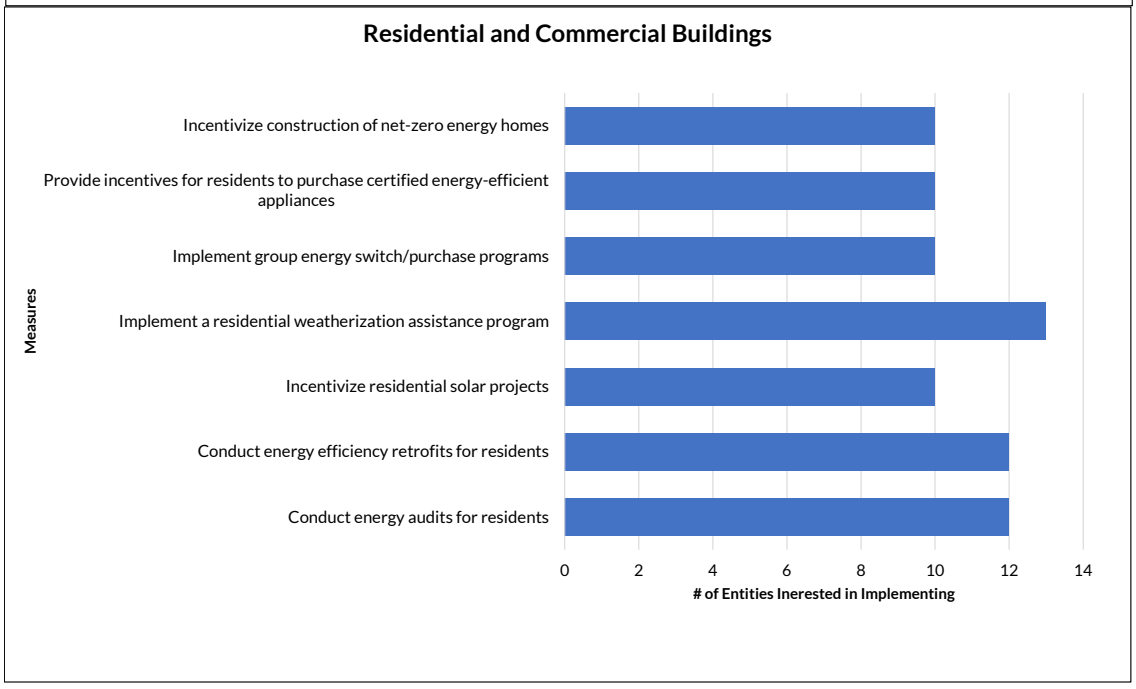
# of Entities Inerested in Implementing


Residential and Commercial Buildings
Incentivize construction of net-zero energy homes
Provide incentives for residents to purchase certified energy-efficient appliances
Implement group energy switch/purchase programs
Implement a residential weatherization assistance program
Incentivize residential solar projects
Conduct energy efficiency retrofits for residents
Conduct energy audits for residents
Measures
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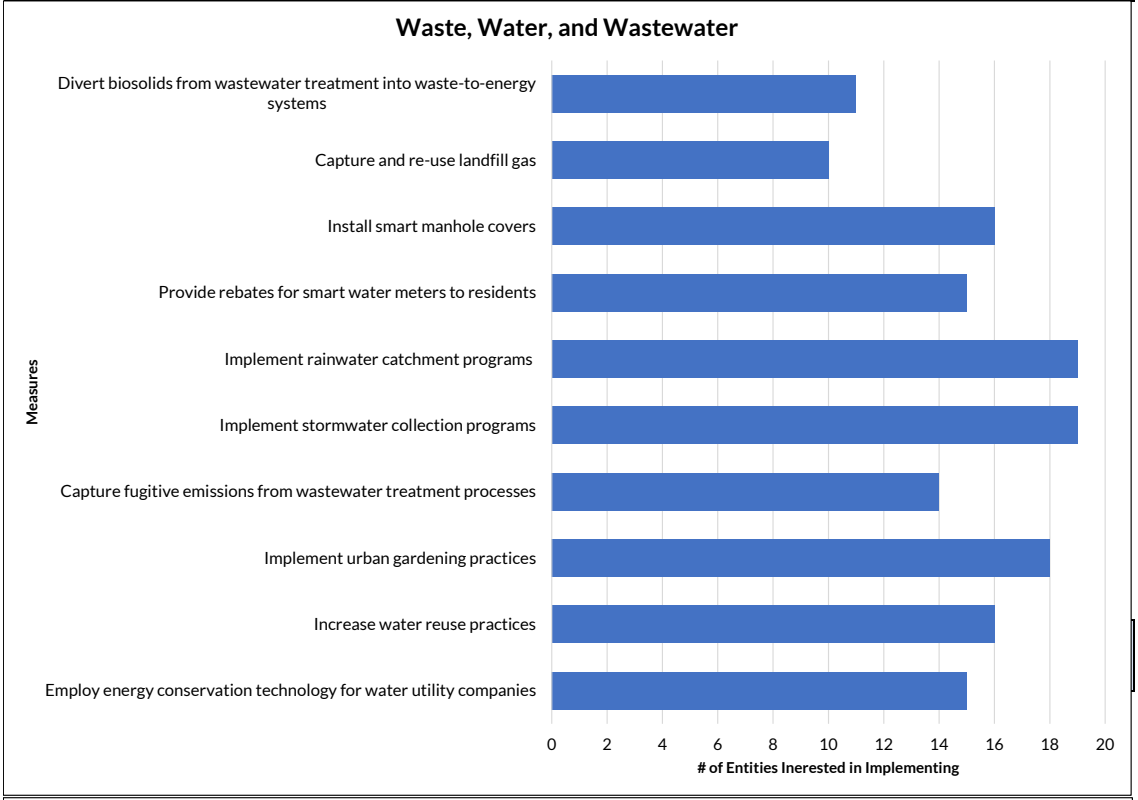
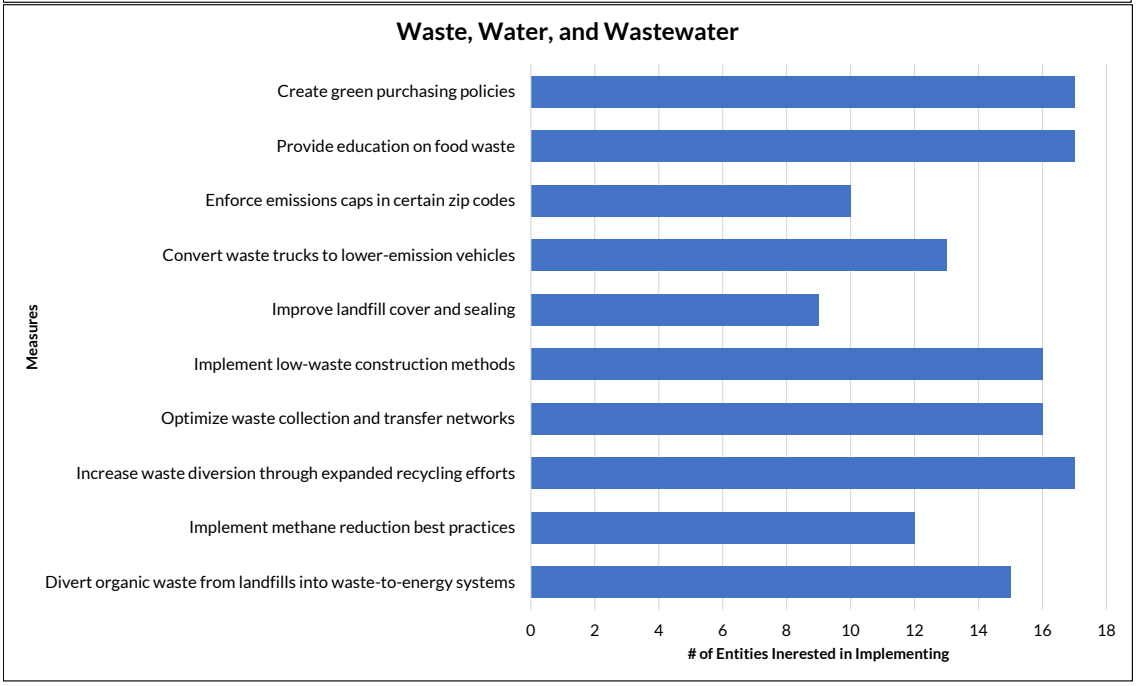
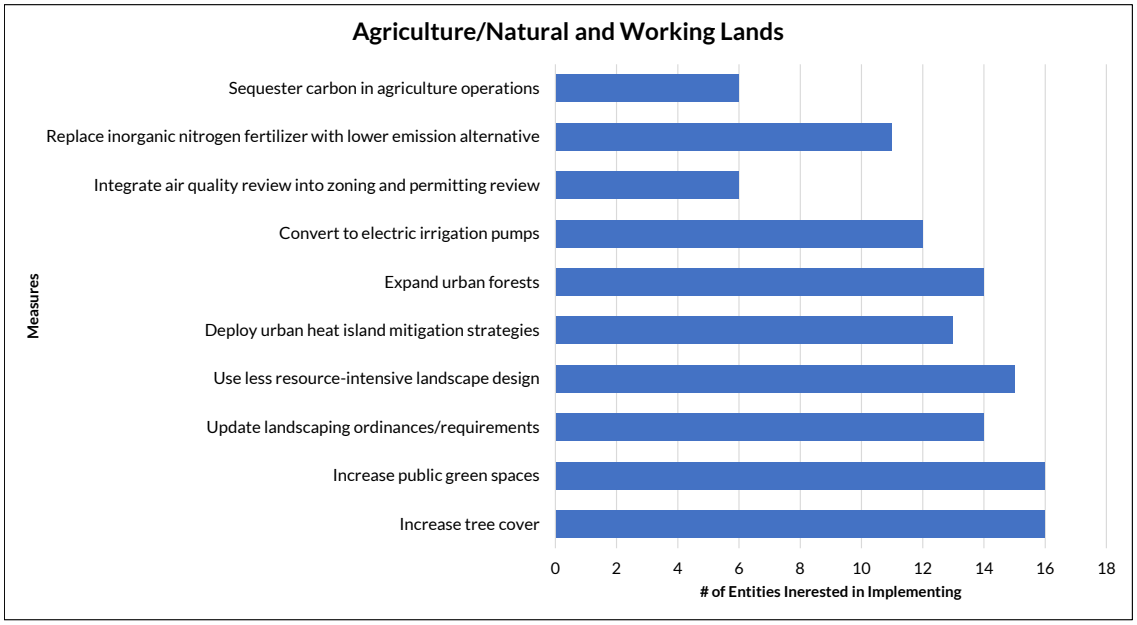
12
14
# of Entities Inerested in Implementing

Waste, Water, and Wastewater Measures Feedback Summary
Measures That Respondants Would Like to Implement

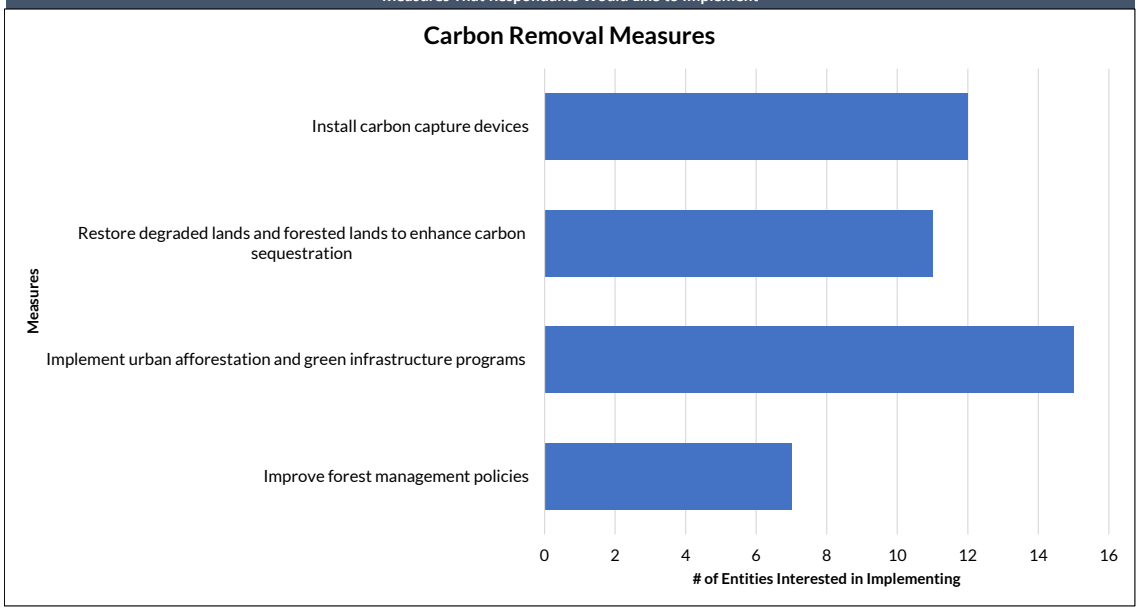




Agriculture/Natural and Working Lands Measures Feedback Summary
Measures That Respondants Would Like to Implement



Carbon Removal Measures Feedback Summary
Measures That Respondants Would Like to Implement



Comments Provided in Open Text Field for Dallas-Fort Worth Air Quality Improvement Plan Online Survey

For each strategy you are doing, please give a brief description of how this strategy is being/will be implemented.

Comment	Sector
We already have eliminated a few grade crossings along the Cottonbelt. And we are a transit agency so we're already doing all of the things that we submitted for TDCs that you have listed above.	Transportation
I am only implementing strategies related to the Inland Port GoLink microtransit program. For the other areas, I am interested in learning more and sharing the information with Inland Port companies and cities.	Transportation
We have a no idle policy in our employee handbook for city vehicles.	Transportation
community organizing	Transportation
We would really like to replace two of our ISD Police vehicles with electric trucks or SUV's, if grant funds would support the cost.	Transportation
Kenworth Truck Company are producing and selling Class 6-8 Battery Electric Vehicles and a Class 8 FCEV. We're working closely with customers in both the public and private sectors to decarbonize their fleets by using zero emissions vehicles where possible, while encouraging use of newer diesel and CNG vehicles that meet or exceed existing EPA and CARB emissions standards. We also work with fleets to select charging infrastructure to support their BEVs and match them with hydrogen fueling providers for FCEVs.	Transportation
The McCommas Bluff landfill here in Dallas Texas. NextERA Energy in Cambrian energy all the partners on the biomethane plant. Currently biomethane is being injected into the pipeline and sold to Shell Energy in California. The contract with the city of Dallas states that they can convert it to renewable fuel anytime. The plan is to furnish Fuel Cell refuse trucks. And turn the biomethane into hydrogen.	Transportation
Use of EV trucks for delivery	Transportation

We are working to incentivize the creation of roundabouts, bike paths, additional trails, a micro-transportation ordinance, installation of solar equipment, and utilization of ride share programs.	Transportation
MINTS-AI: Multi-use Multi-scale Multi-Modal Integrated Intelligent Interactive Sensing and Simulation for Actionable Insights: The vision of MINTS-AI is facilitating serving society by precision proactive preparedness through preemptive smart holistic sensing, providing actionable insights and holistic situational awareness for multiple uses on multiple spatial and temporal scales of the physical and social environment for real time data driven decisions. All sensing elements are "smart software defined sensors." We currently have a live test bed in place of the nine sentinel types across the Dallas Fort-Worth dense urban environment from satellites to wearables, to 24/7 urban sensing, to wearables. The MINTS-AI paradigm is designed as a flexible infrastructure utilizing a set of key approaches and components: Software Defined Sensor: A smart sensor package which combines a physical sensing system with software/machine learning providing a variety of calibrated data products which can be updated via an app store, so that the sensor capabilities can be enhanced over time. Smart Platform: Provides each Software Defined Sensor with power, time and location stamps all observations, provides communication, and where relevant mobility. This may include a variety of platforms from fully autonomous robots to wearable sensors. Sentinel: A Software Defined Sensor plus a Smart Platform. Autonomous Robotic Team: A collection of co-operative autonomous Sentinels. Cyber Physical Observatory: A collection of Sentinel(s) and/or Autonomous Robotic Team(s) providing real time actionable insights. Environmental Observatory: The environmental observatory is coupled to an equally comprehensive social observatory including over a thousand parameters for each zip code from the census and all emergency room admissions for the entire state of Texas over the last 20+ years. Together, this facilitates many multi-faceted research strategies with great potential for quantifiable real-world benefit. Central to realizing this vision is the use of machine learning on multiple scales and in multiple contexts in service of societal needs. The precision capabilities are provided by easily scalable solutions using readily available, off the shelf components, coupled with a suite of state-of-the-art intelligent systems leveraging Open Source tools. The MINTS-AI paradigm is specifically designed to overcome the current lack of appropriate and timely information on which to base data driven decisions in a variety of contexts, from dense urban environments to deployments where 'all the lights are out.'	Transportation
Most strategies already in progress and due to continual improvement processes, Council goals, and staff initiatives.	Transportation
Rolling out battery powered transportation refrigeration units (TRU's) for trailers, trucks, and light duty vehicles. As well as battery powered auxiliary power units for OTR and construction applications.	Transportation
We use an innovative technology solution to develop risk mitigation and logistics/distribution/ transportation optimization operational plans. This includes data analytics and process mining and process updates/ improvements for companies and government that allow for strategic planning and tactical deployment. Our solution helps with sea, air, rail and trucking transportation modes and an integrative and prescriptive plan of operational implementation of improvements.	Transportation
I would suggest the City of Dallas, implementing many of these by the city & large businesses	Transportation
Bike Plan- partnership with NCTCOG. EV needs assessment- completed	Transportation
Parks master plan shows need for more sidewalk/trail system. Preliminary plans were developed and submitted with application for TXDOT alternative transportation funds.	Transportation
We have updated signal equipment to LED lights and use extensive corridor timing plans to reduce congestion and delay along our busiest roads. We have converted some intersections to adaptive signal control which makes operations even more efficient and limits vehicle idle times. We are using and would like to advance our abilities to use remote monitoring in a predictive way that allows us to make upgrades and perform maintenance to signals before there is a failure or to identify equipment that might not have failed but needs to be adjusted because it is causing unnecessary vehicle delays. We have widened intersections where we have identified the need for extra turn lanes to minimize congestion. We have built several roundabouts and have identified several locations for future roundabouts should funding become available. We ask developers to consider roundabouts in their design plans in place of signals wherever feasible. We have received finding through the SS4A Grant to develop a safety plan for the City. We plan to apply for implementation finding once the safety plan is complete. The City has a Hike and Bike Master Plan that is used in conjunction with new development and for planning City-funded upgrades to existing sidewalks and trails. The goal is to encourage use of and reduce barriers to active transportation modes as well as provide regional connectivity. This includes sidewalks and trails but also on-street bike lanes and shared bike routes. The City is currently in the process of a downtown improvement project that will create a more walkable and dense mixed-use area. The City works with the local ISDs to identify missing sections of sidewalks whenever attendance boundaries change and prioritize construction of those sidewalks in advance of development in many cases. We also install infrastructure to support safer pedestrian crossings on arterials. The City has an on-demand transportation service available to those age 65+, people with a disability or anyone needing transportation for a medical purpose. Rides are available at a subsidized cost of $3 within Frisco and $5 for locations in Plano. Riders also have the option of using Lyft to go anywhere with a subsidy up to $7 max. We are looking to potentially expand the existing service to the general public using a micro-transit model. We have participated in regional transit planning through the COG and are working to implement some of the strategies identified to encourage regional connectivity.	Transportation
1. Bus Operating Facilities Modernization strategy is designed to make sustainability enhancements to reduce carbon emissions at facilities, install solar panels, reduce fleet idling time, redesign land use, make modifications to support future Bus and NRV electrification and enhance the surrounding communities. 2. CORE Corridor Optimization + Rider Experience strategy DART seeks to improve bus corridors, improve frequencies and reduce travel time by network redesigns and working with local governments to create traffic signals with a priority for transit corridors and bus/transit only lanes in high traffic/congestion areas. 3. Mobility Hubs strategy – DART seeks to redevelop nearly empty parking lots at rail stations to create more mobility options, amenities and uses that benefit the communities they serve and make using transit convenient and seamless. This includes better walkable pathways and bike paths, storage places for micromobility vehicles, microtransit and ride sharing ports, EV charging stations, and popup retail vendors. 4. Sustainability Plan – DART seeks to improve air quality and reduce GHG emissions through service enhancements and improved access to transit, as well as through ongoing operational efficiency measures related to renewable electricity, clean fleet transition, and incorporation of technologies that reduce energy consumption. Also collaborate with surrounding communities to create opportunities for the diverse business community in our service area by providing education, outreach, and awarding contracts. 5. TRE commuter rail locomotive replacement planned for the replacement of older, heavy-duty diesel vehicles with more efficient clean vehicles. Commuter Rail also implementing RailSentry, a supplemental safety measures at TRE railroad crossing utilizing AI by providing alerts to obstructions at the crossings. 6. Transit Oriented Development - DART seeks to coordinate the development of livable communities at or around DART transit facilities with other governmental and communities in the DART service area early in the development process to enhance multi-modal access to and from DART stops and stations and ensure appropriate transit supportive uses.	Transportation
Adopted idling ordinance 2022. We currently have 10 EVs in our fleet	Transportation

The City of Richardson has implemented a policy aimed at promoting and enforcing idling restrictions to minimize idling and enhance safety. In support of efficient parking management, the city has reduced parking requirements for special districts and optimized parking requirements within those districts. To promote electric vehicle (EV) adoption, EV chargers have been installed at the Police and Fire Department, with considerations for installations at City Hall and the Public Library. As a member of DART (Dallas Area Rapid Transit), the City of Richardson actively encourages public transportation and provides subsidized passes for city employees, aiming to reduce single-occupancy vehicle trips. The city is also involved in the DART Silverline Project, contributing to the development and expansion of the regional transit plan and network. The City of Richardson has adopted an active transportation plan, focusing on connecting various forms of human-powered transportation. Simultaneously, the city is updating its Parks, Recreation, Open Space Master Plan and comprehensive plan. These plans collectively emphasize Richardson's commitment to fostering a community prioritizing health, sustainability, and a high quality of life. Initiatives include improving and expanding sidewalk infrastructure, installing more safe bike facilities. Walkable dense mixed-use centers and improved housing-transportation balance is being encouraged with the adoption or entitlements of form based codes at strategic locations. The city has also adopted a sidewalk rehabilitation program and mandates sidewalk construction as part of new development projects. Additionally, the city is actively participating in the development of the Cotton Belt Regional Trail. Maintaining a hybrid work environment with an effective remote work policy, the city aims to save travel time, reduce congestion, and improve air quality. Starting in 2024, NCTCOG (North Central Texas Council of Governments) is assisting the City of Richardson in expanding the Safe Routes to School program through the Unified Planning Work Program. The city has undertaken an Autonomous Vehicle project funded through federal grants/programs (AV 2.2 & 2.3). This initiative aims to facilitate ride services along specific routes within the city. Furthermore, the City of Richardson is collaborating with UT Dallas to improve signal progression at nine locations using AI-based software. To enhance the efficiency and safety of intersections, various intersections have been upgraded with new traffic signals, detections, and traffic monitoring cameras.	Transportation
Key strategies are hindered due to funding for: 1. Educating residents/public 2. Funding Construction 3. Funding Planning Documents showing a City's Visio	Transportation
Circuit operates all-electric on-demand microtransit services in many communities, including West Dallas with DART and the Toyota Mobility Foundation. We are hopeful that the PCAP process will result in additional opportunities to fund this type of service, which is well-aligned with the city's mobility and climate goals.	Transportation
Helping form new policies and programs for MHD incentives	Transportation
Sierra Club promotes EV usage and SOV reduction among its membership and community. We do so in meetings, discussions, and communications.	Transportation
We are a voluntary neighborhood association in Fort Worth, Ridglea North, 76116, between I-30 and Camp Bowie, Horne and Lackland Rd. We are not a homeowners association. We really have no authority or funds for implementing these ideas. However, I am an individual in the neighborhood and on the Board of RNNA, Ridglea North Neighborhood Association. I encourage sustainability and renewable energy means when I can. I am for all of these measures. I know it is critical for us to start acting in new ways.	Transportation
The KARNO generator is currently in development with initial customer deployments beginning in the 2nd half of 2024.	Transportation
Gage Zero is a women-founded developer and operator of medium- and heavy-duty EV truck charging hubs across the US, and provides vehicle leasing and financing as well. We recently announced a $300M funding commitment from ARC Financial. Gage Zero eliminates the complexity and up-front costs of electrification with a customizable, turn-key package that includes charging hubs, electric trucks, and energy management – so fleets can electrify while staying focused on their core business. Gage Zero works across distribution, last-mile delivery, and drayage, and we're currently developing charging hubs for several prominent fleet customers in Texas, as well as Southern California, and New York/New Jersey, with more locations planned in 2024 and beyond.	Transportation
Fleet Management Practices, recently achieved Gold Fleet Recognition Award from the DFW Clean Cities Coal	Transportation
The best explanation of the plans and/activities detailed in this survey is utopian idealist inane beliefs.	Transportation

What are the barriers to implementation of the above strategies?

Comment	**Sector**
You mean besides money. When an electric bus breaks down, its unfamiliar. We are discovering failure modes that the engineers who designed them never imagined. We spend weeks online with tech support, or they even fly someone out to help diagnose. Then the part is not just on the shelf, they have to manufacture a new one to order. When an electric bus breaks down, it's not down for a day or two, it's months. And range is an issue. If we can only get 8 or 10 hours on a charge, we need to have two buses where we used to have one that could run on CNG for 17 hours. FTA is going to have to allow us a 50% spare ratio.	Transportation
For the companies, it is getting the right person to learn about the program and state their interest to participate. Usually these programs are decided at the corporate level and not at the Distribution Center level	Transportation
Cost, politics, enforcement demands, not a transit member city.	Transportation
Local, state and federal government	Transportation
Cost and need grant for police vehicles	Transportation
The largest barrier is upfront cost, with BEVs pricing out at 2-3 times and FCEVs pricing out at 4 times the cost of a comparable diesel vehicle. The second largest barrier is available power and grid capacity for required charging infrastructure, with many customer sites not having 480V 3-phase power available.	Transportation
Up till now the availability of the Fuel Cell refuse trucks. New manufactures are coming into the space all the time especially in Europe. They all want a US presence.	Transportation
Money and political will	Transportation
Cost	Transportation
We get a lot of kick back when we talk about installing roundabouts here as many people don't have to deal with them in this area of Texas. Many of the roads we would like to install roundabouts on are TxDOT owned so we don't have control over them. The cost of installation of roundabouts, bike paths, and trials is the largest barrier for us at this time. Individuals in our area also balk at public transport and ride share programs which makes pushing out TryParkingIt a challenge.	Transportation
We are ready to go. The only limiting factor is resources.	Transportation
Funding and staff availability	Transportation
High initial cost in equipment. High cost in needed infrastructure improvements. OEM compatibility is some cases.	Transportation
Working with good key organizations to collaborate to make change. A major barrier is finding an innovative group that is willing to collaborate to develop and implement material improvements in infrastructure, operations, planning, risk mitigation, etc.	Transportation
Asking neighbors to replace lawn equipment without an incentive.	Transportation

Funding is Limited	Transportation
funding/grant	Transportation
Resources and funds	Transportation
The following outlines the primary barriers encountered when transitioning from a vision or plan to actual implementation of the aforementioned strategies: • Infrastructure challenge that includes filling the gaps in the existing network and acquiring right-of way to complete the network. - • Safety concerns while operating various modes of transportation. - • Lack of public awareness and resistance to change limiting the adoptability. - • Financial constraints. • Policy and regulatory barriers • Lack in institutional coordination	Transportation
Understanding the funding opportunities and how to gain access to those resources.	Transportation
Funding is the primary barrier to implementation, particularly funding for ongoing operations.	Transportation
Red tape within the programs prevent many large fleets from adopting new technology; have a set aside amount for smaller and special fleets (DAC domiciled fleets, small businesses/fleets, drayage, etc.)	Transportation
Attitudes of people, mainly,,,,,,,then funds.	Transportation
Funding availability.	Transportation
Utility interconnection timelines and availability of grant and incentive programs for multi-fleet charging hubs.	Transportation
Funding and public support	Transportation
Its obvious that the individuals conceptualizing these plans have zero concept of marginal cost v marginal benefit. It should be obvious the micro improvements in air quality will be outweighted by 1000x in costs. In simply terms there will be negative improvements. the moneys can be spent in other much more effective ways with vastly better improvements at a fraction of the costs.	Transportation

Are there any transportation strategies not listed that you have implemented?

Comment	Sector
Everything environmental seems to kind of fit into one or another of the categories above.	Transportation
Is there a way to enhance the existing phone (app) navigation tools to be specific to our region, such that individuals/trips are routed for their commute in a way that attempts to evenly distribute trips based on measured/actual capacity dynamically measured? Waze does this to a certain degree, but is centered around congestion reported through crowd-sourcing. Perhaps there is a way to enhance this to make other routes/options more available to users and is smarter. Investing in enhanced AI technology for interconnectivity of signals. Perhaps adaptive signal technology will evolve to a point that timing plans are no longer static and based on isolated/discrete traffic observations (once/year for each time period), but rather evolve continuously day-to-day over time.	Transportation
Eliminating highways and promoting no car zones	Transportation
Hydrogen refueling along the I-45 corridor.	Transportation
We are developing a denser downtown area with vertical mixed-use buildings that will incentive individuals to live work and play in that area of Fate. We have 1 completed mixed-use building, 3 under construction, and multiple in the pipeline to be built.	Transportation
Together with Prof. Rym Z. Wenkstern, comprehensive air quality monitoring (CO2 and particulate size distribution) at smart traffic light controllers to quantify reduced emissions by better coordinated traffic signals.	Transportation
We have worked on rail fleet utilization & logistics optimization, Less-Than-Load consolidation & optimization and disaster risk, response and resiliency. We use out technology tools/ solution as a means of developing a very prescriptive operational plan and then help organizations to implement the plan.	Transportation
Electric vehicle needs assessment, Pavement Assessment, Bike Plan	Transportation
State of Good Repair improvements, Zero Bus Emission transition,	Transportation
Regional Signal Retiming project: Grant funding (NCTCOG) with local match. By aiming to enhance the coordination of traffic signal timing for a balanced focus on safety and efficiency, signal retiming endeavors can play a role in reducing emissions and lowering fuel consumption. By minimizing the delay time for vehicles at intersections, signal retiming projects can have positive environmental effects. Renner Road, Campbell Road and Arapaho Road corridors: 2021-2022 (NCTCOG Grant funding). Belt Line Road, Spring Valley Road and Coit Road corridors: 2023-2024 (COR funded)	Transportation
Ports charge an extra fee per non-ZEV entry into the port area to begin a new revenue for transitioning drayage vehicles to ZEV (see how HVIP and LA Ports worked together to stack the LA Port $75k/$100k incentives with the HVIP vouchers)	Transportation
You covered them.	Transportation
Adaptive cooridor and adavanced detection	Transportation

What transportation strategies have you heard about from residents/community members?

Comment	Sector
Eliminating highways and promoting no car zones, serious bike infrastructure, serious bus infrastructure, eliminating minimum parking codes	Transportation
Education programs to help folks get more comfortable with Evs. Expand access to charging infrastructure for people not living in single family homes.	Transportation
Moving people to job centers more efficiently.	Transportation
Our residents really want us to build more paths and trails to connect different areas of the city. We currently don't have sidewalks that connect the north section of Fate to the south section of Fate which makes it dangerous to walk from one side to the other. This forces people to drive their vehicles if they want to go shopping, dine, or play on one side or the other.	Transportation
Bike Plan	Transportation
The need for charging stations. Infrastructure does not exist to support mass EV usage	Transportation
Improve frequencies, reduce travel time, improve cleanliness, and enhance security.	Transportation
Allow higher dense developments and mix of uses near rail stations and at key locations along major multi-modal transportation corridors.	Transportation
Sidewalks especially Safe Routes to School.	Transportation
Our program in West Dallas has been successful at its goals of serving disadvantaged communities, particularly connecting residents to jobs and other transit options.	Transportation
want cleaner and quieter vehicles operating in their areas	Transportation
Sidewalk network expansion.	Transportation
More information on drone deleveries, Safe Routes to Schools	Transportation

Are there any transportation strategies not listed above that your organization would like to implement?

Comment	Sector
Eliminating highways and promoting no car zones, serious bike infrastructure, serious bus infrastructure, eliminating minimum parking codes	Transportation
Create a railway stop between Dallas and Fort Worth that connects Arlington's downtown- utilizing existing national and regional railway resources.	Transportation
Need to think future with possible flying cars and emissions.	Transportation
Roundabouts, bike paths, and trails are the ones we want to incentivize the most in the regional plan.	Transportation

Smart sensing at schools and other locations where idling is an issue. A Social and Environmental Observatory for Actionable Insights: More than ever, we need actionable insights based on comprehensive holistic data across multiple domains, incorporating the physical environment, the social environment, and societal outcomes (including, but not limited to, human health). Namely, an open social and environmental observatory for actionable insights. With COVID, we have all just lived through a prime example of how important the social and physical environment is, with exhaled aerosols playing a central role in transmission. With 2023 likely to become the hottest year on record to date, the significant and wide-spread gaps and deficiencies in our knowledge at the intersection of issues such as urban heat islands and human health are becoming ever more manifest. These issues with urban heat islands are intertwined with those of urban air quality. These environmental challenges impact different segments of society in differing ways. For example, there is gender specific thermoregulation, one size does not fit all. This naturally means that there is a greater need for comprehensive health surveillance tools, screening protocols, and community-based alert notifications, all of which are needed to directly combat the increased environmental change and heat-related mortality and morbidity. In order to generate real world change in real time, it is imperative that actionable insights be generated to guide and inform mitigation efforts and benchmark the efficacy of mitigation strategies. A key part of this observatory is multiple spatial scale sensing from the global scale using satellites and environmental networks, to sensing across neighborhoods and urban environments, to wearable sensors. Multiple temporal scales are also involved in understanding the health outcomes. From our bodies' autonomic responses on the second and sub-second time scales, to repeated environmental insults causing chronic health outcomes that manifest in larger scale population health outcomes such as increased emergency room admissions and mortality on the annual and decadal timescales.	Transportation
We are planning for electric take off and landing (eVTOL) aircraft and would like to see this strategy included in the plan. We are also planning for fully electric on-demand rideshare services (microtransit) and would like to see this strategy included in the plan.	Transportation
An integrated public sector/ private sector emergency response plan would be a major benefit to mitigating economic impact and risk. (we can do this and there are significant benefits)	Transportation
New innovative ideas come up often	Transportation
We would like to implement broader smart city initiatives such as integration of ITS into the traffic management system. Advanced traffic management systems may use real-time data, sensors, and communication technologies to dynamically adjust signal timings based on current traffic conditions and reduce delay and environmental impact associated with traffic delay and improve efficiency.	Transportation
Funding for MHD ZEVs in Laredo TX (Border ports)	Transportation
H2 Ranch is very interested in supplying hydrogen to off takers/end users in an effort to reduce emissions.	Transportation
Let's start with these.	Transportation
Address railroad crossings for traffic safety and traffic flow purposes.	Transportation
ITS and more traffic analytics. EMS and Hospital communication enhancements	Transportation
For each strategy you are doing, please give a brief description of how this strategy is being/will be implemented.	
Comment	**Sector**
community organizing	Energy
A large piece of the puzzle to bringing ZEVs to fleets is establishing a robust charging/fueling strategy, which hinges on a capable electrical grid. In many instances, our customers' sites do not have enough resiliency/power with their existing infrastructure, so we're exploring microgrids, solar power, battery storage systems, and on-site power generation	Energy
As the Fuel Cell trucks come available and more hydrogen refueling stations are in place we will do what we're doing at the Dallas landfill in other cities.	Energy
Bus Operating Facilities Modernization strategy is designed to make sustainability enhancements to reduce carbon emissions at facilities, install solar panels, reduce fleet idling time, redesign land use, make modifications to support future Bus and NRV electrification and enhance the surrounding communities. Sustainability Plan – DART seeks to improve air quality and reduce GHG emissions through service enhancements and improved access to transit, as well as through ongoing operational efficiency measures related to renewable electricity, clean fleet transition, and incorporation of technologies that reduce energy consumption. Also collaborate with surrounding communities to create opportunities for the diverse business community in our service area by providing education, outreach, and awarding contracts.	Energy
Annual adoption of the most current building codes.	Energy
Currently not implementing any of the strategies mentioned. However, funding will allow for more opportunities to invest in those strategy implementation.	Energy
Adopt new building codes on a three year cycle.	Energy
just interested in these to be implemented.	Energy
We will begin our first customer deployments in the 2nd half of 2024.d	Energy
We do energy audits and always provide the end user with NetZero option and educate them on available incentive and financing programs.	Energy
opposing inane increases in wind penetration for electric generation	Energy
What are the barriers to implementation of the above strategies?	
Comment	**Sector**
local, state, and federal government	Energy
Sadly, everything still boils down to cost.	Energy
Availability of hydrogen refueling and the trucks.	Energy
Funding is the largest barrier	Energy
Resources and Funds	Energy
Program and personnel funding.	Energy
Funding, and education on how to begin such programs/strategies.	Energy
attitudes, mindset, lack of interest, understanding,,,funds	Energy
Many folks do not want to finance projects	Energy
Its well known by industry experts (as opposed to renewable energy experts) that A) the costs of high penetration renewables become much more expensive per kw than fossil fuel generation, ie the lcoe computation only isolates the direct cost of electric generation and does not include the total costs of maintaining an full operational grid. B) the greater the wind and solar penetration in the grid, the greater the overall cost and massively greater reliability issues in the grid	Energy
Are there any energy strategies not listed that you have implemented?	
Comment	**Sector**
promoting public power	Energy
Energy Assessment	Energy
MPTS installed in facilities using 480 V and above power can reduce consumption 20%	Energy
preventing inane increases in wind and solar electric generation	Energy

What energy strategies have you heard about from residents/community members?	
Comment	**Sector**
promoting public power	Energy
Incentives for solar panels, incentives for EVs, incentives for green business	Energy
PACE is a great way to fund projects, ONCOR has better rebates for 2024	Energy
Are there any energy strategies not listed above that your organization would like to implement?	
Comment	**Sector**
promoting public power	Energy
Didn't mention anything about wind turbine to assist in home electricity savings.	Energy
Energy Plan	Energy
H2 Ranch would like to supply hydrogen to off takers/end users.	Energy
All communities should have a solar lighting strategy especially for parks and walking trails.	Energy
For each strategy you are doing, please give a brief description of how this strategy is being/will be implemented.	
Comment	**Sector**
We are doing small programs to incentivize the reduction of grease in our pipes, reminding individuals what can and cannot go down our storm drains, and have installed smart meters on almost all of the meters throughout the city.	Waste, Water, and Wastewater
None of these strategies have been fully implemented.	Waste, Water, and Wastewater
currently designing 156 million gallon per day constructed wetland for water supply to achieve indirect water reuse (Cedar Creek Wetlands); already have a similar 100 mgd facility in operation (George Shannon Wetlands at Richland Chambers)	Waste, Water, and Wastewater
Sustainability Plan – DART seeks to improve air quality and reduce GHG emissions through service enhancements and improved access to transit, as well as through ongoing operational efficiency measures related to renewable electricity, clean fleet transition, and incorporation of technologies that reuse water and reduce energy consumption. Also collaborate with surrounding communities to create opportunities for the diverse business community in our service area by providing education, outreach, and awarding contracts.	Waste, Water, and Wastewater
Resources to educate.	Waste, Water, and Wastewater
Cogeneration at wastewater treatment facility using methane gas thru 3rd party concession type agreement.	Waste, Water, and Wastewater
We promote and conduct free water audits for the City of Dallas. The program is not well known and more should be shared about the free water audits. All communities who provide water utilities should provide free water audits to their customers.	Waste, Water, and Wastewater
Currently in design of Reuse Pump Station at Town wastewater treatment plant. Developed Reuse Master Plan for western part of Town	Waste, Water, and Wastewater
What are the barriers to implementation of the above strategies?	
Comment	**Sector**
This is not my area of expertise or practice. But I would like to share any of the above strategies/programs with Inland Port companies and cities	Waste, Water, and Wastewater
Since we are a smaller city, we contract for many of these services. This forces our city to rely on our contractors to implement these strategies and limits our say over certain things. However, as we grow, we will eventually develop our own departments for these services. We will need capital and smart people to allow us to implement correct strategies.	Waste, Water, and Wastewater
High costs for converting wastewater treatment process to anaerobic for methane capture. City does not own landfills in town, difficult to have shared strategies for waste reduction.	Waste, Water, and Wastewater
Funding in many cases	Waste, Water, and Wastewater
Funding	Waste, Water, and Wastewater
Resources and Funds	Waste, Water, and Wastewater
Funding to implement, plan, and construct the above strategies.	Waste, Water, and Wastewater
Funding, competing priorities, dedicated staff/technical assistance	Waste, Water, and Wastewater
attitudes, mindset, lack of understanding, polarization of thought	Waste, Water, and Wastewater
We will have our first customer deployments in the 2nd half of 2024.	Waste, Water, and Wastewater
Financing is always a barrier. Education is an important component.	Waste, Water, and Wastewater
Funding	Waste, Water, and Wastewater
Are there any waste, water, and wastewater sector strategies not listed that you have implemented in your jurisdiction?	
Comment	**Sector**
We are wanting to incentivize citizens to download our MyWater Advisor 2.0 app with a bill credit so that they can see if they have leaks in their	Waste, Water, and Wastewater
Education esp. in public schools is important. Much waste and pollution of water is lack of knowledge.	Waste, Water, and Wastewater
leak detection, I&I analysis	Waste, Water, and Wastewater
What waste, water, and wastewater sector strategies are you hearing about from residents/community members?	
Comment	**Sector**
The public is concerned with water waste by the businesses, schools, and HOAs. We want to do outreach to combat this.	Waste, Water, and Wastewater
We get occasional concerns about recyclables not actually being recycled, but this turns into an education opportunity on not contaminating the recycling stream. Unfortunately in my role have not heard any more requests from the public.	Waste, Water, and Wastewater
Water Conservation Education	Waste, Water, and Wastewater
Sustainable/low waste construction methods and sustainable/green procurement policies. Strategic Energy Management.	Waste, Water, and Wastewater

Continued education on no overwatering. Ensuring systems are upgraded to have rain/freeze detectors, education on drip irrigation	Waste, Water, and Wastewater
Implementation of smart water meters	Waste, Water, and Wastewater
Reuse	Waste, Water, and Wastewater

Are there any waste, water, and wastewater sector strategies not listed above your organization would like to implement?

Comments	Sector
We are wanting to be forward thinking and understanding of different strategies. We want to incentivize smart change where appropriate.	Waste, Water, and Wastewater
Yes, although this may fall under the energy sector strategies: North Central Texas water supply utilities use significant amounts of power to convey raw water from water supply reservoirs (often located in East Texas) to meet demands in the DFW area. Grant funding to help facilitate solar/battery storage "behind the meter" installations at the lake and booster pump stations could provide extensive "bank for the buck" improvements in term of increased resilience (for the electrical grid as well), reduced carbon footprint and reduced exposure to real-time power price spikes. TRWD is currently studying the viability of a few solar installations of 4-12 MW size at pump stations frequently operated with adequate land. PPA's are an option being looked at closely.	Waste, Water, and Wastewater
New ideas come up all the time.	Waste, Water, and Wastewater
Strategic Energy Management for the development and implementation of a strategic energy management plan for energy efficiency and conservation. Efforts to include formulation of energy policy; energy efficiency, energy conservation, and energy usage goals; data and process analysis for identification of strategies to achieve those goals, development of methods to measure progress; coaching, walk-thru, and standard operating procedures and development and publication of annual reports.	Waste, Water, and Wastewater
We continue to educate and outreach on water conservation	Waste, Water, and Wastewater

What are the barriers to implementation of the above strategies?

Comment	Sector
local, state, and federal government	Agriculture/Natural and Working Lands
Many zoning requirements specifically spell out exactly where trees need to go and do not line up with urban afforestation and green infrastructure best practices. Additionally, there are many barriers as far as landownership, right-away limitations, irrigation feasibility, and green space planting limitations. Finally, Texas is getting hotter, and keeping newly planted trees alive during the summer is now a challenge.	Agriculture/Natural and Working Lands
This topic is not in the forefront on the minds of Fate citizens due to other concerns (traffic, economic development). When we bring up these topics, the majority of our citizens act like they don't care.	Agriculture/Natural and Working Lands
Funding	Agriculture/Natural and Working Lands
As an emerging organization, we face challenges in securing adequate funding to fully implement our innovative improvement strategies. Navigating the complex funding landscape and establishing a compelling case for financial support can be daunting for a startup like ours. Despite these challenges, we remain committed to improving air quality, urban heat zones, food security, and promoting environmental stewardship in our community.	Agriculture/Natural and Working Lands
Funding	Agriculture/Natural and Working Lands
funding/availability/implementation expertise	Agriculture/Natural and Working Lands
Staff resources and funding.	Agriculture/Natural and Working Lands
Funding and education on how to start and implement the strategies.	Agriculture/Natural and Working Lands
Funding is the biggest barrier we face with implementing the additional strategies we need. The planning and volunteers needed are ready and willing.	Agriculture/Natural and Working Lands

For each strategy you are doing, please give a brief description of how this strategy is being/will be implemented.

Comment	Sector
community organizing	Agriculture/Natural and Working Lands
Our organization reforests through a variety of our programs: Branching Out (planting in city parks), Southwest Medical Urban Design Project and Park, Cool Schools Program (tree planting, rain garden and bioswale installations, and other green infrastructure enhancements on school grounds. We also are beginning a community greening initiative to plant trees on corridors, affordable housing developments, private land, and other key areas that will be identified through community engagement. We are also creating Cool School Neighborhood Parks throughout Dallas and would like to expand the program to other cities.	Agriculture/Natural and Working Lands
We want to work on our downtown area by increasing tree cover and beautifying the area with appropriate landscaping. We want to protect green space as well and have specified this in our comprehensive plan.	Agriculture/Natural and Working Lands
Building the DRELC would increase tree cover and green space available to the public. We plan to utilize LEED construction techniques, green technology, rain barrel harvesting, composting and the use of drought tolerant, native plantings,	Agriculture/Natural and Working Lands
Partner with Texas Seminary Christian University's Urban Christian Agricultural degree and certificate programs to develop and refine these alternatives for specific crops and soil conditions, partner with farmers to test the performance of lower-emission fertilizer alternatives in real-world settings, and collect the data on crop yields, soil health, and environmental parameters to assess the effectiveness of these alternatives. We will also promote local businesses like Nelson Plant Food which sells organic plant food.	Agriculture/Natural and Working Lands
only native trees permitted in commercial landscape plans	Agriculture/Natural and Working Lands

Upon property ownership approval, criteria for engagement: • Engage a local community group to transition the landscape to a wildlife habitat as a means of honoring the buried • Consult Texas Society of Professional Surveyors for local, pro bono survey assistance defining the cemetery's topography and trees • Map habitat zones, such as Blackland Prairie, mixed woodland, etc. • Conduct an initial plant and pollinator survey for each of the cemeteries' micro eco-zones • Develop landscape restoration plans in concert with environmental objectives • Track native emergence and fauna sightings via iNaturalist - Maintain ongoing documentation of flora & fauna species sightings • Conduct a 2-year pollinator biodiversity survey at each cemetery pre & post-restoration • Conduct a one-year college-led cultural archeological study/develop master plan (template to be used for other colleges) • Create a constellation community & support for each specific historic cemetery project • Create educational material and plan outreach events to share our group's mission with local communities • Use website/social media to track local community interest in their historic past, the land's history and the ongoing environmental transformation.	Agriculture/Natural and Working Lands

Are there any strategies for the agriculture/natural and working lands sector not listed that you have implemented?

Comment	Sector
Keep Rowlett Beautiful (KRB) has planted and maintained pollinator gardens and trees on the 4.1 acre property where the future Dan Roberts Environmental Learning Center (DRELC) will be built. The City of Rowlett partnered with KRB to fund visioning sessions that produced a concept plan. Recently, KRB funded a site survey and citizens passed a $250,000 bond to support the construction of the DRELC.	Agriculture/Natural and Working Lands
A. Environmental: Reintroducing native plants to cemetery landscape design innovates, recaptures a sense of place and restores native ecosystems to Dallas green space. • Increase size and geographic availability of quality wildlife habitats • Improve quality of wildlife habitats, exchanging invasive species with native plants, reducing both pesticide use and mechanical disturbance • Encourage recovery of threatened or endangered species • Facilitate an increase in biodiversity of flora and fauna • Increase the biodiversity and abundance of pollinators, improving pollination services throughout the environment • Reduce distance between natural prairie habitat fragments • Address migratory corridors, offering new way-stations and expanding pathways, restoring innate wildlife needs • Create biological resilience under changing climate conditions • Provide easy access opportunities for environmental education	Agriculture/Natural and Working Lands

What strategies for the agriculture/natural and working lands sector are you hearing about from residents/community members?

Comment	Sector
Other cities would like to see our programs there as well (Fort Worth, Arlington, Richardson, Plano) but we lack the funding to get the programs off the ground.	Agriculture/Natural and Working Lands
They want us to protect green space and beautify specific areas of the city.	Agriculture/Natural and Working Lands
Two separate visioning sessions were conducted with elected officials and the community at large to determine interest and areas of focus for this project. Members of the Garland ISD Board of Directors and our community have expressed interested in financially supporting an environmental learning center in Rowlett.	Agriculture/Natural and Working Lands
I've heard from residents/community members about the development of local food systems to reduce reliance on long-distance transportation of food. This could involve establishing farmer's markets, supporting community gardens, and encouraging local procurement by institutions, including local schools and nonprofits that can maintain them.	Agriculture/Natural and Working Lands
The need to preserve and protect the existing tree cover and encourage the use of native and drought tolerant plant materials.	Agriculture/Natural and Working Lands
B. Social: Reconnecting communities with the nature, culture, and those who've gone before them, provide opportunities for all ages to appreciate their local history, past and present...enhancing an authentic sense of place. • Expand native eco-system green-spaces, revitalizing neighborhoods & creating thriving communities • Increase community and individual awareness of the natural world, connecting people to nature and improving understanding of ecosystems • Climate resilient cemetery habitats provide access to nature for mental well being and provide safe places for outdoor exercise and social activities • Facilitate readily accessible and local authentic opportunities for school or club field trips for all ages and interests. (K-12 classrooms, birders, genealogists, etc.) • Enhance the conditions in older cemeteries where individuals can bring their families to visit their ancestors and deepen local history connections • Provide opportunities to educate and strengthen community solidarity through purposeful volunteer based conservation and environmental stewardship at all age levels	Agriculture/Natural and Working Lands

Are there any agriculture/natural and working lands sector strategies not listed above your local organization would like to implement?

Comment	Sector
Agroforestry projects	Agriculture/Natural and Working Lands
Increase incentives for alternative vehicles i.e. ev in farming.	Agriculture/Natural and Working Lands
We would like to create community gardens where applicable and appropriate.	Agriculture/Natural and Working Lands
We would like to implement many of the strategies listed above in the design of our Environmental Learning Center landscape plan along with hands-on environmental education learning stations, built into the overall design.	Agriculture/Natural and Working Lands
Yes, encouraging the installation of solar panels, wind turbines, and other renewable energy systems on agricultural land and natural areas can be a viable strategy to improve air quality in the North Texas region. Harnessing renewable energy sources on agricultural land and natural areas offers several benefits, including: Reducing reliance on fossil fuels, improving energy independence, promoting sustainable agriculture, and enhancing community resilience.	Agriculture/Natural and Working Lands

Food Loss & Waste Reduction: As your agency prepares to allocate funding through the Climate Pollution Reduction Grants, including developing the associated Priority Climate Action Plan, we urge you to prioritize initiatives aimed at combating food loss and waste (FLW). FLW is responsible for 6% of all U.S. GHG emissions and nearly 60% of all landfill methane emissions—making landfills the country's third largest source of methane. Beyond these climate impacts, food waste unnecessarily strains our supply chains and drinking water supply by using nearly one-fifth of all freshwater and 16% of our cropland to grow, process, transport, and cool food we then waste. At The Farmlink Project, we are on track to deliver 200 million pounds of food by the end of 2023, the equivalent of 240 million meals, made possible for individuals in food insecure communities across the United States, while reducing over 200,000 metric tons of CO2e in greenhouse gas emissions. The order of investments should follow the EPA Wasted Food Scale hierarchy, which ranks pathways of addressing food waste based on environmental preferability and creating a more circular economy. According to this hierarchy, funding can prioritize the highest use of food by making investments in food recovery and compost. These initial investments must come before investments in landfill infrastructure. It is vital that policies and programs established through funding disincentivize least preferred pathways and incentivize most preferred pathways established in the EPA's From Field to Bin Report. Donation and upcycling of foods are the most preferred pathways, so funding should prioritize these goals. To support these pathways and maximize impact, infrastructure investments are needed as well. By prioritizing actions that keep food out of landfills and incinerators, while also strengthening landfill emission controls, Climate Pollution Reduction Grants can achieve substantial GHG reductions with multiple co-benefits. Policies and programs that disincentivize food from being landfilled or incinerated (such as food donation or recycling mandates) incentivize greater food waste prevention, while new infrastructure (such as food rescue, food hub, or composting facilities) help businesses and communities donate, upcycle, and recycle more of their excess food. These measures additionally support new jobs, help businesses and individuals cut their food purchasing costs, alleviate food insecurity among low-income and disadvantaged communities, and mitigate the longstanding environmental justice impacts of landfills and incinerators on local communities. We are confident that by allocating a portion of the CPRG grants to projects focused on food loss and waste, your agency can take a crucial step in the right direction, promoting environmental sustainability, economic resilience, and social equity. We would be delighted to offer our expertise, collaborate, or provide further information to assist in the decision-making process. As you draft the Priority Climate Action Plan, we recommend leveraging the Zero Food Waste Coalition's State Policy Toolkit, which provides examples of policies and actions that can be incorporated into climate action plans to keep food waste out of landfills and reduce associated landfill methane emissions. Together, we can make a significant impact on the reduction of greenhouse gas emissions and the improvement of our state's overall sustainability.	Agriculture/Natural and Working Lands
C. Economic/Government: Reduces pollution, increases surrounding property values and saves resources. • Grounds maintenance inputs are reduced creating economic savings. (less labor, mow, blow, grass seed, fertilizer, pest control products and other inputs) • Reduced maintenance reduces noise and pollution in residential areas • Reduced trash and green waste from maintenance of public & private spaces • Increases property value especially in underserved neighborhoods • Aligns with objectives for reduction of pesticide use • Reduces the heat island indices within cities • Can serve to mitigate affects of climate change • Improves water retention and erosion control to meet regulatory objectives • Provides cost effective opportunities for schools to conduct educational fieldtrips. • Facilitates research opportunities for Prep/high schools through Colleges and Universities in diverse	Agriculture/Natural and Working Lands

What are the barriers to implementation of the above strategies?

Comment	Sector
Many zoning requirements specifically spell out exactly where trees need to go and do not line up with urban afforestation and green infrastructure best practices. Additionally, there are many barriers as far as landownership, right-away limitations, irrigation feasibility, and green space planting limitations.	Carbon Removal
Funding and staff resources	Carbon Removal
Funding and education on how to start a green infrastructure program.	Carbon Removal
attitudes, the drill drill drill mentality....misplaced loyalty to oil and gas. ,,funds	Carbon Removal
Education and Funding	Carbon Removal

For each strategy you are doing, please give a brief description of how this strategy is being/will be implemented.

Comment	Sector
Our organization reforests through a variety of our programs: Branching Out (planting in city parks), Southwest Medical Urban Design Project and Park, Cool Schools Program (tree planting, rain garden and bioswale installations, and other green infrastructure enhancements on school grounds. We also are beginning a community greening initiative to plant trees on corridors, affordable housing developments, private land, and other key areas that will be identified through community engagement.	Carbon Removal
City of Richardson bought/traded for a large parcel of undeveloped property, Spring Creek Nature Area, to protect natural resources and create a recreational resource.	Carbon Removal
We provide three times more tree canopy in our developments than conventional patterns. We would do more with additional funding.	Carbon Removal

Are there any carbon removal measures not listed that you have implemented?

Comment	Sector
Planting trees and plant materials in specific locations around schoolgrounds that are known to sequester the most carbon	Carbon Removal
need to do this for sure.	Carbon Removal

What carbon removal are you hearing about from residents/community members?

Comment	Sector
Adding more public greenspace in their communities	Carbon Removal
Ensure city's current initiatives, master plans and recommendations are consistent with the goal of reducing environmental impacts.	Carbon Removal

Are there any carbon removal measures not listed above your organization would like to implement?

Comment	Sector
We would like to also remove impervious surfaces (concrete and asphalt) and replace these areas with trees and greenspace.	Carbon Removal
H2 Ranch is not intrested in carbon removals, but rather we are interested in reducing carbon emissions with green hydrogen production and supply.	Carbon Removal

ur e or Local Organizations: trategies to Impro e Air Qualit in the orth Texas Region

The North Central Texas Council of Governments (NCTCOG) is seeking feedback from local governments, nonprofits, universities, industry, businesses, and other stakeholders on what types of strategies they are currently implementing or would like to implement to improve air quality, protect public health, and address extreme weather events. Responses will in orm the Dallas-Fort Worth Air Qualit Impro ement Plan, a regional plan e elope b CTCOG with assistance rom the En ironmental Protection Agenc 's Climate Pollution Re uction Grants (CPRG) Planning Grants. **Strategies included in the regional plan are eligible to be included in a grant proposal for up to $500 million in competitive funding through CPRG Implementation Grants.**

The sur e is separate into the ollowing sectors: (1) Transportation (inclu es on-roa , a iation/airports, non-roa an rail subtopics); (2) Energ (inclu es resi ential, commercial/in ustrial, an power generation subtopics); (3) oli Waste, Water, an Wastewater; (4) Agriculture/ atural an Working Lan s ector; an (5) Carbon Remo al Measures. **Respondents can reply to as few or as many sectors as desired. Feel free to distribute this survey around to multiple staff within your organization with various perspectives and expertise.**

An accompan ing table that pro i es more etail on strategies liste is a ailable here (https://www.publicinput.com/Customer/File/Full/ 59 38ea-a211-4234-9c0c-7372 4 29eee). Go to www.publicinput.com/ wAQIP or a itional in ormation about this project.

* Require

Contact In ormation N

1. Name

. Emai

3. ganization *

Transportat on tor

4. Would you l k to prov d f dba k on strat g s for th transportat on s tor?

- ◯ Y s
- ◯ No

. Please pr e ee back us ng the ll w ng scale r wh ch transp rtat n sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 -xAlrea y ng t r plann ng t t, n a t nal un ng s nee e
2 - Alrea y ng t, un ng s nee e r e pans n r t c nt nue
3 - Rea y t un ng can be bta ne (plann ng has alrea y been ne)

4 - Very ntereste n start ng un ng s a a lable
5 - S mewhat ntereste n start ng un ng s a a lable
6 - N t at all ntereste
7 - N t appl cable t my rgan zat n r e pert se

T p c: Clean Fuels an Fuel E c ency *

		2	3 x	4 x	5 x	6 x	7
Engage n r supp rt em iss ns en rcement task rce act t es an perat ns	○	○	○	○	○	○	○
Replace hea y- uty esel eh cles w th newer nes, wh ch meet newer em iss n stan ar s	○	○	○	○	○	○	○
Pr m ote an mplement l ng restr ct ns	○	○	○	○	○	○	○
Preser e e eral em iss ns stan ar s	○	○	○	○	○	○	○
Implement zer - em iss n transp rt re r gerat n x un ts	○	○	○	○	○	○	○

Build infr ru ur o uppor l ri v hi l (EV) dop ion for ligh -du y p ng r v hi l	○	○	○	○	○	○	○
Build infr ru ur o uppor u of low mi ion fl v hi l	○	○	○	○	○	○	○
Condu ou r h o in r dop ion of ligh -du y p ng r EV	○	○	○	○	○	○	○
Improv h n rgy ffi i n y or r ili n y of EV h rging ion	○	○	○	○	○	○	○
Adop EV- R dy uilding od	○	○	○	○	○	○	○
D r oniz b fl	○	○	○	○	○	○	○
Provid lo l EV r o on um er	○	○	○	○	○	○	○
Provid lo l EV r o fl	○	○	○	○	○	○	○
In r EV dop ion mong ommer i l v hi l fl (fr igh , on r or , b .) b	○	○	○	○	○	○	○

Develop a lee æ e e pla or public sec or vehicles	○	○	○	○	○	○	○
Provide i ce ives or auxiliary power u i s o rucks	○	○	○	○	○	○	○
Desi a e "low- e ssio " corridors	○	○	○	○	○	○	○
I crease EV adop io a olocal over e lee s	○	○	○	○	○	○	○

6. Please pr e ee back us ng the ll w ng scale r wh ch transp rtat n sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 -xAlrea y ng t r plann ng t t, n a t nal un ng s nee e
2 - Alrea y ng t, un ng s nee e r e pans n r t c nt nue
3 - Rea y t un ng can be bta ne (plann ng has alrea y been ne)

4 - Very ntereste n start ng un ng s a a lable
5 - S mewhat ntereste n start ng un ng s a a lable
6 - N t at all ntereste
7 - N t appl cable t my rgan zat n r e pert se

T p c: Susta nable De el pment an C ngest n Management *

	1	2	3	4	5	6 x	7
Re uce s ngle ccupancy eh cle (SOV) tr ps	○	○	○	○	○	○	○
Pr m ote the use TryPark ngIt.c m, r ther plat rms t enc urage re uct n n SOV	○	○	○	○	○	○	○
Upgra e tra c s gnals n the reg n	○	○	○	○	○	○	○
All w hea y-uty esel eh cles t use manage lanes r ree	○	○	○	○	○	○	○
Pr e ncent es r c mmut ng ur ng " - peak" t mes r w rk ng rem ote	○	○	○	○	○	○	○
Up ate r a ways t x m in m ize	○	○	○	○	○	○	○

idling and imp saf ty							
Utiliz acti manag d lan s							
Impl ment t ans tati n icing g ams (.g., a king f s, c ng sti n f s)							
M dify c nst ucti n c ss s mat ials t duc missi ns impacts							
Imp x and sid walk inf ast uctu							
Install mo saf bik faciliti s							
id - bik bat s							
Add shad t bik lan s sid walks (s la , t s, tc.)							
Add walkabl , d ns , mix d-us c nt s							
Ex and th Saf R ut s t Sch ls g am							
Enc u ag ffici nt manag m nt P							

management of a ng							
C eate a g een u chas ng ol cy							
Incent v ze del ve y d ve s to d ve du ng off- ea t mes							
Ident fy and m plement o o tun t es to ut l ze autonomous veh cles to educe veh cle m iles t aveled							

7. Please pr e ee back us ng the ll w ng scale r wh ch transp rtat n sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 -xAlrea y ng t r plann ng t t, n a t nal un ng s nee e
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T p c: Trans t *

	1 x	2 x	3 x	4 x	5 x	6 x	7
Subs ze n uals' c sts publ c transp rtat n (e.g., trans t passes)	○	○	○	○	○	○	○
Implement m cr trans t	○	○	○	○	○	○	○
Create bus/trans t nly lanes	○	○	○	○	○	○	○
M n m ze ees r rst/last m le transp rtat n	○	○	○	○	○	○	○
Implement h gher capac ty n- eman /m icr trans t eh cles	○	○	○	○	○	○	○
De el p reg nal trans t plan	○	○	○	○	○	○	○
E pan publ c transp rtat y	○	○	○	○	○	○	○

transportation							
pan anpoo program							
Impro e housing-transportation ba ance							
Create an e ucational campaign to increase transit ri ership							

8. Please pr e ee back us ng the ll w ng scale r wh ch transp rtat n sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 -xAlrea y ng t r plann ng t t, n a t nal un ng s nee e
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T p c: A at n an A rp rts *

	1	2 x	3 x	4 x	5 x	6 x	7
Decarb n ze gr un supp rt equ pment	○	○	○	○	○	○	○
Ut l ze susta nable a at n uel	○	○	○	○	○	○	○
Pr e l cal ncent es r susta nable a at n uel use	○	○	○	○	○	○	○
Electr y a rplanes	○	○	○	○	○	○	○
A pt a clean a at n p l cy	○	○	○	○	○	○	○
Install a rp rt ap r rec ery e ces	○	○	○	○	○	○	○
Install unlea e tanks	○	○	○	○	○	○	○
Pursue carb n- x neutral	○	○	○	○	○	○	○

airport accre itatio							
ta o ar pa e							
Participate i the Vo u tary Airport Low Emi io (VALE) program							
ta vegetate roof							
Purcha e zero-emi io airport vehic e							
tegrate e viro me ta u tai a i ity b i to airport co tract							
corporate re ewa e re ource project i to the airport ma ter p a							
ta o - airport apiary							
corporate Lea er hip i E ergy a E viro me ta De ig (LEED)-certifie ui i g							
U e re ewa e re ource a ter ative to heat/coo							
ta a ove b							

ground fu n s	◯	◯	◯	◯	◯	◯	◯
Ph s ou sing -us p s ic w r bo s	◯	◯	◯	◯	◯	◯	◯

9. Please pr e ee back us ng the ll w ng scale r wh ch transp rtat n sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 -xAlrea y ng t r plann ng t t, n a t nal un ng s nee e
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T p c: Other N n-R a r Other M ob le Em iss ns S urces *

	1	2	3		5 x	6 x	7
Incent ze energy e c ent r alternat e uel c nstruct n equ pment	○	○	○	○	○	○	○
I ent y pt m izat n r nterm o al ac l t es	○	○	○	○	○	○	○
Decarb n ze lawn equ pment	○	○	○	○	○	○	○
Incent ze renewable esel usage	○	○	○	○	○	○	○
A pt clean l c m ot e techn l gy	○	○	○	○	○	○	○
Upgra e ra l cr ss ngs	○	○	○	○	○	○	○
Restr ct l c m ot e l ng	○	○	○	○	○	○	○
El m inate ra l x							

grade cross gs	○	○	○	○	○	○	○

10. or eac strategy you are do g, please g ve a br ef descr pt o of ow t s 2 strategy s be g/w ll be mpleme ted.

11. What are t e barr ers to mpleme tat o of t e above strateg es? 2

1 . Are t ere a y tra sportat o strateg es ot l sted t at you ave mpleme ted? 2

13. What tra sportat o strateg es ave you eard about from 2 res de ts/commu ty members?

14. Are there an tran rtat n trateg e n t l ted ab ve that ur rgan zat n w uld l ke t m plement?

Energy Se r

15. Would y u like pr vide feedba k n ra egie f r he energy e r?

- ◯ e
- ◯ N

16. Please pr e ee back us ng the ll w ng scale r wh ch energy sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 -xAlrea y ng t r plann ng t t, n a t nal un ng s nee e
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7 - N t appl cable t my rgan zat n r e pert se

T p c: General *

	1 x	2 x	3 x	4 x	5 x	6 x	7
Up ate bu l ng c es	○	○	○	○	○	○	○
Streaml ne s lar regulat ns	○	○	○	○	○	○	○
De el p c mmun ty-scale renewable energy, m cr gr s, r eh cle-t - gr (V2G)	○	○	○	○	○	○	○
Increase e ucat n n renewable energy an energy e c ency/c n ser at n	○	○	○	○	○	○	○
Establ sh net meter ng	○	○	○	○	○	○	○
De el p l cal w rk rce t enable clean energy a pt n x	○	○	○	○	○	○	○
Purchase x							

Purchase re e a e e ec rici y	○	○	○	○	○	○	○
Reduce a ura gas fugi ive emissio s	○	○	○	○	○	○	○
Res ruc ure e ec ric a d a er ra es	○	○	○	○	○	○	○
Provide rai i g i he opera io , ma ageme , a d mai e a ce of re eva ui di g sys ems	○	○	○	○	○	○	○
Adop hea pumps for commercia a d reside ia ui di gs	○	○	○	○	○	○	○
U i ize a e ergy services compa y (ES O) o rapid y u s ra egica y imp eme e ergy efficie cy measures	○	○	○	○	○	○	○
Es a ish emissio radi g sys em a d car o prici g measures	○	○	○	○	○	○	○
Suppor smar -grid a d/or ehi d- he me er ech o ogies o reduce po er osses C	○	○	○	○	○	○	○

and manage demand							
pand e e ri i y demand response programs	○	○	○	○	○	○	○
Re rofi igh ing wi h L Ds	○	○	○	○	○	○	○
Deve op marke s for ma eria s and produ s wi h ow embodied arbon	○	○	○	○	○	○	○
U i ize more ba ery s orage for resi ien y	○	○	○	○	○	○	○

17. Please pr e ee back us ng the ll w ng scale r wh ch energy sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 -xAlrea y ng t r plann ng t t, n a t nal un ng s nee e
2 - Alrea y ng t, un ng s nee e r e pans n r t c nt nue
3 - Rea y t un ng can be bta ne (plann ng has alrea y been ne)

4 - Very ntereste n start ng un ng s a a lable
5 - S mewhat ntereste n start ng un ng s a a lable
6 - N t at all ntereste
7 - N t appl cable t my rgan zat n r e pert se

T p c: C mmerc al/In ustr al an P wer Generat n *

		2	3	4	5 x	6 x	7
Install c l r s n bu l ngs (e.g., wh te pa nt, "green" egetate r s)	○	○	○	○	○	○	○
Increase utreach t an part c pat n n ustr al cust mers n renewable energy an energy e c ency pr jects	○	○	○	○	○	○	○
Pr m ote clean energy nanc ng pr grams, such as PACE, r the c mmerc al an n ustr al sect rs	○	○	○	○	○	○	○
Ut l ze s lar n ustr al pr cess heat ng	○	○	○	○	○	○	○
E ucate x							

occupants on c nt hav ors							
B nchmark u ld ng n rgy consumpt on and mpl ment a u ld ng n rgy p r ormanc manag m ent l program							
Prov d nc nt v s or us n ss s or local gov rnm ents to purchas c rt d n rgy- c nt appl anc s, h at ng, and cool ng							
Prov d nc nt v s or GHG r duct on n ndustr al n rgy us and ndustr al proc ss s							
Esta l sh standards addr ss ng GHG m iss ons rom ndustr al ac l t s							
Conduct n rgy aud ts or organ zat ons							
Conduct c ncy r tro ts or organ zat ons l							
nc nt v z							

18. Please pr e ee back us ng the ll w ng scale r wh ch energy sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 -xAlrea y ng t r plann ng t t, n a t nal un ng s nee e
2 - Alrea y ng t, un ng s nee e r e pans n r t c nt nue
3 - Rea y t un ng can be bta ne (plann ng has alrea y been ne)

4 - Very ntereste n start ng un ng s a a lable
5 - S mewhat ntereste n start ng un ng s a a lable
6 - N t at all ntereste
7 - N t appl cable t my rgan zat n r e pert se

T p c: Res ent al an C mmerc al Bu l ngs *

	1	2		4 x	5 x	6 x	7
C n uct energy au ts x r res ents	○	○	○	○	○	○	○
C n uct energy e c ency retr ts r res ents	○	○	○	○	○	○	○
Incent ze res ent al s lar pr jects	○	○	○	○	○	○	○
Implement a res ent al weather zat n ass stance pr gram	○	○	○	○	○	○	○
Implement gr up energy sw tch/purch ase pr grams	○	○	○	○	○	○	○
Pr e ncent es r res ents t purchase cert e energy-e c ent appl ances, heat ng, an x c l ng	○	○	○	○	○	○	○

19. F c n acti n t-ze en y t ate y y a e d ing, pl a e give a b ie de c ipti n h w thi W t ategy i being/wi l be implemented.

20. W h at a e the ba ie t implementati n the ab ve t ategie ? W

21. A e the e any ene gy t ategie n t li ted that y have implemented? W

22. at ene gy t ategie have y hea d ab t m e ident /c mmunity W membe ?

23. Are there an ener trate e n t l ted ab ve that ur r an zat n w uld l ke t mplement?

Waste, Water, a Waste ater e tor

24. Woul you like to provi e fee ba k o strategies for the a ste, ater, a aste ater se tor?

- ◯ Yes
- ◯ No

2 . Please pr e ee back us ng the ll w ng scale r wh ch waste, water, an wastewater sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 - Alrea y ng t r plann ng t t, n a t nal un ng s nee e
2 - Alrea y ng t, un ng s nee e r e pans n r t c nt nue
3 - Rea y t un ng can be bta ne (plann ng has alrea y been ne)

4 - Very ntereste n start ng un ng s a a lable
5 - S mewhat ntereste n start ng un ng s a a lable
6 - N t at all ntereste
7 - N t appl cable t my rgan zat n r e pert se *

	1	2	3		5 x	6 x	7
Empl y energy c nser at n techn l gy r water ut l ty c mpan es	○	○	○	○	○	○	○
Increase water reuse pract ces	○	○	○	○	○	○	○
Implement urban gar en ng pract ces	○	○	○	○	○	○	○
Capture ug t e em iss ns r m wastewater treatment pr cesses	○	○	○	○	○	○	○
Implement st rmwater c llect n pr grams	○	○	○	○	○	○	○
Implement ra nwater catchment pr grams	○	○	○	○	○	○	○
Pr e rebates x	○	○	○	○	○	○	○

smart water r t	◯	◯	◯	◯	◯	◯	◯

26. What are the b npleme tat f the ab ve strateg es ?
sta l smart

27. F r each strategy y u are g, please g ve a br ef escr pt f h w th s strategy s be g/w ll be mpleme te . ?

28. Are there a y waste, water, a wastewater sect r strateg es t l ste that y u have mpleme te y ur jur s ct ?

29. What waste, water, a wastewater sect r strateg es are y u hear g ab ut ? fr m res e ts/c mmu ty members

l w-waste c struct meth s	◯	◯	◯	◯	◯	◯	◯
mpr ve la f ll c ver ? a seal g	◯	◯	◯	◯	◯	◯	◯
C vert							

w te tr k
to lower-
emi ion
vehi le

0. Are there ny w te, w ter, nd w tew ter e tor tr tegie not li ted bove 3 yo r org niz tion wo ld like to implement?

Provide ed 3 tion on food w 3 te 3	○	○	○	○	○	○	○
Cre te green 3 p r h ing poli ie	○	○	○	○	○	○	○

Agricultur tur l nd Working L nds

31 Would you lik to provid f db ck on str t gi s for th gricultur n tur l nd working l nds s ctor?

- ◯ Y s
- ◯ o .

. Please pr e ee back us ng the ll w ng scale r wh ch agr culture/natural an w rk ng lan s sect r strateg es y ur rgan zat n w ul l ke t mplement.

1 - Alrea y ng t r plann ng t t, n a t nal un ng s nee e
- Alrea y ng t, un ng s nee e r expans n r t c nt nue
3 - Rea y t un ng can be bta ne (plann ng has alrea y been ne)

4 - Very ntereste n start ng un ng s a a lable
5 - S mewhat ntereste n start ng un ng s a a lable
6 - N t at all ntereste
7 - N t appl cable t my rgan zat n r expert se *

	1		3	4 2	5 2	6 2	7
Increase tree c er	○	○	○	○	○	○	○
Increase publ c green spaces	○	○	○	○	○	○	○
Up ate lan scap ng r nances/re qu rements	○	○	○	○	○	○	○
Use less res urce- ntens e lan scape es gn	○	○	○	○	○	○	○
Depl y urban heat slan m t gat n strateg es	○	○	○	○	○	○	○
Expan urban rests	○	○	○	○	○	○	○
C n ert t electr c rr gat n pumps	○	○	○	○	○	○	○
Integrate a r qual ty re ew 2 nt z n ng an	○	○	○	○	○	○	○

permitting
re ie

33. Wh t re the b rriers to imp ement tion of the bo e str tegies? ,
inorg nic

34. For e ch str tegy you re doing p e se gi e brief description of ho this ,
str tegy is being/ i be imp emented.

35. Are there ny str tegies for the gricu ture/n tur nd orking nds sector ,
not isted th t you h e imp emented?

36. Wh t str tegies for the gricu ture/n tur nd orking nds sector re you ,
he ring bout from residents/community members?

37. Are there an a r lt re/nat ral and work n lands se tor strate es not l sted above o r lo al or an zat on wo ld l ke to mplement?

Carbon Monitoring Measures

38. Would you like to provide feedback on measuring carbon?

- ◯ Yes
- ◯ No

Carbon R a o asur s

39. P as pro id f dback using th fo owing sca for which carbon r a o asur s your organization wou d ik to i pnt.

1 -A r ady doing it or p anning to do it, no additiona funding is n d d
2 - r ady doing it, funding is n d d for xpansion or to continu
3 - R ady to do if funding can b obtain d (p anning has a r ady b n don)

4 - V ry int r st d in starting if funding is a ai ab
5 - So what int r st d in starting if funding is a ai ab
6 - Not at a int r st d
7 - Not app icab to orgnization or xp rtis *

	1	2	3	4 A	5 A	6 A	7
l ro p for st anag nt po ici s	○	○	○	○	○	○	○
l pnt urban affor station and gr n infrastructur progra s	○	○	○	○	○	○	○
R stor d grad d ands and for st d ands to nhanc carbon s qu stration	○	○	○	○	○	○	○
Insta carbon captur d ic s A	○	○	○	○	○	○	○

40. What are the barr er t le ntate n f the ab ve trateg e ? A

41. F r each trategy y u are d ng, lea e g ve a br ef de cr t n f h w th A
trategy be ng/w ll be le ntede

42. re there any carb n re val a ure n t l ted that y u have A
le ented?

43. What carb n re m eval a ure are y u hear ng ab ut fr A
re dent /c n ty ueee ?b

44. A h ny c bon mov l m e su s no lis bov you o g niz ion woul lik o impl m en ?

This con n is n i h c no n o s by Mic osof . Th you submi will b s n o h fo m own .

Mic osof Fo ms

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 5 - COMMITEE ROSTER

North Central Texas Council of Governments
Environment & Development

Public Works Council Fiscal Year 2024

Joseph Cotton
Assistant Director of Engineering
City of Allen
Represents: City of Allen

Keith Brooks
Director of Public Works & Transportation
City of Arlington
Represents: City of Arlington

Christopher Funches
Project Engineer
City of Arlington
Represents: City of Arlington

Jody Byerly
Director of Public Works
City of Carrollton
Represents: City of Carrollton

Ali Hatefi
Director of Public Works
City of Dallas
Represents: City of Dallas

Derek White
Assistant City Engineer
City of Dallas
Represents: City of Dallas

Brett Bourgeois
Deputy City Engineer
City of Denton
Represents: City of Denton

Juan Cadena
Operations Officer
City of Fort Worth
Represents: City of Fort Worth

Michael Owen
City Engineer
City of Fort Worth
Represents: City of Fort Worth

David Chacon
Senior Civil Engineer
City of Frisco
Represents: City of Frisco

Mike Rozelle
Senior Field Engineer
City of Garland
Represents: City of Garland

Brister Merritt
Utility Operations Manager
City of Grand Prairie
Represents: City of Grand Prairie

Walter Thomas
City Engineer
City of Irving
Represents: City of Irving

Aaron Russell
Director of Public Services
City of Lewisville
Represents: City of Lewisville

Paul Sparkman
Assistant Director of Public Works
City of McKinney
Represents: City of McKinney

John Mears
City Engineer
City of Mesquite
Represents: City of Mesquite

Updated November 2023

North Central Texas Council of Governments
Environment & Development

Public Works Council Fiscal Year 2024

Carrie Jones - Chair
Assistant Director of Public Works for Streets/Traffic/Drainage
City of Plano
Represents: City of Plano

Jim Dulac
Assistant Director of Engineering
City of Richardson
Represents: City of Richardson

Mark Hines
Assistant Director of Public Works
Collin County
Represents: Collin County

Cecelia Rutherford
Assistant Director
Dallas County
Represents: Dallas County

Stephen Belknap
Director of Development Services
Denton County
Represents: Denton County

Joseph Jackson
County Engineer/Assistant Director
Tarrant County
Represents: Tarrant County

Jeffrey McSpedden
Director of Public Works
Town of Hickory Creek
Represents: Denton/Lake Cities Subregion

Clayton Riggs
Director of Public Works
Town of Flower Mound
Represents: DFW North Subregion

Scott Monaghan
Director of Public Works
City of Fate
Represents: East Subregion

Caroline Waggoner
Assistant City Manager
City of North Richland Hills
Represent: Mid-Cities Subregion

Andrew Figueroa
Director of Public Works
City of Celina
Represents: Northeast Subregion

Ronnie O'Brien
Assistant Director of Public Works
City of Rowlett
Represents: Northeast Dallas Subregion

Keith Miertschin
Assistant Director of Operations
City of Grapevine
Represents: Northeast Tarrant Subregion

Dillon Luna
Management Analyst
Town of Northlake
Represents: Northwest Subregion

Danielle Rix
City Engineer
City of Farmers Branch
Represents: Northwest Dallas Subregion

Larry Hoover
Director of Public Works
City of White Settlement
Represents: Northwest Tarrant Subregion

Updated November 2023

North Central Texas Council of Governments
Environment & Development

Public Works Council Fiscal Year 2024

James Gaertner
Executive Director of Public Works & Utilities
City of Waxahachie
Represents: Southeast Subregion

Brooks Williams
City Manager
City of Ferris
Represents: Southeast Dallas Subregion

Raymond Coffman
Director of Engineering Services
City of Mansfield
Represents: South Tarrant Subregion

Jeremy Hutt
Director of Public Works
City of Cleburne
Represents: Southwest Subregion

Robert Woodbury
City Engineer
City of Cedar Hill
Represents: Southwest Dallas Subregion

Matt Leppla – Vice Chair
Assistant Director of Public Works, Operations
City of Weatherford
Represents: West Subregion

Sam Davis
Vice President/General Manager
Texas Materials
Represents: Associated General Contractors

Connor VanSteenberg
North Texas Area Manager
Represents: Associated General Contractors of Texas

Chris Cha
Principal
Pacheco Koch
Represents: Council of Engineering Companies

Ted Sugg
Principal Regional Municipal Manager
CobbFendley
Represents: Council of Engineering Companies

Lyndon Cox
Senior Principal/Engineer
Terracon Consultants
Represents: Texas Council of Engineering Laboratories/GeoProfessionals Serving Texas

Updated November 2023

FY2024 RESOURCE CONSERVATION COUNCIL

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FY2024 RESOURCE CONSERVATION COUNCIL

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FY2024 RESOURCE CONSERVATION COUNCIL

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Patricia Redfearn, Ph. D **(2006-2024)**
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Updated November 15, 2023

FY2023-2024 REGIONAL INTEGRATION OF SUSTAINABILITY EFFORTS COALITION

VOTING MEMBERS

RISE Coalition Chair
Katherine Barnett (2023-2024)
Sustainability and Customer Initiatives Manager
City of Denton

Cory Heiple (2023-2024)
Director of Environmental Services
City of Carrollton

Duy Vu (2023-2024)
Environmental Manager
City of Cedar Hill

Rosaerlinda Cisneros (2023-2024)
Climate Coordinator
City of Dallas

Alex Pharmakis (2023-2024)
Sustainability Manager
City of Farmers Branch

RISE Coalition Vice Chair
Mendie White (2023-2024)
Neighborhood Services & Sustainability Mgr.
City of Lewisville

Avery Pesek (2023-2024)
Environmental Planner
City of Fort Worth

Heather Harrington (2023-2024)
Senior Sustainability Coordinator
City of Plano

Dorothy Kindell (2023-2024)
Energy Analyst
Tarrant Regional Water District

VOTING MEMBER ALTERNATES

Krista Pender (2023-2024)
Environmental Quality Manager
City of Carrollton

Lauren Betz (2023-2024)
Environmental Specialist
City of Cedar Hill

Vacant (2023-2024)
City of Dallas

James Douglas (2023-2024)
Conservation Programs Coordinator
City of Denton

Shane Davis (2023-2024)
Director of Sustainability & Public Health
City of Farmers Branch

Betsy Yost (2023-2024)
City of Fort Worth

Nicole Warhoftig (2023-2024)
SEED Manager
City of Plano

Jason Gehrig (2023-2024)
Director of Infrastructure Engineering
Tarrant Regional Water District

Updated: October 11, 2023

REGIONAL TRANSPORTATION COUNCIL

Gyna Bivens, Chair
Mayor Pro Tem
City of Fort Worth

Clay Lewis Jenkins, Vice Chair
County Judge
Dallas County

Rick Bailey, Secretary
Commissioner
Johnson County

Daniel Alemán Jr.
Mayor
City of Mesquite

Bruce Arfsten
Mayor
Town of Addison

Steve Babick
Mayor
City of Carrollton

Dennis Bailey
Commissioner
Rockwall County

Adam Bazaldua
Councilmember
City of Dallas

Elizabeth M. Beck
Councilmember
City of Fort Worth

Alan Blaylock
Councilmember
City of Fort Worth

J.D. Clark
County Judge
Wise County

Ceason Clemens, P.E.
District Engineer
Texas Department of Transportation,
Dallas District

Michael D. Crain
Councilmember
City of Fort Worth

Theresa Daniel, Ph.D.
Commissioner
Dallas County

Jeff Davis
Chair
Trinity Metro

Andy Eads
County Judge
Denton County

Michael Evans
Mayor
City of Mansfield

Gary Fickes
Commissioner
Tarrant County

George Fuller
Mayor
City of McKinney

TJ Gilmore
Board Chair
Denton County Transportation Authority

Raul H. Gonzalez
Councilmember
City of Arlington

Barry L. Gordon
Mayor
City of Duncanville

Lane Grayson
Commissioner
Ellis County

Mojy Haddad
Board Member
North Texas Tollway Authority

Ron Jensen
Mayor
City of Grand Prairie

Brandon Jones
Mayor Pro Tem
City of Lewisville

John Keating
Mayor Pro Tem
City of Frisco

Brad LaMorgese
Councilmember
City of Irving

Cara Mendelsohn
Councilmember
City of Dallas

Ed Moore
Deputy Mayor Pro Tem
City of Garland

John B. Muns
Mayor
City of Plano

Raj Narayanan
Board Member
Dallas Fort Worth International Airport

Omar Narvaez
Councilmember
City of Dallas

Manny Ramirez
Commissioner
Tarrant County

Jim R. Ross
Mayor
City of Arlington

David Salazar, P.E.
District Engineer
Texas Department of Transportation,
Fort Worth District

Chris Schulmeister
Mayor Pro Tem
City of Allen

Gary Slagel
Chair
Dallas Area Rapid Transit

Jeremy Tompkins
Councilmember
City of Euless

T. Oscar Trevino Jr., P.E.
Mayor
City of North Richland Hills

William Tsao, P.E.
Citizen Representative
City of Dallas

Chris Watts
Councilmember
City of Denton

Duncan Webb
Commissioner
Collin County

Chad West
Councilmember
City of Dallas

October 23, 2023

North Central Texas Council of Governments
Environment & Development

Water Resources Council

Tim Abbott
Pumping Facilities Superintendent
City of Plano
Utility Provider, Development Community or Industry Representative Region-At-Large

Mike Adams
Executive Director of Engineering and Utilities
City of Midlothian
Utility Provider, Development Community or Industry Representative Region-At-Large

Cynthia Baughman
Water Utilities Technology Director
City of Garland
Major Utility Provider –
Customer Members-At-Large

Tiffany Bruce
Executive Director of Public Works
Town of Flower Mound
Major Utility Provider –
Customer Members-At-Large

Dan Buhman
(Serving out Wayne Owen's term)
General Manager
Tarrant Regional Water District
Major Utility Provider

Glenn Clingenpeel
Manager, Technical Services and Basin Planning
Trinity River Authority of Texas
Major Utility Provider

Grace Darling
Member
Arlington Conservation Council
Environmental/Public Interest Groups

Bill Gase
Assistant Director- Water Treatment
City of Arlington Water Utilities
Utility Provider, Development Community or Industry Representative Region-At-Large

Stephen Gay
Director of Water Utilities
City of Denton
Utility Provider, Development Community or Industry Representative Region-At-Large

Billy George
Deputy Director – Water and Wastewater
North Texas Municipal Water District
Major Utility Provider

Paul Hackleman
Director of Public Works
City of Watauga
Major Utility Provider –
Customer Members-At-Large

Joshua Howard
Deputy General Manager – Finance & Service
Johnson County Special Utility District
Utility Provider, Development Community or Industry Representative Region-At-Large

Updated: August 16, 2023

North Central Texas Council of Governments
Environment & Development

Rachel Ickert (Vice-Chair)
Chief Water Resources Officer
Tarrant Regional Water District
Customer Members-At-Large

Matthew Jalbert, P.E.
Executive Manager, Northern Region
Trinity River Authority
Major Utility Provider –
Customer Members-At-Large

Wilson Kakembo
Engineering Manager
Town of Addison - Utility Provider
Utility Provider, Development Community or
Industry Representative Region-At-Large

Michael Kivlan
Area Manager
Texas Water Utilities
Utility Provider, Development Community or
Industry Representative Region-At-Large

Kevin Mercer
General Manager
Denton County Fresh Water Supply
District 6 & 7
Major Utility Provider –
Customer Members-At-Large

Valerie Miller
Industry Expert, Water
Olsson
Utility Provider, Development Community or
Industry Representative Region-At-Large

Michael Nieswiadomy
Professor of Economics
University of North Texas
Environmental/Public Interest Groups

Larry Patterson
Executive Director
Upper Trinity Regional Water District
Major Utility Provider

Zachary Peoples
Assistant Director Wastewater Operations
City of Dallas Water Utilities
Major Utility Provider

Steve Pettit
Assistant Water Utilities Director
City of Irving
Utility Provider, Development Community or
Industry Representative Region-At-Large

Jerry Pressley
Assistant Water Director, Water Department
City of Fort Worth
Major Utility Provider –
Customer Members-At-Large

Jeff Price
Utilities Director
City of Mansfield
Major Utility Provider –
Customer Members-At-Large

Eric Robison
City of Richardson
Major Utility Provider –
Customer Members-At-Large

Kelly Rouse
Utilities Manager
City of Lewisville
Utility Provider, Development Community or
Industry Representative Region-At-Large

Updated: August 16, 2023

North Central Texas Council of Governments
Environment & Development

Meghna Tare
Chief Sustainability Officer
University of Texas at Arlington
Environmental/Public Interest Groups

Danielle Tucker
CEO/President
DEVA Service's
Utility Provider, Development Community or
Industry Representative Region-At-Large

Eduardo Valerio
Assistant Director
Dallas Water Utilities
Major Utility Provider –
Customer Members-At-Large

Caroline Waggoner
Public Works Director
City of North Richland Hills
Utility Provider, Development Community or
Industry Representative Region-At-Large

Stacy Walters (Chair)
Regulatory Environmental Administrator
Fort Worth Water Department
Major Utility Provider

Sally U. Wright
Assistant Director, Water Utilities
City of Dallas
Major Utility Provider –
Customer Members-At-Large

Updated: August 16, 2023

Executive Board, 2023-2024

President
BILL HEIDEMANN
Mayor
City of Corinth

Vice President
CHRIS HILL
County Judge
Collin County

Secretary-Treasurer
VICTORIA JOHNSON
Councilmember
City of Burleson

Past President
ANDREW PIEL
Councilmember
City of Arlington

Director
CLAY JENKINS
County Judge
Dallas County

Director
TIM O'HARE
County Judge
Tarrant County

Director
CARA MENDELSOHN
Councilmember
City of Dallas

Director
CARLOS FLORES
Councilmember
City of Fort Worth

Director
BOBBIE MITCHELL
Commissioner
Denton County

Director
J. D. CLARK
County Judge
Wise County

Director
TODD LITTLE
County Judge
Ellis County

Director
JORJA CLEMSON
Deputy Mayor Pro Tem
City of Grand Prairie

What is NCTCOG?

The North Central Texas Council of Governments (NCTCOG) is a voluntary association of, by, and for local governments within the 16-county North Central Texas Region. The agency was established by state enabling legislation in 1966 to assist local governments in planning for common needs, cooperating for mutual benefit, and coordinating for sound regional development. Its purpose is to strengthen both the individual and collective power of local governments, and to help them recognize regional opportunities, resolve regional problems, eliminate unnecessary duplication, and make joint regional decisions – as well as to develop the means to implement those decisions.

North Central Texas is a 16-county metropolitan region centered around Dallas and Fort Worth. The region has a population of more than 7 million (which is larger than 38 states), and an area of approximately 12,800 square miles (which is larger than nine states). NCTCOG has 228 member governments, including all 16 counties, 169 cities, 19 independent school districts, and 24 special districts.

NCTCOG's structure is relatively simple. An elected or appointed public official from each member government makes up the General Assembly which annually elects NCTCOG's Executive Board. The Executive Board is composed of 17 locally elected officials and one ex-officio non-voting member of the legislature. The Executive Board is the policy-making body for all activities undertaken by NCTCOG, including program activities and decisions, regional plans, and fiscal and budgetary policies. The Board is supported by policy development, technical advisory and study committees – and a professional staff led by R. Michael Eastland, Executive Director.

Director
LINDA MARTIN
Mayor
City of Euless

Director
BOWIE HOGG
Councilmember
City of Arlington

Director
JENNIFER JUSTICE
Councilmember
City of Richardson

Director
KAMERON RABURN, PE
Commissioner
City of Ennis

Director
NICK STANLEY
Mayor
City of Aledo

VICTORIA NEAVE CRIADO
State Representative
District 107
Ex Officio Member

Staff Directors

Executive Director
MIKE EASTLAND

Agency Administration
RANDY RICHARDSON

Research and
Information Services
TIM BARBEE

Emergency
Preparedness
MARIBEL MARTINEZ

Transportation
MICHAEL MORRIS

Deputy Executive
Director/Agency
Administration
MONTE MERCER

Area Agency on Aging
DONI GREEN

Workforce
Development
PHEDRA REDIFER

Environment &
Development
SUSAN ALVAREZ

NCT9-1-1
CHRISTY WILLIAMS

What Does NCTCOG Do?

The Executive Director's Office supervises the day-to-day operation of the agency; implements the Executive Board's policy directives; and maintains all Board records (minutes, resolutions, bylaws, appointments). This Office also manages the agency's participation in the Texas Review and Comment System, special projects for member governments, an Urban Fellowship Program and several local government professional roundtables.

Agency Administration is responsible for fiscal management, grants administration and budgeting; administration of purchasing, human resources, insurance, the retirement system, records management and office space; and operation of the supply/mail/copy center.

Community Services has planning, program development, and/or program coordination responsibilities in the *Area Agency on Aging* (planning and services in 14 counties); *Criminal Justice* (program development and funds allocation for the 16-county region); *9-1-1 Administration* (management and implementation in 13 counties); and *radio frequency allocation* for public safety agencies (four COGs and 42 counties). NCTCOG's *Regional Training Center* provides training and professional development through a regional police academy and a local government program.

Emergency Preparedness staffs the Regional Emergency Preparedness Council and facilitates the work of its Technical Committee. The department also works closely with state and federal agencies that are charged with emergency management mitigation, training, response and recovery responsibilities.

Environment & Development assists local governments to protect and improve the region's air, water, and critical land resources; identifies greenway and open space opportunities; promotes pollution prevention through waste minimization, reuse/recycling and proper disposal of nonrecoverable materials; and coordinates public works infrastructure, flood damage reduction and development codes activities.

Research & Information Services provides general technical assistance; population and employment forecasts; annual population, housing and employment estimates; land use information; development announcement reports; and tabulation/analysis of Census data. Support is provided to a regional Geographic Information System (GIS) and NCTCOG's internal computer network. Custom data analyses and special products can be provided on a fee-for-service basis.

Transportation provides technical planning services in support of development, project selection and implementation of transportation projects in the *Regional Transportation Plan* and *Transportation Improvement Program.* The department also provides regional planning, major investment studies, travel forecasting, air quality analysis, transit and traffic operations planning, airport planning and technical assistance to local governments.

Workforce Development administers publicly funded employment and training programs for Collin, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, and Wise Counties. The department provides staff support to the North Central Texas Workforce Development Board by providing planning, coordination, management, and oversight services.

Public Affairs provides external services on behalf of the agency (news media/public relations, directories, newsletters, special publications, operation of NCTCOG's Regional Information Center) and internal services for all departments (graphics design and photography, agency switchboard, mailing lists, meeting/workshop support and special projects).

(Over, please)

North Central Texas
Council of Governments

SURFACE TRANSPORTATION TECHNICAL COMMITTEE

Walter Shumac, III, Chair
City of Grand Prairie

G. "Gus" Khankarli, Vice Chair
City of Dallas

Ricardo Gonzalez, Secretary
TxDOT, Fort Worth

Joe Atwood
Hood County

Melissa Baker
City of Irving

Micah Baker
Dallas County

David Boski
City of Mansfield

Shon Brooks
City of Waxahachie

Tanya Brooks
Dallas Area Rapid Transit

Daniel Burnham
City of Arlington

Travis Campbell
TxDOT, Dallas

Layne Cline
City of Coppell

Rob Cohen
City of Southlake

John F. Cordary, Jr.
TxDOT, Fort Worth

Jackie Culton
City of Duncanville

Clarence Daugherty
Collin County

Chad Davis
Wise County

Arturo Del Castillo
City of Dallas

Pritam Deshmukh
City of Richardson

Caryl DeVries
City of Grand Prairie

Greg Dickens
City of Hurst

Rebecca Diviney
City of Denton

Phil Dupler
Trinity Metro

Chad Edwards
Trinity Metro

Claud Elsom
Rockwall County

Maritza Figy
City of Dallas

Eric Fladager
City of Fort Worth

Chris Flanigan
City of Allen

Gary Graham
City of McKinney

Tom Hammons
City of Carrollton

Ron Hartline
City of The Colony

Barry Heard
Kaufman County

Shannon Hicks
Town of Addison

Matthew Hotelling
Town of Flower Mound

John D. Hudspeth
TxDOT, Dallas

Jeremy Hutt
City of Cleburne

Thuan Huynh
City of McKinney

Joseph Jackson
Tarrant County

Joel James
North Texas Tollway Authority

William Janney
City of Frisco

Kelly Johnson
North Texas Tollway Authority

Major L. Jones
City of Euless

Alonzo Liñán
City of Keller

Eron Linn
Dallas Area Rapid Transit

Clay Lipscomb
City of Plano

Paul Luedtke
City of Garland

Stanford Lynch
Hunt County

Chad Marbut
City of Weatherford

Alberto Mares
Ellis County

Wes McClure
City of Mesquite

Brian Moen
City of Frisco

Mark Nelson
City of Richardson

Jim O'Connor
City of Irving

Cintia Ortiz
Parker County

Tim Palermo
Denton County Transportation Authority

Dipak Patel
City of Lancaster

Martin Phillips
City of Fort Worth

John Polster
Denton County

Kelly Porter
City of Fort Worth

Tim Porter
City of Wylie

Lauren Prieur
City of Fort Worth

Elizabeth Reynolds
City of Grapevine

Jahor Roy
City of Mesquite

Greg Royster
Dallas Fort Worth International Airport

Kathryn Rush
City of Dallas

David Salmon
City of Lewisville

Ryan Sartor
City of Farmers Branch

Brian Shewski
City of Plano

Randy Skinner
Tarrant County

Cheryl Taylor
City of Bedford

Caleb Thornhill
City of Plano

Dave Timbrell
City of Garland

Errick Thompson
City of Burleson

Press Tompkins
City of Greenville

Jennifer VanderLaan
Johnson County

Gregory Van Nieuwenhuize
City of Haltom City

Daniel Vedral
City of Irving

Caroline Waggoner
City of North Richland Hills

Jana Wentzel
City of Arlington

Robert Woodbury
City of Cedar Hill

Larry Wright
City of Colleyville

Jamie Zech
TCEQ

December 8, 2023

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 6 - OPEN HOUSE MATERIALS

North Central Texas Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

Funded through the Environmental Protection Agency's Climate Pollution Reduction Grants

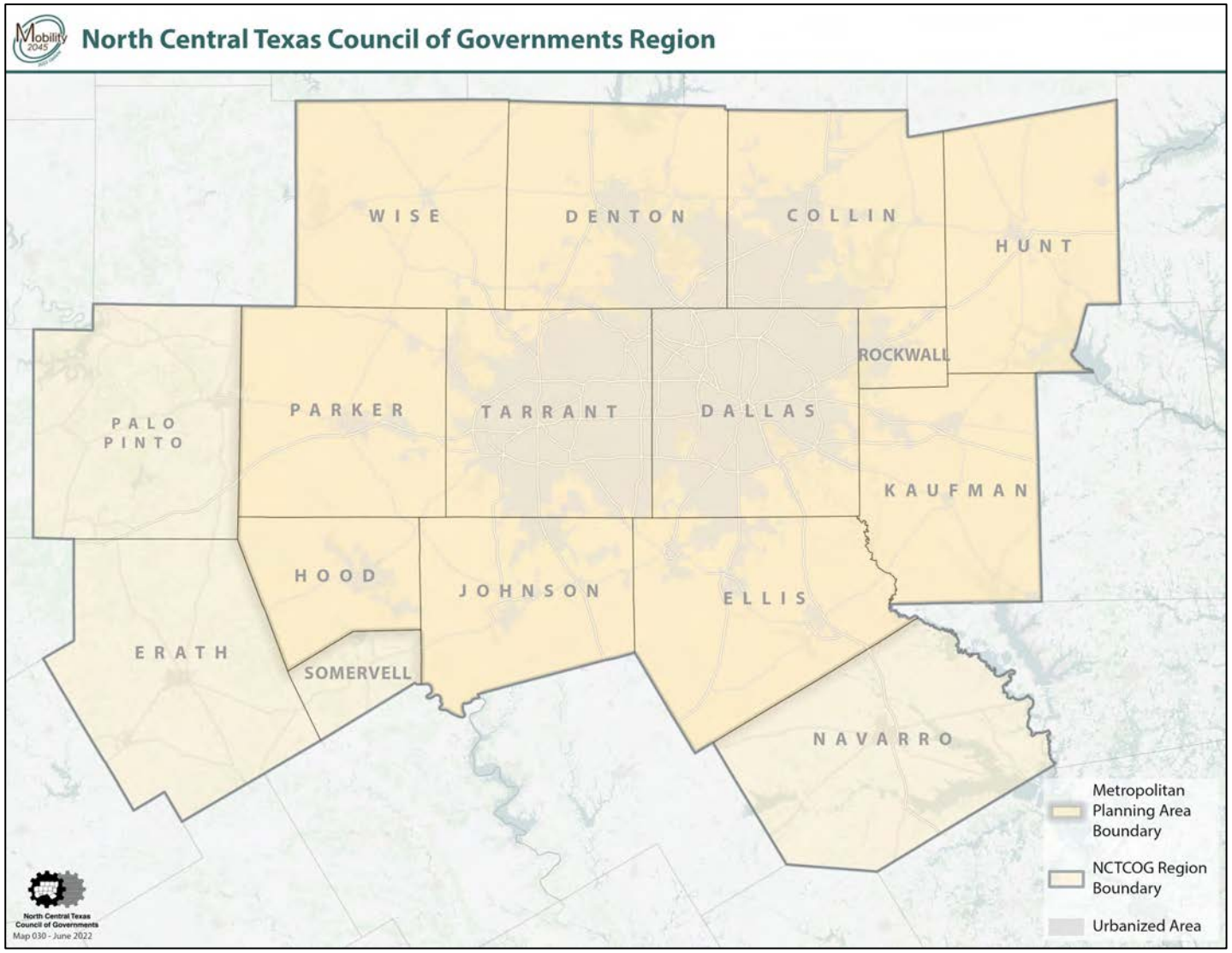
Who We Are

Regional Planning Agency

- Assist local governments in planning and coordinating for regional development

Departments:

- Aging Services
- Economic Development
- Emergency Preparedness
- Environment & Development
- NCT 9-1-1
- Public Safety
- Regional Data
- Transportation
- Workforce Solutions



https://nctcog.org/

Air Pollution

Local Air Pollution

The Clean Air Act requires Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants which are harmful to human health:

Criteria Pollutant	DFW Attainment Status
Ozone	✗
Lead	✓
Carbon Monoxide	✓
Nitrogen Dioxide	✓
Particulate Matter	?
Sulfur Dioxide	Partial nonattainment in Navarro County due to aggregate plant

Greenhouse Gases

Gases that trap heat in the atmosphere, resulting in the warming on the surface

Carbon Dioxide (CO_2)

Burning fossil fuels, solid waste, trees, and other biological materials, and as a byproduct in certain chemical reactions

Methane (CH_4)

Production and transport of coal, natural gas, and oil, the decay of organic waste and agricultural practices

Nitrous Oxide (N_2O)

Agricultural, land use, industrial activities, treatment of wastewater, combustion of fossil fuels

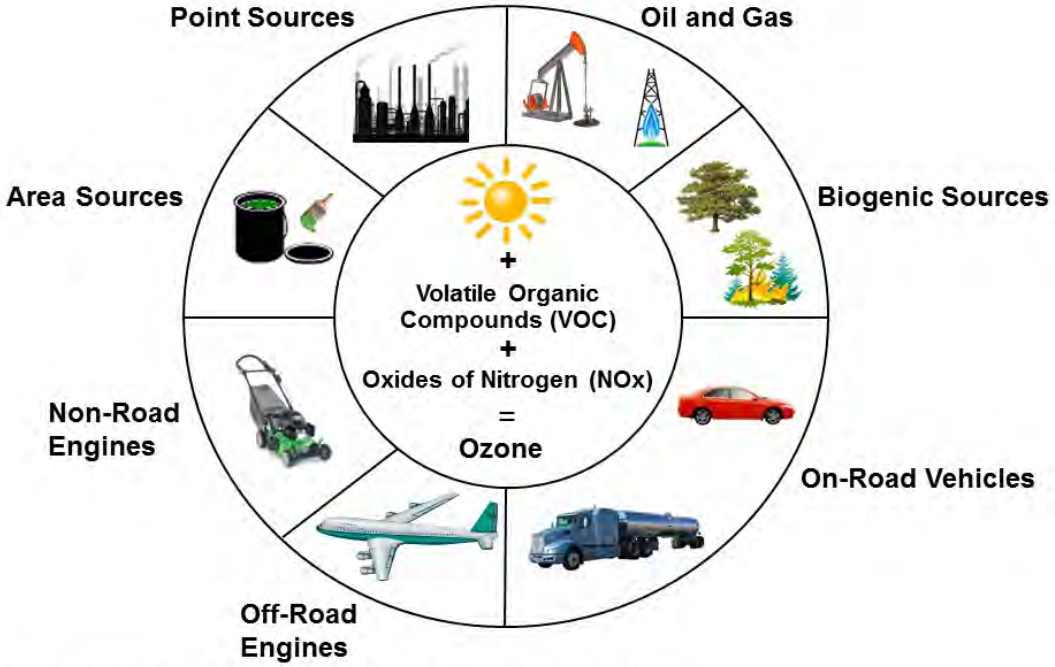
Fluorinated Gases

Synthetic gases emitted from household, commercial, and industrial applications and processes[1]

1. Source: www.epa.gov/ghgemissions/overview-greenhouse-gases

Ground-Level Ozone

How Ozone is Formed:

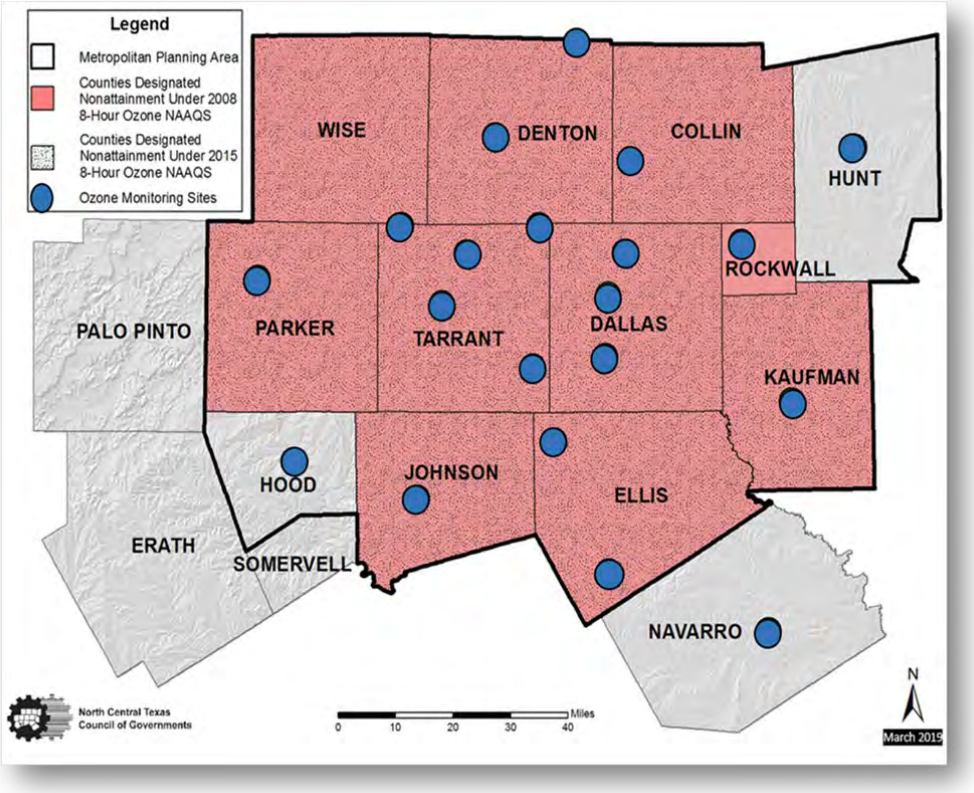


Optimum conditions for the formation of ozone include high temperatures and low winds.
Sections are not to scale and are for illustrative purposes only.

Health Impacts of Ground-Level Ozone[1]:

- Coughing and sore throat
- Inflame and damage airways
- Aggravate lung diseases (asthma, bronchitis, etc.)

Ozone Nonattainment Area



1. Source: [Health Effects of Ozone Pollution | Ground-level Ozone Pollution | US EPA]

Particulate Matter

Mixture of solid particles and liquid droplets found in the air that can be inhaled:

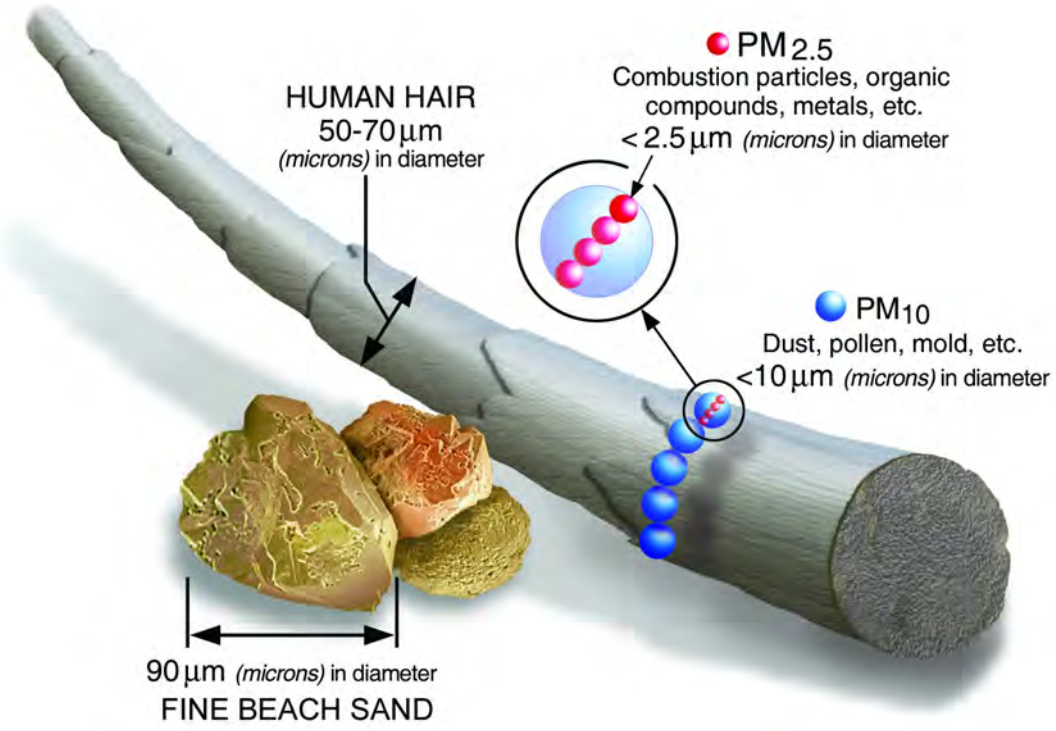
- Soot
- Spores
- Pollen

Particle pollution includes:

- PM_{10}: inhalable particles <10 micrometers
- $PM_{2.5}$: fine inhalable particles that are <2.5 micrometers

Health Impacts:

- Premature death in people with heart or lung disease
- Irregular heartbeat
- Decreased lung function
- Respiratory symptoms[1]



1. Source: US EPA Particulate Matter

Sulfur Dioxide

Sources:

- Burning of fossil fuels by power plants
- Other industrial facilities
- Industrial process
- Natural sources
- Ships
- Vehicles and heavy equipment

Health Impacts:

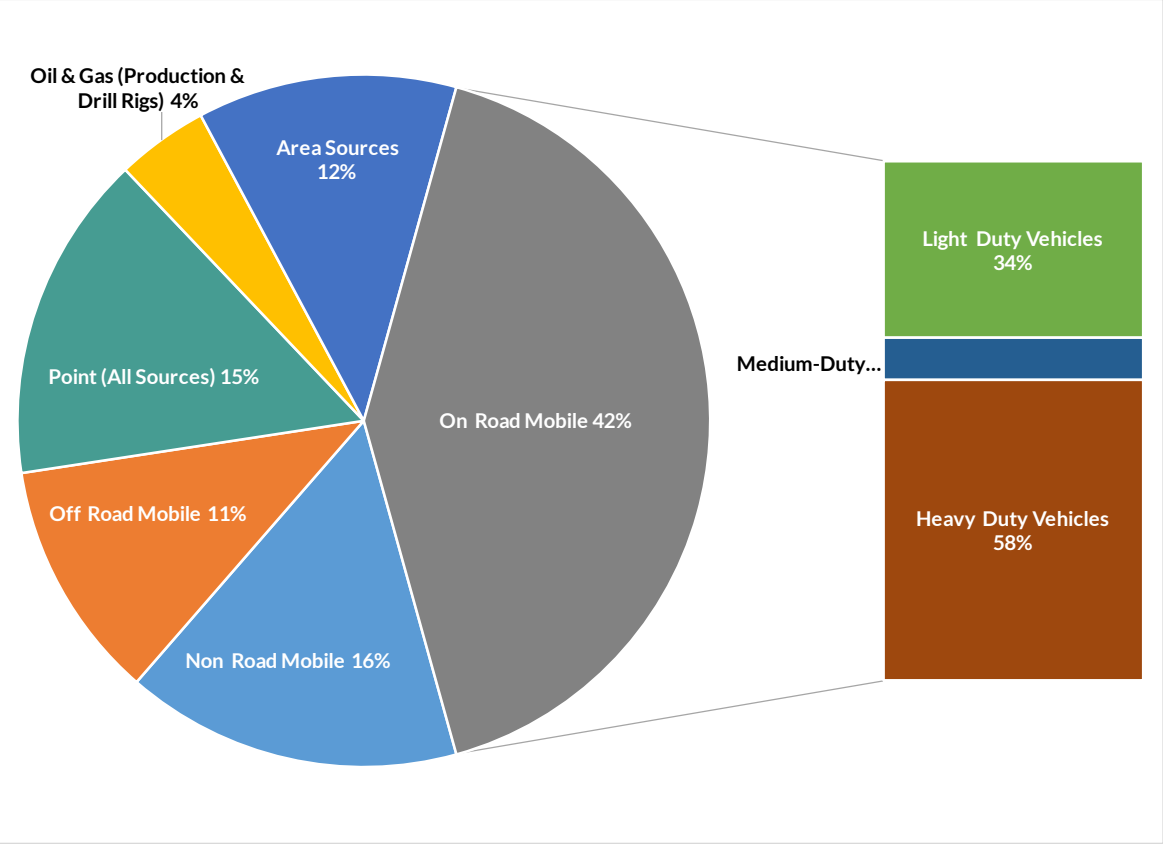
- Harmful to the respiratory system
- Can form small particles in the atmosphere which contributes to particulate matter pollution

Source: Sulfur Dioxide Basics | US EPA

Air Quality in Dallas-Fort Worth

2019 Nitrogen Oxides (NO_X) Emissions Inventory
10-County DFW Ozone Nonattainment Area

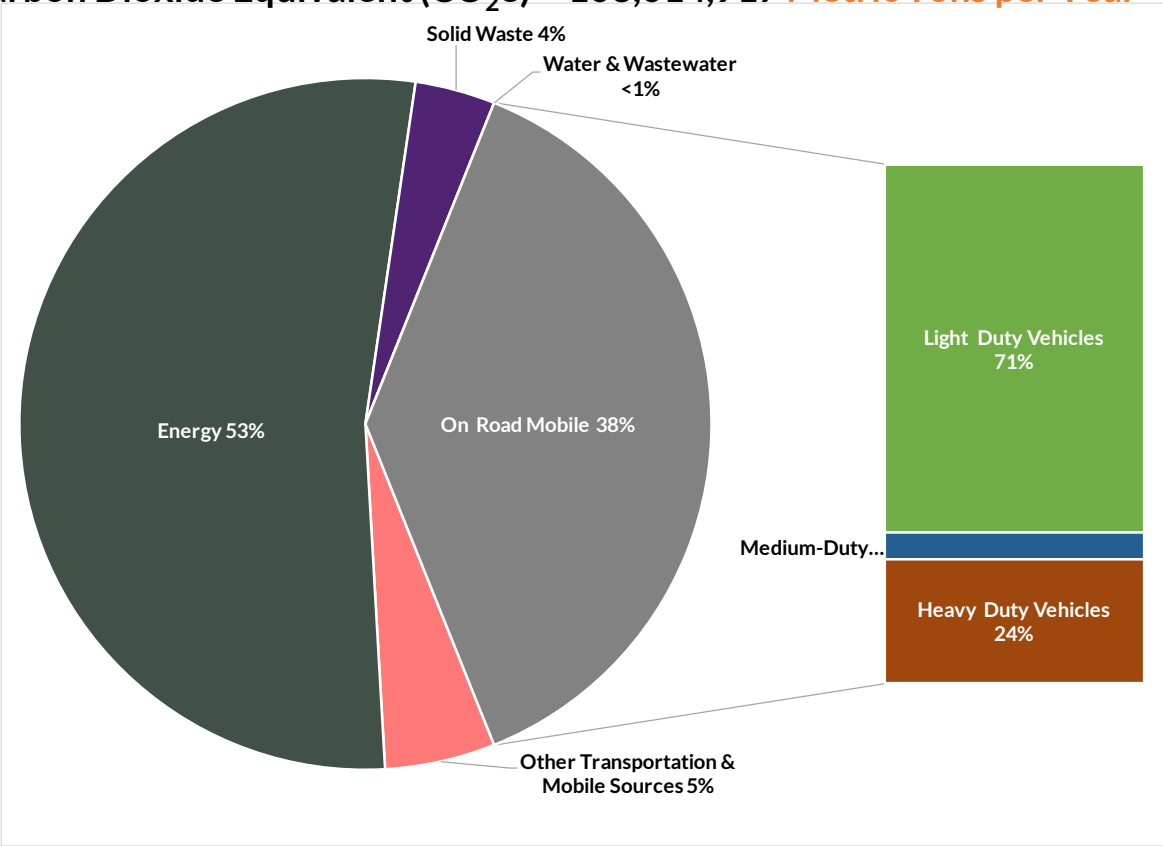
Nitrogen Oxides (NO_X) = 247.02 Tons per Day



Source: TCEQ, 2019 summer weekday anthropogenic emissions for the DFW 10 County Ozone Nonattainment Region, ***Proposed DFW Moderate Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2015 Eight-Hour Ozone NAAQS)***

DRAFT 2019 Greenhouse Gas Emissions Inventory
12-County Metropolitan Planning Area

Carbon Dioxide Equivalent (CO_2e) = 103,014,917 Metric Tons per Year



Source: NCTCOG, North Central Texas 12-County Metropolitan Planning Area 2019 Inventory of Community Greenhouse Gas Emissions

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

Impact of Greenhouse Gases

Each greenhouse gas has an assigned global warming potential, which measures the impact it has on global warming:

- Carbon Dioxide (CO_2) – 1 GWP
- Methane (CH_4) – 28 GWP
- Nitrous Oxide (N_2O) – 265 GWP

Carbon Dioxide Equivalent CO_2e = Greenhouse Gases x Respective Global Warming Potentials (GWP)

Dallas-Fort Worth Air Quality Improvement Plan

Local governments in the region are collaborating with the North Central Texas Council of Governments (NCTCOG) to develop the **Dallas-Fort Worth (DFW) Air Quality Improvement Plan (AQIP)**

- Regional plan to improve air quality in North Texas

Plan development is supported by the Environmental Protection Agency's (EPA) Climate Pollution Reduction Grants (CPRG): Planning Grants

- DFW AQIP will incorporate the following EPA-required deliverables
  - Priority Climate Action Plan (PCAP) – Due March 1, 2024
  - Comprehensive Climate Action Plan (CCAP) – Due Summer 2025
  - Status Report – Due Summer 2027

Planning Grants: Priority Climate Action Plan

Task	Description	Expected Completion Date
Greenhouse Gas (GHG) Inventory	- Calculate the GHGs produced in the 16 counties in North Texas - Includes transportation, energy, agriculture, water, waste and materials management sectors	January 2024
Quantified GHG Reduction Measures	- Identify short-term projects, programs, and policies to reduce GHG emissions - Quantify the benefits of projects, programs, and policies	January 2024
Low-Income/Disadvantaged Communities Benefits Analysis	- Calculate the potential benefits to disadvantaged communities through the deployment of GHG reduction measures - Benefits can include lower energy costs, economic benefits, improved air quality, etc.	February 2024
Review of Authority to Implement	- Review GHG reduction measures to ensure they can be implemented	February 2024
Funding Analysis	- Identify funding to implement the GHG reduction measures	February 2024

Other CPRG Planning Grants Participants

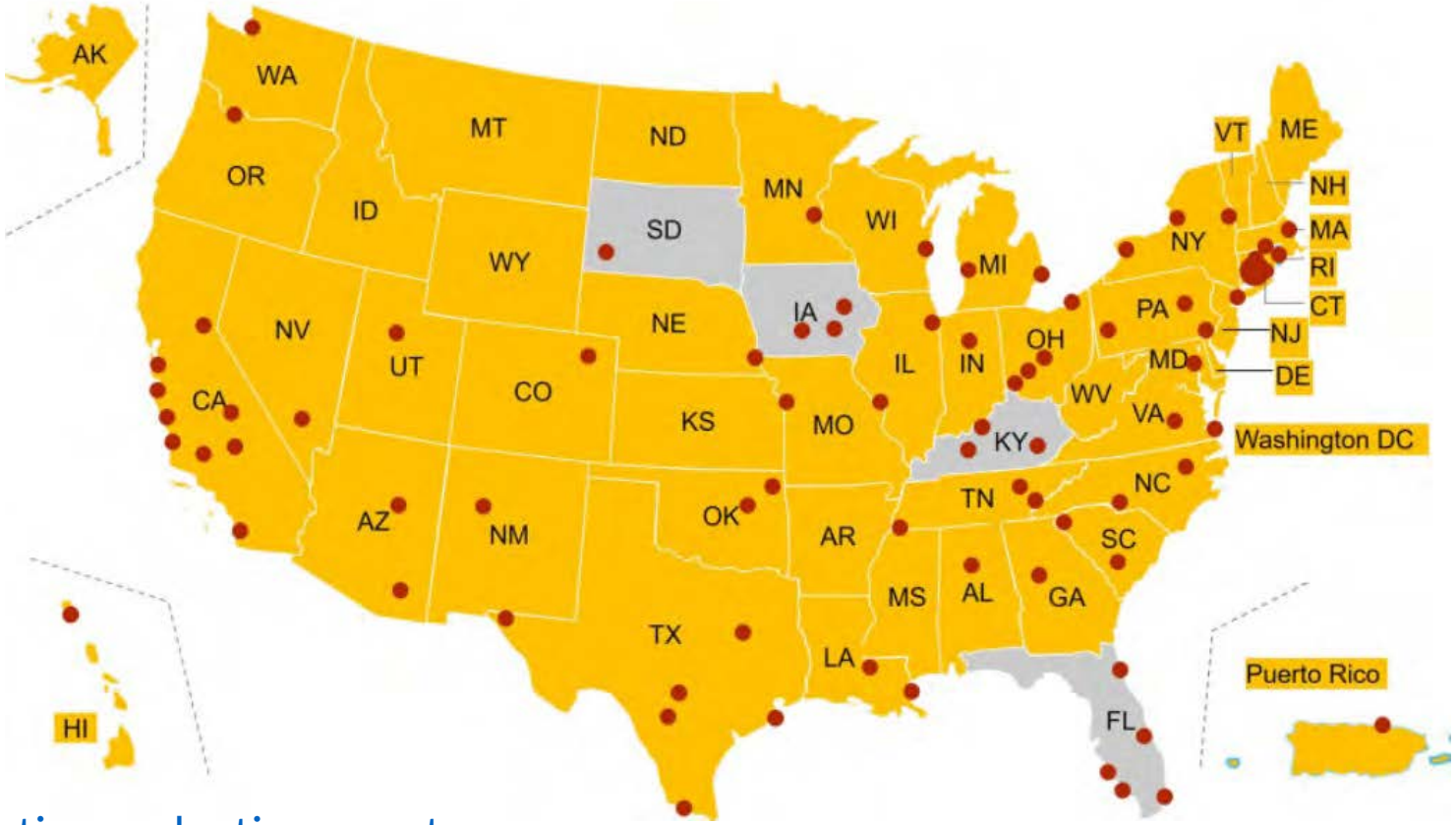
Texas MSA Leads

- City of Austin Office of Sustainability
- City of El Paso
- City of McAllen
- City of San Antonio's Office of Sustainability
- Houston-Galveston Council of Governments
- North Central Texas Council of Governments

Texas Lead

- Texas Commission on Environmental Quality (TCEQ)

www.tceq.texas.gov/agency/climate-pollution-reduction-grants



Participating States

Participating MSAs

IMPLEMENTING THE DFW AQIP

The CPRG Implementation Grants will provide funding to implement projects in the PCAP

30-115 awards anticipated nationwide; Applications are due April 1, 2024

Eligible applicants include lead agencies for CPRG Planning Grants, states, municipalities, tribes

Competition incentivizes collaborative applications

- Scoring based on cumulative benefits of proposed initiatives
- Environmental Protection Agency (EPA) will not award multiple grants for the same initiative in the same area
- EPA anticipates no more than 2 awards to applicants at same level of government within a certain area

Tier	Grant Ranges	Funds Targeted for Each Tier	Anticipated Number of Grants to be Awarded
Tier A	$200M - $500M	$2B	4-10
Tier B	$100M - $199M	$1.3B	6-13
Tier C	$50M - $99M	$.6B	6-12
Tier D	$10M - $49M	$.3B	6-30
Tier E	$2M - $9.9M	$.1B	10-50

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

Funded through the Environmental Protection Agency's Climate Pollution Reduction Grants

Upcoming Public Meetings:
Hood County/City of Granbury- January 9, 2024
City of Fate – January 16, 2024
City of Fort Worth – January 18, 2024
Others TBD

Survey Available Online:
www.publicinput.com/dfwAQIP-Survey

Contact Us

DFW AQIP Plan and Strategy Development

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Lori Clark
Senior Program Manager &
DFWCC Director
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Chris Klaus
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Susan Alvarez, PE, CFM
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Greenhouse Gas Inventory Development

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Vivek Thimmavajjhala
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Jenny Narvaez
Program Manager
jnarvaez@nctcog.org

AIR QUALITY in North Texas

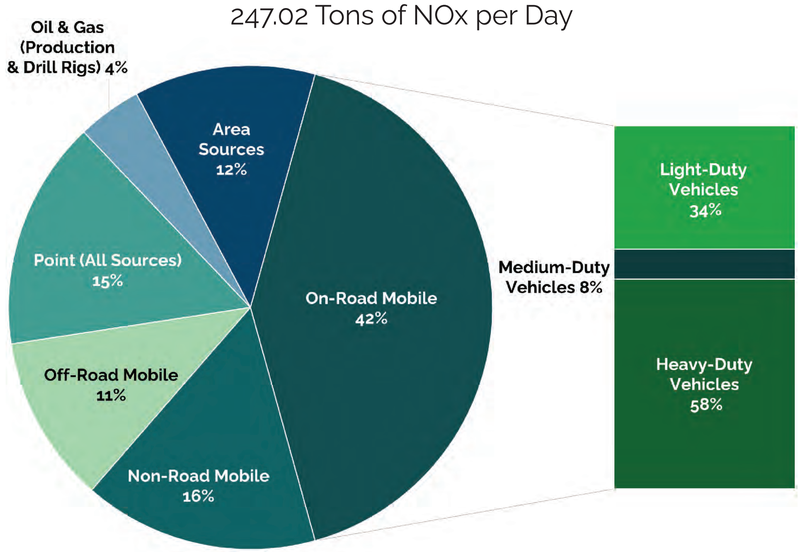
LOCAL AIR POLLUTION

The Clean Air Act requires Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants which are harmful to human health:

CRITERIA POLLUTANTS:	DFW ATTAINMENT STATUS:
Ozone	✗
Lead	✓
Carbon Monoxide	✓
Nitrogen Dioxide	✓
Particulate Matter	✓
Sulfur Dioxide	Partial nonattainment in Navarro County due to aggregate plant

2019 NITROGEN OXIDES (NOX) EMISSIONS INVENTORY FOR 10-COUNTY DFW OZONE NONATTAINMENT AREA

247.02 Tons of NOx per Day



Source: TCEQ, 2019 summer weekday anthropogenic emissions for the DFW 10 County Ozone Nonattainment Region, Used in the Proposed 9-County DFW Moderate Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2015 Eight-Hour Ozone NAAQS)

GREENHOUSE GASSES (GHG)

Increasing rates of greenhouse gases are tied to more extreme weather events that can cause intense heat waves and frequent flooding, Each greenhouse gas has an assigned global warming potential (GWP), which measures the impact it has on global warming:

Carbon Dioxide (CO_2) - GWP 1

Source: Burning fossil fuels, solid waste, trees, and other biological materials, and as a byproduct in certain chemical reactions

Methane (CH_4) - GWP 28

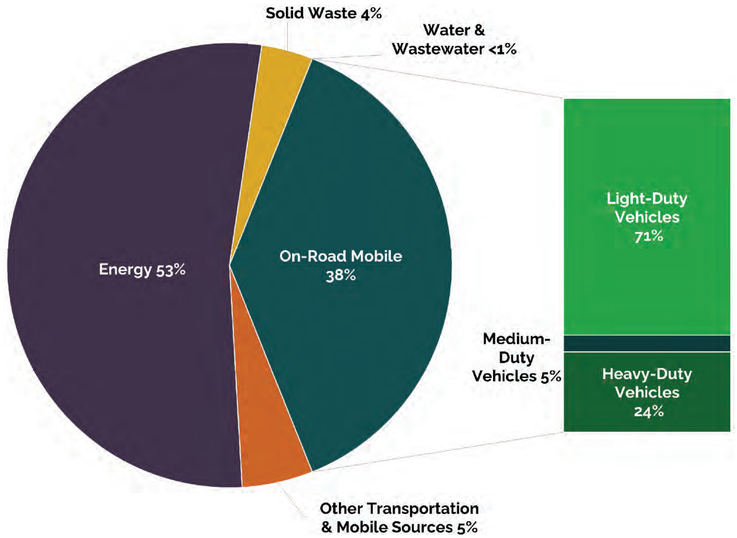
Source: Production and transport of coal, natural gas, and oil, the decay of organic waste and agricultural practices

Nitrous Oxide (N_2O) - GWP 265

Source: Agricultural, land use, industrial activities, treatment of wastewater, combustion of fossil fuels

DRAFT– 2019 GREENHOUSE GAS EMISSIONS INVENTORY FOR 12-COUNTY METROPOLITAN PLANNING AREA

Carbon Dioxide Equivalent (CO2e) = 103,014,917 Metric Tons per Year



Source: NCTCOG, North Central Texas 12-County Metropolitan Planning Area 2019 Inventory of Community Greenhouse Gas Emissions

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

FOR MORE INFORMATION ON AIR QUALITY GO TO WWW.NCTCOG.ORG/TRANS/QUALITY/AIR

North Central Texas Council of Governments

CALIDAD DEL AIRE en Norte de Texas

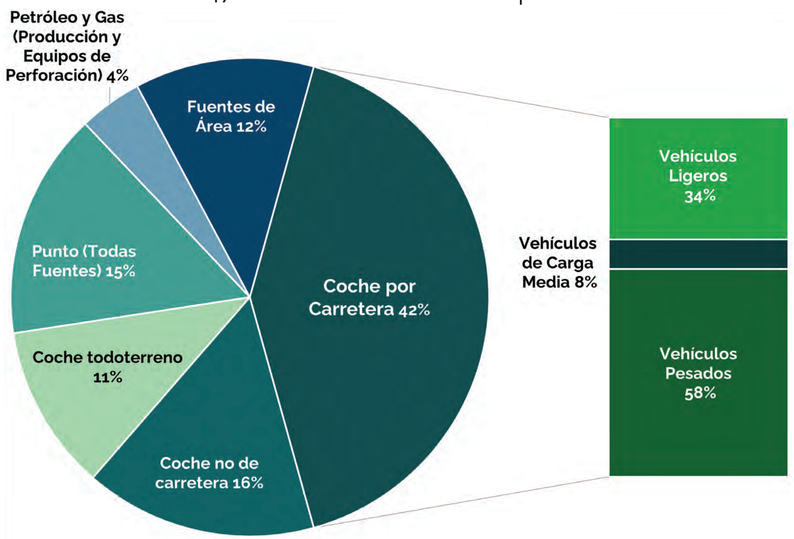
CONTAMINACIÓN DEL AIRE LOCAL

El Clean Air Act exige a la Agencia de Protección del Medio Ambiente (EPA) que establezca National Ambient Air Quality Standards (NAAQS) para seis contaminantes que son nocivos para la salud humana:

CONTAMINANTES CRITERIOS	ESTADO DE CUMPLIMIENTO DFW
Ozono	✗
Plomo	✓
Monóxido de Carbono	✓
Dióxido de Nitrógeno	✓
Materia Particulada	✓
Dióxido de Azufre	Incumplimiento parcial en el condado de Navarro debido a la planta de agregados

INVENTARIO DE EMISIONES DE ÓXIDOS DE NITRÓGENO (NOX) 2019 EN 10-CONDADOS DFW ÁREA DE INCUMPLIMIENTO DE OZONO

247.02 Toneladas de NOX por Día



Fuente: TCEQ, 2019 summer weekday anthropogenic emissions for the DFW 10 County Ozone Nonattainment Region, Used in the Proposed 9-County DFW Moderate Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2015 Eight-Hour Ozone NAAQS)

GASES DE EFECTO INVERNADERO (GHG)

El aumento de la cantidad de gases de efecto invernadero está relacionado con fenómenos meteorológicos más extremos que pueden causar olas de calor intensas e inundaciones frecuentes, Cada gas de efecto invernadero tiene asignado un potencial de calentamiento global (GWP por sus siglas en inglés), que mide el impacto que tiene en el calentamiento global:

Dióxido de Carbono (CO_2) - GWP 1

Fuente: Quema de combustibles fósiles, residuos sólidos, árboles y otros materiales biológicos, y como subproducto en ciertas reacciones químicas

Metano (CH_4) - GWP 28

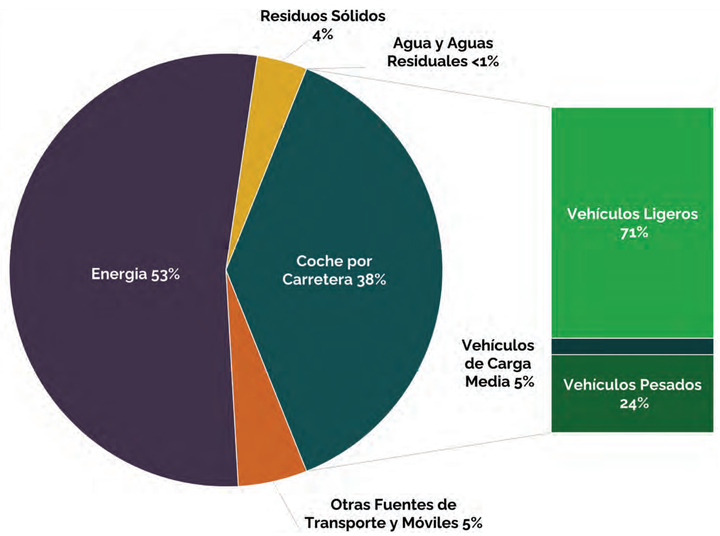
Fuente: La producción y el transporte de carbón, gas natural y petróleo, la descomposición de residuos orgánicos y las prácticas agrícolas

Óxido Nitroso (N_2O) - GWP 265

Fuente: Agricultura, uso del suelo, actividades industriales, tratamiento de aguas residuales, combustión de combustible fósil

BORRADOR – INVENTARIO DE EMISIONES DE GASES DE EFECTO INVERNADERO 2019 PARA 12-CONDADOS DE ÁREA DE PLANIFICACIÓN METROPOLITANA

Dióxido de Carbono Equivalente (CO_2e) = 103,014,917 Toneladas Métricas por Año



Fuente: NCTCOG, North Central Texas 12-County Metropolitan Planning Area 2019 Inventory of Community Greenhouse Gas Emissions

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

PARA MÁS INFORMACIÓN SOBRE LA CALIDAD DEL AIRE VISITA WWW.NCTCOG.ORG/TRANS/QUALITY/AIR

North Central Texas Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

Local governments in the region are collaborating with the North Central Texas Council of Governments to develop the Dallas-Fort Worth (DFW) Air Quality Improvement Plan (AQIP), a regional plan to improve air quality, protect public health, and address extreme weather events.

SECTORS INCLUDED:

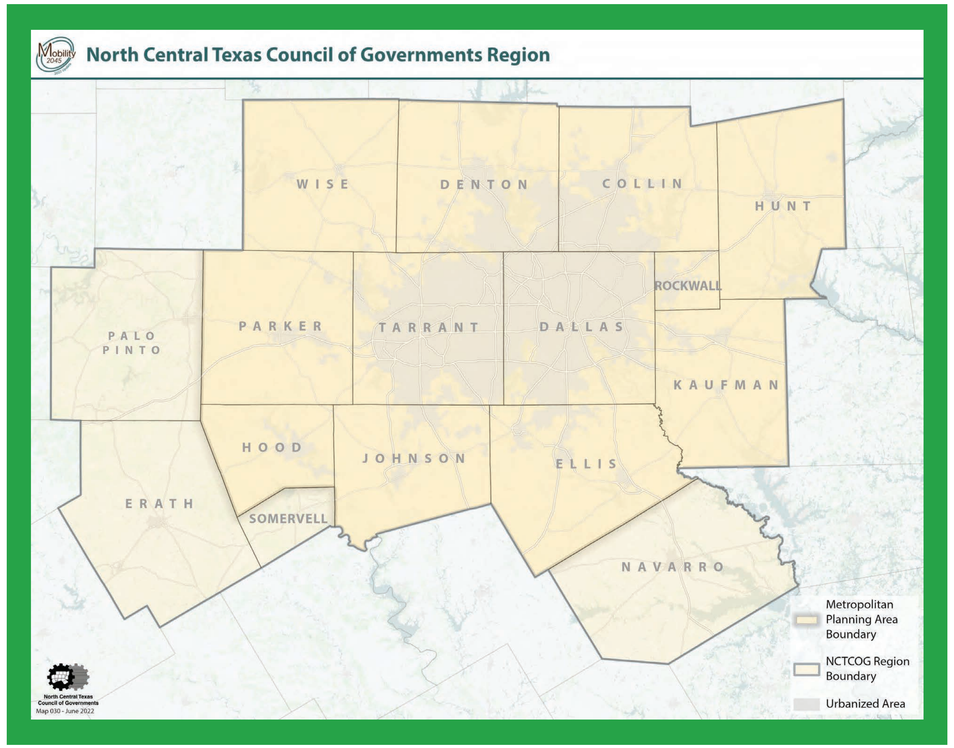
Transportation | Energy | Solid Waste | Water | Agriculture | Carbon Removal

DFW AQIP OBJECTIVES:

- Implement projects and programs to significantly improve air quality through reducing greenhouse gases and criteria air pollutants by 2030 in 16 counties in North Texas,
- Create benefits to the community, particularly in low-income and disadvantaged communities,
- Be cost-effective,
- Implement innovative policies and programs that are relevant to the region.

DFW AQIP CONTENTS:

- Inventory of all air pollutants produced in the region (greenhouse gases and certain criteria pollutants),
- Identification of projects to improve air quality,
- Analysis of the benefits and impacts to low-income and disadvantaged communities,
- A plan for how the DFW AQIP can be implemented (funding, implementing agencies, etc).



North Central Texas Council of Governments

IMPLEMENTING THE DFW AQIP: The development of this plan is supported through a grant from the Environmental Protection Agency's (EPA) Climate Pollution Reduction Grants (CPRG) Planning Grants.The EPA will provide up to $500 million in funding to implement plans developed under the CPRG Planning Grants. For more information go to **www.publicinput.com/dfwAQIP**

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

Los gobiernos locales de la región están colaborando con el North Central Texas Council of Governments (NCTCOG) para desarrollar el Plan de Mejora para la Calidad del Aire (AQIP por sus siglas en inglés) de Dallas-Fort Worth (DFW) un plan regional para mejorar la calidad del aire, proteger la salud publica, y afrontar los sucesos climáticos extremos.

SECTORS INCLUDED:

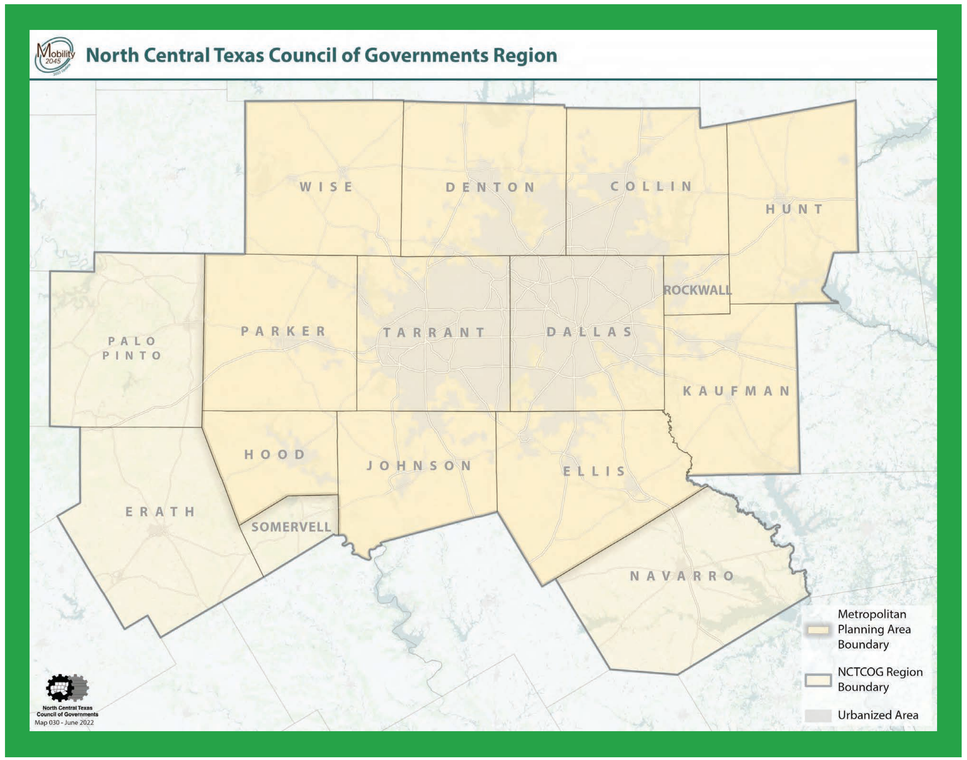
Transportación · Energía · Residuos Sólidos · Agua · Agricultura · Eliminación de Carbono

OBJETIVOS DE DFW AQIP:

- Implementar proyectos y programas para mejorar significativamente la calidad del aire reduciendo los gases de efecto invernadero y los contaminantes criterio del aire para 2030 en 16 condados del Norte de Texas,
- Generar beneficios para la comunidad, especialmente en las comunidades de bajos ingresos y menos favorecidas,
- Ser económicos,
- Implementar políticas y programas innovadores que sean relevantes para la región

CONTENIDOS DE DFW AQIP:

- Inventario de todos los contaminantes ambientales producidos en la región (gases de efecto invernadero y contaminantes criterio),
- Identificación de proyectos para mejorar la calidad del aire,
- Análisis de los beneficios e impactos para las comunidades con bajos ingresos y menos favorecidas,
- Un plan sobre cómo implementar DFW AQIP (financiación, agencias colaboradoras, etc.



North Central Texas Council of Governments

IMPLEMENTACIÓN DE DFW AQIP: El desarrollo de este plan cuenta con el apoyo de una subvención que otorga la Agencia de Protección del Medio Ambiente a través de las Subvenciones para la Reducción de la Contaminación Climática (CPRG por sus siglas en inglés). EPA proporcionará hasta $500 millones de financiación para implementar los planes desarrollados bajo las Subvenciones de Planificación del CPRG. Para más información, visita **www.publicinput.com/dfwAQIPesp**

HOW CAN I IMPROVE AIR QUALITY IN MY COMMUNITY?

SOLID WASTE

- Increase the amount of waste that is recycled or composted
- Use less single-use products

WATER

- Use drought-tolerant plants and grass
- Reuse water when possible
- Fix water leaks

TRANSPORTATION

- Choose the most efficient vehicle
- Minimize idling
- Utilize public transportation
- Carpool to work
- Utilize the Try Parking It app to get rewards for carpooling and working remote
- Ride bicycles and walk, when possible

TELL US!

What would you like to do to improve air quality in DFW?

publicinput.com/dfwAQIP

ENERGY

- Install solar panels at your residence
- Invest in smart meters to track how much energy is being used
- Purchase renewable electricity
- Install energy efficient home appliances

DALLAS-FORT WORTH
AIR QUALITY
IMPROVEMENT PLAN

North Central Texas Council of Governments

COMO PUEDO MEJORAR LA CALIDAD DEL AIRE EN MI COMUNIDAD

RESIDUOS SÓLIDOS

- Aumentar la cantidad de residuos que se reciclan o compostan
- Usar menos productos de un solo uso

AQUA

- Usar plantas y césped resistentes a la sequía
- Reutilizar el agua cuando sea posible
- Reparar las fugas de agua

TRANSPORTACIÓN

- Elige un vehículo mas eficiente
- Minimiza el ralentí
- Usa el transporte público
- Comparte vehículo para ir al trabajo
- Usa la aplicación Try Parking It para obtener recompensas por compartir vehículo y trabajo remoto
- Usa la Bicicleta y camina, cuando sea posible

¡CUÉNTANOS!

¿Qué te gustaría hacer para mejorar la calidad del aire en DFW?

publicinput.com/dfwAQIPesp

ENERGÍA

- Instalar paneles solares en tu residencia
- Invierte en medidores inteligentes para calcular la cantidad de energía consumida
- Compra electricidad renovable
- Instalar electrodomésticos de eficiencia energética

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

North Central Texas Council of Governments

HOW ORGANIZATIONS CAN IMPROVE AIR QUALITY

WASTEWATER AND SOLID WASTE

- Employ energy conservation technology for water treatment facilities
- Capture and re-use landfill gas
- Provide composting and recycling services
- Minimize use of single-use products

WATER

- Install smart manhole covers
- Provide rebates for smart water meters to residents
- Implement nature-based solutions to help with stormwater
- Increase water reuse practices

TRANSPORTATION

- Upgrade railways to reduce idling and congestion
- Allow workers to commute during less congestion times or work remote
- Add shade to bike lanes and sidewalks
- Provide more public transit
- Provide incentives for more vehicles that emit less air pollutants

CARBON REMOVAL

- Improve forest management policies
- Urban afforestation and green infrastructure programs
- Restoration of degraded lands and forested lands to enhance carbon sequestration
- Install carbon capture devices

ENERGY

- Update building codes
- Provide rebates for smart meters to residents
- Purchase renewable electricity
- Install more energy efficient appliances

TELL US!

What would you like to do to improve air quality in DFW?

publicinput.com/dfwAQIP

AGRICULTURE/ NATURAL AND WORKING LANDS

- Increase tree cover and public green spaces
- Provide community gardens
- Update landscaping ordinances/requirements
- Use drought-tolerant plants

DALLAS-FORT WORTH
AIR QUALITY
IMPROVEMENT PLAN

North Central Texas Council of Governments

COMO PUEDEN LAS ORGANIZACIONS MEJORAR LA CALIDAD DEL AIRE

AGUAS RESIDUALES Y RESIDUOS SÓLIDOS

- Emplear tecnologías de conservación de energía para las instalaciones de tratamiento de aguas
- Capturar y reutilizar gas de vertedero
- Proporcionar servicios de compostaje y reciclaje
- Minimizar el uso de productos de un solo uso

AQUA

- Instalar cubiertas de alcantarilla inteligentes
- Proporcionar a los residentes bonificaciones para medidores de agua inteligentes
- Implementar soluciones naturales para ayudar con las aguas pluviales
- Aumentar las prácticas de reutilización del agua

TRANSPORTACIÓN

- Modernizar los ferrocarriles para reducir los tiempos de inactividad y la congestión
- Permitir a los trabajadores viajar en horarios menos congestionados o trabajar en remoto
- Agregar sombra a los carriles de bicicletas y banquetas
- Proporcionar más transporte público
- Ofrecer incentivos para los vehículos que emitan menos contaminantes ambientales.

ELIMINACIÓN DE CARBONO

- Mejorar las políticas de gestión forestal
- Programas de forestación urbana e infraestructura verde
- Restauración de tierras degradadas y forestales para mejorar la captación de carbono

ENERGÍA

- Actualizar los códigos de construcción
- Proporcionar bonificaciones a los residentes por el uso de medidores inteligentes
- Comprar electricidad renovable
- Instalar más electrodomésticos de eficiencia energética

¡CUÉNTANOS!

¿Qué te gustaría hacer para mejorar la calidad del aire en DFW?

publicinput.com/dfwAQIPesp

AGRICULTURA/ TIERRAS NATURALES Y DE LABOR

- Aumentar la cobertura de árboles y áreas verdes públicas
- Proporcionar jardines comunitarios
- Actualizar las ordenanzas/ requisitos del paisajismo
- Utilizar plantas tolerantes a la sequía

PLAN PARA MEJORAR LA
CALIDAD DEL AIRE
EN DALLAS-FORT WORTH

North Central Texas Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

The North Central Texas Council of Governments (NCTCOG) is seeking recommendations on air quality improvement projects for your community!

NCTCOG is collaborating with local stakeholders in the Dallas-Fort Worth region to develop a comprehensive Air Quality Improvement Plan (DFW AQIP). The plan will create a roadmap to improve air quality, protect public health, and reduce the impacts of extreme weather events.

Your input is requested and important! Please go to **www.publicinput.com/dfwAQIP** to make recommendations, attend an open house, and more.

FOCUS AREAS:

Energy

- Reduce energy use and costs
- Facilitate the use of energy efficient products
- Improve reliability of the Texas electrical grid
- Generate more power from low-emitting or renewable energy sources

Water, Wastewater, and Solid Waste

- Improve water quality and reduce flooding
- Conserve water
- Encourage expansion of local recycling and composting

Transportation

- Increase use of cleaner vehicles, such as electric and natural gas
- Create walkable communities
- Provide more public transit options
- Build a more efficient and safer roadway system

North Central Texas Council of Governments

This work is funded by the Environmental Protection Agency's Climate Pollution Reduction Grants: Planning Grants. Written feedback can be mailed to Irlenia Hermosillo, Air Quality Planner, at P.O. Box 5888, Arlington, TX 76005-5888

@nctcogtrans

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

¡El North Central Texas Council of Governments (NCTCOG) solicita recomendaciones sobre los proyectos de mejoras en la calidad del aire para tu comunidad!

El NCTCOG está colaborando con las partes interesadas locales en la región de Dallas-Fort Worth para desarrollar un Plan de Mejora para la Calidad del Aire (DFW AQIP por sus siglas en inglés).

¡Se solicita tu aportación y es importante! Visita **www.publicinput.com/dfwAQIP** para hacer recomendaciones, asistir a una sesión informativa, y más.

ÁREAS DE ENFOQUE:

Energía

- Reducir el uso y costos de energía
- Facilitar el uso de productos eficientes en energía
- Mejorar la fiabilidad de la red eléctrica de Texas
- Generar más energía a partir de fuentes de energía renovables o de bajas emisiones

Agua, Aguas Residuales, Residuos Sólidos

- Mejorar la calidad del agua y reducir las inundaciones
- Conservar agua
- Fomentar la expansión local del reciclaje y compostaje

Transportación

- Aumentar el uso de vehículos menos contaminantes, como eléctricos y gas natural
- Formar comunidades peatonales
- Proporcionar más opciones de transporte público
- Construir un sistema de carreteras más eficiente y seguro

North Central Texas Council of Governments

Este proyecto se financia por Subvenciones para la Reducción de la Contaminación Climática de la Agencia de Protección al Medio Ambiente: Subvenciones de Planificación. Los comentarios por escrito pueden enviarse por correo a Irlenia Hermosillo, Air Quality Planner, at P.O. Box 5888, Arlington, TX 76005-5888

@nctcogtrans

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

Hybrid Public Meeting
Tuesday, November 15, 6:00 p.m.

The North Central Texas Council of Governments (NCTCOG) is seeking feedback on air quality improvement projects in your community! There are three ways to attend:

IN PERSON AT NCTCOG
616 Six Flags Drive
Arlington, Texas 76011

WATCH LIVE
publicinput.com/dfwAQIP

PARTICIPATE VIA PHONE
Dial 855-925-2801 then
enter code XXXX

ABOUT THE PROGRAM:

NCTCOG is collaborating with local stakeholders in the Dallas-Fort Worth region to develop a comprehensive Air Quality Improvement Plan (DFW AQIP). The plan will create a roadmap to improve air quality, protect public health, and reduce the impacts of extreme weather events.

This work is funded by the Environmental Protection Agency's Climate Pollution Reduction Grants: Planning Grants.

ACCOMMODATIONS:

Need a ride to the public meeting? Request a $6 roundtrip ride from the DFW CentrePort Station to NCTCOG with the Arlington Transportation App! Download the app at: **arlingtontx.gov/ondemand**.

For special accommodations due to a disability or for language interpretation, contact Savana Nance at 682-433-0488 or snance@nctcog.org. Reasonable accommodations will be made.

North Central Texas Council of Governments

@nctcogtrans

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

Reunión Pública Híbrida
Tuesday, November 15, 6:00 p.m.

¡El North Central Texas Council of Governments (NCTCOG) solicita recomendaciones sobre los proyectos de mejoras en la calidad del aire para tu comunidad! Pues asistir de tres maneras:

ASISTE EN PERSONA
616 Six Flags Drive
Arlington, Texas 76011

VER EN VIVO
publicinput.com/dfwAQIP

PARTICIPA POR TELÉFONO
Marcando 855-925-2801 y
después la clave XXXX

ABOUT THE PROGRAM:

El NCTCOG está colaborando con las partes interesadas locales en la región de Dallas-Fort Worth para desarrollar un Plan de Mejora para la Calidad del Aire (DFW AQIP por sus siglas en inglés). El plan establecerá un mapa de ruta para mejorar la calidad del aire, proteger la salud pública y reducir el impacto de los sucesos climáticos extremos.

Este proyecto se financia por Subvenciones para la Reducción de la Contaminación Climática del Environmental Protection Agency's: Subvenciones de Planificación.

AJUSTES:

¿Necesitas transporte para ir a la reunión pública? Solicita un viaje de ida y vuelta por $6 desde la estación DFW CentrePort hasta NCTCOG con la aplicación Arlington Transportation. Descarga la aplicación en www.arlingtontx.gov/ondemand. Para ajustes especiales por discapacidad o para interpretación de idiomas, contacta a Savana Nance al 682-433-0488 o snance@nctcog.org. Se harán adaptaciones razonables.

North Central Texas
Council of Governments

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PLAN PARA MEJORAR
LA CALIDAD DEL AIRE
EN DALLAS-FORT WORTH

SESIÓN INFORMATIVA
martes, 16 de noviembre de 2023
6:00 p.m. – 7:30 p.m.
En *Location*

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

OPEN HOUSE

Tuesday, Nov. 16, 2023
6:00 p.m. - 7:30 p.m.
At a Location

NCTCOG seeks public's help to develop plan to improve air quality

The North Central Texas Council of Governments (NCTCOG) is developing a comprehensive air quality improvement plan with the help of stakeholders across the region. Local residents and businesses are invited to provide input at an open house at 6 pm November 15 at NCTCOG's Arlington offices, 616, Six Flags Drive.

The plan will create a roadmap to enhance air quality, protect public health and reduce the impact of extreme weather events. There are several ways to get involved. Attend the open house in person, watch the presentation live at www.publicinput.com/dfwAQIP or participate via phone by dialing 855-925-2801 then code XXXX.

This work is funded by the Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) Program, which provides funds to help states and local governments create and implement plans that could reduce greenhouse gas emissions and other harmful air pollutants. Currently, 10 North Texas counties are in severe nonattainment for ground-level ozone pollution and are working to meet the federal standard to avoid health impacts and related compliance fines and penalties.

The CPRG program has two phases: phase one provides noncompetitive funding to develop regional plans and phase two provides competitive funding to implement the plans developed under phase one. NCTCOG has received phase one funding and will use those funds to develop a priority climate action plan (PCAP), which will be incorporated into the Dallas Fort Worth Air Quality Improvement Plan (AQIP). The development of the PCAP will permit the region to compete for funding from phase two of the CPRG, which has $4.6 billion for entities to develop and deploy different technologies and solutions.

Visit the project webpage (www.publicinput.com/dfwAQIP) to provide feedback on projects you would like to see in your community. For questions about the project, contact Savana Nance at snance@nctcog.org or Irlenia Hermosillo at ihermosillo@nctcog.org.

NCTCOG solicita la ayuda del público para desarrollar un plan de mejora para la calidad del aire.

El North Central Texas Council of Governments (NCTCOG) está elaborando un plan integral para la mejora de la calidad del aire con la ayuda de las partes interesadas de la región. Se invita a los residentes y empresas locales a dar su opinión en la reunión pública que se celebrará en XX el XX de noviembre a las XX.

El plan establecerá un mapa de ruta para mejorar la calidad del aire, proteger la salud pública y reducir el impacto causado por los extremos eventos climáticos. Existen varias maneras de participar. Asiste en persona, puedes ver la presentación en vivo en www.publicinput.com/dfwAQIP o participa por teléfono marcando 855-925-2801 y después la clave XXXX.

Este proyecto se financia por el Programa de Subvenciones para la Reducción de la Contaminación Climática del Environmental Protection Agency's (CPRG por sus siglas en inglés), que proporciona fondos para ayudar a los estados y gobiernos locales para crear e implementar planes que puedan reducir las emisiones de gases de efecto invernadero y otros contaminantes nocivos del aire. En la actualidad 10 condados del norte de Texas se encuentran en situación de incumplimiento grave de la normativa debido a la contaminación por ozono al nivel del suelo y se está trabajando para cumplir la norma federal y evitar impactos para la salud, así como multas y sanciones relacionadas con el cumplimiento de la normativa.

El programa CPRG se compone por dos fases: la fase uno proporciona financiación no competitiva para desarrollar planes regionales y la fase dos proporciona financiación competitiva para aplicar los planes desarrollados en la fase uno. NCTCOG ha recibido financiación de la fase uno y utilizará esos fondos para desarrollar el Plan Prioritario de Acción Climática (PCAP por sus siglas en inglés), que se incorporará el Plan de Mejora para la Calidad del Aire en Dallas Fort Worth (AQIP por sus siglas en inglés). El desarrollo del PCAP permitirá que la región pueda competir por financiación de $4.6 billones para que las entidades desarrollen y apliquen diferentes tecnologías y soluciones.

Visita la página web del proyecto (www.publicinput.com/dfwAQIP) para aportar tus comentarios sobre los proyectos que te gustaría ver en tu comunidad. Para ajustes especiales por discapacidad o para interpretación de idiomas, contacta a Jackie Castillo al 817-695-9255 o en jcastillo@nctcog.org. Para preguntas sobre el proyecto, contacta a Savana Nance en snance@nctcog.org Irlenia Hermosillo en ihermosillo@nctcog.org.

Dallas Fort Worth Air Quality Improvement Plan Survey

El North Central Texas Council of Governments (NCTCOG por sus siglas en inglés), la organización de planificación regional de Dallas-Fort Worth, solicita la aportación del público para mejorar la calidad del aire, proteger la salud pública y afrontar los sucesos climáticos extremos. Estas aportaciones se incorporarán al Plan de Mejora para la Calidad del Aire (AQIP por sus siglas en inglés) de Dallas-Fort Worth (DFW) elaborado por el NCTCOG y los gobiernos locales.

Para más informacion sobre NCTCOG, visita www.nctcog.org/about-us.

Para más informacion sobre DFW AQIP, visita www.publicinnput.com/dfwAQIP.

1. **Nombre: _____**

2. **Ciudad de residencia: _____**

3. **Código postal Zip code: _____**

4. **¿A quién representas?**
   a. Yo mismo(a)
   b. Entidad privada
   c. Organización sin fines de lucro
   d. Gobierno local

5. **Clasifica los siguientes problemas regionales del 1 al 10, donde 1 es el menos preocupante y 10 el más preocupante:**

La salud pública	
Calidad del aire local	
Cambio climático	
Sucesos climáticos extremos	
Aumento del coste de la energía	
Acceso a los alimentos	
Acceso al empleo	
Falta de transporte público	
Otros- Indícalo.	

Clasifica las siguientes afirmaciones relacionadas con el sistema de transporte actual en Dallas-Fort Worth.

Afirmación	Muy de Acuerdo	De Acuerdo	Ni de Acuerdo Ni Desacuerdo	Desacuerdo	Completamente en desacuerdo
Debemos intentar reducir la contaminación ambiental de vehículos grandes diésel y locomotoras					
Las ciudades deben adoptar y ejecutar políticas contra el ralentí.					
No hay suficientes electrolineras para que pueda conducir un vehículo eléctrico (EV)					
Deberíamos reemplazar los equipos de gasolina/diésel (césped, construcción, etc.) por modelos más nuevos que no contaminen tanto.					
Deberíamos mejorar los cruces de ferrocarril para minimizar los vehículos al ralentí y mejorar la seguridad.					
En los aeropuertos deberían reducir las emisiones utilizando combustibles que contaminen menos (eléctrico, gas natural, combustible de aviación sostenible, etc.).					
Cuando sea posible, los empresarios deben dejar que sus empleados trabajen desde casa o viajen al trabajo en las "horas no pico" para reducir la congestión.					
Nuestra región está demasiado congestionada.					
Deberíamos programar mejor los semáforos para que el tráfico fluya más libremente.					

Hay que mejorar las carreteras para que el tráfico fluya (agregar carriles de giro, rotondas, eliminar las intersecciones forzadas, etc.)					
Tenemos que mejorar nuestras banquetas y rutas ciclistas (agregar medidas de seguridad, agregar sombra).					
Me gustaría que el transporte público costara menos.					
Me gustaría que el uso del transporte público fuera más conveniente.					

Clasifica las siguientes afirmaciones relacionadas con el uso de energía, las operaciones industriales y la red eléctrica de Dallas-Fort Worth:

Afirmación	Muy de Acuerdo	De Acuerdo	Ni de Acuerdo Ni desacuerdo	Desacuerdo	Completamente en desacuerdo
Los apagones eléctricos son un problema.					
Deberíamos reducir la contaminación ambiental producida por la generación eléctrica.					
Los residentes/miembros de la comunidad deberían recibir incentivos para ayudar con proyectos de eficiencia energética/climatización.					
Estoy interesado en instalar paneles solares en mi domicilio.					
La región necesita más información sobre cómo reducir el consumo de electricidad.					
Las instalaciones industriales deben encontrar formas de reducir emisiones y disminuir el consumo de energía.					

Clasifica las siguientes afirmaciones relacionadas con los residuos, las aguas residuales y los residuos sólidos en Dallas-Fort Worth:

Afirmación	Muy de Acuerdo	De Acuerdo	Ni de Acuerdo Ni desacuerdo	Desacuerdo	Completamente en desacuerdo
Necesitamos tener más acceso al agua potable					
Tenemos problemas de inundaciones.					
Me preocupa la sequía y los futuros problemas de reservas de agua.					
No hay suficientes opciones de reciclaje y compostaje.					
El basurero clandestino es un problema					
Debería haber incentivos para animar a las empresas locales a reciclar/reducir residuos.					
Los gobiernos locales deberían tener más programas para ayudar a los residentes reducir residuos.					

Clasifica las siguientes afirmaciones relacionadas con la agricultura, recurso forestal y uso de suelo en Dallas-Fort Worth:

Afirmación	Muy de Acuerdo	De Acuerdo	Ni de Acuerdo Ni desacuerdo	Desacuerdo	Completamente en desacuerdo
No tenemos suficientes parques públicos/áreas verdes.					
Deberíamos utilizar plantas/césped tolerante a la sequía.					
Tenemos demasiados estacionamientos/áreas de concreto.					
Deberíamos tener más jardines comunitarios.					

6. ¿Cómo pueden las organizaciones encargadas colaborar mejor con las comunidades para desarrollar el Plan de Mejora para la Calidad del Aire de DFW?

7. ¿Deseas proporcionar alguna otra aportación?

Dallas-Fort Worth Air Quality Improvement Plan Survey

The North Central Texas Council of Governments (NCTCOG), the regional planning organization for Dallas-Fort Worth, is seeking public input on ways to improve air quality, protect public health, and address extreme weather events. This feedback will be incorporated into the Dallas-Fort Worth (DFW) Air Quality Improvement Plan (AQIP) developed by NCTCOG and local governments.

For more information on the NCTCOG, visit www.nctcog.org/about-us.

For more information on the DFW AQIP, visit www.publicinnput.com/dfwAQIP.

1. **Name:** _____
2. **City of residence:** _____
3. **Zip code:** _____
4. **Who are you representing?**
   a. Self
   b. Private entity
   c. Nonprofit organization
   d. Local government
5. **Rank the following regional issues from 1 to 10, with 1 being of least concern and 10 being of most concern:**

Regional Issue	Level of Concern
Public Health	
Local air quality	
Climate change	
Extreme weather events	
Rising energy costs	
Food access	
Job access	
Lack of public transportation	
Other- Please provide.	

6. **Rank the following statements related to the current Dallas-Fort Worth transportation system.**

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
We should try to reduce air pollution from large diesel vehicles and locomotives					
Cities should adopt and enforce anti-idling policies.					
There are not enough electric vehicle (EV) charging stations on for me to use an EV.					
We should replace gasoline/diesel equipment (lawn, construction, etc). with newer versions which do not pollute as much.					
We should upgrade railroad crossings to minimize cars idling and improve safety.					
Airports should reduce emissions through utilizing fuels that pollute less (electric, natural gas, sustainable aviation fuel, etc.)					
When possible, employers should let employees work from home or commute during “off-peak hours” to reduce congestion.					
There is too much traffic congestion in our region.					
We should time traffic signals better so traffic flows more freely.					
Roadways should be improved to help traffic flow (add turn lanes, roundabouts, remove forced merges, etc.)					
We need to improve our sidewalks/bicycle routes (add safety measures, add shade).					
I would like public transit to cost less.					
I would like using public transit to be more convenient.					

Rank the following statements related to energy use, industrial operations, and the Dallas-Fort Worth electrical grid:

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
Power outages are a problem.					
We should reduce air pollution from electricity generation.					
Residents/community members should be provided incentives to help with energy efficiency/weatherization projects.					
I am interested in installing solar panels at my residence.					
The region needs more education on how to reduce electricity use.					
Industrial facilities should find ways to reduce emissions and decrease energy consumption.					

Rank the following statements related to Dallas-Fort Worth agriculture, forestry, and land-use:

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
We do not have enough public parks/green spaces.					
We should use drought-tolerant plants/grass.					
We have too much parking/concrete.					
We should have more community gardens.					

Rank the following statements related to Dallas-Fort Worth waste, wastewater, and solid waste:

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
We need to have more access to clean water.					
We have a flooding problem.					
I am concerned about drought and future water supply issues.					
There are not enough recycling and composting options.					
Illegal dumping of trash is a problem.					
There should be incentives to encourage local businesses to recycle/reduce waste.					
Local governments should have more programs to help residents reduce waste.					

7. How can the organizations developing the DFW Air Quality Improvement Plan better engage with communities?

8. Would you like to provide any other feedback?

PLAN PARA MEJORAR
LA CALIDAD DEL AIRE
EN DALLAS-FORT WORTH

SESIÓN INFORMATIVA
martes, 16 de noviembre de 2023
6:00 p.m. – 7:30 p.m.
En *Location*

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

Hybrid Public Meeting
Tuesday, November 15, 6:00 p.m.

The North Central Texas Council of Governments (NCTCOG) is seeking feedback on air quality improvement projects in your community! There are three ways to attend:

IN PERSON AT NCTCOG
616 Six Flags Drive
Arlington, Texas 76011

WATCH LIVE
publicinput.com/dfwAQIP

PARTICIPATE VIA PHONE
Dial 855-925-2801 then
enter code XXXX

ABOUT THE PROGRAM:

NCTCOG is collaborating with local stakeholders in the Dallas-Fort Worth region to develop a comprehensive Air Quality Improvement Plan (DFW AQIP). The plan will create a roadmap to improve air quality, protect public health, and reduce the impacts of extreme weather events.

This work is funded by the Environmental Protection Agency's Climate Pollution Reduction Grants: Planning Grants.

ACCOMMODATIONS:

Need a ride to the public meeting? Request a $6 roundtrip ride from the DFW CentrePort Station to NCTCOG with the Arlington Transportation App! Download the app at: **arlingtontx.gov/ondemand**.

For special accommodations due to a disability or for language interpretation, contact Savana Nance at 682-433-0488 or snance@nctcog.org. Reasonable accommodations will be made.

North Central Texas Council of Governments

@nctcogtrans

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

Reunión Pública Híbrida
Tuesday, November 15, 6:00 p.m.

¡El North Central Texas Council of Governments (NCTCOG) solicita recomendaciones sobre los proyectos de mejoras en la calidad del aire para tu comunidad! Pues asistir de tres maneras:

ASISTE EN PERSONA
616 Six Flags Drive
Arlington, Texas 76011

VER EN VIVO
publicinput.com/dfwAQIP

PARTICIPA POR TELÉFONO
Marcando 855-925-2801 y
después la clave XXXX

ABOUT THE PROGRAM:

El NCTCOG está colaborando con las partes interesadas locales en la región de Dallas-Fort Worth para desarrollar un Plan de Mejora para la Calidad del Aire (DFW AQIP por sus siglas en inglés). El plan establecerá un mapa de ruta para mejorar la calidad del aire, proteger la salud pública y reducir el impacto de los sucesos climáticos extremos.

Este proyecto se financia por Subvenciones para la Reducción de la Contaminación Climática del Environmental Protection Agency's: Subvenciones de Planificación.

AJUSTES:

¿Necesitas transporte para ir a la reunión pública? Solicita un viaje de ida y vuelta por $6 desde la estación DFW CentrePort hasta NCTCOG con la aplicación Arlington Transportation. Descarga la aplicación en www.arlingtontx.gov/ondemand. Para ajustes especiales por discapacidad o para interpretación de idiomas, contacta a Savana Nance al 682-433-0488 o snance@nctcog.org. Se harán adaptaciones razonables.

North Central Texas
Council of Governments

@nctcogtrans

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

The North Central Texas Council of Governments (NCTCOG) is seeking recommendations on air quality improvement projects for your community!

NCTCOG is collaborating with local stakeholders in the Dallas-Fort Worth region to develop a comprehensive Air Quality Improvement Plan (DFW AQIP). The plan will create a roadmap to improve air quality, protect public health, and reduce the impacts of extreme weather events.

Your input is requested and important! Please go to **www.publicinput.com/dfwAQIP** to make recommendations, attend an open house, and more.

FOCUS AREAS:

Energy

- Reduce energy use and costs
- Facilitate the use of energy efficient products
- Improve reliability of the Texas electrical grid
- Generate more power from low-emitting or renewable energy sources

Water, Wastewater, and Solid Waste

- Improve water quality and reduce flooding
- Conserve water
- Encourage expansion of local recycling and composting

Transportation

- Increase use of cleaner vehicles, such as electric and natural gas
- Create walkable communities
- Provide more public transit options
- Build a more efficient and safer roadway system

North Central Texas Council of Governments

This work is funded by the Environmental Protection Agency's Climate Pollution Reduction Grants: Planning Grants. Written feedback can be mailed to Irlenia Hermosillo, Air Quality Planner, at P.O. Box 5888, Arlington, TX 76005-5888

@nctcogtrans

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

¡El North Central Texas Council of Governments (NCTCOG) solicita recomendaciones sobre los proyectos de mejoras en la calidad del aire para tu comunidad!

El NCTCOG está colaborando con las partes interesadas locales en la región de Dallas-Fort Worth para desarrollar un Plan de Mejora para la Calidad del Aire (DFW AQIP por sus siglas en inglés).

¡Se solicita tu aportación y es importante! Visita **www.publicinput.com/dfwAQIP** para hacer recomendaciones, asistir a una sesión informativa, y más.

ÁREAS DE ENFOQUE:

Energía

- Reducir el uso y costos de energía
- Facilitar el uso de productos eficientes en energía
- Mejorar la fiabilidad de la red eléctrica de Texas
- Generar más energía a partir de fuentes de energía renovables o de bajas emisiones

Agua, Aguas Residuales, Residuos Sólidos

- Mejorar la calidad del agua y reducir las inundaciones
- Conservar agua
- Fomentar la expansión local del reciclaje y compostaje

Transportación

- Aumentar el uso de vehículos menos contaminantes, como eléctricos y gas natural
- Formar comunidades peatonales
- Proporcionar más opciones de transporte público
- Construir un sistema de carreteras más eficiente y seguro

North Central Texas Council of Governments

Este proyecto se financia por Subvenciones para la Reducción de la Contaminación Climática de la Agencia de Protección al Medio Ambiente: Subvenciones de Planificación. Los comentarios por escrito pueden enviarse por correo a Irlenia Hermosillo, Air Quality Planner, at P.O. Box 5888, Arlington, TX 76005-5888

@nctcogtrans

AIR QUALITY in North Texas

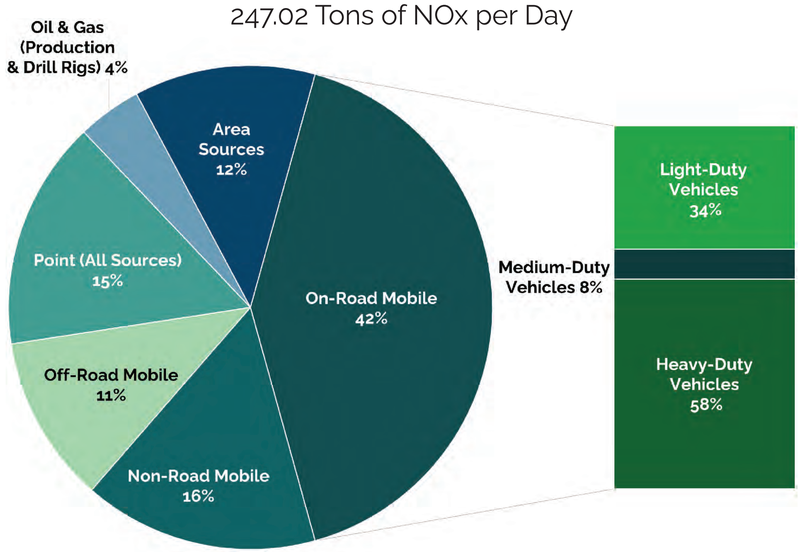
LOCAL AIR POLLUTION

The Clean Air Act requires Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants which are harmful to human health:

CRITERIA POLLUTANTS:	DFW ATTAINMENT STATUS:
Ozone	✗
Lead	✓
Carbon Monoxide	✓
Nitrogen Dioxide	✓
Particulate Matter	✓
Sulfur Dioxide	Partial nonattainment in Navarro County due to aggregate plant

2019 NITROGEN OXIDES (NOX) EMISSIONS INVENTORY FOR 10-COUNTY DFW OZONE NONATTAINMENT AREA

247.02 Tons of NOx per Day



Source: TCEQ, 2019 summer weekday anthropogenic emissions for the DFW 10 County Ozone Nonattainment Region, Used in the Proposed 9-County DFW Moderate Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2015 Eight-Hour Ozone NAAQS)

GREENHOUSE GASSES (GHG)

Increasing rates of greenhouse gases are tied to more extreme weather events that can cause intense heat waves and frequent flooding, Each greenhouse gas has an assigned global warming potential (GWP), which measures the impact it has on global warming:

Carbon Dioxide (CO_2) - GWP 1

Source: Burning fossil fuels, solid waste, trees, and other biological materials, and as a byproduct in certain chemical reactions

Methane (CH_4) - GWP 28

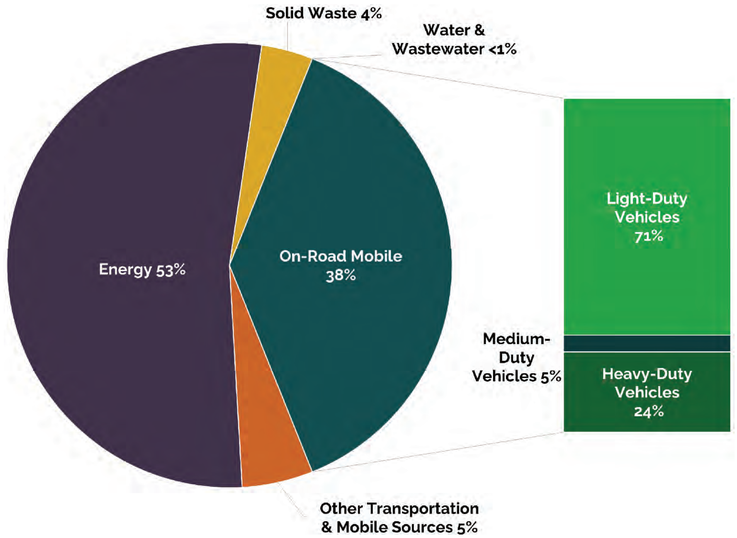
Source: Production and transport of coal, natural gas, and oil, the decay of organic waste and agricultural practices

Nitrous Oxide (N_2O) - GWP 265

Source: Agricultural, land use, industrial activities, treatment of wastewater, combustion of fossil fuels

DRAFT– 2019 GREENHOUSE GAS EMISSIONS INVENTORY FOR 12-COUNTY METROPOLITAN PLANNING AREA

Carbon Dioxide Equivalent (CO2e) = 103,014,917 Metric Tons per Year



Source: NCTCOG, North Central Texas 12-County Metropolitan Planning Area 2019 Inventory of Community Greenhouse Gas Emissions

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

FOR MORE INFORMATION ON AIR QUALITY GO TO WWW.NCTCOG.ORG/TRANS/QUALITY/AIR

North Central Texas Council of Governments

CALIDAD DEL AIRE en Norte de Texas

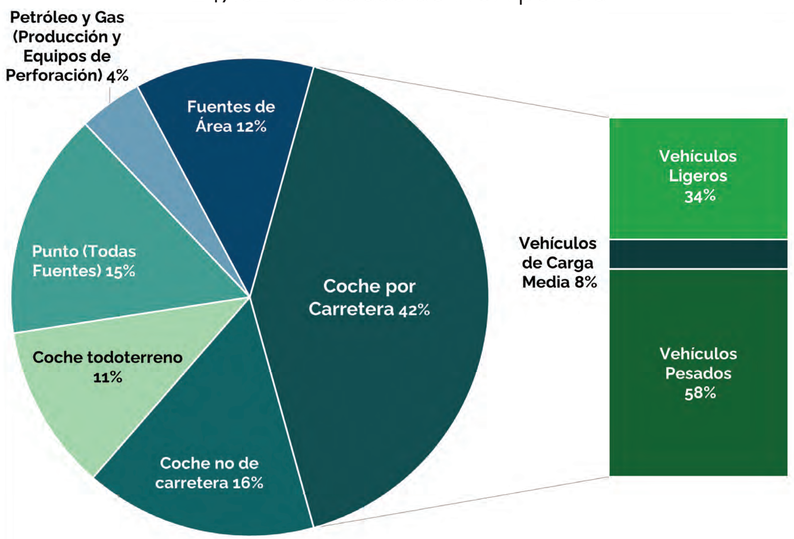
CONTAMINACIÓN DEL AIRE LOCAL

El Clean Air Act exige a la Agencia de Protección del Medio Ambiente (EPA) que establezca National Ambient Air Quality Standards (NAAQS) para seis contaminantes que son nocivos para la salud humana:

CONTAMINANTES CRITERIOS	ESTADO DE CUMPLIMIENTO DFW
Ozono	✗
Plomo	✓
Monóxido de Carbono	✓
Dióxido de Nitrógeno	✓
Materia Particulada	✓
Dióxido de Azufre	Incumplimiento parcial en el condado de Navarro debido a la planta de agregados

INVENTARIO DE EMISIONES DE ÓXIDOS DE NITRÓGENO (NOX) 2019 EN 10-CONDADOS DFW ÁREA DE INCUMPLIMIENTO DE OZONO

247.02 Toneladas de NOX por Día



Fuente: TCEQ, 2019 summer weekday anthropogenic emissions for the DFW 10 County Ozone Nonattainment Region, Used in the Proposed 9-County DFW Moderate Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2015 Eight-Hour Ozone NAAQS)

GASES DE EFECTO INVERNADERO (GHG)

El aumento de la cantidad de gases de efecto invernadero está relacionado con fenómenos meteorológicos más extremos que pueden causar olas de calor intensas e inundaciones frecuentes, Cada gas de efecto invernadero tiene asignado un potencial de calentamiento global (GWP por sus siglas en inglés), que mide el impacto que tiene en el calentamiento global:

Dióxido de Carbono (CO_2) - GWP 1

Fuente: Quema de combustibles fósiles, residuos sólidos, árboles y otros materiales biológicos, y como subproducto en ciertas reacciones químicas

Metano (CH_4) - GWP 28

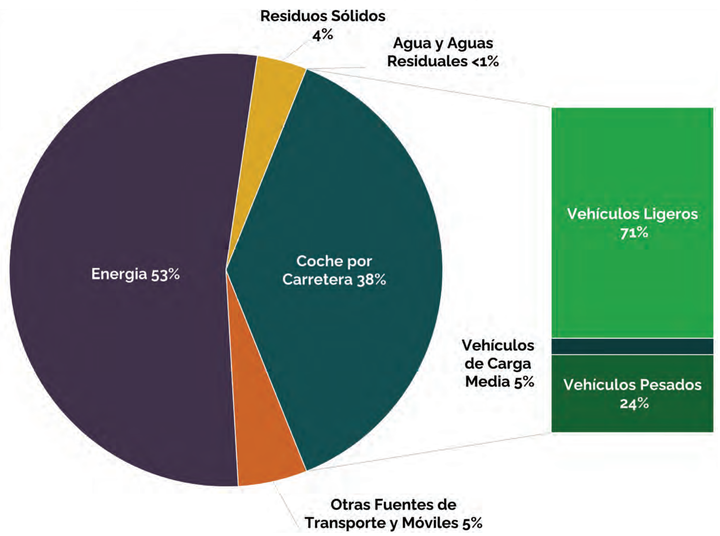
Fuente: La producción y el transporte de carbón, gas natural y petróleo, la descomposición de residuos orgánicos y las prácticas agrícolas

Óxido Nitroso (N_2O) - GWP 265

Fuente: Agricultura, uso del suelo, actividades industriales, tratamiento de aguas residuales, combustión de combustible fósil

BORRADOR – INVENTARIO DE EMISIONES DE GASES DE EFECTO INVERNADERO 2019 PARA 12-CONDADOS DE ÁREA DE PLANIFICACIÓN METROPOLITANA

Dióxido de Carbono Equivalente (CO_2e) = 103,014,917 Toneladas Métricas por Año



Fuente: NCTCOG, North Central Texas 12-County Metropolitan Planning Area 2019 Inventory of Community Greenhouse Gas Emissions

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

PARA MÁS INFORMACIÓN SOBRE LA CALIDAD DEL AIRE VISITA WWW.NCTCOG.ORG/TRANS/QUALITY/AIR

North Central Texas Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

Local governments in the region are collaborating with the North Central Texas Council of Governments to develop the Dallas-Fort Worth (DFW) Air Quality Improvement Plan (AQIP), a regional plan to improve air quality, protect public health, and address extreme weather events.

SECTORS INCLUDED:

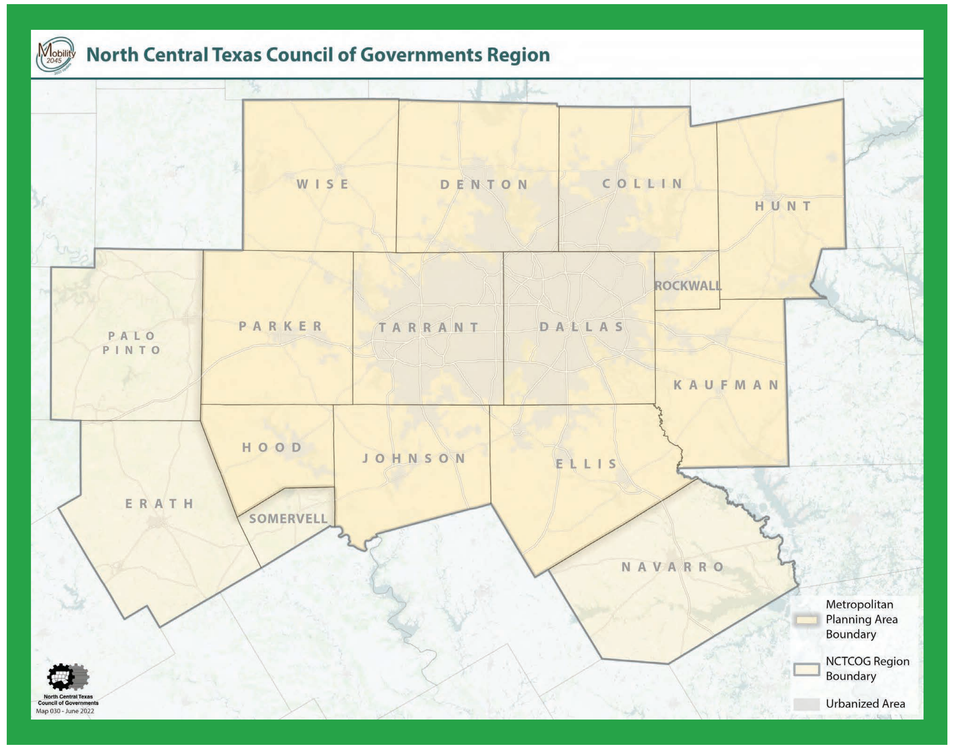
Transportation | Energy | Solid Waste | Water | Agriculture | Carbon Removal

DFW AQIP OBJECTIVES:

- Implement projects and programs to significantly improve air quality through reducing greenhouse gases and criteria air pollutants by 2030 in 16 counties in North Texas,
- Create benefits to the community, particularly in low-income and disadvantaged communities,
- Be cost-effective,
- Implement innovative policies and programs that are relevant to the region.

DFW AQIP CONTENTS:

- Inventory of all air pollutants produced in the region (greenhouse gases and certain criteria pollutants),
- Identification of projects to improve air quality,
- Analysis of the benefits and impacts to low-income and disadvantaged communities,
- A plan for how the DFW AQIP can be implemented (funding, implementing agencies, etc).



North Central Texas Council of Governments

IMPLEMENTING THE DFW AQIP: The development of this plan is supported through a grant from the Environmental Protection Agency's (EPA) Climate Pollution Reduction Grants (CPRG) Planning Grants.The EPA will provide up to $500 million in funding to implement plans developed under the CPRG Planning Grants. For more information go to **www.publicinput.com/dfwAQIP**

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

Los gobiernos locales de la región están colaborando con el North Central Texas Council of Governments (NCTCOG) para desarrollar el Plan de Mejora para la Calidad del Aire (AQIP por sus siglas en inglés) de Dallas-Fort Worth (DFW) un plan regional para mejorar la calidad del aire, proteger la salud publica, y afrontar los sucesos climáticos extremos.

SECTORS INCLUDED:

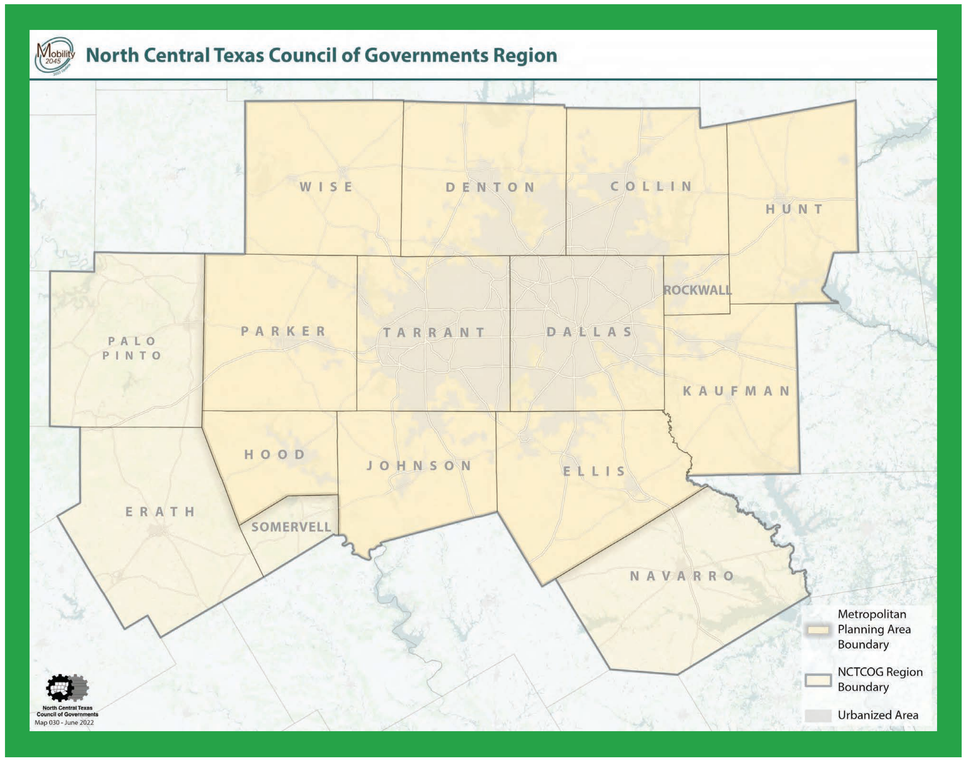
Transportación · Energía · Residuos Sólidos · Agua · Agricultura · Eliminación de Carbono

OBJETIVOS DE DFW AQIP:

- Implementar proyectos y programas para mejorar significativamente la calidad del aire reduciendo los gases de efecto invernadero y los contaminantes criterio del aire para 2030 en 16 condados del Norte de Texas,
- Generar beneficios para la comunidad, especialmente en las comunidades de bajos ingresos y menos favorecidas,
- Ser económicos,
- Implementar políticas y programas innovadores que sean relevantes para la región

CONTENIDOS DE DFW AQIP:

- Inventario de todos los contaminantes ambientales producidos en la región (gases de efecto invernadero y contaminantes criterio),
- Identificación de proyectos para mejorar la calidad del aire,
- Análisis de los beneficios e impactos para las comunidades con bajos ingresos y menos favorecidas,
- Un plan sobre cómo implementar DFW AQIP (financiación, agencias colaboradoras, etc.



North Central Texas Council of Governments

IMPLEMENTACIÓN DE DFW AQIP: El desarrollo de este plan cuenta con el apoyo de una subvención que otorga la Agencia de Protección del Medio Ambiente a través de las Subvenciones para la Reducción de la Contaminación Climática (CPRG por sus siglas en inglés). EPA proporcionará hasta $500 millones de financiación para implementar los planes desarrollados bajo las Subvenciones de Planificación del CPRG. Para más información, visita **www.publicinput.com/dfwAQIPesp**

HOW CAN I IMPROVE AIR QUALITY IN MY COMMUNITY?

SOLID WASTE

- Increase the amount of waste that is recycled or composted
- Use less single-use products

WATER

- Use drought-tolerant plants and grass
- Reuse water when possible
- Fix water leaks

TRANSPORTATION

- Choose the most efficient vehicle
- Minimize idling
- Utilize public transportation
- Carpool to work
- Utilize the Try Parking It app to get rewards for carpooling and working remote
- Ride bicycles and walk, when possible

TELL US!

What would you like to do to improve air quality in DFW?

publicinput.com/dfwAQIP

ENERGY

- Install solar panels at your residence
- Invest in smart meters to track how much energy is being used
- Purchase renewable electricity
- Install energy efficient home appliances

DALLAS-FORT WORTH
AIR QUALITY
IMPROVEMENT PLAN

North Central Texas Council of Governments

COMO PUEDO MEJORAR LA CALIDAD DEL AIRE EN MI COMUNIDAD

RESIDUOS SÓLIDOS

- Aumentar la cantidad de residuos que se reciclan o compostan
- Usar menos productos de un solo uso

AQUA

- Usar plantas y césped resistentes a la sequía
- Reutilizar el agua cuando sea posible
- Reparar las fugas de agua

TRANSPORTACIÓN

- Elige un vehículo mas eficiente
- Minimiza el ralentí
- Usa el transporte público
- Comparte vehículo para ir al trabajo
- Usa la aplicación Try Parking It para obtener recompensas por compartir vehículo y trabajo remoto
- Usa la Bicicleta y camina, cuando sea posible

¡CUÉNTANOS!

¿Qué te gustaría hacer para mejorar la calidad del aire en DFW?

publicinput.com/dfwAQIPesp

ENERGÍA

- Instalar paneles solares en tu residencia
- Invierte en medidores inteligentes para calcular la cantidad de energía consumida
- Compra electricidad renovable
- Instalar electrodomésticos de eficiencia energética

PLAN PARA MEJORAR LA CALIDAD DEL AIRE EN DALLAS-FORT WORTH

North Central Texas Council of Governments

HOW ORGANIZATIONS CAN IMPROVE AIR QUALITY

WASTEWATER AND SOLID WASTE

- Employ energy conservation technology for water treatment facilities
- Capture and re-use landfill gas
- Provide composting and recycling services
- Minimize use of single-use products

WATER

- Install smart manhole covers
- Provide rebates for smart water meters to residents
- Implement nature-based solutions to help with stormwater
- Increase water reuse practices

TRANSPORTATION

- Upgrade railways to reduce idling and congestion
- Allow workers to commute during less congestion times or work remote
- Add shade to bike lanes and sidewalks
- Provide more public transit
- Provide incentives for more vehicles that emit less air pollutants

CARBON REMOVAL

- Improve forest management policies
- Urban afforestation and green infrastructure programs
- Restoration of degraded lands and forested lands to enhance carbon sequestration
- Install carbon capture devices

ENERGY

- Update building codes
- Provide rebates for smart meters to residents
- Purchase renewable electricity
- Install more energy efficient appliances

TELL US!

What would you like to do to improve air quality in DFW?

publicinput.com/dfwAQIP

AGRICULTURE/ NATURAL AND WORKING LANDS

- Increase tree cover and public green spaces
- Provide community gardens
- Update landscaping ordinances/requirements
- Use drought-tolerant plants

DALLAS-FORT WORTH
AIR QUALITY
IMPROVEMENT PLAN

North Central Texas Council of Governments

COMO PUEDEN LAS ORGANIZACIONS MEJORAR LA CALIDAD DEL AIRE

AGUAS RESIDUALES Y RESIDUOS SÓLIDOS

- Emplear tecnologías de conservación de energía para las instalaciones de tratamiento de aguas
- Capturar y reutilizar gas de vertedero
- Proporcionar servicios de compostaje y reciclaje
- Minimizar el uso de productos de un solo uso

AQUA

- Instalar cubiertas de alcantarilla inteligentes
- Proporcionar a los residentes bonificaciones para medidores de agua inteligentes
- Implementar soluciones naturales para ayudar con las aguas pluviales
- Aumentar las prácticas de reutilización del agua

TRANSPORTACIÓN

- Modernizar los ferrocarriles para reducir los tiempos de inactividad y la congestión
- Permitir a los trabajadores viajar en horarios menos congestionados o trabajar en remoto
- Agregar sombra a los carriles de bicicletas y banquetas
- Proporcionar más transporte público
- Ofrecer incentivos para los vehículos que emitan menos contaminantes ambientales.

ELIMINACIÓN DE CARBONO

- Mejorar las políticas de gestión forestal
- Programas de forestación urbana e infraestructura verde
- Restauración de tierras degradadas y forestales para mejorar la captación de carbono

ENERGÍA

- Actualizar los códigos de construcción
- Proporcionar bonificaciones a los residentes por el uso de medidores inteligentes
- Comprar electricidad renovable
- Instalar más electrodomésticos de eficiencia energética

¡CUÉNTANOS!

¿Qué te gustaría hacer para mejorar la calidad del aire en DFW?

publicinput.com/dfwAQIPesp

AGRICULTURA/ TIERRAS NATURALES Y DE LABOR

- Aumentar la cobertura de árboles y áreas verdes públicas
- Proporcionar jardines comunitarios
- Actualizar las ordenanzas/ requisitos del paisajismo
- Utilizar plantas tolerantes a la sequía

PLAN PARA MEJORAR LA
CALIDAD DEL AIRE
EN DALLAS-FORT WORTH

North Central Texas Council of Governments

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

OPEN HOUSE

Tuesday, Nov. 16, 2023
6:00 p.m. - 7:30 p.m.
At a Location

NCTCOG seeks public's help to develop plan to improve air quality

The North Central Texas Council of Governments (NCTCOG) is developing a comprehensive air quality improvement plan with the help of stakeholders across the region. Local residents and businesses are invited to provide input at an open house at 6 pm November 15 at NCTCOG's Arlington offices, 616, Six Flags Drive.

The plan will create a roadmap to enhance air quality, protect public health and reduce the impact of extreme weather events. There are several ways to get involved. Attend the open house in person, watch the presentation live at www.publicinput.com/dfwAQIP or participate via phone by dialing 855-925-2801 then code XXXX.

This work is funded by the Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) Program, which provides funds to help states and local governments create and implement plans that could reduce greenhouse gas emissions and other harmful air pollutants. Currently, 10 North Texas counties are in severe nonattainment for ground-level ozone pollution and are working to meet the federal standard to avoid health impacts and related compliance fines and penalties.

The CPRG program has two phases: phase one provides noncompetitive funding to develop regional plans and phase two provides competitive funding to implement the plans developed under phase one. NCTCOG has received phase one funding and will use those funds to develop a priority climate action plan (PCAP), which will be incorporated into the Dallas Fort Worth Air Quality Improvement Plan (AQIP). The development of the PCAP will permit the region to compete for funding from phase two of the CPRG, which has $4.6 billion for entities to develop and deploy different technologies and solutions.

Visit the project webpage (www.publicinput.com/dfwAQIP) to provide feedback on projects you would like to see in your community. For questions about the project, contact Savana Nance at snance@nctcog.org or Irlenia Hermosillo at ihermosillo@nctcog.org.

NCTCOG solicita la ayuda del público para desarrollar un plan de mejora para la calidad del aire.

El North Central Texas Council of Governments (NCTCOG) está elaborando un plan integral para la mejora de la calidad del aire con la ayuda de las partes interesadas de la región. Se invita a los residentes y empresas locales a dar su opinión en la reunión pública que se celebrará en XX el XX de noviembre a las XX.

El plan establecerá un mapa de ruta para mejorar la calidad del aire, proteger la salud pública y reducir el impacto causado por los extremos eventos climáticos. Existen varias maneras de participar. Asiste en persona, puedes ver la presentación en vivo en www.publicinput.com/dfwAQIP o participa por teléfono marcando 855-925-2801 y después la clave XXXX.

Este proyecto se financia por el Programa de Subvenciones para la Reducción de la Contaminación Climática del Environmental Protection Agency's (CPRG por sus siglas en inglés), que proporciona fondos para ayudar a los estados y gobiernos locales para crear e implementar planes que puedan reducir las emisiones de gases de efecto invernadero y otros contaminantes nocivos del aire. En la actualidad 10 condados del norte de Texas se encuentran en situación de incumplimiento grave de la normativa debido a la contaminación por ozono al nivel del suelo y se está trabajando para cumplir la norma federal y evitar impactos para la salud, así como multas y sanciones relacionadas con el cumplimiento de la normativa.

El programa CPRG se compone por dos fases: la fase uno proporciona financiación no competitiva para desarrollar planes regionales y la fase dos proporciona financiación competitiva para aplicar los planes desarrollados en la fase uno. NCTCOG ha recibido financiación de la fase uno y utilizará esos fondos para desarrollar el Plan Prioritario de Acción Climática (PCAP por sus siglas en inglés), que se incorporará el Plan de Mejora para la Calidad del Aire en Dallas Fort Worth (AQIP por sus siglas en inglés). El desarrollo del PCAP permitirá que la región pueda competir por financiación de $4.6 billones para que las entidades desarrollen y apliquen diferentes tecnologías y soluciones.

Visita la página web del proyecto (www.publicinput.com/dfwAQIP) para aportar tus comentarios sobre los proyectos que te gustaría ver en tu comunidad. Para ajustes especiales [illegible] discapacidad o para interpretación de idiomas, contacta a Jackie Castillo al 817-695-9255 o en jcastillo@nctcog.org. Para preguntas sobre el proyecto, contacta a Savana Nance en snance@nctcog.org Irlenia Hermosillo en ihermosillo@nctcog.org.

North Central Texas Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

Funded through the Environmental Protection Agency's Climate Pollution Reduction Grants

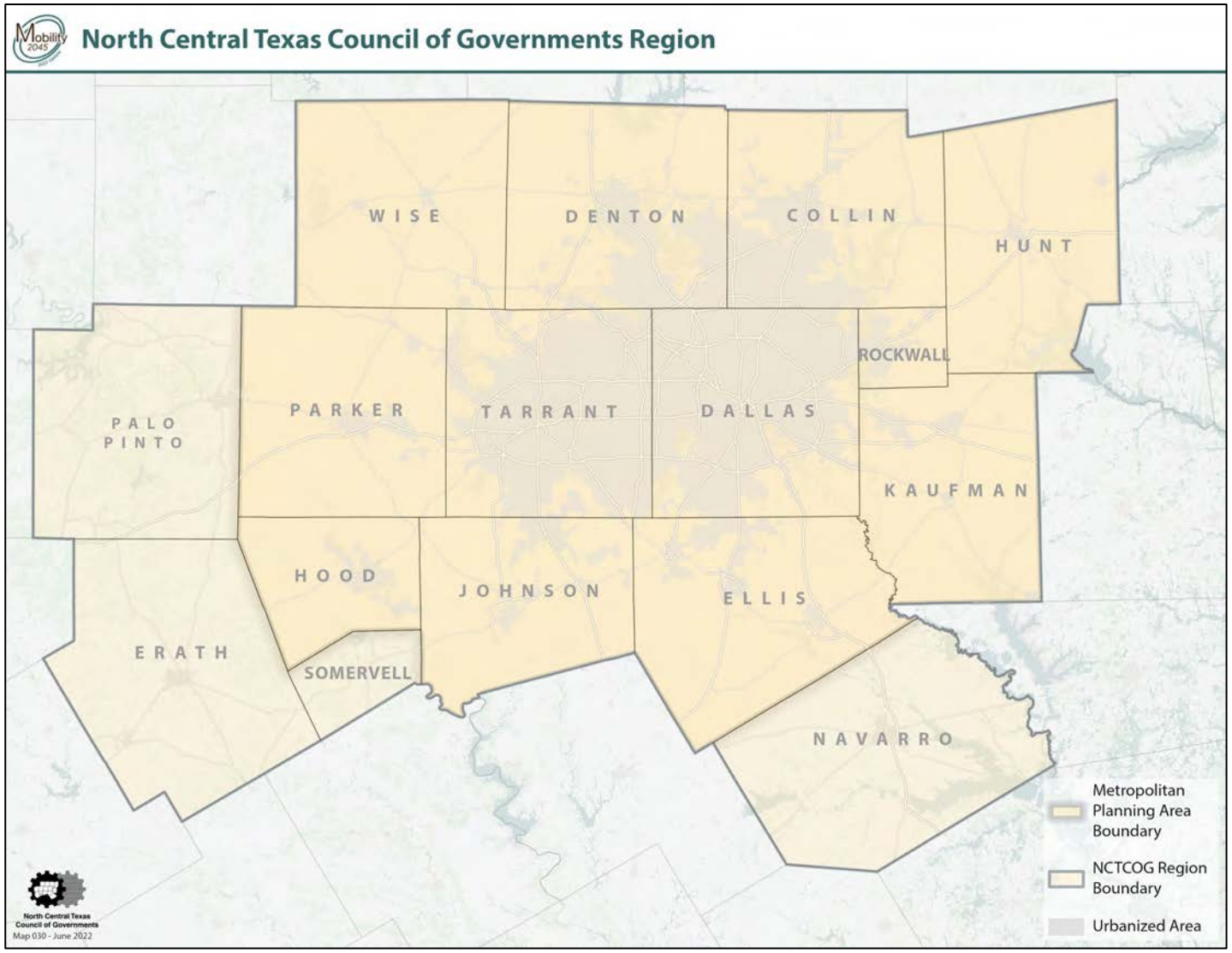
Who We Are

Regional Planning Agency

- Assist local governments in planning and coordinating for regional development

Departments:

- Aging Services
- Economic Development
- Emergency Preparedness
- Environment & Development
- NCT 9-1-1
- Public Safety
- Regional Data
- Transportation
- Workforce Solutions



https://nctcog.org/

Air Pollution

Local Air Pollution

The Clean Air Act requires Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants which are harmful to human health:

Criteria Pollutant	DFW Attainment Status
Ozone	✗
Lead	✓
Carbon Monoxide	✓
Nitrogen Dioxide	✓
Particulate Matter	?
Sulfur Dioxide	Partial nonattainment in Navarro County due to aggregate plant

Greenhouse Gases

Gases that trap heat in the atmosphere, resulting in the warming on the surface

Carbon Dioxide (CO_2)

Burning fossil fuels, solid waste, trees, and other biological materials, and as a byproduct in certain chemical reactions

Methane (CH_4)

Production and transport of coal, natural gas, and oil, the decay of organic waste and agricultural practices

Nitrous Oxide (N_2O)

Agricultural, land use, industrial activities, treatment of wastewater, combustion of fossil fuels

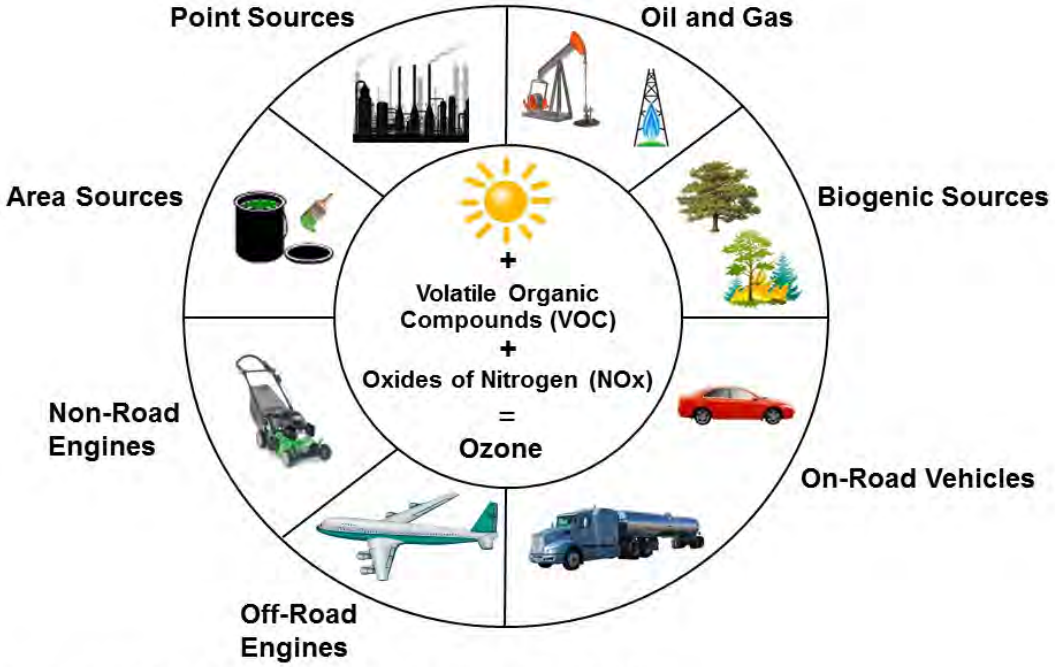
Fluorinated Gases

Synthetic gases emitted from household, commercial, and industrial applications and processes[1]

1. Source: www.epa.gov/ghgemissions/overview-greenhouse-gases

Ground-Level Ozone

How Ozone is Formed:

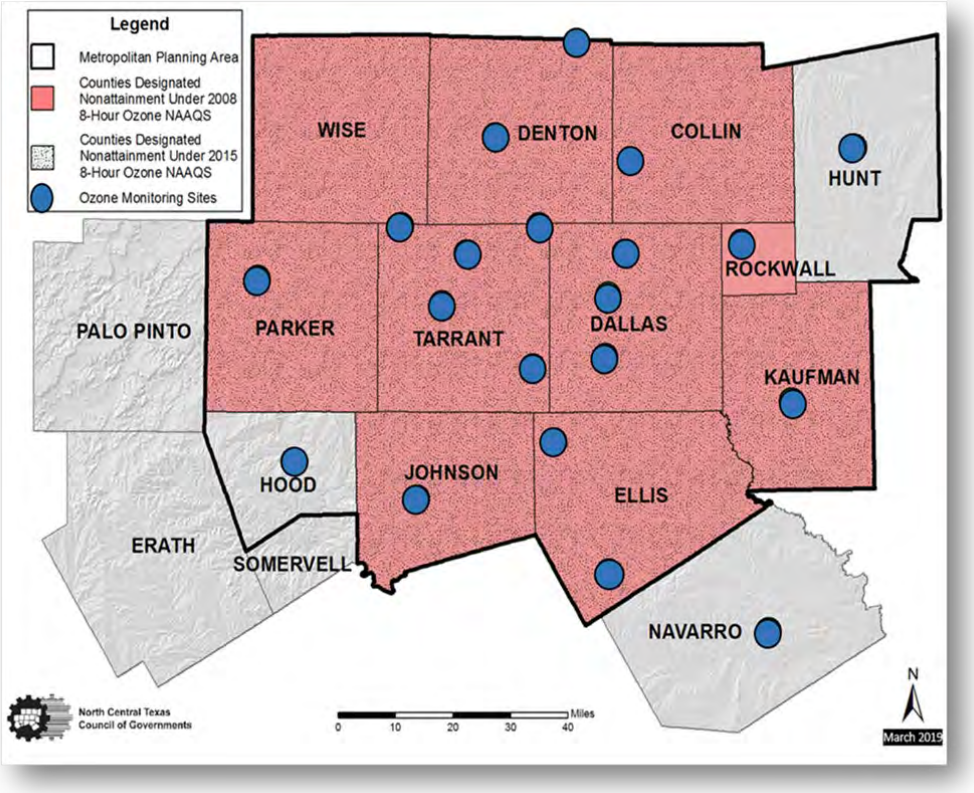


Optimum conditions for the formation of ozone include high temperatures and low winds.
Sections are not to scale and are for illustrative purposes only.

Health Impacts of Ground-Level Ozone[1]:

- Coughing and sore throat
- Inflame and damage airways
- Aggravate lung diseases (asthma, bronchitis, etc.)

Ozone Nonattainment Area



1. Source: [Health Effects of Ozone Pollution | Ground-level Ozone Pollution | US EPA]

Particulate Matter

Mixture of solid particles and liquid droplets found in the air that can be inhaled:

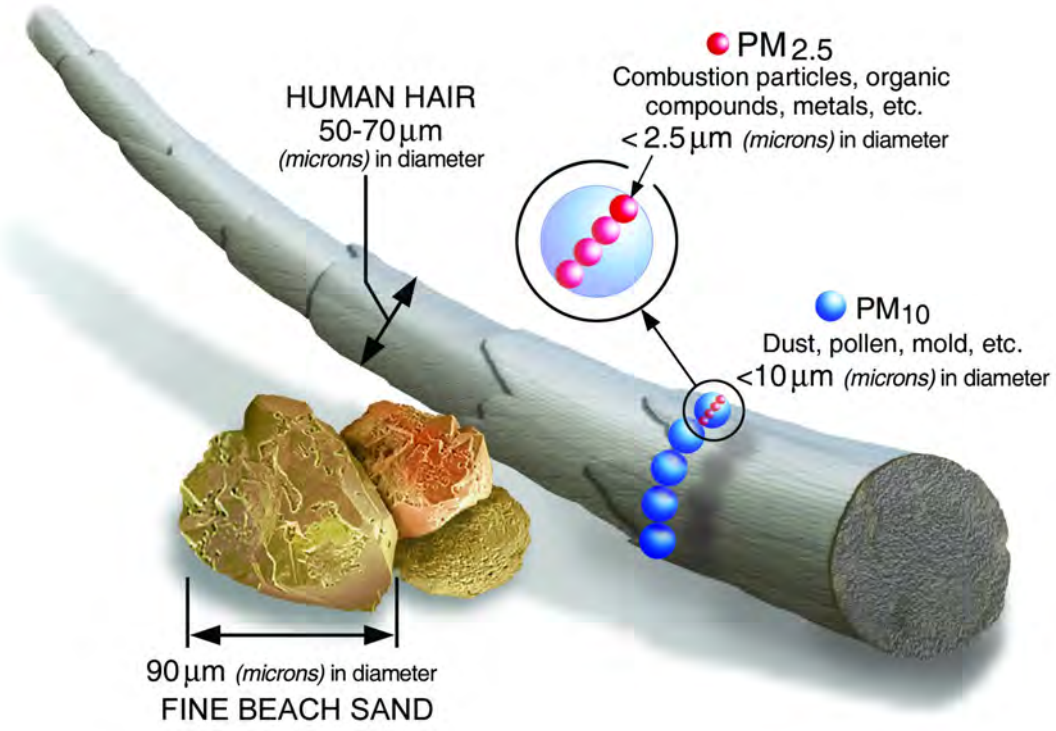
- Soot
- Spores
- Pollen

Particle pollution includes:

- PM_{10}: inhalable particles <10 micrometers
- $PM_{2.5}$: fine inhalable particles that are <2.5 micrometers

Health Impacts:

- Premature death in people with heart or lung disease
- Irregular heartbeat
- Decreased lung function
- Respiratory symptoms[1]



1. Source: US EPA Particulate Matter

Sulfur Dioxide

Sources:

- Burning of fossil fuels by power plants
- Other industrial facilities
- Industrial process
- Natural sources
- Ships
- Vehicles and heavy equipment

Health Impacts:

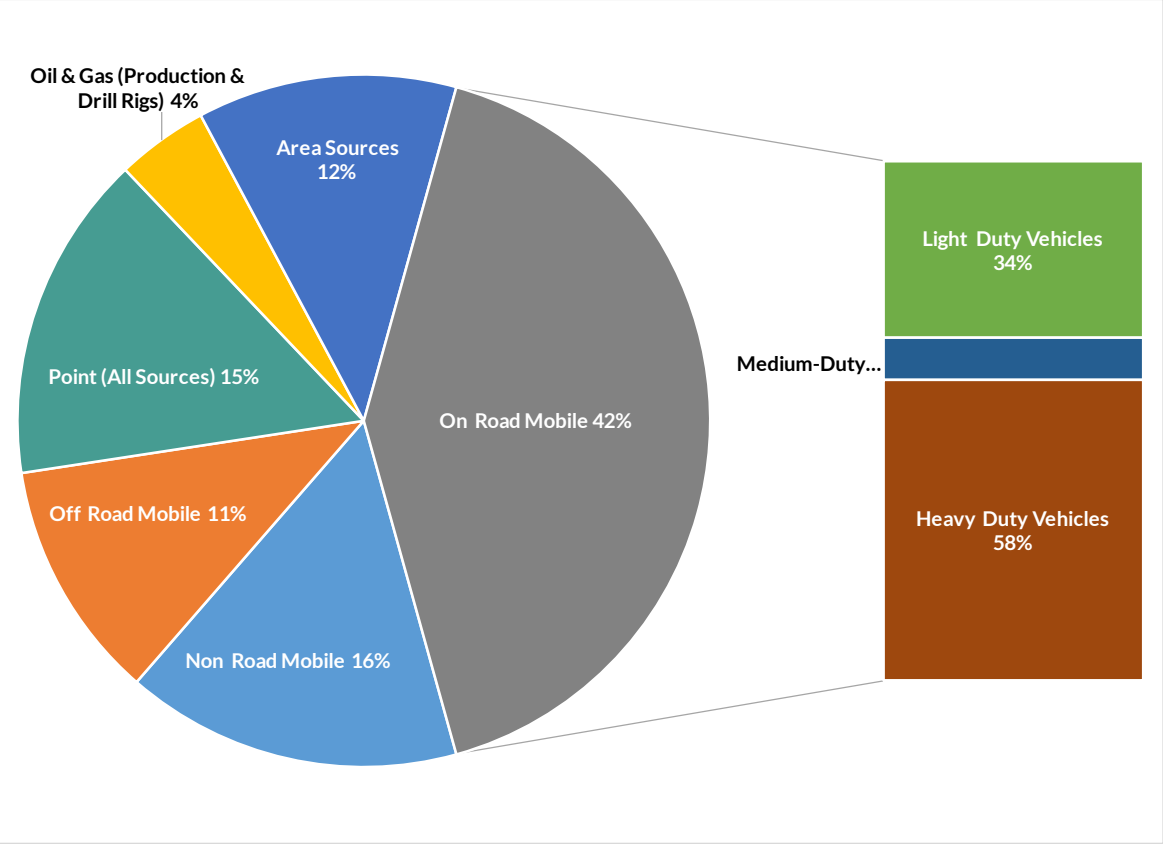
- Harmful to the respiratory system
- Can form small particles in the atmosphere which contributes to particulate matter pollution

Source: Sulfur Dioxide Basics | US EPA

Air Quality in Dallas-Fort Worth

2019 Nitrogen Oxides (NO_X) Emissions Inventory
10-County DFW Ozone Nonattainment Area

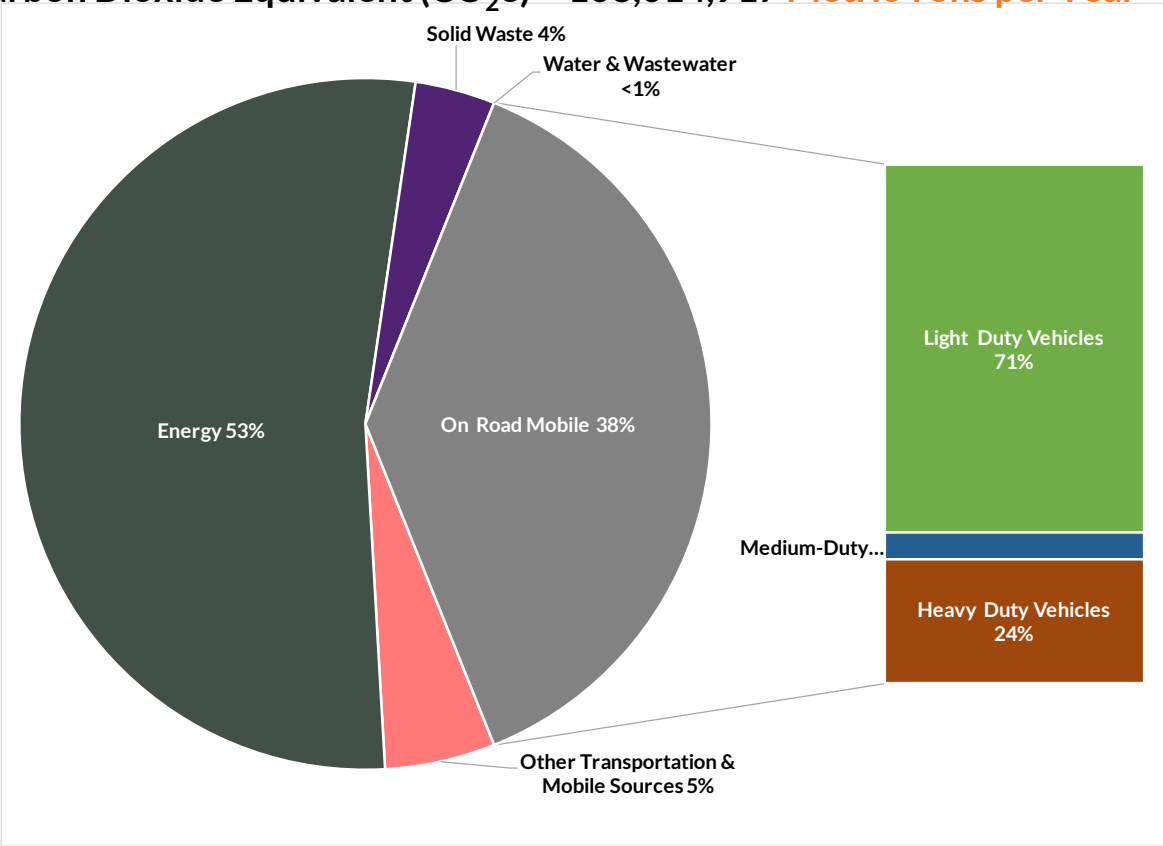
Nitrogen Oxides (NO_X) = 247.02 Tons per Day



Source: TCEQ, 2019 summer weekday anthropogenic emissions for the DFW 10 County Ozone Nonattainment Region, ***Proposed DFW Moderate Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2015 Eight-Hour Ozone NAAQS)***

DRAFT 2019 Greenhouse Gas Emissions Inventory
12-County Metropolitan Planning Area

Carbon Dioxide Equivalent (CO_2e) = 103,014,917 Metric Tons per Year



Source: NCTCOG, North Central Texas 12-County Metropolitan Planning Area 2019 Inventory of Community Greenhouse Gas Emissions

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

Impact of Greenhouse Gases

Each greenhouse gas has an assigned global warming potential, which measures the impact it has on global warming:

- Carbon Dioxide (CO_2) – 1 GWP
- Methane (CH_4) – 28 GWP
- Nitrous Oxide (N_2O) – 265 GWP

Carbon Dioxide Equivalent CO_2e = Greenhouse Gases x Respective Global Warming Potentials (GWP)

Dallas-Fort Worth Air Quality Improvement Plan

Local governments in the region are collaborating with the North Central Texas Council of Governments (NCTCOG) to develop the **Dallas-Fort Worth (DFW) Air Quality Improvement Plan (AQIP)**

- Regional plan to improve air quality in North Texas

Plan development is supported by the Environmental Protection Agency's (EPA) Climate Pollution Reduction Grants (CPRG): Planning Grants

- DFW AQIP will incorporate the following EPA-required deliverables
  - Priority Climate Action Plan (PCAP) – Due March 1, 2024
  - Comprehensive Climate Action Plan (CCAP) – Due Summer 2025
  - Status Report – Due Summer 2027

Planning Grants: Priority Climate Action Plan

Task	Description	Expected Completion Date
Greenhouse Gas (GHG) Inventory	- Calculate the GHGs produced in the 16 counties in North Texas - Includes transportation, energy, agriculture, water, waste and materials management sectors	January 2024
Quantified GHG Reduction Measures	- Identify short-term projects, programs, and policies to reduce GHG emissions - Quantify the benefits of projects, programs, and policies	January 2024
Low-Income/Disadvantaged Communities Benefits Analysis	- Calculate the potential benefits to disadvantaged communities through the deployment of GHG reduction measures - Benefits can include lower energy costs, economic benefits, improved air quality, etc.	February 2024
Review of Authority to Implement	- Review GHG reduction measures to ensure they can be implemented	February 2024
Funding Analysis	- Identify funding to implement the GHG reduction measures	February 2024

Other CPRG Planning Grants Participants

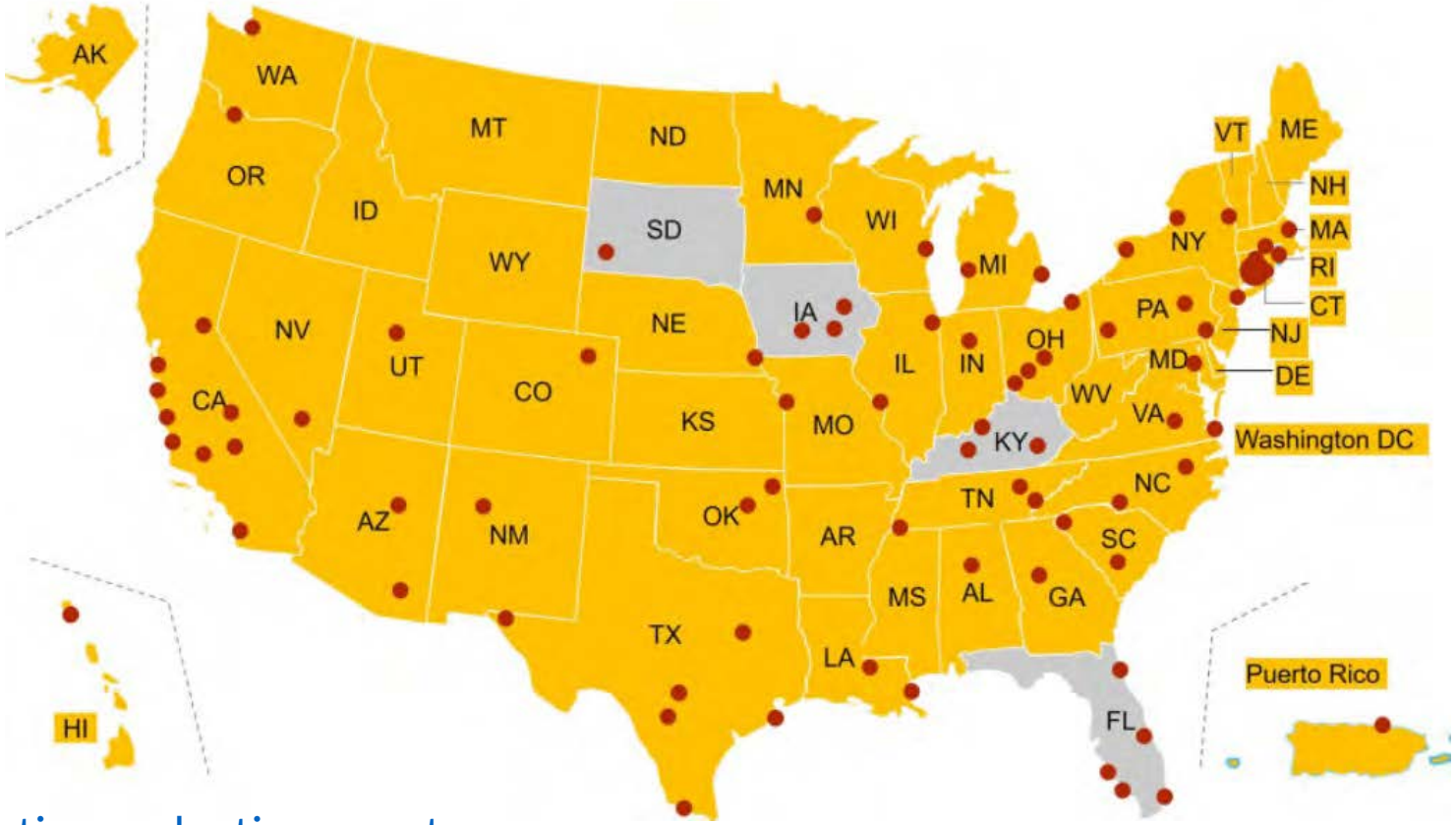
Texas MSA Leads

- City of Austin Office of Sustainability
- City of El Paso
- City of McAllen
- City of San Antonio's Office of Sustainability
- Houston-Galveston Council of Governments
- North Central Texas Council of Governments

Texas Lead

- Texas Commission on Environmental Quality (TCEQ)

www.tceq.texas.gov/agency/climate-pollution-reduction-grants



Participating States

Participating MSAs

IMPLEMENTING THE DFW AQIP

The CPRG Implementation Grants will provide funding to implement projects in the PCAP

30-115 awards anticipated nationwide; Applications are due April 1, 2024

Eligible applicants include lead agencies for CPRG Planning Grants, states, municipalities, tribes

Competition incentivizes collaborative applications

- Scoring based on cumulative benefits of proposed initiatives
- Environmental Protection Agency (EPA) will not award multiple grants for the same initiative in the same area
- EPA anticipates no more than 2 awards to applicants at same level of government within a certain area

Tier	Grant Ranges	Funds Targeted for Each Tier	Anticipated Number of Grants to be Awarded
Tier A	$200M - $500M	$2B	4-10
Tier B	$100M - $199M	$1.3B	6-13
Tier C	$50M - $99M	$.6B	6-12
Tier D	$10M - $49M	$.3B	6-30
Tier E	$2M - $9.9M	$.1B	10-50

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

Funded through the Environmental Protection Agency's Climate Pollution Reduction Grants

Upcoming Public Meetings:
Hood County/City of Granbury- January 9, 2024
City of Fate – January 16, 2024
City of Fort Worth – January 18, 2024
Others TBD

Survey Available Online:
www.publicinput.com/dfwAQIP-Survey

Contact Us

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Jenny Narvaez
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North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

OPEN HOUSE

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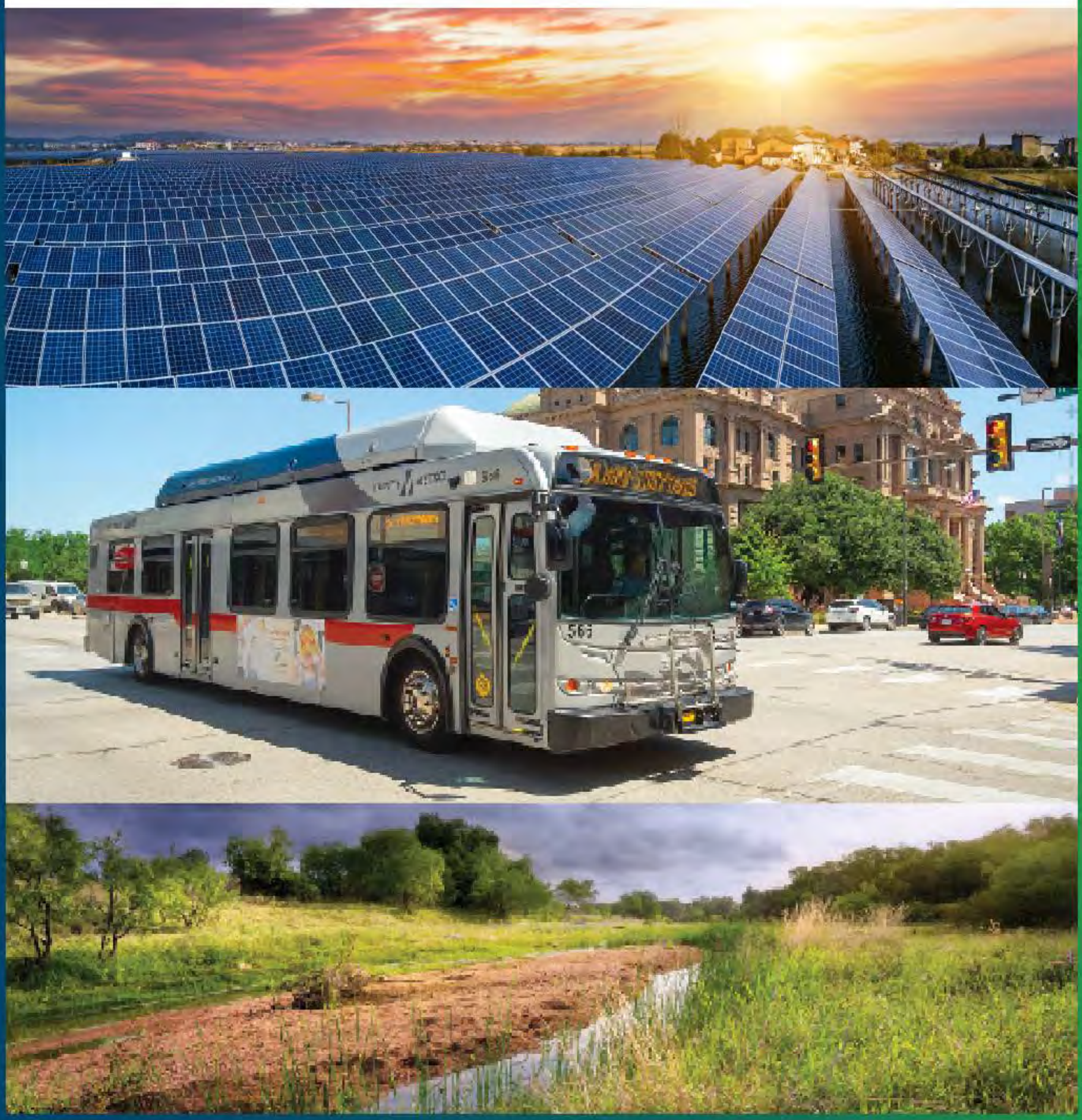


North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

OPEN HOUSE

Tuesday, Nov. 16, 2023
6:00 p.m. - 7:30 p.m.
At a Location

Dallas Fort Worth Air Quality Improvement Plan Survey

El North Central Texas Council of Governments (NCTCOG por sus siglas en inglés), la organización de planificación regional de Dallas-Fort Worth, solicita la aportación del público para mejorar la calidad del aire, proteger la salud pública y afrontar los sucesos climáticos extremos. Estas aportaciones se incorporarán al Plan de Mejora para la Calidad del Aire (AQIP por sus siglas en inglés) de Dallas-Fort Worth (DFW) elaborado por el NCTCOG y los gobiernos locales.

Para más informacion sobre NCTCOG, visita www.nctcog.org/about-us.

Para más informacion sobre DFW AQIP, visita www.publicinnput.com/dfwAQIP.

1. **Nombre: _____**

2. **Ciudad de residencia: _____**

3. **Código postal Zip code: _____**

4. **¿A quién representas?**
   a. Yo mismo(a)
   b. Entidad privada
   c. Organización sin fines de lucro
   d. Gobierno local

5. **Clasifica los siguientes problemas regionales del 1 al 10, donde 1 es el menos preocupante y 10 el más preocupante:**

La salud pública	
Calidad del aire local	
Cambio climático	
Sucesos climáticos extremos	
Aumento del coste de la energía	
Acceso a los alimentos	
Acceso al empleo	
Falta de transporte público	
Otros- Indícalo.	

Clasifica las siguientes afirmaciones relacionadas con el sistema de transporte actual en Dallas-Fort Worth.

Afirmación	Muy de Acuerdo	De Acuerdo	Ni de Acuerdo Ni Desacuerdo	Desacuerdo	Completamente en desacuerdo
Debemos intentar reducir la contaminación ambiental de vehículos grandes diésel y locomotoras					
Las ciudades deben adoptar y ejecutar políticas contra el ralentí.					
No hay suficientes electrolineras para que pueda conducir un vehículo eléctrico (EV)					
Deberíamos reemplazar los equipos de gasolina/diésel (césped, construcción, etc.) por modelos más nuevos que no contaminen tanto.					
Deberíamos mejorar los cruces de ferrocarril para minimizar los vehículos al ralentí y mejorar la seguridad.					
En los aeropuertos deberían reducir las emisiones utilizando combustibles que contaminen menos (eléctrico, gas natural, combustible de aviación sostenible, etc.).					
Cuando sea posible, los empresarios deben dejar que sus empleados trabajen desde casa o viajen al trabajo en las "horas no pico" para reducir la congestión.					
Nuestra región está demasiado congestionada.					
Deberíamos programar mejor los semáforos para que el tráfico fluya más libremente.					

Hay que mejorar las carreteras para que el tráfico fluya (agregar carriles de giro, rotondas, eliminar las intersecciones forzadas, etc.)					
Tenemos que mejorar nuestras banquetas y rutas ciclistas (agregar medidas de seguridad, agregar sombra).					
Me gustaría que el transporte público costara menos.					
Me gustaría que el uso del transporte público fuera más conveniente.					

Clasifica las siguientes afirmaciones relacionadas con el uso de energía, las operaciones industriales y la red eléctrica de Dallas-Fort Worth:

Afirmación	Muy de Acuerdo	De Acuerdo	Ni de Acuerdo Ni desacuerdo	Desacuerdo	Completamente en desacuerdo
Los apagones eléctricos son un problema.					
Deberíamos reducir la contaminación ambiental producida por la generación eléctrica.					
Los residentes/miembros de la comunidad deberían recibir incentivos para ayudar con proyectos de eficiencia energética/climatización.					
Estoy interesado en instalar paneles solares en mi domicilio.					
La región necesita más información sobre cómo reducir el consumo de electricidad.					
Las instalaciones industriales deben encontrar formas de reducir emisiones y disminuir el consumo de energía.					

Clasifica las siguientes afirmaciones relacionadas con los residuos, las aguas residuales y los residuos sólidos en Dallas-Fort Worth:

Afirmación	Muy de Acuerdo	De Acuerdo	Ni de Acuerdo Ni desacuerdo	Desacuerdo	Completamente en desacuerdo
Necesitamos tener más acceso al agua potable					
Tenemos problemas de inundaciones.					
Me preocupa la sequía y los futuros problemas de reservas de agua.					
No hay suficientes opciones de reciclaje y compostaje.					
El basurero clandestino es un problema					
Debería haber incentivos para animar a las empresas locales a reciclar/reducir residuos.					
Los gobiernos locales deberían tener más programas para ayudar a los residentes reducir residuos.					

Clasifica las siguientes afirmaciones relacionadas con la agricultura, recurso forestal y uso de suelo en Dallas-Fort Worth:

Afirmación	Muy de Acuerdo	De Acuerdo	Ni de Acuerdo Ni desacuerdo	Desacuerdo	Completamente en desacuerdo
No tenemos suficientes parques públicos/áreas verdes.					
Deberíamos utilizar plantas/césped tolerante a la sequía.					
Tenemos demasiados estacionamientos/áreas de concreto.					
Deberíamos tener más jardines comunitarios.					

6. ¿Cómo pueden las organizaciones encargadas colaborar mejor con las comunidades para desarrollar el Plan de Mejora para la Calidad del Aire de DFW?

7. ¿Deseas proporcionar alguna otra aportación?

Dallas-Fort Worth Air Quality Improvement Plan Survey

The North Central Texas Council of Governments (NCTCOG), the regional planning organization for Dallas-Fort Worth, is seeking public input on ways to improve air quality, protect public health, and address extreme weather events. This feedback will be incorporated into the Dallas-Fort Worth (DFW) Air Quality Improvement Plan (AQIP) developed by NCTCOG and local governments.

For more information on the NCTCOG, visit www.nctcog.org/about-us.

For more information on the DFW AQIP, visit www.publicinnput.com/dfwAQIP.

1. **Name:** _____
2. **City of residence:** _____
3. **Zip code:** _____
4. **Who are you representing?**
   a. Self
   b. Private entity
   c. Nonprofit organization
   d. Local government
5. **Rank the following regional issues from 1 to 10, with 1 being of least concern and 10 being of most concern:**

Regional Issue	Level of Concern
Public Health	
Local air quality	
Climate change	
Extreme weather events	
Rising energy costs	
Food access	
Job access	
Lack of public transportation	
Other- Please provide.	

6. **Rank the following statements related to the current Dallas-Fort Worth transportation system.**

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
We should try to reduce air pollution from large diesel vehicles and locomotives					
Cities should adopt and enforce anti-idling policies.					
There are not enough electric vehicle (EV) charging stations on for me to use an EV.					
We should replace gasoline/diesel equipment (lawn, construction, etc). with newer versions which do not pollute as much.					
We should upgrade railroad crossings to minimize cars idling and improve safety.					
Airports should reduce emissions through utilizing fuels that pollute less (electric, natural gas, sustainable aviation fuel, etc.)					
When possible, employers should let employees work from home or commute during “off-peak hours” to reduce congestion.					
There is too much traffic congestion in our region.					
We should time traffic signals better so traffic flows more freely.					
Roadways should be improved to help traffic flow (add turn lanes, roundabouts, remove forced merges, etc.)					
We need to improve our sidewalks/bicycle routes (add safety measures, add shade).					
I would like public transit to cost less.					
I would like using public transit to be more convenient.					

Rank the following statements related to energy use, industrial operations, and the Dallas-Fort Worth electrical grid:

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
Power outages are a problem.					
We should reduce air pollution from electricity generation.					
Residents/community members should be provided incentives to help with energy efficiency/weatherization projects.					
I am interested in installing solar panels at my residence.					
The region needs more education on how to reduce electricity use.					
Industrial facilities should find ways to reduce emissions and decrease energy consumption.					

Rank the following statements related to Dallas-Fort Worth agriculture, forestry, and land-use:

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
We do not have enough public parks/green spaces.					
We should use drought-tolerant plants/grass.					
We have too much parking/concrete.					
We should have more community gardens.					

Rank the following statements related to Dallas-Fort Worth waste, wastewater, and solid waste:

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
We need to have more access to clean water.					
We have a flooding problem.					
I am concerned about drought and future water supply issues.					
There are not enough recycling and composting options.					
Illegal dumping of trash is a problem.					
There should be incentives to encourage local businesses to recycle/reduce waste.					
Local governments should have more programs to help residents reduce waste.					

7. How can the organizations developing the DFW Air Quality Improvement Plan better engage with communities?

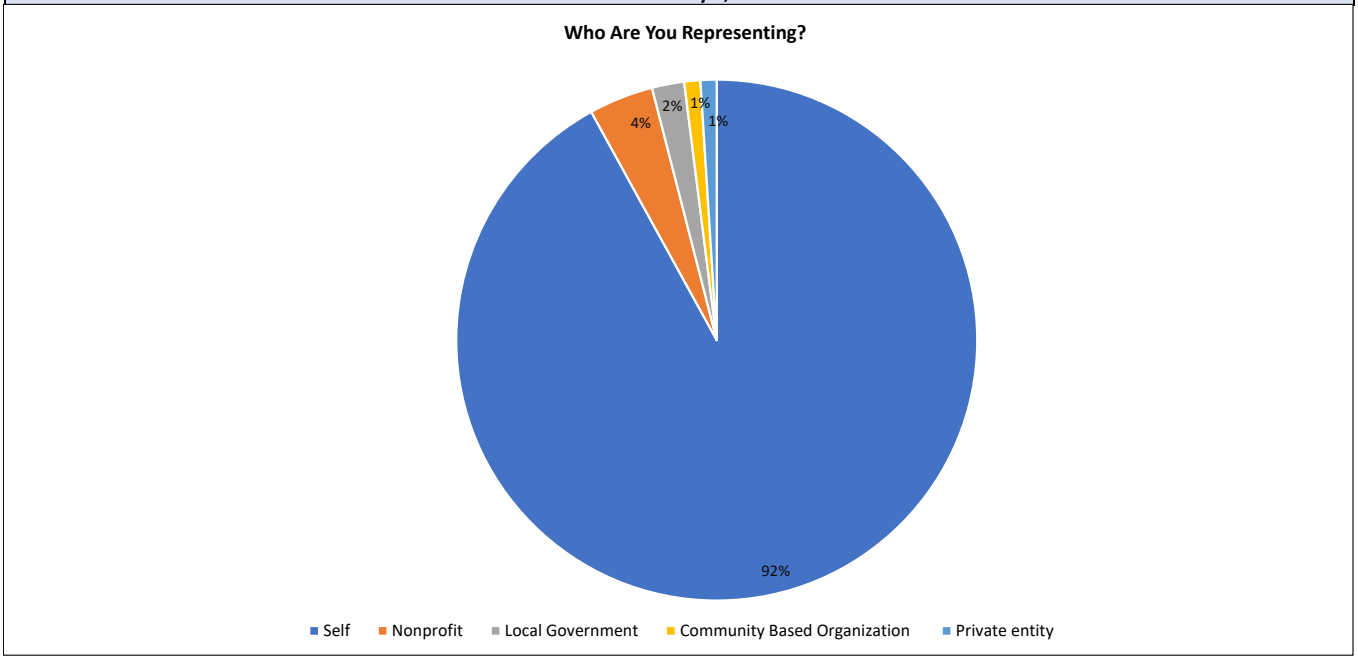
8. Would you like to provide any other feedback?

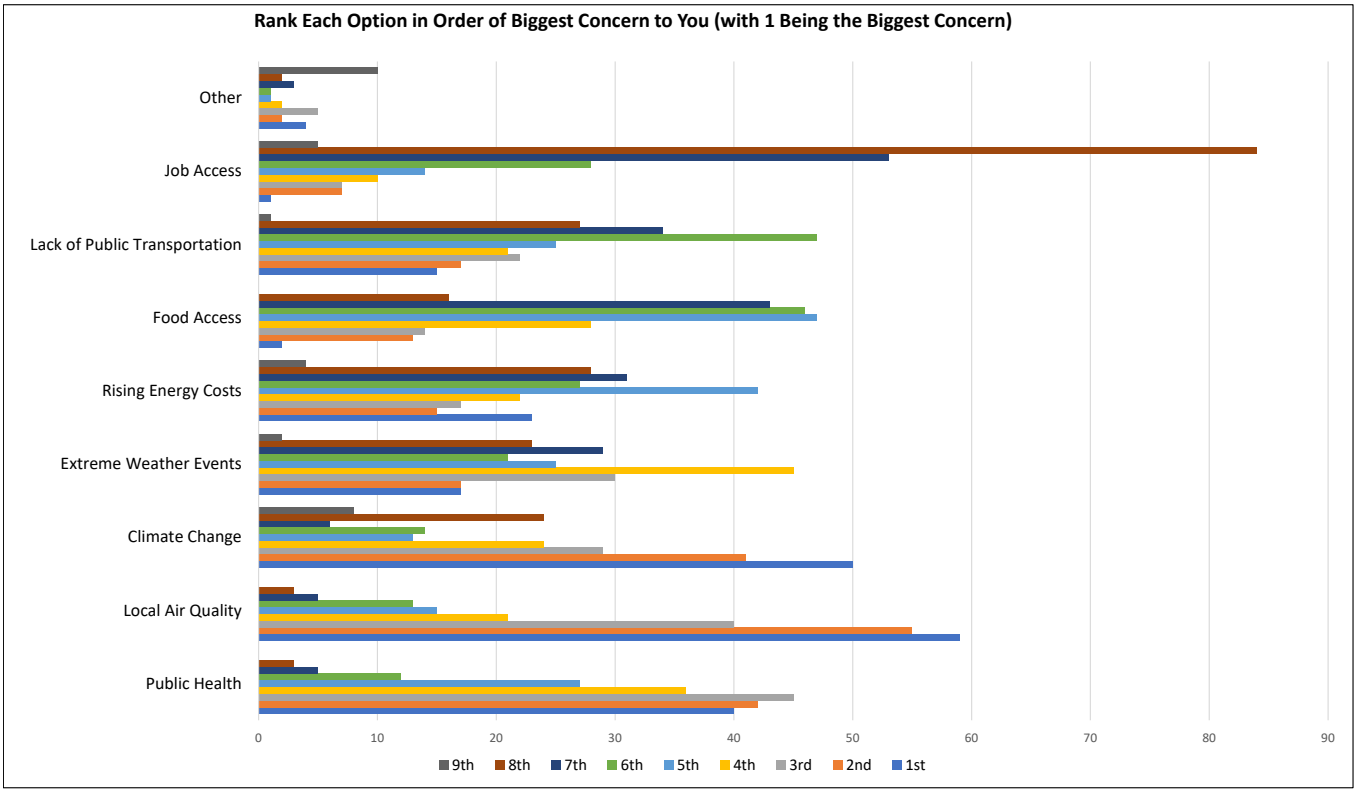
North Central Texas
Council of Governments

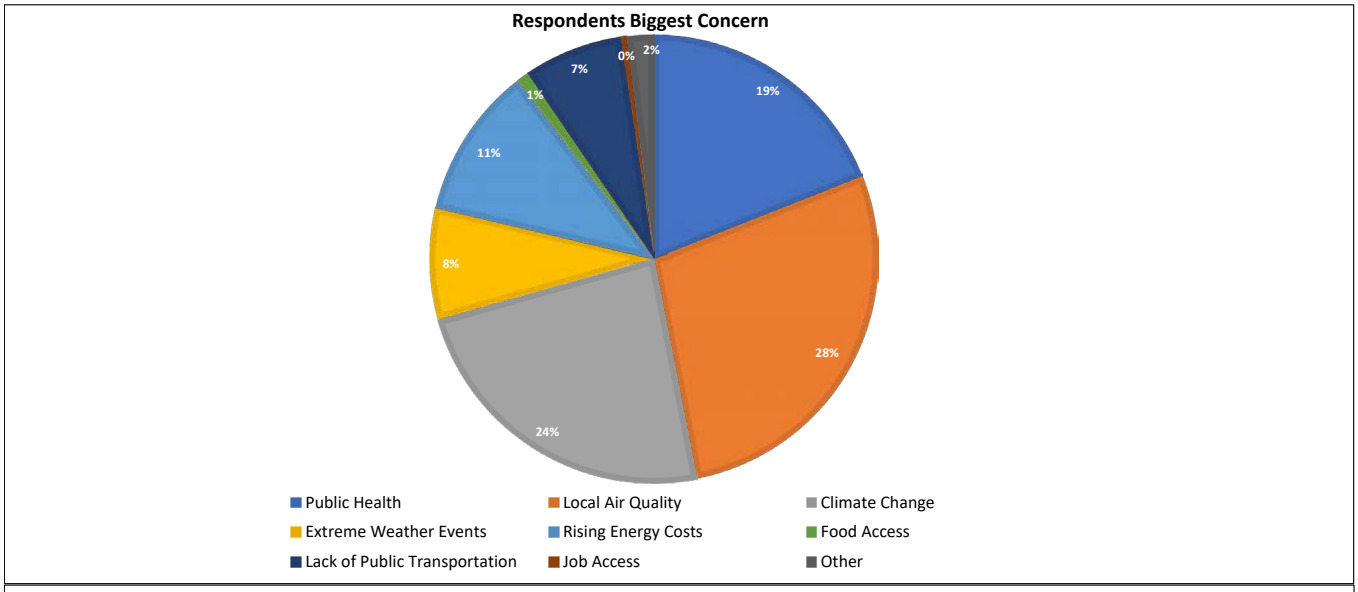
DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

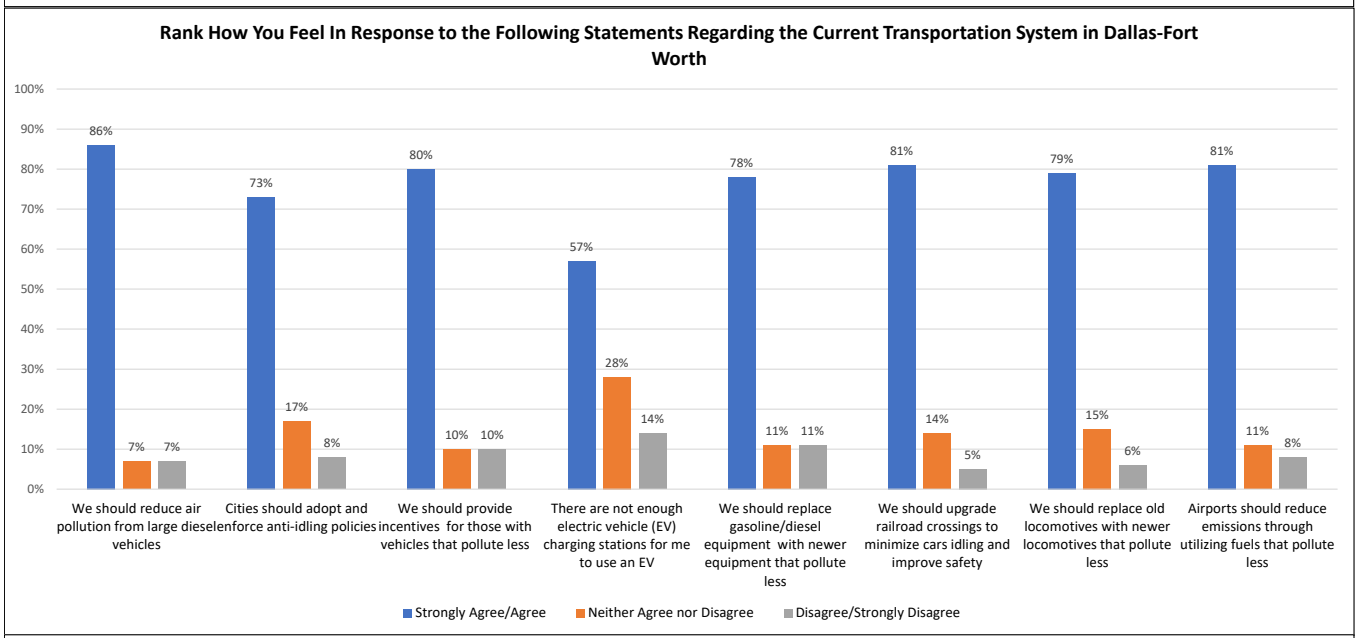
APPENDIX 7 -PUBLIC SURVEY RESULTS

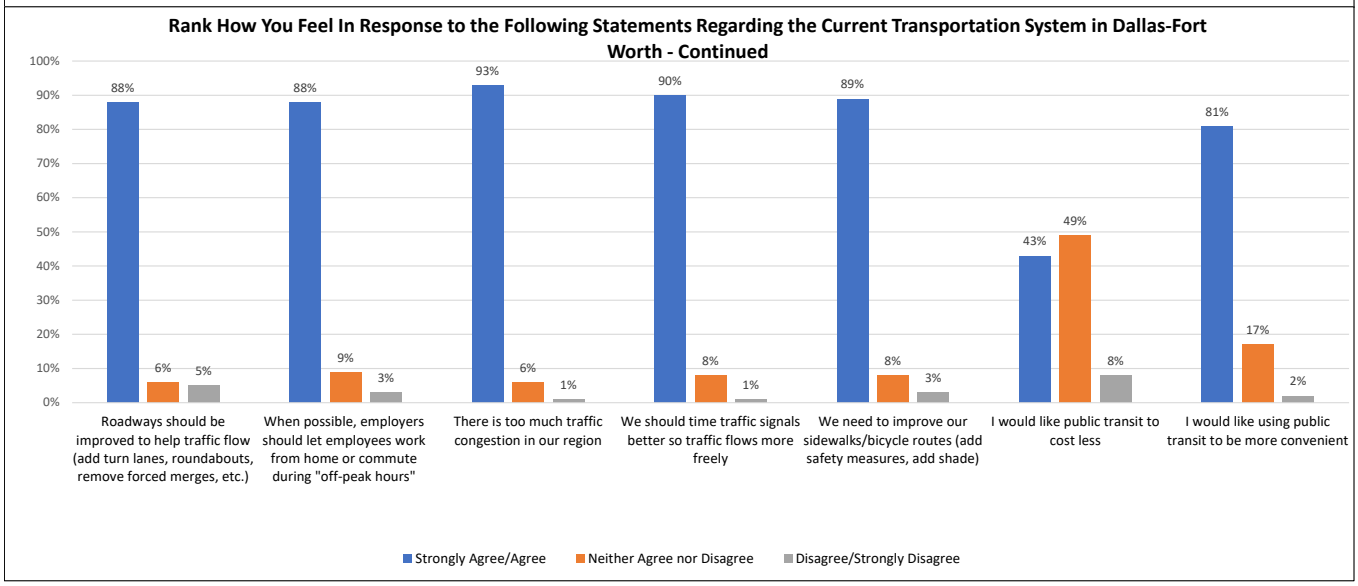
Dallas-Fort Worth Air Quality Improvement Plan: Results From Online Survey for General Public
As of February 9, 2024

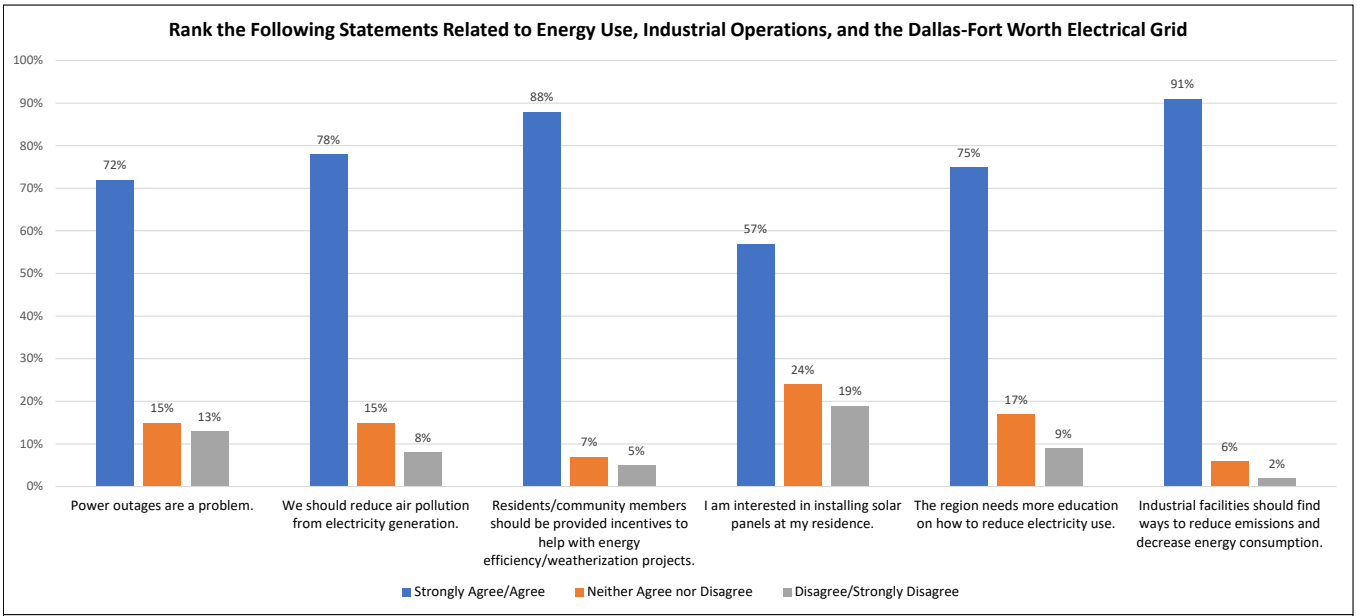


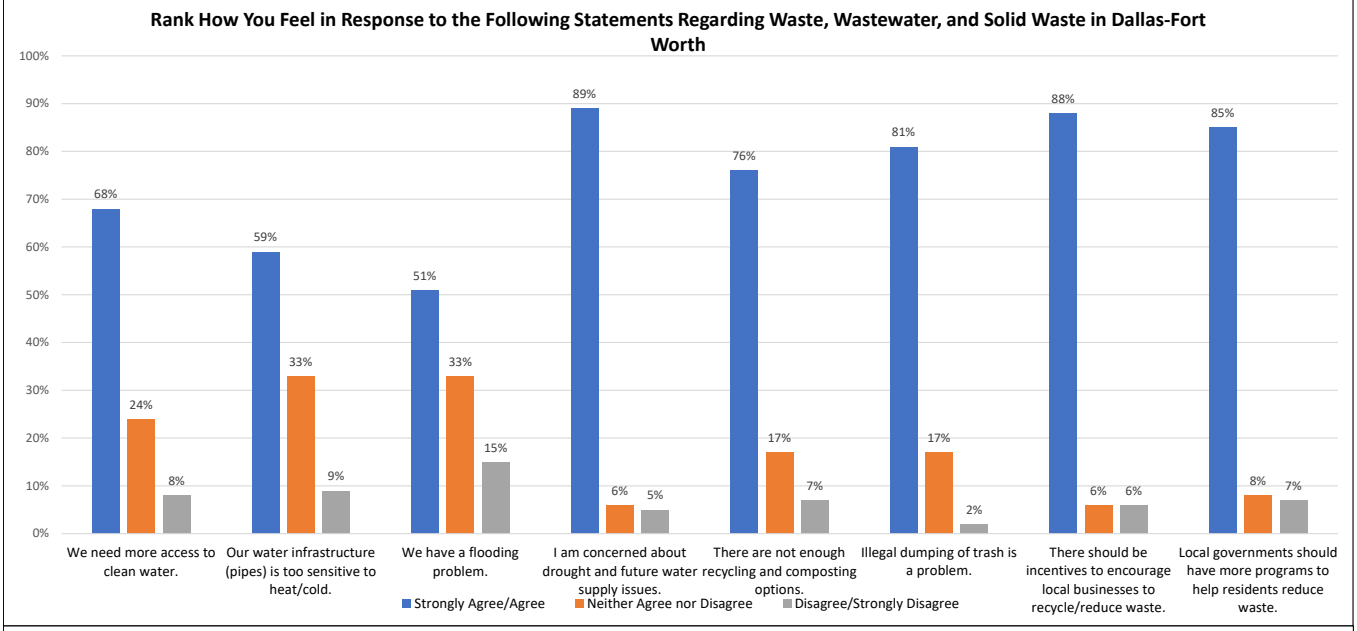


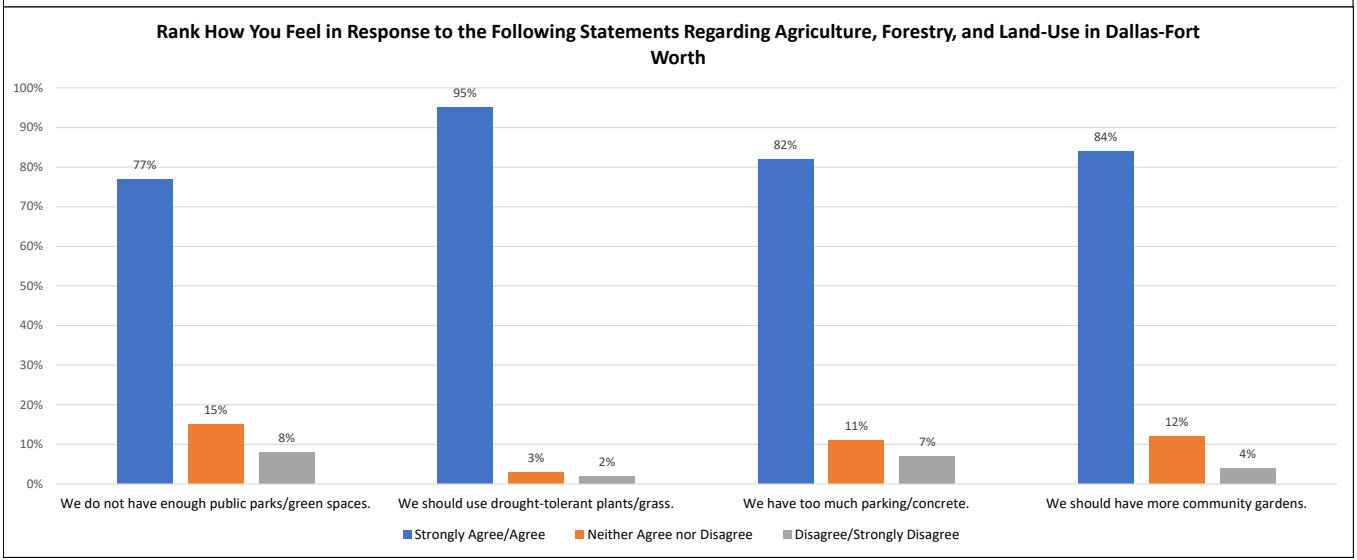

Respondents Biggest Concern
19%
28%
24%
8%
11%
1%
7%
0%
2%
Public Health
Local Air Quality
Climate Change
Extreme Weather Events
Rising Energy Costs
Food Access
Lack of Public Transportation
Job Access
Other


Rank How You Feel In Response to the Following Statements Regarding the Current Transportation System in Dallas-Fort Worth
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
86%
7%
7%
73%
17%
8%
80%
10%
10%
57%
28%
14%
78%
11%
11%
81%
14%
5%
79%
15%
6%
81%
11%
8%
We should reduce air pollution from large diesel vehicles
Cities should adopt and enforce anti-idling policies
We should provide incentives for those with vehicles that pollute less
There are not enough electric vehicle (EV) charging stations for me to use an EV
We should replace gasoline/diesel equipment with newer equipment that pollute less
We should upgrade railroad crossings to minimize cars idling and improve safety
We should replace old locomotives with newer locomotives that pollute less
Airports should reduce emissions through utilizing fuels that pollute less
Strongly Agree/Agree
Neither Agree nor Disagree
Disagree/Strongly Disagree


Rank How You Feel In Response to the Following Statements Regarding the Current Transportation System in Dallas-Fort Worth - Continued
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
88%
6%
5%
88%
9%
3%
93%
6%
1%
90%
8%
1%
89%
8%
3%
43%
49%
8%
81%
17%
2%
Roadways should be improved to help traffic flow (add turn lanes, roundabouts, remove forced merges, etc.)
When possible, employers should let employees work from home or commute during "off-peak hours"
There is too much traffic congestion in our region
We should time traffic signals better so traffic flows more freely
We need to improve our sidewalks/bicycle routes (add safety measures, add shade)
I would like public transit to cost less
I would like using public transit to be more convenient
Strongly Agree/Agree
Neither Agree nor Disagree
Disagree/Strongly Disagree


Rank the Following Statements Related to Energy Use, Industrial Operations, and the Dallas-Fort Worth Electrical Grid
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
72%
15%
13%
78%
15%
8%
88%
7%
5%
57%
24%
19%
75%
17%
9%
91%
6%
2%
Power outages are a problem.
We should reduce air pollution from electricity generation.
Residents/community members should be provided incentives to help with energy efficiency/weatherization projects.
I am interested in installing solar panels at my residence.
The region needs more education on how to reduce electricity use.
Industrial facilities should find ways to reduce emissions and decrease energy consumption.
Strongly Agree/Agree
Neither Agree nor Disagree
Disagree/Strongly Disagree


Rank How You Feel in Response to the Following Statements Regarding Waste, Wastewater, and Solid Waste in Dallas-Fort Worth
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
68%
24%
8%
59%
33%
9%
51%
33%
15%
89%
6%
5%
76%
17%
7%
81%
17%
2%
88%
6%
6%
85%
8%
7%
We need more access to clean water.
Our water infrastructure (pipes) is too sensitive to heat/cold.
We have a flooding problem.
I am concerned about drought and future water supply issues.
There are not enough recycling and composting options.
Illegal dumping of trash is a problem.
There should be incentives to encourage local businesses to recycle/reduce waste.
Local governments should have more programs to help residents reduce waste.
Strongly Agree/Agree
Neither Agree nor Disagree
Disagree/Strongly Disagree


Rank How You Feel in Response to the Following Statements Regarding Agriculture, Forestry, and Land-Use in Dallas-Fort Worth
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
77%
15%
8%
95%
3%
2%
82%
11%
7%
84%
12%
4%
We do not have enough public parks/green spaces.
We should use drought-tolerant plants/grass.
We have too much parking/concrete.
We should have more community gardens.
Strongly Agree/Agree
Neither Agree nor Disagree
Disagree/Strongly Disagree

Comments Provided in Open Text Field for Dallas-Fort Worth Air Quality Improvement Plan Online Survey	
How can the organizations developing the Dallas Fort Worth Air Quality Improvement Plan (the NCTCOG, cities, counties, nonprofits) better engage with communities?	
Comment	**Comment Date**
Using multiple social media platforms and other media options	11/29/2023 2:13 PM
More education about the benefits of solar energy, develop incentives for people to utilize public transportation (when feasible), model waste management practices after Europe (in Switzerland, homes are charged for each bag of trash they produce but recycling is free).	11/30/2023 11:23 AM
More community engagement meetings, where the public can ask questions.	11/30/2023 1:17 PM
there needs to be more interactive engagement/involvement in several different parts of the community, including business and other entities that aren't currently being reached.	11/30/2023 1:52 PM
Meet them at their organizations events rather than asking them to come to you	11/30/2023 4:24 PM
go to their neighborhood association meetings	11/30/2023 4:29 PM
Posting across all social media platforms. Develop relationship with local communities/neighborhood associations.	12/1/2023 8:57 AM
1. Work with groups that don't typically support climate change initiatives in order to best understand their arguments and concerns. 2. Develop and publish metrics that will demonstrate the health benefit of improving air quality (lowered risk of asthmatic events, fewer ozone-action days, etc.) 3. Provide recognition for both private and public organizations that demonstrate either innovative practices or practices that show high involvement from local stakeholders (students, employees, staff, etc.)	12/1/2023 9:15 AM
Town hall meeting in local schools and civic centers.	12/1/2023 10:11 AM
Include groups that are underrepresented in historical and current planning (aka environmental justice communities). Provide Spanish translation at community events. Increase public education on these issues, specifically why they are not just an environmental issue, but a public health issue as well.	12/2/2023 6:31 AM
Make it easier for residents to engage. Surveys like this are great. Send information home with kids through PTAs.	12/4/2023 4:05 PM
Engaging with communities is crucial for the success of any air quality improvement plan, as it helps ensure that the perspectives and needs of local residents are considered. Here are some strategies that organizations developing the Dallas-Fort Worth Air Quality Improvement Plan can use to better engage with communities: 1. **Community Outreach Programs:** - Establish community outreach programs to directly connect with residents. This can include town hall meetings, workshops, and community events. - Collaborate with local community centers, schools, and religious institutions to reach a broader audience. 2. **Communication Channels:** - Utilize diverse communication channels such as social media, newsletters, and local newspapers to disseminate information about the plan and solicit feedback. - Develop a user-friendly website that provides updates, resources, and a platform for community members to express their concerns and opinions. 3. **Language and Cultural Sensitivity:** - Recognize and address language and cultural barriers. Provide information in multiple languages spoken in the community and consider cultural nuances in communication strategies. 4. **Community Liaisons:** - Appoint community liaisons who can act as bridges between the organizations and the community. These individuals should have a good understanding of the community's needs and concerns. 5. **Collaboration with Local Leaders:** - Engage with local community leaders, influencers, and organizations to leverage existing networks and gain the trust of the community. 6. **Education and Awareness Programs:** - Conduct educational programs to raise awareness about the importance of air quality, the specific goals of the improvement plan, and the role of the community in achieving those goals.	12/5/2023 7:30 PM
I sit at traffic lights for several minutes without anyone, or very little, traffic crossing an intersection. The traffic signals should be able to detect idling vehicles and detect little to no cross traffic and change the light patterns. We can put people on the moon but we still sit at a red light for far too long while no one is crossing the intersection. Nice!	12/7/2023 10:36 AM
Listen to community members and do what obviously needs to be done. It's not complicated!	12/8/2023 6:34 AM
Offer paid incentives or meeting opportunities with incentives to attend (i.e. gift cards, gas cards, Starbuck's cards, Kroger cards, etc.)	12/8/2023 11:38 AM
more incentives to attend or participate in meetings	12/8/2023 11:40 AM
Keep traffic moving; greatest problem in my city is drivers that obstruct the flow of traffic.	12/8/2023 10:25 PM
Incentive-based options, community-level events with hands on education	12/11/2023 7:43 AM
Listen to and care about and act on what the real community wants, not just the activists. We need better traffic flow, that means LESS talk of public transit because that will take street space that we are already lacking. It is the North Central Texas Council of Governments jobs to make everyone's lives better and easier and more efficient. Making road less efficient, like having just 2 regular lanes and 2 toll lanes on a stretch of freeway that could easily hold at least 6 lanes, to try to get people out of their cars or to drive less is the exact opposite of your job. Trying to limit my options for cars, roads, and appliances in this fanatical quest to end "pollution" from CO2 is just not based in reason or fact. Chill out about the climate change stuff, or go to California. I fled there for a reason.	12/11/2023 8:28 AM
Look up induced demand and increasing # of lanes as it relates to your traffic flow comment. It's not as simple of an issue to solve as we may think. Also, having public transit helps to provide more alternative options to driving, which can in turn, improve traffic flow.	12/14/2023 2:35 PM
Understand the original comment though (different take on this): many residents are either 1) unfamiliar with this topic or 2) outwardly hostile to the notion of any personal sacrifice to improve it. The latter might not be addressable, but is important to understand how segments of the population will interpret and respond. Millions of people receive a constant feed of misinform on social media with content like "urban planning of any kind is just an attempt to control your lives". This has to be understood and overcome b/c 99% of that is BS fear-mongering that just stands to disrupt making our cities more livable for all.	1/30/2024 1:03 PM
Hold open forum meetings	12/11/2023 6:02 PM

We need smarter solutions for our limited green spaces - how is our green space capturing carbon and increasing air quality?	12/12/2023 11:59 AM
I feel like I need more information to accurately answer some of your questions. How bad is the pollution here how much of it is from engines etc. Need more education on the subjects.	12/12/2023 6:12 PM
More education, outreach, and community listening/learning sessions	12/13/2023 8:49 AM
TOWN HALL MEETINGS WITH INTERNET ACCESS FOR COMMENTS/QUESTIONS; MORE SURVEYS THAT ARE ADVERTISED TO PEOPLE WHO DON'T SUBSCRIBE TO CITY E NEWSLETTERS; DON'T PENALIZE PEOPLE FOR OWNING ELECTRIC CARS BY CHARGING THEM EXTRA FOR REGISTRATION AND RENEWALS LIKE WE CURRENTLY DO; QUIT PUSHING COAL AND NON-RENEWABLE ENERGY SOURCES; EXPAND PUBLIC MASS TRANSIT SYSTEM.	12/13/2023 9:33 AM
It isn't punishing to require EVs to pay taxes like gas cars do. Although I believe EVs should be charged the average amount gas cars get charged on taxes which fund infrastructure. Coal is also on a sharp decline.	1/12/2024 10:05 PM
More open forums in the suburbs	12/13/2023 10:10 AM
stop the urban sprawl from destroying farms and ranches	12/13/2023 1:18 PM
Education. I consider myself well-informed, and until today, I was unaware that there was a Dallas-Fort Worth Air Quality Improvement Plan.	12/13/2023 3:01 PM
Getting a cohort of community leaders that is effective by environmental justice a	12/13/2023 6:27 PM
K	12/13/2023 6:28 PM
There are already rules in place for diesel vehicles to not sit at idle in North Texas, yet Fort Worth disregards this! City vehicles with diesel engines sit for long periods of time at idle. How do you expect to get this under control, when cities aren't held accountable!	12/13/2023 7:04 PM
Is this only City owned vehicles? Yes, this could be handled via 1) education/awareness and 2) some sort of monitoring (so people know they get credit when they comply)	1/30/2024 12:57 PM
Set an example, right now Fort Worth is a major offender!	12/13/2023 7:06 PM
Dallas has higher pollution rates than Ft Worth	1/12/2024 10:06 PM
More education. I agree with the other comments on here - I did not know about the DFW Air Quality Improvement Plan until I read about it in the community impact.	12/13/2023 10:59 PM
Make the development of public transportation a priority. Give citizens a chance to voice concerns on the excessive and haphazard development in Fort Worth that contributes to all forms of pollution.	12/14/2023 5:35 AM
Work with cities and counties to ensure business growth and development does not hinder public health and increase the heat island effect in the DFW area.	12/14/2023 8:16 AM
Fewer young people are engaging on Facebook or other older social media platforms. Ads on YouTube or Tik Tok might be a better way to reach new audiences and younger folks care about pollution and climate change. Work directly with HOAs or community organizations at the neighborhood level.	12/14/2023 8:46 AM
Understand that getting local governments to reduce air pollution represents a cultural change. The NCTCOG needs to lead by example and the necessary cultural change has to occur within the COG before local governments will listen to the COG. The COG needs to achieve Zero Emission Vehicles (ZEV) as soon as possible for its facilities and vehicle fleets and it needs to incentivize COG employees to adopt ZEVs. The COG needs to adopt clear internal zero emission goals with timelines. The COG needs to develop a realistic plan for achieving those goals and timelines and adopt this plan at the highest levels of the COG. The COG should then show case the plan to the extent possible to the local governments and provide full transparency on milestones, results and roadblocks. The COG should not expect to local governments to pursue the cultural change to reduce air pollution unless the COG is willing to pursue this cultural change themselves.	12/14/2023 10:14 AM
I have no recommendations	12/14/2023 10:16 AM
Social media!! Paid social media campaigns can really help reach more people and are well worth it. Partner with corporations, NGO's, and other govt. entities to spread messaging. Also, check out what the City of Denton did for their recycling initiative this year: very successful marketing strategies (audio/social media Ads, "boots on the ground" community engagement in neighborhoods, and billboard advertisements at busy areas of town). Also make us of flyers on people's doors, mailers, etc. to reach neighborhoods where wi-fi is less accessible.	12/14/2023 2:32 PM
Reach out to homeowners associations and ask if you can give live or recorded presentations to their members about the AQIP. Give handouts at the end of the meeting with tips on how they can reduce their energy bills and improve North Texas air quality.	12/14/2023 4:45 PM
Text messages with short tidbits of how to recycle, pictures of drought resistant plants, city help for older cash restricted homeowners to replace thirsty plants. Give seniors potted tomato and kale plants for inside the house near a window. A	12/14/2023 6:04 PM
Social media and neighborhood meetings	12/14/2023 8:32 PM
Have community family events and host question answers to hear the needs of the community and to meet the people you serve.	12/14/2023 10:28 PM
Communicate with local community organizations, such as HOAs and nonprofit groups. And get the word out via local papers like Fort Worth report.	12/14/2023 10:32 PM
Send out more surveys and conduct public meetings and education symposiums, both in person and virtual	12/15/2023 5:01 AM
My impression is that a majority of Texans care little about long term problems (pollution, health, environmental degradation), especially if it costs them an extra few cents. If the case can be made financially for electrifying all systems that use energy (all buildings, lawn care equipment, transportation, industrial/commercial processes, etc.) more Texans will adopt electrified systems. Using financial incentives to offset the initial cost barrier is great, but they need to be easy to access, almost like clipping coupons. Paperwork is often a hurdle many consumers won't attempt.	12/15/2023 12:31 PM
Data driven information based on science. Work with local city representatives so they help communicate plans to their residents. Develop a marketing and communication strategy to reach all demographics and socioeconomic classes. Use cost savings information in communication, for example = tell how much it costs to clean up one illegal dump site. Make things easy for people to do.	12/15/2023 4:42 PM
By encouraging plant-based eating.	12/19/2023 12:52 AM
Social Media	12/19/2023 9:00 AM

Follow best practices in community engagement. Look up the International Association of Public Participation for ideas. Contract with agencies that truly know how to conduct engagement, and make sure they have a documented track record of effective engagement that meets community needs and hopes. There is research that can indicate which groups are doing this well. Perhaps contract with organizations that will subcontract, serving as intermediaries to reach people locally. You need to go to people where they are, don't expect them to come to you. It seems that Fort Worth may not have a strong infrastructure at the neighborhood and community level, which makes this a challenge. For example, I've lived in two different neighborhoods. I've never heard from a council member or been contacted or aware of a neighborhood level association. You might need to boost that civic structure and serve as an example for others in the way that you do this. Digital outreach can also be a part of this. Dedicate a budget to effective social media and digital advertising. Brand your efforts and try out different things to see what is working with each community within DFW. Awareness of the impacts of air pollution on public health are very low around here. For example, there are so	12/19/2023 10:41 AM
Communications campaigns on the public health risks from breathing dirty air, the health impacts from living near fracking and burning natural gas and other fossil fuels.	12/19/2023 2:01 PM
Ban burn off of methane from landfills	12/19/2023 2:26 PM
Ban methane gas burn offs from landfills	12/19/2023 2:27 PM
press publicity, community meetings, social media, more education about the cost advantages of solar panels and electric cars, incentives for improving air quality and disincentives for polluting.	12/19/2023 2:37 PM
host events in local communities and encourage input and engagement from local residents	12/20/2023 12:11 PM
make mass transit more accessible to elderly clean, cheaper and safe for all riders.	12/20/2023 12:26 PM
Increase communication and engagement with local townsfolk. Have more posters of community events happening around town, or more informational posters on how to recycle, be more sustainable. Outreaching to difference audiences -> facebook page, twitter, Instagram, TikTok account.	12/20/2023 12:26 PM
We have a huge problem here in Gunter, where we have 13 batch plants for concrete. We are also facing BNSF installing a logistic center, which would include a fertilizer plant, more concrete, plants, and asphalt as well. Please help us fight this.	12/20/2023 12:44 PM
Helping to improve transparency and common sense explanations of the industries and specific companies that are most contributing to pollution levels. I live next to Holcim Cement in Midlothian, just over a mile away. I can see their smokestacks from my backyard, yet I have no idea what is coming out of them on a daily basis. I should be given fair warning if they intend to exceed their limits for the day so I can plan to be inside. I also believe they should be required to provide public access to all internal reports detailing their burn process including timely, accurate, and third party verified emission reports.	12/20/2023 12:52 PM
Provide ways (newspapers, internet, etc.) for people to communicate ideas on how to reduce pollution. Maybe an offer section on their water/electric bill. Even give customers free ideas on their bill each month on how they can reduce waste/pollution.	12/20/2023 12:56 PM
Social media campaigns to generate awareness, attend/sponsor city and regional events, petition at city council meetings for these improvements (speak for the community/environment)	12/20/2023 1:21 PM
tax stores and fast-food restaurants with drive-thru windows..	12/20/2023 1:41 PM
This idea might be promising. Use of drive through windows = more idling/pollution. BUT there are no incentives for customers to use walk-in counter instead. Perhaps in form of discount or other little benefit that accrues if use indoor counter vs drive through? They also waste a ton of land, so if can get by with smaller or fewer drive through windows, is lower cost to the store owner.	1/30/2024 1:06 PM
Offer incentives to those who are trying to improve the air quality. Even though my Hybrid is only two years old, I still pay the same annual fee for emission testing that older diesel trucks pay. I also have to drive at least 15 miles to find a composting site. Cities like Denton have the option of this waste being picked up curbside.	12/20/2023 1:46 PM
There needs to be more oversight for solar energy. We feel we were taken advantage of in regards to getting solar panels and now we are paying more. I have been very disappointed in how the sales reps have represented the situation.	12/20/2023 2:01 PM
Logical ideas should be publicized. Mandates should never be used. If it makes sense economically businesses and individuals will comply. If it costs more in dollars and difficult effort it will never work. Example: There is no recycling drop off near me. Also, dump use should be free if people make the effort to take things there. Charging extra to use the dump encourages trash dumping in neighborhoods and unmonitored areas.	12/20/2023 2:57 PM
There is tremendous lack of knowledge of what an individual person can do to be part of the solution - continuous education is needed, whiling varying the message on what individuals can do and how every action matters. Small Actions - Big Change and all that. Use all education channels that can be employed. Follow the Blue Zone model - they were really effective at getting their message out while they had funding - churches, schools, community centers, various organizations - they were everyone. This is needed!	12/20/2023 4:57 PM
I think it's not necessarily the possibility to engage, there are connections in place, that maybe should be promoted more, such as the website, flyers, accessibility (not only physical but also timewise), it's the trust that the engagement is actually going somewhere.	12/21/2023 6:00 AM
Improve the trust that engagement is actually going somewhere. Ensure that communities get back to residents when asked questions - work moral improvement. make it more convenient for working people to engage (e.g. social media).	12/21/2023 6:02 AM
Social media and Local TV Commercials	12/21/2023 8:39 AM
1. Advertise this issue widespread and creatively. This is an important issue that deserves funding to effectively inform the public. 2. Be transparent with citizens and talk openly and honestly about issues that exist	12/21/2023 10:27 AM
Regular email updates and surveys	12/21/2023 12:20 PM
Come to the communities of Black and Brown people and talk to us. Due to bad zoning practices these communities bear most of the pollution and illnesses and I should also mention deaths from the industrial zoning in our communities.	12/21/2023 12:20 PM
Help folks see past the initial costs and thru to how these measures directly benefit them and the community.	12/21/2023 3:05 PM
Increase written communications about surveys, their results, planning meetings, projects/initiatives that are done in response to community input. Offer town hall meetings that can be attended both in person and/or virtually. Since Public Improvement Districts (PID) are becoming more popular, have speakers from NCTCOG be guest speakers for their meetings. Same with Rotary, Kwanas, Elks, AMBUCS, etc.	12/22/2023 4:10 PM
By not having industrial buildings come into existence in communities.	12/27/2023 7:17 AM
Knock on doors and go house to house asking residents what their specific needs are or what their ideas are about how to improve air quality in the Dallas-Ft Worth area.	1/1/2024 2:14 PM
Stop fracking and the emissions. Create more rail systems so that people can actually use public transportation. Arlington causes so much pollution with all the dirty fracking and the inability to get to the events without public transportation. Ever see the traffic going into Arlington and out after major events at the stadiums? Miles of cars sitting. Allow plastic, yard waste, food compost recycle at the curb	1/3/2024 12:47 PM
Reach out to all neighborhood associations.	1/3/2024 1:10 PM

Multiple social media platforms to distribute scientific information. Provide publicity incentive for youth and community involvement. Many school organizations, scout troops and churches enjoy getting involved already. With publicity and materials to help educate, they could make a huge impact in the areas of greenspaces and community gardens. Support school robotics teams and competitions to encourage problem solving for new mechanical ideas for climate change and pollution issues. Getting the youth involved will create a deep base for long term support.	1/3/2024 6:59 PM
Na	1/3/2024 7:14 PM
More green spaces	1/3/2024 7:28 PM
This survey is a good start. I have the feeling that Texas does not really care about clean air. The current government doesn't care about how pollution effects people's ability to breath. Asthma, allergies, and other breathing issues are much worse in North Texas now than they were when I arrived int the mid 1970s.	1/3/2024 7:45 PM
Price reducing incentives, clean energy alternatives, offer programs to learn about how to save energy at libraries and community centers. Stricter limits for energy consumption for businesses/facilities that are not in use at the time.	1/3/2024 8:55 PM
No idea, but I'm interested to see how DFW takes this opportunity to lead the world in great living.	1/3/2024 10:28 PM
more public outreach/meetings in local locations. advertise at sporting events and shows (Dickies/Bass Hall/etc.) take surveys on how and where people travel. HOAs, etc.	1/4/2024 7:46 AM
Work hard on making public transportation more accessible and widely usable	1/4/2024 7:47 AM
A trendy social media tie in to drive interest in the topic from those who don't generally care.	1/4/2024 8:23 AM
More community outreach - found out about this on a stray link. Why not a mailer?	1/4/2024 9:20 AM
Explain how to use the recycling programs we have! Better inform the public of the problems we have! Most people I know are unaware. In Costa Rica there are four types of trash receptacles, placed prominently. In S Korea, residents must sort their trash before collection.	1/4/2024 9:21 AM
Promote VIRTUAL engagement! Barely anyone engages or even knows about in in-person meetings because that is not how people operate anymore. Invest in engaging social media and local reporting and provide more meaningful, easy ways for people to submit feedback and track progress online. I found this survey through a news article, but many people, especially younger people, get their news from social media so we should be engaging there. It was also confusing to get here so please invest in better online experiences to encourage engagement. Climate change is critical and urgent so PLEASE invest in local climate action! Mansfield and all cities should have free or cheap composting like Fort Worth. Mansfield has 2 trash pick ups a week yet no compost, which incentivizes us to be wasteful. We need better public transit and more school transit, not solely a focus on individual vehicles. We need to create walkable communities, not just strip mall type areas. We need to hold businesses accountable to their climate inaction and harm. We should not permit so much drilling and fracking, especially in Arlington where it's hurting public health. Build transparency for all these initiatives by joining community events with tables and digital flyers and encouraging sign ups to valuable newsletters, not just boring monthly essays. Anything in person should have a virtual option too! My household will also need a car soon and we can't consider an EV because of the lack of charging on top of costs. Texas has also added costs to having an EV, so local gov should balance that with monetary incentives and should push the state to make those fees more equitable and ensure they do not add them for hybrids (the added fee at yearly checks/registration). It's unfair that there are SO MANY heavily polluting vehicles on the road that cause us such harm yet those doing better for our environment are essentially punished through fees and inconveniences when they're helping the environment we all share. Add more options to recycle grocery bags. Make recycling education clearer. When Mansfield updated their waste provider, the flyers were so poorly done and were confusing on what is accepted or not and there isn't clear info on the frontier app. NYT has done fantastic infographics and articles on what's generally accepted; use that as inspiration to educate. There are such engaging local governments and services on Instagram and tik tok (animal shelters, libraries, city go's), so please look to them as an inspiration and don't just blast info, but make it fun so people actually engage. Send info to registered voters when environmental impacts are on our ballots and put up signs; our local turnout is maybe 8-11% - yikes!	1/4/2024 9:26 AM
Educate on all of the above by any means available to you!	1/4/2024 9:34 AM
Start with engaging. I have never seen an engagement meeting posted at the neighborhood/sub-city level	1/4/2024 10:44 AM
Fix the highway system so there are less "parking on the freeways." (Ex: I-35 and I-30 merge is the worst! Adding toll lanes that cost $5 per trip is NOT the answer. We need more lanes that make traffic flow without stopping.) We need to be planting trees all over the city instead of tearing them down. We have a park in our neighborhood with maybe 4 trees, mostly on the outer edge. Trees help clear the air and provide shade so we don't need as much power to make the A/C work. Finally, our area and all of Texas needs a better health care system, especially for those that don't have a lot of access to it or money to pay for it. Our infant and maternal mortality rates are abysmal, as well as the number of asthma cases that need medical intervention, and there are lots of areas without any local healthcare options, usually in the poorer neighborhoods where transportation is a problem as well. Healthcare clinics can inform people about how to make the air quality better.	1/4/2024 12:51 PM
publish PSAs to educate the community on pollution in their community and on opportunities for people to be involved in the solution. Include measurements of toxic chemicals in our air and water.	1/4/2024 1:56 PM
Make sure that people are aware that there is an Air Quality Improvement Plan. Advertise or share info on ALL channels like NextDoor, Facebook, TikTok, Instagram, etc. Most people do not subscribe to city newsletters and probably don't know anything about NCTCOG or Air Quality. Tell people how they can help as individuals, provide materials to neighborhood, school, and community groups. Offer support for recycling, saving water	1/4/2024 2:04 PM
The focus of air quality improvement needs to come from companies. Focusing on individual communities is not an efficient way to go about improvement.	1/4/2024 2:44 PM
Plan better access to communities with parking and more public transportation.	1/4/2024 3:38 PM
Engage them at the local level - i.e. come to local neighborhood group meetings	1/4/2024 4:25 PM
Use English and Spanish to communicate. Educate on the benefits of these recommendations. Make staff available to attend community level meetings.	1/4/2024 5:53 PM
Through email or text. Information on our city web pages.	1/4/2024 8:14 PM
Leave email updates, use Nextdoor, social media to update us. Utilize AI when possible too.	1/4/2024 8:24 PM
Give us the opportunities to subscribe to newsletters via social media, such as Nextdoor, Facebook, X, Instagram, & even Tik Tok. Post your meetings on youtube and send us the links..	1/4/2024 8:39 PM
Educating people to understand their actions have consequences on others and that most gases and particles that go into the air harm the health of everyone. So many people feel that it will blow away and won't hurt anyone or anything. Pollution is cumulative. It can only be diluted so much. If you wouldn't breathe it, don't put it into the air.	1/4/2024 9:20 PM
We need crosstown buses. I shouldn't have to go all the way to downtown or to the Buckner station to get to SMU, downtown Garland, LoveField, etc. the bus stop is right outside my door but the route (15). is not intuitive or timely. The buses should drive the same common routes we drive to the destinations most commonly visited. I use public transportation much more easily in other cities- D.C, San Francisco, San Diego, New York. It's not as intuitive here as in other cities!!	1/4/2024 9:41 PM
N/a	1/4/2024 9:42 PM

Create more public parks	1/5/2024 8:47 AM
Use clean energy public transportation and improve it's safety so people will use it.	1/5/2024 8:07 PM
Town halls, surveys, social media ads	1/5/2024 10:00 PM
Radio and TV and newspaper ads or stories	1/6/2024 5:01 PM
More community outreach	1/6/2024 5:42 PM
Town halls	1/6/2024 6:09 PM
Listen to local activist groups, especially in communities that are more affected by climate change and pollution.	1/6/2024 6:18 PM
Teach city governments about the dangers of exclusionary zoning, parking minimums, and other anti-density pro-homelessness policy. Make clear good policy, and then run and win elections on it. Talk to city councils and other elected officials. Please do not waste huge amounts of time and money on Community meetings that collect the opinions of angry, rich, and non-representative samples of the community.	1/6/2024 10:36 PM
Build a public transportation system that connects Dallas to cities outside of DfW.	1/6/2024 11:45 PM
	1/7/2024 9:20 AM
Require all new development/construction to save trees, especially our older growth trees. It is heart breaking to see the hundreds of 100+ year old trees cut down to be replaced by 20 1" diameter trees. Trees reduce carbon, provide shade and improve our neighborhoods and city. The number of trees cut down with building along 161 and Bardin alone in Grand Prairie is heartbreaking. The few small replacement trees planted are not adequate. Developers and city staff must be accountable to save trees even if it raises the cost of development a little. Our nature areas are wonderful but they alone are sufficient in trees for the city/ neighborhoods.	1/7/2024 9:50 AM
Do more education on the benefits of recycling and using native plants/grasses in landscaping.	1/7/2024 9:54 AM
Send out TIMELY communications. I just got this email dated 12/20/2023 on 1/7/2024. Send out more communications.	1/7/2024 7:28 PM
A social media account that provides updates on progress would be really helpful!	1/7/2024 8:42 PM
Local visible chapters, local volunteer opportunities, social media, consistency.	1/8/2024 10:06 AM
Social media.	1/8/2024 11:20 AM
teaching civics in school.	1/8/2024 2:20 PM
Offer programs in churches. Quantify monetary savings that result from using EVs, installing solar panels, improving insulation, adjusting thermostats, etc.	1/8/2024 8:35 PM
Town hall meetings	1/8/2024 9:28 PM
Going to impacted communities to engage in plan. I think the communities that are impacted can advocate for air quality in their communities. Hoping their stories	1/9/2024 9:55 AM
More green spaces and use native vegetation along with utilizing reclaimed water/	1/9/2024 10:54 AM
Use Community Action Representatives to come to the NCTCOG by zip code.	1/9/2024 12:39 PM
Social Media, Next Door, Flyers in water bills. I highly doubt that many know about the NCTCOG.	1/9/2024 12:43 PM
Online educational training on demand.	1/9/2024 2:43 PM
We need to stop putting the onus on individuals and rather make structural changes that have a larger impact.	1/9/2024 5:51 PM
blank	1/9/2024 5:53 PM
Maybe go to schools and churches to engage in public education and get ideas from locals as to what is needed in their neighborhoods.	1/10/2024 8:48 AM
Stop spending taxpayer money	1/10/2024 9:01 AM
By implementing the latest in green technology, incentivizing community members to participate & holding public education/training events.	1/10/2024 9:44 AM
By providing participation incentives & having smaller, more localized education/training events.	1/10/2024 9:46 AM
Use the cities' neighborhood associations' contacts to spread the word. Use Nextdoor app. Leave flyers at all religious facilities and community centers.	1/10/2024 11:49 AM
Fund obtaining ACCURATE DATA about the current air quality in DFW -- how bad is it, really? Where real improvement is absolutely necessary, set improvement goals that are cost effective and don't break the bank. Then educate the people in affected communities via email/other electronic/print media about these problems and goals. Enforce the law when people flagrantly break it.	1/10/2024 8:59 PM
First you need to demonstrate that there is an actual problem. This survey seemed to assume everyone thinks there is an air quality problem.	1/11/2024 7:33 AM
Communicate a clear purpose and strategy through news channels	1/11/2024 8:31 AM
Get more citizens involved, knowledgeable, and amped up!	1/11/2024 9:24 AM
Through public forums, community events, social media, & virtual meetings.	1/11/2024 10:29 AM
Public Transit, DFW is way behind other cities, especially in the suburbs away from downtown	1/11/2024 10:42 AM
Coordinate all efforts thru one group. For instance: community gardens, composting, recycling in a one stop on line shop	1/11/2024 11:01 AM
Stop spending taxpayer money on silly incentives and climate training. The climate change narrative is overly dramatized and these "fixes" you propose only further penalize business, hurt our economy and drive inflation. Maybe stop worrying so much about emissions and worry more about your constituents and the real problems they are currently facing like inflation. Everyone charging an electric car only puts more strain on an already fragile power grid, adds pollution to the ground in the form of old worn out batteries needing replaced, and reliance on materials mined in countries like China and Russia putting us more dependent on them. No thanks, stop forcing this narrative down out throats and do something worthwhile.	1/11/2024 11:14 AM
It's annoying because I dislike Chinese dependence but people like you misunderstand. Ignore the climate change stuff, that's fine but some of your points are narrow. Claiming EVs shouldn't be added to reduce power grid strain is just as bad as saying stop building houses with AC or fridges. EVs consumer similar amounts of electricity. Increasing renewable energy with lots of battery storage even if can cause a lot of initial pollution, will always be cleaner in the long term. Old EV batteries are becoming increasingly recycled and I am not aware of batteries being buried under ground so I am curious where you got this from. We can build a domestic or non-Chinese dependent supply chains to make renewables and EVs, so that point is already being addressed. The power grid is always going to increase in demand due to our rapidly growing state. Hence, our privatized energy market shouldn't punish farmers for wanting to use their rightful property to prop up windmills and solar panels. These two things alone generate demand for battery storage which will increase availability of these sources during unstable weather. Solar panels do very good in Texas and even if you want to deny it, its helped the state tremendously. I'm pro business like you are, so people nor Texas should regulate how many solar or wind farms get built. If not you are just as bad as any other crony capitalists "NO WE CANT BUILD A WIND FARM EVEN IF ITS A 100% PRIVATE INVESTEMENT ARGH RENEWABLES AHHH" but then you also say "We can't penalize businesses."	1/12/2024 10:14 PM
Give incentives to the public to sign up for meetings, newsletters, classes	1/11/2024 11:23 AM
more video communications on TicToc / social media	1/11/2024 1:31 PM
The flight path is an issue. Would love more information about how to make our homes more eco friendly. Recycling should be widespread with options in cities to recycle. People need more information about things that hurt the environment - public education about things like releasing balloons etc. - I think if people knew the harm in things they were doing they would stop. So much is just due to ignorance.	1/11/2024 2:00 PM
I am more interested in creating green spaces than in electric cars while we are still burning fossil fuels to create much of the electricity.	1/11/2024 5:58 PM
Stop the creation of toll roads/hov lanes/ controlled access lanes. They EAT UP available space and waste the possibility of having wider/more lanes Public transportation is not useful when it does not run a consistent schedule. For example the TRE has huge holes in its schedule. And it doesn't run on Sunday, can't go to Dallas on a Sunday on a TRE! Why not just make it steady?	1/11/2024 7:13 PM

More charging points for electric cars throughout the city. Incentives for people changing from to clean energy for their homes and cars. Make Fort Worth a more bicycle friendly city.	1/12/2024 5:50 AM
Utilizing all forms of media possible to engage with communities. (Television, social media, newspaper, etc.)	1/12/2024 5:45 PM
Increase privatized transportation like brightline to remove inefficiency from local government and get proven models in Florida to work here. Stop politicizing transportation - like Trinity Metro supporting Pride and other divisive things with taxpayer funds (this causes a lot of people to lose respect for a public entity that goes against their views, stay neutral on social issues). Promote economic benefits of streamlining energy efficiency for houses and industry (long term savings & initial costs and investments).	1/12/2024 10:03 PM
Schedule periodic, high-profile news conferences to promote relevant issues, working ahead with local news organizations to ensure coverage. Also, hold public meetings at gathering places throughout the North Texas region.	1/13/2024 8:28 AM
Hold periodic news conferences to promote relevant issues, working ahead with local news organizations to ensure coverage.	1/13/2024 8:30 AM
"Advertise" to the public, make it easy for people to get involved. Outcomes should include actionable plans that will ACTUALLY HAPPEN and measurable outcomes that the community can track easily.	1/14/2024 9:28 AM
Have communities gather to decide for themselves what solutions they would like to implement to achieve their goals. Then the Have private business (without government financial ties, or even the appearance thereof) make proposals to achieve those goals	1/14/2024 2:05 PM
More outreach and publicity	1/14/2024 11:47 PM
Working with non-profits to get the messages out; education	1/15/2024 8:46 AM
There needs to be more public education surrounding climate change and how that will impact everyone on a personal level. More power needs to be given to the people and not corporations.	1/15/2024 9:43 PM
When it comes to replacing some things with “greener” options, it important to take into account that requesting the construction of those things means the consumption of more new material. It would be important to consider the emissions tied to producing a new products on top of it’s emissions over time, versus continuing to using the item until it needs to be replaced, and then replacing it with that more sustainable alternative.	1/15/2024 10:05 PM
Through more engagement with local city Planning Departments.	1/16/2024 10:00 AM
Stop pretending CO2 is a pollutant	1/17/2024 9:40 AM
Communicate what is being done and what is not being done to improve air quality. I am interested in emissions from natural gas sites in the DFW area. Also site compression engines that run 24/7.	1/17/2024 1:38 PM
We used to celebrate Earth Day in grade school in1968. Those lessons have stuck with me. Public meetings should have Zoom access. Stop blaming air pollution on individuals when the major contributors are corporations and big businesses. Reduce the number of commuters with public transportation and basing registration fees on mileage.	1/17/2024 6:11 PM
Stronger presence at community gatherings such as the arts goggle, tree lighting and parades, better incentive to engage, more education on transportation improvement and acting on those changes	1/17/2024 6:18 PM
Become more involved with the communities themselves. For example, join in the fights to prevent health hazards from going into our neighborhoods.	1/17/2024 11:36 PM
Through blogs and social media and teaching classes and having connections with other people to network start projects that people in the community can engage in and have competitions with cities that would get people in the community involved and interested in wanting to join in and make a monthly event where people can meet up and engage with each other to keep the momentum going possibly having a once a month get together where everyone can bring something to eat or drink sharing kind of like a big picnic so that people can get to know one another and be more involved and active in our community	1/18/2024 4:37 AM
Have additional community meetings at more places. Use commercials, use Next-door, use Facebook and radio.	1/18/2024 6:39 AM
Being more vocal, speaking more, reaching out more, having more programs and community days to engage	1/18/2024 12:19 PM
As an early 30s environmental professional, I believe more involvement from my generation is needed. Many of my friends, who do not work in the sciences, also would love to contribute to making their backyards more sustainable, healthy, and enjoyable for all.	1/18/2024 1:01 PM
Get out in the community more- be at the breweries, school meetings, etc. Public education is so vital!	1/18/2024 1:04 PM
Public transportation should be based on cost per passenger. Public transportation should partner with school districts to consolidate routes where possible.	1/18/2024 3:41 PM
I didn't know it existed before I read this article. I get very little if any information from my own city on these subjects & city programs seem limited to basic single stream recycling for plastic, paper & metal with no mention of sustainability or conservation programs.	1/18/2024 3:50 PM
Give advance notice for meetings re: public comment. I received the notice of this January 18 meeting at 11 pm today, after the meeting occurred!	1/18/2024 11:14 PM
Raising Awareness both in English and Spanish, having dialogue raises awareness.	1/19/2024 7:43 AM
Provide awareness in Spanish by visiting grocery stores, places of worship and social media campaigns	1/19/2024 8:00 AM
Social media.	1/19/2024 7:37 PM
More social media campaigns, visit grocery stores and businesses to promote awareness. Increase out reach to minority communities.	1/22/2024 3:22 AM
Have public engagement meetings at local libraries or parks.	1/22/2024 9:12 PM
I think having spokespersons at local libraries or other public buildings with regular foot traffic could help with engagement. Potentially some kind of pop up chat option on its website XD to talk directly with constituents. Hosting events in local parks, community green spaces. Not necessarily in regards to this air quality improvement thing, but creating a scavenger hunt of sorts through the parks/green spaces in the DFW area to showcase where they are.	1/23/2024 8:35 PM
I think businesses (mostly large) should bear more responsibility for their environmental impact, and should be held to certain standards and then supported by local government to meet those standards. I’d like to see more engagement with business leaders and their customers. Small Businesses shouldn’t be burdened with more responsibility than they can afford, but I think businesses are a place to reach both employees and customers and provide opportunities for positive environmental impact, at minimum, neutralizing any negative impact (e.g., collection of hard to recycle packaging and products at end of life, increased recycle or compost option next to all trash, incentivize energy efficiency/reduction).	1/24/2024 6:53 AM
Please engage with the individuals most negatively impacted by air quality issues - those living near the biggest polluters. They should be heard.	1/24/2024 6:56 AM
Our biggest problem is allowing fracking rigs too close to communities. Fracking rigs release benzene and other cancer-causing agents into the air.	1/24/2024 8:38 AM

Hand out money. ; >) (grants, incentives, rebates to reward product purchases and behaviors that improve air quality) Meet people where they are (community events, schools, churches, sports and entertainment venues, shopping). Develop and implement a media strategy (get a trusted and well known personality to promote air quality benefits and how everyone can help, post on social media, get news coverage)	1/24/2024 11:32 AM
Well, first the survey questions should be broader, less leading, and more aware that issues related to idling and congestion have minimal impact on emissions and the largest factor is vehicle miles travelled per capita and mode share, both of which are highly correlated with highway lane miles or highway capacity per capita.	1/24/2024 12:50 PM
local meetings with Zoom	1/24/2024 1:20 PM
Provide significant financial incentives for housing companies/agencies to prioritize renewable energy implementation.	1/26/2024 10:10 AM
Regulate fracking to make them stop emissions of methane and VOCs into our air. Do not allow the RRC to sue the EPA over the new methane rules. Regulatory agencies should regulate to protect the public not industries that blatantly pollute	1/27/2024 8:07 AM
Trains or monorails along with convenient feeder buses, vans, bikes, etc.	1/28/2024 7:25 PM
knock on doors	1/29/2024 6:09 PM
Perhaps offer in-person information/programs in places where people gather, like schools & churches?	1/30/2024 10:06 AM
Sustained (many years), across many different media, information, combat outdated info & misinformation. Hire firm who is good this including adjusting messages.	1/30/2024 12:51 PM
Provide age-appropriate basic awareness (part of citizenship) through K-12 schools across NCTCOG region so rising generations have basic level of awareness. Include some awareness that our current enviro that requires driving is a challenge. Perhaps show what a *better* future might look like (make it realistic - an adjustment of current patterns - don't use images of Tokyo). Is there a platform to do this? Via each ISD maybe?	1/30/2024 12:55 PM
Make TexRail more intuitive at DFW Airport (look at it from new user perspective). Ever try using Google Maps to find out how to walk to TexRail station? It doesn't know the walking routes to station (so I've given up several times & taking Lyft)	1/30/2024 1:16 PM
They need to actually get out in those communities, esp. the disadvantaged communities and their churches, and have educational presentations as close to their neighborhoods as possible armed with incentives and aid to help improve their housing with energy efficiency and fixes to make their home more livable and in turn their bills lower. Mailers aren't going to get us there. We also need to do something with "slum lords" who will leave rental properties in deplorable conditions to incentivize them to weatherize homes without hurting their renters on rental fees.	2/4/2024 6:15 AM
Getting with every city in the 16 counties and making sure those persons who sit on boards in those counties and cities are present and making sure the people can see tax dollars are work and know who represents and make decisions that aren't elected but appointed.	2/4/2024 2:51 PM
Volunteers visit residents door to door and have a conversation about the issues. Emails and snail mail.will.probsbly get ignored	2/5/2024 12:56 PM
Raise awareness about air pollution. People always think it is "pollen allergies", with the blessing of anti-allergy medicine manufacturers. Truly we have pollution form benzene; arsenic and other poisons from flaring, uranium for South Texas open-air Uranium mining, and any chemical release from anywhere in the US or on Earth (like the train wreck in Ohio 2023). These chemicals do not break down and clouds don't have borders.	2/6/2024 9:57 AM
More meetings and more promotions of meetings	2/8/2024 10:39 AM
More meetings and more promotion for meetings	2/8/2024 10:40 AM
More meetings and more promotion of meetings	2/8/2024 10:44 AM
Share analysis of valuation of submitted plans for grants.	2/8/2024 11:08 AM
Share analysis of Valuation of submitted plans for grants.	2/8/2024 2:09 PM
Please do more social media campaigns in schools and college campuses. Use the media outlets such as NBC, CBS, Univisio, Telemundo, and so forth to promote clean air quality enhancements.	2/9/2024 7:40 AM

Would you like to provide any other feedback?

Comment	**Comment Date**
Thank you for conducting this important work! I look forward to seeing what NCTCOG does next.	11/30/2023 11:23 AM
no	11/30/2023 1:53 PM
No.	12/1/2023 8:57 AM
We are not a municipality but a school district, so our priorities may be slightly different. However, we appreciate the opportunity to provide input.	12/1/2023 9:18 AM
I hope the NCTCOG understands how critical reducing emissions and taking actions to mitigate and adapt to climate change is for the public health in our region, and that direct action and solution implementation will result from these efforts.	12/2/2023 6:32 AM
Time is running out. We need bold, sweeping changes now!	12/8/2023 6:35 AM
no	12/8/2023 11:39 AM
Electric vehicles only seem efficient because people forget that the generation of electricity requires use of other types of fuel somewhere. EV batteries are still a research project; they are not ready for public use. Climate change has always existed and is caused by the sun and the universe itself. It is sheer hubris to think that humans can effect it or that warmer temps a bad (historically they have increase world food production). Public transportation is neither safe nor efficient; talk to people with established systems (many have told me they never feel safe). For American liberty we need personal vehicles and adequate roads. You can build your way out of traffic congestion, and Plano seems to be proving it.	12/8/2023 10:39 PM
I'm on my fifth EV so I guess I'm on my fifth research project. I also have a 100% renewable contract so, unless you're talking about wind or solar, I get a gazillion miles per gallon of gasoline in my EV, that's pretty efficient.	12/14/2023 2:08 PM
Climate change has been around, yes, but it has become more urgent, critical, and impactful. We are seeing more extreme weather events more frequently and with more surprise. We are seeing public health impacts from our environment in more ways. There is a proven tie to humans as outlined by scientists globally in the IPCC reports.	1/4/2024 9:32 AM
"They are not ready for public use" is an utterly false statement. I've owned an EV for more than five years. It is superior to all my (many) previous gas-powered cars in virtually every regard. MIT, Yale, Cambridge and other top research institutions have independently concluded that EVs are far cleaner than fossil-fuel cars even when tied to a grid that's predominantly coal-burning. That's largely because EVs are 3 to 5 times more efficient than fossil-fuel vehicles.	1/13/2024 9:01 AM
As long as Texas glorifies oil and gas consumption, clean air will be out of reach. Electric vehicles are demonized, land is being hoarded by developers and packed with multi-unit housing. Every square inch of Earth is being ------ by these money-grubbing companies like DR Horton, etc. Put a limit on dwellings per acre. Encourage incentives for electric vehicles. Mandate more park land.	12/11/2023 7:48 AM
Where is the accountability for our water contamination?	12/11/2023 6:04 PM
Further greening our electrical grid by increasing renewables + hardening it against the impacts of extreme weather is sorely needed. Natural gas use is NOT the answer to our resilience needs. Further, more education/efforts/investment in building electrification are a fantastic complement to our work on the grid - moving away from fuels in buildings is great for ambient & indoor air pollution, community health, and climate change.	12/13/2023 8:52 AM

DFW AND TEXAS IN GENERAL HAS NOT ATTEMPTED TO MAKE ANY PROGRESS IN REDUCING AIR POLLUTION. THEY HAVE STREAMLINED PERMITTING PROCESSES SO THAT POLLUTING COMPANIES CAN CONTINUE SPEWING FILTH AND HARMFUL SUBSTANCES INTO OUR AIR AND WATER. THEY HAVE ALLOWED FRACKING COMPANIES TO TAKE OUR LIMITED WATER RESOURCES EVEN IN TIMES OF DROUGHT. OUR GOVERNMENT DOES NOT WATCH OUT FOR THE PEOPLE, THEY ONLY WATCH OUT FOR THEIR WALLETS AND BIG BUSINESS.	12/13/2023 9:33 AM
secure the border and stop the flow of criminals, terrorists, and drugs	12/13/2023 1:18 PM
Please bring curbside composting to Fort Worth!	12/13/2023 3:01 PM
No	12/13/2023 6:27 PM
The concept of a 15-minute city is really exciting!	12/13/2023 11:00 PM
Need to make public transportation a realistic alternative to driving. Fort Worth has very limited options that are difficult to use.	12/14/2023 5:39 AM
Trees are a resource that is not appreciated by the city or the county. With continued growth in the area, tree preservation and planting is critical to combating heat island effects and improving mental health	12/14/2023 8:20 AM
Ultimately this is a development issue. The biggest polluter in my area (North FW) is traffic but I wouldn't have to spend so much time in my car if the place I needed to go was closer to me. I can't walk to any businesses safely once I exit my neighborhood due to unsafe crossings/lack of sidewalks or comfortably because the walk spaces are too hot (not enough shade, heat island effect in a massive shopping center parking lot). Development forces me into my car which only worsens pollution and heat.	12/14/2023 8:51 AM
No	12/14/2023 10:16 AM
I bought my fist electric vehicle (EV) in 2015 and I'm on fifth EV since then. I have owned other Plug-in Hybrid Electric Vehicles (PHEV) and Hybrid Electric Vehicles (HEV) but the five I just mentioned were Battery Electric Vehicles (BEV) with no Internal Combustion Engine (ICE). Three of my EVs were Fords and none were Teslas. I believe my experience makes me uniquely qualified to reflect on EV ownership and operations. I feel that the single action the NCTCOG could take that would have	12/14/2023 11:58 AM
When does the survey close?	12/14/2023 2:36 PM
Current self-reporting of GHG emissions is not adequate, we need continuous data collection of GHG emissions from all over the area. Work with local colleges to perform more data collection and reporting.	12/14/2023 10:34 PM
Mass transit is long overdue in the metroplex and in particular in Tarrant County. We should put at least 4 times more funding towards mass transit over road infrastructure projects.	12/14/2023 10:36 PM
Expand the types of plastic that is recyclable	12/15/2023 5:03 AM
Can NCTCOG incentivize industrial and commercial use of thermal energy storage for building heating/cooling as well as process heat (chilled water storage, thermal battery for long duration process heat availability)? Those systems can work as large flexible loads for the grid. They allow large energy consumers to use renewable energy when it is abundant (and cheap) and reduce their consumption when it isn't. We will need load shifting capabilities to economically build the cleanest grid possible.	12/15/2023 12:50 PM
I agree about curbside composting being added in FW. Hold businesses and corporations to the highest standards to protect our environment. The idea that has been sold to us that the responsibility lies on the back of the average person is one of the biggest boondoggle.	12/15/2023 4:44 PM
Animal agriculture is one of the most destructive and unnecessary industries on the planet. Cities should encourage plant-based eating.	12/19/2023 12:48 AM
Stop supporting animal agriculture and fossil fuels.	12/19/2023 12:50 AM
Please don't forget indoor air quality. Improve filtration, ventilation, and increase air exchanges in our public schools. Many of the FWISD buildings have outdated HVAC systems and are located on or near busy roads and railways, and suffer from terrible indoor air quality as a result. Buses and car pick up lines idle just outside the buildings for hours each day. Pollution is a concern. Another concern is public health from the spread of airborne viruses such as COVID, RSV, and influenza. We need to monitor and improve indoor air quality, particularly in public schools, to address pollution and health concerns.	12/19/2023 8:11 AM
Air pollution from the UP railyard combined with that emitted from vehicles using regional highways cause the local air to often stink in the early mornings. Gas-fed grass and leaf blowers are abusive sound polluters and should be banned. By 2030 there will be more plastic filling the world's oceans than fish. Ban use of plastic bags by local retailers, or at least charge customers 50 cents per bag used. Add recycling of plastic bags to FW recycling initiatives. Increase taxes on local farms and ranches, concrete plants, and oil and gas facilities to incentivize shift to less polluting and less water intensive enterprises.	12/19/2023 8:55 AM
We desperately need commuter rail linking Parker, Johnson, and Hood Counties into the Metroplex. We also need an expansion on I-20 to be three lanes both ways all the way past Weatherford to limit daily highway idling.	12/19/2023 8:58 AM
There are a series of train tracks near this dockyards that are literally terrifying to cross. I started crossing the other day when they were all open. By the time I got to the last one, the bar was coming down and the car in front of me was going very slowly over the tracks. I was looking around, trying to figure out whether it would be better to zoom around it or push the other case with my bumper in the case of a train! This is not good design. We need additional public transit infrastructure. Many of the bus stops don't have a sidewalk, seating or a lighted shelter for rain. They are completely inaccessible for some disabled people and a hard choice for people who want to keep their shoes clean. Sidewalk connectivity is also lacking to some of the stops around the downtown area. I do want to say the Fort Worth bus drivers are amazing!	12/19/2023 10:48 AM
Please include indoor air quality standards. This is a win for everybody. Better breathing and data proven reduction in transmission of respiratory illness. There should be an initiative that provides education and equipment to businesses and residential complexes. Can some of these changes be made along with the others that businesses are making?	12/19/2023 10:52 AM
Air quality plans must account for significant point sources of pollution like all the fracking sites and fracking infrastructure that leaks and emits methane and other hazardous air pollutants linked to health issues like asthma, leukemia, cardiac disease, birth defects and higher ground level ozone and all the health issues related to that.	12/19/2023 2:01 PM
No	12/19/2023 2:28 PM
We already have solar panels on our home. The question asking if you want to install solar panels is thus in appropriate for us.	12/19/2023 2:37 PM
we are concerned about how dysfunctional TCEQ is and how it allows industrial pollution to run rampant, without any significant consequence for violators; this hurts the environment and public health as well as interfering with daily enjoyment of life due to noise, odor, dust, etc.	12/20/2023 12:11 PM
na	12/20/2023 12:28 PM
Great idea on this anonymous survey with public comments. I found lots of great information on here!	12/20/2023 12:29 PM
All vehicles should be required to pass an emissions test equal to what they were required to pass when they were new. With improvements in fuel and repair parts they should easily pass. If they are too old to have an original requirement, they should at least pass a visual test.	12/20/2023 1:03 PM
We used to use the TEXRail every time we went to the airport to reduce transportation waste. Within the last year, they have started charging for overnight parking. This system is difficult to navigate and isn't as cost effective when we still have to purchase the train ticket. Work with the city to allow free parking, no matter the length of time when public transportation is being used.	12/20/2023 1:48 PM
I love our city and I am thankful to live in Fort Worth. I do hope we can work together for the good of the whole community and not a select few.	12/20/2023 2:05 PM
Stop pushing ideas that are not scientifically proven. EVs for one.	12/20/2023 2:57 PM

In 2023 there will be over one million electric vehicles sold in the United States. I have been driving electric vehicles since 2015 and I'm currently on my fifth electric vehicle. What's not proven is your postulation that EVs are not proven.	1/5/2024 11:09 AM
Electrical vehicles have all kinds of issues from charging, being too expensive to buy, the battery costs way too much to replace, and you have to use fossil fuels to produce the batteries, plus the mining for cobalt is terrible for the environment. So, I can not support investment into electric vehicles. Fort Worth has lots of city buses that drive around empty or almost empty all day. Texans are not going to spend extra time every day riding a bus. Buses are inconvenient all the way around. We need more man made lakes in Texas. We keep adding people and the water resources need to increase accordingly. Do not put in a ton of regulations that cause the prices of everything to skyrocket. I don't trust the integrity of our electrical grid. Wind and solar are not dependable sources for consistent supply. Keep the power stations upgraded and add more of them, because we have added a ton of people to Texas!	12/20/2023 2:58 PM
We have an air quality problem, the problem has existed for decades and is just getting worse. Your post indicates that you wish to ignore the problem, worse yet you appear to want to reverse the very difficult progress we have already made. Your comments are reactionary without any foundation in fact. The governments know that thinking like yours is socially irresponsible and they have had to pass laws to keep thinking like yours from destroying our environment. Electric vehicles are our future, I'm sorry you find that so difficult. Instead of fighting the trend I recommend that you embrace it and gain experience with electric vehicles before the internal combustion vehicle option is taken away.	1/5/2024 11:04 AM
Keep after it! We need the tortoise and the hare in this endeavor. Engage the development community as well as citizens.	12/20/2023 5:00 PM
I would love to see more green infrastructure, such as incentives for businesses to improve their parking lots (trees, raingardens), and also noise reduction measures along highways such as greened barriers which could also improve AQ and flooding.	12/21/2023 6:00 AM
I would like to see more green infrastructure, such as green roofs, raingardens, greened noise barriers along highways, that could also improve AQ and help with flooding. Maybe incentives for businesses to improve their parking lots (shade, flooding prevention).	12/21/2023 6:06 AM
No	12/21/2023 8:39 AM
Environmental justice is critical to address in the Dallas/Fort Worth area. Marginalized communities have and continue to suffer due to high pollution, industrial growth near residential areas, etc. Local politicians have not responded to environmental justice in an effective manner.	12/21/2023 10:30 AM
During ozone action days, stop all drive through restaurants service. Long lines of idling cars do not help the environment.	12/21/2023 11:18 AM
I think that the City of Fort Worth should come up with plans that does not industrialize communities. The City of Fort Worth has a history of putting industrial development close to residents and that should be stopped. There should be designated areas for industry that is far far away from established residential areas, schools, restaurants, hospitals etc.	12/21/2023 12:20 PM
All vehicles in Texas should continue to be inspected annually to help keep properly maintained vehicles on the road. The inequity, both in Dallas & Fort Worth, for access to goods and services need to be addressed. Health care, housing, food, park and recreation, shopping options all need to be improved in marginalized areas of each city.	12/22/2023 4:19 PM
We must not sacrifice our critical economic driver of the oil and gas industry under the guise of sanctimonious environmental improvement. A strong economy with careful safeguards are our greatest hope for a better future.	12/26/2023 11:12 AM
No	12/27/2023 7:17 AM
I am a longtime resident of Crowley, TX. I've been working in the food delivery industry for the last 4 years. I drive all over the city of Ft Worth. One main concern I have is the heat island effect in and around apartment complexes without any trees. I see a lot of apartment complexes without any trees or shrubbery growing in and around the apartment complex. In some areas of these apartment complexes I could see how the local residents and the apartment building itself could benefit from just simply planting a few trees in and around the apartment complex. These trees would provide shade to the local residents and also shade the apartment complex itself while also sequestering carbon. Digging up parts of the parking lot for the apartment complex may be required to plant some trees. Planting drought resistant trees would also be beneficial.	1/1/2024 2:30 PM
I fully support the rapid development of renewable energy sources, community scale solar, the use of net metering, new building codes, green infrastructure, and	1/3/2024 12:25 PM
No	1/3/2024 7:14 PM
None	1/3/2024 7:29 PM
We need more trees and green spaces. Well maintained roadways. Limit unnecessary traffic.	1/3/2024 8:57 PM
No.	1/3/2024 10:28 PM
DFW is far too car dependent because there is no effective public transit. This needs to be fixed.	1/4/2024 7:48 AM
no	1/4/2024 7:54 AM
Curbside composting or local composting facilities would be nice to have	1/4/2024 9:13 AM
Arlington, Grand Prairie, and Mansfield lack public transport. There are no convenient ways of getting to Dallas, Fort Worth, or the airports without using a personal vehicle.	1/4/2024 9:14 AM
There lacks enforcement on the DART. The trains and buses feel too unsafe to ride, and many people do not pay for the trains.	1/4/2024 9:16 AM
Cities should tighten up enforcement. Encourage people to stop wasting water.	1/4/2024 9:34 AM
We have zero sidewalks in our neighborhood. We have to walk on the street or in someone's yard. Our city actively discourages walking/biking and promotes driving; even absurdly short distances <1 mile.	1/4/2024 11:08 AM
We cannot solve our air quality problems without reducing vehicle miles traveled and addressing vehicle size and weight. Vehicle registration fees should be tied to vehicle weight. Zoning should be revised to allow greater population density and more mixed use to reduce average trip length. Walking and bicycling should be supported by a connected network of safe infrastructure, and mass transit should reduce headways so that it becomes a viable alternative to driving. Government owned car fleets should be equipped with intelligent speed assistance to slow traffic, reducing particulate matter from brakes and tires. Where possible, we should look for opportunities to remove highways. At minimum we should restrict the number of highway expansion projects that induce demand for driving and increase VMT. Any road greater than 4 lanes should be a candidate for a road diet, preferably by converting lanes to either protected bike lanes or BRT. The 85th percentile rule should be abandoned so that speed limits can be decreased more easily.	1/4/2024 1:44 PM
We need tighter control of methane and Co2 emissions from oil, gas and coal industries. Also needed is better protection of aquifers from waste water storage connected with fracking.	1/4/2024 2:02 PM
I think targeting industry with incentives to reduce their pollution output and increasing cost in penalties for pollution they produce. For citizens, I think a PR campaign for awareness to make people CARE is needed. Most people deny the problem or the severity of the problem.	1/4/2024 2:03 PM
There need to be new building codes that focus on resource conservation and reducing the amount of concrete that's contributing to this urban heat island. Keep big trees, offer incentives for solar and green roofing, permeable parking lots, anti bird-strike glass, native plants, etc. The amount of new construction and miles of concrete will continue to diminish our air quality.	1/4/2024 2:04 PM

Include research and incentives for land use policies that are better for air quality. For example, incentivize land use policies that reduce travel distance between residences and where people need to go. Encourage infill and redevelopment in high-demand, high-amenity areas. This, in turn, allows more residents to live where it's easier to walk, bike or take transit than to drive, thereby reducing both traffic emissions and traffic congestion.	1/4/2024 2:11 PM
I am much more likely to walk, bike or take the bus than to purchase an expensive EV and drive in miserable, stressful traffic. Please focus efforts and funding on making it easier and safer for residents to walk, bike and take public transportation. This helps reduce traffic congestion, infrastructure costs, transportation emissions, pavement and concrete from roads and expansive parking lots. Walking, biking and public transportation are also better for public health and household budgets. It's a win-win!	1/4/2024 2:20 PM
Increasing native vegetation would help keep the area cool in hot months and provide resources to native species.	1/4/2024 2:44 PM
Before a building permit is approved, the land should be surveyed for trees so they can be inventoried.	1/4/2024 5:53 PM
We need composting options and true recycling	1/4/2024 5:53 PM
I have never smelled "smog" in the DFW area. That news tagline is misleading. I think that we need to strengthen our electric grid for the growth in the Collin County area, and also to protect against attack. Senator Bob Hall has many great (and low cost) ideas for this. We need to make sure we have the lakes we need for water for the growing population. We are spending way too much of our tax money on low ROI "green" agenda items like electric vehicles and charging stations - when we need more focus on how to make our roadways better and improve traffic flow / commuting time.	1/4/2024 8:14 PM
Here is what Chat GPT has to say about improving our local air quality..... **Support and Advocate for Stronger Regulations:** Encourage and support the enforcement of stricter emissions standards for industries, vehicles, and power plants. Advocate for policies that promote cleaner energy sources and technologies. **Promote Public Transportation:** Enhance public transportation infrastructure to reduce the number of individual vehicle trips. Encourage the use of electric or hybrid vehicles and offer incentives for their adoption. **Reduce Vehicle Emissions:** Implement and enforce vehicle emission testing programs. Promote carpooling, ridesharing, and telecommuting options to reduce the number of vehicles on the road. **Expand Bike and Pedestrian Infrastructure:** Develop and improve biking and walking paths to encourage non-motorized transportation. Implement bike-sharing programs and ensure pedestrian-friendly urban planning. **Tree Planting and Green Spaces:** Increase urban green spaces and promote tree planting initiatives. Trees absorb pollutants and improve air quality. **Air Quality Monitoring and Reporting:** Implement and maintain a robust air quality monitoring system. Make real-time air quality data accessible to the public, allowing individuals to make informed decisions. **Industrial and Construction Regulations:** Enforce strict regulations on industrial emissions and construction activities. Encourage the use of cleaner technologies in manufacturing processes. **Education and Awareness Programs:** Conduct awareness campaigns to educate the public about the sources and effects of air pollution. Promote individual actions that contribute to better air quality, such as energy conservation and responsible waste disposal. Renewable Energy Promotion:	1/4/2024 8:35 PM
Support and invest in renewable energy sources such as solar and wind power. Incentivize businesses and households to adopt clean energy practices. **Local Government Collaboration:** Encourage collaboration between local government, businesses, and community organizations to address air quality concerns. Develop and implement comprehensive air quality improvement plans. **Community Engagement:** Engage local communities in the decision-making process to ensure that policies and initiatives reflect their needs. Foster a sense of responsibility and community ownership in improving air quality.	
The same thoughts that we should have about polluting the air should govern our actions with the water supply. As you wouldn't want to breathe air pollution you shouldn't want to drink water pollution. Some chemicals are very hard to filter out to our drinking water. Think about your actions.	1/4/2024 9:24 PM
No	1/4/2024 9:41 PM
N/a	1/4/2024 9:42 PM
NO	1/5/2024 8:48 AM
Public transportation needs to be more accessible across all of DFW. It is clear that the smog and air quality is visibly worse during weekday rush hours versus holidays when there are less people on the roadway. I only work 1.6 miles from where I live, but I have to drive due to lack of sidewalks and public transportation options in my area.	1/5/2024 8:51 AM
1. City-wide composting systems would be huge in reducing food waste and the emissions that come with it 2. There are so many areas around NTX where trees could solve a lot of problems, especially in lower-income neighborhoods that suffer more from the heat in the summer due to a lack of a tree canopy 3. I have an EV and am lucky enough to charge from my home (powered by my solar panels), but it would be really annoying if I did not have this set-up due to the total lack of a charging infrastructure around town 4. Here in Arlington I am surrounded (literally) by gas wells that continue to emit after the drilling phase and there are more drilling operations being speedily and greedily greenlit without community input from Arlington residents as we speak by the city. With the publishing of the new federal methane rules by the EPA just last month, we need a moratorium on urban drilling in the DFW region until these new methane rules are implemented by the state. Fifteen years of unmonitored and unregulated fracking operations have increased climate harming emissions and taken a severe toll on regional air quality. 5. Provide incentives or plans for restaurants to include at least one plant-based option on their menu.	1/6/2024 7:51 AM
More public transportation!!	1/6/2024 6:18 PM
Large urban trees are wonderful.	1/6/2024 10:49 PM
More realistic green spaces and green spaces that have a purpose to serving the area.	1/6/2024 11:45 PM
This is Texas not Maine, our parks, yards, green spaces should be native to Texas, drought tolerant.	1/7/2024 5:29 AM
I enjoy running and the poor air quality in Tarrant county is a health concern for me, as well as a climate change concern. Thank you for your work on this issue.	1/7/2024 8:43 PM
Yes. It's hard not to encounter diesel emissions and/or two-stroke leaf blower fumes (usually both) when running in FW. Even on the Trinity Trail municipal work vehicles are often fouling the air.	1/13/2024 9:12 AM

The massive amount of both residential and commercial development is destroying the natural wildlife at a devastating rate. Hundreds of acres are being clear cut in just days only to build another massive McMansion, cookie cutter neighborhood where houses sit on top of one another. These huge houses are energy suckers and are inefficient. There seems to be little thought of infrastructure, environmental impact, park-planning, road safety, or land preservation during development. DFW is on its way to be one big cement strip mall and mega neighborhood if things don't change.	1/8/2024 10:15 AM
These comments are in regards to the Barnett shale fracking emissions: 1)Methane emissions from fracking are a major driver of the climate crisis as methane is 87 times more powerful than carbon dioxide as a greenhouse gas in the first twenty years after it is emitted. 2)With the announcement of the new federal methane rules, we ask for a moratorium on urban drilling in the DFW region until these new methane rules are implemented by the state. Fifteen years of unmonitored and unregulated fracking operations have increased climate harming emissions and taken a severe toll on regional air quality. 3) We encourage the immediate adoption of measures to reduce leaks from not only pipelines, but also from ALL sources of methane and associated GHG compounds emissions related to natural gas production including storage tanks, compressor stations, and pneumatic devices. 4) With drilling expanding in the Barnett shale, we ask that electric drilling rigs be universally required and only electric motors be used for any oil and gas related activities. 5)Though we support incentivizing CO2 reductions for industry, we do not support trading emissions credits or "carbon trading". Carbon trading merely shifts the burden of pollution and does not result in true and meaningful emission reduction. 6) We fully support the rapid development of renewable energy sources. community scale solar. the use of net metering, new building codes, green infrastructure, and the adoption of energy efficiency measures to phase out our dependence on fossil fuels. We also ask that a regional climate plan prioritize equity and environmental justice.	1/8/2024 2:19 PM
if air quality is a priority there should not be an unfair fee' tax structure put on EVs. Road use taxes should be based on vehicle weight and miles traveled regardless of fuel used. Do not eliminate auto safety and emissions inspections as they are for the common good.	1/8/2024 5:01 PM
The DART Silver Line passes through several neighborhoods so it is important for it to not pollute the air. Diesel power is not appropriate for this line. There is also more noise pollution from diesel than electric.	1/8/2024 5:04 PM
No	1/8/2024 9:28 PM
We Industrial companies infrastructure plans to provide protection to communities.	1/9/2024 9:57 AM
DFW needs to require utilization of drought tolerant/native plants as well as utilization of reclaimed water for irrigation.	1/9/2024 10:51 AM
Less warehouses more parks	1/9/2024 10:55 AM
TCEQ is not doing a good job of protecting air quality. We need to make sure they enforce permits and limit permit renewals.	1/9/2024 2:44 PM
COMPOSTING	1/9/2024 5:52 PM
Not at this time.	1/10/2024 8:48 AM
It's time to make green initiatives a priority. The best way to engage community participation in project efforts is by providing incentives that reduce the citizen's expense to implement.	1/10/2024 9:52 AM
EVs, solar panels, and renewable energy sources aren't the panacea most people think they are. Climate change is NOT a problem and, as its advocates claim, is NOT based on settled science -- there is no such thing. I wish governmental entities would quit advocating these things and trying to push them down our throats.	1/10/2024 9:09 PM
Wind and solar are unreliable energy sources, and require excessive infrastructure for the amount of energy used. Texas should be looking at nuclear power as well as improving emissions from current gas fired plants.	1/11/2024 7:49 AM
Wind and solar are now the cheapest energy option, and battery storage had begun coming online. Consumers will not pay more for a dirtier option. Trying to derail renewables at this point is like trying to reverse Niagara Falls.	1/13/2024 9:08 AM
Illegal burning of trash is a big problem.	1/11/2024 9:25 AM
The City of Fort Worth does not have enough green space. Too many trees have been CHOPPED DOWN Zandt CLEAR CUT. Every elected official should be certified in an importance if responsible actions with regard to city planning and forestry	1/11/2024 11:02 AM
No	1/11/2024 11:17 AM
There are so many great ideas put forth in the Potential Strategies. Large amounts of methane are released in our neighborhoods by fracking. New gas and oil site installations should be put on hold until the new federal methane rules come into play. New measures should address methane and GHG compound leakage not only from pipes but storage tanks, compressors, and other devices. Electric motors should be used for oil and gas related activities. My electricity went out six times in the last year and a half, once for sixteen hours. This was not Snowmageddon. The pain, anguish, and cost of these events is huge. We need more dependable electrical service. I was a recipient of the weatherization program in Arlington in 2015. This was immensely helpful to reducing electricity usage and cost. From these events	1/11/2024 11:22 AM
We need to make air pollution solutions a priority here. Stop giving businesses loopholes so they can continue to damage the environment and make the health of our citizens a priority.	1/11/2024 2:00 PM
Municipal adoption of fleet EVs is very poor and needs aggressive advocacy by groups like NTCOG. For example, about a decade ago Fort Worth seemed to be making an effort to integrate then-cutting edge vehicles like the Chevy Volt and the Toyota Prius into its fleets. Now, most of what I see are truck-based fuel guzzlers. The worst example is FWPD and its Chevy Tahoe police cruisers. You'd have to work hard to find a thirstier, heavier, clumsier vehicle than this. It borders on civic irresponsibility. Many, many better choices are out there, some of which are zero tailpipe-emissions options. Work directly and aggressively with municipal fleet managers to raise their consciousness and shift their paradigms. Also, please push back publicly on the state's usurious EV registration fee. Most every EV owner wants to help offset the loss in gasoline-tax revenues, but the current fee is outrageous and clearly punitive.	1/13/2024 8:43 AM
Composting, making public transportation a realistic alternative to driving (you will have to market it in a sexy way and make it go have a enough stops and destinations that people can actually use it), native plants instead of invasive lawn (in public spaces), working with people who have $$ to actually implement these changes in drastic ways. Basically being brave enough to re-envision the city (Dallas) and even metroplex so that it can be a sustainable haven for human, animal, and natural life for as much of the future as we can forsee (which is actually lots if people are willing to look at the science).	1/14/2024 9:32 AM
Vehicle exhaust from inefficient vehicles are a problem that needs to be addressed, as well as increased greenery along freeways, streets, and parking lots. Light pollution is also become a problem	1/14/2024 11:48 PM
Add safe bike lanes; add more EV chargers	1/15/2024 8:47 AM

Make public transportation more widely available to connect all cities of the metroplex to one another. Encourage the construction of homes and buildings that are meant for their natural environment, so they can heat and cool naturally. Make cities walkable - to prioritize people rather than vehicles, which can stimulate the economy. Diversify and increase the vegetation growing in our cities - more fruiting trees to capture all the pollen, plants that are native to the area, moving area from the stereotypical lawn to more wild natural that can grow deeper roots that will decrease erosion, increase biodiversity, and cool areas. Encourage the reduction of consumption as recycling can be a very arduous process. Incentivize sustainable business to move into the area. Provide public education on environmental matters. Listen to people, rather than corporations.	1/15/2024 10:00 PM
no	1/16/2024 10:00 AM
Following are more ideas for consideration:	1/16/2024 5:56 PM
We must focus on sustainability even as it is costing more. Industry MUST do it's fair share, including oil and gas!	1/17/2024 9:20 AM
Fort Worth is a city built for cars and not for people. Put electric trams in place until true mass transit is built.	1/17/2024 6:14 PM
Stop cutting down all the trees, they are a natural resource to clean the air. I think some have forgotten the science lessons on the eco system.	1/17/2024 11:30 PM
It seems that the entire eco system is being destroyed across this area. People complaining about wild life, but don't complain when a new highway or housing development goes in.	1/17/2024 11:34 PM
We need to increase public transportation, meaning more commuter and light rail. Stop increasing the motorways. We should Use the Netherlands example of intercity rail Travel. We need to reduce the amount of pavements and concrete lots. The summer months are unbearably hot. Increase the greenery and tree cover to provide shade.	1/19/2024 7:45 AM
Fort Worth needs to expand light rail and commuter rail that links its residents to the surrounding cities. We need more trams and street cars. Stop expanding the freeways. Too many people are dying on our roads. Decrease speed limits. We should have a rail station no more than a 15 - 20 minute walk from our homes just like in Singapore, and the Netherlands. In doing so we will have a healthy population, cleaner air, safer roads, and better quality of life.	1/19/2024 7:50 AM
Fort Worth should consider becoming a world class city and invest more in electrifying its public transport for example we should use electric trams, and light rail all through out the city. Train stations should be accessible by foot. We need to decrease the amount of distance traveled by car. Dallas and Fort Worth need to electrify the TRE.	1/19/2024 7:53 AM
Please make use of the Infrastructure funds provided by the federal government and begin investing in more light rail and trams. Additionally, the local governments need to invest more in green infrastructure and community gardens.	1/19/2024 7:57 AM
Please electrify the TRE and make it a high speed rail. Make intercity travel more convenient and accessible by public transportation. We should link the DART with Fort Worth's TexRail. Trinity Metro must rollout an expensive light rail and tram system all through out the city.	1/19/2024 7:59 AM
Provide low-income residents with air purifiers. Until we reduce the amount of vehicles on the roads, and industry reduces its emissions.	1/19/2024 8:02 AM
We need to change our zoning laws to reduce the amount of parking spaces allocated to projects. Cities need to require new developments to have solar panels. Fort Worth needs to develop an electric rapid rail transit system to serve the city. We need more tree cover in our neighborhoods. Reduce speeds within city limits. Modernize the TRE to be fully electric, run every 15 minutes, and high speed.	1/22/2024 3:25 AM
This is more of a question, but I'm curious to know if the uptick in drone delivery services are seen as better for the environment than other traditional delivery services because I know that's picking up the DFW area.	1/23/2024 8:38 PM
We should push back on huge corporations (e.g., Amazon) trying to expand into this area without holding them accountable for the environmental damage we know they will have. They either need to do better (and be held to it) or be refused future opportunities here.	1/24/2024 6:59 AM
This survey was not easy to complete on mobile.	1/24/2024 7:02 AM
Our biggest problem is allowing fracking rigs too close to communities. Fracking rigs release benzene and other cancer-causing agents into the air.	1/24/2024 8:38 AM
Fracking in urban areas should be ended immediately. No excuses. There are literally gas wells in neighborhoods within earshot of and extracting gas from under homes, schools and day-cares. Methane (natural gas) leaks, and other operations on these sites and pollute the air (plus the land and water), produce nuisance noise, and contribute to asthma (especially in children) and a host of other short term maladies and long term negative health outcomes. "Oil and gas activities in the Barnett Shale area have the potential to emit a variety of air pollutants, including greenhouse gases, ozone and fine particle smog-forming compounds, and air toxic chemicals. The state of Texas has the highest greenhouse gas (GHG) emissions in the U.S., and future federal efforts to reduce national GHG emissions are likely to require emissions reductions from sources in the state. The three anthropogenic greenhouse gases of greatest concern, carbon dioxide, methane, and nitrous oxide, are emitted from oil and gas sources in the Barnett Shale area." Source: https://www.edf.org/sites/default/files/9235_Barnett_Shale_Report.pdf The exponential growth of gas extraction in the DFW area over the last 20 years is degrading our health, contributing to climate change (methane is 80 times more powerful than CO2 at trapping heat in the atmosphere over a 20 year time span), and polluting our air, water, and land. Questions on this survey relate to the electricity grid, energy use, transportation, water, waste and agriculture/forestry. There is non-specific mention of 'industrial operations', but there is no mention of oil and gas operations in urban areas. Any regional air quality plan that does not include removing the 'elephant in our neighborhood' which is gas fracking pollution will be missing the mark.	1/24/2024 12:16 PM
fix all of the leaking oil wells and fracking oil wells. Prioritize ticketing vehicles that obviously don't meet emission standards. Make recycling a law. Strengthen and enforce regulations against companies who pollute (incentives for reduction and fines for the pollution released.	1/24/2024 1:03 PM
fix the leaking oil/fracking wells. Make recycling a law. Make ticketing a priority for vehicles that obviously fail emission standards. Incentivize pollution reduction actions of companies and fine polluters. Clean up the corruption in the Railroad Commission and stop permits for fracking in our neighborhoods. Enforce current regulations for dumping, polluting.	1/24/2024 1:14 PM
fix the leaks in fracking/oil wells. Clean up the corruption at the Railroad Commission and stop fracking permits in our neighborhoods. Prioritize police ticketing vehicles that obviously fail emission standards. Incentivize pollution reduction actions of companies and fine polluters. Enforce existing laws on pollution and dumping. Outlaw plastic shopping bags. Make recycling the law.	1/24/2024 1:20 PM
Build more rails and rail stations. Include Arlington.	1/27/2024 8:07 AM
The City of Ft Worth and the City of Dallas or any other local suburb for that matter could provide trees to local homeowners free of charge. These cities could find and identify homes that have room to plant a tree or trees in and around the homeowner's property. When I drive around the city of Ft Worth and its suburbs I see some homes that have room to plant at least one tree in their yard. Sometimes I see entire neighborhoods that have room to plant at least one tree in almost every yard in the neighborhood. These trees could be acquired from places like The Arbor Day Foundation or The Texas Trees Foundation or even a local plant store that sells trees.	1/29/2024 6:09 PM
public transportation should be available and inexpensive	1/30/2024 10:05 AM

Incentivize NOT using drive-throughs. For stores and for customers. Example: Starbucks could provide some little incentive, points, etc. for orders picked up indoors vs drive through. Not punitive, but a small nudge of an incentive. Also information letting people know that for every minute their car idles, it contributes ___ lbs. of pollution and carbon into the atmosphere.	1/30/2024 1:08 PM
Making tree planting on highway and roadsides the norm. Require tree planting & irrigation for every new or renovated part of highway, city and county road.	1/30/2024 1:11 PM
Cities (FORT WORTH) - encourage tree planting between sidewalk and street. Do not fill that space with utilities. Adjust road & utility design standards to allow.	1/30/2024 1:12 PM
No	1/31/2024 5:14 PM
We need to put a priority on incentives on measures that the state has tried to negate by preventing local ordinances from moving forward. This includes incentivizing decarbonizing lawn equipment and incentivizing developer/builders NOT to cut mature trees and use energy efficient appliances, etc. We need to think of whatever can be done about concrete batch plants. When I think of Joppa and West Dallas, there are railroads literally driving right through their neighborhoods.	2/4/2024 6:20 AM
Yes, it is important that we as board members take our roles seriously and hold ourselves accountable for the 16 counties we represent and the peoples lives we male decisions for. We need less carwashes due to PFAS and local governments need to utilize solar and the elected officials from cities on boards or getting more involved because government isn't just local.	2/4/2024 2:55 PM
Utilize the boards	2/4/2024 2:55 PM
We need to rename of the Texas Railroad Commission.	2/6/2024 10:00 AM
our Sierra Club in Fort Worth will continue to participate in this process.	2/8/2024 11:08 AM
Sierra Club in Fort Worth will continue to participate in this process.	2/8/2024 2:09 PM
Please implement electrified commuter rail that operates off wind and solar energy similar to the Netherlands inter city trains. Modernize the TRE to increase speed and have frequent services. Extend TEXRAIL and DART to suburban communities in the midcitites region. Increase tree cover across Fort Worth.	2/9/2024 7:43 AM

Dallas-Fort Worth Air Quality Improvement Plan: Feedback Received Via Email
As of February 9, 2024

Feedback	Date Received
We are writing on behalf of The Farmlink Project, a national organization with a mission to connect surplus produce to communities in need, reduce carbon emissions, and empower the next generation of young changemakers. The Farmlink Project serves as a "link" connecting the broken supply chains of the agricultural and food access industries in Texas and across the United States. As your agency prepares to allocate funding through the Climate Pollution Reduction Grants, including developing the associated Priority Climate Action Plan, we urge you to prioritize initiatives aimed at combating food loss and waste (FLW). FLW is responsible for 6% of all U.S. GHG emissions and nearly 60% of all landfill methane emissions—making landfills the country's third largest source of methane. Beyond these climate impacts, food waste unnecessarily strains our supply chains and drinking water supply by using nearly one-fifth of all freshwater and 16% of our cropland to grow, process, transport, and cool food we then waste. At The Farmlink Project, we are on track to deliver 200 million pounds of food by the end of 2023, the equivalent of 240 million meals, made possible for individuals in food insecure communities across the United States, while reducing over 200,000 metric tons of CO2e in greenhouse gas emissions. The order of investments should follow the EPA Wasted Food Scale hierarchy, which ranks pathways of addressing food waste based on environmental preferability and creating a more circular economy. According to this hierarchy, funding can prioritize the highest use of food by making investments in food recovery and compost. These initial investments must come before investments in landfill infrastructure. It is vital that policies and programs established through funding disincentivize least preferred pathways and incentivize most preferred pathways established in the EPA's From Field to Bin Report. Donation and upcycling of foods are the most preferred pathways, so funding should prioritize these goals. To support these pathways and maximize impact, infrastructure investments are needed as well. By prioritizing actions that keep food out of landfills and incinerators, while also strengthening landfill emission controls, Climate Pollution Reduction Grants can achieve substantial GHG reductions with multiple co-benefits. Policies and programs that disincentivize food from being landfilled or incinerated (such as food donation or recycling mandates) incentivize greater food waste prevention, while new infrastructure (such as food rescue, food hub, or composting facilities) help businesses and communities donate, upcycle, and recycle more of their excess food. These measures additionally support new jobs, help businesses and individuals cut their food purchasing costs, alleviate food insecurity among low-income and disadvantaged communities, and mitigate the longstanding environmental justice impacts of landfills and incinerators on local communities. We are confident that by allocating a portion of the CPRG grants to projects focused on food loss and waste, your agency can take a crucial step in the right direction, promoting environmental sustainability, economic resilience, and social equity. We would be delighted to offer our expertise, collaborate, or provide further information to assist in the decision-making process. As you draft the Priority Climate Action Plan, we recommend leveraging the Zero Food Waste Coalition's State Policy Toolkit, which provides examples of policies and actions that can be incorporated into climate action plans to keep food waste out of landfills and reduce associated landfill methane emissions. Together, we can make a significant impact on the reduction of greenhouse gas emissions and the improvement of our state's overall sustainability. Thank you for your time and consideration. We look forward to discussing this important matter further and working together to create a more sustainable future.	11/20/2023

NOTE: This was originally received in Spanish and has been translated Hi, here are my public comments for the public transportation campaign staff in the Dallas-Fort Worth area. These are ideas I thought of as I find it especially important to make sure that CULTURE is related to CLIMATE SOLUTIONS. 1. Youth Involvement and Contributions: Youth Advisory Councils: Establish Youth Advisory Councils within transportation planning agencies to provide a platform where they can express their ideas, concerns, and innovative solutions related to transportation. Technology Solutions for Sustainable Transportation: Take advantage of nature in technology among young people by incorporating innovative technologies in transportation systems. Develop applications for real-time updates involving public transportation, bike sharing, and ridesharing, promoting sustainable, and efficient modes of transportation. Educational Programs Connecting Initiatives with Careers in Sustainable Energy: Implement educational programs in schools and communities to raise awareness of sustainable transportation options. Encourage participation in initiatives such as "Walk to School" or "Ride your Bike to Work" days to promote eco-friendly habits from an early age. 2. Environmental Justice for Black and Brown Working-Class Communities: Environmental Justice for Black and Brown Working-Class Communities: Make investing in public transportation infrastructure in historically underserved neighborhoods a priority. Ensure affordable and reliable public transportation options, by connecting these communities to essential services, employment opportunities, and cultural centers. Community Led Planning: Collaborate directly with Black and Brown working class communities in transportation planning processes. Conduct community workshops and outreach to understand the specific needs and preferences. Empower local leaders and organizations to actively participate in decision making and advocate for their communities. Displacement Mitigation: Acknowledge the risk of gentrification and displacement associated with transportation development. Implement policies to protect residents from being displaced due to rising property values. Ensure that new infrastructure projects contribute positively to the local economy without negatively affecting vulnerable populations. Residential properties are tied to public transportation access. 3. Transportation and Food Justice: Urban Agriculture and Community Gardens: Integrate urban agriculture and community garden spaces into transportation planning. Allocate land near transportation hubs to community gardens, allowing residents to grow their own food. Mobile Farmers Markets: Implement mobile farmers markets or grocery transit services that connect transportation hubs to underserved neighborhoods. Ensure that these services are affordable and accept different payment methods, addressing food deserts and promoting food justice. People want to shop for groceries in a sustainable, practical, and equitable way. Incentives for Sustainable Food Distribution: Develop transportation policies that incentivize the use of electric or low-emission vehicles for food distribution. Support local businesses committed to sustainable and equitable food practices. Consider partnerships with local food co-ops and farmers to strengthen the regional food system.	1/8/2024
Good Morning, I wanted to first express my gratitude to NCTCOG for allowing for public input regarding the DFW Air Quality Improvement Plan. I have lived in multiple states and cities with problematic air quality; namely, Salt Lake City, Los Angeles, Syracuse NY, and DFW. In Salt Lake City we experienced many winter “inversions” which makes the air quality terrible for groups that are sensitive. TO combat this, the state took a first step approach that is part of their Air Quality Action Plan. It encourages “government” employees to telecommute or modify their commutes during days when air quality is deteriorating or considered unhealthy. These they call Mandatory Action Days. By rethinking their commutes, employees can help improve air quality, save fuel, reduce traffic, and stay active. Salt Lake City distributes an e-mail Air Quality Action Day notification if the State Department of Air Quality forecasts any Mandatory Action Days in the next 48 hours. The emails include the actions City employees can take to help improve air quality, such as working from home or taking transit. It will also include suggested precautionary measures for employees to take if the air quality is Unhealthy, Very Unhealthy, or Hazardous. I think this type of action could be something that the state of Texas and various municipalities could encourage to reduce emissions as a partial solution to the issues we face in the	1/10/2024
I feel that it is important to put a “face” on the individuals who are affected by poor air quality in the greater DFW area. With 8 million inhabitants in DFW, one could presume that 2 million are children. In Tarrant county alone, with a population of 2 million, there are probably 500,000 children. Two medical studies conducted in Tarrant county [one at UTA College of Nursing and one at Cook’s Children’s Hospital} determined that approximately 20% of Tarrant County's children have asthma. This is double the national and state values. And, I might add, poor air quality affects our elderly population and those other adults with chronic lung conditions such as emphysema, pulmonary fibrosis and chronic bronchitis. This is a public health problem. The biostatics and epidemiology of these diseases could be studied by one of three areas of public health, and/or academic pediatricians or pulmonologist at one of three area medical schools and affiliated hospitals. Thank you for holding the recent hearing, for providing an abundance of information, and for listening intently to our testimony	1/14/2024
In Arlington, we are loosing the original cross timbers post oaks rapidly due to weak tree ordinances and cities easily giving exceptions. We also see Arlington handing out small root bound trees in Styrofoam cups with limited instructions at events. I would estimate that 90%+ die due to lack of citizens knowledge of how to grow therm. I think the handouts make it easy for Arlington to say it has planted many trees. Environmentalists are especially worried about our post oaks vanishing. Climate change has made the last few years very hard on post oaks. Invasive privet forests are also taking over everywhere which sucks moisture from mature trees until they die. The west side of River Legacy Park is a good ex ample. I could go on and on about the problems. Does NCTCOG have a program such as promoting model tree ordinances or educating the public of what we are losing?	1/26/2024

Project Scopes Received for Dallas-Fort Worth Air Quality Improvement Plan
As of March 1, 2024

Sector	Organization	Do [what] at [where]:	Estimated number of sites/vehicles/people/etc.:	Geographical Location/Community Served *(if applicable)*:	Estimated community benefits: *(if known, if not NCTCOG can assist)*	Expected benefits to DAC: *(if known/applicable, if not NCTCOG can assist)*	Existing community engagement/feedback: *(if applicable, if no existing community engagement/feedback, NCTCOG will use public engagement currently being conducted for the DFW AQIP)*	Funding availability: *(other funds which have been or could be used)*	Estimated start date:	Estimated finish date:	Include an explanation on how this can be implemented in ~2025- 2030
Transportation	City of Aledo	Active Transportation Investment Program - Install sidewalks, reconstruct roadway with curb and gutter and install landscaping beds along Pine Street		Pine Street, Aledo, Texas 76008	Encourage and emphasize pedestrian mobility.				1-Oct-24	1-Oct-26	Upon receipt of funds or awarding of funds, City will initiate the design process to be completed within FY2025 as stated above.
Transportation	City of Aledo	Active Transportation Investment Program Install sidewalks within Lasater Subdivision with drainage improvements		Lasater Subdivision, Aledo, TX 76008	Encourage and emphasize pedestrian mobility.				1-Oct-24	1-Oct-26	Upon receipt of funds or awarding of funds, City will initiate the design process to be completed within FY2025 as stated above.
Transportation	City of Aledo	Regional Clean Vehicle Program - City of Aledo is looking to auction off and buy new City Vehicles for Public Work use, this includes medium and heavy duty vehicles.	Currently have 9 vehicles, Aledo is looking to reduce to 6 vehicles.	Aledo, TX 76008	Reduce air pollution.			Approximately $65,000 will be available to replace 1 vehicle			Will need assistance with facilitating the lease or purchase of vehicles. Do not have a price.
Energy/Transportation	City of Fort Worth	Install battery backup at existing 725 intersections @ 10K per intersection. Reduce signal outage to improve safety and operations		citywide				N/A	10/26/2024	9/30/2024	
Other	City of Arlington	Comprehensive air quality monitoring at smart traffic light controllers to quantify reduced emissions by better coordinated traffic signals - Install air quality monitoring devices at any number of Arlington's signalized intersections or other smart roadside technology locations.	anywhere from 1 to 370	potentially the entire City of Arlington, Tarrant County Precinct 2, NCTCOG, the North Texas Region	better quality data for the North Texas Region other benefits identified by NCTCOG.	same as above, hopefully NCTCOG could assist in this area.	N/A	N/A	ASAP	At the least 6 months from start date and at most 18 to 24 months.	As soon as funds are available, we can issue a bid for the work and can issue a notice to procced. The project could certainly be started with funds encumbered in or prior to FY25 however the funds could not be completely expended prior to the end of FY 25. This is all entirely dependent on the number of locations to be deployed, If only 5 locations are chosen then this can certainly be done prior to the end of FY25. However, if 200 locations are chosen, then it would not be possible.
Transportation	City of Arlington	Upgrade traffic signals citywide to minimum NCTCOG standards	350 signals	Entire City	will need NCTCOG's help for a complete list; however, here are some: reduced congestion, reduced emissions, reduced traveler delay, proactive incident response, reduced emergency response time.	All same as to the left	Citizen Satisfaction Survey rated congestion as one of the highest priorities for Arlington.	N/A	ASAP	18 to 24 months after project begins.	As soon as funds are available, we can issue a bid for the work and can issue a notice to procced. The project could certainly be started with funds encumbered in or prior to FY25 however the funds could not be completely expended prior to the end of FY 25.
Transportation	City of Arlington	Develop a Safe Routes to School master plan for all school campuses in Arlington.	approximately 75 more locations	City of Arlington, AISD, MISD, HEBISD, KISD, Various Charter ISDs	increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.	same as community benefits with greater impact.	N/A	potential SS4A grant - to be applied for in FY24, Arlington Annual SRTS Implementation Capital Funding available starting in FY25.	ASAP	12 to 15 months after project start	As soon as funds are available, we can issue an RFQ for the design work with the expectation to start immediately and finish before the end of FY25. If SS4A grant funds are to be used it is not likely that the project could be complete prior to the end of FY25 but it could certainly be complete in FY26.
Transportation	City of Arlington	Improve and expand Arlington's sidewalk infrastructure based on the NCTCOG sidewalk assessment.	dependent on number of locations chosen.	The entire City of Arlington	increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.	same as community benefits with greater impact.	resident requests for ramps or sidewalks	Arlington Annual Sidewalk Bond Funds - approximately $2M per year	ASAP	depends on number of locations chosen and any potential conflicts	As soon as funds are available, we can issue a bid for the work and can implement and complete prior to the end of FY25 depending on the number and complexity of locations chosen.
Transportation	City of Arlington	Upgrade Rail Crossings at the following at-grade crossing locations: Bowen Road, Davis Drive, FM 157/Cooper Street, Center Street, Mesquite Street, Collins Street.	Six sites with four Downtown Arlington locations and one Entertainment District location	UTA, Downtown Arlington, Old Town Arlington, and the Entertainment District	increased pedestrian safety and awareness at RR crossing locations, increased pedestrian access to the Entertainment District and Downtown venues and businesses, other benefits identified by NCTCOG.	same as community benefits with greater impact.	Walkable Arlington improvement requests, and Downtown Arlington Management Corporation's Downtown Master Plan and Capital Infrastructure Priorities for Downtown	Arlington Annual Street Bond Funds and Sidewalk Bond Funds and the Arlington CIP project - UPRR Sidewalk Crossings (at Center and Mesquite)	ASAP - the UPRR Sidewalk Crossings (at Center and Mesquite) project is currently in design and is scheduled to start construction in FY24 or early FY25.	depends on number of locations chosen and complexity of work	As soon as funds are available, we can issue an RFQ for the design work depending on locations chosen. If money is provided for the UPRR Sidewalk Crossings (at Center and Mesquite) project construction phase, that project is starting eminently. The overall project could certainly be started with funds encumbered in or prior to FY25 however the funds would not likely be completely expended prior to the end of FY 25. This would be a multi-year project. The length is entirely based on number of locations chosen and what work is proposed to be implemented.
Transportation	City of Arlington	Install more safe bike facilities in Arlington according to the Department of Transportation's priorities of the Hike-N-Bike Master Plan	dependent on number of locations chosen.	Entire City of Arlington	increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.	same as community benefits with greater impact.	resident requests for bike safe facilities	N/A	ASAP	depends on number of locations chosen and any potential conflicts	As soon as funds are available, we can issue an RFQ for the design work. The project could certainly be started with funds encumbered in or prior to FY25 however the funds could not be completely expended prior to the end of FY 25. This would be a multi-year project depending on the number and complexity of locations chosen.
Agriculture/Natural and Working Lands	City of Arlington	Update landscape requirements - To update landscape requirements in the Unified Development Code (UDC) to allow for the greater use of xeriscaping, native and drought tolerant plants, and other low maintenance landscaping.	City wide		creating a more manageable natural environments, by allowing increased water conservation, runoff reduction, environmental protection, and to allow for landscaping more in tune with the North Central Texas region.	An opportunity to improve the overall look of the areas and community. A reduction in maintenance and costs long-term due to using plants more acclimated to the region. A connection to the environment with use of drought tolerant and native plants, reducing pollution.	will include a combination of the following: existing city feedback already gathered, NCTCOG will use public engagement involving residents as well as working with City Council, Planning and Zoning Commission, and Developers Round Table.		Spring 2025	Winter 2025	As soon as funds are available.
Agriculture/Natural and Working Lands	City of Arlington	Community Gardens - to expand, incentivize, and identify more geographical areas for the expansion of community gardens by updating the Unified Development Code (UDC). Community Gardens are permitted in all zoning categories as Parks and Open Space use. With this update, standards will be updated to allow them as part of single family and multi-family residential landscaping which will benefit the community from proximity and enhancing sustainability. The current code's definition of community garden will be updated.	City wide	The existing community gardens and East Arlington area, while expanding these areas to include more residential areas.	include environmental protection, provide for greater food sustainability, increase food security, and reduce the effects of local food deserts.	An opportunity to grow fresh organic produce and plants. A connection to the environment. A doorway to rewarding physical activity and fresh air. An educational opportunity for families. Neighborhood improvement and companionship.	will include a combination of the following: existing city feedback already gathered (NCTCOG will use public engagement) involving residents as well as working with City Council, Planning and Zoning Commission, and Developers Round Table.		Summer 2025 - June	Summer 2026 - June	As soon as funds are available, we can issue a RFQ for the code update work and proceed with implementation program upon adoption of changes.
Transportation	City of Arlington	Eliminate the at-grade rail crossing at Great Southwest Parkway	one at-grade crossing	East Arlington, Great Southwest Industrial District	This project will eliminate a key at-grade crossing in the middle of the Great Southwest Industrial District. This crossing is currently blocked for more than 60% of the day. Maybe some additional NCTCOG data here to bolster this.	This will allow for trucks to not need to reroute around the blocked crossing through disadvantaged communities and neighborhoods. Maybe NCTCOG has more specific data.	N/A	N/A	ASAP	5 to 8 Years after start	As soon as funds are available, we can issue an RFQ for the design work. The project could certainly be started with funds encumbered in or prior to FY25 however the funds could not be completely expended prior to the end of FY 25. This would be a multi-year project.
Transportation	City of Arlington	Eliminate the at-grade rail crossing at Collins Street	one at-grade crossing	East Arlington, Entertainment District	This project will eliminate a key at-grade crossing in the middle of the Entertainment District. This crossing is vital to moving traffic during special events. maybe some additional NCTCOG data here to bolster this.	This will allow for everyday and event day traffic to enter or leave the Entertainment District efficiently relieving the heavily trafficked disadvantaged communities and neighborhoods. Maybe NCTCOG has more specific data.	N/A	N/A	ASAP	5 to 8 Years after start	As soon as funds are available, we can issue an RFQ for the design work. The project could certainly be started with funds encumbered in or prior to FY25 however the funds could not be completely expended prior to the end of FY 25. This would be a multi-year project.
Transportation	City of Arlington	Update roadways in Arlington to minimize idling and improve safety.	varies on chosen locations.	The City of Arlington, various neighborhoods.	minimizing idling, improving safety, reduced emissions, reduced traveler delay other NCTCOG identified benefits.	same as above along with any NCTCOG identified benefits.	N/A	N/A	ASAP	depends on number of locations chosen and work to be accomplished	As soon as funds are available, we can issue an RFQ for the design work. The project could certainly be started with funds encumbered in or prior to FY25 however the funds could not be completely expended prior to the end of FY 25. This would be a multi-year project. The length is entirely based on number of locations chosen and what work is proposed to be implemented.
Transportation	City of Arlington	Implement higher capacity on-demand/micro-transit vehicles- Arlington would like to supplement our existing On-Demand rideshare service fleet vehicles with larger capacity vehicles to better serve areas and times of high demand. Our existing fleet vehicles are 6 passenger minivans, which work well to meet dynamic needs across our 100 square mile service area. However, there are certain destinations that attract a large number of trips at certain times of day, such as the regional rail station (CentrePort TRE station) during morning and afternoon commute times, where it would be beneficial to have higher capacity vehicles. Ideally these would also be hybrid or fully electric vehicles.	geographical location/community served (if applicable): We would be interested in implementing 5 to 10 higher capacity vehicles for our On-Demand service, which currently has a fleet of approximately 100 vehicles total. This project would serve the entire City of 395,000 residents and 99 square miles.	geographical location/community served (if applicable): We would be interested in implementing 5 to 10 higher capacity vehicles for our On-Demand service, which currently has a fleet of approximately 100 vehicles total. This project would serve the entire City of 395,000 residents and 99 square miles.	The community would benefit from a more efficient public transit option; reduced emissions and air pollution from the use of hybrid and shared vehicles; and reduced traffic congestion due to elimination of single occupancy vehicle use.	Expected benefits to DAC: DAC benefits include increased access to affordable public transit. Many census tracts within the City of Arlington are identified as meeting the CEJST disadvantage thresholds for concerns including workforce development, pollution, transportation, and housing.	Surveys of On-Demand riders reveal that the majority of current riders are from low-income and minority groups, who do not have access to a personal vehicle, and who use the service for essential trips to work, school, and medical appointments. Based on public feedback on transportation service, continued funding and provision of this service has remained a priority to Arlington's City Council.	The existing service is currently funded by FTA 5307 formula funds, City general budget funds, and farebox recovery. The City has also received competitive Transit Strategic Partnership funds from NCTCOG to pilot a dynamic direct route service, which would benefit from larger capacity vehicles.	Larger capacity vehicles could be acquired and operational for the service within 6 months of funding being awarded and received by the City.	The service would continue operations until funding is fully expended.	
Transportation	City of Arlington	Electrify Airplanes: In anticipation of future growth of electric aircraft, the City of Arlington is pursuing electric aircraft charging infrastructure at our National Airport. We would like to install electric charging infrastructure that will be easily accessible for future electric aircraft.	We proposed installing up to four charging stations at the Arlington Airport.	Arlington Airport	The electrification of aircraft would provide community benefits in the form of reduced air pollution and reduced noise pollution.	Many census tracts within the City of Arlington are identified as meeting the CEJST disadvantage thresholds for concerns including workforce development, pollution, transportation, and housing.	The Arlington City Council has made electrification within our City and our transportation services a priority.	The City is currently spending local and federal funds on environmental assessment and design related to installation of charging infrastructure and other operational elements related to electrification of aircraft and plans to build a vertiport to support electric vertical take off and landing aircraft (eVTOL).	The City estimates that we would be able to begin installation of electric aircraft charging infrastructure in 2025.	The City anticipates the completion of electric aircraft charging infrastructure by mid-2026, in time for World Cup games and expected demand for eVTOL trips as part of the World Cup.	
Transportation	City of Arlington	Acquire low emission fleet vehicles and build necessary charging infrastructure to support their use- The City of Arlington would like to convert our existing On-Demand rideshare service vehicles to low or no emissions vehicles. The service currently uses a fleet of approximately 100 six passenger minivans, of which approximately 65% are hybrid gas-electric vans. We would like to convert the entire fleet to all hybrid or fully electric vehicles, which would also require the construction of charging infrastructure to support plug-in hybrid and fully electric vehicles.	Approximately 35 new vehicles would be needed to convert the entire fleet to hybrid or fully electric vehicles. The City does not purchase these vehicles, but they are made available to the City through our long-term, turnkey contract with our transit provider. Sufficient charging infrastructure would also be needed at the fleet facility, located in central Arlington, and a portion of the chargers would also be available to the general public for personal vehicle charging needs.	The On-Demand rideshare service provides an affordable transportation option across the entire City limits of 99 square miles and to Arlington's 395,000 residents, as well as to visitors.	The community would benefit from reduced emissions and air pollution from the use of hybrid and fully electric transit vehicles; reduced traffic congestion due to elimination of single occupancy vehicle use; and increased access to electric vehicle chargers.	DAC benefits include improved air quality and reduced air pollution through the use of hybrid and electric vehicles. Many census tracts within the City of Arlington are identified as meeting the CEJST disadvantage thresholds for concerns including workforce development, pollution, transportation, and housing.	The Arlington City Council has made electrification of our City and transit fleets a priority. Additionally, continued funding and provision of the On-Demand rideshare service has remained a priority to Arlington's City Council.	The City owns the land where the charging infrastructure would be installed and would make the land available for this installation. Additionally, the City has an annual investment of approximately $11 million in the existing On-Demand rideshare service, which would support conversion to hybrid and electric vehicles.	Charging infrastructure and vehicle acquisition could be completed with 18 to 24 months of funding being awarded and received by the City.	The fleet vehicle electrification and charging infrastructure would be installed well before 2030 and would continue to be used indefinitely for the On-Demand rideshare service.	
Transportation	City of Arlington	Identify and implement opportunities to utilize autonomous vehicles to reduce vehicles miles traveled or SOW- Arlington would like to expand our existing autonomous vehicle service, known as RAPID, which operates in Downtown Arlington, to include more vehicles and more geographical areas. As a shared-ride, hybrid electric, autonomous vehicle service, this would provide more transportation options in areas with high transit dependence, reduce single occupancy trips, and reduce emissions.	The existing service area covers one square mile in the core of Arlington's Downtown. We would like to expand the service area to include more residential areas, as well as key destinations such as grocery stores. The service currently uses a fleet of 4 vehicles, which we would like to expand by 2 new vehicles, to have a total fleet of 6 vehicles. The service currently provides well over 100 rides per day, and with a larger fleet and service area, we could serve more people for their daily transportation needs.	The existing service area covers one square mile in the core of Arlington's Downtown. We would like to expand the service area to include more residential areas, as well as key destinations such as grocery stores. The service currently uses a fleet of 4 vehicles, which we would like to expand by 2 new vehicles, to have a total fleet of 6 vehicles. The service currently provides well over 100 rides per day, and with a larger fleet and service area, we could serve more people for their daily transportation needs.	The community would benefit from an expanded public transit option; reduced emissions and air pollution from the use of hybrid and shared vehicles; increased access to essential services and destinations; and reduced traffic congestion due to elimination of single occupancy vehicle use.	The existing RAPID service area and potential expansion areas fall within census tracts identified using the CEJST, with thresholds related specifically to workforce development and pollution. These areas also have a lower median income, higher rate of disability, and lower car ownership than the City-wide averages.	Surveys of RAPID riders and of the general public reveal strong support for the existing service and interest in expanding the service to meet more needs. The vast majority of survey respondents feel safe using the service and would recommend it to others. We have many repeat and frequent riders who use the service to fulfill their daily transportation needs.	The existing service is currently supported by competitive grant funds from NCTCOG, as well as in-kind contributions from the City and its partners. The existing service is currently funded through 2025 and work is underway to secure additional grant funds to continue the service.	Expanded service area and expanded fleet could be launched within 6 to 9 months of funding being awarded and received by the City.	Estimated finish date (include explanation of how this can be implemented in 2025-2030): The service would continue operations until funding is fully expended.	
Transportation	City of Carrollton	Construct hike/bike trail leading from existing Downtown trail to southern City border, neighboring Farmers Branch. .		The proposed trail will span approximately 0.7 mi, primarily along City or DART right-of-way						2 years	
Transportation	City of Carrollton	Install on-street bike lanes at various locations throughout City. Priority is on providing greater connectedness between major existing trails. The span of this project is <u>flexible</u> to the funding received.	up to 8 miles of bike lanes (shown in linked image)							1 year	
Transportation	City of Carrollton	Perform signal timing adjustments at select high-priority and heavily congested intersections throughout the City OR along the full Hebron Parkway corridor. The span of this project is <u>flexible</u> to the funding received.	21 intersections							1-1.5 years	
Agriculture/Natural and Working Lands	City of Dallas	Increase Canopy Cover/Decrease Heat	Urban Forestry Floodplain and Floodway Initiative, including Floodway Management Area Master Plan ($500,000) with an additional $500,000 to advance planting initiatives across the city on public lands and Dallas Floodway Extension/Great Trinity Forest O&M plan ($500,000)								
Agriculture/Natural and Working Lands	City of Dallas	Deploy urban heat island mitigation strategies.	Smart Surface Coalition is analyzing and quantifying the UHI effect for COD, and Martiza Figgy (OEQS) also is conducting NOAA UHI in areas of Dallas. Support is needed on 2nd half of NOAA study.								
Agriculture/Natural and Working Lands	City of Dallas	Implement carbon Sequestration utilizing Grasslands	If implemented, this carbon-negative sequestration method has the potential to remove current annual carbon emissions. Various studies of the potential for prairie carbon storage have shown that the storage rates vary between . 30 and 1.7 metric tons per acre per year.								
Energy	City of Dallas	Install battery-backup for existing Solar PV systems at Fire Station 6, DPD Northeast Patrol, Bachman Recreation Center (increase battery backup capacity), Fretz Park Library, Dallas West Library, Pleasant Oaks Recreation Center, Fire Station 27, Kiest Park Recreation Center, DPD North Central Police Station, DPD Southeast Police Station,									
Energy	City of Dallas	Design, print and deploy energy/water conservation signage in all City facilities									
Energy	City of Dallas	Benchmark building energy consumption using Energy Star Portfolio Manager									
Energy	City of Frisco	Develop a Propane Collection Program, where: residents or VSQG businesses can safely dispose of empty or partially full propane tanks; City staff can safely purge and store remaining propane for reuse in propane-fueled forklifts; and City staff can recycle the metal tanks at the City's Environmental Services facility. Currently, City of Frisco is contracted to pay $25 per tank to extract the remaining propane. However, through the proposed program, the propane collected would not only result in cost savings but would also be reused as fuel for Environmental Services' two forklifts, which are otherwise driven to refuel in Aubrey, TX. Program development includes costs for the equipment (pump, connections, 250 gallon storage tank, and press), enclosure, and staff training. If possible, the propane collection system will be powered by installed solar panels. This operation would result in decreased emissions generated from travel and from residents or VSQG businesses that may otherwise improperly dispose of tanks.		residents and very small quantity generators of hazardous waste (VSQG) businesses					2025	2026	
Energy	DFW Airport	Energy Plaza Resilience Upgrades - rehabilitating parts of its existing Energy Plaza Central Utility Plant (CUP) to serve as a peaking plant to meet Airport cooling needs during hot weather. The cooling components of the Energy Plaza CUP are powered by 100% renewable electricity and will operate in coordination with DFW's new Electric Central Utility Plant (under construction). This project will reduce greenhouse gas (GHG) emissions from refrigerant loss, improve energy efficiency and resiliency, and support passenger and employee comfort during periods of extreme heat in North Central Texas. The project scope consists of two interrelated projects: Rehabilitation of six 5,500-ton centrifugal chillers, and the conversion of their refrigerant systems from R-134a to R513a. This transition will replace a high global warming potential (GWP) refrigerant with a low GWP refrigerant, reducing the GHG impact of refrigerant losses by 56%. Rehabilitation of existing pre-conditioned air (PCA) chiller controls system. The PCA system provides comfort cooling and heating to terminal jet bridges, and the existing equipment is obsolete and unable to reliably operate during extreme heat.	6 chillers					Airport Improvement Program (FAA); Voluntary Airport Low Emissions Program (FAA); Neither of these programs provide adequate funding to support all project costs.	2025	2027	2025 Rehabilitation of six chillers launched; refrigerants transitioned , Rehabilitation of existing PCA chiller controls system launched 2027 Six chillers rehabilitated and recommissioned , PCA chiller controls system rehabilitated and recommissioned , Renewed CUP peaking plant commissioned
Energy	City of Dallas	Conduct a comprehensive energy audit/preliminary energy assessment to identify potential energy efficiency improvements for City facilities									
Energy	City of Frisco	Replace older, inefficient appliances at municipal facilities (fire station(s), City Hall, etc.) with EnergyStar-certified units. This will result in reduced energy consumption from fossil fuel-based utilities									**Complete within 5 yr timeframe**
Energy	Peterbilt	Paint Booth Optimization –New Regenerative Thermal Oxidizer including Heat Recovery System			Significant NOx Reduction;				N/A	N/A	
Energy	City of Dallas	Use an energy services company to implement energy efficiency measures, building electrification, and ongoing energy management for various City buildings									

Project Scopes Received for Dallas-Fort Worth Air Quality Improvement Plan
As of March 1, 2024

Sector	Organization	Do [what] at [where]:	Estimated number of sites/vehicles/people/etc.:	Geographical Location/Community Served *(if applicable)*:	Estimated community benefits: *(if known, if not NCTCOG can assist)*	Expected benefits to DAC: *(if known/applicable, if not NCTCOG can assist)*	Existing community engagement/feedback: *(if applicable, if no existing community engagement/feedback, NCTCOG will use public engagement currently being conducted for the DFW AQIP)*	Funding availability: *(other funds which have been or could be used)*	Estimated start date:	Estimated finish date:	Include an explanation on how this can be implemented in ~2025- 2030
Energy	City of Frisco	Retrofit lighting at athletic fields (Warren Park, Shawnee Park, Phillips Park, YC Park, and Bacchus Park) with energy-efficient LED lighting. There are currently about 220 non-LED light poles that run approximately 4 hours/night, 270 days/year, and each light pole would cost approximately $34,375 to retrofit. Additionally, retrofitting about 20 lighting fixtures in the basketball courts with LED would cost approximately $9,000. Energy savings from switching to LED lights results in less emissions and helps balance the grid, making room for potential implementation of other electric technologies.	220 non-led light poles, 20 lighting fixtures	athletic fields (Warren Park, Shawnee Park, Phillips Park, YC Park, and Bacchus Park)							**Complete within 5 yr timeframe**
Energy	City of Dallas	Implement energy efficiency improvements in City buildings (prioritizing those identified in energy audits/preliminary energy assessments)									
Energy	City of Frisco	Upgrading Exterior Doors for Energy Efficiency - The exterior doors at Dr. Pepper Ballpark/Riders field have worn over time. Replacement of the exterior doors is recommended to improve the facility's energy efficiency by minimizing air infiltration/leakage.									**Complete within 5 yr timeframe**
Energy	City of Fort Worth	Procure energy management information system.		Citywide for Municipal Facilities				None identified	Energy Management Information System	3/1/2029	
Energy	City of Frisco	Variable Frequency Drive Retrofits at Frisco Athletic Center - Retrofit pumps/motors at the Frisco Athletic Center with variable frequency drive (VFD). Approximately 19 motors can be retrofitted: 17 motors at 15-hp or less will cost approximately $7,500 each and 2 motors at 30-hp will cost approximately $10,500 each. Using VFDs' "slow start" and optimized pump control will not only extend motor life but will also result in decreased emissions.	19 motors to be retrofitted	Frisco Athletic Center							**Complete within 5 yr timeframe**
Energy	City of Frisco	Expand replacement of fire station bay doors with faster, more efficient models. Constant opening/closing of bay doors makes it difficult to control variations in indoor temperature. New doors (either bay or folding based on the stations' available space and other operational needs) will decrease open/close times, improve insulation, and could even improve response readiness. The design of the doors will mirror existing Frisco Fire architecture.		Fire Stations							
Energy	City of Frisco	Replace Elevators in Municipal Buildings - Modernize eight elevators (built from 2002 - 2009) within seven municipal buildings (Police Department, Central Fire, Heritage Museum, Frisco Athletic Center, and two parking garages) , which will reduce energy consumption and improve staff/visitor comfort.									**Complete within 5 yr timeframe**
Transportation	City of Dallas	Replace heavy duty diesel vehicles with newer ones which meet newer emission standards	Replace 8 (2012-2018 models) Landfill Transfer Trucks along with the haul trailer. Each tractor averages approximately 40k miles annually.								
Transportation	City of Dallas	Build Infrastructure to support use of low emission fleet vehicles - Southern Quadrant of City	Add (1) Compressed Natural Gas pumps (2 dispensers) to SE Service Center with the intent to procure renewable natural gas (RNG). Additional vehicles in the **southern quadrant of the City** can be converted from diesel to CNG to help reduce emissions.								
Transportation	City of Dallas	Build Infrastructure to support use of low emission fleet vehicles - Northern Quadrant of City	Add (2) Compressed Natural Gas pumps (4 dispensers) to NW Service Center with the intent to procure renewable natural gas (RNG). Vehicles in the **Northern quadrant of the City** have fewer fueling options and travel further out of area to fuel.								
Transportation	City of Dallas	Decarbonize Fleets	Convert existing gasoline police patrol vehicles with 100% battery electric vehicles (BEV) for Dallas Police Central Patrol - Central Business District (30 units).								
Transportation	City of Dallas	Build Infrastructure to support use of low emission fleet vehicles	Add Level II and Level III Charging infrastructure at City Hall Garage, 7800 Stemmons Garage, and LoveField Airport								
Transportation	City of Dallas	Promote and implement idling restrictions	Enhance use of GPS technology to monitor and improve the reporting of vehicle use to include idling and trip/route management								
Transportation	City of Dallas	Replace heavy duty diesel vehicles with newer ones which meet newer emission standards	Enhance our Motor Pool operation by purchasing (10) Hook-Lift Trucks that can convert to multi-use asset by attaching different body elements to the same chassis. The City would reduce the number of total vehicles by 50% with 10 new hook lift trucks replacing 15 older diesel vehicles.								
Transportation	City of Dallas	Install Above Ground Fuel Tanks	Replace (6-9) underground storage tanks at NC Patrol, SE Patrol, and SC Patrol Divisions. Install smaller, 10k gallon above ground tanks at each location								
Transportation	City of Dallas	Catalyst Cleaner to reduce particulate emissions from diesel trucks	Equipment used to clean out Diesel Engine Catalyst particulate filters (DPF) for two locations. Price includes installation. Delivery 3-6 months								
Transportation	City of Dallas	Build Infrastructure to support use of low emission fleet vehicles	Purchase ~30 solar powered EV Charging Stations								
Transportation	City of Dallas	Upgrade traffic signals in the region that do not meet our minimum equipment standard.	Congestion mitigation through downtown signal equipment upgrades, signal retiming, and microsimulation model development and associated analysis to incorporate DART transit mall operations.								
Transportation	City of Dallas	Decarbonize Fleets	Convert existing gasoline vehicles with 100% battery electric vehicles (EV) for Department of Aviation fleet (86 units).								
Transportation	City of Dallas	Deploy electric shuttles at Dallas Love Field Airport	Converting gasoline ground transportation to electric drives, airports can effectively and immediately reduce emissions. Studies show that electric vehicles yield significant savings over time in fuel costs and maintenance, as electric vehicles are much simpler and cheaper to maintain than engines using liquid fuel.								
Transportation	City of Dallas	USTs	Converting USTs to ASTs within Dallas Airport System.								
Transportation	City of Dallas	Modify construction process/materials to reduce emissions impacts	Implement a Pavement **Preservation** Program for Cool Pavement products that preserve pavement, lower surface temperature by 10-12 degrees Fahrenheit, and function as a photocatalyst to reduce greenhouse gas emissions and other pollutants. This product is to be applied on both concrete and asphalt street surfaces within the City of Dallas that are in excellent or very good condition to extend the service life of roads. Complete 220 lane miles of pavement preservation and greenhouse gas reduction from our Pavement Management Model with a product that meets the abovementioned criteria. The project will include the use of air sensors and other tools to help track the reduction of greenhouse gas emissions and other pollutants. The estimated project cost is $21K per lane mile on asphalt streets and $15K per lane mile on concrete streets.								
Transportation	City of Dallas	Modify construction process/materials to reduce emissions impacts	Implement a Pavement **Rehabilitation** Program for Cool Pavement products that preserve pavement, lower surface temperature by 10-12 degrees Fahrenheit, and function as a photocatalyst to reduce greenhouse gas emissions and other pollutants. This product is to be applied on concrete street surfaces within the City of Dallas that are in poor condition and will be restored to excellent condition; therefore, extending the useful life of the street 10 plus years. Complete 50 lane miles of pavement preservation and greenhouse gas reduction from our Pavement Management Model with a product that meets the abovementioned criteria. The project will include the use of air sensors and other tools to help track the reduction of greenhouse gas emissions and other pollutants. The estimated project cost is $360K per lane mile compared to $2.2M for reconstruction.								
Waste, Water, and Wastewater	City of Dallas	Purchase, install and initiate oil sample and recycle program in house	Purchase and train staff on oil analysis and on vehicle recycle equipment and program. Estimate to reduce 387,000 kg CO2 annually (equals 86 gas engines) or merely 1,000,00 miles reduced) and save over $300,000.00 annually Delivery 6-8 Weeks								
Waste, Water, and Wastewater	City of Dallas	Phase 1: Automated Metering Infrastructure (Water meters): Master Plan and Strategic Implementation Design. Time Frame: 1 year	Phase 1: Master Plan and Strategic Implementation Design for Automated Metering Infrastructure (AMI). Replacing or retrofitting all water meters to reduce carbon emissions by reducing daily truck rolls of 60 vehicles. Also allows the customer and utility to proactively locate continuous water usage (potential leaks) on the city and private side.								
Waste, Water, and Wastewater	City of Dallas	Phase 2: Automated Metering Infrastructure (Water meters): Implementation and Deployment. Time Frame for deployment 3-5 years	Phase 2: Implementation and Deployment. Install Automated Metering Infrastructure (AMI). Replacing or retrofitting all water meters to reduce carbon emissions by reducing daily truck rolls of 60 vehicles. Also allows the customer and utility to proactively locate continuous water usage (potential leaks) on the city and private side.								
Waste, Water, and Wastewater	City of Dallas	(no name)	Planning/design for retrofit to water treatment facility to remove PFOS/PFAS from water supply								
Waste, Water, and Wastewater	City of Dallas	Optimize waste collection and transfer networks - upgrade its transfer station network	The Department of Sanitation proposes a significant upgrade to its transfer station network in Dallas, with a focus on enhancing all three existing facilities The plan involves expanding the capabilities of the stations, which presently process only refuse and recycling, to also manage organic waste, particularly vegetative matter. This expansion will markedly reduce carbon emissions by eliminating the need for cross-town transportation of co-mingled bulky and vegetative waste therefore streamlining the process of transporting materials to the landfill for refuse, the recycling MRF for recyclables and in the case of organics directly to the City's planned compost facility at McCommas Bluff Landfill. Further to the increasing of the capabilities of the units to receive organic matter. Sanitation proposes to expand, renovate, and reconfigure the existing aging facilities to optimizing load weights, minimalize unloading and loading times and improve operations within the stations The upgrades will ensure that the transfer stations are equipped to meet future power and emission control requirements.								
Waste, Water, and Wastewater	City of Dallas	Optimize waste collection and transfer networks - Community Recycling Drop-off Center	Sanitation also propose the construction of a comprehensive **Community Recycling Drop-off Center** in North Dallas. Residents currently have up to a 34 mile round trip to the nearest Sanitation facility. Operating at full capacity this new Unit will potentially save over 1m miles of vehicular emissions per year.								
Waste, Water, and Wastewater	City of Dallas	Optimize waste collection and transfer networks - bulking transfer station	With an average intake of over 1000 vehicles per day the customers with 3ton loads or less contribute 43.8% of traffic to the working face but only 11.99% of the tonnage. A **bulking transfer station** located immediately after the entrance to the Landfill proper would reduce these "light " loads going to the working face by 95%. Therefore reducing emissions of vehicles travelling to and from the working face (2.5 to 3.8 mile round trip) , further to this a reduction in dust emissions, emissions due to road maintenance by heavy equipment. Finally it would be a beneficial resource in emissions reductions in times of high usage and or weather events in this period of unprecedent climate change .								
Solid Waste	City of Dallas	The McCommas Bluff Landfill Gas Capture and Management Project is an ambitious initiative aimed at mitigating the release of potent greenhouse gases (GHG) from the McCommas Bluff Landfill (McCBLF), covering an approximate sloped area of 70 acres. The project is designed to capture fugitive Landfill Gas (LFG), which is a mix of roughly 50% methane and 50% carbon dioxide, in addition to small quantities of non-methane organic compounds and rerouting it for potential beneficial use. Methane, being a significant greenhouse gas, has at least 28 times the heat-trapping capability of CO2, highlighting the environmental urgency of this project.	1 Site within the McCommas Bluff Landfill, Dallas TX 75241	This program will be at the McCommas Bluff Landfill, Dallas TX 75241 (MBLF) and will cover an area of approximately 70 acres.	Reduction of air pollution, public health improvement via capture of potential hazardous pollutants		The City of Dallas currently does not hold regular scheduled meetings with the local community around MBLF. However, they do have a robust engagement plan in the case of a "special program" that may potentially affect the local neighborhoods.		25-Feb	26-Jul	**Project Preparation (2025):** Procurement of specialist contractors. Community engagement and feedback through city-planned special program outreach (If required). **Construction Phase (2025-2026):** Specialist contractors to commence slope grading and trenching works. Installation of a 3ft soil cap, leakage lines, and 60 mil. plastic lining. Initiation of regular drone monitoring to establish baseline emissions metrics. **Operation and Maintenance Phase (Post-2026):** Continued employment of the gas leak detection drone system. Routine inspection and maintenance by Landfill Management and specialist contractors.
Solid Waste	City of Dallas	Reduction of GHG Emissions through improving The Transfer Stations. The Department of Sanitation proposes a significant upgrade to its transfer station network in Dallas, with a focus on enhancing all three existing facilities The plan involves expanding the capabilities of the stations, which presently process only refuse and recycling, to also manage organic waste, particularly vegetative matter. This expansion will markedly reduce carbon emissions by eliminating the need for cross-town transportation of co-mingled bulky and vegetative waste therefore streamlining the process of transporting materials to the landfill for refuse, the recycling MRF for recyclables and in the case of organics directly to the City's planned compost facility at McCommas Bluff Landfill. Further to the increasing of the capabilities of the units to receive organic matter. Sanitation proposes to expand, renovate, and reconfigure the existing aging facilities to optimizing load weights, minimalize unloading and loading times and improve operations within the stations The upgrades will ensure that the transfer stations are equipped to meet future power and emission control requirements.	3 Transfer Stations (Northwest Transfer Station, Southwest Transfer Station, Northeast Transfer Station)7 pieces of Heavy Equipment, 12 semi-trailer Combos, 4 to 5 static heavy equipment. 2 camera systems, 5 electronically linked Scales	The SW, NE, NW, N, S regions of the City of Dallas	The new transfer station plan will offer a host of community benefits. Reductions in vehicular emissions, Heavy vehicle traffic, and noise will be definite improvements in the overall environmental quality of the areas surrounding the facilities and their supporting Road network. Moreover, the decrease in greenhouse gas emissions from the more efficient routing, machinery and transfer stations aligns with efforts to mitigate climate change. The provision of more convenient citizens drop-off centers will have enhanced accessibility for residents, while the increased scope in accepted materials (HHW?) could contribute to better waste management practices. These benefits will have a positive impact on the surrounding communities and the City's overall sustainability goals.		Sanitation Services have implemented a strategy that leverages both physical infrastructure (transfer stations) and digital platforms (City's website and social media (example: Next-door)) to engage with and inform the community. While there are no formal scheduled meetings with local communities, the Sanitation Department maintains a strong connection with the residents. The City's "Free Disposal" program, attracting around 60,000 visits to the transfer stations, fulfills an essential logistical role and provides a direct, tangible service to Dallas residents. Is a proactive approach by Sanitation Services to encourage proper waste disposal habits among the citizens, thus promoting environmental stewardship. In addition to this, the use of the City's website and social media platforms like Next-door for communication serves a dual purpose. First, it ensures that residents are kept up to date with any changes or improvements in the sanitation services. Second, it has fostered a sense of community around shared responsibilities and opportunities to participate in maintaining the cleanliness and health of the local environment. Consistent and clear communication through trusted and widely used channels ensures that even without formal meetings, the sanitation department remains responsive and transparent to the needs of Dallas residents. This approach also highlights an understanding of the changing dynamics of community engagement, where digital presence does complement and sometimes even replace the need for traditional in-person meetings. But we like meeting our neighbors!		25-Feb	30-Oct	The City of Dallas, through its Comprehensive Environmental & Climate Action Plan (CECAP), in conjunction with the Sanitation department's Solid Waste Management Plan, is taking a proactive stance on environmental sustainability and climate action. This approach is a strategic and multifaceted effort to significantly reduce greenhouse gas emissions through several initiatives in the waste management sector.**(1) Collaborative Execution:** To achieve these targets within a specific timeframe, there is a plan to leverage the city's broader commitment to fighting climate change for assistant within the city's organization. But also, by engaging specialized external vendors to supply the necessary technology and expertise and creating a project dedicated multi-departmental team to ensure the various sections of this plan are completed on time and on budget **(2) Upgrading Transfer Stations**: The plans to expand and upgrade the city's three nearly 40-year-old transfer stations are substantial. These upgrades are not only intended to handle a greater volume of waste but to do so in a manner that greatly reduces environmental impact. **(3) Acceptance of Source-Separated Organics**: Allowing all three stations to accept source-separated organics (vegetative matter) will likely lead to several benefits. It will make the process more efficient and enable the diversion of organic waste from landfills to more sustainable processing methods like composting. This, in turn, avoids the methane emissions that would otherwise result from the decomposition of organic materials in landfills**. (4) Reduction in Road Miles and Vehicle Emissions**: By accepting a wider variety of materials and processing them more effectively, there will be a reduction in the number of trips needed to transport waste. Fewer road miles translate to a direct reduction in vehicular emissions, aligning with climate action goals. **(5) Infrastructure and Equipment:** Floors and other structures within the transfer stations will be improved to enhance environmental performance, and the deployment of hybrid-powered heavy equipment will further reduce fossil fuel consumption and emissions. This demonstrates an investment in not only how the stations function but also the tools they use to operate. **Closing:** Such comprehensive and detailed plans reflect Sanitation's and the City of Dallas's dedication to environmental stewardship. By moving towards more sustainable waste management practices and leveraging new technologies, the City is taking measurable steps to mitigate its contribution to climate change. This approach showcases the potential for local urban planning and service delivery to play a significant role in achieving broader environmental goals.

Project Scopes Received for Dallas-Fort Worth Air Quality Improvement Plan
As of March 1, 2024

Sector	Organization	Do [what] at [where]:	Estimated number of sites/vehicles/people/etc.:	Geographical Location/Community Served *(if applicable)*:	Estimated community benefits: *(if known, if not NCTCOG can assist)*	Expected benefits to DAC: *(if known/applicable, if not NCTCOG can assist)*	Existing community engagement/feedback: *(if applicable, if no existing community engagement/feedback, NCTCOG will use public engagement currently being conducted for the DFW AQIP)*	Funding availability: *(other funds which have been or could be used)*	Estimated start date:	Estimated finish date:	Include an explanation on how this can be implemented in ~2025- 2030
Transportation	City of Denton	Implementation of Traffic congestion and quality improvement initiative through Road Safety and Bike-Ped Improvements at Duchess and Loop 288 (I-35E) - Developing a signalized intersection at Duchess Drive and Loop 288 East of I-35, including bike-ped and road safety improvements for Bike-Ped crossing for the bike trail extending from Duchess across Loop 288. linked image illustrates the Map of the proposed project. Factors: • Air Quality Improvements • Improved Access to Activity Centers • Improved Multimodal Access (Bike Lanes and Trails, ADA, Sidewalks) • Improved Intersection Safety for All Users			• Air Quality Improvements • Improved Access to Activity Centers • Improved Multimodal Access (Bike Lanes and Trails, ADA, Sidewalks) • Improved Intersection Safety for All Users				1/1/2025 ** including contracts/design/procurement/construction/closeout and final payments made	Dec-29	
Transportation	City of Denton	Bike Lane Striping and Road Safety Enhancement (UNT – Denton Downtown) Implementation of Traffic congestion and quality improvement initiative by adding on-street Bike Lanes for better bike-ped connectivity per City of Denton Mobility Plan guidelines, improved road safety, and ADA accessibility for University of North Texas Students for bike trips originating at the University of North Texas Campus and traversing through Denton Downtown terminating at the Denton Square. Linked image illustrates the Map of the proposed project			Factors: Air quality improvements Improved connectivity for access to activity centers Improved multimodal access (Bike Lanes, ADA, Sidewalks) Improved multiple intersection safety for all road users Improved Access to Denton Historic District				1/1/2025 ** including contracts/design/procurement/construction/closeout and final payments made	Dec-29	
Transportation	City of Denton	Bike Lane Striping and Road Safety Enhancement (TWU – Denton Downtown) Implementation of Traffic congestion and quality improvement initiative by adding On-Street Bike Lanes for better bike-ped connectivity per City of Denton Mobility Plan guidelines, improved road safety, and ADA accessibility for Texas Woman's University (TWU) students for bike trips originating at the Texas Woman's University Campus and traversing through Denton Downtown terminating at the Denton Square. Linked image exhibit C illustrates the Map of the proposed project.			Factors: Air quality improvements Improved connectivity for access to activity centers Improved multimodal access (Bike Lanes, ADA, Sidewalks) Improved multiple intersection safety for all road users Improved Access to Denton Historic District				1/1/2025 ** including contracts/design/procurement/construction/closeout and final payments made	Dec-29	
Transportation	City of Fate	Transportation System Optimization and Connectivity - Double Roundabouts on Hwy 66		roundabout #1 would be placed at SH 66 & Fate Main Pl, and roundabout #2 would be placed at SH 66 & William E Crawford Ave	These two roundabouts would vitally change the traffic patterns throughout Fate's Downtown and allow for improved air quality as a result. With reduced idling times, smoother traffic flows, lower fuel consumption, and fewer vehicle starts and stops this would be a critical step for the City of Fate to decrease emissions in this area.			N/A	n/a	n/a	
Transportation	City of Fate	Active Transportation Investment Program - Fate Sidewalks & Trails: increase connectivity of Rockwall County cities for residents by improving biking and pedestrian infrastructure specifically. This would be between Fate, Royse City, and Rockwall, but there is priority for a trail connection between downtown Fate and downtown Royse City.		downtown Fate to downtown Royse City (specific location can be found on the map linked)	allow citizens throughout the area to use alternate means of transportation to travel in Fate, Royse City, and Rockwall to arrive at their destinations; if only 25% of the secondary trail could be funded with this grant assistance, the city could begin (the $505,000 is just for the secondary trail costs and 25% of that would be $155,612)			N/A	N/A	N/A	
Energy/Transportation	City of Fort Worth	To upgrade, replace and maintain Plymovent diesel exhaust capture systems at various fire stations.		citywide				No matching or additional funds have been secured at this time. Other grant opportunities may be available but will require a minimum 10% match.	Summer 2025	7/22/1905	
Agriculture/Natural and Working Lands	City of Fort Worth	Acquire high priority green space and conservation easements to help meet the City's goal to protect 10,000 acres of green space over the next 5 years. Develop needed land management plans and implement ecosystem restoration projects to improve ecosystem health and mitigate flooding. This will also help fill gaps in the 10-Minute Walk and may extend the trail network. Parcels that are a high priority for open space conservation have been identified by the City's Open Space Conservation Program Prioritization Tool by Trust For Public Land. The tool prioritizes open space both in the city and city's Extraterritorial Jurisdiction (ETJ) based on numerous GIS datasets that cover 7 goal areas: Ecosystem Preservation, Stream, River, and Lake Health, Community Health, Recreation, Flood Control, Equitable Access to Open Space, and Economic Development. Staff then analyze parcels that are available for acquisition to further determine their suitability. Park & Recreation determines park needs based on population, current development, areas with park deficits, and park planning districts. Stormwater tracks storm and flooding events to identify watersheds and areas of highest need for flood mitigation projects.		Citywide - land acquisition and conservation easements may be in City limits or the City's Extraterritorial Jurisdiction (ETJ)				2020 allocation of $551,647.20 from the General Gas Lease for the acquisition of the city's first open space property; 2021 disbursement of $8,820,000 from the General Gas Lease and $2,885,000 from the Water Gas Lease Trust for open space acquisitions and capital projects; $15 million from the 2022 for open space acquisition and capital projects; Estimated $3.5 million spent on the acquisition of parks per year since 2019; 2022 commitment from ONCOR of $1 million to be distributed over 5 years for green space planning.	Acquisitions would start after grant is awarded and continue as long as funds are available.	Acquisitions would conclude once funding is expended.	
Agriculture/Natural and Working Lands	City of Fort Worth	Shelton Ranch Land Acquisition		Regional				$40M	Summer 2025	Fall 2025	
Agriculture/Natural and Working Lands	City of Fort Worth	To plan, implement and maintain ecosystem restoration, flood mitigation and establish riparian corridors. To educate public and aid recreation within the riparian corridors.		City of Fort Worth / Regional				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Agriculture/Natural and Working Lands	City of Fort Worth	To plan, design, build or retrofit, operate, and maintain green infrastructure/low-impact design projects in Fort Worth, Texas.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Agriculture/Natural and Working Lands	City of Fort Worth	To plan, design, build or retrofit, operate, and maintain green buildings, related systems and appurtenances to reduce overall impact of built environment in Fort Worth, Texas.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Agriculture/Natural and Working Lands	City of Fort Worth	Provide funding for a citywide assessment of employment, industry, and housing choice land needs and identification of appropriate locations through future land use assessment and planning that includes place type designations. Establish new mixed-use neighborhood centers in Fort Worth's rapidly growing areas to encourage live-work-play neighborhood centers that provide housing choices and attractive alternatives to auto-oriented suburbia. Planned neighborhood centers and employment centers to be served by a multi-modal transportation network supporting biking, walking, driving, and using existing or future transit. These centers will provide a range of housing, employment, civic, and recreational facilities to help reduce vehicle miles traveled. This project will supplement and support the implementation of Fort Worth's 2050 Comprehensive Plan.		Citywide Critical corridors-Berry St, Rosedale St, University Dr, Hulen St, Camp Bowie Blvd, Lancaster St, Riverside Dr, SH 114, IH 35 and IH 30; total at least 200 signals.				The funding that has been secured for the 2050 Comprehensive Plan is not sufficient for a citywide land use assessment and planning of this scale.	Fall 2025	Fall 2027	
Transportation	City of Fort Worth	Pilot the use of cooling pavement to reduce the heat island effect attributed to city streets.		E. Berry St: I-35W - S. Craven Rd. (6 Miles) McCart Ave: IH 20 to Risinger Road (4 miles),				NA	10/27/2024	9/29/2024	
Agriculture/Natural and Working Lands	City of Fort Worth	Implement channel restoration projects based on prioritization using green design principals to improve water quality, store runoff during extreme storm events, and to protect the public health, safety, and welfare.		citywide				None	10/25/2024	9/30/2024	
Agriculture/Natural and Working Lands	City of Fort Worth	Revegetate high priority earthen drainage channels using native grasses.		citywide				None	Project kick off 3 months after receiving funding	Phased over 3 years following funding award	
Agriculture/Natural and Working Lands	City of Fort Worth	Replace acquired fire station, construct new community center and purchase existing adjacent land for park.		Council District 7				No matching or additional funds have been secured at this time. Other opportunities	Summer 2025	7/22/1905	
Agriculture/Natural and Working Lands	City of Fort Worth	The program objective is to planning, installation, education and outreach, operation, and maintenance of projects and programs to increase number of neighborhood farms, community gardens, farmers markets, and mitigation of food deserts in Fort Worth, Texas.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Agriculture/Natural and Working Lands	City of Fort Worth	To plan, design, operate and maintain impermeable surface removal for installation and maintenance of vegetation or permeable surfaces/paving in Fort Worth, Texas.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Agriculture/Natural and Working Lands	City of Fort Worth	For using landscaping to cover graffiti and provide sustainable opportunities for graffiti.						No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Agriculture/Natural and Working Lands	City of Fort Worth	To support planting installation, operations and maintenance of urban tree canopy in Fort Worth, Texas.		citywide, regional				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Agriculture/Natural and Working Lands	City of Fort Worth	To provide funding for an equitable tree planting and establishment project addressing areas identified in sampling models as lacking tree canopy coverage based on race, income or similar demographics.		historically underserved neighborhoods with inadequate tree canopy coverage				**No matching or additional funds have been secured at this time.**	**Summer 2025**	**7/22/1905**	
Agriculture/Natural and Working Lands	City of Fort Worth	To provide funding for the purchasing of equipment and hiring of contractors to implement ecosystem restoration along streams, wetlands and prairies within select park Natural Areas.		Citywide for municipal facilities				No matching or additional funds have been secured at this time.	Summer 2025	7/22/1905	
Carbon Removal Measures	City of Fort Worth	Expand/supplement TCEQ current pollutant monitoring network to include monitor testing and data validation to include approximately 20 Primary sites and 140 secondary sites through partnerships		City of Fort Worth/Tarrant County				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Carbon Removal Measures	City of Fort Worth	Align with regional approach for neighborhood-level air quality monitoring network and ability to respond to concerns regarding facilities									
Energy	City of Frisco	Replacement HVAC systems at City Sports Venues - Most HVAC units at Dr. Pepper Ballpark/Riders Field were installed 20032005. Since then, HVAC technologies have vastly improved in energy efficiency and materials used (e.g. refrigerants). Replacement of the HVAC units at Dr. Pepper Ballpark/ Riders Field will result in reduced energy consumption from fossil fuel-based utilities and improved staff/visitor comfort.		city sports venues							**Complete within 5 yr. timeframe**
Energy	City of Dallas	In coordination with OEM, install emergency generators, conduct weatherization activities, and upgrade facility electrical systems to improve capacity at six additional facilities identified as future resiliency centers. $3.9M generator installations, $600k weatherization, $2.5M electrical improvements									
Energy	City of Frisco	Replacement of generators - Various City facilities are utilizing inefficient generators (approximately 15- 20 years old). The City is proposing to replace generators at select municipal facilities with more efficient Tier 3 and/or Tier 4 generators, as recommended by ERCOT. This will result in reduced energy consumption from fossil fuel-based utilities.									**Complete within 5 yr. timeframe**
Energy	City of Grand Prairie	Replacement of Fire Station #1 Generator with a more efficient and Tier Model		One site located at 510 W. Main Street, Grand Prairie TX. 75050	Increased equipment efficiency, decreased pollutants			City CIP Funding	Jan-25	Nov-25	
Energy	City of Grand Prairie	New Installation of Fire Station #11 Generator		One site located at 11005 Davis Dr, Grand Prairie TX. 76065				City CIP Funding	Nov-24	May-25	
Energy	City of Fort Worth	To replace outdated and inefficient diesel generators at various fire stations.		citywide				No matching or additional funds have been secured at this time. Other grant opportunities may be available but will require a minimum 25% match.	Summer 2025	7/22/1905	
Energy/Transportation	DCTA	Corridor and Facility Greening Initiative - increase trees and water resistant vegetation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Energy	City of Frisco	HVAC Upgrades, Various City facilities (Discovery Center, Fire Stations, Heritage Center, etc.) are utilizing older, inefficient HVAC technologies. In addition to upgrading HVAC systems at these facilities, the City is proposing to incorporate building automation systems, which provide supervisory control and optimize performance of a building's HVAC system. These upgrades would result in reduced manual labor, reduced energy consumption, and result in smaller-sized generators.		city facilities							**Complete within 5 yr. timeframe**
Energy	City of Fort Worth	Replace HVAC units with better energy efficient units		Citywide replacement				Capital Improvement City (PayGo) Funding	The PMD Facilities staff assesses the units, and based on age, operation and, at times, failure of the equipment will determine when the HVAC equipment is beyond repair and in	Potentially projects for HVAC replacements could span the duration of 2025-2030 depending on availability of equipment and contractor capacity to install the equipment	
Energy	DART	Replace old inefficient HVAC systems, chillers, and broilers in maintenance and administrative buildings.	Eighteen (18) maintenance and administrative buildings		Installing high-efficient HVAC systems, heat pumps, and chillers in our 18 maintenance and administrative buildings will utilize advanced technologies and components that optimize energy usage, resulting in lower electricity usage, lower environmental emissions			Current FTA discretionary grants, formula grants, and local revenue do not provide adequate funds for building upgrades.		Two (2) years from execution of funding agreement	
Other	City of Fort Worth	To provide educational and outreach print materials and consumables to both city employees and members of the public at internal/external events. To fund future web and social media educational campaigns.		City of Fort Worth				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Transportation	City of Fort Worth	To provide for planning, installation, operation, and maintenance of electric vehicle charging stations and involved infrastructure at select municipal facilities.		CFW				No matching or additional funds have been secured at this time.	5/1/2025	1/1/2030	
Transportation	City of Fort Worth	To provide for conversion of percentage of COFW fleet to alternative fuel types.		CFW				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Transportation	City of Fort Worth	To provide for planning, installation, operation, and maintenance of Alternative Fueling Stations and Involved Infrastructure.		CFW				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Transportation	City of Fort Worth	To replace heavy duty diesel vehicles with newer ones to meet emissions standards and promote a zero-emissions fleet.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Transportation	City of Fort Worth	To provide funding for a new Transit-Oriented Development (TOD) plan for the Northside TEXRail Station, while supporting new development guidelines and redevelopment/revitalization opportunities.		Northside TEXRail TOD Area (approximately one half-mile radius around commuter rail station)				No matching or additional funds have been secured at this time.	1/26/2024	Winter 2027	
Transportation	City of Fort Worth	Increase the capability of the Advanced Traffic Management System (ATMS) by including additional modules to automatically detect and manage corridors. The included functionalities are traffic analytics and health dashboard, automated electric vehicle detection and response using integrated corridor management system and enabling signal data for connected vehicle to make system CV ready.		Citywide Critical corridors-Berry St, Rosedale St, University Dr, Hulen St, Camp Bowie Blvd, Lancaster St, Riverside Dr, SH 114, IH 35 and IH 30; total at least 200 signals.				Bond	9/28/2024	9/30/2024	
Transportation	City of Fort Worth	Addition of red bus/taxi lanes in Downtown on Houston St., Throckmorton St. and two additional TBD east/west streets.		Houston St: 8th St. - 19th St., Throckmorton St: 8th St. - 19th St., two TBD east-west streets based on transit connectivity and need.				N/A	10/24/2024	11/24/2024	
Transportation	City of Fort Worth	To expand/supplement TCEQ for planning, installation, operation, and maintenance of a mobile air quality monitoring vehicle, equipment and related items for use in neighborhood and property line air quality monitoring and sampling strategies.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2035	
Transportation	City of Fort Worth	To provide incentives and subsidies to the public for use of mass and alternative transit mechanisms (bus, train, bike, carpool, work from home, etc.).		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Transportation	City of Fort Worth	Reconstruct non-compliant pedestrian facilities in alignment with the Americans with Disabilities Act.		Fort Worth Stockyards Historic District. Ref: Stockyards Transportation Study, Sep 2023				N/A	9/28/2024	9/30/2024	

Project Scopes Received for Dallas-Fort Worth Air Quality Improvement Plan
As of March 1, 2024

Sector	Organization	Do [what] at [where]:	Estimated number of sites/vehicles/people/etc.:	Geographical Location/Community Served *(if applicable)*:	Estimated community benefits: *(if known, if not NCTCOG can assist)*	Expected benefits to DAC: *(if known/applicable, if not NCTCOG can assist)*	Existing community engagement/feedback: *(if applicable, if no existing community engagement/feedback, NCTCOG will use public engagement currently being conducted for the DFW AQIP)*	Funding availability: *(other funds which have been or could be used)*	Estimated start date:	Estimated finish date:	Include an explanation on how this can be implemented in ~2025- 2030
Transportation	City of Fort Worth	Upgrade traffic signal detection system, signal cabinet, communication switch, roadside unit.		Citywide Critical corridors-Berry St, Rosedale St, University Dr, Hulen St, Camp Bowie Blvd, Lancaster St, Riverside Dr, SH				N/A	9/28/2024	9/30/2024	
Transportation	City of Fort Worth	Provide pedestrian and bike connection and to accommodate channelize northbound right turn to reduce congestion.		Underpass at University Blvd.				N/A	9/28/2024	9/30/2024	
Transportation	City of Fort Worth	Build or rebuild signal with current standard and ADA compliances.		4 intersections (25th & Clinton, Beach & Meacham, Berry & New York and Berry & Village Creek)				N/A	9/28/2024	9/30/2024	
Transportation	City of Fort Worth	Purchase three (3) miniature electric street sweepers to clean the city's protected/buffered bike lanes.		citywide				N/A	6/24/2024	7/24/2024	
Transportation	City of Fort Worth	Install new sidewalk and ramps in alignment with the Americans with Disabilities Act.		S Riverside Dr; E Lancaster Ave - E Rosedale St				N/A	6/24/2024	9/30/2024	
Transportation	City of Fort Worth	Install new sidewalk and ramps in alignment with the Americans with Disabilities Act.		E Vickery Blvd; I-35W - MLK Freeway				N/A	6/24/2024	9/24/2024	
Transportation	City of Fort Worth	Addition of sidewalks, solar lighting, plantings/trees, bioswales, striping, buffered bike lanes and xeriscaping.		E. Berry St: I-35W - S. Craven Rd.				2022 Bond	1/26/2024	1/28/2024	
Transportation	City of Fort Worth	Addition of sidewalks, solar lighting, plantings/trees, bioswales, striping, buffered bike lanes and xeriscaping.		E. Lancaster Ave:				2022 Bond	10/27/2024	9/30/2024	
Transportation	City of Fort Worth	Addition of sidewalks, solar lighting, plantings/trees, bioswales, striping, buffered bike lanes and xeri-scaping.		McCart Ave: Covert Ave. - Fort Worth City Limits				2022 Bond	10/27/2024	10/29/2024	
Transportation	City of Fort Worth	Construction of a grade-separated crossing over the UPRR and the addition of sidewalks, solar lighting, plantings/trees, bioswales, striping, buffered bike lanes and xeri-scaping.		Altamesa Blvd: Hulen St. - Kennedale city limits.				N/A	10/28/2024	9/30/2024	
Transportation	City of Fort Worth	Addition of sidewalks, solar lighting, plantings/trees, bioswales, striping, buffered bike lanes and xeri-scaping.		Westport Parkway: I-35W - SH-170				N/A	10/28/2024	9/30/2024	
Transportation	City of Fort Worth	Addition of sidewalks, solar lighting, plantings/trees, bioswales, striping, buffered bike lanes and zero-scaping.		Bowman-Roberts: Marine Creek Rd. - WJ Boaz Rd.				N/A	10/27/2024	10/29/2024	
Transportation	City of Fort Worth	Addition of bus and bike-lane infrastructure, signage, enhanced traffic signals, lighting, fiber technology, streetscaping and on-street parking.		Jones St: Weatherford St. to Lancaster Ave.				N/A	10/27/2024	10/29/2024	
Transportation	City of Fort Worth	Addition of bus and bike-lane infrastructure, signage, enhanced traffic signals, lighting, fiber technology, streetscaping and on-street parking.		Calhoun St: Weatherford St. to Lancaster Ave.				N/A	10/27/2024	10/29/2024	
Transportation	City of Fort Worth	Installation of (six) 6 Electric Vehicle Heavy Duty Charging Stations.		Alliance Truckport (SH 170 @ IH35W - NW Corner)				N/A	2/25/2024	7/25/2024	
Transportation	City of Fort Worth	Addition of buffered bike lanes, sharrows and a shared-use path connector to Sansom Park.		Long Ave. from Refugio Ave. to Jacksboro Hwy, 30th St. from Long Ave. to Rock Island St., 26th St. from Long Ave. to Rock Island St., Macie Ave. from 26th St. to 30th St. and Rock Island St. from 26th St. to 30th St. Additionally, a 10' on street shared-use path will be added to a portion of Sansom Park Dr., which is a one-way street that runs along the western side of Sansom Park. The project will also transform the vacated portion of Macie Ave. from Sansom Park Drive to 30th St. into a 20' shared-use illuminated path by milling the existing 30' surface and repaving it.				NA	10/24/2024	10/27/2024	
Transportation	City of Fort Worth	On-street bike lanes with raised buffer, sharrows and various pedestrian safety improvements including raised crosswalks, bike/ped signals and median cuts.		McPherson Blvd. from Chisholm Trail Pkwy to Hulen St., Summer Creek Dr. from Risinger Rd. to Sunflower Ridge Dr. and Hulen St. from Nightingale Dr. to McPherson Blvd.				NA	10/24/2024	10/27/2024	
Transportation	City of Fort Worth	Develop two digital twins- operations efficiency and long-term land use/transportation.		citywide				NA	11/24/2024	4/25/2024	
Transportation	City of Fort Worth	Construct pedestrian facilities, pedestrian bridge, wayfinding, bike storage, bike sharing, and green space to support use of alternative modes for short trips downtown - includes construction electric vehicle charging spaces.		Downtown Fort Worth					10/26/2024	10/29/2024	
Transportation	City of Fort Worth	Construct facilities for enhanced transit, pedestrian bike, and intermodal trip connectivity.		Downtown Fort Worth					10/28/2024	9/30/2024	
Transportation	City of Fort Worth	To enhance/supplement TCEQ monitoring efforts through planning, installation, operation and maintenance of air quality monitoring equipment directly to gather mobile monitoring data through transportation partnerships.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2035	
Transportation	City of Fort Worth	Build roundabouts		John T White and Cooks Lane (Minor Arterials)				Bond	10/26/2024	9/30/2024	
Transportation	City of Fort Worth	Extend the curb space, expand sidewalk, allotting areas for bus stops and valet parking only. Restripe with left-turn lanes.		N Main St. from 23rd Street to 25th Street. Fort Worth Stockyards Historic District. Ref: Stockyards Transportation Study, Sep 2023				N/A	9/28/2024	9/30/2024	
Transportation	City of Fort Worth	Assign West Exchange Ave. with eastbound one-way operations and bulb-out intersections.		Clinton Ave. to North Main St. Fort Worth Stockyards Historic District. Ref: Stockyards Transportation Study, Sep 2023				N/A	9/28/2024	9/30/2024	
Transportation	City of Fort Worth	Reconstruct Ellis Ave. as a three-lane section with parallel parking, extended curb space, and a reduced pavement width.		Ellis Ave. from 23rd Street to 25th Street. Fort Worth Stockyards Historic District. Ref: Stockyards Transportation Study, Sep 2023				N/A	9/28/2024	9/30/2024	
Transportation	City of Fort Worth	Extend the curb at intersection corners and upgrade existing lighting west of N. Main St.		Fort Worth Stockyards Historic District. Ref: Stockyards Transportation Study, Sep 2023				N/A	9/28/2024	9/30/2024	
Transportation	City of Fort Worth	Install traffic signals at critical signal warranted locations.		Precinct Line & River Trails, Chapel Creek Blvd & Chapin Rd, Chapel Creek Blvd & Westpoint				Impact Fee and Future Bond Fund	9/28/2024	9/30/2024	
Transportation	City of Fort Worth	Replace five at-grade rail crossings with a grade-separated crossing.		23rd St. and Decatur Ave.				N/A	10/28/2024	9/30/2024	
Transportation	City of Fort Worth	Replace at-grade rail crossing with a grade-separated crossing.		5th St. over FWRR				N/A	10/28/2024	9/30/2024	
Transportation	City of Fort Worth	Replace at-grade rail crossing with a grade-separated crossing.		Weisenberger St./Kansas St. over FWRR				N/A	10/28/2024	9/30/2024	
Transportation	City of Fort Worth	Pilot to install real-time weather monitoring sensors for autonomous vehicle operations in the Alliance area.		Alliance Airport Mobility Innovation Zone and the Alliance Texas AV				N/A	9/24/2024	3/26/2024	
Transportation	City of Fort Worth	Reconstruct non-compliant pedestrian facilities in alignment with the Americans with Disabilities Act.		Forest Park and Belknap					Design starts within three months after receiving the grant.	September 2030 or sooner.	
Transportation	City of Fort Worth	To make improvements to the plaza that allows for outdoor use throughout all seasons.		Fort Worth Northside, Council District 2. Buildings in close proximity to plaza (example: Artes de la Rosa)				N/A	Pending Funding Source(s)	It is estimated that project can be completed by 2030.	
Waste, Water, and Wastewater	City of Fort Worth	To decrease the amount of water that is used throughout the city by creating a way for the city to take non-potable water from different sources, treating it, and then using it for other beneficial uses. Expansion and upgrade.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Waste, Water, and Wastewater	City of Fort Worth	The objective of this program is to decrease the amount of energy/chemicals utilized at water treatment plants by upgrading and expanding the current reuse program which distributes non-potable reclaim water for irrigation, industrial processes, and other non-potable uses across the City of Fort Worth and adjacent municipalities.		Countywide				No matching or additional funds have been secured at this time.	Summer 2025	7/22/1905	
Waste, Water, and Wastewater	City of Fort Worth	To provide funding for direct technical assistance and related expenses for environmental assessments, sampling and small cleanup activities or construction projects, as warranted, at eligible properties across multimedia (e.g., air, soil, stormwater runoff, etc.)		disenfranchised communities / income-based eligibility				No other funding is available - large-scale cleanup projects may be eligible for Brownfields Grant Program funding, as available.	Summer 2025	7/22/1905	
Waste, Water, and Wastewater	City of Fort Worth	To support installation, operations and/or maintenance of landfill gas capture infrastructure and systems at the Southeast Landfill, Fort Worth, Texas.		citywide, regional				No matching or additional funds have been secured at this time.	Summer 2025	7/22/1905	
Waste, Water, and Wastewater	City of Fort Worth	To support design and construction of biogas storage and processing infrastructure to capture all digester biogas for beneficial use and eliminate biogas flaring at the Village Creek Water Reclamation Facility, Fort Worth, Texas.		Regional - air quality improvements from eliminated biogas flaring.				No matching or additional funds have been secured at this time.	Summer 2025	7/22/1905	
Waste, Water, and Wastewater	City of Fort Worth	To replace and/or upgrade technology, underground storage tanks, above ground storage tanks, or related equipment to reduce fugitive emissions.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2035	
Waste, Water, and Wastewater	City of Fort Worth	To improve stormwater runoff water quality, provide additional trees in an urbanized area, and to reduce runoff volumes through constructing approximately 1 mile of bio-swales in the Linwood Watershed and/or areas draining into the watershed.		Linwood and West 7th Watershed Area				It is anticipated that SW revenue bond funds in FY26 will be earmarked for the Linwood flood mitigation project. Some of this funding could be used to extend the bio swales.	10/25/2024	10/28/2024	
Waste, Water, and Wastewater	City of Fort Worth	The objective of this program is to reduce water loss throughout the water distribution system. Funding will provide for the installation District Meter Areas (DMA) throughout the distribution system in order to identify distribution system leakage locations and prioritize pipe replacement and rehabilitation.		citywide				No matching or additional funds have been secured at this time.	Summer 2025	7/22/1905	
Waste, Water, and Wastewater	City of Fort Worth	To dredge contaminated sediments which include PCB's, dioxin and dieldrin (found in fish tissue).		Echo Lake and Ciquio Vasquez Trail				No other funding is available - large-scale cleanup projects may be eligible for Brownfields Grant Program funding, as available. Trail construction could be funded through future bond programs	Summer 2025	7/19/1905	
Waste, Water, and Wastewater	City of Fort Worth	To support installation, operation, and maintaining mulching or composting projects		citywide				No matching or additional funds have been secured at this time	1/1/2025	1/1/2030	
Waste, Water, and Wastewater	City of Fort Worth	Implement detention ponds to manage flooding based on prioritization using green design principals to improve water quality, store runoff during extreme storm events, and to protect the public health, safety, and welfare.		citywide				None	Depending on funding Availability	~ 3-5 years from when the funding would be available.	
Waste, Water, and Wastewater	City of Fort Worth	Implement detention pond to manage flooding in the upper Lebow area using green design principals to improve water quality, store runoff during extreme storm events, and to protect the public health, safety, and welfare.		Upper Lebow detention - Just north of Long Ave on and adjacent to the NuRock Housing Development (the Diamond Hill Townhomes Addition)				None	9/24/2024	6/28/2024	
Waste, Water, and Wastewater	City of Fort Worth	To plan, educate, and conduct community outreach for waste reduction and management strategies (e.g., composting, bulk and brush, mulching, etc.)		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Waste, Water, and Wastewater	City of Fort Worth	Replace existing manholes with hinged manholes.		Various locations throughout the city prioritized based on risk and considering past replacement				N/A	9/28/2024	9/30/2024	
Waste, Water, and Wastewater	City of Fort Worth	Implement storm drain rehabilitation projects based on prioritization using trenchless construction methods. Using trenchless rehabilitation methods would limit the traffic impacts from construction and reduce waste when compared to remove and replace construction methods.		citywide				The City currently allocates $2.8M - $3.8M to the storm drain rehabilitation program each FY.	10/25/2024	9/30/2024	
Energy	DCTA	Replace old inefficient HVAC systems, heat pumps, chillers and broiler in bus and rail maintenance, Downtown Denton Transit Center, and administrative buildings	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transportation; Agriculture/Natural and Working Lands	City of Frisco	Residential Street Tree Replacement Program - Develop a program to assist and encourage homeowners, who are required to maintain the landscape area within the adjacent parkway, to replace dead street trees with trees suitable for the local climate and soil conditions. This would involve defining program eligibility criteria, developing a tree species inventory, defining tree quality standards and location requirements, developing public education materials on proper maintenance, defining roles/responsibilities for the City and homeowner, and conducting a cost-effectiveness study on utilizing City- vs. homeowner-arranged contractors. If the project is selected to receive federal funding, the funding will solely be spent on the tree-planting itself. The planted trees will serve as natural air purifiers and shade, which reduces the heat island effect.		Homeowners							
Energy	City of Dallas	Central Utility Plant - Upgrades to the thermal storage system and heat exchanger.	1 site								
Transportation	City of Frisco	Low-Emission Non-Road Equipment Replacement: Replace a subset of City's non-road / internal combustion engine (ICE) equipment (e.g. lawn equipment and ground support equipment) with alternative fuel and advanced technologies. Current inventory of small equipment is about 100% ICE.		City Equipment							
Transportation	City of Frisco	Pilot Study Converting One 5-perons Play Frisco Crew to Alternative Fuel and/or Hybrid Equipment - Conduct a pilot study to better understand the performance/outcomes of utilizing alternative energy equipment for parks and recreation practices. Study will consist of converting one five-person crew to alternative energy equipment, which may include but is not limited to: zero-turn mowers, trimmers, edgers, blowers, a generator, and a truck.		City Equipment							
Transportation	City of Frisco	Study on Replacing City-owned Gasoline-Powered Vehicles with Alternative Energy Vehicles - Conduct a Fleet study on replacing City-owned gasoline-powered vehicles with alternative fuel and/or hybrid vehicles.		City Fleet							

Project Scopes Received for Dallas-Fort Worth Air Quality Improvement Plan
As of March 1, 2024

Sector	Organization	Do [what] at [where]:	Estimated number of sites/vehicles/people/etc.:	Geographical Location/Community Served *(if applicable)*:	Estimated community benefits: *(if known, if not NCTCOG can assist)*	Expected benefits to DAC: *(if known/applicable, if not NCTCOG can assist)*	Existing community engagement/feedback: *(if applicable, if no existing community engagement/feedback, NCTCOG will use public engagement currently being conducted for the DFW AQIP)*	Funding availability: *(other funds which have been or could be used)*	Estimated start date:	Estimated finish date:	Include an explanation on how this can be implemented in ~2025- 2030
Transportation	City of Frisco	Zero- and Near-Zero Freight and Work Truck/Bus program Replace a subset of City's light duty gasoline vehicles with alternative fuel and/or hybrid vehicles. Total fleet makeup is currently approximately 98% internal combustion engine units.		City Fleet							
Transportation	City of Frisco	Extinguishing fires involving EV's lithium ion batteries are more time- and equipment-intensive than traditional gasoline-vehicle fires. Specialized equipment is needed to extinguish these fires, which will prevent extensive damage to surrounding areas and limit the duration/amount of toxic fumes released into the environment. Fire blankets and other equipment can support the extinguishing process.		Fire Stations							
Transportation	City of Frisco	Install charging stations at City facilities (e.g. library, athletic center, and fire stations), where installation costs could potentially be recovered and excess used to fund additional charging stations. Install within uncovered areas only, per Frisco Fire's safety recommendations.	Install within uncovered areas only, per Frisco Fire's safety recommendations.	Municipal Facilities							
Transportation	City of Frisco	Develop policy for City Fleet vehicle idling and measure performance by analyzing changes using Fleet telematics.		City Fleet							
Water/Wastewater	City of Frisco	Infrastructure Upgrade at Frisco-1 Pump Station - I undergo a condition assessment study to determine necessary electrical, mechanical, and structural upgrades, to increase overall reliability and decrease energy consumption. Upgrades to the 30+ year old pump station infrastructure will strive to follow the Envision framework, developed by the Institute for Sustainable Infrastructure (ISI), which encourages building of sustainable, equitable, and resilient infrastructure. Following the condition assessment, the Envision guidelines and checklist will be utilized, independent of project verification, to implement sustainable practices into the design and construction of the project. If selected to receive federal funding, the funding will be used for project design/implementation and not used to submit for ISI Certification.									**Complete within 5 yr timeframe**
Water/Wastewater	City of Frisco	Smart Meter Portal- Develop a smart meter portal providing customers access to water usage data, which in turn promotes behavioral change and efficient use of water resources. Delivering water to households is an energy-intensive process, making up three percent of the nation's energy consumption, per the USEPA. Lower household water consumption results in less water pumped, treated, and heated and decreased emissions.		households							**Complete within 5 yr timeframe**
Water/Wastewater	City of Frisco	Solar-powered Irrigation Systems - Add solar panels to supplement electrical power for irrigation systems at select City-owned locations. Energy generated from solar will reduce power consumed from the electrical grid, resulting in cost savings and reduced emissions.		city-owned location							**Complete within 5 yr timeframe**
Water/Wastewater	City of Frisco	Purchase Grapple Truck for More Efficient Disaster Response and Waste Collection - Purchase grappling truck to improve the City's disaster response and waste collection practices, which will reduce the time, manpower, and emissions generated from traditional methods utilizing trucks and multiple staff.									**Complete within 5 yr timeframe**
Energy	Peterbilt	Upgrade Boiler and HVAC Units at Peterbilt plant in Denton			Significant GHG Reduction-NOx Reduction				N/A	N/A	
Energy	City of Frisco	Replace older lighting technology at municipal buildings with efficient LEDs. Energy savings from switching to LED lights results in less emissions and helps balance the grid, making room for potential implementation of other electric technologies.									**Complete within 5 yr timeframe**
Energy	City of Dallas	To further the City's CECAP goals, as well as BSD's initiative of transitioning from R-22 based refrigerant systems to more environmentally-friendly and energy efficient mechanical systems in all City buildings. Approximately 750 systems remain at an average cost of $35,000 per system.	750 systems								
Energy	City of Dallas	Total lighting replacement to convert into more efficient LEDs at facilities.									
Energy/Transportation	City of Arlington	Retrofit the existing lighting with LEDs on the pedestrian bridge over SH 360.	One site - pedestrian benefits	East Arlington and Hollandale Neighborhoods Communities Served	This improvement will reduce energy and encourage the use of existing facilities.	Encourage use of facility, make facility more user friendly.	N/A	N/A	ASAP	18-24 months after project begins	As soon as funds are available, we can issue a bid for the work and can issue a notice to procced. The project could certainly be started with funds encumbered in or prior to FY25 however the funds could not be completely expended prior to the end of FY 25.
Energy	City of Dallas	Retrofit City buildings, to include parking lot lighting, with LED fixtures and required components in 10 recreation centers, 15 libraries, 20 fire stations	10 recreation centers, 15 libraries, 20 fire stations								
Energy	Tarrant County	Tarrant County Resource Connection LED Lighting Retrofit - retrofit would allow for updates to 184 lights and installation of 10 new, LED efficient lights in poorly lit areas.	1 site, 194 LED lights needed total	282-acre campus in south Fort Worth. There are sixteen buildings, parking lots, and a shared central green space that make up "campus proper." Stella Rowen Prairie, a 125-acre native prairie, is also a part of campus. The request for lighting improvements is focused on the campus proper lighting in parking lots and around the exterior areas of the buildings. The majority of the lighting on campus dates back to the 1970s with the exception of one building (food stamp building) with lighting dating to 2000.	reduce energy costs with modern, updated LED fixtures.	he majority of people served at the Resource Connection are from disadvantaged communities. The Resource Connect (RC) is a hub for dozens of critical services to the area's most vulnerable residents, including programs and services for people with disabilities and mental health needs, veterans, SNAP and WIC recipients, and clients of Texas Workforce Commission, Tarrant County Burial Assistance, Autism Treatment Center, HealthMasters Home Care, Law Liaison Program, and many more.		(2022 pricing would need to be updated). This is a one-time charge that may take 12-16 months to complete	Feb-25	Feb-26	With a plan in place from MEPCE Consulting Engineers (first drafted in August 2022), this project is shovel ready and can be completed in 12-16 months.
energy	City of Frisco	As a result of a study (Facility Preliminary Energy Assessments and Recommendations) completed in 2023, a set of strategies to improve energy efficiencies was developed. The assessment estimates implementation of the strategies will result in a reduction in the City's carbon footprint by 1,787 metric tons of CO2 per year. Funding is needed to move forward on a subset of strategies.			reduction in city's carbon footprint of 1787 metric tons of CO2 per year						**Complete within 5 yr timeframe**
Energy	City of Dallas	Improving AVI's emergency power electrification with battery backup tied to solar photovoltaics (PV)									
Energy	City of Dallas	Development and implementation of a strategic energy management plan for energy efficiency and conservation. Efforts to include formulation of energy policy; energy efficiency, energy conservation, and energy usage goals; data and process analysis for identification of strategies to achieve those goals, development of methods to measure progress; coaching, walk-thru, and standard operating procedures and development and publication of annual reports.									
Energy	City of Fort Worth	To provide overarching planning and strategy to support the city in reducing its environmental impact and gear itself towards innovation for a sustainable future to include green technology, green infrastructure/spaces, to create a diverse energy portfolio, etc. This may include updates and revisions to the Environmental Master Plan, the Comprehensive Solid Waste Management Plan and alignment with the Comprehensive Plan or related plans throughout the City.		citywide				No matching or additional funds have been secured at this time.	5/1/2025	7/22/1905	
Energy	City of Fort Worth	To aid in the promotion and alignment of City of Fort Worth energy efficiency and conservation planning, education, outreach, strategy, enforcement, projects, and programs.						$750,000 from EECBG.	1/1/2025	1/1/2030	
Energy	City of Fort Worth	To provide funding to design and convert current electrical DC system to power over ethernet (PoE).		Citywide for municipal facilities				N/A	Pending Funding Source(s)	It is estimated that project can be completed by 2030.	
Energy	DFW Airport	DFW Rental Car Center Microgrid - an onsite microgrid for its Rental Car Center. This project will install permanent solar canopies on the uppermost level of the facility, yielding an onsite generating capacity of roughly 2.55 megawatts of electricity – enough to allow the facility to meet all of its energy needs (lighting, HVAC, and EV charging) entirely from onsite solar panels. The Rental Car Center would thus function independent of the Texas electrical grid, reducing offsite energy demand and boosting resiliency in times of crisis. This project will take approximately 18 months to complete, and showcases DFW's commitment to microgrids, energy resiliency, and the region's continued transition to zero-emission vehicles.	one site					Airport Improvement Program (FAA); Voluntary Airport Low Emissions Program (FAA); Neither of these programs provide adequate funding to support all project costs.	2025	2027	2025 Final design and procurement for RCC Microgrid , Construction initiated 2027 Construction completed; RCC Microgrid inaugurated
Agriculture/Natural and Working Lands	City of Frisco	Develop a City-owned site for mulch operation to eliminate the current tree clippings/debris drop-off trips to Plano. An existing 10,000 sq ft City lot, enclosed by a 6 ft high concrete wall, would be utilized for the mulch bin, and equipment needs include: concrete blocks, a chipper, and a front loader. In general, the daily operation would involve staff processing their green waste using the brush chipper into the mulch bin (Forestry would dump their box truck directly into the mulch bin). Equipment operators would push, turn or otherwise manipulate the pile of chips to the rear of the box to allow for more material. The pile shall be turned every 30 days to ensure proper composting of the arbor chips. For Non-Class A properties, staff shall use the city-provided mulch for beds, trees, and non-landscaped areas. Frisco Fire could potentially use the equipment as well for disaster response and the mulch operation site as a debris station (per a Disaster Debris Plan). While mulching itself conserves soil moisture and temperature and reduces nutrient loss, salinity, and erosion, keeping the mulch processing in-house reduces emissions generated from transporting the materials outside the city.									**Complete within 5 yr timeframe**
Agriculture/Natural and Working Lands	City of Frisco	Develop an outdoor plant learning laboratory, an active educational experience for students to learn about native and non-native, adaptive species. This will include a prairie grass cross-sectional aid, which will demonstrate how native deep-rooted plants (e.g. prairie grass) sequester carbon, better resist climate variability, improve infiltration, and reduce erosion. Supplies and equipment would include raised plant beds, trellis, irrigation, rock, mulch, soil, and other miscellaneous costs.									**Complete within 5 yr timeframe**
Agriculture/Natural and Working Lands	City of Frisco	Provide Incentives for Naturalizing HOA-maintained Water Bodies - There are currently 300 ponds in Frisco with 90% managed by HOAs. An incentive program could be created to encourage HOA-managed neighborhoods to naturalize detention basins, resulting in reduction in roadside pollution (if within close proximity to roads); increased biodiversity; better stormwater management; less erosion; increased cost savings on maintenance costs; and valuable education opportunities.									**Complete within 5 yr timeframe**
Agriculture/Natural and Working Lands	City of Frisco	Install a vegetation buffer at the Northwest Community Pond, which will reduce mowing at the pond-edge and allow native species to thrive. Native deep-rooted species sequester carbon, better resist climate variability, improve infiltration, and reduce erosion. This installation could also serve as an educational aid in a "stormwater workshop" for residents/HOAs, teaching them how to install/maintain stormwater features. Additionally, it could feed into a potential incentive program for residents to install green infrastructure features.									**Complete within 5 yr timeframe**
Water/Wastewater	City of Frisco	Conduct a study to track the amount of water conserved and overall environmental impact of reusing wash water from a Public Works equipment wash station. Delivering water to facilities is an energy-intensive process, so lowering consumption will result in less water pumped and decreased emissions.									**Complete within 5 yr timeframe**
Water/Wastewater	City of Frisco	Purchase of a Bathymetric LiDAR Drone Attachment to measure water depth at City-owned ponds stream segments, which will help inform pond conditions, maintenance cycles, and reduce City staff and consultant hours required to conduct the work. Decreased dredging operations can lower air quality impacts from dredged materials that have settled to the stream bottom and heavy equipment required to conduct the operation.									**Complete within 5 yr timeframe**
Water/Wastewater	City of Frisco	Conduct a study to assess the amount of trash flowing through a specific waterway. This involves designing and installing a trash rack or water goat trash barrier to capture trash and debris being transported by the waterways. If left to accumulate, the trash and debris within waterways could decompose and release unpleasant odors, block light and deplete oxygen levels in underlying waters, and impact local habitat.									**Complete within 5 yr timeframe**
Agriculture/Natural and Working Lands	City of Frisco	Study the infiltration effectiveness of the newly constructed sandy loam bioswale over a one-year period as vegetation grows. Plants within these vegetated bioswales could not only aid in stormwater management but also could sequester carbon.									**Complete within 5 yr timeframe**

Project Scopes Received for Dallas-Fort Worth Air Quality Improvement Plan
As of March 1, 2024

Sector	Organization	Do [what] at [where]:	Estimated number of sites/vehicles/people/etc.:	Geographical Location/Community Served *(if applicable)*:	Estimated community benefits: *(if known, if not NCTCOG can assist)*	Expected benefits to DAC: *(if known/applicable, if not NCTCOG can assist)*	Existing community engagement/feedback: *(if applicable, if no existing community engagement/feedback, NCTCOG will use public engagement currently being conducted for the DFW AQIP)*	Funding availability: *(other funds which have been or could be used)*	Estimated start date:	Estimated finish date:	Include an explanation on how this can be implemented in ~2025- 2030
Water/Wastewater	City of Frisco	Conduct a study to assess the amount of green infrastructure that comes along with above-ground stormwater development requirements. Study will help determine the percentage of projects with an above ground stormwater feature requirement and the area of stormwater features serving as green infrastructure. In addition to improving stormwater management, green infrastructure can also reduce the urban heat island effect and reduce vehicle emissions if installed in close proximity to roads.									**Complete within 5 yr timeframe**
Water/Wastewater	City of Frisco	Study the effects of installing of a rain barrel at a bioswale to supplement water use. Delivering water for irrigation purposes is an energy-intensive process, so lowering consumption will result in less water pumped and decreased emissions.									**Complete within 5 yr timeframe**
Energy	City of Frisco	Revamp the City's environmental purchasing policy to aid in addressing "Scope 3" emissions (emissions generated indirectly, outside the agency) through product/vendor selection and life-cycle assessment. This can help staff understand and consider indirect emissions generated through procured goods and services.									**Complete within 5 yr timeframe**
Energy	City of Frisco	Conduct a study at Monarch View Park to address operational challenges involving trash within parks. The trash bin's built-in monitoring system and increased capacity (approximately five times greater than a typical trash bin) will result in reduced trash overflow and less trips into the park to empty them.									**Complete within 5 yr timeframe**
Energy	Trinity Metro	Streamline solar regulations - Conduct a study to examine opportunities at agency facilities to install solar panels									
Water/Wastewater	City of Grand Prairie	Doghouse Lift Station - Lift Station needed improvements driven a physical survey of each of the City's 16 lift stations and an asset management assessment of the remaining useful life of each type of equipment at each of these lift stations. Each of these assessments generated facility improvement needs to ensure that these systems would continue to operate with a lower potential for failure. This lift station has the fourth highest consequence of failure among the lift stations based on the prioritization criteria of the lift stations. Lift station failures result in sanitary sewer overflows (SSOs) that release methane and other pollutants into the air. Additional greenhouse gases and air pollutants are released during the response by the use of heavy-duty vacuum trucks and other response vehicles.	One project site location.	South of West Camp Wisdom Road just east of State Highway 360.	Health benefits, decreased exposure to criteria pollutants			Impact Fees	FY2025	FY2026	Project part of FY25 through FY30 5-Year Multi-Year Program
Water/Wastewater	City of Grand Prairie	Jefferson Avenue (Condition Replace) - replace an existing 10-inch gravity main near Idlewild and Jefferson, with a new 15-inch sewer line. Model results indicate capacity issues and a potential for SSOs at 3 manholes, during 2021 Wet Weather Conditions. The total length of pipe recommended for upsizing Project 12 is 2,116 ft. When SSOs occur methane and other pollutants are released into the air. Additional greenhouse gases and air pollutants are released during the response by the use of heavy-duty vacuum trucks and other response vehicles.	One project site location.	South of IH-30, near MacArthur and Jefferson St.	Health benefits, decreased exposure to criteria pollutants				FY2025	FY2026	Project part of FY25 through FY30 5-Year Multi-Year Program
Water/Wastewater	City of Grand Prairie	Koscher Lift Station -same reason as Doghouse Lift Station project	One project site location.	South of West Camp Wisdom Road just east of State Highway 360.	Health benefits, decreased exposure to criteria pollutants			Impact Fees	FY2025	FY2026	**Project part of FY25 through FY30 5 Year Multi-Year Program**
Water/Wastewater	City of Grand Prairie	Oasis Lift Station- same as previous lift station projects	One project site location.	South of West Camp Wisdom Road just east of State Highway 360	Health benefits, decreased exposure to criteria pollutants			Impact Fees	FY2025	FY2026	**Project part of FY25 through FY30 5 Year Multi-Year Program**
Water/Wastewater	City of Grand Prairie	Performance New Lift Station & Gravity – Phase 1: Project 9 replaces Performance Lift station, and an existing 8-inch force main and 12 and 15-inch gravity main near Performance Place at Lone Star Park beginning at the connection to a 27-inch sewer line and ending at Performance Lift Station, with a new dual pump 2500 gpm Lift Station, 12-inch force main and 21-inch gravity line. Model results indicate capacity issues at the Performance Lift Station wet well and potential for SSO, during 2021 Wet Weather Conditions. The total length of pipe recommended for upsizing Project 9 is 1,359 ft. Lift station failures result in sanitary sewer overflows (SSOs) that release methane and other pollutants into the air. Additional greenhouse gases and air pollutants are released during the response by the use of heavy-duty vacuum trucks and other response vehicles.	1 project site location	Lone Star Parkway and Levee Drive near Lone Star Park	Health benefits, decreased exposure to criteria pollutants			Impact Fees	n/a	n/a	**Project part of FY25 through FY30 5 Year Multi-Year Program**
Water/Wastewater	City of Grand Prairie	Performance New Lift Station & Gravity – Phase : Project is needed to replace an existing 6, 8 and 10-inch gravity main feeding into Performance Lift Station at Lone Star Park beginning at Pollack Pl and Performance Pl, with a new 15-inch gravity line. Model results indicate capacity issues at manholes upstream of Performance Lift Station, during 2021 Wet Weather Conditions. The total length of pipe recommended for upsizing is 1,866 ft. Lift station failures result in sanitary sewer overflows (SSOs) that release methane and other pollutants into the air. Additional greenhouse gases and air pollutants are released during the response by the use of heavy-duty vacuum trucks and other response vehicles.	2 project site location	Lone Star Parkway and Levee Drive near Lone Star Park.	Health benefits, decreased exposure to criteria pollutants			Impact Fees	n/a	n/a	**Project part of FY25 through FY30 5 Year Multi-Year Program**
Water/Wastewater	City of Grand Prairie	SSES – Manhole Replace Gr 5, Pipeline Replace Gr 5, Manhole Replace GR 4, Pipeline Replace GR 4: Inspection scoring was performed on the manholes. Each code has a rating of 1 through 5, with 5 being the most severe. The scoring showed 13 manholes in Basin 3.0W with score 5, all 13 manholes with severe damage and structural defects (MACP score 5) need to be replaced and replacing or rehabbing 3,200 LF of gravity sewers with grade 4 structural and O&M defects. Manhole failures result in sanitary sewer overflows (SSOs) that release methane and other pollutants into the air. Additional greenhouse gases and air pollutants are released during the response by the use of heavy-duty vacuum trucks and other response vehicles.	1 project site location	3.0W Basin Location	Health benefits, decreased exposure to criteria pollutants			Impact Fees	FY2025	FY2026	**Project part of FY25 through FY30 5 Year Multi-Year Program**
Water/Wastewater	City of Grand Prairie	Waterford Lift Station - same as previous lift station projects	2 project site location	South of West Camp Wisdom Road just east of State Highway 360.	Health benefits, decreased exposure to criteria pollutants			Impact Fees	FY2025	FY2026	**Project part of FY25 through FY30 5 Year Multi-Year Program**
Energy	City of Fort Worth	To provide for installation, operation, and maintenance of alternative energy projects at city offices, buildings, and properties, citywide.		CFW				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Transportation	City of Lewisville	King Arthur Blvd. Buffered Bike Lane - 1.5 miles		King Arthur Blvd from: FM 2281 to Lady of the Lake	these projects are designed to integrate with the existing City bike/trail network and improve health and safety of the residents and bikers in the city					Project timeline can be completed in 2 years	In accordance with the grant requirements, we assure you that these projects can be efficiently designed and constructed within the stipulated 5-year timeframe.
Transportation	City of Lewisville	Corporate Dr to DCTA Bikeway - 4 miles			these projects are designed to integrate with the existing City bike/trail network and improve health and safety of the residents and bikers in the city					Project timeline can be completed in 3.5 years	In accordance with the grant requirements, we assure you that these projects can be efficiently designed and constructed within the stipulated 5-year timeframe.
Transportation	City of Mansfield	Seeton Rd. Bridge - to improve the bridge and pedestrian connection of Seeton Rd across Joe Pool Lake via a two lane roadway with a hike and bike trail	.6 miles long	The southern Lake Ridge HS driveway south across Joe Pool Lake to just south of Edgewater Dr.				Street bond of 800,000	Q2 2024	Q4 2028	
Transportation	City of Mesquite	Mesquite Creek Trail - construct a 12-foot wide trail with 4" thickness concrete pavement at West of Clay Mathis Rd – East of Pioneer Rd .		west of Clay Mathis Road, along the side of North Mesquite Creek, from west of Clay Mathis Rd. to the East of Pioneer Rd.	It will connect existing trails and include bridge structure, drainage improvements, pedestrian ramps, pedestrian signage, and pavement markings.				9/1/2025	Jun-29	
Transportation	City of Mesquite	Safe Route to School Plan - identifying sidewalks and other routes for 43 schools in the City of Mesquite that are suitable for use by the students. We will also include the necessary safety precautions, such as traffic control and other measures that need to be considered to emphasize student's safety.		City of Mesquite and it's residents	Students will use this plan to walk and bicycle safely to school, improving their safety and physical activity.				4/1/2025	10/30/2026	1. Develop Plan Goal: Start – 04/01/2025 End – 01/31/2025 2. Data Collection & Equity: Start - 05/01/2025 End – 10/30/2025 3. Network Analyses: Start – 10/30/2025 End – 2/28/2026 4. Safety Analyses: Start – 10/1/2026 End – 5/31/2026 5. Action Step / Priority Analyses: Start – 05/01/2026 End – 08/31/2026 6. Trails Master Plan: Start – 09/01/2026 End – 10/30/2026
Transportation	City of Mesquite	Trails Master Plan - Proposed study will detail about the future need and deficiency of existing network connectivity. With that study, the City of Mesquite will able to budget and plan to meet the recommended trails plan.	149,900 is the estimated population of the city in 2024 and the amount impacted by this plan	City of Mesquite and it's residents	City is rapidly growing, but the transportation system is not keeping up. This plan will help provide alternative means of transportation to residents within the city via bike and foot trails.				1/1/2025	6/30/2026	1. Develop Plan Goal: Start – 01/01/2025 End – 01/31/2025 2. Data Collection & Equity: Start - 02/01/2025 End – 06/30/2025 3. Network Analyses: Start – 06/30/2025 End – 10/30/2025 4. Safety Analyses: Start – 090/1/2025 End – 12/31/2025 5. Action Step / Priority Analyses: Start – 01/01/2026 End – 03/31/2026 6. Trails Master Plan: Start – 04/01/2026 End – 06/30/2026
Agriculture/Natural and Working Lands	City of Plano	Residential Landscaping Rebate Program - increase the amount of drought-tolerant, low-maintenance, North Central Texas-appropriate landscaping in Plano residences. To reduce high-water use landscape plants, including turf, by replacing them with low-water use, low-maintenance, North Central Texas - appropriate alternatives. To remove the financial barrier to beginning a transition to low-water use landscaping.	200 residences per year	residents	Increased air-filtering, heat-absorbing neighborhood green space. Renovation of mature or underdeveloped landscapes resulting in increased neighborhood property value. 10% reduction of residential water use for landscape as measured by participants' water bills over high-use period (May – September). 10% savings or greater on monthly water bill as measured by participants' water bills over high-use period (May – September).				Jan-25	2026 until funds are expended each year	Timeframe Tasks Jan 2025, 2026 – closes when registration reaches maximum each year. Registration for program participation. Target high-use properties and DAC ZIP codes. Jan – Feb 2025, 2026 Review of participants' previous water usage to establish baseline. Participants must be able to produce May – September water bills or provide permission to access them. Feb – April 2025, 2026 Provide compulsory participant education class on Principles of Texas SmartScape. Offer in-person and virtual classes. March – November 2025, 2026 Open application and review process for proposed purchases. Allowable purchases: landscape plants, drip irrigation. Provide discounted, bulk purchase of compost and mulch through Texas Pure partnership. April 2025, 2026 until funds are expended each year. Distribute rebates. Not all participants may request or qualify for the full $500. Review and compare water usage for May – September of current to previous year.
Energy	City of Frisco	Install solar panels on a subset of City facilities (e.g. Library and Frisco Athletic Center), pending roof quality inspections. Electricity-generated from solar can result in less electricity purchased from the utility, which lowers emissions generated from the fossil fuel-powered utilities. Proposed solar panel installation is estimated to save each respective facility 10% of its annual electrical consumption.		a subset of city facilities							**Complete within 5 yr timeframe**
Energy	City of Frisco	Build solar parking canopies at municipal facilities, which would provide coverage to City/staff vehicles during inclement weather; improve air quality by lowering emissions generated from City staff transporting vehicles to/from covered parking; reduce the urban heat island effect; and produce energy to feed back into the grid.		Municipal Buildings							
Other	City of Plano	Education – Online learning modules - Develop two new online learning modules: gamified, self-paced learning tools. Suggested topics include leak detection coupled with water bill interpretation and best practices for a Texas-tough landscape.		city residents	Increase residents' knowledge of the importance of water conservation and the importance of drought tolerant plants. Decrease in water usage resulting in decreased energy usage to help improve air quality. Increased landscaping to act as air filters for cleaner air.				Jan-25	Dec-25	
Other	City of Plano	Education – Video Catalog of on-demand learning - video catalog of on-demand how-to content that's housed on a topically tabbed webpage, giving residents a trusted, local source for easy-to-follow, relevant information on achieving sustainable behaviors.		residents	A comprehensive video catalog of short videos that meets the need of lack of non-commercial, local content out there with a genuine focus on local sustainability initiatives.				Jan-25	Early 2026	
Other	City of Plano	Education – Youth Education Sustainable Learning Kits - Purchase supplies to help SEED better align its youth education initiatives with STEM-related TEKS. Examples of desired supplies include but aren't limited to: Air quality monitoring classroom kit, Renewable energy kit, LCD digital microscope and Biodiversity, ecosystems and human impact kit.		Plano students, particularly older age groups	Reach more Plano students, particularly in older age groups, in more impactful, career-inspiring ways. New audiences might include underserved groups, like homeschool students and students who reside in multifamily properties (using the mobile outreach van).						Implementation schedule: Supplies can be ordered and curricula can be written, as needed, as soon as funds are available.
Other	City of Plano	Education – Expanded Marketing and Education - Pilot fifteen-second pre-movie screen ads at all or some of Plano's five movie theaters. Choose films that target adult homeowners with seasonal messages about energy conservation, water conservation, best practices for a Texas-tough landscape and more.		all or some of Plano's five movie theatres; Plano residents and viewers outside the city	Pilot fifteen-second pre-movie screen ads at all or some of Plano's five movie theaters. Choose films that target adult homeowners with seasonal messages about energy conservation, water conservation, best practices for a Texas-tough landscape and more.				Jan-25	Nov-26	
Other	City of Plano	Education – Green Student Certification App - Work with an outside contractor and COP Technology team to develop and launch a self-paced green student certification phone app. Completion of the app will give Plano students credentials for hours spent completing sustainable initiatives and becoming environmentally literate citizens. Completion will also be awarded with a certificate and monetary award.		Plano students	Environmentally literate students who will utilize their knowledge to further educate other residents in their networks about the importance of conservation for improved air quality.				Jan-25	Dec-25	Timeframe Tasks Jan – Apr 2025 Identify the coordinating staff. Draft a vision and app initiatives. Develop RFP with Tech Solutions. May – July 2025 Bid the contract, review contractors and determine the winning contractor. Set up an implementation plan. July – Dec 2025 Work with the contractor to develop and test app Dec 2025 Launch and maintain app for 4 years.
Solid Waste	City of Plano	Multi-Family Bulky Waste Diversion - Increase waste diversion from landfills by expanding networks, specifically targeting multi-family dwellings. Elevate city services to enhance waste management practices, focusing on the underserved populations residing in multi-family housing. Mitigate illegal dumping incidents, particularly related to bulky waste items, electronics, and other materials, through targeted collections. Remove financial barriers associated with waste diversion collections in multifamily dwellings, ensuring equitable access to sustainable waste management practices.	Limit of $30,000 per multi-family complex. Program able to service up to 5 multi-family complexes. Pilot program will run for 2 years.	multi-family complexes	Expansion of waste diversion networks in multi-family dwellings leading to a measurable 5% increase in the overall diversion of waste from landfills. Implementation of targeted collections leading to a noticeable reduction in illegal dumping incidents, specifically related to bulky waste items and electronics.				Jan-25	Dec-26	Plano project 11.png
Transportation	City of Plano	Residential Lawn Care Equipment Rebate Program - decrease the number of residential owned gas-powered lawn care devices (lawn mowers and leaf blowers) by replacing them with electric or battery powered lawn equipment. To reduce the financial barrier that acts as a deterrent which will assist people in making the transition of lawn care equipment. Properly dispose of old equipment.	400 electric mowers and 400 electric leaf blowers	residents that own gas powered lawn care devices	Reduce the overall amount of gasoline-based carbon emissions within the city. According to a study by the EPA, a single lawn mower produces approximately 89 pounds of CO2 and 34 pounds of other pollutants each year. Participants will save additional money by not having to purchase gasoline and oil for their lawn equipment. Reduce noise pollution because gas powered equipment is much louder than electric. Keep old gas-powered equipment out of the landfill.				Jan-25	Mar-26	Milestone Dates Market equipment exchange program. Open participation up to max allowable in the program (200 mowers/100 blowers per year) First week of January 2025, 2026 Collect old equipment and properly dispose of with outside vendor. Exchange for a voucher for new equipment at the exchange location. February 2025, 2026 Order and distribute new equipment based on the number of vouchers handed out, up to max amount. February - March 2025, 2026
Transportation	City of Plano	Parks Lawn Care Equipment Replacement Program - To replace existing city owned gas and diesel powered lawn care equipment with battery operated models.		Municipal Grounds: Neighborhood, Community and Downtown Parks, Nature Preserves, Dog Parks, Athletic [illegible]	Plano project 13.png		Complaints involving excessive noise generated from gas powered equipment during normal grounds maintenance activities have been historical from the public in the downtown area of Plano, as well as from staff within public facility meeting rooms and offices.	Equipment maintenance costs will be funded through City of Plano Fleet Services for at least 8 years of equipment life: $262,806	Feb-24	Aug-25	i. Feb. 2024 – Meeting with Fleet Services to plan for equipment acquisition in FY 2024-25 ii. Feb. 2025 – Grant funding received iii. Mar. 2025 – Begin acquisition process for equipment through Fleet Services/Purchasing Department iv. Aug. 2025 – Receive equipment and place into service
Water/Wastewater	City of Plano	Residential Smart Water Meter Rebate Program - Provide real-time water data monitoring devices to our residents through a rebate program. The smart water meter will notify residents of unusual water usage, enabling them to promptly address and prevent costly water leaks. Additionally, the device can provide users with the capability to monitor their daily water consumption, facilitating the reduction of overall water usage and better conservation habits.		residents	reduce water loss and make repairs or changes to their systems in a timely manner by receiving alerts from their app instead of having to wait for their monthly water bill. Residents will gain a better understanding of their overall water consumption. The amount of energy required to produce water for the City of Plano will be reduced, resulting in a decrease of greenhouse gases. Residents will become more water conservation literate through on-going education.				Jan-25	Dec-26	Timeframe Tasks Jan 2025 – Dec 2026 Market program and develop education outreach campaign. Launch program – Distribute rebates until funds are depleted. Offer on-going educational opportunities.

Project Scopes Received for Dallas-Fort Worth Air Quality Improvement Plan
As of March 1, 2024

Sector	Organization	Do [what] at [where]:	Estimated number of sites/vehicles/people/etc.:	Geographical Location/Community Served *(if applicable)*:	Estimated community benefits: *(if known, if not NCTCOG can assist)*	Expected benefits to DAC: *(if known/applicable, if not NCTCOG can assist)*	Existing community engagement/feedback: *(if applicable, if no existing community engagement/feedback, NCTCOG will use public engagement currently being conducted for the DFW AQIP)*	Funding availability: *(other funds which have been or could be used)*	Estimated start date:	Estimated finish date:	Include an explanation on how this can be implemented in ~2025- 2030
Energy	Peterbilt	Complete Solar Parking Covering + 15% Employee EV Chargers	+ 15% Employee EV Chargers		Promote employee conversion to EVs-ESG-Utilize solar for employee car charging or offset electricity used at plan				N/A	N/A	
Transportation	City of Richardson	Greenville Network - a network of high-comfort bike facilities which complete some gaps in our current network in central Richardson.	The proposal includes 3.7 miles of bike lanes made up of 2.6 miles of separated bike lanes (1.7 miles is an upgrade from painted buffered bike lanes to full separation) and 1.1 miles of painted buffered bike lanes							39 months from when they started	
Solid waste	City of Weatherford	Western Region Resource Management Center - The WRRMC is intended to provide the Western Region with a comprehensive solution to long-term municipal solid waste management needs. The proposed WRRMC facility will incorporate the following elements. Environmental learning center and incubator hub Resource recovery facilities, including a material recovery facility, tire storage, appliance recycling, electronics recycling, and HHW facility. Recovery of construction and demolition wastes. Organics composting operation for sludge, vegetative, and food waste. Administrative facilities State-of-the-art municipal solid waste landfill.	The western region has a total population of 2.8 million people covering eight counties. review of the Western Region's waste generation indicates that outside of Tarrant and Johnson Counties, a total of 444,000 tons of MSW is generated annually	The primary area served by the WRRMC will be the Western Region, excluding Tarrant and Johnson counties. This area covers a total of 4536 square miles.			Critical to the project's success is community engagement and acceptance. This will be initiated through several meetings with local government leaders in the Western Region. The PAG will be one of the focal points of the community engagement process. The City will define the purpose of the WRRMC and seek commitments from these local leaders to participate in the program. Through the process, the public will have an opportunity to comment on the project's goals and design features through public meetings. The City will also coordinate closely with the NCTCOG and the TCEQ as it develops the project.		2025	2030	
Energy	DART	Replace roofs on DART maintenance and administrative buildings with sustainable roofs including green spaces and solar panels.	Fourteen (14) maintenance and administrative buildings.		Solar panels reduce reliance on traditional energy sources, decreasing the overall environmental impact and contributing to cleaner air. Green roofs help mitigate the urban heat island effect, enhance air quality, and reduce energy consumption for cooling, contributing to overall environmental improvements.			Current FTA discretionary grants, formula grants, and local revenue do not provide adequate funds for building upgrades such as large solar panel arrays.		Two (3) years from execution of funding agreement	
Transportation	DART	Ticketing Vending Machines (TVM) Model Replacement - Replace TVMs at the rail station platforms with a more reliable model to enhance the customer experience. The new TVMs will provide a method for people without a credit card or bank account to purchase and recharge GoPass tap cards.	189 TV Ms at rail stations with 48% in DACs		Improving access to working TVMs enhances the customer experience and increase the use of public transportation and reduces automobile dependency, traffic congestion, and GHG emissions. In addition, this project will minimize the usage of paper tickets in the environment.	Service to DACs will be a priority when replacing new TVMs. New TVMs provide easier access for unbanked customers.		Current FTA discretionary grants, formula grants, and local revenue do not provide adequate funds for public amenities improvements.		Two (3) years from execution of funding agreement	
Transportation	DART	Bus Corridor Improvements - implement new features to improve transit bus operations, including traffic signal priority, queue jump lanes, bus shelters and bus priority lanes along high frequency corridors.	TSP equipment that will be added to the traffic signal and controllers at 22 intersections. Plus, the cost to purchase and install new equipment on 15 buses.		Improve on-time performance, increase transit usage and mode shifting therefore reducing GHG emissions, congestion and single occupancy vehicle usage.	Each corridor serves multiple DACs.				1-4 years from execution of funding agreement.	
Transportation	DART	Implement Corridor-based BRT along high frequency route(s)	15-20 miles		Increase transit usage and mode shifting therefore reducing GHG emissions, congestion and single occupancy vehicle usage	BRTserves DACs.				2 - 4 years from execution of funding agreement.	
Transportation	DART	Bus Corridor Improvements - Rehab, establish bus only lanes in Downtown Dallas corridors (e.g. paint, signage, markings, etc.)	2-3 miles		Increase transit usage and mode shifting therefore reducing GHG emissions, congestion and single occupancy vehicle usage.	Corridor serves DACs.				2 - 4 years from execution of funding agreement.	
Energy	DART	Install solar panels on bus canopies	3 bus operating facilities		Solar panels reduce reliance on traditional energy sources, decreasing the overall environmental impact and contributing to cleaner air	Each bus operating facility was identified as a being a DAC by the Climate and Economic Justice Screening Tool that supports the president's J ustice40 Executive Order (Census Tracts: 48113008603, 48113000406, and 48113009802).	n/a	Current FTA discretionary grants, formula grants, and local revenue do not provide adequate funds for building upgrades such as large solar panel arrays.		Two (2) years from execution of funding agreement.	
Transportation	DART	TRE Diesel Locomotive Vehicle Replacement (2 locomotives)	Two (2) replacement Diesel-Electric locomotives to replace aging equipment operating on the Texas Railway Express (TRE) commuter rail line operating between the cities of Dallas and Fort Worth.	Texas Railway Express (TRE) commuter rail line operating between the cities of Dallas and Fort Worth.	Replacing vehicles will create significant climate change benefits. By upgrading from Tier 2 (first emission standard adopted in 1997) to Tier 4 (highest standard adopted in 2015), emissions for PM and NOx will be reduced by about 70% and hydrocarbon emissions will be reduced by about 50"/o.	Vehicles will operate along a corridor adjacent to multiple DACs.		Current discretionary grants and local revenue do not provide adequate funds for replacement of the entire fleet of exiting locomotives.		3- 4 years from execution of funding agreement.	
Transportation	DART	2-year funding to accelerate service improvements on select routes (229 and 230 from 30/40 to 15/20) to reduce headway to support disadvantaged communities and enhance access to jobs.	Two (2) routes (229, and 230)		Increase transit usage and mode shifting therefore reducing GHG emissions, congestion and single occupancy vehicle usage.	Each route serves multiple DACs.		Funding of these improvements would need to be offset by service cuts on other routes serving DACs located elsewhere in the DART service area.		Six (6) months from execution of funding agreement.	
Transportation	DART	CNG bus replacements with the latest CNG engines to support DART fleet replacement plans	50 CNG buses		CNG buses emit significantly lower levels of nitrogen oxides, particulate matter, and greenhouse gases compared to diesel buses. Procuring CNG buses with the latest CNG engines to support DART fleet replacement plans directly contributes to improved air quality.	Vehicles will operate along a corridor adjacent to multiple DACs.		DART's current fleet size is a significant deterrent to providing the public transportation frequency and coverage needed to address the mobility needs of our member cities.		Three (3) years from execution of funding agreement.	
Transportation	DART	Corridor Greening Initiative - Design and develop green spaces and drought-resistant landscaping with native trees and vegetation along DART corridors and rail stations.	150 acres in DACs along DART corridors and/or rail stations	DART corridors and/or rail stations	Green infrastructures and landscapes help improve air quality by reducing heat island effects, capturing pollutants, and enhancing the overall environmental sustainability of DART corridor.	Multiple installations will be within and adjacent to DACs		The amount of current revenue which can be used for facility enhancements like sustainable landscaping is limited.		Three (3) years from execution of funding agreement.	
Transportation	DART	Develop mobility hubs to enable multiple walkable connections within the DART service area.	Five (5) new or enhanced mobility hubs		Adding multi-modal connections along with other conveniences, such as micro mobility services, EV chargers, and pop-up shops which increase the attractiveness of public transportation and reduce single traffic congestion and GHG emissions.	Service to DACs will be a priority consideration when locating every new or improved mobility hub.		The amount of current revenue which can be used for facility enhancements like mobility hubs is limited.		Three (3) years from execution of funding agreement.	
Transportation	DART	Pilot program for police patrol EVs	10 new large police "sport utility" EVs and 90 kW DC fast charging facilities.		Replacing gasoline vehicles with hybrid or electric service vehicles reduces GHG emissions.	Vehicles will operate along a corridor adjacent to multiple DACs ..		Limited funding availability for non-revenue vehicles in general.		One to three (1- 3) years from execution of funding	
Transportation	DART	Carrollton Crossing Depot adaptive reuse and mobility hub	1 facility		The Carrollton Crossing Depot was constructed in 1924 to serve as the city's primary passenger rail station. Adding multi-modal connections along with other conveniences, such as micro mobility services, EV chargers and po pup shops and increasing the utility of public transportation therefore reducing GHG emissions associated with automobile dependency.	The Carrollton Crossing Depot is in a DAC (Tract 48113009802) and would increase economic opportunities by expanding the range of mobility options for residents.		DART has recently begun an adaptive reuse concept plan for the building and site and has not identified implementation funding.		One to three 1-year from execution of funding agreement.	
Transportation	DART	Construct and replace enhanced passenger amenities throughout the DAC service area, such as solar powered bus shelters that power security lights and passenger information displays.	570 replacement shelters in DAC		Improving access and security at bus shelters enhances the use of public transportation and reduces automobile dependency, traffic congestion, and GHG emissions.	Service to DACs will be a priority when replacing new enhanced bus shelters.		Requested funding is for existing stops and associated facilities. Limited funding available		Two (3) years from execution of funding agreement	
Transportation	DART	TRE Wayside Power- purchase 11 electrical wayside power cabinets to allow TRE to plug in the locomotives and turn off the diesel engines to reduce GHG emissions.	11 wayside electrical cabinets (1 system)		TRE diesel engines significantly impact levels of nitrogen oxides, particulate matter, and greenhouse gases in the environment. Procuring electrical wayside cabinets to plug in the locomotives and turn off the diesel engines will reduce GHG emissions.			Other grants pursed but no feedback yet		2 years from execution of funding agreement.	
Energy	DCTA	Replace roofs on our maintenance and administrative buildings with sustainable roofs include green spaces and solar panels	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Energy	City of Fate	Solar Incentive Program - through a company called iChooser, that promotes a program called Solar Switch Fate to facilitate group buying programs. Their main objective is to help people switch to clean energy and save money on their electricity bills in an easy and transparent manner. Solar Switch Fate organizes group purchasing of residential solar panels to help homeowners receive a significantly discounted price for a solar panel installation. the city staff would like to have the ability to offer monetary assistance as an incentive for Fate residents who are interested in making the switch to solar. If funding was available though grants for this, city staff would then administer this program. Funding would be done on a reimbursement basis upon proof that residents have switched to solar power.	200 residents	city residents	provide residents with a hassle-free way to begin powering their homes with renewable energy.			N/A	N/A	N/A	
Energy	City of Plano	Residential Solar Installation Rebate Program - increase the installation of residential solar on Plano residences. To reduce the amount of greenhouse gases by installing solar panels for renewable energy consumption on Plano residences. To remove the financial barrier to installing solar on Plano residences.	200 residents annually	Plano residences	Improved air quality due to the increased use of renewable solar energy. Increased financial savings to residents on their monthly electricity bill. Increased property values due to solar installation. Increased equitable access to solar installation for Plano residents.				Jan-25	Oct-25	
Transportation	DCTA	A-train extension to Downtown Carrollton, station construction, and frequency increase to 15-minute headways									
Transportation	DCTA	Old Town Lewisville Transit Oriented Development									
Transportation	DCTA	Curve and Speed Improvements DCTA is exploring opportunities to expand and enhance their A-train commuter rail service. Those opportunities include increasing civil speeds by upgrading curves along the alignment through superelevation (Ea.) and unbalance elevation (Eu), decreasing trip times. Along with the curves upgrades the optimization of Enhanced Automatic Train Control (E-ATC) and Temporary Speed Restrictions (TSR) systems is also included in the decreasing of trip times. This includes changing the Eu up to five (5) inches on 19 curves spanning 4.7 miles and six (6) turnouts, Ea. changes at five (5) grade crossings and twelve (12) of the nineteen (19) curves identified for Eu changes. At the current 30-minute headway these changes result in three (3) minute run time north bound and one (1) minute thirteen (13) second run time south bound. At twenty-five (25) minute headways the run time savings grows to six (6) minutes northbound, and five (5) minutes forty-five (45) seconds south bound. To fully optimize the run times changes to E-ATC for the curves will need to be implemented to allow for 50-mph code rate.									
Transportation	DCTA	Downtown Carrollton Extension (assumes including Broadway siding) DCTA is looking at expanding operation 2.2 miles south to link with DART's Silver Line east west corridor allowing Denton County residents to connect to DFW airport and destination east. This extension includes the upgrade of existing track to Class IV standards, upgrades at eight (8) grade crossings, a new 5,400 feet passing siding and platform allowing transfer to DART's Silver line as well as the DART Green Line LRT. This project includes the extension of E-ATC for the system.									
Transportation	DCTA	Headway Changes (30 minute to 15 minute) Headway Changes from Current 30-minute to 15 minutes. To achieve the 15-minute headways several new passing sidings would be required for train meets. These include a new 1,200 feet siding in the City of Corinth, the extension of the Highland Village Lewisville Lake siding by 8,900 feet.									
Transportation	DCTA	Corinth Infill Station The City of Corinth and DCTA are contemplating a new station within the City of Corinth, to serve their residents as well as students at the North Central Texas Community College (Corinth Campus). To include this station work includes new platform and the extension of the Downtown Town Denton double track 3,900 feet to accommodate a new train meet due to the additional station and proposed dwell times.									
Transportation	DCTA	Diesel hybrid electric bus replacements with the latest hybrid technology to support DCTA fleet replacement plans	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transportation	DCTA	Education Campaign to increase transit use for corporations, youth, and minority populations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transportation	DCTA	Develop Mobility Hubs (up to 15 locations) for walkable multi-modal connections , in accordance with the University of North Texas / NCTCOG Mobility Hub Strategy and the DCTA Bus Stop Infrastructure Study	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transportation	DCTA	Non Revenue Vehicle (NRV) Replacements	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transportation	DCTA	Passenger Amenity Replacement and Expansion including solar panel bus shelters and ADA access improvements	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transportation	DCTA	Complete Streets solutions on Bus Corridors (street trees, sidewalks, bike lanes, widening, TSP, Queue jumps, bus only or priority lanes)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transportation	DCTA	Downtown Denton Transit Center Transit Oriented Development (redevelopment)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Energy	City of Dallas	Roof replacement projects at City Facilities-Jack Evans Police Headquarters	1 building								
Energy	City of Dallas	Roof replacement projects at City Facilities-Fire station #18	1 building								
Solid waste	DFW Airport	Anaerobic Digester - to manage DFW's organic waste stream in furtherance of the Airport's goals for net zero carbon emissions by 2030 and zero waste by 2040. An anaerobic digester is an organic waste processor that breaks down organic waste to produce energy and divert waste from landfills. Given the volume of organic waste generated at DFW (~6,000 tons per year), the rising costs to haul and landfill waste, and the need to reduce DFW's onsite GHG emissions, a facility that can convert this costly waste product into biomethane gas.	one site					Airport Improvement Program (FAA); Voluntary Airport Low Emissions Program (FAA); This program does not provide adequate funding to support all project costs.	2025	2027	2025 Digester design finalized , Procurement of equipment and services finalized , Digester construction initiated 2027 Digester construction completed , Digester commissioned

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Sector	Organization	Do [what] at [where]:	Estimated number of sites/vehicles/people/etc.:	Geographical Location/Community Served *(if applicable)*:	Estimated community benefits: *(if known, if not NCTCOG can assist)*	Expected benefits to DAC: *(if known/applicable, if not NCTCOG can assist)*	Existing community engagement/feedback: *(if applicable, if no existing community engagement/feedback, NCTCOG will use public engagement currently being conducted for the DFW AQIP)*	Funding availability: *(other funds which have been or could be used)*	Estimated start date:	Estimated finish date:	Include an explanation on how this can be implemented in ~2025- 2030
Transportation	DFW Airport	DFW International Airport – EV Resilience Roadmap - This proposed work will generate a methodology and Roadmap to quantitatively evaluate the resilience of airport EV transitions at DFW and provide clear benchmarks regarding potential single points-of-failure that could derail airport infrastructure operations if not adequately addressed. The methodology will utilize emerging data science capabilities for transparency and scientific rigor, including decision science and artificial intelligence. This Roadmap will identify airport critical functions for EV charging/supporting infrastructure, conduct resilience stress testing to assess risks and ensure resilience, and economically evaluate different DFW ZEV alternatives and investment needs. The EV Resilience Roadmap will assure DFW International Airport's stakeholders that ZEV alternatives can sustain airport critical functions in the face of expected unknown and unpredictable disruptions.			Seamless transition to EV assets; improved risk management; reduced downtime of EV infrastructure during disruptions			US Environmental Protection Agency (EPA)	2024	2028	2024 Complete a comprehensive Tier 1 screening-level assessment of DFW's current EV infrastructure and operational practices, including stakeholder interviews and data analysis. 2025 Initiate the development of Tier 2 system interdependency models 2026 Implement advanced Tier 3 modeling and simulation techniques 2027 Establish a fully operational data collection and analysis infrastructure, enabling continuous monitoring and assessment 2028 Integration of AI and Machine Learning tools for advanced predictive modeling and risk assessment Stakeholder workshops and tool completion.
Transportation	DFW Airport	Zero Emission Vehicle (ZEV) Roadmap - plan for transitioning hundreds of Airport vehicles to zero-emission alternatives (electric and/or hydrogen). This Roadmap includes detailed procurement schedules for replacing DFW's entire fleet of buses, pickups, and sedans – three fleets identified as being both the busiest and most-polluting on Airport property – as well as plans to construct/install a robust network of refueling infrastructure to support zero-emission buses, staff vehicles, and customer vehicles.	75+ bus chargers; 125+ car/truck chargers; 275+ buses; 125+ sedans and pickups; 1 hydrogen fueling station		Health benefits; decreased exposure to criteria pollutants; economic development and job creation; increased regional connectivity to zero-emission fueling infrastructure			Airport Zero Emissions Vehicle and Infrastructure Pilot Program (FAA); Strengthening Mobility And Revolutionizing Transportation (SMART) Program (USDOT); Advanced Transportation Technologies and Innovative Mobility Deployment (ATTAIN) Program (USDOT); None of these programs provide adequate funding to support full deployment of vehicles and infrastructure contained in the Roadmap.	2025		2025 Launch of Hydrogen Bus Pilot , 75 EV charging stations installed for buses and cars/trucks 2026 First ZEV bus depot constructed (Remote North lot) 2027 125 EV charging stations installed for buses and cars/trucks 2028 50% of DFW-owned sedans and pickups transitioned to ZEVs 2029 Second ZEV bus depot constructed (Rental Car Center) 2030 Third ZEV bus depot constructed (Southwest Campus), 67% of DFW buses transitioned to ZEVs , 200+ EV charging stations installed at DFW for buses and cars/trucks
Energy	City of Plano	Residential Home Water Conservation Audits and Rebate Program - Creating enhanced water efficiency in order to reduce carbon pollution and lower the energy requirements for supplying water to the City of Plano by offering extensive home water use (indoor and outdoor) audits to pinpoint potential necessary repairs or water conservation opportunities. Provide rebates for water conservation measures or repairs made as a result of home water audit. Provide education and outreach relating to water conservation.		residences	Reduce the amount of water used and wasted by the residents receiving audits. Reduce the amount of energy required to produce water for the City of Plano. Reduce greenhouse gas emissions due to the intensive process of treating water. Renovate and improve aging infrastructure of residents participating in the audit program. Educate, inform and involve residence about water conservation and quality issues and programs. Decrease water use and save money for participating residences. Improve water conservation and change behaviors of Plano residents.				Jan-25	Dec-26	Timeframe Tasks Jan – Feb 2025 Prepare & list RFP for Audit Company. Develop infrastructure for tracking requests, scheduling audits and repairs and processing rebates. Develop education outreach campaign. March 2025 Select contractor. Create marketing plan and prepare web pages. March 2025 – December 2026 Launch program – schedule audits and distribute rebates until funds are depleted. Offer on-going educational opportunities.
Energy	City of Plano	Residential Home Energy Audits and Weatherization Rebate Program - rebates on a variety of residential home energy savings projects to decrease household energy use. Provide free energy audits for qualifying residents. Target and refurbish aging infrastructure in residential areas to decrease energy losses. Create a rebate program that helps residents offset the costs associated with weatherization practices and the installation of energy-saving materials. Encourage residents to switch to renewable energy electricity plans and to participate in provided rebate programs. Provide energy-saving kits to renters.		residential homes both homeowners and renters	Increase energy savings in residential households. Residents provided with a free audit program and additional opportunity for rebates. Infrastructure of aging properties improved in residential areas. Quantifiable data will be collected through the rebate program in regards to the amount of energy saving and/or weatherization products installed in residential homes within a year. As a result of the audit program we will receive reports on the energy needs of the participating households. This information will allow us to infer how we can better target the rebate program to assist the community.				Jan-25	Dec-26	Timeframe Tasks Jan – Feb 2025 Prepare & list RFP for Audit Company. Develop infrastructure for tracking requests, dealing with associated paperwork, and paying out rebates. Order supplies for renter energy kits. March 2025 Select contractor. Create marketing plan and prepare web pages. Prepare renter kits. March 2025 – December 2026 Launch program and distribute rebates until funds are depleted. Offer on-going educational opportunities.
Energy	City of Fort	Replace 3 fire stations that demonstrate energy efficiency and/or	3 fire stations	Council District 8 and 11				No matching or additional funds have been	Summer 2025	7/22/1905	
Transportation	Peterbilt	General Truck Purchases	100 trucks	Specific for DFW					N/A	N/A	
Transportation	Peterbilt	HD EV Charging Station in Denton	-3 MW –18 Plugs	Near Peterbilt Plant; Restricted Access	Promote converting suppliers to ZEV-Provide charging solution to suppliers				N/A	N/A	
Transportation	Peterbilt	HD EV Charging Station in McKinney	-1.5 MW –10 Plugs	Near Dynacraft Facility; Restricted Access	Expand ZEV conversion to ZEV for trucks from McKinney to Peterbilt Denton				N/A	N/A	
Transportation	Peterbilt	EV Forklift –Complete conversion of propane to EV forklifts	Convert remaining 59 Propane forklifts to electric		Significant GHG Reduction-NOx Reduction				N/A	N/A	
Energy	City of Fort Worth	Ensuring regulatory compliance of the city's municipal facilities.		citywide				No matching or additional funds have been secured at this time.	1/1/2025	1/1/2030	
Energy	City of Frisco	Replace fountain in front of City Hall (Simpson Plaza) with a project proposed and selected by the local community / stakeholders/ City Council. If Council-approved, this would be a City-wide contest for stakeholders to propose a project that reflects the work accomplished by the City through the EPA's CPRG program, a sustainable project with elements that engage the public. The current fountain pumps are inefficient and there have been several leaks leading to water loss.									**Complete within 5 yr timeframe**
Transportation	Town of Addison	Beltway Drive Trail Project - The Beltway Drive Trail is a first phase recommendation of the City- Wide Trail System Master Plan (CWTMP) adopted by the Addison City Council in May 2021. The trail is an on-road and off-road side path beginning at Marsh Lane at Addison's western city limit with Carrollton and ending at Beltway Drive and Belt Line Road to the east.	one trail 1.5 miles long	The trail is approximately 1.5 miles in length from Marsh Lane to Belt Line Road on Beltway Drive. Marsh Lane west to Le Grande Drive is designed to be a buffered 2-way cycle track on the north side of Beltway Dr. The 2-way cycle track at Le Grande Drive will transfer to a public park and become a off-road shared use path to Midday Road. From Midway Road to Belt Line Road the trail becomes a Bicycle Boulevard.					2025	2029	
Transportation	Town of Addison	Westgrove Drive Trail Project - The Westgrove Drive Trail Project is also a first phase recommendation of the CWTMP adopted by Addison City Council in May 2021. Like the Beltway Drive Trail, the Westgrove Drive Trail is a buffered 2-way cycle track from the north Addison City limits line on Westgrove Drive just south of Trinity Mills in Dallas south and eastward to the Dallas North Tollway.	one trail .93 miles long	The Westgrove Drive Trail Project is also a first phase recommendation of the CWTMP adopted by Addison City Council in May 2021. Like the Beltway Drive Trail, the Westgrove Drive Trail is a buffered 2-way cycle track from the north Addison City limits line on Westgrove Drive just south of Trinity Mills in Dallas south and eastward to the Dallas North Tollway.					2025	2029	
Transportation	Town of Addison	Quorum Drive from Belt Line Road to Westgrove Drive - This project is being considered in association with the NCTCOG Implementation of Bicycle Facilities to DART Station Study.	three segments of a trail: .32 miles, .67 miles, .40 miles	This project contains three segments. The south segment is planned from Belt Line Road to Arapaho Road along Quorum Drive for approximately 0.32 miles. The preferred option presented by NCTCOG is One-way Off-street Separated Bike Lanes. The central segment is planned from Arapaho Road to Keller Springs Road along Quorum Drive for approximately 0.67 miles. The preferred option presented by NCTCOG is One-Way Separated Bike Lanes in front of parking. The north segment is planned from Keller Springs Road to Westgrove Drive along Quorum Drive for approximately 0.40 miles. The preferred option presented by NCTCOG is One-Way Separated Bike Lanes.					2025	2029	
Transportation	Town of Addison	Dallas North Tollway Pedestrian and Bicycle Crossing along Belt Line Road - create safe and convenient access between west and east Addison by utilizing Belt Line Road overpass on the south side as a shared use path.		Belt Line Road overpass on the south side					2025	2029	
Transportation	Trinity Metro	Promote and implement idling restriction- Evaluate and implement a									
Energy	City of Dallas	Provide training in the operation, management, and maintenance of relevant building systems.	Provide supervisory and management personnel with advanced building automation system training opportunity								
Transportation	Trinty Metro	Build infrastructure to support use of low emissions fleet vehicles - Conduct a fleet replacement plan to evaluate timing, cost and infrastructure needs for conversion to EV buses									
Transportation	Trinty Metro	Develop a fleet management plan for public sector vehicles - Conduct a fleet replacement plan to evaluate timing, cost and infrastructure needs for conversion to EV buses; Evaluate and implement a no/limited idling program for buses									
Transportation	Trinty Metro	Reduce single occupancy vehicle trips- Introduce and coordinate with municipalities in Tarrant Co that do not already have basic transit services to implement services; Work with municipalities to expand micro transit/on-demand services in existing and new areas; Increase ease of use of the transit system through improved Fare Collection equipment, strategies, and pricing.									
Transportation	Trinty Metro	Improve/expand sidewalk infrastructure - Improve coordination with municipalities regarding developments located near transit hubs									
Transportation	Trinty Metro	Add more walkable, dense, mixed-use centers - Improve coordination with municipalities regarding developments located near transit hubs									
Transportation	Trinty Metro	Implement micro transit - Introduce and coordinate with municipalities in Tarrant Co that do not already have basic transit services to implement services; Work with municipalities to expand micro transit/on-demand services in existing and new areas									
Transportation	Trinty Metro	Create bus-only transit lanes - Work with municipalities to identify and implement bus-only lanes, TSP, queue jumps, or other transit specific applications that speed up service and reliability									
Transportation	Trinty Metro	Expand public transportation - Introduce and coordinate with municipalities in Tarrant Co that do not already have basic transit services to implement services									
Transportation	Trinty Metro	Create an educational campaign to increase transit ridership - Work with municipalities to expand micro transit/on-demand services in existing and new areas; Improve coordination with municipalities regarding developments located near transit hubs; Increase ease of use of the transit system through improved Fare Collection equipment, strategies, and pricing.									
Transportation	Trinty Metro	Adopt clean locomotive technology - TRE Diesel Locomotive Vehicle Replacement (2 locomotives) DART led activity supported by Trinity Metro									
Energy	City of Denton	Improve energy efficiency of facilities identified in the comprehensive facilities condition assessment	3	City of Denton			The city will build on the existing engagement activities.		Oct-25		
Energy	City of Denton	Resilient building installation	1	City of Denton							
Energy	City of Denton	Heat Pump Program	6								
Energy	City of Denton	Conduct Residential Energy Audits		Enhance existing energy and water audit program. Target high usage customers and customers receiving utility assistance. Create path to home improvement program.			Existing program can be scaled to larger number of audits and proactive outreach to current high use and high use utility assistance customers.		Oct-25		
Energy	City of Denton	Implement Residential Efficiency Improvements		Cover existing program gaps for minor repairs, energy efficiency and other existing assistance programs.			Existing program can be scaled to larger number of audits and proactive outreach to current high use and high use utility assistance customers.		Oct-25		
Energy	City of Denton	Provide incentives for Residential Solar		Provide rebates for Denton Municipal Utilities customers to install solar battery storage			Reopen previous process to new customers.	Not available	Oct-25		Denton suspended solar rebate program for 23/24 to focus on energy efficiency programs. The rebate program previously funded rebates for DME customers totaling 500,000/fy. The program could be easily relaunched when funding becomes available.
Energy	City of Denton	Incentives to cover the incremental cost of hybrid, plug in hybrid, or electric work truck, refuse trucks, dump trucks, and associated infrastructure.									
Energy	City of Denton	provide funding to replace medium and heavy duty vehicles with new clean one and infrastructure									
Energy	City of Denton	Incentives, local govt. rebate program for replacement of gas powered lawn equipment with electric models									
Transportation	City of Frisco	Replace existing gasoline- and battery-powered, ruggedized UTVs with alternative fuel and/or hybrid models.									
Transportation	City of Frisco	A program that builds sidewalks annually at various locations across the city.									
Transportation	City of Frisco	Construct Roundabouts on Frisco Street at All Stars, Research, Technology, and Sports Village.									
Transportation	City of Frisco	Construct Roundabout at Ohio & Wade.									
Transportation	City of Frisco	Add turn lanes to improve traffic in various intersections (about 5-7 intersections) throughout the city.									
Transportation	City of Frisco	Plan major park to improve community access and provide mobility hub for biking and pedestrians									
Transportation	City of Frisco	Replace older lighting technology at streetlights and parking lots with efficient LEDs									
Transportation	City of Frisco	Install ATC Cabinets with cabinet locks city wide. All cabinets to be replaced. Improves operation and allows for easier implementation of future technologies to improve traffic flow.									

Project Scopes Received for Dallas-Fort Worth Air Quality Improvement Plan
As of March 1, 2024

Sector	Organization	Do [what] at [where]:	Estimated number of sites/vehicles/people/etc.:	Geographical Location/Community Served *(if applicable)*:	Estimated community benefits: *(if known, if not NCTCOG can assist)*	Expected benefits to DAC: *(if known/applicable, if not NCTCOG can assist)*	Existing community engagement/feedback: *(if applicable, if no existing community engagement/feedback, NCTCOG will use public engagement currently being conducted for the DFW AQIP)*	Funding availability: *(other funds which have been or could be used)*	Estimated start date:	Estimated finish date:	Include an explanation on how this can be implemented in ~2025- 2030
Transportation	City of Frisco	Install fiber optic communications to improve existing communications systems and improve redundancy and resiliency. Increase bandwidth for video camera and connected vehicle technologies.									
Transportation	City of Frisco	17 Cabinet upgrades based on 2024 inventory.									
Transportation	City of Frisco	Retime traffic signals using Frisco ATSPM system and Connected Vehicle travel times via INRIX/WEJO.									
Transportation	City of Frisco	Retime traffic signals using Frisco ATSPM system and Connected Vehicle travel times via INRIX/WEJO.									
Transportation	City of Frisco	Roadway expansions include median enhancements utilizing drought tolerant landscaping across the city.									
Transportation	City of Frisco	Hillcrest realignment construction planned to reduce sight line issues and intersection improvements.									
Transportation	City of Frisco	Cotton Gin alignment study from Short St. to Stonebrook/Rolling brook.									
Transportation	Town of Flower Mound	Active Transportation sidewalk link program - Install sidewalks, widen roadway with curb and gutter, landscaping and storm drainage improvements.	1.07 Miles	Waketon Road - Flower Mound	Active Transportation Program - increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.		Town of Flower Mound Transportation Commission recommended and approved the project as part of the Sidewalk Link Program		2/28/2025	10/15/2025	As soon as funds are available, we can issue a start work order since we have an annual concrete bid available for the next four years. The project could certainly be started with funds encumbered in or prior to FY25.
Transportation	Town of Flower Mound	Active Transportation Sidewalk Link Program - Install sidewalk, ADA ramps, and landscaping.	561 Linear Feet	Flower Mound Road (FM 3040) northeast of Duncan Road intersectional	Active Transportation Program - increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.		Town of Flower Mound Transportation Commission recommended and approved the project as part of the Sidewalk Link Program		2/28/2025	10/15/2025	As soon as funds are available, we can issue a start work order since we have an annual concrete bid available for the next four years. The project could certainly be started with funds encumbered in or prior to FY25.
Transportation	Town of Flower Mound	Active Transportation Sidewalk Link Program - Install sidewalk, ADA ramps, storm drainage improvement, retaining walls and landscaping.	.52 Miles	Simmons Road from Wichita Road to McKamy Creek Road	Active Transportation Program - increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.		Town of Flower Mound Transportation Commission recommended and approved the project as part of the Sidewalk Link Program		2/28/2025	10/15/2025	As soon as funds are available, we can issue a start work order since we have an annual concrete bid available for the next four years. The project could certainly be started with funds encumbered in or prior to FY25.
Transportation	Town of Flower Mound	Active Transportation Sidewalk Link Program - Install sidewalk, ADA ramps, fencing, and landscaping.	550 LF	Strait Lane from Flower Mound Rd. to Rock Cliff Ln.	Active Transportation Program - increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.		Town of Flower Mound Transportation Commission recommended and approved the project as part of the Sidewalk Link Program		2/28/2025	10/15/2025	As soon as funds are available, we can issue a start work order since we have an annual concrete bid available for the next four years. The project could certainly be started with funds encumbered in or prior to FY25.
Transportation	Town of Flower Mound	Active Transportation Sidewalk Link Program - Install sidewalk, ADA ramps, and landscaping. Cross over existing Rail Road crossing which will need UPRR permitting and pedestrian improvements.	972 LF	Justin Rd. (FM 407) at East Town Limits	Active Transportation Program - increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.		Town of Flower Mound Transportation Commission recommended and approved the project as part of the Sidewalk Link Program		2/28/2025	10/15/2025	As soon as funds are available, we can issue a start work order since we have an annual concrete bid available for the next four years. The project could certainly be started with funds encumbered in or prior to FY25.
Transportation	Town of Flower Mound	Active Transportation Sidewalk Link Program - Install sidewalk, ADA ramps, and landscaping.	700 LF	Cross Timbers Rd. (FM 1171) East of Lusk Lane	Active Transportation Program - increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.		Town of Flower Mound Transportation Commission recommended and approved the project as part of the Sidewalk Link Program		2/28/2025	10/15/2025	As soon as funds are available, we can issue a start work order since we have an annual concrete bid available for the next four years. The project could certainly be started with funds encumbered in or prior to FY25.
Transportation	Town of Flower Mound	Active Transportation Sidewalk Link Program - Install sidewalk, ADA ramps, retaining wall, handrails, and landscaping.	2060 LF	Cross Timbers Rd. (FM 1171) East of Morris Road	Active Transportation Program - increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.		Town of Flower Mound Transportation Commission recommended and approved the project as part of the Sidewalk Link Program		2/28/2025	10/15/2025	As soon as funds are available, we can issue a start work order since we have an annual concrete bid available for the next four years. The project could certainly be started with funds encumbered in or prior to FY25.
Transportation	Town of Flower Mound	Active Transportation Sidewalk Link Program - Install sidewalk, ADA ramps, and landscaping.	700 LF	Cross Timbers Rd. (FM 1171) West of Churchill Dr.	Active Transportation Program - increased pedestrian safety, rejuvenating neighborhoods, encouraging walking/biking to school, reducing vehicle trips, reducing emissions, other benefits, other NCTCOG identified benefits.		Town of Flower Mound Transportation Commission recommended and approved the project as part of the Sidewalk Link Program		2/28/2025	10/15/2025	As soon as funds are available, we can issue a start work order since we have an annual concrete bid available for the next four years. The project could certainly be started with funds encumbered in or prior to FY25.
Energy	Town of Flower Mound	Total lighting and pole replacement to convert into more efficient LEDs at the Waste Water Treatment Plant	70	1105 Duncan Lane	This improvement will reduce energy and provide a safe environment/workplace for staff				1/20/2025	12/20/2025	As soon as funds are available, we can issue a bid for the work and can implement and complete prior to the end of FY25.
Water/Wastewater	Town of Flower Mound	Stonecrest Pump Station Phase II - Provide an additional 5MG Ground Storage and additional Pump .	1 project site location	Serves western Flower Mound, physical location is 6200 Stonecrest Parkway	Increase water distribution efficiency, capacity, and resiliency			Impact Fees	FY2025	FY2027	Design and construction can be competed in five year time frame
Water/Wastewater	Town of Flower Mound	Lakeside Reuse - Provide recuse water treated from the Town's Wastewater Treatment Plant for irrigation in southern Flower Mound	1 project site location	Serves multiple Town parks, medians, and businesses in the Lakeside District	Improved treatment process, increases water conservation, and provides water Reuse			Impact Fees	FY2025	FY2028	Design and construction can be competed in five year time frame
Water/Wastewater	Town of Flower Mound	Denton Creek Reuse - Provide reuse water treated from the Town's Wastewater Treatment Plant for irrigation in western Flower Mound	1 project site location	Serves multiple Town parks, medians in western Flower Mound	Improved treatment process, increases water conservation, and provides water Reuse			Impact Fees	FY2025	FY2030	Design and construction can be competed in five year time frame
Water/Wastewater	Town of Flower Mound	Wastewater Treatment Plant Final Clarifier and RAS pump rehabilitation	1 project site location	Serves eastern Flower Mound Physical address - 1105 Duncan	Improved treatment process, reduce energy consumption required for treatment				FY2026	FY2027	Design and construction can be competed in five year time frame
Water/Wastewater	Town of Flower Mound	Wastewater Treatment Plant Effluent Filter Rehabilitation	1 project site location	Serves eastern Flower Mound Physical address - 1105 Duncan	Improved treatment process, reduce energy consumption required for treatment				FY2025	FY2026	Design and construction can be competed in five year time frame
Water/Wastewater	Town of Flower Mound	Wastewater Treatment Plant Primary Treatment Area Improvement	1 project site location	Serves eastern Flower Mound Physical address - 1105 Duncan	Improved treatment process, reduce energy consumption required for treatment, and increase residency				FY2025	FY2026	Design and construction can be competed in five year time frame
Water/Wastewater	Town of Flower Mound	Wastewater Treatment Plant Primary Treatment Area Improvement	1 project site location	Serves eastern Flower Mound Physical address - 1105 Duncan	Improved treatment process, reduce energy consumption required for treatment, and increase residency				FY2025	FY2026	Design and construction can be competed in five year time frame
Water, Wastewater, Solid Waste	Atmos	Recover and process landfill biogas rather that seeping to atmosphere, or being flared, depending on current operations	N/A	Hunt, Collin, Denton Counties	Reduce methane emissions, can make RNG available for community end use (homes/businesses/vehicles). RNG as a replacement for fuel in vehicles is 95% lower CO2e				2025	2025	Partner with RNG developers that have previously screened operating and dormant landfills to recover this methane. Utilize existing Local Distribution Companies to facilitate the offtake of that RNG.
Energy	Atmos	Dramatically increase the efficiency of commercial hot water heaters by implementing highly efficient water heater gas heat pumps. Hot Water Heat Pumps have demonstrated a reduction of 50% of gas usage, and 48% GhG reduction.	N/A	D/FW Metro	Reduced gas emissions from onsite combustion of fuel to heat water in commercial applications. Highest and best use are restaurants, hotels, hospitals.				2025	2027	Partner with heat pump OEMs and/or technology organizations (GTI as an example) to establish a pilot program to identify commercial businesses as candidates, then subscribe a program, potentially offering rebates to encourage adoption.
Energy	Atmos	Encourage the adoption of ZNE or ZNE-ready homes	N/A	D/FW Metro	When fitted with high-efficiency gas appliances and best-in-class insulation, accompanied by rooftop solar, single family homes can be zero-net energy, with reliability of a mix of energy consumption and very low monthly bills.	Through our partnership with Habitat for Humanity, we have been able to provide 12 ZNE homes across our enterprise, focusing on income qualified homeowners.	Existing relationships with Habitat for Humanity and for-profit builders that build homes ZNE ready.		2024	2025	Continuing on the work we've already demonstrated in D/FW and other locations, expand partnerships across D/FW to incentivize build out of ZNE homes.
Energy	Atmos	Incentivize weatherization of existing homes.	N/A	D/FW Metro	Increased weatherization lowers end-use emissions for heating/cooling a home and also lowers monthly bill for residents.	Weatherization programs may target income qualified communities.	Texas utilities have existing weatherization programs which may serve as a template.	DOE Home Rebate Program: https://www.energy.gov/scep/home-energy-rebates-programs	2024	ongoing	Augment existing weatherization programs which have proven successful.
Water, Wastewater, Solid Waste	Atmos	Utilize RNG for fuel in waste trucks	N/A	D/FW Metro	RNG as a replacement fuel lowers emissions by approximately 95% compared to fossil liquid fuels.				2024	2025	

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 9 - METHODOLOGY FOR QUANTIFYING MEASURES

Dallas-Fort Worth Air Quality Improvement Plan- Measure Quantification Documentation							
SECTOR	**PROGRAM AREA**	**MEASURE**	**PROJECTS TO QUANTIFY WITHIN MEASURE**	**TOOL USED**	**EXPLANATION AND ASSUMPTIONS**	**REFERENCE**	**LIMITATIONS AND DISCLAIMERS**
Transportation	Transit	Transit Enhancement Program	Enhance Existing Transit Service	MoSERS Transit	Benefits are based on the increase in ridership due to the enhancements of the existing transit service. Expansion of transit system or service includes the addition of rail services through increased frequency or route extension. Bus or paratransit services can be expanded with new vehicles and/or route extensions. Increased amenities such as shelters and lighting are also part of the development. Input emission factors for NOx, VOC, PM2.5 and CO2e were calculated in MOVES3. New transit ridership was estimated based on past projects by the NCTCOG Transportation Department (5% min/ 15% max). The resulting increase in ridership was adapted assuming to be implemented by only one of the three big public transportation agencies (1/3) in North Central Texas and cover 20% of their service area (1/5).	https://txaqportal.org/mosers/overview https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf Chapter 1.1, 1.2	A measure or project that is expected to deliver greenhouse gas benefits as long as it is maintained, is defined as *indefinite* for the useful life of the project. Ridership increase is based on assumptions.
Transportation			Expand Vanpool Program	AFLEET	Utilizing AFLEET defaults, staff calculated reductions for a gasoline to electric vehicle replacement project for a shuttle van. The range provided in the DFW AQIP represents the lowest estimated GHG/criteria pollutant reduction and the highest estimated GHG/criteria pollutant reduction across all fuel types for both the low and high utilization scenarios. It is expected the actual emission reductions will be somewhere between the high and low number. If the GHG/criteria pollutant reductions were negative, those results were changed to 0 due to no reduction being received.	Reference's used to develop the AFLEET tool are available in the XLSX version of AFLEET in the Background tab. https://www.apta.com/research-technical-resources/transit-statistics/vehicle-database/	The calculated emission reductions compare the difference between 2023 model year conventionally fueled vehicle and 2023 model year alternatively fueled vehicle. It is likely that most conventional fuel vehicle replaced during this project will be older than 2023, and that the reductions listed are likely conservative compared to real world results. The calculated emission reductions for the electric vehicle replacement include upstream electricity production emissions. Figures used for calculating electricity upstream emissions were based on the ERCOT grid. Results may vary based on electricity production processes.
Transportation			Develop Mobility Hubs & Transit-Oriented Developments	Average benefits from existing Congestion Mitigation & Air Quality (CMAQ) Projects 2019 - 2023	Over the past years NCTCOG, in collaboration with other partners, has implemented several Mobility Hubs & Transit-oriented Development Projects, that had been quantified for greenhouse gas benefits. A database query was run for the past five years (2019 - 2023) to identify related projects and the average benefit was calculated to estimate the typical impact of an average project. For this project 154 existing projects were taken into account.	https://txaqportal.org/mosers/overview https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf	A measure or project that is expected to deliver greenhouse gas benefits as long as it is maintained, is defined as *indefinite* for the useful life of the project. The estimation of the scope of benefits is limited to existing projects.
Transportation			Subsidize Transit Passes	MoSERS Transit	Benefits are based on the increase in ridership due to the subsidy of transit passes (moderate base fare $2.50/ aggressive base fare $2.00). Expansion of transit system or service includes the addition of rail services through increased frequency or route extension. Bus or paratransit services can be expanded with new vehicles and/or route extensions. Increased amenities such as shelters and lighting are also part of the development. Input emission factors for NOx, VOC, PM2.5 and CO2e were calculated in MOVES3. New transit ridership was estimated based on the local transportation agency DART projection (1.8 M/a or 4% min/ 3.6 M/a or 8% max).	https://txaqportal.org/mosers/overview https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf Chapter 1.1, 1.2	Ridership increase is based on assumptions.
Transportation		Transit Planning Program	Develop Regional Transit Plan	N/A - Not Quantifiable	N/A - Not Quantifiable	N/A	N/A
Transportation	Sustainable Development	Active Transportation Program	Improve/Expand Bicycle and Pedestrian Facilities	Average benefits from existing Congestion Mitigation & Air Quality (CMAQ) Projects 2019 - 2023	Over the past years NCTCOG, in collaboration with other partners, has implemented several Projects to Improve/Expand Bicycle and Pedestrian Facilities, that had been quantified for greenhouse gas benefits. A database query was run for the past five years (2019 - 2023) to identify related projects and the average benefit was calculated to estimate the typical impact of an average project. For this project 84 existing projects were taken into account.	https://txaqportal.org/mosers/overview https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf	A measure or project that is expected to deliver greenhouse gas benefits as long as it is maintained, is defined as *indefinite* for the useful life of the project. The estimation of the scope of benefits is limited to existing projects.
Transportation	Sustainable Development	Green Purchasing/Green Construction Program	Green Purchasing/Green Construction Program	Green Street Calculator	Assuming, that materials used and the road surface can make a contribution to energy conservation. The Green Street Calculator provides the impacts of concrete pavements and associated benefits as measure for green infrastructure. Benefits are calculated for a road segment of 5,000 ft, 12 ft road width (equivalent to one lane), concrete thickness of 10 inches with a factor 1.25 for asphalt thickness), 10,00 vehicles/d with 3 % heavy duty vehicles, and a road design life of 30 years.	Green Streets Calculator (myregisteredsite.com)	Estimations of benefits are limited to concrete pavement. Other aspects such as emission reduction during construction, use of recycled products and low emission material have not been considered in the calculation.
Transportation; Agriculture/Forestry/Land Use	Sustainable Development	Urban Heat Island and Green Spaces Program	Expand Use of Landscaping, Vegetation, and Tree Cover	iTree - MyTree	Benefits were calculated based on an individual tree. In the MyTree-tool on the iTree-platform eight different typical North Central Texas tree species were selected. As input parameters for all species a trunk diameter of 6 inches, full sun exposure, and a good tree condition were assumed. All trees were assumed to stand in open space without shading buildings. The greenhouse gas and air quality benefits were calculated and results were converted into metric units. As final result the average values for the eight typical local species was entered as per tree benefit.	i-Tree Tools - Calculate the benefits of trees! (itreetools.org) https://mytree.itreetools.org/#/	Only individual trees were taken into account. Other landscaping features such as grass, bushes, flower beds or vertical green structures are omitted in this calculation. All trees are assumed to grow in open space, so additional benefits from weather protection or shading of buildings, and facilitating walking or biking are not considered.
			Develop Parks/Plazas/Open Spaces	Average benefits from existing Park Creation and Expansion Projects (MOVES_Benefits-Cost-Analysis Guidance- USDOT)	In North Central Texas are currently four deck parks planned - ranging from the expansion of existing green space to completely new construction. For two of these parks emission benefits were calculated by NCTCOG. The average benefits of these projects were used to estimate overall benefits of Develop Parks/Plazas/Open Spaces.	NCTCOG Transportation Department	The estimation of the scope of benefits is limited to existing projects.
			Preserve Existing Green Spaces	iTree - MyTree	Benefits were calculated based on an individual tree. In the MyTree-tool on the iTree-platform eight different typical North Central Texas tree species were selected. As input parameters for all species a trunk diameter of 6 inches, full sun exposure, and a good tree condition were assumed. All trees were assumed to stand in open space without shading buildings. The greenhouse gas and air quality benefits were calculated and results were converted into metric units. As final result the average values for the eight typical local species was entered as per tree benefit.	i-Tree Tools - Calculate the benefits of trees! (itreetools.org) https://mytree.itreetools.org/#/	Only individual trees were taken into account. Other landscaping features such as grass, bushes, flower beds or vertical green structures are omitted in this calculation. All trees are assumed to grow in open space, so additional benefits from weather protection or shading of buildings, and facilitating walking or biking are not considered.
Transportation	Congestion Management	Enhanced Regional Traffic Signal Timing Program	Upgrade Traffic Signal Equipment	N/A - Not Quantifiable	N/A - Not Quantifiable - but is foundational step to enabling signal timing benefits	N/A	N/A
Transportation	Transit/Congestion Management		Bus Signal Prioritization	MoSERS Transit	Benefits are based on the increase in ridership due to the Bus Signal Prioritization. Input emission factors for NOx, VOC, PM2.5 and CO2e were calculated in MOVES3. New transit ridership was estimated based on the Transit Cooperative Research Program (TCRP) Report 166 (2014); 'Characteristics of Premium Transit Services that Affect Choice of Mode' and the NCTCOG travel demand model travel time sensitivity analysis (10% min/ 15% max). The resulting increase in ridership was adapted assuming to be implemented by only one of the three big public transportation agencies (1/3) in North Central Texas and cover 20% of their service area (1/5).	https://txaqportal.org/mosers/Strategies https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf Chapter 1.1, 1.2	Ridership increase is based on assumptions.
Transportation	Congestion Management		Improve Signal Timing in the Region	Average benefits from existing Congestion Mitigation & Air Quality (CMAQ) Projects 2019 - 2023	Over the past years NCTCOG, in collaboration with other partners, has implemented several Projects to Improve Signal Timing in the Region, that had been quantified for greenhouse gas benefits. This mostly refers to single signal projects. A database query was run for the past five years (2019 - 2023) to identify related projects and the average benefit was calculated to estimate the typical impact of an average project. For this project 84 existing projects were taken into account.	https://txaqportal.org/mosers/Strategies https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf	The estimation of the scope of benefits is limited to existing projects.
Transportation	Congestion Management		Roadway Improvements	Average benefits from existing Congestion Mitigation & Air Quality (CMAQ) Projects 2019 - 2023	Over the past years NCTCOG, in collaboration with other partners, has implemented several Projects to Improve Roadways, that had been quantified for greenhouse gas benefits. A database query was run for the past five years (2019 - 2023) to identify related projects and the average benefit was calculated to estimate the typical impact of an average project. For this project 68 existing projects were taken into account.	https://txaqportal.org/mosers/Strategies https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf	The estimation of the scope of benefits is limited to existing projects.
Transportation	Congestion Management	Transportation System & Truck/Rail Flow Optimization Program	Technology and Multimodal Connectivity Improvements	NCTCOG equation based on MoSERS	Reduction in Estimated Emissions in a County = (Freeways + Toll roads + HOV Lanes Emissions) * (% Recurrent Congestion Eliminated) * (% ITS Coverage)	NCTCOG based on MoSERS	Reduction in estimated emissions is a function of the ITS coverage in a county. A measure or project that is expected to deliver greenhouse gas benefits as long as it is maintained, is defined as *indefinite* for the useful life of the project.
Transportation	Congestion Management		Grade Separations	MoSERS Traffic Flow Improvement	Grade Separations increases the efficiency of traffic flow at intersections by reduction in travel times, delays, and stop-and-go driving. These measure is applied to major arterials or high capacity roadways. Input emission factors for NOx, VOC, PM2.5 and CO2e were calculated in MOVES3 and the calculation assumed a traffic volume of 10,000 vehicles per day.	https://txaqportal.org/mosers/Strategies https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf Chapter 4.2, 12.1, 12.2, 12.3	N/A
Transportation	Sustainable Development/Congestion Management	Vehicle Miles Traveled Reduction Program	Improve Job-Housing-Transportation Balance	Average benefits from existing Congestion Mitigation & Air Quality (CMAQ) Projects 2019 - 2023	Over the past years NCTCOG, in collaboration with other partners, has implemented several Projects to the Job-Housing-Transportation Balance, that had been quantified for greenhouse gas benefits. A database query was run for the past five years (2019 - 2023) to identify related projects and the average benefit was calculated to estimate the typical impact of an average project. For this project 154 existing projects were taken into account.	https://txaqportal.org/mosers/Strategies https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf	A measure or project that is expected to deliver greenhouse gas benefits as long as it is maintained, is defined as *indefinite* for the useful life of the project.
Transportation	Congestion Management		Provide Incentives to Encourage Commuting During Off-Peak Times or Working Remote	MoSERS Compressed Work Week	The Trip-Reduction Program includes Telecommuting, Flextime and Compressed work weeks, work scheduling programs that condense a standard number of work hours into fewer days per week. Input emission factors for NOx, VOC, PM2.5 and CO2e were calculated in MOVES3. The number of work days assumed to be eliminated was 1/week with an average auto work trip length of 20 miles (NCTCOG default).	https://txaqportal.org/mosers/Strategies https://server.txaqportal.org/storage/uploads/2019/10/18/5da920eeb23eeTexas.Guide.to.Accepted.Mobile.Source.Emission.Reduction.Strategies_August.2007.pdf Chapter 4.2, 12.1, 12.2, 12.3	The tool used focuses on compressed work week measures.
Transportation	Congestion Management		Utilize Smart Infrastructure to Improve Operations	NCTCOG equation based on MoSERS	Reduction in Estimated Emissions in a County = (Freeways + Toll roads + HOV Lanes Emissions) * (% Recurrent Congestion Eliminated) * (% ITS Coverage)	NCTCOG based on MoSERS	Reduction in estimated emissions is a function of the ITS coverage in a county. A measure or project that is expected to deliver greenhouse gas benefits as long as it is maintained, is defined as *indefinite* for the useful life of the project.
Transportation	Clean Vehicles and Transportation Energy Efficiency	Green Airport Planning Program	Increase Education/Best Practices for Green Airports	Range of benefits from existing projects at DFW International Airport	Existing projects at DFW International Airport include composting, purchase of 100% renewable electricity, switch from natural gas to electricity for heating, on-site solar array, use of renewable natural gas for the airport bus fleet.	Environmental Affairs Department, DFW International Airport	The estimation of the scope of benefits is limited to existing projects.

Dallas-Fort Worth Air Quality Improvement Plan- Measure Quantification Documentation							
SECTOR	**PROGRAM AREA**	**MEASURE**	**PROJECTS TO QUANTIFY WITHIN MEASURE**	**TOOL USED**	**EXPLANATION AND ASSUMPTIONS**	**REFERENCE**	**LIMITATIONS AND DISCLAIMERS**
Transportation; Energy	Clean Vehicles and Transportation Energy Efficiency	LED Streetlighting Program	Retrofit Streetlights with LEDS	EPA AVERT (web edition)	Staff surveyed a variety of case studies to estimate energy savings achieved through LED replacements and selected an example from the Metropolitan Area Planning Council, as this is a trusted organization of similar size and scope as NCTCOG and the energy savings per light were estimated to be lower than many other examples, making this a more conservative estimate.	Metropolitan Area Planning Council Program summary at https://www.mapc.org/our-work/expertise/clean-energy/led-streetlight-retrofits/	Per-light savings were estimated based on overall program impacts of 116,139 streetlights achieve in 35.1 million kWh annual savings
Transportation	Clean Vehicles and Transportation Energy Efficiency	Clean Vehicle and Equipment Program	Heavy-Duty Hydrogen Pilot Program	AFLEET	Utilizing AFLEET defaults, staff calculated reductions for a diesel to hydrogen replacement project for the following vehicle types: -Transit Bus -Single Unit Short-Haul Freight -Combination Long-Haul Freight The range provided in the DFW AQIP represents the lowest estimated GHG:criteria pollutant reduction and the highest estimated GHG:criteria pollutant reduction from the examples calculated above. It is expected the actual emission reductions will be somewhere between the high and low number.	Reference's used to develop the AFLEET tool are available in the XLSX version of AFLEET in the Background tab. https://www.transit.dot.gov/sites/fta.dot.gov/files/2021-11/TAM-ULB-CheatSheet.pdf https://www.tceq.texas.gov/assets/public/implementation/air/banking/guidance/useful-life-trucks.pdf#:~:text=Useful%20Life%20for%20Trucks%20that%20are%20both%20Combination,5.3%25%20of%20vehicles%20go%20beyond%20their%20useful%20life	The calculated emission reductions include upstream hydrogen production emissions. AFLEET default figures were used for calculating hydrogen production emissions. Results may vary based on hydrogen production process. The calculated emission reductions also compare the difference between a 2023 model year traditional diesel vehicle and a 2023 model year hydrogen vehicle. It is likely that most conventional fuel vehicles replaced during this project will be older than 2023, and that the reductions listed are likely conservative compared to real world results.
Transportation	Clean Vehicles and Transportation Energy Efficiency		Zero- and Near-Zero Freight and Work Truck/Bus Program	AFLEET	Utilizing AFLEET defaults, staff calculated emission reductions for the replacement of diesel short-haul freight vehicles with electric vehicles and emission reductions from adding an auxiliary power unit to a light commercial truck. The range provided in the DFW AQIP represents the lowest estimated GHG:criteria pollutant reduction and the highest estimated GHG:criteria pollutant reduction from the examples calculated. It is expected the actual emission reductions will be somewhere between the high and low number.	N/A	N/A
Transportation	Clean Vehicles and Transportation Energy Efficiency			AFLEET	Utilizing AFLEET defaults, staff calculated reductions for vehicle replacement projects for the following fuel and vehicle types: -Light Commercial Truck: Gasoline to Electric, Diesel to Electric -Cargo Van: Gasoline to Electric, Diesel to Electric Refuse Truck: Diesel to Compressed Natural Gas, Diesel to Hydrogen Regional Haul Freight Truck: Diesel to Electric School Bus: Diesel to Propane, Diesel to Electric The range provided in the DFW AQIP represents the lowest estimated GHG:criteria pollutant reduction and the highest estimated GHG:criteria pollutant reduction across all fuel types for both the low and high utilization scenarios. It is expected the actual emission reductions will be somewhere between the high and low number. If the GHG/criteria pollutant reductions were negative, those results were changed to 0 due to no reduction being received.	Reference's used to develop the AFLEET tool are available in the XLSX version of AFLEET in the Background tab. https://www.government-fleet.com/vehicle-research/340773/2019-fleet-inventory-and-age https://www.schoolbusfleet.com/maintenance/10139184/maintenance-survey-2021#whitepaper-form	The calculated emission reductions compare the difference between 2023 model year conventionally fueled vehicles and 2023 model year alternatively fueled vehicles. It is likely that most conventional fuel vehicles replaced during this project will be older than 2023, and that the reductions listed are likely conservative compared to real world results. The calculated emission reductions for the hydrogen and electric vehicle replacements include upstream hydrogen and electricity production emissions. AFLEET default figures were used for calculating hydrogen production emissions. Figures used for calculating electricity upstream emissions were based on the ERCOT grid. Results may vary based on electricity and hydrogen production processes.
Transportation	Clean Vehicles and Transportation Energy Efficiency		Low-Emission Non-Road Equipment Program	AFLEET	Utilizing AFLEET defaults, staff calculated reductions for a diesel to hydrogen replacement project for the following fuel and equipment types: -Agricultural Tractors: Diesel to Electric -Airport Support Equipment: Diesel to Electric -Commercial Turf Equipment: Diesel to Propane, Diesel to Electric -Forklifts: Diesel to Propane, Diesel to Electric -Lawn Mowers: Gasoline to Electric -Terminal Tractors: Diesel to Electric The range provided in the DFW AQIP represents the lowest estimated GHG:criteria pollutant reduction and the highest estimated GHG:criteria pollutant reduction from the examples calculated above. It is expected the actual emission reductions will be somewhere between the high and low number. If the GHG/criteria pollutant reductions were negative, those results were changed to 0 due to no reduction being received.	Reference's used to develop the AFLEET tool are available in the XLSX version of AFLEET in the Background tab. https://www.faa.gov/sites/faa.gov/files/airports/resources/publications/reports/vale_techreport_v7.pdf https://extension.msstate.edu/publications/farm-machinery-cost-calculations	The calculated emission reductions compare the difference between 2023 model year conventionally fueled equipment and 2023 model year alternatively fueled equipment. It is likely that most conventional fuel equipment replaced during this project will be older than 2023, and that the reductions listed are likely conservative compared to real world results.
Transportation	Clean Vehicles and Transportation Energy Efficiency		Add Wayside Power for Rail Operations	NCTCOG equation based on multiple North Carolina State University (NC State) Research Projects prepared for the North Carolina Department of Transportation (NCDOT) and the Oak Ridge National Laboratory (ORNL) Carbon Emissions Calculator	Trinity Railway Express (TRE) provided engine specifications, including Tier and rated horsepower, and annual usage hours on nine (9) head-end power (HEP) engines used to provide electricity to power locomotive auxiliaries. TRE estimated that the addition of wayside power would reduce HEP engine fuel use by 75 percent per year. Based on annual HEP engine fuel savings and usage hours provided by TRE, staff calculated both baseline and new HEP engine fuel use. Based on research conducted by NC State on NCDOT passenger locomotives and HEP engine fuel and emissions, staff used fuel-based NO_x and PM emissions factors of HEP engines to calculate emissions reductions per HEP engine. NCDOT operates the same type of diesel passenger locomotives and similar HEP engines as TRE, making this a sound comparison. Staff utilized the ORNL Carbon Emissions Calculator to estimate CO_2 emissions based on the calculated fuel savings.	https://connect.ncdot.gov/projects/research/RNAProjDocs/2015-13%20FinalReport.pdf https://connect.ncdot.gov/projects/research/RNAProjDocs/2010-12FinalReport.pdf https://railpropulsion.com/wp-content/uploads/2021/10/Test-Report-NCDot-1859-June-2021-v3-1.pdf https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf https://carboncalc.ornl.gov/ https://www.tceq.texas.gov/downloads/air-quality/terp/erig/erig-23-tech-supplement-locomotive.pdf https://www.apta.com/research-technical-resources/transit-statistics/vehicle-database/ https://trinityrailwayexpress.org/stations/#schedules	The fuel-based emissions factors used from research conducted by NC State on NCDOT locomotives are for 766 rated hp and 831 rated hp HEP engines. The HEP engines operated by TRE are 1069 rated hp engines. This difference in horsepower may slightly affect the calculated NOx and PM emissions. NCDOT and TRE both own two EMD F59HI locomotive engines and, six and seven EMD F59PHI locomotive engines, respectively. Additionally, both agencies also rebuilt the EMDF59PHI locomotive engines in the early 2010s, furthering the reasoning to use these fuel-based emissions factors for this calculation based on NCDOT's engines. The emissions factors calculated by NC State on NCDOT locomotives are based on amount of load. TRE locomotives appear to have 2-4 cars on any given engine. Adding the number of passengers to the load may effect the engines efficiency. However, because the wayside power to HEP engines is intended to be connected when the train is idling, it is assumed this should not have an impact for this application.
Transportation	Clean Vehicles and Transportation Energy Efficiency		Replace/Improve Diesel Locomotives	Diesel Emissions Quantifier (DEQ)	Staff estimated an annual usage of 6,140 hours per locomotive, based on the Trinity Railway Express' (TRE) train schedule. Based on data provided by TRE on revenue miles per locomotive and fuel economy sourced from the National Transit Database based on data from FY 2022 for TRE, staff calculated the baseline fuel use of the replacement locomotives. Staff estimated fuel savings of five (5) percent for a Tier 1 to Tier 4 locomotive replacement project based on Metrolink's recent Tier 0 to Tier 4 locomotive replacement project which saw fuel savings of eight (8) percent. Based on estimated fuel savings, staff utilized the percentage of emissions reductions provided by the DEQ tool. The rated horsepower specifications for the diesel locomotives were estimated based on locomotive make and model.	Reference's used to develop the DEQ tool are available on the EPA's DEQ website - https://cfpub.epa.gov/quantifier/index.cfm?action=main.home. https://www.apta.com/research-technical-resources/transit-statistics/vehicle-database/ https://trinityrailwayexpress.org/stations/#schedules https://data.transportation.gov/Public-Transit/2022-NTD-Annual-Data-Fuel-and-Energy/8ehq-7his/about_data https://metrolinktrains.com/globalassets/about/tier-4-factsheet.pdf https://en.wikipedia.org/wiki/EMD_F59PHI#F59PHI https://en.wikipedia.org/wiki/EMD_F125	Estimations of locomotive specifications, and annual usage hours, fuel use, and fuel economy for both the Tier 1 and Tier 4 locomotives, affect the calculated emissions benefits. As well as, the estimated percentage of fuel savings seen from the locomotive replacement project. Specifically, the calculation of CO_2 emissions reductions are tied to fuel savings. Additionally, the DEQ tool applies load factors to locomotive engines based on actual horsepower usage and adds sulfur adjustments to calculate baseline PM emissions for Tier 2 and earlier.
Transportation	Clean Vehicles and Transportation Energy Efficiency		Public Sector Fleet Transition Program	AFLEET	Utilizing AFLEET defaults, staff calculated reductions for vehicle replacement projects for the following fuel and vehicle types: -Passenger Sedan: Gasoline to Electric -Police Sedan: Gasoline to Electric -Passenger SUV: Gasoline to Electric -Police SUV: Gasoline to Electric -Passenger Pickup Truck: Gasoline to Electric - Transit Bus: Old Compressed Natural Gas (CNG) to New CNG -School Bus: Old Propane to New Propane, Diesel to Electric The range provided in the DFW AQIP represents the lowest estimated GHG:criteria pollutant reduction and the highest estimated GHG:criteria pollutant reduction across all fuel types for both the low and high utilization scenarios. It is expected the actual emission reductions will be somewhere between the high and low number. If the GHG/criteria pollutant reductions were negative, those results were changed to 0 due to no reduction being received.	Reference's used to develop the AFLEET tool are available in the XLSX version of AFLEET in the Background tab. https://www.government-fleet.com/vehicle-research/340773/2019-fleet-inventory-and-age https://www.schoolbusfleet.com/maintenance/10139184/maintenance-survey-2021#whitepaper-form https://www.apta.com/research-technical-resources/transit-statistics/vehicle-database/ https://www.bts.gov/content/average-age-automobiles-and-trucks-operation-united-states NCTCOG - Texas SchoolBusData_20230907 https://afdc.energy.gov/data/10310	The calculated emission reductions (except the bus examples) compare the difference between 2023 model year conventionally fueled vehicles and 2023 model year alternatively fueled vehicles. It is likely that most conventional fuel vehicles replaced during this project will be older than 2023, and that the reductions listed are likely conservative compared to real world results. For the CNG Transit Bus and Propane School Bus projects, the calculated emission reductions compare the difference between 2023 model year CNG Transit Bus and propane School Bus and 2015 and 2014 buses, respectively, of the same fuel type. For the CNG Transit Bus comparison, a lower fuel economy was used for the 2015 bus based on data from the Department of Energy. For the propane School Bus comparison, the same fuel economy was used for both model years because of insufficient data available on older propane School Bus average fuel economy. For the propane School Bus comparison, the older model year bus was estimated based on a NCTCOG School Buses in Texas database. For the CNG Transit Bus comparison, the older model year bus was estimated based on the average active vehicle age from the American Public Transportation Association database. The calculated emission reductions for the electric vehicle replacements include upstream electricity production emissions. Figures used for
Transportation	Clean Vehicles and Transportation Energy Efficiency	Regional Low Carbon Liquid Fuels Program	Build Infrastructure to Enable Use of Low-Carbon Liquid Fuels	AFLEET	This calculation solely utilizes default numbers provided by AFLEET's CFI Tool. Staff calculated both a **low** utilization scenario (i.e. low usage) and a **high** utilization scenario (i.e. high utilization) of the stations of the following fuel types: - B20 (20% biodiesel blended with 80% conventional diesel) - B100 (100% biodiesel) - RD20 (20% renewable diesel blended with 80% conventional diesel) - RD100 (100% renewable diesel) - E85 The range provided in the DFW AQIP represents the lowest estimated GHG:criteria pollutant reduction and the highest estimated GHG:criteria pollutant reduction across all fuel types for both the low and high utilization scenarios. It is expected the actual emission reductions will be somewhere between the high and low number. If the GHG/criteria pollutant reductions were negative, those results were changed to 0 due to no reduction being received.	Reference's used to develop the AFLEET tool are available in the XLSX version of AFLEET in the Background tab.	GHG reductions from the utilization of biofuels are typically received "upstream" meaning during the production process, not at the "tailpipe" or when the fuel is consumed. The emission reductions can vary depending on the feedstock. The following feedstocks were used as they are the default feedstocks used in AFLEET: - Biodiesel: Soy Feedstock - Renewable Diesel: Soy Feedstock -Ethanol: Corn Feedstock
Transportation	Clean Vehicles and Transportation Energy Efficiency		Provide Incentives for Utilizing Biofuels in Locomotives/Non-Road Equipment	AFLEET	Staff calculated both a "typical" scenario utilizing AFLEET defaults for the following vehicle/fuel types: - Terminal Tractor: B20, B100, RD20, RD100 - Forklift: B20, B100, RD20, RD100 - Agriculture Tractor: B20, B100, RD20, RD100 The range provided in the DFW AQIP represents the lowest estimated GHG:criteria pollutant reduction and the highest estimated GHG:criteria pollutant reduction from all of the examples calculated above. It is expected the actual emission reductions will be somewhere between the high and low number, but could potentially be higher depending on the typical of vehicle utilizing the equipment. For example, biodiesel could also be used in a locomotive, which could greatly increase the GHG reduction due to more fuel being consumed. If the GHG/criteria pollutant reductions were negative, those results were changed to 0 due to no reduction being received.	Reference's used to develop the AFLEET tool are available in the XLSX version of AFLEET in the Background tab.	The calculated emission reductions compare the difference in utilizing a biofuel in a 2023 vehicle. It is likely that the utilization of biofuels would actually occur in older vehicles, which typically emit more emissions due to older vehicles not have as strict emission standards. Therefore, the reductions are likely conservative and the real reductions would be higher. GHG reductions from the utilization of biofuels are typically received "upstream" meaning during the production process, not at the "tailpipe" or when the fuel is consumed. The emission reductions can vary depending on the feedstock. The following feedstocks were used as they are the default feedstocks used in AFLEET: - Biodiesel: Soy Feedstock - Renewable Diesel: Soy Feedstock -Ethanol: Corn Feedstock
Transportation	Clean Vehicles and Transportation Energy Efficiency	Regional Emissions Compliance Program	Fund Emissions Compliance Activities and Operations	N/A - Not Quantifiable	N/A - Not Quantifiable	N/A - Not Quantifiable	N/A - Not Quantifiable

Dallas-Fort Worth Air Quality Improvement Plan- Measure Quantification Documentation							
SECTOR	**PROGRAM AREA**	**MEASURE**	**PROJECTS TO QUANTIFY WITHIN MEASURE**	**TOOL USED**	**EXPLANATION AND ASSUMPTIONS**	**REFERENCE**	**LIMITATIONS AND DISCLAIMERS**
Energy	Energy Demand Management	Public Sector Energy Efficiency & Refrigerant Transition Program	Increase Energy Efficiency of Existing Buildings	Energy Star Saving Calculator EPA AVERT (web edition) Energy Savings Calculator for Air-Cooled Electric Chillers | Department of Energy Energy Savings Calculator for Commercial Boilers | Department of Energy	Utilizing the tools list and information from EIA's Commercial Buildings Energy Consumption Survey (CBECS) to determine the average square footage of a public building, staff calculated reductions through the replacement of the following appliances and systems for more efficient Energy Star – certified units. The range represents the lowest estimated GHG/criteria pollutant reduction and the highest estimated GHG/criteria pollutant reduction from the examples calculated in annual metric tons. It is expected the actual emission reductions will be somewhere between the high and low number. Boilers: NOX 0.0000001, CO2 -0.0003, PM25 0.00000001, VOCS 0.000000003 Heat Pumps: NOX 0.000000008, CO2 0.00002, PM25 0.000000001, VOCS 0.0000000004 Chillers: NOX 0.000002, CO2 0.0037, PM25 0.0000002, VOCS 0.0000001 HVAC: NOX 0.00000001, CO2 0.00003, PM25 0.000000001, VOCS 0.0000000004	Energy Information Administration (EIA)- About the Commercial Buildings Energy Consumption Survey (CBECS)	The calculator tools for boilers and chillers went with the assumption of the following default data: The base model for a chiller in the government sector has values representative of a 100-ton air-cooled electric chiller operating for 2,000 full-load hours per year with an EER of 9. The performance of this standard unit is based on ASHRAE Standard 90.1. The default values pre-loaded into the calculator represent average operating conditions in the Federal sector. Calculations assume that efficiency ratings entered by the user are based on the Air-Conditioning and Refrigeration Institute's (ARI) 1998 Standard 550/590. The base model, inefficient chiller, uses 192,000 kWh annually and the minimally efficient model uses 155945 kWh. The difference, 36055 kHw, is what is put into AVERT as .036 GWH to get the GHG and CO2 amounts in metric tons. The base model has values representative of a 1,000,000 Btu/hour gas-fired, hot-water boiler operated for 1,500 full-load hours per year with a thermal efficiency of 80%. The performance of this standard unit is based on ASHRAE 90.1-2007. The default values pre-loaded into the calculator represent average operating conditions in the Federal sector. The base model, inefficient chiller, uses 18750 kWh annually and the minimally efficient model uses 16304 kWh. The difference, 2446 kHw, is what is put into AVERT as .0025 GWH to get the GHG and CO2 amounts in metric tons.
Energy			LED Lighting Retrofits	EPA AVERT (web edition)	The watt range for an LED streetlight is 40 – 150 kwh in the City of Fort Worth, which is what was used as a reference. Staff will use the median of 95 w. To be conservative, 80 kwh was used. To get an estimate on the number of streetlights owned by cities in our region, staff found the number of streetlights owned by Dallas, Ft. Worth, Denton, and Frisco to be 23,000, 64,944,10,000, and 5000 respectively. Taking the combined average, 25736, and multiplying it by 254, to account for the 254 counties in Texas, staff estimated there to be 6,536,944 streetlights yet to be retrofitted to be LED. Using this LED Light Bulb Energy Calculator: Watts and kWh (energybot.com) it was determined that annually a LED streetlight bulb at 90 w uses 416.1 kWh. Putting that into AVERT in GWh and dividing that by the estimated number of streetlights in Texas will give us the amount of GHG emissions per streetlight.	LED Light Bulb Energy Calculator: Watts and kWh (energybot.com) Street Lights – Welcome to the City of Fort Worth (fortworthtexas.gov) - watt range for LED streetlights	Cities and counties do not list the number of streetlights they own, so estimates could only be made with what was publicly available. The cities that had numbers were midsize to larger cities in the region, so the number may not be as accurate when considering smaller local governments.
Energy		Residential Efficiency Rebate Program	Conduct Residential Energy Audits and Weatherization Rebate Program	EPA AVERT (web edition)	Using the **average kWh used in a home in Texas,17,436 kwh** from EnergySage.com, staff calculated a 30% reduction in energy because that is the annual energy reduction when a home receives an energy audit, via a one-pager from DOE. The average kWh was converted to GWh per the AVERT tool requirement, .0174, to get GHG and criteria pollutants generated in Texas. The air quality amounts given are then divided by the **number of households in Texas, 12,136,678** via census.gov, in order to get a per unit household amount. The results show annual air quality amounts reductions in metric tons	Energy Saver 101 Infographic: Home Energy Audits | Department of Energy census.gov for number of households; https://www.energysage.com/local-data/electricity-cost/tx/	N/A
Energy			Provide Incentives for Residential Solar	EPA AVERT (web edition)	The average home needs 15 – 25 solar panels to fully power a home. Each panel on average generates 350 – 450 watts of power. Using the conservative side of both ranges, 15 panels and 350 watts staff used the following equation to calculate the daily kwh production How Many kWh Does A Solar Panel Produce Per Day? Calculator + Chart (thegreenwatt.com). (350* 4.92) * (.75/1000) = 1.29 kwh a day from one 350w solar panel. Multiply that by 15 for the minimum number of panels needed for a home to be fully powered and it's 19.35 kwh of power a day for a home. For a year its 7062.75 kwh. Staff put that into AVERT to get the GHG and convert the amounts to tons, divided it by number of households in Texas, 12,136,678 via census.gov, and received the per unit of a household in the region.	How Many kWh Does A Solar Panel Produce Per Day? Calculator + Chart (thegreenwatt.com) How Much Energy Does A Solar Panel Produce? | EnergySage	N/A
Energy		Green/Cool Roof Replacements	Implement Cool/Green Roofs	Cool Roof Calculator (ornl.gov) - and AVERT	For Cool Roofs: Using the Cool Roof Calculator (ornl.gov) staff inputted the following: Texas, Ft Worth, R-value 5, SR.33, IE.90, summertime cost .14, COP 2, energy source Electricity, wintertime cost .20, heating efficiency 1. The net savings are $0.062/ft^2$ a year, and that is multiplied by average sqft of a public building, **24,300 sqft** in the US, via the via the Energy Information Administration (EIA)- About the Commercial Buildings Energy Consumption Survey (CBECS). This is to get an annual savings, 1506.6 kwh, for a building to put into AVERT. **To get a per cool roof of a building unit measurement for the Texas region, the number of local and county governments was used, 5787**, with the assumption that each has a building that could have a cool roof. Staff then divided the air quality amounts by that number for the per unit cool roof of a building air quality amounts of NOX, CO2, PM25, and VOCs.	Energy Information Administration (EIA)- About the Commercial Buildings Energy Consumption Survey (CBECS)	
Energy				Green Roof Energy Calculator | Urban Climate Research Center (asu.edu) and AVERT	For green roofs: using the Green Roof Energy Calculator | Urban Climate Research Center (asu.edu). Staff used a sqft roof estimate of 24300 for a public building since it is similar to the estimate for floor space, and while the two are not the same, it would be an appropriate stand in as an average amount of sqft for the Texas region. Dallas was then selected as the city in the calculator's list of options, an old office building, growing depth of 4 in, leaf index of 3, no irrigation, 50% roof coverage, and white roof covering the rest of the roof space. EPA states that a .7% reduction is possible with a green roof. Using this information, staff multiplied the annual usage number the calculation gave me with the percentage reduction from EPA, .07, to get the reduction in annual electricity generation. The result was 103491 kWh which is then converted to GWh in AVERT to get the air quality emissions. To get a per green roof of a building unit measurement for the Texas region, staff used the number of local and county governments, 5787, with the assumption that each has a building could have a green roof. I then divided the air quality amounts by that number for the per unit green roof of a building air quality amounts of NOX, CO2, PM25, and VOCs.	Energy Information Administration (EIA)- About the Commercial Buildings Energy Consumption Survey (CBECS)	
Energy		Distributed Energy and Resilience for Public Entities	Resilient Building Improvements	N/A	Assuming power needed for about 23k sq ft govt office bldg for a 10 hour outage. Emissions reductions are a range w/Scenario 1 the low range and Scenario 2 the high range. Scenario 1: 1.5 MW diesel generators vs 1 .5MW NG generators; Scenario 2: 1 .5MW diesel generators vs 1 1 MW batteries	U.S. electricity customers averaged seven hours of power interruptions in 2021 - U.S. Energy Information Administration (EIA) Energy Information Administration (EIA)- About the Commercial Buildings Energy Consumption Survey (CBECS)	N/A
Energy			Develop Emergency Shelters	N/A	Assuming power needed for about 19k sq ft rec center for a 10 hour outage. Emissions reductions are a range w/Scenario 1 the low range and Scenario 2 the high range. Scenario 1: 1 MW diesel generator vs 1 MW NG generator; Scenario 2: 1 MW diesel generator vs 10 1MW batteries	U.S. electricity customers averaged seven hours of power interruptions in 2021 - U.S. Energy Information Administration (EIA) Energy Information Administration (EIA)- About the Commercial Buildings Energy Consumption Survey (CBECS)	
Energy			Increase Grid Resiliency for Communities	EPA AVERT (web edition)	Emissions reductions are a range for 2 scenarios. Scenario 1 is .016 MW load solar microgrid (about 40 400W panels). Scenario 2 is 0.032 MW load solar microgrid (about 80 400W panels).	https://www.solar.com/learn/how-do-you-calculate-the-number-of-panels-on-a-16-kw-solar-system/#:~:text=There%20are%20typically%2040%20solar,power%20ratings%20of%20each%20panel	N/A
Water/Wastewater/Watershed Management	Watershed Management	Implement Integrated Stormwater Management, Low Impact Development and/or other Green Stormwater Infrastructure	Provide economic rebates for green infrastructure and water efficient landscaping in commercial spaces	EPA AVERT (web edition)	Assuming one large (50 sq ft.) rain garden sequesters 2.8 Kg of CO2 per year.	https://www.epa.gov/system/files/documents/2022-06/d9-project-narrative%20508.pdf	Assumptions are based on national data and may vary depending on plant type, region, and growth conditions
Water/Wastewater/Watershed Management			Update local policy, codes, drainage criteria and ordinances to encourage wider adoption of nature based solutions	N/A - Not Quantifiable	N/A - Not Quantifiable	N/A - Not Quantifiable	N/A - Not Quantifiable
Water/Wastewater/Watershed Management			Implement bioswales and other organic stormwater collection areas to increase local storage	EPA AVERT (web edition)	Assuming one large (50sq ft.) rain garden sequesters 2.8 Kg of CO2 per year.	https://www.epa.gov/system/files/documents/2022-06/d9-project-narrative%20508.pdf	Assumptions are based on national data and may vary depending on plant type, region, and growth conditions
Water/Wastewater/Watershed Management			Install smart controls and sensors to LID and green infrastructure to analyze and quantify stormwater collection efforts.	EPA AVERT (web edition)	Assuming one large rain garden (50 sq ft) sequesters 2.8 Kg of CO2 per year and assuming smart controls add another 1.5 kg of carbon sequestration/ year.	https://www.epa.gov/system/files/documents/2022-06/d9-project-narrative%20508.pdf	Assumptions are based on national data and may vary depending on plant type, region, and growth conditions
Water/Wastewater/Watershed Management			Restore, protect and maintain riparian corridor ecosystems	Comet-Planner	5 acres of native plant installation	http://comet-planner.com/	Assumptions are based on national data and may vary depending on plant type, region, and growth conditions
Water/Wastewater/Watershed Management		Expand Contamination Detection and Pollution Prevention Measures	Provide discharge detection and sampling kits for illicit discharge investigations	N/A-Not quantifiable	N/A-Not quantifiable	N/A-Not quantifiable	N/A-Not quantifiable
Water/Wastewater/Watershed Management		Update Stormwater & Wastewater Conveyance Infrastructure	Install smart manhole covers	kg CH4 / gallon = (EFSeptic * 100 gal / person / day),	Average sanitary sewer overflow event releases 12,764 gallons per event; There are approximately 8.34 lbs of solids per gallon of water; 1.1 Kwh to treat 100 gallons,	2022 NCTCOG Sanitary Sewer Overflow Data from TCEQ https://www.pca.state.mn.us/sites/default/files/wq-wwtp8-03.pdf	Gallons per leak vary depending on response time, source, and leak size.
Water/Wastewater/Watershed Management			Utilize trenchless pipe rehabilitation	Literature on Trenchless Construction-	4.6 Metric tons CO2/year per gasoline vehicle, 35.28 g/CO2 per minute idle; cut traffic by 30 mins. Calculation is the reduction of 1 idle vehicle due to construction.	https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle#:~:text=typical%20passenger%20vehicle%3F,-A%20typical%20passenger%20vehicle%20emits%20about%204.6%20metric%20tons%20of,8%2C887%20grams%20of%20CO2 https://afdc.energy.gov/files/u/publication/which_is_greener.pdf	Assumptions are based on national data and may vary depending on the size of the project and number of lanes obstructed.
Water/Wastewater/Watershed Management		Increase Available Stormwater Detention Volumes	Augment stormwater detention basin storage	N/A - Not Quantifiable	N/A - Not Quantifiable	N/A - Not Quantifiable	N/A - Not Quantifiable
Water/Wastewater/Watershed Management	Water & Wastewater Treatment Infrastructure	Improve Water & Waste Treatment Process Efficiency	Develop and implement a strategic energy management & conservation for water utilities.	N/A-Not quantifiable	N/A-Not quantifiable	N/A-Not quantifiable	N/A-Not quantifiable
Water/Wastewater/Watershed Management			Update aging water/wastewater treatment plant infrastructure	EPA AVERT (web edition)	80% of emissions from treatment come from the filtration process. Updates improve emissions by 8%. Baseline taken from NCTCOG Regional Greenhouse Gas Emission Inventory.	https://vem.vermont.gov/sites/demhs/files/pdfs/funding/Project-Useful-Life.pdf, https://www.epa.gov/sites/default/files/2015-08/documents/energy_conservation_fact_sheet_p100i6f.pdf	Emissions reductions will vary by the type of renewable energy source.
Water/Wastewater/Watershed Management			Increase on-site renewable energy into WWTP site	EPA AVERT (web edition)	On-shore wind energy turbines use 4 MWh to treat water. Assuming 10 hours of use per day. Yearly energy use calculated then input in to the AVERT software. Baseline taken from NCTCOG Regional Greenhouse Gas Emission Inventory.	https://vem.vermont.gov/sites/demhs/files/pdfs/funding/Project-Useful-Life.pdf, https://www.irena.org/Energy-Transition/Technology/Wind-energy#:~:text=Wind%20turbine%20capacity%20has%20increased,and%208%2D12%20MW%20offshore.	Emissions reductions will vary by the type and size of upgrade.
Water/Wastewater/Watershed Management			Pursue energy-efficient disinfection processes	EPA AVERT (web edition)	Assume 30% reduction rate in yearly energy expenditures. Baseline taken from NCTCOG Regional Greenhouse Gas Emission Inventory.	https://www.ctc-n.org/technologies/biomass-heating	Emissions reductions will vary by disinfection method.
Water/Wastewater/Watershed Management			Install water-source heat-pumps at drinking water and wastewater treatment plants	https://www.viessmann.ae/en/knowledge/technology-and-systems/heat-pump/energy-consumption.html#calculation	Seasonal Performance Factor (SPF)= 4. Brine/water pump. Heat pump consumption= 100 kWh. Used baseline data from NCTCOG Regional Greenhouse Gas Emissions Inventory to assume treatment volume.	https://vem.vermont.gov/sites/demhs/files/pdfs/funding/Project-Useful-Life.pdf	Emissions reductions will vary by size and type of equipment. Seasonal Performance Factor will vary depending on the pump.
Water/Wastewater/Watershed Management			Support biogas capture & reuse in wastewater treatment plants	BioWatt	Internal biogas storage using a low pressure system, for on-site use (no transfer). Baseline taken from NCTCOG Regional Greenhouse Gas Emissions Inventory.	https://vem.vermont.gov/sites/demhs/files/pdfs/funding/Project-Useful-Life.pdf	Emissions reductions will vary by system type.

Dallas-Fort Worth Air Quality Improvement Plan- Measure Quantification Documentation							
SECTOR	**PROGRAM AREA**	**MEASURE**	**PROJECTS TO QUANTIFY WITHIN MEASURE**	**TOOL USED**	**EXPLANATION AND ASSUMPTIONS**	**REFERENCE**	**LIMITATIONS AND DISCLAIMERS**
Water/Wastewater/Watershed Management	Wastewater Infrastructure	Address On-site Sewage Facility Systems	Identify and repair aging on-site sewage facility systems	EPA AVERT (web edition)	Blackwater septic tank. 65% of total capacity, 1 person household contributes 60 gallons of sludge per year. Assuming it takes 1.1 Kwh to treat 100 gallons of wastewater. Calculated energy use to clean one septic failure and applied that to the AVERT tool.	https://extension.psu.edu/septic-tank-pumping; https://pubs.acs.org/doi/10.1021/acs.est.0c03418	Emissions reductions will vary by type, classification, age of system, household size, and leak detection speed.
Water/Wastewater/Watershed Management			Provide sanitary sewage upgrades in developing areas with existing on-site sewage facility systems	EPA AVERT (web edition)	Blackwater septic tank. 65% of total capacity, 1 person household contributes 60 gallons of sludge per year. Assuming it takes 1.1 Kwh to treat 100 gallons of wastewater. Calculated energy use to clean one septic failure and applied that to the AVERT tool.	https://extension.psu.edu/septic-tank-pumping; https://pubs.acs.org/doi/10.1021/acs.est.0c03418	Emissions reductions will vary by type, classification, age of system, household size, and leak detection speed.
Water/Wastewater/Watershed Management			Provide financial rebates to upgrade on-site sewage facility systems	EPA AVERT (web edition)	Assuming 1 system owner makes an upgrade from single to dual pump system. Dual pump system use- 0.75 kWh to treat sewage, single pump system use- 1.5 kW. Calculated the yearly difference in energy use and applied to AVERT tool.	https://www.wwdmag.com/wastewater-treatment/article/10918302/wastewater-pumps-and-variable-speed-drives; https://www.epa.gov/septic/types-septic-systems2/27/2024; https://ecoseptic.com.au/new-year-new-pump-upgrading-your-septic-system-in-2024/	Emission reductions will vary by type of upgrade.
Water/Wastewater/Watershed Management		Improve Bio-Solids Management	Divert biosolids from wastewater treatment into thermal waste-to-energy facilities	BioWatt	Assuming internal biogas storage using a low pressure system, for on-site use (no transfer). Baseline taken from NCTCOG Regional Greenhouse Gas Emissions Inventory.	https://vem.vermont.gov/sites/demhs/files/pdfs/funding/Project-Useful-Life.pdf	Emission reductions will vary by system type and length and method of transfer
Water/Wastewater/Watershed Management			Divert biosolids from wastewater treatment into waste-to-energy facilities	BioWatt	Internal biogas storage using a low pressure system, for on-site use (no transfer). Baseline taken from NCTCOG Regional Greenhouse Gas Emissions Inventory.	https://vem.vermont.gov/sites/demhs/files/pdfs/funding/Project-Useful-Life.pdf	Emission reductions will vary by system type and length and method of transfer
Water/Wastewater/Watershed Management			Update bio-solids management from wastewater treatment for placement into low carbon soils to sequester carbon through landfarming	MyTree	Assuming upgraded soil produces 1 ash tree, 3cm diameter, good condition, full sun exposure	https://mytree.itreetools.org/#/benefits/individual	Emissions reductions will vary by length of transfer and method. Carbon capture will vary depending on planting and maintenance techniques.
Water/Wastewater/Watershed Management		Support Effluent Reuse	Reduce chemical use affecting effluent reuse options	EPA AVERT (web edition)	Assuming 100 million gal/day of water treated and dedicating 30% of that water to reuse. From there, calculate energy reduction and place in AVERT tool. Baseline data taken from NCTCOG Regional Greenhouse Gas Emissions Inventory	https://twri.tamu.edu/publications/txh2o/2022/winter-2022/bigger-is-not-always-better-decentralizing-texas-wastewater-infrastructure/	Emission reductions will vary based on amount dedicated to reuse and reuse purpose.
Water/Wastewater/Watershed Management			Implement methods for non-potable water reuse	EPA AVERT (web edition)	Assuming 100 million gal/day of water treated and dedicating 30% of that water to reuse. From there, calculate energy reduction and place in AVERT tool. Baseline data taken from NCTCOG Regional Greenhouse Gas Emissions Inventory	https://twri.tamu.edu/publications/txh2o/2022/winter-2022/bigger-is-not-always-better-decentralizing-texas-wastewater-infrastructure/	Emission reductions will vary based on amount dedicated to reuse and reuse purpose.
Water/Wastewater/Watershed Management	Water Resources	Water Conservation	Utilize automated metering infrastructure (water meters)	EPA AVERT (web edition)	Assuming smart metering eliminates 1 household leak per year. 1 household leak releases ~ 10,000 gallons of water/year. Baseline energy use determined from NCTCOG Greenhouse Gas Emission Inventory.	https://www.ntmwd.com/broken-pipes-and-water-leaks-can-waste-thousands-of-gallons/; https://www.epa.gov/watersense/fix-leak-week	Emission reductions will vary by leak size, length of leak, and household water usage.
Water/Wastewater/Watershed Management			Explore aquifer storage and recovery	EPA AVERT (web edition)	Assuming that surface water extraction uses 750 kwh of energy per million gallons treated and that storage provides a 15% reduction in surface water extraction per year. Baseline data taken from NCTCOG Regional Greenhouse Gas Emissions Inventory.	NCTCOG Greenhouse Emissions Inventory	Emissions reductions will vary by size of storage capture, and equipment used in extraction.
Water/Wastewater/Watershed Management			Develop aquifer protection and land preservation efforts	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Water/Wastewater/Watershed Management			Implement building-scale rainwater harvesting for commercial and municipal buildings	EPA AVERT (web edition)	NCTCOG region averages 36 inches of rain/ year. 36,000 gallons per year collected. 1 inch of rain in a 2000 sqft space produces 1000 gallons of collected water.	https://www.twdb.texas.gov/publications/shells/RainwaterHarvesting.pdf. https://www.weather.gov/fwd/dmoprecip.	Emissions reductions will vary by building size and changes to average rainfall.
Water/Wastewater/Watershed Management			Establish residential home water conservation audits and smart water meter rebate programs	EPA AVERT (web edition)	Baseline data taken NCTCOG's Greenhouse Gas Emissions Inventory. Assuming conservation audits results in a year 10% reduction in water use/home.	N/A	Energy savings will vary depending on conservation audit software and measures of correction.
Water/Wastewater/Watershed Management			Implement Municipal and Commercial Water Conservation Audits for Irrigation Systems	EPA AVERT (web edition)	Baseline data taken NCTCOG's Greenhouse Gas Emissions Inventory. Assuming conservation audits results in a year 10% reduction in water use/home.	N/A	Energy savings will vary depending on conservation audit software and measures of correction.
Materials Management	Materials Management	Expand Local Compost Opportunities to Reduce Organic Disposal	Implement concierge-type residential organics pickup with diversion to commercial compost operations.	Spreadsheet	Assumed percent of organics diverted from landfills	NA	May need to consider additional reductions, and/or GHG associated with waste collection and delivery to new location; information not available to do that at this time
Materials Management			Incentivize multi-family residential developers to incorporate space for community compost and recycling	Spreadsheet	Assumed percent of organics diverted from landfills	N/A;	May need to consider additional reductions, and/or GHG associated with waste collection and delivery to new location; information not available to do that at this time
Materials Management			Develop regional compost facilities to support organic diversion from landfills	Spreadsheet	Assumed percent of organics captured, and amount of organics diverted from landfill	NA	May need to consider additional reductions, and/or GHG associated with waste collection and delivery to new location; information not available to do that at this time
Materials Management		Divert Organic Waste Into Waste-to-Energy Systems	Implement organic waste to energy through anaerobic digestion	Renergon Biogas Calculator	Assuming an electric feed-in and 40,000 tons of composted organic material digested.	https://www.renergon-biogas.com/en/biogas-calculator/; https://www.nctcog.org/getmedia/1dff458f-1b49-4e3c-b8a2-58760589b601/North-Central-Texas-Organic-Waste-to-Fuel-Feasibility-Study.pdf, https://vem.vermont.gov/sites/demhs/files/pdfs/funding/Project-Useful-Life.pdf	Emissions reductions will vary by feed-in type (gas vs. electric) and type of material.
Materials Management		Divert Construction & Demolition Debris	Expand Regional Construction Material Recycling Efforts	N/A; Negligible Benefits	N/A; Negligible Benefits	N/A; Negligible Benefits	N/A; Negligible Benefits
Materials Management			Partner with Construction Companies That Prioritize Low-Waste Techniques into Their Projects	N/A; Negligible Benefits	N/A; Negligible Benefits	N/A; Negligible Benefits	N/A; Negligible Benefits
Materials Management			Adopt Contract Requirements to Prioritize Deconstruction Methods Over Demolition Practices Where Feasible	N/A; Negligible Benefits	N/A; Negligible Benefits	N/A; Negligible Benefits	N/A; Negligible Benefits
Materials Management		Upgrade Waste Disposal Facilities	Implement Western Regional Resource Management Center	Spreadsheet	Assumed percent of GHG Captured by new Landfill	NA	May need to consider additional GHG reductions associated with waste collection and delivery to new landfill; information not available to do that at this time
Materials Management			Implement Landfill Gas Collection & Management Systems	Spreadsheet	Assumed percent of GHG Captured by effective landfill gas collection	NA	Capture rate depends on type and efficacy of system implemented
Materials Management			Utilize Efficient Landfill Seals and Cover	Spreadsheet	Assumed percent of GHG Captured by more effective cover	NA	Capture rate depends on type and efficacy of system implemented, as well as efficacy of daily cover implementation
Materials Management			Consider Buffers and More Appropriate Zoning for Landfills Near Residential Areas	NA/	Does not impact GHG generation, solely community impacts from proxity to landfill	N/A; Negligible Benefits	NA/negligible benefits
Materials Management		Implement Recycling & Transfer Facilities	Upgrade Existing Facilities to Optimize Load Weights	NA/	NA/ negligible benefits	N/A; Negligible Benefits	May have slight impact on on-site landfill operations; GHG from facility to disposal may be reduced
Materials Management			Construct Additional Recycling Centers in the Region	NA/	NA/Negligible benefits	N/A; Negligible Benefits	May need to consider additional reductions associated with waste collection and delivery to new facility; information not available to do that at this time
Materials Management			Construct Bulking Transfer Station at Landfills	NA/	N/A; Negligible Benefits	N/A; Negligible Benefits	May need to consider additional reductions associated with waste collection and delivery to landfill; information not available to do that at this time
Materials Management		Improve Waste Collection	Expand Waste Diversion Collection Networks to Support Multi-Family Dwellings	NA/	N/A; Negligible Benefits	N/A; Negligible Benefits	May actually increase GHG related to equipment used, collection distance, and transport to recycling facility; difference not quantifiable at this time;
Materials Management			Implement Local Policy to Require Trip Planning to Reduce VMT from Waste-Hauling Processes	NA/	N/A; Negligible Benefits	N/A; Negligible Benefits	May need to consider additional GHG reductions associated with waste collection and delivery to landfill; depends on route and equipment used; information not available to do that at this time
Materials Management			Convert Waste Trucks to Lower-Emission Vehicles	NA/	NA/Negligible - Estimate included in Transportation project for heavy equipment	NA/Negligible - Estimate included in Transportation project for heavy equipment	Reductions dependent upon number of trucks converted and routes travelled
Agriculture, Forestry, Land Use	Green Space & Land Use	Promote the Expansion of Green Space	Comprehensive Regional Green Space Project	MyTree, Comet-Planner	1 Tree, 1 acre native grass, 1 acre riparian corridor. Oak tree is in good condition, 6 inch diameter trunk, full sun exposure.	https://www.epa.gov/system/files/documents/2022-06/d9-project-narrative%20508.pdf	Conservative estimate, expanded other landscaping and vegetation as well as additional benefits such as shading of houses and subsequent energy benefits or potential increase in bike/ped numbers due to provided shade are not taken into account.
Agriculture, Forestry, Land Use			Develop Financial Incentives for Commercial Property Owners to Maintain or Create Green Space	MyTree	Assuming 1 Oak tree planted, good condition, 6-inch diameter trunk, full sun exposure.	N/A	Conservative estimate, expanded other landscaping and vegetation as well as additional benefits such as shading of houses and subsequent energy benefits or potential increase in bike/ped numbers due to provided shade are not taken into account.
Agriculture, Forestry, Land Use			Install Minimally Resource-Intensive Landscape Design	My tree, Comet-Planner	Assuming one large (50 sq ft.) rain garden sequesters 2.8 Kg of CO2 per year.	https://www.thelawninstitute.org/environmental-benefits/carbon-sequestration/#:~:text=Research%20suggests%20that%20grasses%20can,for%2030%20to%2040%20years., https://grownative.org/learn/native-plants-store-carbon/; comet-planner.com	Emission reductions will vary by plant type, amount planted, and maintenance practices.
Agriculture, Forestry, Land Use			Preserve and Rewild Historic Cemeteries	MyTree, Comet-Planner	Assuming one cemetery incorporates 1 acre of native grass, which captures between .5-1 US ton per year of Co2 and 1 Oak tree (6 in diameter, good condition), full sun	https://www.thelawninstitute.org/environmental-benefits/carbon-sequestration/#:~:text=Research%20suggests%20that%20grasses%20can,for%2030%20to%2040%20years., https://grownative.org/learn/native-plants-store-carbon/	Emission reductions will vary by plant type, amount planted, and maintenance practices.
Agriculture, Forestry, Land Use			Upgrade Governmental Buildings to Utilize Biophilia Through Green Walls, Rooftops, and other Site Surfaces	Innovations in Buildings Cool Roof Calculator	City- Fort Worth. R-value is 10, solar reflectance is 50, infrared emittance is 60, cooling load for black roof- 12840 btu, new roof- 8647 btu, 2000 sq ft	https://web.ornl.gov/sci/buildings/tools/cool-roof/	Emission reductions will vary by size of building and level of solar reflectance
Agriculture, Forestry, Land Use			Increase Neighborhood Green Space	MyTree	Assuming 1 Oak tree planted, good condition, 6-inch diameter trunk, full sun exposure.		Conservative estimate, expanded other landscaping and vegetation as well as additional benefits such as shading of houses and subsequent energy benefits or potential increase in bike/ped numbers due to provided shade are not taken into account.
Agriculture, Forestry, Land Use			Acquire/Preserve High Priority Greenspace	My tree, Comet-Planner	Assuming one large (50 sq ft.) rain garden sequesters 2.8 Kg of CO2 per year.	https://www.thelawninstitute.org/environmental-benefits/carbon-sequestration/#:~:text=Research%20suggests%20that%20grasses%20can,for%2030%20to%2040%20years., https://grownative.org/learn/native-plants-store-carbon/; comet-planner.com	Emission reductions will vary by plant type, amount planted, and maintenance practices.
Agriculture, Forestry, Land Use		Support Park Management and Maintenance	Municipal Park and Recreation Plan Development	My tree, Comet-Planner	Assuming one large (50 sq ft.) rain garden sequesters 2.8 Kg of CO2 per year.	https://www.thelawninstitute.org/environmental-benefits/carbon-sequestration/#:~:text=Research%20suggests%20that%20grasses%20can,for%2030%20to%2040%20years., https://grownative.org/learn/native-plants-store-carbon/; comet-planner.com	Emission reductions will vary by plant type, amount planted, and maintenance practices.
Agriculture, Forestry, Land Use			Lawn Care Equipment Replacement Program	EPA AVERT (web edition)	Assuming the replacement of 1 riding lawn mower with an annual fuel use equal to 2000 gallons of gasoline. Electric use mower running at 20 Horsepower for, 600 hours/year.	https://afdc.energy.gov/files/pdfs/52423.pdf, https://sciencing.com/convert-horsepower-kwh-7613597.html	Emission reductions will vary by horsepower of electric equipment.

Dallas-Fort Worth Air Quality Improvement Plan- Measure Quantification Documentation							
SECTOR	**PROGRAM AREA**	**MEASURE**	**PROJECTS TO QUANTIFY WITHIN MEASURE**	**TOOL USED**	**EXPLANATION AND ASSUMPTIONS**	**REFERENCE**	**LIMITATIONS AND DISCLAIMERS**
Agriculture, Forestry, Land Use	Forestry	Increase Urban Forest Canopy	Establish tree canopy goals and benchmarks	MyTree, Comet-Planner	1 Tree, 1 acre native grass, 1 acre riparian corridor. Oak tree is in good condition, 6 inch diameter trunk, full sun exposure.	https://www.epa.gov/system/files/documents/2022-06/d9-project-narrative%20508.pdf	Conservative estimate, expanded other landscaping and vegetation as well as additional benefits such as shading of houses and subsequent energy benefits or potential increase in bike/ped numbers due to provided shade are not taken into account.
Agriculture, Forestry, Land Use			Develop Urban Forestry Floodplain and Floodway Initiative	MyTree, Comet-Planner	1 Tree, 1 acre native grass, 1 acre riparian corridor. Oak tree is in good condition, 6 inch diameter trunk, full sun exposure.	https://www.epa.gov/system/files/documents/2022-06/d9-project-narrative%20508.pdf	Conservative estimate, expanded other landscaping and vegetation as well as additional benefits such as shading of houses and subsequent energy benefits or potential increase in bike/ped numbers due to provided shade are not taken into account.
Agriculture, Forestry, Land Use			Develop tree canopy assessments	My tree, Comet-Planner	Assuming one large (50 sq ft.) rain garden sequesters 2.8 Kg of CO2 per year.	https://www.thelawninstitute.org/environmental-benefits/carbon-sequestration/#:~:text=Research%20suggests%20that%20grasses%20can,for%2030%20to%2040%20years., https://grownative.org/learn/native-plants-store-carbon/; comet-planner.com	Emission reductions will vary by plant type, amount planted, and maintenance practices.
Agriculture, Forestry, Land Use	Agriculture	Update Agricultural Management Practices	Implement Manure & Livestock Management to Reduce Methane	Renergon Biogas Calculator	Assuming an electric feed-in and 40,000 of cattle biosolids (hay diet) digested per year.	https://www.renergon-biogas.com/en/biogas-calculator/; https://www.nctcog.org/getmedia/1dff458f-1b48-4e3c-bfa2-6876058960 1/North-Central-Texas-Organic-Waste-to-Fuel-Feasibility-Study.pdf; https://vem.vermont.gov/sites/demhs/files/pdfs/funding/Project-Useful-Life.pdf	Emission vary by animal source, the animal's diet, and digester feed-in type (gas vs. electric).
Agriculture, Forestry, Land Use			Electrify Irrigation and other Farm Equipment	EPA AVERT (web edition)	Assuming an irrigation system operates at 50 Horsepower, 1500 gallons per minute. Diesel fueled pump with these assumptions use 9.5 liters per hour, which converts to 84.264 KWH. Electric irrigation equipment with same assumptions uses 37.3 KWh. Apply the difference in energy consumption to the AVERT tool.	https://www.rivulis.com/electric-or-diesel-irrigation-pumps/	Emission reductions vary by equipment type, size, and horsepower.
Agriculture, Forestry, Land Use			Increase/promote neighborhood and community growing practices	N/A - Not Quantifiable	N/A - Not Quantifiable	N/A - Not Quantifiable	N/A - Not Quantifiable
Agriculture, Forestry, Land Use	Regional Codes	Update Code and Zoning Revisions to promote green space conservation and preservation	Integrate air quality review into zoning and permitting review	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Agriculture, Forestry, Land Use			Update landscaping ordinances/requirements	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Agriculture, Forestry, Land Use			Adopt tree ordinances that promote urban forestry in the built environment	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Agriculture, Forestry, Land Use			Utilize Smart Growth and/or transect-based codes to promote environmental analysis in development	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Cross-Sector	N/A	Tire Recycling Initiatives	Adopt Tire Recycling Policy	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Cross-Sector	N/A	Carbon Footprint App	Carbon Footprint Smartphone Application and Rewards Program	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Cross-Sector	N/A	Regional Air Quality Monitoring Program	Deploy Air Quality Monitors	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Cross-Sector	N/A	Workforce Development	Develop Local Workforce to Enable Clean Energy Adoption and Resilience	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Cross-Sector	N/A		Develop Local Workforce to Enable Water, Wastewater, and Drainage System Upgrades	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Cross-Sector	N/A		Develop Local Workforce to Enable "Green Space" Implementation, Wastewater, and Drainage System Upgrades	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Cross-Sector	N/A	Education and Outreach	Lower Electricity Rate Through Group Renewable Energy Purchase	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable
Cross-Sector	N/A		Promote Renewable Energy and Energy Efficiency	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable	N/A- Not Quantifiable

North Central Texas Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 10 - DFW AQIP TRANSPORTATION MEASURES

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN - TRANSPORTATION MEASURES																	
MEASURE OVERVIEW													AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				EXPECTED DISADVANTAGED COMMUNITY BENEFITS
PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO2e)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
														OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	
Clean Vehicles and Transportation Energy Efficiency	Clean Vehicles and Equipment Program	Heavy-Duty Hydrogen Pilot Program	Facilitate leases and/or purchases of hydrogen fuel cell vehicles to be used in and around the NCTCOG area, potentially in partnership with a truck leasing company. Include fueling infrastructure to support leased vehicles. Emphasize medium- and heavy-duty trucks.	Build infrastructure to support use of low emission fleet vehicles Decarbonize fleets	84% 70%	We should reduce air pollution from large diesel vehicles	86%	Public and private fleets	Yes	Established scope of work; End-user buy-in; Annual status reports; Final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify and obtain funding; Year 2 - Provide Funding; Year 3-5 Projects Completed and In Operation	6.44 - 45.27 per vehicle	0.02 - 0.37 per vehicle	0.001 - 0.016 per vehicle	0 - 0.003 per vehicle	Economic Development and Job Creation; Improved Health and Well-Being; Increased Resiliency/Ability to Adapt; Reduced Noise Pollution
		Zero- and Near-Zero Freight and Work Truck/Bus Program	Provide incentives to cover the incremental cost of purchasing hybrid, plug-in hybrid, or electric drivetrain vehicles/technologies in the work truck (e.g. freight trucks, utility trucks, refuse trucks, dump trucks, contractor pickup trucks, etc.), and associated infrastructure if needed.	Decarbonize fleets Provide incentives for Auxiliary Power Units on trucks	70% 50%	We should provide incentives for those with vehicles that don't pollute very much.	80%	Public and private fleets	Yes	Established scope of work; End-user buy-in; Annual status reports; Final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify and obtain funding; Year 2 - Provide Funding; Year 3-5 Projects Completed and In Operation	0.360-26.48 per vehicle/idle reduction project	0-0.020 per vehicle/idle reduction project	0.00	0.00	Economic Development and Job Creation; Improved Health and Well-Being; Increased Resiliency/Ability to Adapt; Reduced Noise Pollution
			Provide funding to replace medium- and heavy-duty vehicles and equipment with newer, cleaner ones. Includes infrastructure costs as needed. Includes converting waste trucks to lower emissions vehicles (Project from Materials Management sector)	Replace heavy-duty diesel vehicles with newer ones which meet newer emission standards Decarbonize fleets	66% 70%	We should reduce air pollution from large diesel vehicles. We should provide incentives for those with vehicles that don't pollute very much.	86% 80%	Public and private fleets	Yes	Established scope of work; End-user buy-in; Annual status reports; Final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify and obtain funding; Year 2 - Provide Funding; Year 3-5 Projects Completed and In Operation	0-105.9 per vehicle	0.0005-0.15 per vehicle	0.0005-0.006 per vehicle	0-0.0014 per vehicle	Economic Development and Job Creation; Improved Health and Well-Being; Increased Resiliency/Ability to Adapt; Reduced Noise Pollution
			Fund the development of heavy-duty truck charging hubs.	Build infrastructure to support use of low emission fleet vehicles	84%	We should reduce air pollution from large diesel vehicles	86%	Public and private fleets	Yes	Established scope of work; End-user buy-in; Annual status reports; Final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify and obtain funding; Year 2 - Provide Funding; Year 3-5 Projects Completed and In Operation	5.6 - 22.3 per site	0.01 - 0.05 per site	0.001 - 0.002 per site	0.0001 - 0.0004 per site	Economic Development and Job Creation; Improved Health and Well-Being; Increased Resiliency/Ability to Adapt; Reduced Noise Pollution
		Low-Emission Non-Road Equipment Program	Provide Incentives for alternative fuel and advanced technologies for non-road equipment including lawn equipment, ground support equipment, rubber-tire gantry cranes, airplanes etc. Could also include local governments providing rebates to residents for the replacement of gas powered lawn equipment with electric models.	Decarbonize lawn equipment Decarbonize ground support equipment Decarbonize fleets Incentivize energy efficient or alternative fuel construction equipment	43% 23% 70% 52%	We should replace gasoline and diesel equipment (ex: lawn, construction) with newer equipment that doesn't pollute as much.	77%	Public and private fleets	Yes	Established scope of work; End-user buy-in; Annual status reports; Final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify and obtain funding; Year 2 - Provide Funding; Year 3-5 Projects Completed and In Operation	1.72 - 18.69 per equipment	0.006-0.036 per equipment	0-0.015 per equipment	0-0.004 per equipment	Economic Development and Job Creation; Improved Health and Well-Being; Increased Resiliency/Ability to Adapt; Reduced Noise Pollution; Reduced Costs
		Public Sector Fleet Transition Program	Provide funding for public entity fleet transitions, with priority to those who are adopting a new fleet tech for the first time, or in a new segment or hard-to-reach segment of operation (e.g. non-revenue vehicles in transit agencies, 'white fleets' for school districts, older non-diesel vehicles that don't qualify for diesel replacement programs, etc.). Includes infrastructure.	Decarbonize fleets Increase EV adoption among commercial vehicle fleets (Freight, contractors, etc.) Increase EV adoption among local government fleets Provide local EV rebates to fleets	70% 64% 70% 55%	We should provide incentives for those with vehicles that don't pollute very much.	80%	Public fleets	Yes	Established scope of work; End-user buy-in; Annual status reports; Final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify and obtain funding; Year 2 - Provide Funding; Year 3-5 Projects Completed and In Operation	2.8 -16.6 per vehicle	0.0002 - 0.04 per vehicle	0.0003-0.003 per vehicle	0-0.0001 per vehicle	Economic Development and Job Creation; Improved Health and Well-Being; Increased Resiliency/Ability to Adapt; Reduced Noise Pollution
		Replace/Improve Diesel Locomotives	Provide incentives to replace/upgrade/improve old, high-emitting diesel locomotives.	Adopt clean locomotive technology	39%	We should replace old locomotives with newer locomotives that pollute less. We should replace gasoline and diesel equipment with newer equipment that doesn't pollute as much	79% 77%	DART (for Trinity Railway Express service)	Yes	Established scope of work; End-user buy-in; Annual status reports; Final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify and obtain funding; Year 2 - Provide Funding; Year 3 - Order locomotive; Year 5 - Locomotive in operation	168.3 per engine	23.14 per engine	N/A	1 per engine	Improved Health and Well-Being, Increased Resiliency/Ability to Adapt
		Add Wayside Power for Rail Operations	Add wayside power to enable rail engines to power down when out of service.	Adopt clean locomotive technology Restrict locomotive idling	39% 39%	We should replace old locomotives with newer locomotives that pollute less.	79%	DART (for Trinity Railway Express service)	Yes	Established scope of work; End-user buy-in; Annual status reports; Final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify and obtain funding; Year 2 - Provide Funding; Year 3-5 Projects Completed and In Operation	175.8 - 176.4 per engine	1.73 - 2.68 per engine	N/A	0.11 per engine	Improved Health and Well-Being, Increased Resiliency/Ability to Adapt; Reduced Noise Pollution
	Low Carbon Liquid Fuels Program	Build Infrastructure to Enable Use of Low-Carbon Liquid Fuels	Provide incentives to assist with building ethanol, biodiesel, renewable diesel, and/or renewable gasoline facilities.	Decarbonize fleets Incentivize renewable diesel usage Build infrastructure to support use of low emission fleet vehicles	70% 43% 84%	We should provide incentives for those with vehicles that don't pollute very much.	80%	Public and private fleets and/or fueling facility owners	Yes	Identification of funding opportunities; End-user adoption; annual status reports; final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify funding to support; Year 2 - Develop Project Scope Year 3-5 Begin to Implement Project	91 - 1,096 per site	0 per site	0.01 - 0.04 per site	0.0001 - 0.003 per site	Economic Development and Job Creation; Increased Resiliency/Ability to Adapt; Reduced Costs; Increased Access to Service and Amenities; Improved Health and Well Being
		Provide Incentives for Utilizing Biofuels in Locomotives/Non-Road Equipment	Pay the difference between a conventional fuel and a renewable biofuel to encourage biofuel usage	Decarbonize fleets Incentivize renewable diesel usage	70% 43%	We should provide incentives for those with vehicles that don't pollute very much.	80%	Public and private fleets and/or fueling facility owners	Yes	Identification of funding opportunities; End-user adoption; annual status reports; final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify funding to support; Year 2 - Develop Project Scope Year 3-5 Begin to Implement Project	1.4- 17.7 per equipment	0 per equipment	0 per equipment	0 per equipment	Economic Development and Job Creation; Increased Resiliency/Ability to Adapt
	Regional Emissions Compliance Program	Fund Emissions Compliance Activities and Operations	Funding to cover law enforcement personnel hours to dedicated emissions compliance task force to investigate and monitor methane emissions from industrial, energy and transportation sectors, as well as combat fraudulent emissions inspections and engine tampering; ensure compliance and cite on violations like visible tailpipe smoking vehicles, heavy-duty truck highway lane restrictions, vehicle idling restriction ordinances, and fraudulent vehicle inspections and registrations	Engage in or support emissions enforcement task force activities and operations	61%	Cities should adopt and enforce anti-idling policies.	73%	Public entities within NCTCOG service area	Yes	Funding/resources obtained, Established scope of work; annual status reports; final report at the end of five-year project period	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Identify funding to support; Year 2 - Develop Project Scope Year 3-5 Implement project	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Improved Health and Well-Being; Increased Engagement/Awareness, Increased Safety; Reduced Noise Pollution

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN - TRANSPORTATION MEASURES																	
MEASURE OVERVIEW													AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				EXPECTED DISADVANTAGED COMMUNITY BENEFITS
PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO2e)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
														OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	
	LED Streetlighting Program	Retrofit Streetlights with LEDS	Replace older technology streetlights with LED lighting. May be limited to streetlights owned by local governments.	Retrofit lighting with light-emitting diodes (LED)	58%	Industrial facilities should find ways to reduce emissions and decrease energy consumption.	91%	Public entities within NCTCOG service area	Yes	Identification of funding opportunities; Vendor procurement; End-user adoption; annual status reports; final report at the end of five-year project period	Identify scope; Identify funding; Project start; Project end	Year 1 - Identify funding and develop scope; Year 2-Implementation; Year 3-5 Monitor progress	0.00017 per light	0.000172 per light	N/A	N/A	Reduced Costs; Economic Development and Job Creation; Increased Safety, Increased Resiliency/Ability to Adapt; Improved Health and Well Being
	Green Airport Planning Program	Increase Education/Best Practices for Green Airports	Includes pursuing Carbon-Neutral Airport Accreditation, integrate environmental sustainability into airport contracts, and implementing practices to reduce carbon.	Pursue carbon-neutral airport accreditation	18%	Airports should reduce emissions through utilizing fuels that pollute less.	81%	NCTCOG and airports within NCTCOG service area	Yes	Project scope developed; annual status reports; five-year project update	Identify scope; Outreach starts; outreach ends	Year 1 - Develop scope; Year 2-5 - Begin implementation	39 - 57,500	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Economic Development and Job Creation, Increased Safety, Increased Resiliency/Ability to Adapt
Transit	Transit Enhancement Program	Enhance Existing Transit Service	Improve/enhance existing transit service to increase ridership and remove barriers to transit use by upgrading select passenger amenities (e.g. passenger shelters, ADA improvements, etc.) and expanding service (e.g. higher frequencies or additional routes); prioritize improvements in underserved areas and/or on services that improve transit access to major employers.	Reduce single occupancy vehicle trips Implement higher capacity on-demand/micro transit vehicles Implement micro transit Expand public transportation	52% 48% 50% 61%	I would like using public transit to be more convenient.	81%	Local governments/transit agencies within NCTCOG service area	Yes	Project scope developed; annual status reports; five-year project update	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Develop project scope year 2 - Begin implementation; Year 3- Finish implementation; Year 4-5 Monitor implementation	199.21 - 597.67 program benefit	0.09 - 0.26 program benefit	0.05 - 0.14 program benefit	0.00066- 0.0021 program benefit	Economic Development and Job Creation; Improved Health and Well-Being, Increased Access to Service and Amenities, Increased Resiliency/Ability to Adapt; Increased Awareness/Engagement; Reduced Costs
		Expand Vanpool Program	Expand the use of electric vehicles across the regional vanpool program.	Expand vanpool programs(s)	48%	I would like using public transit to be more convenient.	81%	NCTCOG	Yes	Identification of electrification opportunities; Annual report; Five-year project update	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Develop project scope year 2 - Begin implementation; Year 3- Finish implementation; Year 4-5 Monitor implementation	13.61 per vehicle	0.0005 per vehicle	0.0015 per vehicle	0.00006 per vehicle	Economic Development and Job Creation; Improved Health and Well-Being, Increased Access to Service and Amenities, Increased Resiliency/Ability to Adapt
		Subsidize Transit Passes	Provide funding to local governments/transit agencies to subsidize transit passes. Passes could be provided to individuals or businesses. Would include funding for outreach and education.	Subsidize individuals' cost of public transportation Create an educational campaign to increase transit ridership	45% 50%	I would like public transit to cost less.	43%	Public entities within NCTCOG service area	Yes	Identification of partners; project scope development; annual report; five-year project update	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Develop Project Scope Year 2-5 - Implement and monitor	2,980.31 - 5,960.02 program benefit	1.32 - 2.64 program benefit	0.72 - 1.44 program benefit	0.01 - 0.02 program benefit	Reduced Costs, Improved Health and Well-Being, Increased Resiliency/Ability to Adapt, Economic Development and Job Creation, Increased Access to Service and Amenities; Increased Awareness/Engagement
		Develop Mobility Hubs & Transit-Oriented Developments	Develop mobility hubs to enable multimodal connections and first/last mile solutions for transit services.	Add more walkable, dense, mixed-use centers	57%	I would like using public transit to be more convenient.	79%	Public entities within NCTCOG service area	Yes	Identification of partners; project scope development; annual report; five-year project update	Identify scope; Identify end-users; Identify funding; Project start; Project end	Year 1- Develop Project Scope Year 2 - Begin Implementation; Year 3- Finish Implementation; Year 4-5 Monitor Implementation	8,571.7 program benefit	3.57 program benefit	2.00 program benefit	0.05 program benefit	Economic Development and Job Creation; Improved Health and Well-Being, Increased Access to Service and Amenities, Increased Resiliency/Ability to Adapt; Increased Awareness/Engagement
	Transit Planning Program	Develop Regional Transit Plan	Identify service gaps and offer recommendations to expand on public and active transit routes and grow regional transit fund.	Develop regional transit plan	57%	I would like using public transit to be more convenient.	79%	NCTCOG	Yes	Published Regional Transit Plan; Annual report on implementation of deficiencies found in plan; five-year project update	Project start; Project end	Year 1- 3; Develop Plan; Year 4-5 Begin to Implement Plan	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Economic Development and Job Creation; Improved Health and Well-Being, Increased Access to Service and Amenities, Increased Resiliency/Ability to Adapt; Increased Awareness/Engagement; Reduced Costs
Sustainable Development	Active Transportation Program	Improve/ Expand Bicycle and Pedestrian Facilities	Provide on-street bikeways; provide off-street facilities such as trails and sidewalks. Includes supporting the Safe Routes to Schools Program	Improve/expand sidewalk infrastructure Install more safe bike facilities Add shade to bike lanes or sidewalks (solar, trees, etc.) Expand the Safe Routes to Schools program	68% 64% 55% 59%	We need to improve our sidewalks/bicycle routes (add safety measures, and shade).	89%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify scope; Identify end-users; Obtain relevant permits; Identify funding; Project start; Project end	Year 1- Develop Project Scope Year 2-3 Obtain funding and begin construction; Year 4-5 Finish construction and monitor	3,955.96 per project	0.76 per project	0.85 per project	0.02 per project	Economic Development and Job Creation; Improved Health and Well-Being, Increased Access to Service and Amenities, Increased Resiliency/Ability to Adapt, Increased Safety; Increased Awareness/Engagement ; Reduced Noise Pollution
Sustainable Development	Green Purchasing/ Green Construction Program	Green Purchasing/Green Construction Program	Use low-embodied carbon, recycled content, and/or high-efficiency materials (e.g. materials that extend the life of projects and reduce the frequency of necessary construction/maintenance). Employ reduced-emission construction methods (e.g. low-emission equipment), materials (e.g. low-emission or high-albedo coatings/surfaces), or management practices (e.g. tools/field work improving oversight and efficiency).	Create green purchasing policy Deploy urban heat island mitigation strategies	50% 76%	N/A	N/A	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify scope; Identify end-users; Procure vendors; Obtain relevant permits; Identify funding; Project start; Project end	Year 1- Develop Project Scope Year 2-3 Obtain funding and begin construction; Year 4-5 Finish construction and monitor	8.04 per 5000 ft length	0.09 per 5000 ft length	Not Currently Quantifiable	Not Currently Quantifiable	Economic Development and Job Creation; Increased Resiliency/Ability to Adapt; Improved Health and Well Being
		Expand Use of Landscaping, Vegetation, and Tree Cover	Enhance transportation right-of-way with trees, vegetation, and other landscaping that facilitate more active transportation, reduce urban heat island, and also buffer stormwater and drainage issues through bioswales or other similar methods.	Develop markets for materials and products with low embodied carbon Modify construction process/materials to reduce emissions impacts	35% 52%	We have a flooding problem.	50%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify scope; Identify end-users; Obtain relevant permits; Identify funding; Project start; Project end	Year 1- Develop Project Scope Year 2-3 Obtain funding and begin construction; Year 4-5 Finish construction and monitor	0.04 per tree	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	New Green Space/Community Beautification; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN - TRANSPORTATION MEASURES																	
MEASURE OVERVIEW													AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				EXPECTED DISADVANTAGED COMMUNITY BENEFITS
PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO2e)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
														OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	
Sustainable Development	Urban Heat Island and Green Spaces Program	Develop Parks/Plazas/Open Spaces	Develop parks, plazas, and open spaces in developed spaces, especially in areas where such green spaces can help provide multimodal connections (e.g. deck parks that enable connectivity across transportation infrastructure)	Increase public green spaces Expand urban forests	94% 82%	We do not have enough public parks/green spaces. We have too much parking/concrete.	76% 81%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify scope; Identify end-users; Obtain relevant permits; Identify funding; Project start; Project end	Year 1- Develop Project Scope Year 2-3 Obtain funding and begin construction; Year 4-5 Finish construction and monitor	1,183.89 per project	0.4695 per project	0.054 per project	0.054 per project	New Green Space/Community Beautification; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being; Increased Awareness/Engagement
		Preserve Existing Green Spaces	Preserve existing green spaces and tree cover	Increase public green spaces Expand urban forests	94% 82%	We have too much parking/concrete. We do not have enough public parks/green spaces.	81% 76%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify scope; Identify end-users; Obtain relevant permits; Identify funding; Project start; Project end	Year 1- Develop Project Scope Year 2-3 Obtain funding and begin construction; Year 4-5 Finish construction and monitor	0.04 per tree	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	New Green Space/Community Beautification; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being
Congestion Management	Enhanced Regional Traffic Signal Timing Program	Upgrade Traffic Signal Equipment	Upgrade traffic signals in the region based on the inventory that identified those not meeting our minimum equipment regional standard. At a minimum, upgrade all signals identified as not meeting regional standard based on NCTCOG's inventory that are the jurisdiction of local governments . Could include utilization of Advanced Traffic Management System (ATMS) and/or battery backup for traffic signals.	Upgrade traffic signals in the region	64%	We should time traffic signals better so traffic flows more freely.	91%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify locations; Obtain local government support; Identify funding; Project start; Project end	Year 1- Identify locations; Year 2; Obtain funding and equipment; Year 3- Upgrade equipment; Year 4-5 Complete construction and monitor	Not Quantifiable but is foundational step to enabling signal timing benefits	Not Quantifiable but is foundational step to enabling signal timing benefits	Not Quantifiable but is foundational step to enabling signal timing benefits	Not Quantifiable but is foundational step to enabling signal timing benefits	Increased Access to Service and Amenities; Economic Development and Job Creation, Increased Safety, Reduced Costs
Congestion Management		Improve Signal Timing in the Region	Adjustment of timing plans of traffic signals at intersections to optimize traffic flow and improve overall efficiency.	Upgrade traffic signals in the region	64%	We should time traffic signals better so traffic flows more freely.	91%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify locations; Obtain local government support; Identify funding; Project start; Project end	Year 1- Identify locations; Year 2; Begin upgrades; Year 3- Finish Upgrades; Year 4-5 Monitor Improvements	203.97 per project	0.10 per project	0.06 per project	0.0014 per project	Increased Access to Service and Amenities; Economic Development and Job Creation, Increased Safety, Reduced Costs; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being; Reduced Costs
Transit		Bus Signal Prioritization	Deploy new features to improve transit operations, including traffic signal priority and bus priority lanes.	Create bus/transit only lanes Expand public transportation	25% 61%	I would like using public transit to be more convenient. Roadways should be improved to help traffic flow (add turn lanes, roundabouts, remove forced merges, etc.).	79% 88%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify locations; Obtain local government support and transit agencies support; Identify funding; Project start; Project end	Year 1- Identify locations; Year 2; Begin upgrades; Year 3- Finish Upgrades; Year 4-5 Monitor Improvements	398.42 - 597.67 program benefit	0.18 - 0.26 program benefit	0.1 - 0.14 program benefit	0.00144 - 0.0021 program benefit	Increased Access to Service and Amenities; Economic Development and Job Creation, Increased Safety, Reduced Costs; Increased Resiliency/Ability to Adapt; Increased Awareness/Engagement
Congestion Management	Transportation System & Truck/Rail Flow Optimization Program	Roadway Improvements	Update Roadways to Minimize Idling and Improve Safety through features such as (improved alignments, roundabouts, dedicated turn lanes, etc.)	Update roadways to minimize idling and improve safety	61%	Roadways should be improved to help traffic flow (add turn lanes, roundabouts, remove forced merges, etc.). We should upgrade railroad crossings to minimize cars idling and improve safety.	88% 80%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify locations; Obtain local government support and transit agencies support; Identify funding; Project start; Project end	Year 1- Identify locations; Year 2; Project design and permit approval Year 3-4- Begin construction Year 5 Monitor improvements	729.71 per project	0.48 per project	0.47 per project	0.01 per project	Increased Access to Service and Amenities; Economic Development and Job Creation, Increased Safety, Reduced Costs; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being
Congestion Management		Technology and Multimodal Connectivity Improvements	Expand use of transportation technologies (e.g. connected infrastructure elements) and improve efficiency of traffic flow through multimodal connections (e.g. from road to rail) with emphasis on freight traffic. Examples could include traffic signal timing to clear truck queues.	Identify optimization for intermodal facilities	50%	There is too much traffic congestion in our region.	93%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify locations; Obtain local government support; Identify funding; Project start; Project end	Year 1- Identify locations; Year 2; Project design and permit approval Year 3-4- Begin construction Year 5 Monitor improvements	197 program benefit	0.68 program benefit	0.02 program benefit	0.02 program benefit	Increased Access to Service and Amenities; Economic Development and Job Creation, Increased Safety, Reduced Costs; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being; Reduced Noise Pollution
Congestion Management		Grade Separations	Construct overpasses or underpasses to separate at-grade intersections (either roadway intersections or road-rail intersections), with priority on locations of substantial freight congestion	Eliminate rail grade crossings	39%	We should upgrade railroad crossings to minimize cars idling and improve safety.	80%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify locations; Obtain local government support; Identify funding; Project start; Project end	Year 1- Identify locations; Year 2; Project design and permit approval Year 3-4- Begin construction Year 5 Monitor improvements	231.93 per project	0.12 per project	0.05 per project	0.0017 per project	Increased Access to Service and Amenities; Economic Development and Job Creation, Increased Safety, Reduced Costs; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being; Reduced Noise Pollution
Sustainable Development/Congestion Management	Vehicle Miles Traveled Reduction Program	Improve Job-Housing-Transportation Balance	Provide incentives for construction of new housing near public transit locations and in close proximity to major new employment centers	Improve housing-transportation balance Add more walkable, dense, mixed-use centers	36% 57%	I would like using public transit to be more convenient.	79%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify locations; Obtain local government support; Identify funding; Project start; Project end	Year 1- Identify locations; Year 2; Project design and permit approval Year 3-4- Begin construction Year 5 Monitor improvements	8,571.70 per project	3.57 per project	2.00 per project	0.047 per project	Economic Development and Job Creation; Improved Health and Well-Being; Increased Access to Service and Amenities; Increased Resiliency/Ability to Adapt; Increased Awareness/Engagement
Congestion Management		Provide Incentives to Encourage Commuting During Off-Peak Times or Working Remote	Incentives to encourage commuting during "off-peak times", hybrid work and/or other modes of transportation.	Incentivize delivery drivers during off-peak times Provide incentives to encourage off-peak commutes or working remote Reduce single occupancy vehicle trips	39% 45% 50%	When possible, employers should let employees work from home or commute during "off-peak hours" to reduce congestion. There is too much traffic congestion in our region.	88% 93%	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Develop project scope; Identify funding; Identify partners; Project start; Project end	Year 1- Develop project scope; Year 2-5 Implement project	2,465.47 per project	0.68 per project	0.37 per project	0.00497 per project	Economic Development and Job Creation; Improved Health and Well-Being; Increased Resiliency/Ability to Adapt; Increased Safety
Congestion Management		Utilize Smart Infrastructure to Improve Operations	Install ground-based sensors that can be integrated into a public network. Includes the North Texas Minimum Viable Unmanned Traffic Management Infrastructure Project	N/A	N/A	N/A	N/A	Public entities within NCTCOG service area	Yes	Annual status report, five-year project report	Identify locations; Obtain local government support; Identify funding; Project start; Project end	Year 1- Identify locations; Year 2; Project design and permit approval Year 3-4- Begin construction Year 5 Monitor improvements	706,850.92 program benefit	351.41 program benefit	57.48 program benefit	4.74 program benefit	Economic Development and Job Creation; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 11 - DFW AQIP ENERGY MEASURES

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN - ENERGY MEASURES																		
MEASURE OVERVIEW														AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				DISADVANTAGED COMMUNITY BENEFITS
PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO2e)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
														OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	
Energy Demand Management Program	Public Sector Energy Efficiency & Refrigerant Transition Program	Increase Energy Efficiency of Existing Buildings	Replace older, inefficient appliances and systems, such as HVAC, heat pumps/ smart meter, chillers, and boilers, with focus on most efficient EnergyStar-certified units.	Adopt heat pumps for commercial and residential buildings	35%	Industrial facilities should find ways to reduce emissions and decrease energy consumption.	91%	Public Entities and Utilities in NCTCOG Jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	0.00002 - 0.0037 per retrofit	0.00000001 - 0.000002 per retrofit	0.0000000004 - 0.0000001 per retrofit	0.000000001 - 0.0000002 per retrofit	Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being
		LED Lighting Retrofits	Replace older lighting technology with efficient LEDs	Retrofit lighting with light-emitting diodes (LED)	62%	Industrial facilities should find ways to reduce emissions and decrease energy consumption.	91%	Public Entities and Utilities in NCTCOG Jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; project start; project end	Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	0.00000004 per streetlight	0.00000000002 per streetlight	0.0000000000005 per streetlight	0.000000000002 per streetlight	Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being
	Residential Efficiency Rebate Program	Conduct Residential Energy Audits and Weatherization Rebate Program	Conduct a comprehensive energy audit/preliminary energy assessment to identify potential energy or water efficiency improvements for residents and offer rebates to weatherize homes	Conduct energy audits for residents Conduct energy efficiency retrofits for residents	46% 46%	Residents/community members should be provided incentives to help with energy efficiency/weatherization projects. The region needs more education on how to reduce electricity use.	88% 75%	Public Entities and Utilities in NCTCOG Jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	0.0000009 per household	0.0000000004 per household	0.00000003 per household	0.00000000004 per household	Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being; Reduced Costs; Increased Awareness and Engagement; Increased Safety
		Provide Incentives for Residential Solar	Provide incentives for local residential solar installations, facilitate community solar opportunities, and/or support "Solarize" group-purchase options to reduce residential solar costs.	Incentivize residential solar projects	38%	Residents/community members should be provided incentives to help with energy efficiency/weatherization projects. I am interested in installing solar panels at my residence.	88% 57%	Public Entities and Utilities in NCTCOG Jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope an incentive program; program start; program end	Years 1-2 Identifying scope of program, Years 3-4 program implementation, Year 5 Evaluate projects	0.0000004 solar per household	0.0000000001 solar per household	0.000000000005 solar per household	0.00000000001 solar per household	Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being; Reduced Costs; Increased Awareness and Engagement
	Energy Plans/Audits/ Policies	Implement Building Energy Performance Management Program/Plan/Policy	Benchmark building energy consumption using Energy Star Portfolio Manager	Benchmark building energy consumption and implement a building energy performance management program	50%	We should reduce air pollution from electricity generation. I am interested in installing solar panels at my residence.	78% 57%	Public Entities in NCTCOG Jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; project start; project end	Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	Not Quantifiable	Not Quantifiable	Not Quantifiable	Not Quantifiable	Increased Awareness and Engagement; Increased Resiliency and Adaptability
		Conduct Energy Audits for Organizations	Conduct a comprehensive energy audit/preliminary energy assessment to identify potential energy or water efficiency improvements for commercial buildings or industrial facilities	Conduct energy audits for organizations	42%	Industrial facilities should find ways to reduce emissions and decrease energy consumption.	91%	Public Entities in NCTCOG Jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; project start; project end	Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	Not Quantifiable	Not Quantifiable	Not Quantifiable	Not Quantifiable	Increased Awareness and Engagement; Increased Resiliency and Adaptability
	Green/Cool Roof Replacements	Implement Cool/Green Roofs	Install cool roofs on government buildings (includes white paint for reflectivity, green roofs planted with vegetation)	Install cool roofs on buildings (e.g., white paint, "green" vegetated roofs)	54%	Residents/community members should be provided incentives to help with energy efficiency/weatherization projects. Industrial facilities should find ways to reduce emissions and decrease energy consumption.	88% 91%	Public Entities in NCTCOG Jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	0.0002 -0.011 per building roof	0.00000006 - 0.000004 per building roof	0.000000002 - 0.0000002 per building roof	0.000000007 - 0.0000005 per building roof	Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well Being
	Distributed Energy and Resilience for Public Entities	Resilient Building Improvements	Provide resiliency elements, such as battery or hydrogen fuel cell energy storage, solar, microgrids and cleaner burning generators (LPG,CNG), to improve resiliency at public buildings.	Incentivize commercial/industrial solar projects	42%	Power outages are a problem.	72%	Public Entities in NCTCOG Jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	8.27 - 40.94	0.40 - 0.52	0 - 0.027	0.009 - 0.011	Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being
		Increase Grid Resiliency for Communities	Develop community-scale renewable energy (wind, solar), microgrids, battery storage and/or hydrogen fuel cell storage, or vehicle-to-grid facilities	Establish grid reliability requirements Modernize and update the electric grid Utilize more battery storage for resiliency	35% 38% 46%	We should reduce air pollution from electricity generation. Power outages are a problem.	78% 72%	Public Entities in NCTCOG Jurisdiction in Collaboration with Electric Utilities	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	16.89 - 33.77	0.008 - 0.016	0.00028 - 0.00055	0.00076 - 0.0015	Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being
		Develop Emergency Shelters	Identify appropriate buildings and retrofit them to include resiliency elements to accommodate sheltering of the general public in the event of a power outage. These buildings could include community centers, large libraries, schools, etc. that could accommodate large numbers of people.	Modernize and update the electric grid Establish grid reliability requirements	38% 35%	We should reduce air pollution from electricity generation. Power outages are a problem.	78% 72%	Public Entities in NCTCOG Jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	5.51 - 27.29	0.26 - 0.35	0 - 0.02	0.006 - 0.0072	Increased Resiliency and Ability to Adapt; Job Creation and Economic Development; Improved Health and Well-Being; Increased Safety
	Advancing Energy Elements in Building Codes	Expand Regional Codes Program to Support EVs, Solar and Energy Efficient Buildings	Enhance/expand regional codes program with additional training and outreach to expand adoption of latest & greatest building codes, including solar-ready provisions supported by the Regional Codes Coordinating Council and energy efficiency Develop resources to guide regional adoption of EV-friendly (e.g. EV-ready, EV-capable, and/or EV-installed) building codes or standards	Promote clean energy financing programs, such as PACE Benchmark building energy consumption and implement a building energy performance management program Update building codes Increase EV adoption among commercial vehicle fleets (freight, contractors, etc.)	42% 50% 31% 66%	Industrial facilities should find ways to reduce emissions and decrease energy consumption.	91%	NCTCOG	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope project; trainings and resources developed; trainings conducted	Year 1 Identifying scope of project, Years 2-3 Develop trainings and resources, Years 4-5 Conduct trainings and coordinate with local governments	Not Quantifiable	Not Quantifiable	Not Quantifiable	Not Quantifiable	Increased Awareness and Engagement; Increased Resiliency and Adaptability; Increased Safety

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 12 - DFW AQIP WATER, WASTEWATER, AND WATERSHED MANAGEMENT MEASURES

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN- WATER, WASTEWATER & WATERSHED MANAGEMENT MEASURES																	
MEASURE OVERVIEW													AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				DISADVANTAGED COMMUNITY BENEFITS
PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO2e)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
														OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	
Watershed Management	Implement Integrated Stormwater Management, Low Impact Development, Green Stormwater Infrastructure, and other Nature-based Solutions	Provide Economic Rebates for Green Infrastructure and Water Efficient Landscaping	Green infrastructure and low-impact landscaping sequesters carbon, reduces water used for irrigation, and reduces site runoff.	Sequester carbon in agriculture operations Implement urban forestation and green infrastructure programs	35% 83%	We should use drought-tolerant plants/grass. We do not have enough public parks/green spaces.	95% 77%	Local cities and counties to private property owners	Yes	Established scope of work; project status reports at year 2 and year 4 milestones; final report at the end of five-year project period	Rebate program approved through public entity, commercial business owners establish vendors for installation, construction begins, construction ends, rebate provided.	Year 1- Establish program and enrollees, Years 2-3- Installation occurs, Years 3-4- Installations finalize, Year 5- Evaluate project and rebate provided.	1183.89	0.47	Not Quantifiable at This Time	0.05	New Green Space/Community Beautification; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being; Increased Awareness/Engagement; Increased Resiliency/Ability to Adapt
		Update Local Policy, Codes, Drainage Criteria and Ordinances	Update local policy, codes, drainage criteria and ordinances as necessary to encourage wider adoption of nature based solutions towards reduced stormwater peaks and volumes, improved water quality, and associated green space benefits	Sequester carbon in agriculture operations Implement urban forestation and green infrastructure programs	35% 83%	We should use drought-tolerant plants/grass. We do not have enough public parks/green spaces.	95% 77%	Local governments	Yes	Draft of the ordinance proposal introduced at council or committee meeting, evidence of public hearing, meeting minutes showing council voted to approve ordinance change, ordinance signed by mayor.	Ordinance introduced in special committee or city council meeting, public hearing, ordinance appears before public governing body for a vote. If approved, executive governing body signs ordinance into effect.	Year 1- Ordinance introduced and public hearing, Years 2-3- Ordinance approved and executive governing body signs ordinance. Year 5- Evaluate project	N/A	N/A	N/A	N/A	New Green Space/Community Beautification; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being; Increased Awareness/Engagement ; Increased Resiliency/Ability to Adapt
		Implement Bioswales and Other Organic Stormwater Collection Areas to Increase Local Storage	Implement bioswales and other organic stormwater collection areas to provide extra storage and limited treatment for runoff during extreme storm events; would also provide urban heat island mitigation, note: may be related to similar measures in transportation sector around public ROW, and also similar measures under AGFOLU around increasing green space.	Sequester carbon in agriculture operations Implement urban forestation and green infrastructure programs	35% 83%	We should use drought-tolerant plants/grass. We do not have enough public parks/green spaces.	95% 77%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status reports at year 2 and year 4 milestones; final report at the end of five-year project period	Procurement of vendors to install stormwater collection materials, construction/installation begins, maintenance and installation as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation occurs, Years 3-4- Provide maintenance and installations as needed, Year 5- Evaluate project	1183.89	0.47	Not Quantifiable at This Time	0.05	New Green Space/Community Beautification; Increased Resiliency/Ability to Adapt; Improved Health and Well-Being; Increased Awareness/Engagement ; Increased Resiliency/Ability to Adapt
		Install Smart Controls and Sensors to LID and Green Infrastructure to Analyze and Quantify Stormwater Collection Efforts	Encourages carbon sequestration through green infrastructure. Smart controls reduce energy expenditure by assessing conditions of green infrastructure and making adjustments.	Install smart manhole covers Implement stormwater collection programs	76% 90%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status reports at year 2 and year 4 milestones; final report at the end of five-year project period	Procurement of vendors for sensors and smart controls, installation begins, installation finalizes, project evaluation.	Year 1-Procure vendors, Years 2-3- Installation occurs, Years 3-4- Installations finalize, Year 5- Evaluate project	0.0035	Unspecified	Unspecified	Unspecified	Green Spaces and Community Beautification, Job Creation and Economic Development, Increased Safety; Water Conservation; Increased Health and Well-Being; Increased Resiliency and Adaptability
		Restore, Protect and Maintain Riparian Corridor Ecosystems	Implement measures to protect, enhance and maintain riparian corridor ecosystems; while many channels in our area are required be relatively clear to ensure flood conveyance, there are also TODES MS4 Permit requirements to maintain at lease a 50-foot buffer along all waters of the state.	Expand urban forests Improve forest management policies	82% 39%	We should use drought-tolerant plants/grass. We do not have enough public parks/green spaces.	95% 75%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors to plant and maintain vegetation added to corridor, installation begins, maintenance and installations as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation occurs, Years 3-4- Provide maintenance and installations as needed, Year 5- Evaluate project	2.2	0	unspecified	unspecified	Green Spaces and Community Beautification; Improved Health and Well- Being; Increased Safety
	Expand Contamination Detection and Pollution Prevention Measures	Provide Discharge Detection and Sampling Kits for Illicit Discharge Detection & Elimination (IDDE) Investigations	Supports increased detection and elimination of pollutants to Municipal Separate Storm Sewer Systems	Implement stormwater collection programs	90%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period.	Procurement of sampling kit vendors, update and train staff on new sampling process if needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Update and train staff on new sampling process if needed, Year 5- Evaluate project.	Not quantifiable	Not quantifiable	Not quantifiable	Not quantifiable	Improved Health and Well-Being
	Update Stormwater & Wastewater Conveyance Infrastructure	Install Smart Manhole Covers	Install smart manhole covers to quickly provide updates on potential sewer blockages/overflows.	Install smart manhole covers	76%	We have a flooding problem.	51%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors to install manhole covers, identify maintenance staff, installation begins, maintenance and installations as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation occurs, Years 3-4- Provide maintenance and installations as needed, Year 5- Evaluate project	52.46	0	0.38	0	Improved Health and Well-Being; Water Conservation; Increased Resiliency and Adaptability
		Utilize Trenchless Pipe Rehabilitation	Implement pipe rehabilitation projects based on prioritization using trenchless construction methods. Using trenchless rehabilitation methods would limit the traffic impacts from construction, uses about 60 percent less energy, and can reduce particulates associated with excavation, and reduce waste when compared to remove and replace construction methods.	Implement stormwater and wastewater collection programs	90%	We have a flooding problem. Our water infrastructure (pipes) is too sensitive to heat/cold.	51% 59%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors to install manhole covers, identify maintenance staff, installation begins, maintenance and installations as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation occurs, Years 3-4- Provide maintenance and installations as needed, Year 5- Evaluate project	0.0011	0.00	Unspecified	Unspecified	Increased Resiliency and Adaptability
	Increase Available Stormwater Detention Volumes	Augment Stormwater Detention Basin Storage	Construct & maintain stormwater basins in flood prone communities to reduce local flood potential; measures include stormwater detention basin construction and dredging to provide local flood storage	Implement stormwater collection programs	90%	We have a flooding problem.	51%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for detention construction and dredging, identify maintenance staff, installation begins, maintenance and installations as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation occurs, Years 3-4- Provide maintenance and installations as needed, Year 5- Evaluate project	N/A	N/A	N/A	N/A	Increased Safety; Improved Health and Well-Being; Increased Resiliency and Adaptability

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN- WATER, WASTEWATER & WATERSHED MANAGEMENT MEASURES																	
MEASURE OVERVIEW													AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				DISADVANTAGED COMMUNITY BENEFITS
PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO2e)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
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Water & Wastewater Treatment Infrastructure	Improve Water & Waste Treatment Process Efficiency	Develop and Implement a Strategic Energy Management and Conservation Plan for Water Utilities	Efforts to include formulation of energy policy; energy efficiency through energy audit, energy conservation, and energy usage goals; data and process analysis for identification of strategies to achieve those goals, development of methods to measure progress; coaching, walk-thru, and standard operating procedures and development and publication of annual reports.	Employ energy conservation technology for water utility companies	71%	We should reduce air pollution from electricity generation. I am concerned about drought and future water supply issues.	78% 89%	Water utility companies in NCTCOG jurisdiction	Yes	Report developed detailing baseline energy use; Plan written outlining energy management goals and strategies. Final report on any implementation impacts.	Establish method of auditing energy use, including procuring any outside vendors to run audit, audit begins, audit ends, establish energy conservation goals, develop methods of conservation, implementation of method, project evaluation.	Year 1- Establish methods and procure vendors, Year 2- Conduct audit, Year 3- Establish conservation goals and develop methods to meet the goal, Year 4- Implement method, Year 5- Evaluate project.	Not quantifiable	Not quantifiable	Not quantifiable	Not quantifiable	Job Creation and Economic Development; Increased Awareness and Engagement
		Update Aging Water/Wastewater Treatment Plant Infrastructure	Funding would update water/ wastewater treatment plant infrastructure with energy efficient supplies such as pumps and filters, etc.	Employ energy conservation technology for water utility companies Create green purchasing policies	71% 81%	Industrial facilities should find ways to reduce emissions and decrease energy consumption.	91%	Water/wastewater utility companies in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for supplies, installation begins, maintenance and installations as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation occurs, Years 3-4- Provide maintenance and installations as needed, Year 5- Evaluate project	0.005	N/A	N/A	N/A	Increased Resiliency and Adaptability
		Increase On-Site Renewable Energy into Wastewater Treatment Plant Site	Funding would diversify energy sources at water/wastewater treatment plants by increasing the use of co-generation, combined heat & power, solar, hydroelectric, and wind energy in the treatment process.	Increase the renewable portfolio standard and/or establish energy efficiency portfolio standard for electricity	41%	Industrial facilities should find ways to reduce emissions and decrease energy consumption.	91%	Water/wastewater utility companies in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for supplies, installation begins, maintenance and installations as needed, project evaluation.	Year 1- Procure vendors, Years 2-4- Installation occurs, Year 5- Maintenance as needed and evaluate project	57.15	0	0.00009	0.03	Increased Resiliency and Adaptability; Improved Health and Well-Being
		Pursue Energy-Efficient Disinfection Processes	Funding would support UV disinfection and other processes that would reduce energy expenditures from biomass cookstoves	Increase the renewable portfolio standard and/or establish energy efficiency portfolio standard for electricity Create green purchasing policies	41% 81%	We need more access to clean water. Industrial facilities should find ways to reduce emissions and decrease energy consumption.	68% 91%	Water/wastewater utility companies in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for disinfection, installation of new equipment begins, staff trained on new processes, maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2- Installation occurs, staff trained on new processes. Years 3-4 - Maintenance as needed, Year 5- Evaluate project	1249.12	0.57	0.02	0.06	Increased Resiliency and Adaptability; Improved Health and Well-Being
		Install Water-Source Heat Pumps at Water- and Wastewater Treatment Plants	Funding would pay for upgrades to water and wastewater plants to utilize water-source heat-pumps.	Employ energy conservation technology for water utility companies	71%	We need more access to clean water. Industrial facilities should find ways to reduce emissions and decrease energy consumption.	68% 91%	Water/wastewater utility companies in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for supplies, installation begins, maintenance and installations as needed, project evaluation.	Year 1- Procure vendors, Years 2- Installation occurs, Years 3-4 -Maintenance as needed, Year 5- Evaluate project	333.00	0.15	0.0053	0.016	Increased Resiliency and Adaptability; Improved Health and Well-Being
		Support Bio-Gas Capture & Reuse in Wastewater Treatment Plants	Funding would support the design and construction of biogas storage and processing infrastructure.	Employ energy conservation technology for water utility companies	71%	We need more access to clean water. Industrial facilities should find ways to reduce emissions and decrease energy consumption.	68% 91%	Wastewater utility companies in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for construction, installation of new equipment begins, staff trained on new processes, maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2-3 Installation occurs, staff trained on new processes. Years 3-4 - Maintenance as needed, Year 5- Evaluate project	22	Unspecified	Unspecified	Unspecified	Increased Resiliency and Adaptability
	Address On-site Sewage Facility Systems	Identify and Repair Aging On-site Sewage Facility Systems	Provide Authorized Permitting Authorities with software upgrades needed to track On-Site Sewage Facility systems, and to upgrade, repair, or replace efficiently	Employ energy conservation technology for water utility companies	71%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of software vendors, installation of software, convert paper permitting records to digital copies, project evaluation.	Year 1- Procure vendors, install software, Year 2- Convert paper permits to digital software, Year 5- Evaluate project	0.0074	Negligible	0.00435	Not specified	Improved Health and Well-Being; Increased Resiliency and Adaptability; Job Creation and Economic Development ; helps to reduce bacteria-related discharges in areas with related TMDLs
		Provide Sanitary Sewage Upgrades in Developing Areas with Existing On-Site Sewage Facility Systems	Provide sanitary sewer upgrades in developing areas with existing on-site sewage facility systems; incentivize hookup, and appropriate tank and drain field closure.	Employ energy conservation technology for water utility companies	71%%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for construction and drainfield closure, construction of hook up lines begins, remaining drainfields closed once hook ups are complete, project evaluation.	Year 1- Procure vendors, Years 2-4 -Construction, Year 4-Drain field closure, Year 5- Evaluate project.	0.0074	Not specified	0.00435	Not specified	Improved Health and Well-Being; Increased Resiliency and Adaptability; Job Creation and Economic Development ; helps to reduce bacteria-related discharges in areas with related TMDLs
		Provide Financial Rebates to Upgrade OSSF	Provides homeowner incentives to upgrade On-Site Sewage Facility systems	Employ energy conservation technology for water utility companies	71%	Local governments should have more programs to help residents reduce waste.	85%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Rebate program approved through public entity, homeowners establish vendors for installing upgrades, construction begins, construction ends, rebate provided, project evaluation.	Year 1- Establish program and enrollees, homeowners establish vendors, Years 2-3- Installation occurs, Years 3-4- Installations finalize, Year 5- Evaluate project and rebate provided.	Negligible	Negligible	Negligible	Negligible	Improved Health and Well-Being, Increased Awareness and Engagement ; helps to reduce bacteria related discharges in areas with related TMDLs

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PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO2e)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
														OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	
Wastewater Infrastructure	Improve Bio-Solids Management	Divert Biosolids From Wastewater Treatment into Thermal Waste-to-Energy Facilities	Funding would be used to implement thermal treatment processes, like gasification and pyrolysis. Would reduce GHG from treatment processes, but depending on process used may have high energy needs to support process, and may not result in full air quality improvements for all constituents;	Divert biosolids from wastewater treatment into waste-to-energy systems	62%	We need more access to clean water. Industrial facilities should find ways to reduce emissions and decrease energy consumption.	68% 91%	Wastewater utility companies in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for construction, construction begins, staff trained on new processes, maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation occurs, staff trained on new process, Years 3-4- Maintenance and installations as needed, Year 5- Evaluate project	22	Unspecified	Unspecified	Unspecified	Increased Resiliency and Adaptability
		Divert Biosolids from Wastewater Treatment into Waste-to-Energy Facilities	Funding would be used to implement anaerobic digestion and/or co-generation units in order to use organic wastes to develop renewable energy	Divert biosolids from wastewater treatment into waste-to-energy systems	62%	We need more access to clean water. Industrial facilities should find ways to reduce emissions and decrease energy consumption.	68% 91%	Wastewater utility companies in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of digester and co-generation unit vendors, installation and construction begins, maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation occurs, staff trained on new process, Years 3-4- Maintenance and installations as needed, Year 5- Evaluate project	22	Unspecified	Unspecified	Unspecified	Increased Resiliency and Adaptability
		Update Bio-Solids Management from Wastewater Treatment for Placement into Low Carbon Soils to Sequester Carbon Through Landfarming	Funding would be used to identify better locations and infrastructure for placing dewatered sludge for disposal and carbon sequestration	Replace inorganic nitrogen fertilizer with lower emission alternative	65%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Wastewater utility companies in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for transfer and disposal, necessary equipment installed, maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation occurs, Years 3-4- Maintenance as needed, Year 5- Evaluate project	0.035	0.000011	Unspecified	0.00013873	Green Spaces and Community Beautification; Increased Resiliency and Adaptability; Improved Health and Well-Being
	Support Effluent Reuse	Reduce Chemical Use Affecting Effluent Reuse Options	Decrease the amount of energy/chemicals utilized at water treatment plants by upgrading and expanding the current reuse program which distributes non-potable reclaimed water for irrigation, industrial processes	Increase water reuse practices	76%	We need more access to clean water. Industrial facilities should find ways to reduce emissions and decrease energy consumption.	68% 91%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for to construct reuse infrastructure, construction begins, maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2-4- Construct reuse hookups and infrastructure, Year 5- Evaluate project	506.14	0	0.01	0.025	Improved Health and Well-Being; Increased Resiliency and Adaptability; Water Conservation
		Implement Methods for Non-Potable Water Reuse	Develop and implement methods of using non-potable water from various sources to treat and use for other functions	Increase water reuse practices Implement rainwater catchment programs	76% 90%	We need more access to clean water. Industrial facilities should find ways to reduce emissions and decrease energy consumption.	68% 91%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for to construct reuse infrastructure, construction begins, maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2-4- Construct reuse hookups and infrastructure, Year 5- Evaluate project	506.14	0	0.01	0.025	Improved Health and Well-Being; Increased Resiliency and Adaptability; Water Conservation
Water Resources	Improve Local Water Conservation	Utilize Automated Metering Infrastructure (Water Meters)	Allows the customer and utility to proactively locate continuous water usage (potential leaks) on the city and private side, saving energy on extraction and treatment.	Provide rebates for smart water meters to residents	71%	We need more access to clean water. Industrial facilities should find ways to reduce emissions and decrease energy consumption.	68% 91%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of meter vendors, installation of new meters, staff trained on new processes, project evaluation.	Year 1- Procure vendors, Years 2-3 Install new meters, training staff on new processes, Year 5- Evaluate project	Negligible	Negligible	Negligible	Negligible	Increased Resiliency and Adaptability; Water Conservation; Increased Awareness and Engagement
		Explore Aquifer Storage and Recovery	Explore Aquifer Storage and Recovery options to establish redundant water supply, and as potential water storage option.	Implement rainwater catchment programs	90%	We need more access to clean water.	68%	Water utility companies in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procure study on various storage and recovery options, determine water sources and best aquifers to pursue for storage and recovery.	Year 1- Procure vendors to conduct study, Years 2-5 determine sources and aquifer locations.	Not quantifiable at this time	Not quantifiable at this time	Not quantifiable at this time	Not quantifiable at this time	Improved resiliency and adaptability
		Develop Aquifer Protection and Land Preservation Efforts	Provide funding to establish protected land designated for aquifer storage and support Aquifer Storage and Recovery (ASR) projects, lessening the energy expenditure of treatment infrastructure	Improve forest management policies Restore degraded lands and forested lands to enhance carbon sequestration	39% 61%	We need more access to clean water.	68%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Milestones for preservation vary by method of preservation. Milestones for subsequent ASR projects include: Procurement of vendors to construct storage and recovery facilities, construction begins, construction ends, project evaluation.	Year 1- Procure vendors, Years 2-3-Construct storage facility, Year 4- Water storage begins, Year 5- Evaluate project	145.15	0	0	0.0091	Increased Resiliency and Adaptability; Improved Health and Well-Being
		Implement Building-Scale Rainwater Harvesting for Commercial and Municipal Buildings	Funding would support the capture, diversion, and harvesting of rainwater for non-potable purposes	Implement rainwater catchment programs	90%	We need more access to clean water.	68%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for to install rainwater harvesting infrastructure, construction begins, maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Construction, Year - Maintenance as needed, Year 5- Evaluate project	18.14	0.0091	0	0	Increased Resiliency and Adaptability; Improved Health and Well-Being; Water Conservation
		Establish Home Water Conservation Audits and Smart Water Meter Rebate Programs	Audit program would identify potential conservation opportunities, lowering the energy needed to supply water to residents	Provide rebates for smart water meters to residents	71%	Local governments should have more programs to help residents reduce waste. We need more access to clean water.	85% 68%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Rebate program approved through public entity, homeowners establish vendors for installation, installation begins, installations finalize, rebate provided, project evaluation.	Year 1- Establish program and enrollees, Years 2-3- Installation occurs, Years 3-4- Installations finalize, Year 5- Evaluate project and rebate provided.	54.43	0.027	0	0	Increased Resiliency and Adaptability; Improved Health and Well-Being; Water Conservation; Reduced Costs; Increased Awareness and Engagement
		Implement Municipal and Commercial Water Conservation Audits with Irrigation Repair Programs	Irrigation system audit programs to help municipal and commercial system operators identify opportunities to conserve water by identifying equipment that needs repair. Consider use of non-potable, or cooling tower discharge for makeup water . The project can include contract opportunities for implementing irrigation system repairs.	Provide rebates for smart water meters to residents	71%	Local governments should have more programs to help residents reduce waste. We need more access to clean water.	85% 68%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors to provide audits, audits begin and repairs needed are identified, repairs begin, project evaluation.	Year 1- Procure vendors, Year 2- Audits begin, Year 3- Repairs begin as needed, Year 5- Evaluate project	54.43	0.027	0	0	Increased Resiliency and Adaptability; Improved Health and Well-Being; Water Conservation; Reduced Costs; Increased Awareness and Engagement

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DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 13 - DFW AQIP WASTE MANAGEMENT (SOLID WASTE) MEASURES

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN- MATERIALS MANAGEMENT (SOLID WASTE) MEASURES

MEASURE OVERVIEW													AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				DISADVANTAGED COMMUNITY BENEFITS
PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION ($CO2e$)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
														OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	
Materials Management	Expand Local Compost Opportunities to Reduce Organic Disposal	Implement Concierge-Type Residential Organics Pickup with Diversion to Commercial Compost Operations	Funding would support the contracts with 3rd party entities that would pick up residential organics (yard waste, food waste), to divert from landfills to local compost operations with reuse	Provide education on food waste Optimize waste collection and transfer networks	81% 76%	There are not enough recycling and composting options. Local governments should have more programs to help residents reduce waste.	76% 85%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	13,886.27	Negligible	Negligible	Negligible	Improved Health and Well-Being; Increased Resiliency and Adaptability; Increased Awareness and Understanding; Negligible Impact on Reducing Organic Waste at Landfill
		Incentivize Multi-Family Residential Developers to Incorporate Space for Community Compost and Recycling	Funding would give priorities to developments that support multifamily composting efforts.	Provide education on food waste Implement low-waste construction methods	81% 76%	There are not enough recycling and composting options. Local governments should have more programs to help residents reduce waste.	76% 85%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	8,054.04	Negligible	Negligible	Negligible	Improved Health and Well-Being; Increased Resiliency and Adaptability; Increased Awareness and Understanding; Negligible Impact on Reducing Organic Waste Streams
		Develop Regional Compost Facilities to Support Organic Diversion From Landfills	Implementing regional compost facilities would reduce landfill GHG from organic waste streams, as well as the GHG and priority pollutants associated with their haul. Funding would be used to implement, expand existing and new compost facilities.	Implement low-waste construction methods Provide education on food waste	76% 81%	There are not enough recycling and composting options. Local governments should have more programs to help residents reduce waste.	76% 85%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	69,431.34	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Improved Health and Well-Being; Increased Resiliency and Adaptability; Increased Awareness and Understanding; May Help Reducing Organic Waste Streams; Extends Landfill Life
	Divert Organic Waste Into Waste-to-Energy Systems	Implement Organic Waste to Energy Through Anaerobic Digestion	Divert food waste and other appropriate organic materials to anaerobic digestors to use for energy	Divert organic waste from landfills into waste-to-energy systems Implement methane reduction best practices	71% 57%	We should reduce air pollution from electricity generation.	78%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	85,052.84	Negligible	Negligible	Negligible	Increased Resiliency and Adaptability; Job Creation and Economic Benefits; Better Carbon Capture Related to Embodied Carbon in Construction Materials
	Divert Construction & Demolition Debris	Expand Regional Construction Material Recycling Efforts	Funding would aid in increasing the number of construction/ demolition materials recycling facilities	Implement low-waste construction methods Modify construction process/materials to reduce emissions impacts	76% 55%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	Negligible	Negligible	Negligible	Negligible	Increased Resiliency and Adaptability; Better Carbon Capture Related to Embodied Carbon in Construction Materials; Extends Landfill Life
		Partner with Construction Companies That Prioritize Low-Waste Techniques into Their Projects	Accelerate the acceptance of low-waste construction projects through education, incentives and partnerships, and continue to pursue zero-landfill waste practices for all construction projects.	Implement low-waste construction methods Modify construction process/materials to reduce emissions impacts	76% 55%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities within NCTCOG jurisdiction through regional Public Works Committee	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	Negligible	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Increased Resiliency and Adaptability; Better Carbon Capture Related to Embodied Carbon in Construction Materials; Extends Landfill Life
		Adopt Contract Requirements to Prioritize Deconstruction Methods Over Demolition Practices Where Feasible	Deconstruction methods achieve high landfill-diversion rates and support the market for recovered materials, reducing energy costs needed to make new materials.	Implement low-waste construction methods Modify construction process/materials to reduce emissions impacts	76% 55%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities within NCTCOG jurisdiction through regional Public Works Committee	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	Negligible	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Increased Resiliency and Adaptability; Better Carbon Capture Related to Embodied Carbon in Construction Materials; Extends Landfill Life
	Upgrade Waste Disposal Facilities	Implement Western Regional Resource Management Center	Expand landfill capacity in the western portions of the region to support ongoing growth and limited existing landfill capacity. Project includes siting, design, permitting, with early implementation of compost facility, c&d facility, recycling(MRF) and regional landfill construction in follow-on grant/other funding.	Optimize waste collection and transfer networks	76%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identify scope of individual projects, Years 3-4 siting & design, permitting, year 5	99,187.63	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Improved Health and Well-Being, Increased Resiliency and Adaptability; Better Carbon Capture Related to Embodied Carbon in Construction Materials; Extends Service in Underserved Part of the Region; Siting will Need to Incorporate LIDAC Analyses and Local Input to Reduce Impacts
		Implement Landfill Gas Collection & Management Systems	Implement landfill gas collection systems to optimize GHG diversion, and reuse as a renewable gas resource. Implementation of new equipment, and or upgrading existing landfill gas collection systems can reduce the need for flaring, and direct off-gassing, thus reducing landfill GHG contributions.	Improve landfill cover and sealing	48%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	19,837.53	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Improved Health and Well-Being, Increased Resiliency and Adaptability; Better Carbon Capture Related to Embodied Carbon in Construction Materials; Extends Service in Underserved Part of the Region; Siting will Need to Incorporate LIDAC Analyses and Local Input to Reduce Impacts
		Utilize Efficient Landfill Seals and Cover	Improve landfill cover and sealing to prevent landfill runoff from entering water systems and the local environment	Improve landfill cover and sealing	43%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	3,967.51	Negligible	Negligible	Negligible	Increased Resiliency and Adaptability; Reduces GHG generation and Leachate; Extends Landfill Life; Note: May be Part of Normal Anticipated Landfill Operation Costs; Reduces Local Impacts from Landfill Operations
		Consider Buffers and More Appropriate Zoning for Landfills Near Residential Areas	Implement deed restrictions or zoning changes in areas zoned for industrial or landfill use near residential use. Explore buffer zones of safe distances from landfills or toxic waste areas from residential areas and implement organic or structural exposure reduction measures, such as vegetive screens, raised berms, and open greenspace for areas with high air pollution burden.	Improve landfill cover and sealing	48%	There should be incentives to encourage local businesses to recycle/reduce waste.	88%	Public entities within NCTCOG jurisdiction through Regional Codes Committee	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	N/A	Negligible	Negligible	Negligible	Increased Resiliency and Adaptability; Reduces GHG generation and Leachate; Extends Landfill Life; Note: May be Part of Normal Anticipated Landfill Operation Costs
	Implement Recycling & Transfer Facilities	Upgrade Existing Facilities to Optimize Load Weights	This renovation and reconfiguration of existing sites would minimize loading/unloading times. The upgrades will ensure that the transfer stations are equipped to meet future power and emission control requirements.	Increase waste diversion through expanded recycling efforts	81%	Illegal dumping of trash is a problem.	81%	Public entities within NCTCOG jurisdiction through Resource Conservation Council	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	N/A	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Increased Resiliency and Adaptability; Reduces GHG generation and Leachate; Extends Landfill Life; Note: May be Part of Normal Anticipated Landfill Operation Costs
		Construct Additional Recycling Centers in the Region	Currently residents can be required to travel over 30 minutes for the nearest recycling center. Increasing drop off locations saves on vehicle emissions per year.	Increase waste diversion through expanded recycling efforts	81%	There are not enough recycling and composting options.	76%	Public entities within NCTCOG jurisdiction through Resource Conservation Council	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	N/A	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Increased Resiliency and Adaptability; Reduces GHG generation and Leachate; May Reduce Waste Hauling Traffic
		Construct Bulking Transfer Station at Landfills	A bulking transfer station located immediately after the entrance to the landfill proper would reduce emissions of vehicles travelling to and from the working face of the landfill, which is, at times a 2.5 to 3.8 miles, round trip	Optimize waste collection and transfer networks	76%	There are not enough recycling and composting options. Illegal dumping of trash is a problem.	76% 81%	Public entities within NCTCOG jurisdiction through Resource Conservation Council	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	500	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Increased Resiliency and Adaptability; Reduces GHG generation and Leachate; May Reduce Waste Hauling Traffic
	Improve Waste Collection	Expand Waste Diversion Collection Networks to Support Multi-Family Dwellings	Additional waste diversion would increase landfill capacity by targeting multifamily residential buildings, providing equitable access to sustainable materials management practices	Optimize waste collection and transfer networks	76%	There are not enough recycling and composting options. Illegal dumping of trash is a problem.	76% 81%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	500	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Increased Resiliency and Adaptability; Better Carbon Capture Related to Embodied Carbon in Construction Materials; Extends Landfill Life
		Implement Local Policy to Require Trip Planning to Reduce VMT from Waste-Hauling Processes	Trip planning may allow for more efficient waste hauling, resulting in reduced vehicle miles travelled per year, and related emissions and priority pollutants	Optimize waste collection and transfer networks	76%	There are not enough recycling and composting options. Illegal dumping of trash is a problem.	76% 81%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	500	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Increased Resiliency and Adaptability; May Reduce Vehicle Miles Traveled
		Convert Waste Trucks to Lower-Emission Vehicles	Replace existing waste trucks with lower-emission vehicles, such as those that use RNG as fuel; Measure and associated emission/ priority pollutant reductions are included under Transportation measure for "Clean Vehicle & Equipment Program"	Convert waste trucks to lower-emission vehicles	62%	We should reduce air pollution from large diesel vehicles.	86%	Public entities within NCTCOG jurisdiction	Yes	Established scope of work; annual project status reports; final report at the end of five-year project period	Identify and scope individual projects; obtain relevant permits; project start; project end	'Years 1-2 Identifying scope of individual projects, Years 3-4 individual projects completed, Year 5 Evaluate projects	500	Quantified under Transportation Sector	Quantified under Transportation Sector	Quantified under Transportation Sector	Increased Resiliency and Adaptability; May Reduce Vehicle Miles Traveled

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DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 14 - DFW AQIP AGRICULTURE, FORESTRY, AND LAND-USE MEASURES

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN- AGRICULTURE, FORESTRY, LAND USE ("AGFOLU") MEASURES																		
MEASURE OVERVIEW													AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				DISADVANTAGED COMMUNITY BENEFITS
PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO2e)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
														OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	
Green Space & Land Use	Promote the Expansion of Green Space	Comprehensive Regional Green Space Project	Collaborative regional effort by public, non-profit, and private partners to significantly increase green space within the region, providing associated drainage, air quality, carbon sequestration, aesthetics, and public health benefits. Funding to address areas to protect, enhance and create green space to support healthy prairie, riparian, road ROW's, agricultural, historic, parklands, and other locally appropriate vegetation, including planting materials, and initial irrigation infrastructure necessary to establish plant materials.	Increase public green spaces Restore degraded lands and forested lands to enhance carbon sequestration	94% 61%	We do not have enough public parks/green spaces. We have too much parking/concrete.	77% 82%	NCTCOG	Yes	Established Regional Green Space Master Plan, project status report at halfway point in the project; final report at the end of five-year project period	List of stakeholders developed, public engagement, master plan adoption, implementation of greening strategies detailed in the plan, project evaluation.	Year 1- Develop group of stakeholders and key interest groups, Year 2- Public engagement and plan development, master plan adoption, Years 3- 4- Implementation, Year 5- Ongoing implementation, evaluate project.	3.034	0.000063	Unspecified	Unspecified	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being
		Develop Financial Incentives for Commercial Property Owners to Maintain or Create Green Space	Provide tax rebates, density/height allowances or other incentives to businesses who develop/maintain green spaces on their property.	Increase public green spaces Update landscaping ordinances/requirements Use less resource-intensive landscape design	94% 82% 88%	We have too much parking/concrete	82%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Rebate program approved through public entity, commercial business owners establish vendors for installation/preservation of green space, construction begins, construction ends, rebate provided, project evaluation.	Year 1- Establish program and enrollees, vendors procured, Years 2-3- Installation occurs, Years 3-4- Installations finalize, Year 5- Evaluate project and rebate provided.	0.063	0.000063	Unspecified	Unspecified	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Reduced Costs
		Install Minimally Resource-Intensive Landscape Design	Update landscaping to increase the amount of drought-tolerant, low-maintenance landscaping versus high-intensity turf or maintenance-intensive species; Also addressed in Water Conservation defined measures.	Update landscaping ordinances/requirements Use less resource-intensive landscape design	82% 88%	We should use drought-tolerant plants/grass.	95%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors to update landscaping, installation/planting begins, maintenance and installation as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- Installation/planting occurs, Years 3-4- Provide maintenance and installations as needed, Year 5- Evaluate project	0.0025	0.000063	Unspecified	Unspecified	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Reduced Costs
		Preserve and Rewild Historic Cemeteries	Implement program with public, private and neighborhood community partners to restore historic cemeteries by removing invasive species, and planting native drought tolerant species as a way of preserving history, and local green spaces; particularly important in LIDAC communities	Expand urban forests Improve forest management policies	82% 39%	We should use drought-tolerant plants/grass.	95%	Cemetery owners in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors to remove invasive species and install native plants, Installation/planting begins, Maintenance and installation as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- plant removal and new plantings occurs, Years 3-4- Provide maintenance and installations as needed, Year 5- Evaluate project	.54 - .99	Unspecified	0.000032	0.000020	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Water Conservation
		Upgrade Governmental Buildings to Utilize Biophilia Through Green Walls, Rooftops, and other Site Surfaces	Funding would support projects that implement planted surfaces and supporting water irrigation systems, to promote a greener built environment	Install green roofs, walls and other surfaces on buildings (e.g., white paint, "green" vegetated roofs)	54%	Industrial facilities should find ways to reduce emissions and decrease energy consumption.	91%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors to add planted surfaces to existing buildings, installation/planting begins, maintenance and installation as needed, project evaluation.	Year 1- Procure vendors, Years 2-3- installation/construction occurs, Years 3-4- Provide maintenance and installations as needed, Year 5- Evaluate project	4662.93	0.077	2.11	0.23	Increased Resiliency and Adaptability
		Increase Neighborhood Green Space	Provide rebates or incentives to residents to plant trees/vegetation.	Increase tree cover Increase public green spaces	94% 94%	We do not have enough public parks/green spaces. We should have more community gardens.	77% 84%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Rebate program approved through public entity, homeowners establish vendors for planting and adding green space, installation begins, installation ends, evaluate project, rebate provided.	Year 1- Establish program and enrollees, vendors procured, Years 2-3- Installation occurs, Years 3-4- Installations finalize, Year 5- Evaluate project and rebate provided.	0.063	Negligible	Not specified	Negligible	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Reduced Costs
		Acquire/Preserve High Priority Greenspace	Support land acquisition and the development of land management plans, and support ecosystem restoration projects.	Improve forest management policies Restore degraded lands and forested lands to enhance carbon sequestration	39% 61%	We do not have enough public parks/green spaces.	77%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Milestones for land acquisition and preservation vary by method of preservation. Milestones for subsequent ecosystem restoration projects include: Procurement of vendors to implement restoration project, greening installations begin, greening installations ends, project evaluation.	Year 1- Procure vendors, Years 2-Install greening mechanisms, Years 3 -4- Maintenance as required , Year 5- Evaluate project	0.0025	6.3364E-05	Unspecified	Unspecified	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Reduced Costs
	Support Park Management and Maintenance	Municipal Park and Recreation Plan Development	Develop parks and recreation plans to increase the acreage of parkland per resident.	Increase public green spaces Deploy urban heat island mitigation strategies	94% 76%	We do not have enough public parks/green spaces.	77%	Public entities in NCTCOG jurisdiction	Yes	Established inventory of existing municipal parks; periodic status updates on plan progress, final park plan prepared for adoption by municipal council.	List of stakeholders developed, public engagement, park plan adoption, implementation of greening strategies detailed in the plan, project evaluation.	Year 1- Develop group of stakeholders and key interest groups, Year 2- Public engagement and plan development, Master plan adoption, Years 3- 4- Implementation, Year 5- Ongoing implementation, Evaluate project.	0.0025	0.000063	Unspecified	Unspecified	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Reduced Costs
		Lawn Care Equipment Replacement Program	Replacement of gas powered lawn equipment with electric and battery powered models for municipal Parks and Recreational Department	Decarbonize lawn equipment	45%	We should replace gasoline and diesel equipment (ex: lawn, construction) with newer equipment that doesn't pollute as much.	78%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for new equipment, purchase of new equipment, staff trained on new equipment and relevant processes, equipment maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2- Equipment purchase occurs, staff trained on new equipment and processes. Years 3-4 -Maintenance as needed, Year 5- Evaluate project.	36.29	0.0136	Negligible	Negligible	Improved Health and Well-Being; Increased Access to Service and Amenities; Reduced Noise Pollution
Forestry	Increase Urban Forest Canopy	Establish Tree Canopy Goals and Benchmarks	Funding would support the implementation of municipal Urban Forestry Management Plans, along with funding for planting & water infrastructure efforts to meet tree canopy goals.	Increase tree cover Improve forest management policies	94% 39%	We do not have enough public parks/green spaces.	77%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors to implement plan methods, implementation/planting begins, plant maintenance, project evaluation.	Year 1- Procure Vendors, Year 2- Implement plan methods, Years 3-4- Plant maintenance, Year 5- Project evaluation.	3.03	0.0000634	Unspecified	Unspecified	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being
		Develop Urban Forestry Floodplain and Floodway Initiative	Funding would support development of Trinity Floodway Management Area Master Plan and would serve to advance riparian and wetland planting initiatives across the Region on public lands, including, but not limited to Dallas Floodway Extension/Great Trinity Forest O&M plan	Improve forest management policies	39%	We have a flooding problem.	51%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	List of stakeholders developed, public engagement, master plan adoption, implementation of strategies detailed in the plan, project evaluation.	Year 1- Develop group of stakeholders and key interest groups, Year 2- public engagement and plan development, master plan adoption, Years 3- 4- Implementation, Year 5- Ongoing implementation, evaluate project.	3.03	0.0000634	Unspecified	Unspecified	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being
		Develop Tree Canopy Assessments	Urban tree canopy assessments aid cities in developing tree inventories, a crucial step in plan development. Funding would support software purchases to make inventory building easier.	Increase tree cover	94%	We do not have enough public parks/green spaces.	77%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period.	Procurement of software vendors, acquisition and installation of software, assessments begin, tree inventory finalized, project evaluation.	Year 1- Procure Vendors, Year 2- Acquire and install software, Years 3-4- Assessments and inventories finalized, Year 5- Project evaluation.	0.0025	0.0000634	Unspecified	Unspecified	Increased Resiliency and Adaptability; Green Spaces and Community Beautification; Improved Health and Well-Being; Reduced Costs
		Implement Manure & Livestock Management to Reduce Methane	Integrate anaerobic digester systems into current agricultural practices	Implement methane reduction best practices Sequester carbon in agriculture operations	57% 35%	Industrial facilities should find ways to reduce emissions and decrease energy consumption.	91%	Farm/ranches in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for new equipment and construction, construction/installation begins, staff trained on new equipment and relevant processes, equipment maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2- Construction/Installation occurs, staff trained on new equipment and processes, Years 3-4 -Maintenance as needed, Year 5- Evaluate project.	20.11	Unspecified	Unspecified	Unspecified	Green Spaces and Community Beautification; Increased Resiliency and Adaptability

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN- AGRICULTURE, FORESTRY, LAND USE ("AGFOLU") MEASURES																	
MEASURE OVERVIEW													AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				DISADVANTAGED COMMUNITY BENEFITS
PROGRAM AREA	MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO_2e)	ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			EXPECTED COMMUNITY BENEFITS
														OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	
Agriculture	Update Agricultural Management Practices	Electrify Irrigation and other Farm Equipment	Convert to electric irrigation pumps in large landscaping operations (golf course, etc.) and farms	Convert to electric irrigation pumps	71%	We should replace gasoline and diesel equipment (ex: lawn, construction) with newer equipment that doesn't pollute as much.	78%	Public and private entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Procurement of vendors for new equipment, construction/installation to convert irrigation pumps, equipment maintenance as needed, project evaluation.	Year 1- Procure vendors, Years 2- Construction/installation, Years 3-4 - Maintenance as needed, Year 5- Evaluate project.	Negligible	Negligible	Negligible	Negligible	Green Spaces and Community Beautification; Increased Resiliency and Adaptability; Improved Health and Well-Being
		Increase/Promote Neighborhood and Community Growing Practices	Supports the planning, implementation, operation and maintenance of urban agriculture, including commercial growing, community gardens, and other local efforts to boost resilience of local food supply. Would including a promotion of community selling at farmers markets, and opening commercial markets to local growers when sufficient supply attained	Increase public green spaces Implement urban gardening practices	94% 86%	We should have more community gardens.	84%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period detailing the community impacts of urban agriculture	List of stakeholders developed, public engagement, urban agriculture plan adoption, implementation of strategies detailed in the plan, project evaluation.	Year 1- Develop group of stakeholders and key interest groups, Year 2- Public engagement and plan development, plan adoption, Years 3- 4- Implementation, Year 5- Ongoing implementation, Evaluate project.	Not Quantifiable	Not Quantifiable	Not Quantifiable	Not Quantifiable	Increased Awareness and Engagement; Increased Resiliency and Adaptability; Green Spaces and Economic Development; Increased Access to Service and Amenities
Regional Codes	Update Codes and Zoning Requirements to Promote Green Space Conservation and Preservation	Integrate Air Quality Review into Zoning and Permitting Review	Integrate climate mitigation and adaptation into existing land development review and permitting processes with a goal of maximizing the benefits of natural geographic and watershed features.	Integrate air quality review into zoning and permitting review	35%	We should reduce air pollution from electricity generation.	78%	Public entities in NCTCOG jurisdiction	Yes	Project status update containing zoning and permitting review notes.	Procure experts and studies to inform zoning and permitting review, integrate body of knowledge into review process, project evaluation.	Years 1-2- Procure experts/studies, Years 2-4- Integrate body of knowledge, Year 5- Evaluate project.	Not Quantifiable	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Increased Awareness and Engagement; Increased Resiliency and Adaptability
		Update Landscaping Ordinances/Requirements	Update zoning and landscaping requirements to remove barriers to xeriscaping and other low-maintenance landscapes (e.g. relax height restrictions on turf grasses).	Update landscaping ordinances/requirements	82%	We should use drought-tolerant plants/grass.	95%	Public entities in NCTCOG jurisdiction	Yes	Draft of ordinance proposal introduced at council or committee meeting; evidence of public hearing; meeting minutes showing council voted to approve ordinance change; ordinance signed by mayor.	Ordinance introduced in special committee or city council meeting, public hearing, ordinance appears before public governing body for a vote. If approved, executive governing body signs ordinance into effect, project evaluation.	Year 1- Ordinance introduced and public hearing, Years 2-3- Ordinance approved and executive governing body signs ordinance. Year 5- Evaluate project	Not Quantifiable	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Green Spaces and Community Beautification; Increased Resiliency and Adaptability
		Adopt Tree Ordinances that Promote Urban Forestry in the Built Environment	Tree ordinances set standards for tree planting, care, and maintenance to ensure longevity among development; include measures to protect existing established trees	Increase tree cover	94%	We do not have enough public parks/green spaces.	77%	Public entities in NCTCOG jurisdiction	Yes	Draft of ordinance proposal introduced at council or committee meeting; evidence of public hearing; meeting minutes showing council voted to approve ordinance change; ordinance signed by mayor.	Ordinance introduced in special committee or city council meeting, public hearing, ordinance appears before public governing body for a vote. If approved, executive governing body signs ordinance into effect, project evaluation.	Year 1- Ordinance introduced and public hearing, Years 2-3- Ordinance approved and executive governing body signs ordinance. Year 5- Evaluate project	Not Quantifiable	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Green Spaces and Community Beautification
		Utilize Smart Growth and/or Transect-Based Codes to Promote Environmental Analysis in Development	Smart Growth and similar codes allow communities to make environmental considerations while separating development from Euclidean zoning codes	Deploy urban heat island mitigation strategies Install carbon capture devices	76% 67%	We do not have enough public parks/green spaces. We have too much parking/concrete. We should have more community gardens.	77% 82%	Public entities in NCTCOG jurisdiction	Yes	Established scope of work; project status report at halfway point in the project; final report at the end of five-year project period	Proposal to adopt new zoning codes introduced in special committee or city council meeting, public hearing, ordinance appears before public governing body for a vote. If approved, executive governing body signs ordinance into effect, project evaluation.	Year 1- Ordinance introduced and public hearing, Years 2-3- Ordinance approved and executive governing body signs ordinance. Year 5- Evaluate project	Not Quantifiable	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Anticipated, but not quantifiable at this time	Green Spaces and Community Beautification

North Central Texas
Council of Governments

DALLAS-FORT WORTH AIR QUALITY IMPROVEMENT PLAN

APPENDIX 15 - CROSS SECTOR MEASURES

DFW AQIP- CROSS-SECTOR MEASURES																
MEASURE OVERVIEW													AIR QUALITY BENEFITS PER UNIT/TYPICAL PROJECT IN METRIC TONS				EXPECTED DISADVANTAGED COMMUNITY BENEFITS
														ESTIMATED ANNUAL CRITERIA POLLUTANT REDUCTION			
MEASURE	PROJECTS TO QUANTIFY WITHIN MEASURE	DESCRIPTION	RELATED STRATEGIES PRESENTED IN IMPLEMENTER SURVEY	PERCENTAGE OF RESPONDENTS WHO CONSIDER THIS A PRIORITY	RELATED STRATEGIES PRESENTED IN PUBLIC SURVEY	PERCENTAGE OF RESPONDENTS WHO "AGREE"	IMPLEMENTING AGENCIES	AUTHORITY TO IMPLEMENT	METRICS FOR TRACKING PROGRESS	IMPLEMENTATION MILESTONES	IMPLEMENTATION SCHEDULE	ESTIMATED ANNUAL GHG REDUCTION (CO2e)	OXIDES OF NITROGEN	VOLATILE ORGANIC COMPOUNDS	PARTICULATE MATTER 2.5	EXPECTED COMMUNITY BENEFITS
Tire Recycling Initiatives	Adopt Tire Recycling Policy	Adopt and implement an ordinance (cities), guidelines similar to an ordinance (counties) that promote sustainable tire disposal practices including recycling.	Increase waste diversion through expanded recycling efforts	76%	Illegal dumping of trash is a problem Local governments should have more programs to help residents reduce waste.	79% 84%	Local governments	Yes	Established scope of work; project status reports at year 3 and year 4 milestones; final report at the end of five-year project period	Policy development; policy adoption; policy implementation; annual review of policy effectiveness	Year 1 - Policy development and adoption; Year 2- 5 - Policy implementation and monitoring	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Increased Engagement/Awareness, New Green Space/Community Beautification
Carbon Footprint App	Carbon Footprint Smartphone Application and Rewards Program	Develop smartphone app to "gamify" personal decisions by residents that impact carbon footprint by enabling logging, measuring, and earning rewards.	N/A	N/A	N/A	N/A	NCTCOG and partners	Yes	Established scope of work; project status reports at year 3 and year 4 milestones; final report at the end of five-year project period	Investigate different options; Selection of option; Promotion to public; annual review of effectiveness	Year 1-2 Investigation and selection; Years 3-5 Deployment and monitoring	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Increased Awareness/Engagement; Increased Resiliency/Ability to Adapt
Regional Air Quality Monitoring Program	Deploy Air Quality Monitors	Deploy additional air quality monitors to supplement the TCEQ regulatory air monitoring network and collect more detailed regional air quality data; effort includes monitors along with calibration and establish PRM data quality protocols, along with dashboard to allow public data sharing. Data can be used to focus local air quality, transportation, and other measures to areas with greatest need.	N/A	N/A	N/A	N/A	NCTCOG and partners	Yes	Established scope of work; project status reports at year 3 and year 4 milestones; final report at the end of five-year project period	Project scope development (identification of locations and technologies); Implementation; Monitoring	Year 1-2 Scope development and acquiring funding; Year 3 5 Monitoring	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Increased Awareness/Engagement; Improved Health and Well Being; Increased Safety; Increased Resiliency/Ability to Adapt; support for related public policy and action implementation to ensure LEAD benefits from program
Workforce Development	Develop Local Workforce to Enable Clean Energy Adoption and Resilience	Develop workforce for clean energy adoption such as electricians and technicians for solar installations, microgrids, battery storage, and community-scale renewable energy as well as weatherization for residences and buildings. This can include assisting local community or technical colleges in launching curricula/certification testing to expand local workforce with necessary certifications (e.g. Building Performance Institute certifications).	Increase the renewable portfolio standard and/or establish energy efficiency portfolio standard for electricity Provide training in the operation, management, and maintenance of relevant building systems	41% 58%	We should reduce air pollution from electricity generation. Power outages are a problem. I am interested in installing solar panels at my residence.	76% 72% 57%	NCTCOG and educational institutions	Yes	Established scope of work; project status reports at year 4 milestones; final report at the end of five-year project period	Project scope development; Development of curriculum; Deployment of curriculum; Monitoring participation	Year 1-2 Scope development and obtain funding; Year 3 Develop curriculum; Year 4-5 monitor participation	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Job Creation and Economic Development; Increased Resiliency and Adaptability; Increased Awareness and Engagement
	Develop Local Workforce to Enable Water, Wastewater, and Drainage System Upgrades	Develop workforce for water, wastewater and stormwater infrastructure implementation, operations & maintenance; This can include assisting local community or technical colleges in launching curricula/certification testing to expand local workforce with necessary certifications (e.g. NECIT, AWWA, or TCEQ Operator's certifications).	Our water system is too sensitive to heat/cold Implement stormwater and wastewater collection programs Employ energy conservation technology for water utility companies	59% 90% 71%	Our water system is too sensitive to heat/cold We need more access to clean water	59% 68%	NCTCOG and educational institutions	Yes	Established scope of work; project status reports at year 4 milestones; final report at the end of five-year project period	Project scope development; Development of curriculum; Deployment of curriculum; Monitoring participation	Year 1-2 Scope development and obtain funding; Year 3 Develop curriculum; Year 4-5 monitor participation	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Job Creation and Economic Development; Increased Resiliency and Adaptability; Increased Awareness and Engagement
	Develop Local Workforce to Enable "Green Space" Implementation, Wastewater, and Drainage System Upgrades	Develop workforce for agriculture, forestry, and constructed nature-based solutions, to allow effective implementation, and sustainable operations & maintenance over time; This can include assisting local community or technical colleges and non-profits in launching curricula/certification testing to expand local workforce with necessary certifications (e.g. Arborists, irrigators, and other certifications).	Sequester carbon in agriculture operations; implement urban forestry and green infrastructure programs; expand urban forests	35% 83% 71%	We should use drought tolerant plantings we do not have enough parks/green spaces	95% 77%	NCTCOG and educational institutions	Yes	Established scope of work; project status reports at year 4 milestones; final report at the end of five-year project period	Project scope development; Development of curriculum; Deployment of curriculum; Monitoring participation	Year 1-2 Scope development and obtain funding; Year 3 Develop curriculum; Year 4-5 monitor participation	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Job Creation and Economic Development; Increased Resiliency and Adaptability; Increased Awareness and Engagement
Education and Outreach	Lower Electricity Rate Through Group Renewable Energy Purchase	Develop or implement programs that allow residents or other customers to join together to get a lower rate for 100% renewable energy	Implement group energy switch/purchase programs	38%	Residents/community members should be provided incentives to help with energy efficiency/weatherization projects.	88%	Local governments and utilities	Yes	Established scope of work; project status reports at year 4 milestones; final report at the end of five-year project period	Project scope development; Program implementation; Monitoring participation	Year 1-2 Scope development and obtain funding; Year 3 Develop curriculum; Year 4-5 Implement and monitor participation	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Increased Resiliency and Ability to Adapt; Increased Awareness and Engagement; Improved Health and Well-Being
	Promote Renewable Energy and Energy Efficiency	Increase education on renewable energy and energy efficiency/conservation; Educate occupants and/or residents on efficient behaviors	Increase education on renewable energy and energy efficiency/conservation.	58%	The region needs more education on how to reduce electricity use.	75%	NCTCOG, public entities, and utilities	Yes	Established scope of work; project status reports at year 4 milestones; final report at the end of five-year project period	Project scope development; Obtain partners; Outreach; begins; Monitor outreach; Outreach ends	Year 1-2 Scope development and obtain funding; Year 3 Develop curriculum; Year 4-5 Implement and monitor participation	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Not Currently Quantifiable	Increased Awareness and Engagement

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
480850307025	48	085	030702	5	Yes	No	Yes	79	87	72	76	58
480850307021	48	085	030702	1	Yes	Yes	Yes	94	97	90	93	78
480850320034	48	085	032003	4	Yes	Yes	Yes	99	99	97	97	86
480850320121	48	085	032012	1	Yes	Yes	Yes	94	96	88	90	74
482319606001	48	231	960600	1	Yes	Yes	No	85	81	65	47	73
482319608001	48	231	960800	1	Yes	Yes	Yes	88	87	73	48	76
482319608002	48	231	960800	2	Yes	Yes	Yes	89	87	73	48	76
482319605003	48	231	960500	3	Yes	No	Yes	66	59	31	73	55
482319615031	48	231	961503	1	Yes	No	Yes	71	64	28	36	58
482319616001	48	231	961600	1	Yes	No	Yes	80	72	35	42	66
482319607003	48	231	960700	3	Yes	No	Yes	65	54	26	31	53
481390604001	48	139	060400	1	Yes	No	Yes	82	63	68	79	61
482570507043	48	257	050704	3	Yes	No	Yes	74	63	33	36	59
482570507042	48	257	050704	2	Yes	No	Yes	88	79	48	46	73
482570505004	48	257	050500	4	Yes	Yes	Yes	86	77	83	86	69
481390615001	48	139	061500	1	Yes	No	Yes	72	44	60	32	54
484391057062	48	439	105706	2	Yes	Yes	No	92	94	86	89	73
484391142033	48	439	114203	3	Yes	Yes	Yes	81	91	54	81	63
480850310061	48	085	031006	1	Yes	Yes	No	84	90	51	43	66
480850310081	48	085	031008	1	Yes	Yes	No	94	96	67	49	77
480850318091	48	085	031809	1	Yes	Yes	No	88	91	86	83	88
480850320143	48	085	032014	3	Yes	Yes	Yes	97	98	92	95	81
480850320141	48	085	032014	1	Yes	Yes	Yes	98	99	94	96	83
480850320104	48	085	032010	4	Yes	Yes	Yes	94	96	81	91	75
480850320105	48	085	032010	5	Yes	No	Yes	79	83	62	74	55
480850317094	48	085	031709	4	Yes	Yes	No	95	97	92	91	76
480850317233	48	085	031723	3	Yes	Yes	No	87	90	82	81	63
480850317241	48	085	031724	1	Yes	Yes	No	88	91	83	82	64
480850306082	48	085	030608	2	Yes	Yes	No	92	96	84	89	73
480850309031	48	085	030903	1	Yes	Yes	Yes	86	91	70	82	65
480850309033	48	085	030903	3	Yes	Yes	Yes	96	98	87	95	81
480850315121	48	085	031512	1	Yes	Yes	No	86	90	77	81	63
480850316354	48	085	031635	4	Yes	Yes	No	89	92	81	84	66
480850320151	48	085	032015	1	Yes	No	Yes	63	69	54	63	43
480850320152	48	085	032015	2	Yes	No	Yes	83	87	73	77	59
480850313321	48	085	031332	1	Yes	Yes	No	95	97	79	93	78
480850310052	48	085	031005	2	Yes	Yes	No	84	91	51	43	67
480850304102	48	085	030410	2	Yes	Yes	No	90	94	82	86	69
481130181203	48	113	018120	3	Yes	Yes	No	92	93	81	89	72
481130210003	48	113	021000	3	Yes	Yes	Yes	95	94	95	92	76
481130136301	48	113	013630	1	Yes	No	Yes	65	71	67	64	70
484971506042	48	497	150604	2	Yes	Yes	No	78	91	48	41	63
480850309011	48	085	030901	1	Yes	Yes	Yes	91	95	77	88	72
484971504052	48	497	150405	2	Yes	No	Yes	69	89	36	40	63
484971502011	48	497	150201	1	Yes	Yes	Yes	78	92	64	82	65
484971504051	48	497	150405	1	Yes	No	Yes	56	80	26	30	52
484971502022	48	497	150202	2	Yes	No	Yes	69	86	55	75	57
484971501041	48	497	150104	1	Yes	Yes	No	90	97	68	92	95
484971504041	48	497	150404	1	Yes	Yes	Yes	73	91	39	42	66
484971504042	48	497	150404	2	Yes	No	Yes	41	65	16	18	41
484971502021	48	497	150202	1	Yes	No	Yes	62	81	49	70	51
484971502013	48	497	150201	3	Yes	No	Yes	67	85	53	74	55
484971502012	48	497	150201	2	Yes	No	Yes	26	38	16	52	31
481130136292	48	113	013629	2	Yes	Yes	Yes	98	99	98	96	97
481130136302	48	113	013630	2	Yes	Yes	Yes	92	94	91	87	91
482511306042	48	251	130604	2	Yes	Yes	No	82	90	40	43	67
482511306032	48	251	130603	2	Yes	Yes	No	84	91	43	45	69
482511304191	48	251	130419	1	Yes	No	Yes	72	71	47	70	51
482511304132	48	251	130413	2	Yes	No	Yes	83	82	62	80	62
482511304111	48	251	130411	1	Yes	No	Yes	79	79	54	75	57
482511303033	48	251	130303	3	Yes	No	Yes	81	86	56	39	61
482511304122	48	251	130412	2	Yes	No	Yes	66	64	44	67	47
482511304171	48	251	130417	1	Yes	Yes	No	86	87	69	83	66
482511304121	48	251	130412	1	Yes	No	Yes	80	79	58	77	59
482511304131	48	251	130413	1	Yes	No	Yes	75	73	53	73	54
482511302162	48	251	130216	2	Yes	Yes	No	87	90	79	84	67
482511308003	48	251	130800	3	Yes	Yes	Yes	90	95	85	47	73
482511302211	48	251	130221	1	Yes	Yes	No	87	90	82	83	66
482511302143	48	251	130214	3	Yes	No	Yes	75	81	59	74	55
482511304193	48	251	130419	3	Yes	No	Yes	34	32	17	53	32
482511304112	48	251	130411	2	Yes	Yes	Yes	96	96	79	94	80
482511304182	48	251	130418	2	Yes	No	Yes	54	53	31	60	40

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
39	79	62	23	81	71	78	65
61	92	94	44	96	88	94	86
89	98	59	79	98	91	99	96
74	90	48	62	90	74	93	65
73	82	81	25	89	17	91	54
30	74	92	48	94	80	91	83
33	72	82	49	92	83	77	92
44	41	60	12	66	7	62	33
43	64	53	56	30	17	63	55
60	50	39	58	56	26	65	72
28	35	39	17	69	16	34	39
54	53	68	43	83	46	58	59
45	49	40	81	77	61	57	68
69	45	40	78	38	34	53	52
60	78	38	93	92	84	85	88
40	45	32	26	82	74	64	50
84	81	0	79	93	71	85	90
32	31	58	87	51	33	62	57
30	79	0	30	58	36	66	43
50	28	0	50	85	51	70	72
63	90	40	55	88	84	76	15
83	97	0	71	96	76	96	94
85	93	77	74	97	81	98	95
76	93	0	62	93	65	87	90
54	72	0	39	81	42	73	74
70	96	62	71	85	85	94	95
55	86	0	57	59	62	73	89
56	74	35	58	59	64	73	85
57	73	0	40	89	83	0	82
51	78	38	33	70	75	74	79
78	96	60	52	95	97	90	92
59	74	0	40	79	57	78	75
64	90	75	49	83	48	87	83
37	47	0	25	59	31	39	57
56	78	38	43	78	51	75	74
95	80	56	63	86	86	85	83
27	42	64	28	56	36	51	43
58	65	88	46	52	80	76	89
76	81	41	63	93	81	89	87
78	63	96	94	93	62	0	95
32	61	0	42	62	56	0	47
34	15	54	79	64	19	54	56
53	81	35	33	93	80	82	82
19	11	58	32	77	12	49	78
25	74	75	49	79	74	85	28
6	20	47	28	59	17	42	65
17	62	48	38	74	67	60	24
29	49	41	71	80	64	63	65
7	12	72	28	73	11	46	84
3	7	37	13	40	7	26	52
16	47	57	31	62	67	44	23
15	61	51	39	71	58	74	23
5	21	0	10	31	20	33	7
79	96	91	87	95	89	98	91
66	78	44	74	86	75	69	78
56	8	57	22	58	19	50	89
71	18	63	29	83	31	66	61
69	23	23	34	66	55	41	40
81	25	0	38	65	48	44	83
83	22	0	38	51	42	52	39
69	35	28	31	62	48	46	47
56	45	0	29	54	45	39	71
90	71	0	37	40	71	56	61
81	26	0	40	53	48	53	82
70	49	45	31	63	39	55	80
79	72	0	59	63	33	0	70
93	86	78	47	95	90	89	71
78	77	0	56	75	26	81	81
76	51	63	35	71	40	58	40
28	13	17	13	32	29	23	18
97	28	0	66	76	67	80	62
41	28	0	25	50	48	0	31

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
482511304181	48	251	130418	1	Yes	No	Yes	25	22	11	51	29
482511307001	48	251	130700	1	Yes	No	Yes	75	83	71	34	56
482511304192	48	251	130419	2	Yes	No	Yes	26	23	12	51	29
480850320142	48	085	032014	2	Yes	No	Yes	70	76	61	68	48
480850307022	48	085	030702	2	Yes	No	Yes	51	61	46	59	39
480850309034	48	085	030903	4	Yes	Yes	Yes	94	97	82	92	76
480850301022	48	085	030102	2	Yes	No	Yes	70	81	28	34	21
480850301011	48	085	030101	1	Yes	Yes	Yes	82	90	39	43	27
480850304092	48	085	030409	2	Yes	Yes	No	86	91	77	81	64
484250002002	48	425	000200	2	Yes	No	Yes	49	64	21	23	14
480850307024	48	085	030702	4	Yes	Yes	Yes	84	90	77	81	63
480850308024	48	085	030802	4	Yes	Yes	Yes	89	94	82	86	69
480850301021	48	085	030102	1	Yes	Yes	Yes	83	91	40	44	27
480850303066	48	085	030306	6	Yes	Yes	No	89	95	66	45	71
480850320134	48	085	032013	4	Yes	Yes	Yes	96	98	92	94	79
480850319021	48	085	031902	1	Yes	Yes	No	94	96	90	90	74
480850301012	48	085	030101	2	Yes	No	Yes	78	87	34	40	25
480850303065	48	085	030306	5	Yes	Yes	No	88	94	64	44	68
480850309032	48	085	030903	2	Yes	Yes	Yes	86	92	71	83	65
480850318092	48	085	031809	2	Yes	Yes	No	95	97	94	91	94
480850318131	48	085	031813	1	Yes	Yes	No	95	97	93	92	76
480850320103	48	085	032010	3	Yes	Yes	Yes	96	98	86	94	79
480850309021	48	085	030902	1	Yes	No	Yes	32	37	20	52	31
480850317232	48	085	031723	2	Yes	Yes	No	97	99	96	95	81
483671404121	48	367	140412	1	Yes	Yes	No	81	91	61	41	64
483671406034	48	367	140603	4	Yes	Yes	No	97	99	62	53	90
483630002002	48	363	000200	2	Yes	No	Yes	45	66	9	34	21
483630008002	48	363	000800	2	Yes	No	Yes	66	81	48	41	25
483671404132	48	367	140413	2	Yes	Yes	No	87	95	68	46	71
481390604002	48	139	060400	2	Yes	Yes	Yes	90	74	77	87	71
481390610002	48	139	061000	2	Yes	No	Yes	76	61	40	37	59
481390601041	48	139	060104	1	Yes	No	Yes	85	70	53	41	65
481390601031	48	139	060103	1	Yes	No	Yes	77	59	43	34	56
481390601062	48	139	060106	2	Yes	Yes	No	91	76	60	47	73
481390601042	48	139	060104	2	Yes	Yes	Yes	93	82	65	48	75
481390601032	48	139	060103	2	Yes	No	Yes	69	51	36	27	50
480850313312	48	085	031331	2	Yes	Yes	No	89	92	68	85	68
480850302051	48	085	030205	1	Yes	Yes	No	82	91	53	42	65
480850315112	48	085	031511	2	Yes	Yes	No	87	91	78	82	64
480850315113	48	085	031511	3	Yes	Yes	No	91	94	83	87	70
483499703022	48	349	970302	2	Yes	No	Yes	83	64	37	43	68
483499703012	48	349	970301	2	Yes	No	Yes	84	66	38	44	69
483499709011	48	349	970901	1	Yes	Yes	Yes	89	80	58	91	75
483499703021	48	349	970302	1	Yes	Yes	Yes	90	73	46	48	75
483499709013	48	349	970901	3	Yes	No	Yes	85	74	52	87	70
483499709022	48	349	970902	2	Yes	No	Yes	80	68	46	83	65
483499703011	48	349	970301	1	Yes	No	Yes	56	35	17	22	45
483499707014	48	349	970701	4	Yes	Yes	Yes	90	88	54	49	77
483499709021	48	349	970902	1	Yes	Yes	Yes	91	82	61	93	77
483499707013	48	349	970701	3	Yes	No	Yes	65	61	27	30	52
483499706002	48	349	970600	2	Yes	No	Yes	83	82	32	44	69
483499707011	48	349	970701	1	Yes	No	Yes	64	60	26	29	51
483499701001	48	349	970100	1	Yes	No	Yes	86	75	47	45	70
483499707012	48	349	970701	2	Yes	No	Yes	25	20	7	5	30
483499710003	48	349	971000	3	Yes	No	Yes	68	51	23	33	20
483499704002	48	349	970400	2	Yes	No	Yes	60	38	17	27	16
483499705001	48	349	970500	1	Yes	No	Yes	82	70	72	84	67
483499709012	48	349	970901	2	Yes	No	Yes	84	72	50	86	69
482319607001	48	231	960700	1	Yes	No	Yes	68	58	29	34	56
482319605002	48	231	960500	2	Yes	No	Yes	84	79	50	88	72
482319615033	48	231	961503	3	Yes	No	Yes	74	67	30	38	60
482319607002	48	231	960700	2	Yes	No	Yes	80	71	40	43	66
482319616003	48	231	961600	3	Yes	No	Yes	88	81	45	47	75
481130087043	48	113	008704	3	Yes	Yes	Yes	97	96	92	95	80
481130092031	48	113	009203	1	Yes	Yes	Yes	97	96	90	96	82
481130090022	48	113	009002	2	Yes	Yes	Yes	91	89	79	88	72
481130120003	48	113	012000	3	Yes	Yes	Yes	96	94	87	93	78
481130116031	48	113	011603	1	Yes	Yes	Yes	94	90	87	91	76
481130078331	48	113	007833	1	Yes	Yes	Yes	93	94	91	90	74
481130093031	48	113	009303	1	Yes	Yes	Yes	99	98	94	97	87
481130185061	48	113	018506	1	Yes	Yes	Yes	94	95	91	90	74
481130202001	48	113	020200	1	Yes	Yes	Yes	93	90	87	90	74

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
18	8	17	10	18	18	0	19
69	27	63	26	80	68	60	33
19	17	20	9	19	25	0	15
44	38	0	30	68	38	64	63
19	42	53	10	57	45	48	38
62	78	89	41	93	91	75	87
21	7	44	16	38	9	35	46
29	19	55	25	59	23	0	46
51	75	44	41	49	78	61	87
16	24	57	13	26	3	55	18
43	45	66	27	86	76	0	70
54	86	68	36	88	86	81	83
51	34	53	17	61	15	49	60
72	46	95	30	30	26	59	68
80	93	0	67	93	73	96	90
74	95	71	63	89	81	94	10
24	11	52	20	43	14	50	55
72	67	70	23	39	24	68	49
53	66	33	33	76	82	0	81
87	96	0	69	95	93	74	11
74	85	58	72	90	92	0	94
83	96	0	69	97	66	91	95
11	7	0	6	25	25	0	24
79	98	0	79	81	82	92	98
50	65	42	84	58	21	59	63
91	25	82	95	71	58	90	99
34	28	53	11	68	3	34	79
83	43	82	41	84	66	84	83
48	34	59	93	62	35	63	71
66	34	57	56	87	58	0	61
47	28	72	19	70	18	39	56
48	53	37	64	75	47	47	53
44	30	27	60	40	39	36	38
65	27	0	70	59	44	57	14
63	82	86	79	86	71	73	71
36	27	0	51	47	38	36	37
86	33	0	48	75	73	68	72
62	62	0	17	83	26	80	83
63	84	0	43	88	52	77	80
71	82	34	50	92	55	0	88
24	41	68	16	59	39	52	86
34	18	70	21	52	37	0	85
39	82	48	19	84	62	90	93
43	85	87	21	85	63	92	93
33	42	48	13	73	53	60	87
34	70	77	13	79	57	84	87
20	29	50	8	50	30	46	62
88	88	78	20	96	85	93	96
64	87	94	20	93	80	95	96
16	15	44	8	70	48	39	67
17	59	54	22	75	27	57	85
14	35	32	6	44	25	33	48
41	79	58	32	53	41	58	49
12	14	0	3	38	31	24	27
9	32	62	6	54	5	39	34
9	7	24	7	61	7	31	25
59	42	63	16	79	57	81	87
22	37	46	15	64	43	54	87
43	26	38	25	39	27	37	55
78	55	79	22	87	14	85	53
44	54	42	54	43	22	41	65
62	42	46	46	68	36	53	78
76	48	42	69	63	31	67	77
82	89	96	98	95	85	88	96
78	95	99	95	89	88	97	75
63	82	81	85	83	81	87	74
74	86	83	90	90	89	93	82
70	94	93	92	76	65	91	77
66	87	54	83	80	66	86	85
85	88	99	99	98	83	0	99
65	96	61	77	96	94	89	88
72	75	83	96	92	86	78	93

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130114011	48	113	011401	1	Yes	Yes	Yes	90	88	84	86	69
481130121022	48	113	012102	2	Yes	No	Yes	87	84	76	83	65
481130173153	48	113	017315	3	Yes	No	Yes	84	78	71	81	63
481130178061	48	113	017806	1	Yes	Yes	Yes	97	96	94	95	81
481130178182	48	113	017818	2	Yes	Yes	Yes	92	90	86	89	72
481130208002	48	113	020800	2	Yes	Yes	Yes	92	90	87	88	71
481130008022	48	113	000802	2	Yes	Yes	No	89	89	89	84	67
481130204011	48	113	020401	1	Yes	No	Yes	57	55	59	60	40
481130204012	48	113	020401	2	Yes	Yes	Yes	94	93	94	91	75
481130167111	48	113	016711	1	Yes	Yes	Yes	94	92	94	91	75
481130112012	48	113	011201	2	Yes	No	Yes	86	83	81	81	63
481130112011	48	113	011201	1	Yes	Yes	Yes	94	92	91	91	75
481130167073	48	113	016707	3	Yes	No	Yes	81	74	64	77	58
481130078291	48	113	007829	1	Yes	Yes	No	94	95	91	90	74
481130190343	48	113	019034	3	Yes	Yes	Yes	94	96	91	91	75
481130078352	48	113	007835	2	Yes	No	Yes	77	80	74	72	53
481130190441	48	113	019044	1	Yes	Yes	Yes	89	91	80	84	66
481130190471	48	113	019047	1	Yes	No	Yes	63	67	51	64	44
481130190461	48	113	019046	1	Yes	Yes	Yes	97	98	90	94	80
481130167062	48	113	016706	2	Yes	No	Yes	81	74	64	76	58
481130167061	48	113	016706	1	Yes	Yes	Yes	94	90	81	91	75
481130127012	48	113	012701	2	Yes	Yes	Yes	96	96	92	94	79
481130122122	48	113	012212	2	Yes	Yes	No	98	98	95	97	85
481130084022	48	113	008402	2	Yes	Yes	Yes	98	97	92	96	83
481130122103	48	113	012210	3	Yes	Yes	Yes	90	89	82	86	70
481130190491	48	113	019049	1	Yes	Yes	No	94	95	84	91	75
481130167072	48	113	016707	2	Yes	No	Yes	88	82	73	84	66
481130184011	48	113	018401	1	Yes	No	Yes	72	73	65	69	50
481130126043	48	113	012604	3	Yes	No	Yes	63	62	60	64	44
481130210001	48	113	021000	1	Yes	Yes	Yes	99	99	99	98	87
481130208004	48	113	020800	4	Yes	Yes	Yes	92	91	88	88	72
481130210002	48	113	021000	2	Yes	Yes	Yes	95	95	96	93	78
481130208001	48	113	020800	1	Yes	Yes	Yes	96	95	93	94	79
481130121011	48	113	012101	1	Yes	No	Yes	87	84	76	83	65
481130121021	48	113	012102	1	Yes	Yes	Yes	95	93	87	93	77
481130181111	48	113	018111	1	Yes	Yes	No	93	93	85	90	74
481130178062	48	113	017806	2	Yes	No	Yes	84	82	79	80	62
481130078292	48	113	007829	2	Yes	Yes	No	91	93	88	86	69
481130178161	48	113	017816	1	Yes	Yes	Yes	91	89	86	88	71
481130178162	48	113	017816	2	Yes	No	Yes	87	84	81	82	65
481130078301	48	113	007830	1	Yes	Yes	Yes	97	98	96	95	81
481130178171	48	113	017817	1	Yes	No	Yes	82	79	74	78	59
481130178181	48	113	017818	1	Yes	No	Yes	77	73	69	73	54
481130179003	48	113	017900	3	Yes	Yes	Yes	93	92	90	90	74
481130078321	48	113	007832	1	Yes	Yes	Yes	99	99	99	98	89
481130078322	48	113	007832	2	Yes	Yes	Yes	99	99	99	98	88
481130078312	48	113	007831	2	Yes	Yes	Yes	93	94	91	89	73
481130185073	48	113	018507	3	Yes	Yes	Yes	90	92	87	85	68
481130078342	48	113	007834	2	Yes	Yes	Yes	88	90	85	83	65
481130185053	48	113	018505	3	Yes	Yes	Yes	95	96	92	91	76
481130185052	48	113	018505	2	Yes	Yes	Yes	94	95	91	90	74
481130190262	48	113	019026	2	Yes	Yes	No	94	95	84	91	75
481130181523	48	113	018152	3	Yes	Yes	No	89	91	77	85	68
481130181051	48	113	018105	1	Yes	Yes	No	90	91	79	86	69
481130078332	48	113	007833	2	Yes	Yes	Yes	99	99	99	98	89
481130181052	48	113	018105	2	Yes	Yes	No	92	93	81	88	72
481130178183	48	113	017818	3	Yes	Yes	Yes	87	85	80	83	66
481130177052	48	113	017705	2	Yes	Yes	No	94	91	84	91	76
481130177031	48	113	017703	1	Yes	Yes	Yes	93	91	88	91	75
481130167102	48	113	016710	2	Yes	Yes	Yes	93	90	92	89	73
481130167101	48	113	016710	1	Yes	Yes	Yes	91	89	91	88	71
481130084011	48	113	008401	1	Yes	Yes	Yes	93	92	84	90	74
481130170083	48	113	017008	3	Yes	No	Yes	85	77	62	42	65
481130181112	48	113	018111	2	Yes	Yes	No	92	92	83	89	72
481130088021	48	113	008802	1	Yes	Yes	Yes	96	95	91	93	78
481130091013	48	113	009101	3	Yes	No	Yes	84	81	68	79	61
482570513014	48	257	051301	4	Yes	No	Yes	73	63	35	76	57
482570506021	48	257	050602	1	Yes	No	Yes	75	66	33	38	60
482570507041	48	257	050704	1	Yes	No	Yes	85	75	44	44	69
482570513022	48	257	051302	2	Yes	No	Yes	58	48	24	66	46
482570513021	48	257	051302	1	Yes	No	Yes	79	70	41	81	63
482570513011	48	257	051301	1	Yes	No	Yes	60	50	25	67	48

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
69	75	79	94	89	89	62	89
58	72	32	77	83	84	71	58
63	52	32	72	61	42	69	79
78	96	73	89	96	91	96	69
66	83	44	77	80	75	92	20
66	83	90	89	92	68	92	78
64	90	49	85	74	84	85	83
30	63	46	54	55	56	60	50
77	96	89	91	92	90	94	93
75	84	73	96	93	90	88	93
63	86	30	86	79	77	75	30
78	71	0	94	90	88	80	42
56	62	0	78	74	74	64	28
64	94	94	78	95	92	66	93
66	78	53	78	96	95	78	91
40	71	25	56	80	77	55	54
60	86	37	64	91	89	82	67
38	50	21	33	69	67	52	45
81	95	94	79	98	98	87	86
54	60	0	77	72	73	68	28
74	81	79	91	89	89	90	43
77	84	96	82	95	89	91	78
83	99	90	95	98	91	97	92
80	81	98	95	98	83	92	93
63	66	0	79	85	82	89	50
80	90	48	70	94	91	88	82
65	72	34	84	81	80	76	37
42	65	0	45	77	71	69	48
34	62	32	39	63	47	41	37
89	99	99	99	99	85	95	99
67	90	90	90	93	68	77	92
78	79	93	95	95	69	0	96
76	82	87	95	97	75	96	88
59	85	0	76	79	81	87	50
72	92	76	88	91	92	92	77
72	72	0	72	92	67	0	86
53	86	73	70	81	74	84	43
58	91	86	74	92	88	88	90
64	93	63	79	87	82	89	54
56	87	52	72	80	75	70	39
75	87	73	90	85	78	97	89
52	77	0	62	65	53	75	16
45	70	0	57	61	54	67	12
70	88	93	80	87	76	86	17
86	92	85	96	94	88	95	96
85	85	82	95	94	86	96	96
65	79	50	82	77	65	89	82
57	92	0	70	91	90	84	84
54	91	0	69	90	88	83	79
69	95	0	78	96	95	93	90
65	91	41	76	96	94	92	88
86	86	0	67	95	87	92	90
73	86	0	58	91	79	82	85
79	83	0	61	93	86	82	90
87	99	0	96	96	88	99	98
78	77	47	64	94	86	89	92
59	90	0	71	75	70	86	15
72	94	0	80	87	77	95	25
71	86	88	81	84	81	94	20
72	65	56	95	92	87	0	91
69	92	59	94	91	87	89	90
69	87	96	88	91	80	85	77
63	25	44	65	48	29	0	88
70	78	0	70	89	63	0	84
79	58	97	97	95	76	81	95
52	75	83	78	74	70	82	45
39	31	50	37	44	12	49	31
53	41	40	76	49	46	49	46
55	22	0	83	65	52	0	77
16	6	31	24	13	7	28	37
39	13	51	40	51	12	44	71
28	40	29	24	53	7	46	36

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
482570513013	48	257	051301	3	Yes	No	Yes	86	79	50	88	71
482570504021	48	257	050402	1	Yes	No	Yes	68	57	35	30	52
482570513012	48	257	051301	2	Yes	No	Yes	83	74	45	84	67
482570506011	48	257	050601	1	Yes	No	Yes	65	55	25	30	52
482570506012	48	257	050601	2	Yes	No	Yes	82	73	40	43	67
482570506022	48	257	050602	2	Yes	No	Yes	71	61	29	34	56
482570504011	48	257	050401	1	Yes	Yes	Yes	88	81	58	46	72
481130190321	48	113	019032	1	Yes	Yes	Yes	95	97	89	93	77
481130212002	48	113	021200	2	Yes	Yes	Yes	97	97	96	95	81
481130009021	48	113	000902	1	Yes	Yes	No	95	95	93	92	76
481130183003	48	113	018300	3	Yes	Yes	Yes	98	99	95	97	85
481130015041	48	113	001504	1	Yes	No	Yes	74	74	72	70	51
481130190194	48	113	019019	4	Yes	Yes	Yes	99	99	98	97	86
481130015023	48	113	001502	3	Yes	No	Yes	74	74	72	70	51
481130125011	48	113	012501	1	Yes	No	Yes	82	81	70	78	59
481130204021	48	113	020402	1	Yes	No	Yes	71	69	71	68	48
481130126042	48	113	012604	2	Yes	No	Yes	82	81	78	77	59
481130108071	48	113	010807	1	Yes	Yes	Yes	93	93	83	90	74
481130123025	48	113	012302	5	Yes	No	Yes	86	85	78	82	64
481130123024	48	113	012302	4	Yes	Yes	Yes	93	92	87	90	74
481130165273	48	113	016527	3	Yes	No	Yes	77	75	56	72	54
481130137283	48	113	013728	3	Yes	Yes	No	94	95	91	89	73
481130137294	48	113	013729	4	Yes	Yes	Yes	98	99	97	97	84
481130137281	48	113	013728	1	Yes	Yes	Yes	96	98	94	93	78
481130165302	48	113	016530	2	Yes	No	Yes	71	68	53	68	49
481130137292	48	113	013729	2	Yes	Yes	Yes	96	98	95	94	79
481130139021	48	113	013902	1	Yes	Yes	No	93	95	90	88	72
481130100032	48	113	010003	2	Yes	No	Yes	76	77	77	72	53
481130205003	48	113	020500	3	Yes	Yes	Yes	89	89	89	84	67
481130164182	48	113	016418	2	Yes	No	Yes	64	64	58	80	44
481130141471	48	113	014147	1	Yes	Yes	No	82	84	77	92	83
481130141481	48	113	014148	1	Yes	Yes	No	87	89	83	96	87
481130144102	48	113	014410	2	Yes	No	Yes	51	53	50	70	37
481130141542	48	113	014154	2	Yes	Yes	Yes	81	83	77	92	82
481130141532	48	113	014153	2	Yes	Yes	Yes	85	87	81	94	85
481130145012	48	113	014501	2	Yes	Yes	Yes	94	95	92	98	74
481130145022	48	113	014502	2	Yes	No	Yes	85	86	82	79	61
481130149032	48	113	014903	2	Yes	Yes	Yes	95	95	92	91	75
481130144073	48	113	014407	3	Yes	Yes	Yes	97	97	96	99	80
481130143101	48	113	014310	1	Yes	Yes	No	90	92	85	85	89
481130143092	48	113	014309	2	Yes	Yes	Yes	97	98	95	95	97
481130149031	48	113	014903	1	Yes	Yes	Yes	96	97	94	94	79
481130098044	48	113	009804	4	Yes	Yes	Yes	99	99	99	98	99
481130143061	48	113	014306	1	Yes	Yes	Yes	96	96	94	99	77
481130143162	48	113	014316	2	Yes	Yes	Yes	96	97	95	93	79
481130147042	48	113	014704	2	Yes	Yes	Yes	94	94	92	90	73
481130147011	48	113	014701	1	Yes	Yes	Yes	96	97	95	93	79
481130152071	48	113	015207	1	Yes	Yes	No	87	88	77	95	63
481130147041	48	113	014704	1	Yes	Yes	Yes	98	98	97	96	83
481130151021	48	113	015102	1	Yes	Yes	No	98	98	95	96	82
481130152082	48	113	015208	2	Yes	Yes	No	97	98	92	99	81
481130144061	48	113	014406	1	Yes	Yes	Yes	94	95	92	98	75
481130150011	48	113	015001	1	Yes	Yes	Yes	92	93	88	88	71
481130151011	48	113	015101	1	Yes	Yes	No	95	96	91	92	77
481130150022	48	113	015002	2	Yes	No	Yes	86	87	80	80	62
481130150012	48	113	015001	2	Yes	Yes	Yes	98	98	97	96	84
481130165332	48	113	016533	2	Yes	No	Yes	72	72	61	69	50
481130072031	48	113	007203	1	Yes	Yes	Yes	99	99	99	99	99
481130192152	48	113	019215	2	Yes	No	Yes	85	88	83	79	86
481130109052	48	113	010905	2	Yes	Yes	Yes	92	91	88	89	72
481130109062	48	113	010906	2	Yes	Yes	Yes	95	94	91	92	77
481130166352	48	113	016635	2	Yes	Yes	Yes	91	89	83	87	70
481130100015	48	113	010001	5	Yes	Yes	Yes	97	97	97	94	80
481130165262	48	113	016526	2	Yes	Yes	Yes	94	93	78	91	75
481130004092	48	113	000409	2	Yes	No	Yes	73	75	72	69	76
481130004091	48	113	000409	1	Yes	No	Yes	29	28	28	51	40
481130004101	48	113	000410	1	Yes	Yes	Yes	93	94	92	89	93
481130100013	48	113	010001	3	Yes	No	Yes	0	0	0	0	0
481130100011	48	113	010001	1	Yes	No	Yes	57	58	60	60	40
481130165281	48	113	016528	1	Yes	No	Yes	81	80	61	76	58
481130068001	48	113	006800	1	Yes	Yes	Yes	96	96	93	93	79
481130212001	48	113	021200	1	Yes	Yes	Yes	96	96	94	93	78

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
51	56	85	58	40	26	71	77
33	18	39	81	64	53	0	68
48	67	0	41	70	9	67	59
36	5	48	67	28	21	32	57
57	27	67	87	81	65	44	84
46	17	29	70	31	26	38	50
60	82	92	96	89	84	92	88
74	91	58	77	97	96	92	78
94	98	75	98	98	94	87	96
75	49	0	91	87	89	94	89
88	98	98	84	99	98	81	94
44	74	72	69	64	67	72	60
84	99	69	87	99	99	98	87
45	70	66	68	65	66	77	60
53	67	84	64	79	62	57	39
40	75	28	69	68	60	69	70
51	85	0	59	79	51	0	58
87	90	78	91	95	89	83	88
57	87	34	74	84	77	85	47
70	62	86	82	89	88	87	56
60	41	0	67	67	35	49	69
76	85	67	78	93	89	78	95
90	97	91	89	98	97	98	98
84	93	64	84	96	93	92	97
51	42	32	56	60	29	0	63
85	95	84	84	96	94	96	97
77	80	92	79	91	86	92	93
65	79	0	79	76	75	73	76
72	78	55	92	91	85	66	90
47	44	0	61	69	62	49	57
69	83	29	71	70	74	70	70
78	87	0	79	83	77	76	79
40	54	20	45	55	43	45	44
70	41	26	72	72	69	71	70
76	81	42	77	77	73	77	76
91	83	88	91	83	86	88	94
82	75	70	81	72	78	82	85
94	90	91	93	91	91	93	95
93	96	51	93	95	88	95	92
82	65	0	82	74	82	88	87
93	95	61	93	90	93	97	96
95	95	92	96	96	97	94	96
95	99	87	99	99	99	99	98
91	82	86	91	86	89	95	95
92	87	98	92	85	90	95	95
89	95	89	92	94	93	92	94
92	97	80	94	97	96	90	96
89	65	36	88	77	73	0	84
97	92	93	97	98	98	94	98
98	88	98	97	96	95	97	98
98	60	79	98	92	89	0	96
92	69	83	92	88	82	94	93
90	77	88	91	91	90	87	92
96	56	82	96	94	91	0	95
85	65	75	86	84	80	73	87
96	97	97	98	99	98	98	98
52	54	36	69	77	67	49	61
97	99	0	99	99	99	99	96
53	72	67	61	85	77	72	77
76	94	73	88	94	88	73	41
81	93	0	91	95	91	79	47
72	66	67	85	89	88	80	45
84	98	91	97	98	97	97	64
82	75	0	87	89	59	88	89
48	68	26	74	76	74	71	26
15		0				33	
76	64	94	92	95	93	93	36
0		0				0	
34	62	0	62	60	64	62	48
66	40	0	75	76	42	0	77
86	84	90	97	97	78	88	95
94	96	67	97	97	92	94	95

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130053004	48	113	005300	4	Yes	Yes	Yes	93	93	87	89	73
481130053003	48	113	005300	3	Yes	Yes	Yes	96	96	91	93	78
481130004014	48	113	000401	4	Yes	No	Yes	86	86	87	80	62
481130004071	48	113	000407	1	Yes	Yes	No	91	92	90	87	70
481130165331	48	113	016533	1	Yes	No	Yes	34	32	26	52	31
481130053002	48	113	005300	2	Yes	Yes	Yes	94	94	88	90	74
481130108082	48	113	010808	2	Yes	Yes	Yes	96	96	87	94	79
481130067011	48	113	006701	1	Yes	Yes	Yes	96	96	90	93	78
481130108081	48	113	010808	1	Yes	Yes	Yes	96	96	85	93	78
481130108092	48	113	010809	2	Yes	Yes	Yes	92	92	80	88	72
481130108091	48	113	010809	1	Yes	Yes	Yes	89	89	74	84	66
481130045001	48	113	004500	1	Yes	Yes	Yes	92	92	86	88	72
481130138052	48	113	013805	2	Yes	Yes	No	90	92	84	84	67
481130192121	48	113	019212	1	Yes	Yes	Yes	99	99	99	99	99
481130172032	48	113	017203	2	Yes	Yes	Yes	91	86	81	88	72
481130176061	48	113	017606	1	Yes	Yes	Yes	91	88	82	88	71
481130172031	48	113	017203	1	Yes	No	Yes	74	67	62	72	53
481130173111	48	113	017311	1	Yes	Yes	No	89	84	72	85	68
481130173144	48	113	017314	4	Yes	Yes	No	93	89	78	91	75
481130170061	48	113	017006	1	Yes	No	Yes	81	69	49	39	61
481130121012	48	113	012101	2	Yes	Yes	Yes	93	91	84	90	74
481130178201	48	113	017820	1	Yes	Yes	No	91	90	87	88	71
481130211001	48	113	021100	1	Yes	Yes	Yes	96	95	90	93	78
481130204022	48	113	020402	2	Yes	No	Yes	88	87	87	83	65
481130172011	48	113	017201	1	Yes	Yes	Yes	96	93	89	95	80
481130172041	48	113	017204	1	Yes	Yes	Yes	93	89	84	91	75
481130172042	48	113	017204	2	Yes	No	Yes	89	84	78	86	69
481130173152	48	113	017315	2	Yes	Yes	Yes	97	94	89	95	82
481130171013	48	113	017101	3	Yes	Yes	Yes	91	85	81	88	71
481130141461	48	113	014146	1	Yes	Yes	No	87	89	81	95	87
481130136271	48	113	013627	1	Yes	Yes	No	87	90	83	81	63
481130072052	48	113	007205	2	Yes	Yes	Yes	99	99	99	98	99
481130072051	48	113	007205	1	Yes	Yes	Yes	99	99	99	99	99
481130072042	48	113	007204	2	Yes	Yes	Yes	98	99	98	97	98
481130004103	48	113	000410	3	Yes	Yes	Yes	98	98	98	96	98
481130099003	48	113	009900	3	Yes	Yes	Yes	90	92	90	97	90
481130004102	48	113	000410	2	Yes	Yes	Yes	98	98	97	96	98
481130165291	48	113	016529	1	Yes	No	Yes	68	65	50	67	47
481130141591	48	113	014159	1	Yes	No	Yes	44	48	41	55	53
481130072041	48	113	007204	1	Yes	Yes	Yes	98	99	98	96	98
481130143161	48	113	014316	1	Yes	No	Yes	61	64	61	62	42
481130141592	48	113	014159	2	Yes	No	Yes	29	30	24	51	40
481130141582	48	113	014158	2	Yes	No	Yes	86	88	80	80	86
481130143151	48	113	014315	1	Yes	No	Yes	68	71	67	66	46
481130143152	48	113	014315	2	Yes	Yes	Yes	95	96	94	92	77
481130142031	48	113	014203	1	Yes	Yes	No	94	95	92	90	74
481130141611	48	113	014161	1	Yes	Yes	No	84	87	78	94	85
481130192142	48	113	019214	2	Yes	No	Yes	76	80	74	71	79
481130137291	48	113	013729	1	Yes	No	Yes	80	84	76	74	55
481130192141	48	113	019214	1	Yes	Yes	Yes	98	99	98	96	98
481130192084	48	113	019208	4	Yes	Yes	Yes	99	99	99	97	98
481130107015	48	113	010701	5	Yes	Yes	Yes	90	90	83	85	68
481130109061	48	113	010906	1	Yes	Yes	Yes	92	91	87	88	72
481130020021	48	113	002002	1	Yes	Yes	Yes	97	97	98	95	82
481130020022	48	113	002002	2	Yes	Yes	Yes	97	96	97	94	80
481130166341	48	113	016634	1	Yes	Yes	Yes	91	88	83	87	70
481130162041	48	113	016204	1	Yes	Yes	Yes	91	91	82	97	69
481130154052	48	113	015405	2	Yes	Yes	No	84	85	79	94	60
481130159002	48	113	015900	2	Yes	No	Yes	37	36	28	53	32
481130165352	48	113	016535	2	Yes	No	Yes	84	83	73	79	61
481130165181	48	113	016518	1	Yes	No	Yes	72	71	59	69	50
481130100031	48	113	010003	1	Yes	No	Yes	48	48	51	56	36
481130109063	48	113	010906	3	Yes	No	Yes	80	78	75	76	57
481130111041	48	113	011104	1	Yes	Yes	Yes	95	94	92	93	78
481130162031	48	113	016203	1	Yes	Yes	Yes	97	97	91	99	80
481130162032	48	113	016203	2	Yes	Yes	Yes	96	96	90	99	79
481130164191	48	113	016419	1	Yes	Yes	Yes	79	79	73	91	55
481130164062	48	113	016406	2	Yes	Yes	Yes	97	97	94	99	81
481130165182	48	113	016518	2	Yes	Yes	Yes	92	91	81	88	72
481130165163	48	113	016516	3	Yes	Yes	Yes	94	94	89	92	76
481130164212	48	113	016421	2	Yes	Yes	No	90	90	83	85	68
481130164202	48	113	016420	2	Yes	Yes	No	92	92	86	88	71

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
82	62	95	94	94	65	0	90
86	89	98	97	96	71	91	95
61	80	0	86	84	87	82	77
70	67	82	91	90	91	0	83
23		0				33	
81	86	96	94	93	62	78	92
91	96	0	96	98	93	96	94
90	92	91	97	97	88	87	93
89	88	75	95	97	91	95	92
83	87	47	91	94	84	86	87
76	69	66	87	91	78	87	82
80	87	94	93	94	71	66	87
69	84	46	73	87	79	79	89
90	99	87	95	99	99	0	99
71	91	71	81	74	57	88	87
67	92	64	80	77	69	88	85
47	79	0	60	62	44	72	76
65	79	50	72	90	72	84	26
79	87	0	80	76	55	0	92
52	47	70	59	49	28	53	80
69	84	52	85	88	91	92	64
64	91	90	76	83	75	85	17
78	85	95	96	96	69	89	96
61	89	79	86	85	74	85	89
81	97	92	90	79	67	90	87
75	95	0	85	71	56	88	81
68	80	51	78	65	49	83	69
87	92	49	89	80	61	94	92
78	81	65	80	74	46	81	74
75	87	42	76	69	81	86	37
58	77	0	63	74	80	78	84
94	98	95	98	99	98	99	96
98	93	0	99	99	99	99	98
91	97	92	97	99	96	99	91
90	91	99	98	99	98	99	65
81	90	37	85	89	86	89	91
87	93	97	98	99	98	98	54
48	33	0	54	58	27	0	60
27	47	23	26	36	43	32	46
91	76	66	96	98	96	99	95
50	47	37	52	41	54	59	57
19	32	0	16	17	30	23	26
74	86	43	75	65	82	79	37
60	70	32	62	52	57	65	67
92	96	64	91	85	90	91	95
91	93	91	89	87	92	88	93
72	57	61	73	71	80	77	45
43	57	31	51	79	74	73	68
55	81	49	57	79	75	73	79
81	97	0	87	99	97	98	96
82	99	52	90	99	99	98	98
80	64	31	92	92	82	79	87
75	89	0	88	91	87	87	42
84	87	97	97	96	76	97	98
81	98	76	97	95	76	91	97
73	92	70	88	84	86	83	40
81	78	0	91	91	86	85	78
76	82	0	86	82	85	76	81
31	18	0	44	29	33	27	25
65	87	45	78	87	74	80	72
51	59	24	65	77	56	65	62
25	55	17	51	43	44	47	45
58	78	0	76	82	72	71	26
82	87	93	94	90	91	94	48
89	96	70	96	97	95	94	95
89	89	51	96	97	94	89	94
63	73	30	75	75	69	67	70
90	65	0	96	97	93	0	94
76	81	0	85	94	76	85	81
80	94	52	88	96	87	92	45
78	64	0	89	87	81	62	85
81	75	0	89	90	85	85	85

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130109043	48	113	010904	3	Yes	Yes	Yes	91	91	84	87	71
481130166221	48	113	016622	1	Yes	No	Yes	69	58	50	67	48
481130067021	48	113	006702	1	Yes	Yes	Yes	98	98	94	96	82
481130004013	48	113	000401	3	Yes	No	Yes	33	31	36	52	31
481130100014	48	113	010001	4	Yes	No	Yes	0	0	0	0	0
481130065021	48	113	006502	1	Yes	Yes	Yes	96	96	87	93	78
481130108061	48	113	010806	1	Yes	No	Yes	60	60	48	62	42
481130062001	48	113	006200	1	Yes	Yes	Yes	96	96	92	94	79
481130165283	48	113	016528	3	Yes	No	Yes	74	73	53	71	52
481130154031	48	113	015403	1	Yes	Yes	Yes	95	96	92	98	76
481130108072	48	113	010807	2	Yes	Yes	Yes	94	94	84	91	75
481130108041	48	113	010804	1	Yes	Yes	Yes	97	97	92	95	81
481130108062	48	113	010806	2	Yes	No	Yes	85	85	72	80	62
481130110042	48	113	011004	2	Yes	No	Yes	87	86	80	82	65
481130164181	48	113	016418	1	Yes	Yes	Yes	81	81	75	92	57
481130161004	48	113	016100	4	Yes	Yes	Yes	87	88	80	96	65
481130110031	48	113	011003	1	Yes	No	Yes	73	72	66	70	51
481130110041	48	113	011004	1	Yes	No	Yes	79	77	71	74	55
481130110032	48	113	011003	2	Yes	No	Yes	75	74	68	71	52
481130110033	48	113	011003	3	Yes	Yes	Yes	90	89	83	85	68
481130161002	48	113	016100	2	Yes	No	Yes	33	32	27	59	31
481130160012	48	113	016001	2	Yes	Yes	Yes	98	98	94	99	82
481130162042	48	113	016204	2	Yes	Yes	Yes	96	96	89	99	78
481130141421	48	113	014142	1	Yes	Yes	No	91	93	85	85	68
481130136291	48	113	013629	1	Yes	No	Yes	57	62	60	60	63
481130065013	48	113	006501	3	Yes	Yes	Yes	91	90	78	86	69
481130107013	48	113	010701	3	Yes	No	Yes	33	31	27	52	31
481130109051	48	113	010905	1	Yes	Yes	Yes	88	87	83	84	66
481130185071	48	113	018507	1	Yes	No	Yes	79	82	76	74	55
481130136154	48	113	013615	4	Yes	Yes	Yes	96	97	96	93	95
481130167071	48	113	016707	1	Yes	No	Yes	71	64	54	69	50
481130192111	48	113	019211	1	Yes	Yes	No	89	91	86	83	66
481130078103	48	113	007810	3	Yes	Yes	No	94	95	92	91	75
481130185081	48	113	018508	1	Yes	Yes	Yes	92	94	90	88	72
481130190452	48	113	019045	2	Yes	No	Yes	77	80	67	72	53
481130190442	48	113	019044	2	Yes	Yes	Yes	91	92	82	86	69
481130190462	48	113	019046	2	Yes	Yes	Yes	92	94	82	88	72
481130027032	48	113	002703	2	Yes	Yes	Yes	94	93	87	90	74
481130130071	48	113	013007	1	Yes	No	Yes	73	74	70	69	50
481130122111	48	113	012211	1	Yes	Yes	Yes	97	96	93	95	81
481130181541	48	113	018154	1	Yes	Yes	No	89	91	73	85	68
481130181261	48	113	018126	1	Yes	No	Yes	83	82	75	78	60
481130060023	48	113	006002	3	Yes	Yes	Yes	96	95	92	93	78
481130208003	48	113	020800	3	Yes	Yes	Yes	96	95	93	93	78
481130210004	48	113	021000	4	Yes	Yes	Yes	99	99	99	98	89
481130190193	48	113	019019	3	Yes	Yes	Yes	95	97	93	93	77
481130181263	48	113	018126	3	Yes	No	Yes	85	85	77	81	63
481130211002	48	113	021100	2	Yes	Yes	Yes	94	93	88	91	76
481130087011	48	113	008701	1	Yes	Yes	Yes	97	96	92	95	81
481130119012	48	113	011901	2	Yes	Yes	Yes	96	94	88	94	79
481130119022	48	113	011902	2	Yes	Yes	Yes	95	93	87	93	78
481130119021	48	113	011902	1	Yes	Yes	Yes	92	89	82	89	72
481130092041	48	113	009204	1	Yes	Yes	Yes	96	94	87	94	79
481130118022	48	113	011802	2	Yes	Yes	Yes	96	94	89	50	81
481130119011	48	113	011901	1	Yes	Yes	Yes	90	87	79	86	70
481130118021	48	113	011802	1	Yes	Yes	Yes	95	92	87	49	78
481130118012	48	113	011801	2	Yes	Yes	Yes	97	95	90	50	82
481130118013	48	113	011801	3	Yes	Yes	Yes	95	92	86	49	78
481130118011	48	113	011801	1	Yes	No	Yes	89	85	78	44	68
481130016011	48	113	001601	1	Yes	Yes	No	94	94	95	91	75
481130027031	48	113	002703	1	Yes	Yes	Yes	98	97	93	96	83
481130209002	48	113	020900	2	Yes	Yes	Yes	92	90	87	88	71
481130209001	48	113	020900	1	Yes	Yes	Yes	91	90	87	87	70
481130170081	48	113	017008	1	Yes	No	Yes	87	79	64	43	67
481130178151	48	113	017815	1	Yes	Yes	Yes	91	89	86	88	71
481130167091	48	113	016709	1	Yes	Yes	No	97	95	94	96	82
481130116032	48	113	011603	2	Yes	Yes	Yes	94	91	87	92	77
481130171023	48	113	017102	3	Yes	Yes	Yes	95	91	79	49	79
481130170052	48	113	017005	2	Yes	No	Yes	83	71	51	40	63
481130170051	48	113	017005	1	Yes	Yes	Yes	95	87	69	49	79
481130170091	48	113	017009	1	Yes	Yes	Yes	99	97	93	98	88
481130170072	48	113	017007	2	Yes	Yes	Yes	97	93	83	51	84

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US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
75	82	61	86	94	84	85	37
47	39	0	51	36	28	42	18
92	97	98	98	99	89	96	95
17	36	0	34	36	40	34	26
0	0	0	0	0	0	0	0
88	84	97	96	97	89	96	93
40	49	42	57	67	46	47	49
84	97	97	95	86	66	89	95
56	51	0	68	72	41	38	67
88	92	89	95	95	96	72	92
84	90	56	91	96	89	88	89
87	92	75	96	98	89	88	93
67	75	82	82	87	67	0	76
68	87	83	85	88	67	70	28
66	67	0	76	83	75	62	72
74	85	62	86	89	87	86	86
49	75	37	73	73	48	0	59
57	82	48	76	81	64	75	23
53	77	71	74	77	61	70	21
72	74	74	88	89	75	60	33
22		0				29	
92	91	98	98	98	97	92	95
88	87	87	96	96	92	89	88
76	65	64	73	77	82	71	92
28	51	27	35	53	38	59	53
80	79	0	90	93	81	84	86
23		0				31	
69	91	0	83	89	84	80	37
42	83	0	56	82	80	75	70
73	91	0	83	93	82	97	86
45	46	0	68	64	61	49	24
60	79	56	62	88	86	72	87
66	94	60	79	95	93	89	91
62	95	53	75	94	93	87	86
43	74	0	50	80	78	72	50
66	88	48	66	92	91	77	72
74	83	83	68	94	93	76	80
69	81	91	90	94	78	93	78
38	59	60	50	77	73	61	48
78	91	0	89	95	92	98	68
86	80	0	53	70	76	75	76
54	81	0	58	84	69	76	67
82	97	76	96	87	67	89	95
75	96	92	95	97	72	95	96
92	91	99	99	99	82	0	99
72	94	56	79	97	96	91	91
55	73	0	61	82	53	66	68
74	82	95	95	95	67	87	95
81	96	71	99	96	87	85	97
74	87	72	91	87	86	90	75
75	85	78	88	83	83	83	80
68	83	87	84	76	75	76	69
73	88	97	91	88	86	91	81
77	79	96	93	81	76	81	80
61	72	55	83	76	75	85	70
74	84	84	90	79	74	88	72
80	93	0	92	83	79	85	81
74	77	89	89	75	71	75	79
64	61	78	80	64	60	78	73
74	96	54	92	84	94	94	89
79	68	98	95	98	87	94	89
68	93	84	89	92	77	89	92
66	93	90	90	93	67	78	92
65	64	0	70	59	38	0	87
64	94	0	78	83	76	81	16
81	96	96	97	98	95	92	91
72	91	85	92	83	70	68	75
75	76	79	90	92	78	76	95
86	75	53	71	69	39	70	66
84	64	88	87	89	61	74	83
96	84	76	93	85	67	97	98
97	94	78	89	83	56	87	94

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130170062	48	113	017006	2	Yes	No	Yes	82	69	50	39	62
481130170092	48	113	017009	2	Yes	Yes	Yes	98	95	89	97	84
481130122074	48	113	012207	4	Yes	Yes	Yes	98	97	94	96	83
481130178172	48	113	017817	2	Yes	No	Yes	71	68	64	69	50
481130167092	48	113	016709	2	Yes	Yes	No	96	93	92	94	79
481130185063	48	113	018506	3	Yes	No	Yes	85	87	82	80	62
481130170071	48	113	017007	1	Yes	No	Yes	88	80	66	44	69
482570504012	48	257	050401	2	Yes	Yes	Yes	87	80	57	46	71
482570504022	48	257	050402	2	Yes	No	Yes	47	37	20	15	39
481130112022	48	113	011202	2	Yes	No	Yes	76	73	72	72	53
481130090012	48	113	009001	2	Yes	Yes	Yes	93	91	81	90	74
481130078341	48	113	007834	1	Yes	Yes	Yes	91	93	89	87	70
481130078351	48	113	007835	1	Yes	Yes	Yes	93	94	90	89	73
481130178191	48	113	017819	1	Yes	Yes	No	90	88	85	86	69
481130178152	48	113	017815	2	Yes	No	Yes	61	57	56	63	43
481130166223	48	113	016622	3	Yes	No	Yes	88	80	71	83	66
481130055003	48	113	005500	3	Yes	No	Yes	86	85	82	82	64
481130172012	48	113	017201	2	Yes	Yes	Yes	98	97	93	97	85
481130165292	48	113	016529	2	Yes	No	Yes	83	80	65	78	60
481130116042	48	113	011604	2	Yes	No	Yes	89	84	80	85	68
481130173151	48	113	017315	1	Yes	No	Yes	85	79	72	82	64
481130116041	48	113	011604	1	Yes	Yes	Yes	91	87	83	88	71
481130170101	48	113	017010	1	Yes	Yes	Yes	96	91	85	94	80
481130170102	48	113	017010	2	Yes	Yes	Yes	96	92	85	95	80
481130059023	48	113	005902	3	Yes	Yes	Yes	96	96	93	94	79
481130169022	48	113	016902	2	Yes	No	Yes	68	60	54	26	48
481130084012	48	113	008401	2	Yes	Yes	Yes	95	95	87	93	78
481130170082	48	113	017008	2	Yes	Yes	Yes	91	84	70	46	73
481130181293	48	113	018129	3	Yes	Yes	No	90	89	85	86	69
481130181481	48	113	018148	1	Yes	Yes	No	94	94	83	92	76
481130091051	48	113	009105	1	Yes	Yes	Yes	90	88	80	87	70
481130112021	48	113	011202	1	Yes	No	Yes	79	76	74	74	55
481130090011	48	113	009001	1	Yes	Yes	Yes	95	94	85	93	78
481130090021	48	113	009002	1	Yes	Yes	Yes	98	97	90	96	83
481130185072	48	113	018507	2	Yes	Yes	Yes	88	90	85	83	66
481130190451	48	113	019045	1	Yes	Yes	Yes	93	95	86	90	74
481130190472	48	113	019047	2	Yes	Yes	Yes	91	92	80	86	69
481130165301	48	113	016530	1	Yes	No	Yes	69	65	50	67	47
481130084021	48	113	008402	1	Yes	Yes	Yes	92	91	81	88	71
481130092042	48	113	009204	2	Yes	Yes	Yes	97	96	91	96	83
481130090023	48	113	009002	3	Yes	No	Yes	88	85	74	84	67
481130092032	48	113	009203	2	Yes	Yes	Yes	95	93	86	93	78
481130181303	48	113	018130	3	Yes	No	Yes	81	80	78	77	59
481130190274	48	113	019027	4	Yes	Yes	No	93	94	83	89	73
481130027033	48	113	002703	3	Yes	Yes	Yes	98	98	95	97	84
481130165272	48	113	016527	2	Yes	No	Yes	87	86	68	82	65
481130008013	48	113	000801	3	Yes	Yes	No	95	95	95	91	76
481130182043	48	113	018204	3	Yes	Yes	Yes	97	98	91	96	82
481130190331	48	113	019033	1	Yes	Yes	Yes	96	97	90	93	78
481130212003	48	113	021200	3	Yes	Yes	Yes	96	96	93	93	77
481130125022	48	113	012502	2	Yes	Yes	Yes	92	91	82	89	72
481130125021	48	113	012502	1	Yes	Yes	Yes	90	89	78	85	68
481130125012	48	113	012501	2	Yes	No	Yes	79	78	67	75	56
481130166353	48	113	016635	3	Yes	No	Yes	82	79	73	78	59
481130165341	48	113	016534	1	Yes	Yes	Yes	96	96	90	94	79
481130078302	48	113	007830	2	Yes	Yes	Yes	92	93	90	88	72
481130147043	48	113	014704	3	Yes	Yes	Yes	98	98	97	96	83
481130072062	48	113	007206	2	Yes	Yes	Yes	98	98	96	96	98
481130072061	48	113	007206	1	Yes	Yes	Yes	99	99	99	99	99
481130100012	48	113	010001	2	Yes	Yes	Yes	97	97	97	94	80
481130078311	48	113	007831	1	Yes	Yes	Yes	96	96	94	93	78
481130141581	48	113	014158	1	Yes	Yes	No	91	93	85	86	90
481130144091	48	113	014409	1	Yes	Yes	Yes	94	94	91	98	74
481130144101	48	113	014410	1	Yes	Yes	Yes	89	90	86	96	66
481130143163	48	113	014316	3	Yes	Yes	Yes	91	93	89	87	70
481130065014	48	113	006501	4	Yes	Yes	Yes	97	97	90	95	81
481130154061	48	113	015406	1	Yes	Yes	No	82	83	77	93	58
481130141541	48	113	014154	1	Yes	No	Yes	69	72	66	83	73
481130141472	48	113	014147	2	Yes	Yes	No	87	88	82	95	87
481130141533	48	113	014153	3	Yes	Yes	Yes	87	89	83	95	87
481130141531	48	113	014153	1	Yes	Yes	Yes	90	92	87	97	90
481130151012	48	113	015101	2	Yes	Yes	No	97	97	94	94	80

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
86	59	80	67	63	35	71	74
94	39	0	88	77	57	0	97
79	97	55	93	98	95	93	80
39	76	45	52	57	44	60	10
81	89	51	93	92	90	89	55
63	88	41	63	88	87	80	68
78	87	54	71	59	35	84	89
55	68	76	95	87	80	75	86
23	16	50	63	52	42	0	50
50	78	68	79	63	54	68	71
68	93	79	86	90	90	87	73
60	94	44	74	93	91	82	85
63	93	53	76	94	93	75	77
61	93	31	73	78	62	80	18
30	54	50	42	54	46	52	7
68	68	0	75	55	46	0	33
61	78	86	88	86	49	82	86
87	99	83	93	88	79	97	90
67	43	32	70	72	39	0	77
63	87	83	84	74	55	80	59
65	60	0	71	63	43	73	83
68	92	64	85	82	60	83	61
94	89	62	87	81	53	87	79
93	58	57	86	75	51	88	92
82	94	97	97	85	77	90	95
34	65	0	71	60	61	57	70
74	81	98	92	94	78	0	85
70	76	57	73	56	36	88	92
65	58	0	69	75	53	82	80
74	94	74	74	83	66	92	84
61	87	74	86	76	73	85	53
52	69	66	82	66	55	58	76
73	90	94	90	91	89	95	73
79	96	95	95	94	91	88	78
54	90	32	68	90	88	80	81
68	92	53	74	95	94	91	73
68	91	58	66	93	91	80	76
45	66	0	53	60	32	54	23
66	83	95	85	90	75	82	76
78	86	95	95	92	90	89	76
58	64	82	80	81	79	0	68
71	88	96	91	84	83	90	76
51	86	0	60	63	49	81	48
74	81	0	64	85	68	85	92
81	92	93	96	99	83	96	92
75	83	0	81	76	46	0	85
75	55	89	91	86	91	93	89
88	95	95	79	98	97	95	96
78	95	70	79	97	97	94	78
97	90	94	98	93	89	78	93
69	84	93	78	88	81	89	69
64	83	90	73	87	71	87	65
48	72	82	61	69	61	0	28
60	86	0	75	84	82	71	32
91	77	74	94	98	94	95	92
63	80	57	82	75	67	79	80
96	92	92	97	98	97	95	97
89	95	0	96	98	95	98	89
97	99	0	99	99	99	99	97
86	98	76	97	98	97	97	61
71	88	0	87	82	72	93	86
81	86	0	81	70	88	80	44
87	94	42	89	95	88	81	92
82	81	34	83	89	79	78	84
86	67	86	85	75	82	89	90
91	89	62	97	98	92	84	95
71	85	0	81	84	85	78	79
57	44	0	59	57	61	64	50
76	86	0	77	75	80	79	46
77	77	0	78	74	79	85	64
83	83	53	83	80	82	83	87
97	85	86	97	94	92	93	97

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130126044	48	113	012604	4	Yes	Yes	Yes	96	96	94	94	79
481130152081	48	113	015208	1	Yes	Yes	No	87	88	78	95	64
481130150021	48	113	015002	1	Yes	Yes	Yes	94	95	90	90	74
481130166342	48	113	016634	2	Yes	No	Yes	77	74	68	73	54
481130072032	48	113	007203	2	Yes	Yes	Yes	97	98	97	95	97
481130192153	48	113	019215	3	Yes	No	Yes	50	54	50	57	57
481130192143	48	113	019214	3	Yes	Yes	Yes	97	98	96	95	97
481130192083	48	113	019208	3	Yes	Yes	Yes	91	93	89	86	90
481130137293	48	113	013729	3	Yes	Yes	Yes	89	92	86	84	66
481130107014	48	113	010701	4	Yes	No	Yes	33	31	27	52	31
481130020011	48	113	002001	1	Yes	Yes	Yes	98	97	98	96	83
481130100021	48	113	010002	1	Yes	No	Yes	58	59	61	61	41
481130165282	48	113	016528	2	Yes	No	Yes	71	70	51	69	49
481130165261	48	113	016526	1	Yes	No	Yes	84	82	64	79	60
481130164192	48	113	016419	2	Yes	Yes	Yes	89	89	84	97	67
481130162043	48	113	016204	3	Yes	Yes	Yes	99	99	97	99	88
481130165361	48	113	016536	1	Yes	Yes	Yes	95	94	87	92	76
481130165362	48	113	016536	2	Yes	Yes	Yes	89	89	79	85	68
481130165271	48	113	016527	1	Yes	No	Yes	81	80	61	76	58
481130006102	48	113	000610	2	Yes	Yes	No	96	96	94	93	78
481130006101	48	113	000610	1	Yes	Yes	No	99	99	99	98	88
481130165333	48	113	016533	3	Yes	Yes	Yes	97	96	90	94	80
481130165351	48	113	016535	1	Yes	No	Yes	79	78	67	74	55
481130107043	48	113	010704	3	Yes	Yes	Yes	98	98	91	96	82
481130101011	48	113	010101	1	Yes	Yes	Yes	99	99	99	97	86
481130108093	48	113	010809	3	Yes	Yes	Yes	88	88	73	83	65
481130067012	48	113	006701	2	Yes	Yes	Yes	99	99	96	97	86
481130166351	48	113	016635	1	Yes	Yes	Yes	97	96	93	95	82
481130020012	48	113	002001	2	Yes	No	Yes	45	43	50	56	35
481130192151	48	113	019215	1	Yes	No	Yes	39	42	40	54	49
481130050001	48	113	005000	1	Yes	Yes	Yes	93	92	89	89	73
481130165342	48	113	016534	2	Yes	Yes	Yes	97	97	91	95	81
481130155001	48	113	015500	1	Yes	Yes	Yes	93	94	89	98	74
481130161003	48	113	016100	3	Yes	Yes	Yes	85	85	76	94	61
481130108043	48	113	010804	3	Yes	Yes	Yes	98	98	95	97	84
481130161005	48	113	016100	5	Yes	No	Yes	33	32	27	59	31
481130136311	48	113	013631	1	Yes	Yes	Yes	98	99	98	96	97
481130190184	48	113	019018	4	Yes	Yes	Yes	92	94	86	87	71
481130190492	48	113	019049	2	Yes	Yes	No	89	91	78	85	68
481130054002	48	113	005400	2	Yes	Yes	Yes	91	91	88	87	71
481139802001	48	113	980200	1	Yes	Yes	No	93	96	87	89	73
481130181572	48	113	018157	2	Yes	Yes	No	84	86	68	80	62
481130092022	48	113	009202	2	Yes	Yes	Yes	97	95	91	95	81
484391131151	48	439	113115	1	Yes	Yes	No	83	84	80	93	84
484391065022	48	439	106502	2	Yes	Yes	Yes	92	93	85	88	71
484391013012	48	439	101301	2	Yes	Yes	No	96	97	90	93	78
484391132132	48	439	113213	2	Yes	Yes	No	84	87	76	94	60
484391132232	48	439	113223	2	Yes	Yes	Yes	85	88	80	95	61
484391101032	48	439	110103	2	Yes	No	Yes	84	87	80	79	61
484391134103	48	439	113410	3	Yes	Yes	No	87	89	82	96	64
484391132231	48	439	113223	1	Yes	No	Yes	44	47	42	66	35
484391110192	48	439	111019	2	Yes	Yes	No	94	95	88	92	76
484391057053	48	439	105705	3	Yes	Yes	No	88	90	82	85	67
484391219062	48	439	121906	2	Yes	Yes	Yes	99	99	98	99	85
484391216123	48	439	121612	3	Yes	Yes	No	93	94	85	89	73
484391065183	48	439	106518	3	Yes	Yes	No	81	83	75	92	83
484391004022	48	439	100402	2	Yes	Yes	Yes	98	99	97	97	85
484391065231	48	439	106523	1	Yes	Yes	No	84	85	78	94	60
484391043012	48	439	104301	2	Yes	Yes	No	90	92	86	87	70
484391059012	48	439	105901	2	Yes	Yes	Yes	96	97	92	94	79
484391131181	48	439	113118	1	Yes	Yes	Yes	92	93	88	88	71
484391131172	48	439	113117	2	Yes	No	Yes	86	87	81	80	62
484391110232	48	439	111023	2	Yes	Yes	No	90	92	74	87	71
484391005042	48	439	100504	2	Yes	Yes	Yes	94	96	89	92	76
484391005031	48	439	100503	1	Yes	Yes	Yes	96	98	92	95	81
484391224012	48	439	122401	2	Yes	Yes	No	99	99	97	97	85
484391224011	48	439	122401	1	Yes	Yes	No	94	94	90	90	75
484391132221	48	439	113222	1	Yes	Yes	Yes	80	84	76	92	57
484391048021	48	439	104802	1	Yes	Yes	Yes	95	96	89	93	77
484391048022	48	439	104802	2	Yes	Yes	Yes	96	97	91	94	80
484391236001	48	439	123600	1	Yes	Yes	Yes	95	96	96	93	77
484391055152	48	439	105515	2	Yes	Yes	No	87	90	67	43	67

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
77	97	48	81	95	81	91	82
88	37	60	88	75	72	62	82
95	85	63	94	95	91	81	95
53	54	28	72	66	72	64	31
89	95	89	95	98	95	98	86
23	41	38	25	55	49	41	41
77	95	86	84	98	96	98	94
58	93	50	72	93	90	0	87
67	82	54	70	88	85	73	91
23		0				25	
85	97	98	98	96	79	96	98
32	64	0	62	49	48	58	62
53	57	0	64	65	35	57	63
66	76	29	74	78	45	78	75
77	85	0	87	90	85	76	85
96	94	98	99	99	99	98	98
82	96	76	90	96	90	90	44
73	89	0	83	92	82	83	53
66	58	0	73	68	39	0	76
78	96	0	95	95	96	94	91
90	96	0	99	98	99	99	97
90	84	93	96	98	95	71	93
59	79	0	73	83	69	72	68
94	98	97	98	98	95	95	97
91	96	94	99	99	97	91	99
77	74	73	86	90	80	85	81
95	95	99	99	99	95	95	97
86	71	0	94	92	95	0	64
24	34	0	49	44	25	36	48
17	29	35	18	44	37	0	32
77	93	94	93	90	55	89	92
91	86	50	94	98	96	88	92
86	88	89	94	93	94	84	88
71	84	51	85	86	85	81	82
90	94	89	98	99	84	89	95
22		0				31	
80	98	0	87	97	93	0	93
63	91	41	71	93	91	87	87
74	83	37	61	90	84	77	81
73	92	87	91	84	53	83	91
68	89	50	69	91	90	77	92
66	77	0	50	84	69	63	90
77	89	97	94	82	74	77	84
76	79	0	76	85	85	83	79
80	93	79	73	77	78	83	34
87	94	94	81	86	78	83	35
66	87	68	57	72	74	76	19
68	84	60	59	76	69	82	17
65	68	82	66	87	79	83	64
71	86	53	62	73	79	76	25
29	39	0	20	38	30	45	5
88	62	0	81	96	77	91	95
79	71	0	75	90	64	0	85
95	99	94	96	99	98	97	98
83	67	0	78	90	84	0	89
71	84	0	72	83	81	69	75
93	71	98	97	99	96	97	68
74	58	26	73	86	81	0	76
80	90	76	84	90	70	83	62
97	97	95	86	98	84	92	96
82	75	55	83	88	88	90	84
73	57	31	75	82	80	66	77
85	41	0	74	70	51	0	89
82	80	92	95	91	75	92	74
88	95	98	96	98	82	97	75
93	95	88	94	95	96	95	99
83	92	88	85	82	89	87	94
64	81	0	52	67	65	69	15
89	92	93	87	96	78	94	93
90	93	95	90	97	78	94	94
87	92	93	89	96	93	95	90
76	86	0	75	77	46	72	52

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
484391115433	48	439	111543	3	Yes	Yes	Yes	93	93	83	90	74
484391115434	48	439	111543	4	Yes	No	Yes	89	88	77	84	67
484391229012	48	439	122901	2	Yes	Yes	Yes	95	95	92	98	76
484391217023	48	439	121702	3	Yes	Yes	No	93	94	90	90	73
484391221006	48	439	122100	6	Yes	Yes	No	97	97	95	99	80
484391048032	48	439	104803	2	Yes	Yes	Yes	96	98	92	95	81
484391229021	48	439	122902	1	Yes	Yes	Yes	99	99	98	99	86
484391229022	48	439	122902	2	Yes	Yes	Yes	98	98	96	99	82
484391110193	48	439	111019	3	Yes	Yes	No	95	97	90	94	79
484391052043	48	439	105204	3	Yes	Yes	Yes	93	96	85	92	76
484391229011	48	439	122901	1	Yes	Yes	Yes	98	98	96	99	83
484391055133	48	439	105513	3	Yes	No	Yes	86	89	73	83	65
484391055171	48	439	105517	1	Yes	Yes	No	89	92	69	86	69
484391110201	48	439	111020	1	Yes	Yes	No	88	90	80	84	67
484391131182	48	439	113118	2	Yes	No	Yes	86	87	81	80	62
484391131171	48	439	113117	1	Yes	Yes	Yes	89	90	85	84	67
484391054054	48	439	105405	4	Yes	Yes	No	90	93	85	87	70
484391025003	48	439	102500	3	Yes	No	Yes	79	83	72	76	57
484391134082	48	439	113408	2	Yes	Yes	No	82	85	76	93	59
484391046052	48	439	104605	2	Yes	Yes	Yes	94	95	86	91	75
484391059023	48	439	105902	3	Yes	No	Yes	34	35	28	53	32
484391005041	48	439	100504	1	Yes	Yes	Yes	97	98	94	96	83
484391045052	48	439	104505	2	Yes	Yes	Yes	96	97	94	94	79
484391037011	48	439	103701	1	Yes	Yes	Yes	98	98	93	96	83
484391046011	48	439	104601	1	Yes	Yes	Yes	98	98	93	96	83
484391217034	48	439	121703	4	Yes	No	Yes	85	87	80	80	62
484391216132	48	439	121613	2	Yes	Yes	No	92	93	84	88	71
484391216141	48	439	121614	1	Yes	Yes	No	95	96	90	92	77
484391132222	48	439	113222	2	Yes	Yes	Yes	95	97	93	99	77
484391131163	48	439	113116	3	Yes	Yes	Yes	88	89	83	96	88
484391065185	48	439	106518	5	Yes	Yes	No	86	87	80	95	86
484391216153	48	439	121615	3	Yes	Yes	No	90	90	82	85	68
484391135133	48	439	113513	3	Yes	Yes	No	79	81	76	91	81
484391135142	48	439	113514	2	Yes	Yes	No	90	91	86	97	89
484391135124	48	439	113512	4	Yes	Yes	No	85	87	80	95	61
484391046022	48	439	104602	2	Yes	Yes	Yes	97	98	92	96	83
484391061024	48	439	106102	4	Yes	Yes	Yes	91	92	81	87	70
484391061023	48	439	106102	3	Yes	Yes	Yes	98	98	93	96	83
484391004011	48	439	100401	1	Yes	Yes	Yes	97	98	95	96	82
484391004021	48	439	100402	1	Yes	Yes	Yes	98	99	96	96	84
484391004023	48	439	100402	3	Yes	Yes	Yes	97	98	95	96	83
484391062021	48	439	106202	1	Yes	Yes	Yes	95	96	88	92	77
484391059024	48	439	105902	4	Yes	No	Yes	63	67	55	64	45
484391065211	48	439	106521	1	Yes	No	Yes	60	63	52	62	42
484391101031	48	439	110103	1	Yes	Yes	Yes	88	91	84	83	66
484391136352	48	439	113635	2	Yes	Yes	Yes	84	88	78	94	85
484391136351	48	439	113635	1	Yes	Yes	Yes	92	94	87	98	92
484391102021	48	439	110202	1	Yes	Yes	Yes	91	93	88	87	71
484391001013	48	439	100101	3	Yes	Yes	Yes	93	94	90	89	93
484391136073	48	439	113607	3	Yes	Yes	No	78	81	70	90	54
484391136372	48	439	113637	2	Yes	Yes	No	84	87	78	94	60
484391001012	48	439	100101	2	Yes	Yes	Yes	91	93	89	87	91
484391134101	48	439	113410	1	Yes	Yes	No	95	96	92	99	77
484391035001	48	439	103500	1	Yes	Yes	Yes	94	96	89	92	76
484391003003	48	439	100300	3	Yes	Yes	Yes	90	92	86	86	90
484391140132	48	439	114013	2	Yes	Yes	No	88	93	79	85	68
484391003004	48	439	100300	4	Yes	Yes	Yes	97	98	96	95	97
484391141062	48	439	114106	2	Yes	Yes	No	81	90	61	79	61
484391065241	48	439	106524	1	Yes	Yes	No	85	86	79	94	61
484391110252	48	439	111025	2	Yes	Yes	No	88	90	74	85	67
484391036011	48	439	103601	1	Yes	Yes	Yes	96	97	91	94	79
484391036012	48	439	103601	2	Yes	Yes	Yes	93	94	87	90	74
481130096043	48	113	009604	3	Yes	Yes	No	95	97	93	92	77
481130164063	48	113	016406	3	Yes	Yes	Yes	88	88	81	96	65
481130064011	48	113	006401	1	Yes	Yes	Yes	90	90	82	85	68
484391102043	48	439	110204	3	Yes	Yes	No	91	93	88	87	91
484391036022	48	439	103602	2	Yes	Yes	Yes	95	96	90	93	78
484391037012	48	439	103701	2	Yes	Yes	Yes	97	98	92	95	81
481130082002	48	113	008200	2	Yes	Yes	No	92	92	81	89	72
481130183001	48	113	018300	1	Yes	No	Yes	49	50	41	57	37
484391001021	48	439	100102	1	Yes	No	Yes	59	63	61	62	66
484391001023	48	439	100102	3	Yes	Yes	Yes	97	98	96	95	97

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US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
84	81	0	78	83	85	77	72
78	81	34	71	76	76	79	63
86	82	96	89	95	92	86	93
84	87	52	86	91	92	93	93
91	92	98	92	97	97	94	96
92	77	87	90	97	86	96	95
93	99	96	95	98	97	95	98
91	97	97	93	98	95	95	97
92	81	0	82	96	76	81	96
79	96	47	95	73	74	84	93
91	96	97	93	97	95	92	97
73	85	0	79	83	41	86	59
78	82	70	81	84	48	88	59
80	78	30	70	90	65	81	88
73	80	0	75	80	82	78	80
78	82	49	80	88	86	71	82
78	88	0	87	86	48	75	76
63	54	75	78	65	43	0	52
69	66	78	58	66	76	68	17
86	78	82	82	92	82	85	94
25		0				33	
89	89	97	97	98	80	94	68
89	96	90	88	95	84	92	96
92	92	99	89	95	92	90	97
91	97	97	89	90	88	97	97
72	87	33	73	78	70	84	76
81	74	35	78	88	83	90	42
86	94	67	85	89	88	0	45
86	96	50	75	87	86	89	26
91	90	49	82	90	90	87	81
76	86	0	77	87	85	79	82
78	89	78	75	86	73	73	84
66	80	33	66	79	70	74	67
81	83	58	77	90	83	81	79
76	79	34	68	85	74	76	84
92	91	96	87	93	93	96	95
81	93	32	69	80	88	90	85
93	98	69	85	93	97	97	95
90	92	99	96	98	90	97	63
92	70	99	97	99	93	96	70
90	81	98	97	98	90	97	80
87	94	81	79	85	89	91	89
50	45	0	43	67	51	58	60
43	54	25	35	49	45	52	34
71	89	41	71	89	82	85	66
61	69	0	59	59	40	67	80
72	70	43	70	68	50	80	89
79	82	94	80	93	89	86	85
82	83	89	83	95	91	91	79
66	67	36	55	66	64	75	68
71	75	43	64	82	67	81	81
80	84	94	81	94	89	76	72
84	96	0	77	85	91	93	26
85	91	96	84	93	87	84	95
78	73	84	87	93	82	86	56
71	54	0	85	92	72	69	56
91	96	95	95	98	94	98	64
61	42	0	75	84	61	64	39
82	78	35	72	87	81	71	80
80	87	0	73	84	60	84	85
88	62	94	82	86	84	78	86
83	65	94	77	79	73	76	85
77	97	55	83	93	77	89	84
75	72	55	86	88	82	0	81
76	77	92	90	89	60	79	87
81	60	80	78	93	89	75	76
87	94	95	79	88	85	78	88
90	66	97	88	92	89	92	96
65	86	81	77	89	79	91	77
27	34	47	23	57	52	37	39
43	40	63	48	66	58	54	33
89	83	98	90	98	95	94	83

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
484391002021	48	439	100202	1	Yes	Yes	Yes	98	99	97	97	98
484391002023	48	439	100202	3	Yes	Yes	Yes	96	97	95	94	96
484391003001	48	439	100300	1	Yes	Yes	Yes	96	97	94	94	96
484391003002	48	439	100300	2	Yes	Yes	Yes	97	98	96	96	97
484391045042	48	439	104504	2	Yes	Yes	Yes	93	94	88	90	74
481130078091	48	113	007809	1	Yes	Yes	No	93	93	88	89	72
481130136182	48	113	013618	2	Yes	No	Yes	17	17	11	44	23
481210206011	48	121	020601	1	Yes	Yes	Yes	90	95	89	88	71
481210216152	48	121	021615	2	Yes	Yes	No	91	94	86	86	69
481210216161	48	121	021616	1	Yes	Yes	Yes	88	92	84	83	65
480850306051	48	085	030605	1	Yes	Yes	No	92	96	86	90	74
480850306052	48	085	030605	2	Yes	Yes	No	85	91	77	81	63
483499708001	48	349	970800	1	Yes	Yes	Yes	86	76	83	88	71
481130015042	48	113	001504	2	Yes	Yes	Yes	96	96	95	93	78
481130015021	48	113	001502	1	Yes	Yes	Yes	95	95	94	92	77
481130166072	48	113	016607	2	Yes	No	Yes	66	64	59	65	46
481130137183	48	113	013718	3	Yes	Yes	Yes	99	99	98	99	86
481130163021	48	113	016302	1	Yes	Yes	Yes	97	97	88	94	80
481130042022	48	113	004202	2	Yes	No	Yes	72	72	68	69	50
481130093032	48	113	009303	2	Yes	Yes	Yes	96	95	87	94	80
481130154041	48	113	015404	1	Yes	Yes	Yes	93	93	88	98	72
481130069002	48	113	006900	2	Yes	Yes	Yes	93	93	89	89	72
484391012022	48	439	101202	2	Yes	Yes	Yes	94	96	94	92	94
484391014022	48	439	101402	2	Yes	Yes	Yes	97	98	94	95	81
484391014031	48	439	101403	1	Yes	Yes	Yes	96	97	92	94	80
481130087012	48	113	008701	2	Yes	Yes	Yes	97	96	92	95	81
481130177032	48	113	017703	2	Yes	Yes	Yes	92	90	86	89	73
484391061022	48	439	106102	2	Yes	Yes	Yes	94	95	87	92	76
481130098043	48	113	009804	3	Yes	Yes	Yes	99	99	99	98	99
481130069003	48	113	006900	3	Yes	Yes	Yes	98	98	96	96	83
481130060011	48	113	006001	1	Yes	Yes	Yes	97	96	93	95	81
481130188012	48	113	018801	2	Yes	Yes	Yes	93	95	84	90	74
484391059011	48	439	105901	1	Yes	Yes	Yes	97	98	94	96	82
484391131102	48	439	113110	2	Yes	Yes	No	80	81	76	91	56
484391025002	48	439	102500	2	Yes	Yes	Yes	93	95	88	91	75
481130164074	48	113	016407	4	Yes	Yes	Yes	97	97	92	95	80
481130059021	48	113	005902	1	Yes	Yes	Yes	95	95	92	93	77
484391065021	48	439	106502	1	Yes	No	Yes	52	55	45	58	38
484391115431	48	439	111543	1	Yes	No	Yes	82	82	69	77	58
484391115432	48	439	111543	2	Yes	Yes	Yes	96	96	89	94	80
484391136282	48	439	113628	2	Yes	Yes	No	86	88	81	95	86
484391136283	48	439	113628	3	Yes	Yes	No	85	87	80	95	86
484391136302	48	439	113630	2	Yes	Yes	No	81	84	72	92	57
484391217031	48	439	121703	1	Yes	Yes	Yes	99	99	97	97	86
484391217041	48	439	121704	1	Yes	Yes	Yes	95	95	92	92	76
480850317201	48	085	031720	1	Yes	Yes	Yes	98	99	95	96	84
480850317171	48	085	031717	1	Yes	Yes	No	87	90	82	81	63
481130116011	48	113	011601	1	Yes	Yes	Yes	95	93	86	93	78
484391065122	48	439	106512	2	Yes	Yes	No	89	90	80	84	67
484391101021	48	439	110102	1	Yes	No	Yes	87	89	82	82	87
484391101022	48	439	110102	2	Yes	Yes	Yes	87	90	83	83	88
481130143082	48	113	014308	2	Yes	Yes	Yes	90	92	88	85	68
481130143091	48	113	014309	1	Yes	Yes	Yes	96	97	93	93	95
481130143093	48	113	014309	3	Yes	Yes	Yes	97	98	95	95	96
483499702003	48	349	970200	3	Yes	No	Yes	82	67	53	84	66
483499702001	48	349	970200	1	Yes	No	Yes	83	68	54	84	67
484391058002	48	439	105800	2	Yes	Yes	Yes	97	98	94	95	81
484391035003	48	439	103500	3	Yes	Yes	Yes	98	98	95	96	84
484391048041	48	439	104804	1	Yes	No	Yes	84	87	76	80	63
484391048031	48	439	104803	1	Yes	Yes	Yes	96	97	91	94	79
484391045032	48	439	104503	2	Yes	Yes	Yes	98	99	96	97	84
481130068003	48	113	006800	3	Yes	No	Yes	83	83	78	78	59
480850320031	48	085	032003	1	Yes	No	Yes	74	79	66	70	51
480850320032	48	085	032003	2	Yes	Yes	Yes	94	96	88	90	74
480850320033	48	085	032003	3	Yes	No	Yes	82	86	74	76	58
480850320101	48	085	032010	1	Yes	No	Yes	64	69	47	64	44
480850320132	48	085	032013	2	Yes	Yes	Yes	99	99	98	98	88
480850320122	48	085	032012	2	Yes	Yes	Yes	89	93	82	85	67
481130201002	48	113	020100	2	Yes	No	Yes	85	87	83	80	62
481130152051	48	113	015205	1	Yes	Yes	Yes	97	97	94	99	80
481130152052	48	113	015205	2	Yes	Yes	Yes	99	99	98	99	86
481210205062	48	121	020506	2	Yes	Yes	Yes	92	96	78	90	74

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
93	91	99	96	99	97	98	60
90	89	97	93	98	94	95	53
86	79	57	94	98	80	92	78
92	88	97	96	99	94	98	72
87	73	80	82	94	80	84	94
64	94	0	82	77	63	92	82
7	16	0	6	10	8	0	15
39	84	60	38	72	79	77	77
67	87	0	67	88	84	84	48
60	73	0	61	73	69	86	34
56	89	0	38	92	92	89	32
42	61	0	25	85	74	74	26
74	89	89	18	87	69	92	91
77	95	96	92	90	91	96	90
75	94	96	91	91	89	97	85
42	69	21	57	71	58	68	19
90	98	0	90	99	98	95	99
90	90	82	97	94	91	95	87
49	61	77	77	73	38	0	71
77	94	96	96	92	72	76	96
84	92	75	92	94	94	86	89
80	90	67	95	94	81	0	91
85	94	95	86	96	92	93	78
89	91	97	87	92	86	95	88
88	85	97	83	86	77	83	34
81	93	86	98	98	80	87	97
68	91	92	79	83	78	92	19
87	80	74	78	88	91	77	88
94	80	81	98	99	99	99	94
91	96	85	99	99	91	96	97
85	97	86	96	90	72	96	96
93	90	92	69	95	93	85	91
97	98	97	90	98	87	95	97
66	71	0	70	78	79	76	74
83	67	85	93	81	66	86	69
90	91	0	97	96	92	0	94
81	94	98	96	84	70	0	94
36	52	38	29	37	40	48	26
68	77	34	63	66	78	71	51
91	96	0	84	90	88	89	82
74	82	0	67	86	74	83	84
73	88	0	66	85	74	83	83
66	74	36	58	76	63	67	78
94	99	96	94	96	96	97	98
86	92	92	87	88	90	94	93
81	98	0	83	92	93	93	97
55	88	0	56	61	56	82	85
73	90	85	95	86	74	79	96
77	89	43	67	79	72	73	28
69	81	84	70	86	81	64	73
71	72	87	72	89	83	84	73
86	92	62	85	79	85	88	90
89	96	54	89	84	93	96	54
92	97	67	92	87	93	97	56
40	43	30	18	66	49	48	79
64	57	0	16	77	60	80	87
92	98	98	89	98	86	97	96
92	86	99	91	97	93	97	97
74	83	87	75	88	59	81	75
90	74	97	90	96	83	87	92
96	99	99	92	98	90	95	97
65	82	35	87	86	56	74	81
46	59	0	34	69	50	64	61
74	86	59	63	90	79	90	8
54	82	54	44	78	64	70	5
40	17	0	25	67	29	51	61
91	99	97	80	97	81	99	98
67	81	0	53	85	59	83	82
76	85	87	87	88	85	75	87
96	89	97	96	90	92	96	96
98	83	89	98	94	93	98	98
68	57	38	36	60	79	0	67

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481390616002	48	139	061600	2	Yes	Yes	Yes	88	68	77	45	71
481130099002	48	113	009900	2	Yes	No	Yes	67	71	70	82	72
481210215023	48	121	021502	3	Yes	Yes	No	89	92	85	83	66
481130169023	48	113	016902	3	Yes	Yes	Yes	93	89	83	47	75
481210216181	48	121	021618	1	Yes	Yes	No	87	91	85	82	64
481390608031	48	139	060803	1	Yes	No	Yes	81	77	68	78	59
481210207001	48	121	020700	1	Yes	Yes	No	88	94	88	86	69
481390616003	48	139	061600	3	Yes	Yes	Yes	91	73	81	47	75
481390616004	48	139	061600	4	Yes	No	Yes	78	53	65	37	59
481210212021	48	121	021202	1	Yes	Yes	No	89	94	90	87	70
481130146022	48	113	014602	2	Yes	Yes	Yes	93	94	91	89	73
481130107041	48	113	010704	1	Yes	Yes	Yes	94	94	85	91	75
481130144083	48	113	014408	3	Yes	Yes	Yes	87	88	84	96	64
482511303032	48	251	130303	2	Yes	Yes	Yes	91	94	70	47	74
482511311003	48	251	131100	3	Yes	No	Yes	53	63	47	18	42
482511302132	48	251	130213	2	Yes	Yes	Yes	86	91	50	43	67
482511302121	48	251	130212	1	Yes	No	Yes	62	68	24	23	46
482511302122	48	251	130212	2	Yes	Yes	Yes	87	91	48	43	68
481210217451	48	121	021745	1	Yes	No	Yes	75	80	72	70	78
481210216182	48	121	021618	2	Yes	Yes	No	93	96	91	89	73
481210217161	48	121	021716	1	Yes	Yes	No	92	95	90	88	91
482570503002	48	257	050300	2	Yes	No	Yes	76	65	59	36	58
483499704003	48	349	970400	3	Yes	No	Yes	71	48	23	35	22
483499702004	48	349	970200	4	Yes	No	Yes	46	30	21	59	39
483499710001	48	349	971000	1	Yes	No	Yes	81	65	33	42	26
482319617002	48	231	961700	2	Yes	No	Yes	68	58	17	33	55
482319617001	48	231	961700	1	Yes	No	Yes	81	73	26	43	67
480850317202	48	085	031720	2	Yes	Yes	Yes	91	94	83	86	69
482511311002	48	251	131100	2	Yes	Yes	Yes	88	93	81	45	71
482511309001	48	251	130900	1	Yes	Yes	Yes	93	96	85	49	77
481130166263	48	113	016626	3	Yes	Yes	Yes	90	86	71	44	69
481130166191	48	113	016619	1	Yes	No	Yes	83	79	66	78	60
482511311001	48	251	131100	1	Yes	No	Yes	79	87	72	39	61
482511302131	48	251	130213	1	Yes	Yes	Yes	89	93	55	45	71
481130165111	48	113	016511	1	Yes	No	Yes	77	74	61	73	54
481130169031	48	113	016903	1	Yes	No	Yes	81	69	59	37	59
481130177043	48	113	017704	3	Yes	Yes	Yes	90	87	80	86	69
481130087031	48	113	008703	1	Yes	Yes	Yes	97	97	93	96	82
481130127013	48	113	012701	3	Yes	Yes	Yes	92	92	86	88	72
481130013022	48	113	001302	2	Yes	No	Yes	60	60	60	62	42
481130146021	48	113	014602	1	Yes	Yes	Yes	96	97	95	93	79
481130160021	48	113	016002	1	Yes	Yes	Yes	99	99	96	99	86
481130085002	48	113	008500	2	Yes	Yes	Yes	94	93	83	91	75
481130166192	48	113	016619	2	Yes	No	Yes	84	80	67	79	61
481130181053	48	113	018105	3	Yes	Yes	No	93	94	83	90	74
481130182034	48	113	018203	4	Yes	Yes	No	92	92	79	88	72
480850317203	48	085	031720	3	Yes	Yes	Yes	95	97	89	91	76
480850308011	48	085	030801	1	Yes	Yes	No	85	90	78	81	63
480850320133	48	085	032013	3	Yes	No	Yes	77	83	69	72	54
481130004011	48	113	000401	1	Yes	Yes	Yes	99	99	99	97	85
481130004012	48	113	000401	2	Yes	Yes	Yes	90	91	91	85	68
484250002001	48	425	000200	1	Yes	No	Yes	73	85	39	41	25
481130078272	48	113	007827	2	Yes	Yes	Yes	91	92	86	86	69
481130078213	48	113	007821	3	Yes	Yes	Yes	90	91	88	85	68
481130004051	48	113	000405	1	Yes	No	Yes	75	76	77	71	52
481130190183	48	113	019018	3	Yes	Yes	Yes	92	93	86	87	71
481130185062	48	113	018506	2	Yes	Yes	Yes	93	94	90	89	73
481130185051	48	113	018505	1	Yes	Yes	Yes	97	98	96	95	81
481130190351	48	113	019035	1	Yes	Yes	Yes	96	97	95	94	79
481130105002	48	113	010500	2	Yes	Yes	Yes	97	97	92	94	80
481130203001	48	113	020300	1	Yes	No	Yes	48	46	47	57	36
481130203002	48	113	020300	2	Yes	Yes	Yes	96	96	94	94	79
481130092023	48	113	009202	3	Yes	Yes	Yes	96	94	89	93	79
481130117023	48	113	011702	3	Yes	Yes	Yes	90	85	82	87	70
482211602042	48	221	160204	2	Yes	No	Yes	70	78	25	33	55
484391061021	48	439	106102	1	Yes	Yes	Yes	92	93	83	88	72
484391061011	48	439	106101	1	Yes	Yes	Yes	93	94	85	90	74
484391115143	48	439	111514	3	Yes	Yes	No	93	92	86	89	72
484391038002	48	439	103800	2	Yes	Yes	Yes	94	95	91	91	76
484391045021	48	439	104502	1	Yes	Yes	Yes	97	98	95	95	81
484391038001	48	439	103800	1	Yes	Yes	Yes	97	98	96	96	82
484391037021	48	439	103702	1	Yes	Yes	Yes	96	97	91	94	79

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
78	81	87	47	93	82	92	56
51	68	0	53	59	58	44	72
89	50	0	50	90	79	68	89
66	76	85	91	89	90	80	94
77	86	50	52	86	86	86	88
78	56	52	45	69	58	53	86
36	81	60	39	89	87	74	13
88	84	40	54	93	83	85	58
63	74	53	32	85	75	78	45
41	77	67	38	77	82	91	87
91	44	84	91	91	91	88	92
88	93	37	94	96	88	87	91
80	30	40	81	86	76	83	80
82	81	0	48	75	62	0	78
47	26	22	14	59	46	50	20
77	27	0	52	65	40	48	61
48	26	25	34	29	17	30	34
73	10	37	58	71	45	0	71
56	77	35	36	72	71	74	75
92	91	88	60	94	92	92	94
83	92	73	58	91	87	89	92
46	41	52	86	80	69	0	79
14	3	61	13	36	17	39	51
20	42	26	6	57	36	33	52
21	45	68	7	25	20	0	75
48	19	29	54	22	12	45	27
73	17	30	61	37	19	0	44
62	86	0	65	79	80	83	90
79	66	0	39	87	61	86	52
90	84	89	50	92	83	93	55
75	69	65	73	69	42	83	53
60	61	0	76	65	74	66	52
73	71	82	29	81	67	76	42
83	48	36	53	84	52	52	68
58	48	28	66	69	36	65	69
44	73	50	70	72	77	47	77
65	65	58	75	83	75	88	17
82	65	99	98	97	80	0	97
67	78	95	76	91	84	86	73
31	53	57	54	54	50	60	43
94	91	90	94	95	95	90	95
96	98	97	99	96	98	99	95
71	88	97	88	93	86	91	63
62	72	0	77	67	78	80	44
79	86	59	66	95	86	86	91
75	64	52	65	94	85	81	94
70	57	0	73	83	81	89	92
48	88	0	31	74	75	67	77
50	75	0	35	69	38	71	70
88	83	80	99	98	99	96	96
68	91	86	90	85	88	85	85
28	72	81	24	44	6	81	35
57	86	0	76	90	86	0	78
56	53	49	77	74	64	73	78
47	77	33	76	67	73	59	65
63	87	61	71	93	92	87	86
65	87	47	75	95	94	92	87
76	97	0	84	98	98	97	93
72	95	58	81	97	97	83	93
92	90	88	98	98	95	94	97
22		0				51	
78	95	87	93	96	87	96	96
74	85	92	92	81	79	90	80
67	90	84	84	72	52	79	67
39	15	24	33	73	21	40	81
82	77	45	72	83	91	81	85
84	85	69	77	84	91	90	85
81	85	0	82	79	85	85	63
85	81	90	85	93	87	78	93
91	98	98	90	97	88	93	96
91	91	95	90	95	91	86	98
88	80	95	84	86	82	92	94

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
484391236002	48	439	123600	2	Yes	Yes	Yes	88	90	89	84	67
484391046042	48	439	104604	2	Yes	Yes	Yes	96	96	89	93	78
484391059021	48	439	105902	1	Yes	Yes	Yes	99	99	96	97	86
484391219052	48	439	121905	2	Yes	Yes	Yes	98	98	96	99	83
481130013011	48	113	001301	1	Yes	Yes	No	94	94	92	91	75
481130013021	48	113	001302	1	Yes	Yes	Yes	90	90	88	86	69
481130015022	48	113	001502	2	Yes	Yes	Yes	99	99	99	98	88
484391047013	48	439	104701	3	Yes	Yes	Yes	92	94	87	89	73
484391062023	48	439	106202	3	Yes	Yes	Yes	97	97	92	95	81
484391065034	48	439	106503	4	Yes	No	Yes	79	81	69	74	56
484391142041	48	439	114204	1	Yes	Yes	No	82	90	58	80	62
481130087051	48	113	008705	1	Yes	Yes	Yes	96	95	90	94	79
481210216192	48	121	021619	2	Yes	Yes	Yes	93	96	92	89	73
484391134031	48	439	113403	1	Yes	Yes	No	86	88	82	95	62
484391002022	48	439	100202	2	Yes	Yes	Yes	99	99	98	98	99
484391017001	48	439	101700	1	Yes	Yes	Yes	97	98	98	95	97
484391013022	48	439	101302	2	Yes	Yes	Yes	97	97	91	94	80
484391026022	48	439	102602	2	Yes	Yes	No	91	93	91	88	71
482511303043	48	251	130304	3	Yes	Yes	No	92	95	77	48	75
481130153031	48	113	015303	1	Yes	Yes	Yes	97	98	93	99	81
481439503011	48	143	950301	1	Yes	No	Yes	58	69	9	38	24
481439503023	48	143	950302	3	Yes	No	Yes	51	62	7	33	21
481439503012	48	143	950301	2	Yes	No	Yes	56	67	8	37	23
481439503021	48	143	950302	1	Yes	Yes	Yes	76	85	14	48	29
481439503022	48	143	950302	2	Yes	Yes	Yes	72	82	13	46	28
481439505021	48	143	950502	1	Yes	Yes	No	77	86	43	47	29
482211602041	48	221	160204	1	Yes	No	Yes	59	69	19	25	47
482211603021	48	221	160302	1	Yes	No	Yes	56	66	11	30	18
482211603022	48	221	160302	2	Yes	No	Yes	65	75	15	37	23
480850316303	48	085	031630	3	Yes	Yes	No	86	90	73	80	62
481439506002	48	143	950600	2	Yes	No	Yes	52	65	26	32	20
481439507001	48	143	950700	1	Yes	No	Yes	58	72	8	36	22
483671401011	48	367	140101	1	Yes	Yes	No	82	90	88	43	68
484391131041	48	439	113104	1	Yes	Yes	No	84	85	78	94	60
484391132141	48	439	113214	1	Yes	Yes	No	90	93	80	86	69
484391001011	48	439	100101	1	Yes	Yes	Yes	97	98	96	95	97
484391103021	48	439	110302	1	Yes	Yes	Yes	97	98	95	95	96
484391103022	48	439	110302	2	Yes	Yes	Yes	93	95	90	90	93
484391131152	48	439	113115	2	Yes	Yes	No	96	96	94	99	95
480850316241	48	085	031624	1	Yes	Yes	Yes	91	94	86	86	69
481130181282	48	113	018128	2	Yes	Yes	No	93	92	84	90	74
481130181301	48	113	018130	1	Yes	No	Yes	68	66	66	67	47
481130181302	48	113	018130	2	Yes	Yes	Yes	90	89	87	86	70
480850316271	48	085	031627	1	Yes	Yes	No	90	93	84	84	67
484391132061	48	439	113206	1	Yes	Yes	No	93	94	87	89	73
484391132064	48	439	113206	4	Yes	Yes	No	93	95	88	90	74
481130164071	48	113	016407	1	Yes	Yes	Yes	90	90	82	85	68
481130164061	48	113	016406	1	Yes	Yes	Yes	85	85	78	95	62
481130164072	48	113	016407	2	Yes	No	Yes	85	86	76	80	62
481130164073	48	113	016407	3	Yes	Yes	Yes	98	98	93	96	82
484391012021	48	439	101202	1	Yes	Yes	Yes	96	97	96	94	96
484391013021	48	439	101302	1	Yes	Yes	Yes	91	91	82	86	69
484391014014	48	439	101401	4	Yes	Yes	No	95	96	89	92	76
484391228011	48	439	122801	1	Yes	Yes	Yes	98	98	96	96	83
481130160022	48	113	016002	2	Yes	Yes	Yes	95	95	88	98	76
481130162011	48	113	016201	1	Yes	No	Yes	75	76	64	88	52
481130162012	48	113	016201	2	Yes	Yes	Yes	94	94	86	98	75
484391014021	48	439	101402	1	Yes	Yes	Yes	90	92	84	86	69
484391014033	48	439	101403	3	Yes	Yes	Yes	98	99	96	97	85
484391015002	48	439	101500	2	Yes	Yes	Yes	94	95	90	90	75
484391015003	48	439	101500	3	Yes	Yes	Yes	96	97	94	94	80
484391132161	48	439	113216	1	Yes	Yes	No	89	92	80	84	67
484391132173	48	439	113217	3	Yes	Yes	No	87	90	80	82	65
484391221002	48	439	122100	2	Yes	Yes	No	89	89	85	96	66
484391221003	48	439	122100	3	Yes	Yes	No	96	96	93	99	78
484391221005	48	439	122100	5	Yes	Yes	No	96	96	93	99	78
484391221004	48	439	122100	4	Yes	Yes	No	97	97	95	99	81
484391222001	48	439	122200	1	Yes	Yes	Yes	99	99	98	97	87
484391222002	48	439	122200	2	Yes	Yes	Yes	95	96	92	93	77
484391223001	48	439	122300	1	Yes	Yes	Yes	94	94	90	98	74
484391223002	48	439	122300	2	Yes	Yes	Yes	90	91	86	97	68
484391026012	48	439	102601	2	Yes	Yes	No	91	93	86	88	71

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US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
76	87	70	80	91	83	87	57
87	92	90	85	92	85	0	95
96	96	71	92	99	94	95	99
91	98	82	94	98	97	96	97
71	91	93	88	89	82	81	78
63	89	81	84	84	79	88	72
88	99	98	98	98	97	99	92
86	88	91	83	93	78	89	90
90	87	95	84	85	89	0	92
63	41	55	53	66	59	58	30
38	51	65	88	83	33	84	61
80	87	95	98	91	86	87	95
81	89	0	63	91	91	91	93
71	86	56	61	68	73	82	19
96	99	99	97	99	99	99	90
90	98	98	91	98	97	92	89
90	96	98	81	91	86	91	90
79	92	93	89	84	65	78	71
86	75	63	50	88	80	77	70
94	92	73	96	98	98	90	95
2	21	54	6	26	0	37	19
2	10	36	5	19	0	0	20
2	49	69	5	18	0	66	23
3	71	94	9	35	0	69	37
2	60	91	8	27	0	80	33
7	87	89	16	90	2	92	40
35	45	38	30	55	20	42	68
43	5	32	33	10	7	36	76
50	22	52	37	20	7	46	82
55	70	0	43	74	37	0	81
4	63	51	8	73	0	64	42
4	8	39	11	16	0	0	61
72	75	31	88	68	76	60	65
71	82	0	73	85	82	82	79
65	82	0	69	88	77	87	13
90	87	98	91	98	96	96	81
89	93	97	89	98	95	95	88
82	91	92	82	94	90	89	83
92	89	62	91	96	97	83	94
64	91	40	61	78	76	86	92
72	89	53	72	82	63	91	83
36	64	32	43	61	34	67	48
63	93	0	71	86	59	90	72
62	81	71	55	78	72	82	87
79	88	40	76	90	87	87	68
80	82	89	79	94	89	90	80
79	86	50	90	88	80	79	86
71	76	59	84	86	80	77	79
72	82	0	85	84	78	77	76
92	93	68	97	98	95	90	95
89	91	98	89	98	96	88	91
79	90	84	68	83	76	86	64
85	86	94	82	89	84	89	84
92	98	76	92	91	94	97	98
88	76	84	96	91	92	86	91
61	57	32	78	75	70	57	66
85	85	89	94	94	93	83	93
77	79	90	74	80	69	85	73
93	92	96	89	93	82	94	89
83	93	95	83	92	86	80	93
88	86	97	86	94	88	90	92
65	70	44	65	83	71	86	14
71	88	44	65	84	74	74	15
76	82	87	80	87	85	82	89
87	73	96	90	95	94	94	95
87	87	95	90	96	93	89	94
89	95	96	92	96	94	91	97
95	98	95	96	94	98	98	98
87	95	95	87	88	90	94	93
84	86	50	84	84	90	92	92
78	75	71	80	79	84	83	89
79	93	89	90	76	62	87	64

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
484391134042	48	439	113404	2	Yes	Yes	No	90	92	85	97	68
484391134043	48	439	113404	3	Yes	Yes	No	80	83	75	92	56
484391035002	48	439	103500	2	Yes	Yes	Yes	94	95	89	91	76
484391235003	48	439	123500	3	Yes	Yes	Yes	97	98	98	95	97
484391135091	48	439	113509	1	Yes	Yes	No	83	85	78	93	84
484391135093	48	439	113509	3	Yes	Yes	No	94	95	91	98	94
484391045031	48	439	104503	1	Yes	Yes	Yes	98	99	96	97	84
484391045041	48	439	104504	1	Yes	Yes	Yes	99	99	97	97	86
484391045051	48	439	104505	1	Yes	Yes	Yes	96	97	94	94	79
484391135111	48	439	113511	1	Yes	Yes	No	87	88	82	95	87
484391135132	48	439	113513	2	Yes	Yes	No	93	94	91	98	93
484391135141	48	439	113514	1	Yes	Yes	No	87	88	82	95	87
484391135143	48	439	113514	3	Yes	Yes	No	88	89	84	96	88
481130153052	48	113	015305	2	Yes	Yes	Yes	94	95	89	98	75
481130130103	48	113	013010	3	Yes	No	Yes	81	82	78	76	58
481130136153	48	113	013615	3	Yes	Yes	Yes	98	99	98	96	97
484391046051	48	439	104605	1	Yes	Yes	Yes	89	91	80	85	68
484391048033	48	439	104803	3	Yes	Yes	Yes	95	97	91	93	79
484391048042	48	439	104804	2	Yes	Yes	Yes	96	97	91	94	79
484391136191	48	439	113619	1	Yes	Yes	No	93	94	86	98	73
484391142031	48	439	114203	1	Yes	Yes	Yes	86	94	59	85	68
484391052031	48	439	105203	1	Yes	No	Yes	84	89	76	82	64
484391052032	48	439	105203	2	Yes	No	Yes	83	87	74	80	62
484391052041	48	439	105204	1	Yes	Yes	Yes	89	92	79	87	70
484391052042	48	439	105204	2	Yes	Yes	Yes	89	92	79	86	70
481130137253	48	113	013725	3	Yes	No	Yes	76	81	68	71	52
481130078211	48	113	007821	1	Yes	Yes	Yes	97	98	96	95	81
481130143081	48	113	014308	1	Yes	Yes	Yes	92	93	90	88	71
481130190203	48	113	019020	3	Yes	Yes	No	91	93	79	86	69
481130015031	48	113	001503	1	Yes	Yes	Yes	96	96	95	94	79
484391062011	48	439	106201	1	Yes	Yes	Yes	96	97	90	94	79
484391055051	48	439	105505	1	Yes	Yes	Yes	95	97	89	93	78
484391055052	48	439	105505	2	Yes	No	Yes	70	75	61	69	50
481130190191	48	113	019019	1	Yes	Yes	Yes	98	98	96	96	83
484391136193	48	439	113619	3	Yes	Yes	No	85	87	76	94	61
484391036013	48	439	103601	3	Yes	Yes	Yes	99	99	98	99	91
484391055121	48	439	105512	1	Yes	Yes	No	94	96	85	92	77
484391056002	48	439	105600	2	Yes	Yes	No	89	91	81	85	68
484391014013	48	439	101401	3	Yes	Yes	No	90	91	82	85	68
484391059022	48	439	105902	2	Yes	Yes	Yes	97	98	93	96	83
482570503001	48	257	050300	1	Yes	No	Yes	73	61	55	33	55
482570503003	48	257	050300	3	Yes	Yes	Yes	82	73	65	41	65
481130069001	48	113	006900	1	Yes	Yes	Yes	87	88	83	82	65
481130086042	48	113	008604	2	Yes	Yes	Yes	92	90	83	88	72
481130087013	48	113	008701	3	Yes	Yes	Yes	95	93	88	92	76
481130106012	48	113	010601	2	Yes	Yes	Yes	95	96	89	92	77
481130106022	48	113	010602	2	Yes	Yes	Yes	93	94	88	89	73
481130111011	48	113	011101	1	Yes	No	Yes	83	81	77	78	60
481130037002	48	113	003700	2	Yes	Yes	Yes	92	91	89	89	72
481130071022	48	113	007102	2	Yes	Yes	No	91	92	88	87	70
481130107012	48	113	010701	2	Yes	Yes	Yes	99	99	97	98	87
481130078151	48	113	007815	1	Yes	Yes	Yes	99	99	98	97	86
481130120001	48	113	012000	1	Yes	Yes	Yes	98	97	93	97	85
481130042021	48	113	004202	1	Yes	Yes	Yes	91	91	88	87	70
481130108042	48	113	010804	2	Yes	Yes	Yes	98	98	95	97	85
481130143063	48	113	014306	3	Yes	Yes	Yes	81	84	79	92	57
481130045002	48	113	004500	2	Yes	No	Yes	81	81	74	76	57
481130045003	48	113	004500	3	Yes	Yes	Yes	98	98	95	96	84
481130047001	48	113	004700	1	Yes	Yes	Yes	97	97	96	95	81
481130048001	48	113	004800	1	Yes	Yes	Yes	98	98	98	96	83
481130087041	48	113	008704	1	Yes	Yes	Yes	95	93	89	92	76
481130088011	48	113	008801	1	Yes	Yes	Yes	92	91	88	89	72
481130088023	48	113	008802	3	Yes	Yes	Yes	98	97	95	97	84
481130109041	48	113	010904	1	Yes	Yes	Yes	98	98	95	96	84
481130109042	48	113	010904	2	Yes	Yes	Yes	90	90	83	86	69
481130122071	48	113	012207	1	Yes	No	Yes	80	78	71	76	57
481130122072	48	113	012207	2	Yes	No	Yes	80	78	71	76	57
481130130102	48	113	013010	2	Yes	Yes	Yes	88	88	85	83	65
481130130072	48	113	013007	2	Yes	No	Yes	81	83	78	76	58
481130048002	48	113	004800	2	Yes	Yes	Yes	97	97	97	95	81
481130122073	48	113	012207	3	Yes	No	Yes	86	84	78	82	64
481130122101	48	113	012210	1	Yes	Yes	Yes	94	93	87	91	76

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US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
81	74	73	70	80	80	0	75
66	71	61	55	62	68	67	14
85	87	96	83	91	85	89	94
90	98	96	91	97	94	93	95
66	69	83	67	80	71	78	74
86	95	78	83	94	88	94	87
95	98	98	93	98	90	93	97
97	99	99	93	99	92	97	98
89	97	98	88	94	88	0	95
83	80	68	70	88	76	77	86
86	73	87	84	94	89	80	85
75	87	78	72	87	78	86	73
77	78	70	75	88	79	86	76
92	84	75	93	91	84	94	88
48	81	50	59	85	81	78	56
80	96	52	88	96	87	98	91
78	70	84	74	86	76	84	87
89	94	98	90	96	80	92	70
90	91	96	90	97	84	95	92
86	79	50	79	93	85	86	93
41	31	0	93	82	43	65	70
67	60	86	86	69	56	68	31
64	75	66	84	65	54	72	31
72	90	37	91	68	64	82	35
71	89	57	91	66	65	0	80
46	67	0	50	71	72	70	74
73	75	0	89	88	79	81	91
88	81	35	86	81	87	86	91
70	89	0	64	92	89	89	79
78	85	93	93	90	91	94	91
88	87	93	83	83	87	92	93
88	97	64	89	94	66	93	67
54	73	0	61	69	33	64	35
78	95	0	85	99	98	95	95
74	61	0	66	85	76	76	85
97	96	99	94	96	95	0	76
87	93	58	84	89	71	90	91
78	87	91	80	90	60	74	54
76	92	75	73	81	78	0	75
95	89	89	89	98	87	83	98
58	45	43	83	78	68	48	76
51	78	74	91	86	77	84	83
72	86	76	91	90	66	80	86
69	76	66	94	92	63	90	92
75	93	93	97	95	82	82	95
89	80	87	97	97	94	78	94
86	91	85	95	95	91	92	91
62	68	52	81	83	70	76	28
69	91	92	90	93	75	75	92
69	85	89	88	90	86	92	82
98	99	99	99	99	98	97	99
80	97	73	93	92	89	98	95
82	89	65	95	94	93	93	83
75	76	88	93	92	63	79	90
91	97	99	98	99	82	97	97
72	81	48	74	69	69	74	78
63	78	85	84	84	51	75	78
91	97	98	99	99	87	97	97
85	94	97	98	96	69	84	97
86	99	94	98	95	74	97	98
78	92	94	97	88	79	92	94
71	88	92	94	92	61	90	92
85	94	97	99	98	80	98	98
90	84	94	96	99	92	95	53
73	93	0	83	92	83	91	38
48	81	0	69	79	68	72	40
48	62	0	71	79	69	0	40
57	87	58	68	90	88	78	66
47	72	45	60	84	82	72	58
83	98	90	97	95	74	97	97
56	77	0	76	86	77	79	52
71	94	74	84	89	89	93	77

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130122102	48	113	012210	2	Yes	No	Yes	70	68	60	68	49
481130143064	48	113	014306	4	Yes	Yes	Yes	85	87	83	95	62
481130171022	48	113	017102	2	Yes	No	Yes	89	83	69	45	69
481130167042	48	113	016704	2	Yes	No	Yes	75	68	53	31	53
481130178063	48	113	017806	3	Yes	No	Yes	88	86	82	83	66
481130190162	48	113	019016	2	Yes	Yes	Yes	91	93	88	87	70
481130078231	48	113	007823	1	Yes	No	Yes	85	87	81	79	61
481130091011	48	113	009101	1	Yes	Yes	Yes	94	92	81	91	75
481130015032	48	113	001503	2	Yes	Yes	Yes	93	92	91	89	72
481130146023	48	113	014602	3	Yes	Yes	Yes	98	98	97	96	83
481130111031	48	113	011103	1	Yes	Yes	Yes	95	94	92	93	77
481130156002	48	113	015600	2	Yes	Yes	Yes	96	96	93	99	78
481130047002	48	113	004700	2	Yes	Yes	Yes	97	97	97	96	82
481130091012	48	113	009101	2	Yes	No	Yes	86	83	70	81	63
481130091031	48	113	009103	1	Yes	Yes	Yes	93	91	81	90	74
481130091032	48	113	009103	2	Yes	Yes	Yes	98	97	91	97	84
481130091042	48	113	009104	2	Yes	Yes	Yes	91	89	77	87	71
481130111012	48	113	011101	2	Yes	No	Yes	56	53	52	60	40
481130111013	48	113	011101	3	Yes	No	Yes	82	79	75	77	58
481130111032	48	113	011103	2	Yes	Yes	Yes	95	94	92	93	77
481130111042	48	113	011104	2	Yes	Yes	Yes	95	93	91	92	76
481130111051	48	113	011105	1	Yes	Yes	Yes	90	88	87	86	69
481130122112	48	113	012211	2	Yes	No	Yes	83	81	75	78	60
481130122113	48	113	012211	3	Yes	Yes	Yes	95	94	89	92	76
481130123011	48	113	012301	1	Yes	No	Yes	84	82	71	79	61
481130088022	48	113	008802	2	Yes	Yes	Yes	97	96	94	95	82
481130182032	48	113	018203	2	Yes	Yes	No	91	91	78	87	70
481130117011	48	113	011701	1	Yes	Yes	Yes	95	91	87	92	77
481130091052	48	113	009105	2	Yes	Yes	Yes	93	91	84	90	74
481130092021	48	113	009202	1	Yes	Yes	Yes	98	97	93	97	84
481130111052	48	113	011105	2	Yes	Yes	Yes	95	93	92	92	77
481130113002	48	113	011300	2	Yes	No	Yes	85	83	81	81	63
481130113003	48	113	011300	3	Yes	Yes	Yes	91	88	87	87	70
481130144062	48	113	014406	2	Yes	Yes	Yes	95	96	93	98	76
481130145011	48	113	014501	1	Yes	Yes	Yes	81	83	79	92	57
481130165161	48	113	016516	1	Yes	Yes	Yes	97	96	93	95	80
481130078253	48	113	007825	3	Yes	Yes	No	91	93	88	87	70
481130078271	48	113	007827	1	Yes	Yes	Yes	90	91	85	85	68
481130093012	48	113	009301	2	Yes	Yes	Yes	95	93	86	92	77
481130114012	48	113	011401	2	Yes	Yes	Yes	96	94	92	94	79
481130114013	48	113	011401	3	Yes	Yes	Yes	93	91	88	90	74
481130115002	48	113	011500	2	Yes	Yes	Yes	96	95	88	93	79
481130115001	48	113	011500	1	Yes	Yes	Yes	99	99	98	99	91
481130123012	48	113	012301	2	Yes	No	Yes	87	86	76	83	65
481130123013	48	113	012301	3	Yes	Yes	Yes	96	95	88	94	79
481130123021	48	113	012302	1	Yes	Yes	Yes	94	92	87	91	75
481130123022	48	113	012302	2	Yes	Yes	Yes	97	97	93	96	82
481130136101	48	113	013610	1	Yes	Yes	No	94	95	93	90	93
481130152021	48	113	015202	1	Yes	Yes	Yes	95	96	93	98	76
481130078153	48	113	007815	3	Yes	Yes	Yes	95	96	93	92	76
481130078152	48	113	007815	2	Yes	Yes	Yes	99	99	99	98	90
481130136151	48	113	013615	1	Yes	Yes	Yes	88	91	87	82	88
481130137262	48	113	013726	2	Yes	Yes	No	95	96	90	91	75
481130152061	48	113	015206	1	Yes	Yes	No	98	98	94	99	83
481130152062	48	113	015206	2	Yes	Yes	No	87	88	78	95	63
481130050002	48	113	005000	2	Yes	Yes	Yes	98	97	96	96	82
481130093013	48	113	009301	3	Yes	Yes	Yes	96	94	88	94	79
481130093041	48	113	009304	1	Yes	Yes	Yes	99	98	94	98	87
481130093042	48	113	009304	2	Yes	Yes	Yes	99	98	94	97	87
481130093043	48	113	009304	3	Yes	Yes	Yes	96	94	88	94	80
481130137171	48	113	013717	1	Yes	Yes	Yes	97	98	96	95	80
481130137182	48	113	013718	2	Yes	Yes	Yes	94	96	91	98	74
481130155002	48	113	015500	2	Yes	Yes	Yes	90	91	85	97	68
484391044003	48	439	104400	3	Yes	No	Yes	87	89	83	83	65
481130156001	48	113	015600	1	Yes	Yes	Yes	99	99	98	99	86
481130156003	48	113	015600	3	Yes	Yes	Yes	92	92	88	98	71
481130157001	48	113	015700	1	Yes	Yes	Yes	97	97	93	94	80
481130160013	48	113	016001	3	Yes	Yes	Yes	97	97	92	99	80
481130161001	48	113	016100	1	Yes	Yes	Yes	97	97	93	99	81
481130190282	48	113	019028	2	Yes	Yes	No	88	91	77	83	66
481130051001	48	113	005100	1	Yes	Yes	Yes	92	92	86	88	72
481130051002	48	113	005100	2	Yes	Yes	Yes	96	96	92	94	79

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
38	53	21	55	65	59	57	47
78	86	44	79	72	73	76	83
60	65	66	85	83	65	78	81
47	59	0	75	73	69	67	21
58	83	67	73	83	77	77	46
61	90	0	73	93	90	82	89
49	86	0	70	81	75	78	75
68	79	88	89	89	83	91	59
71	75	73	88	84	88	93	85
97	92	92	97	97	97	96	98
81	96	94	95	88	84	94	43
93	93	96	97	84	91	96	93
86	93	98	98	97	71	98	97
55	63	89	80	78	70	65	55
69	86	84	91	82	71	85	77
82	97	94	97	92	81	98	88
62	84	93	86	80	76	78	54
34	44	19	55	57	48	48	15
59	61	50	79	74	74	79	28
81	81	93	95	91	86	89	43
80	84	96	94	88	88	90	44
72	90	85	90	83	83	82	36
51	73	0	70	79	73	82	42
72	92	0	86	93	87	79	63
54	68	82	68	76	72	75	39
84	88	98	98	97	78	84	97
72	53	42	64	93	84	85	92
72	78	94	90	73	64	78	70
68	85	95	91	79	71	92	71
81	95	98	96	87	84	97	79
80	97	68	94	90	90	76	46
61	65	57	88	79	76	62	82
70	79	80	93	81	76	77	89
92	83	84	92	89	82	94	94
75	82	78	76	65	71	70	81
86	96	73	92	98	90	96	52
60	91	0	74	92	89	77	75
57	85	0	73	91	87	69	73
71	78	96	93	81	70	89	61
80	81	0	98	96	92	87	95
72	83	86	96	91	86	78	93
76	87	60	96	97	69	85	96
91	92	97	99	99	89	99	98
59	65	89	73	80	81	80	44
75	96	71	87	92	94	95	78
71	79	37	83	90	88	93	58
81	80	86	90	95	93	96	68
64	92	44	76	94	91	93	89
93	81	74	92	85	88	92	95
66	90	52	84	86	82	81	89
87	94	85	96	96	94	99	97
57	87	0	69	83	75	86	76
79	90	73	80	93	87	85	94
98	79	76	98	91	91	90	97
87	76	76	86	77	75	79	86
87	98	99	98	96	69	96	97
75	94	96	95	87	72	95	88
85	99	97	98	93	83	99	98
85	98	89	98	94	84	99	99
76	93	96	96	90	75	91	96
84	62	88	83	98	96	92	96
77	91	82	77	96	91	81	94
83	87	87	92	87	90	87	84
75	78	89	78	87	68	76	53
97	97	99	99	92	95	98	97
90	89	93	94	80	82	86	89
98	88	96	98	91	91	82	94
91	78	98	97	96	96	92	91
91	89	90	97	98	98	89	93
62	84	43	59	79	81	75	73
76	92	95	93	90	57	0	91
85	80	97	96	95	65	0	95

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130052001	48	113	005200	1	Yes	No	Yes	77	77	71	73	54
481130052002	48	113	005200	2	Yes	Yes	Yes	96	96	92	93	78
481130053001	48	113	005300	1	Yes	Yes	Yes	99	99	97	98	87
481130126012	48	113	012601	2	Yes	No	Yes	72	72	67	69	50
481130137252	48	113	013725	2	Yes	No	Yes	80	85	73	74	56
481130165112	48	113	016511	2	Yes	No	Yes	80	77	64	75	56
481130015033	48	113	001503	3	Yes	No	Yes	86	86	84	81	63
481130055001	48	113	005500	1	Yes	Yes	Yes	93	92	89	90	74
481130055002	48	113	005500	2	Yes	Yes	Yes	98	98	97	97	85
481130056001	48	113	005600	1	Yes	Yes	Yes	96	96	94	94	80
481130057003	48	113	005700	3	Yes	Yes	Yes	98	97	95	96	83
481130096102	48	113	009610	2	Yes	Yes	Yes	99	99	99	98	99
481130096112	48	113	009611	2	Yes	Yes	No	89	91	88	84	89
481130097011	48	113	009701	1	Yes	No	Yes	76	80	76	71	79
481130097012	48	113	009701	2	Yes	Yes	Yes	98	99	98	97	98
481130097013	48	113	009701	3	Yes	No	Yes	77	81	77	72	79
481130126041	48	113	012604	1	Yes	Yes	Yes	97	96	95	95	80
481130126031	48	113	012603	1	Yes	Yes	No	90	90	84	86	69
481130127011	48	113	012701	1	Yes	Yes	Yes	96	96	92	94	79
481130127021	48	113	012702	1	Yes	Yes	Yes	89	89	77	85	68
481130127022	48	113	012702	2	Yes	Yes	Yes	95	94	85	92	76
481130024001	48	113	002400	1	Yes	No	Yes	85	84	82	80	62
481130024003	48	113	002400	3	Yes	Yes	Yes	96	96	95	94	79
481130025002	48	113	002500	2	Yes	Yes	Yes	98	97	96	96	83
481130025003	48	113	002500	3	Yes	Yes	Yes	96	95	93	93	78
481130025004	48	113	002500	4	Yes	Yes	Yes	94	93	91	91	75
481130057001	48	113	005700	1	Yes	Yes	Yes	91	89	85	86	70
481130059011	48	113	005901	1	Yes	Yes	Yes	94	93	90	91	75
481130059012	48	113	005901	2	Yes	Yes	Yes	93	92	89	90	74
481130059013	48	113	005901	3	Yes	Yes	Yes	97	96	94	95	81
481130059022	48	113	005902	2	Yes	No	Yes	88	86	82	83	65
481130060012	48	113	006001	2	Yes	Yes	Yes	97	97	94	96	82
481130060022	48	113	006002	2	Yes	Yes	Yes	91	90	86	87	70
481130139011	48	113	013901	1	Yes	Yes	Yes	93	95	91	89	73
481130062002	48	113	006200	2	Yes	Yes	Yes	91	90	85	87	70
481130062003	48	113	006200	3	Yes	Yes	Yes	90	90	84	86	69
481130063012	48	113	006301	2	Yes	Yes	Yes	90	90	83	86	69
481130063013	48	113	006301	3	Yes	Yes	Yes	96	96	92	94	80
481130085001	48	113	008500	1	Yes	Yes	Yes	91	89	79	87	71
481130098021	48	113	009802	1	Yes	Yes	Yes	95	96	91	92	95
481130098023	48	113	009802	3	Yes	Yes	Yes	98	99	96	96	98
481130098031	48	113	009803	1	Yes	Yes	No	92	93	91	88	91
481130098042	48	113	009804	2	Yes	Yes	Yes	99	99	99	98	99
481130101012	48	113	010101	2	Yes	Yes	Yes	96	96	96	94	79
481130101021	48	113	010102	1	Yes	Yes	Yes	97	97	97	95	81
481130117012	48	113	011701	2	Yes	Yes	Yes	91	87	81	88	71
481130117013	48	113	011701	3	Yes	Yes	Yes	95	92	87	92	77
481130117021	48	113	011702	1	Yes	Yes	Yes	97	94	92	96	82
481130117022	48	113	011702	2	Yes	Yes	Yes	96	93	90	94	79
481130169032	48	113	016903	2	Yes	Yes	Yes	97	91	83	50	82
481130037001	48	113	003700	1	Yes	Yes	Yes	96	95	94	94	79
481130063021	48	113	006302	1	Yes	Yes	Yes	98	98	96	97	85
481130063022	48	113	006302	2	Yes	Yes	Yes	88	88	81	84	66
481130064021	48	113	006402	1	Yes	Yes	Yes	99	99	95	97	87
481130065011	48	113	006501	1	Yes	Yes	Yes	97	97	89	95	80
481130065022	48	113	006502	2	Yes	Yes	Yes	93	93	82	90	74
481130101022	48	113	010102	2	Yes	Yes	Yes	97	98	97	95	82
481130105001	48	113	010500	1	Yes	Yes	Yes	95	95	90	92	76
481130172013	48	113	017201	3	Yes	Yes	Yes	95	92	87	93	79
484971504022	48	497	150402	2	Yes	Yes	No	74	91	27	42	66
484971505002	48	497	150500	2	Yes	Yes	Yes	78	93	66	43	68
484971505001	48	497	150500	1	Yes	No	Yes	56	78	45	27	49
484971506032	48	497	150603	2	Yes	Yes	No	88	95	78	86	91
484391219054	48	439	121905	4	Yes	Yes	Yes	99	99	98	99	86
484391217032	48	439	121703	2	Yes	Yes	Yes	92	93	88	88	71
484391045053	48	439	104505	3	Yes	Yes	Yes	99	99	98	97	86
481130136062	48	113	013606	2	Yes	No	Yes	85	89	83	80	62
481130136063	48	113	013606	3	Yes	No	Yes	54	60	55	59	39
481130176021	48	113	017602	1	Yes	Yes	Yes	95	94	90	93	78
481130176062	48	113	017606	2	Yes	No	Yes	86	82	76	82	64
481130176063	48	113	017606	3	Yes	Yes	Yes	98	97	95	97	85
481130178051	48	113	017805	1	Yes	No	Yes	32	27	27	52	31

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US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
57	72	81	81	78	43	70	75
85	83	98	96	96	69	88	95
94	97	99	99	99	81	90	99
41	68	29	48	73	62	64	44
52	70	31	56	76	78	72	79
61	37	28	67	71	38	0	73
60	86	55	82	75	83	88	77
75	86	96	94	90	57	86	93
89	98	98	99	97	77	96	98
84	93	94	97	90	67	86	96
86	91	97	99	95	83	95	97
95	94	86	97	99	99	99	96
68	82	86	78	88	81	82	67
51	71	73	64	75	68	69	47
90	81	92	94	98	96	99	86
53	67	54	67	74	73	65	52
79	98	0	82	96	85	95	83
65	79	90	72	88	70	80	66
76	88	96	82	97	93	91	78
63	72	92	72	87	71	87	67
73	82	97	81	92	81	89	79
55	85	88	78	80	72	84	63
75	97	98	92	94	87	96	83
78	98	99	94	99	88	98	91
73	96	93	91	96	85	94	83
70	96	78	89	92	85	94	78
70	86	84	93	80	71	87	89
77	91	97	95	83	69	0	93
74	80	89	95	81	74	73	92
84	73	97	98	88	80	83	96
65	88	60	89	70	58	59	85
87	98	99	97	91	71	93	97
72	79	51	91	83	61	79	89
78	82	94	79	92	88	91	95
74	88	90	90	80	53	0	90
73	92	79	89	80	50	82	89
73	76	91	89	86	60	69	88
86	94	98	96	96	74	85	95
64	89	91	85	88	82	90	56
80	95	97	90	93	88	79	87
88	98	97	96	98	95	98	89
77	83	81	85	90	92	92	78
94	94	64	98	99	99	99	97
83	91	92	98	97	93	85	97
84	94	95	98	97	92	88	98
66	92	75	85	70	53	88	60
73	92	94	92	76	63	90	77
81	80	96	92	79	69	88	87
77	80	88	91	76	66	76	79
75	92	84	93	87	96	84	89
76	73	95	94	96	84	91	95
91	94	99	98	96	75	0	98
71	82	91	88	85	55	70	87
94	99	99	99	99	92	96	97
89	78	99	97	98	87	0	94
83	88	96	93	95	82	92	89
86	89	98	98	98	93	79	98
85	79	74	97	96	93	0	95
78	79	87	88	79	73	91	87
38	26	56	45	79	9	46	33
10	56	66	47	75	26	85	88
5	33	48	28	53	15	40	67
40	9	67	87	55	41	64	81
94	99	62	96	99	98	97	99
81	87	88	82	83	85	86	89
95	99	99	94	99	90	97	99
54	76	0	62	79	74	73	74
25	56	0	30	47	40	43	44
76	94	92	87	89	89	96	73
59	66	63	73	71	69	85	64
85	91	98	94	93	92	95	90
14	13	0	20	32	29	28	12

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130176041	48	113	017604	1	Yes	Yes	No	95	92	88	93	78
481130177041	48	113	017704	1	Yes	Yes	Yes	94	91	86	92	76
481130177042	48	113	017704	2	Yes	No	Yes	88	85	78	84	67
484391232001	48	439	123200	1	Yes	Yes	No	86	89	89	82	87
484391055054	48	439	105505	4	Yes	No	Yes	78	82	69	75	57
482319609001	48	231	960900	1	Yes	No	Yes	81	78	81	44	68
482319609002	48	231	960900	2	Yes	Yes	Yes	88	85	87	47	75
482319609003	48	231	960900	3	Yes	Yes	Yes	93	91	92	50	81
482319610001	48	231	961000	1	Yes	No	Yes	75	71	69	39	62
484391014032	48	439	101403	2	Yes	Yes	Yes	98	98	94	96	83
484391009001	48	439	100900	1	Yes	Yes	Yes	98	98	97	96	84
484391063001	48	439	106300	1	Yes	Yes	Yes	96	97	91	94	79
484391044001	48	439	104400	1	Yes	No	Yes	65	69	62	65	46
484391047011	48	439	104701	1	Yes	Yes	Yes	98	98	95	96	84
484391228012	48	439	122801	2	Yes	Yes	Yes	98	98	96	96	83
484391046041	48	439	104604	1	Yes	Yes	Yes	96	96	89	93	78
484391136192	48	439	113619	2	Yes	Yes	No	82	84	72	92	57
481130122092	48	113	012209	2	Yes	Yes	No	90	89	80	86	69
481130154042	48	113	015404	2	Yes	Yes	Yes	94	94	89	98	74
481130157002	48	113	015700	2	Yes	Yes	Yes	93	94	87	89	73
481130159001	48	113	015900	1	Yes	Yes	Yes	97	97	91	95	81
481130160011	48	113	016001	1	Yes	Yes	Yes	98	98	95	99	83
481130154032	48	113	015403	2	Yes	Yes	Yes	88	89	82	96	65
481130153051	48	113	015305	1	Yes	Yes	Yes	79	80	71	91	55
481130153061	48	113	015306	1	Yes	Yes	No	78	80	68	90	54
481130153063	48	113	015306	3	Yes	Yes	No	84	85	74	94	60
484391001022	48	439	100102	2	Yes	No	Yes	70	74	71	68	75
480850306062	48	085	030606	2	Yes	Yes	No	86	91	76	82	65
480850316323	48	085	031632	3	Yes	Yes	No	93	96	85	89	73
481130139012	48	113	013901	2	Yes	No	Yes	87	89	84	81	63
481130064022	48	113	006402	2	Yes	Yes	Yes	94	94	85	91	75
481130165221	48	113	016522	1	Yes	Yes	No	90	88	70	86	69
481130201001	48	113	020100	1	Yes	Yes	Yes	91	92	89	87	70
484391115571	48	439	111557	1	Yes	Yes	No	87	87	83	96	64
484391055162	48	439	105516	2	Yes	Yes	No	88	91	70	44	69
484391139522	48	439	113952	2	Yes	Yes	No	88	92	80	84	89
484391115572	48	439	111557	2	Yes	Yes	No	88	88	84	96	66
482570510001	48	257	051000	1	Yes	Yes	Yes	94	86	71	50	80
484391136362	48	439	113636	2	Yes	Yes	Yes	87	90	81	96	87
484391136361	48	439	113636	1	Yes	No	Yes	30	31	25	57	41
484391137123	48	439	113712	3	Yes	Yes	No	81	85	79	92	83
481130096052	48	113	009605	2	Yes	Yes	No	87	90	82	81	64
481390604003	48	139	060400	3	Yes	No	Yes	85	67	72	82	65
481390605002	48	139	060500	2	Yes	Yes	No	90	77	84	88	71
481390615003	48	139	061500	3	Yes	Yes	Yes	96	81	89	50	82
481390615002	48	139	061500	2	Yes	Yes	Yes	91	71	81	48	75
481390616001	48	139	061600	1	Yes	No	Yes	74	48	61	34	55
481130190182	48	113	019018	2	Yes	No	Yes	77	80	70	72	53
481210217341	48	121	021734	1	Yes	No	Yes	82	86	82	76	83
481210217392	48	121	021739	2	Yes	Yes	Yes	93	95	93	88	72
481210217391	48	121	021739	1	Yes	Yes	Yes	96	97	96	92	77
481210216183	48	121	021618	3	Yes	Yes	No	90	94	88	85	68
481210217441	48	121	021744	1	Yes	Yes	Yes	91	94	89	86	91
481210211003	48	121	021100	3	Yes	Yes	Yes	89	94	88	86	90
481210211001	48	121	021100	1	Yes	No	Yes	72	81	73	71	78
481210216371	48	121	021637	1	Yes	No	Yes	78	83	72	73	54
481210216372	48	121	021637	2	Yes	No	Yes	58	64	53	60	40
481210217281	48	121	021728	1	Yes	No	Yes	86	89	78	80	86
480850307012	48	085	030701	2	Yes	Yes	No	88	93	81	85	68
484391063002	48	439	106300	2	Yes	Yes	Yes	97	97	91	94	80
480850307023	48	085	030702	3	Yes	No	Yes	69	78	63	69	49
480850308021	48	085	030802	1	Yes	Yes	Yes	89	94	82	86	69
484391012023	48	439	101202	3	Yes	Yes	Yes	98	98	97	96	97
484391044002	48	439	104400	2	Yes	Yes	Yes	93	95	90	91	75
481210217342	48	121	021734	2	Yes	No	Yes	62	69	65	62	68
481210216162	48	121	021616	2	Yes	No	Yes	19	19	15	46	24
481210216163	48	121	021616	3	Yes	Yes	Yes	87	90	82	81	63
481210217402	48	121	021740	2	Yes	Yes	No	95	97	93	92	76
481210205042	48	121	020504	2	Yes	No	Yes	59	70	50	64	44
481210209002	48	121	020900	2	Yes	Yes	Yes	95	98	96	94	79
484391217042	48	439	121704	2	Yes	Yes	Yes	98	98	96	96	82
481130185011	48	113	018501	1	Yes	Yes	Yes	90	91	83	86	68

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
77	92	91	87	84	76	90	84
72	70	93	81	91	82	92	23
62	84	80	73	85	72	88	16
79	52	76	80	90	83	84	71
64	82	28	68	76	39	75	43
28	60	53	40	83	80	80	87
32	82	81	49	88	82	94	92
39	81	89	56	94	88	96	94
22	73	77	32	76	64	82	82
91	92	91	88	92	79	95	88
94	95	99	96	99	97	98	84
88	78	92	82	86	88	76	89
50	37	69	56	66	50	63	52
94	82	99	92	98	89	96	96
92	97	47	92	91	95	97	98
87	95	95	85	88	85	90	95
71	47	0	62	81	72	0	81
61	87	51	80	87	75	69	76
85	94	91	94	94	95	84	87
91	83	95	96	83	84	80	90
93	96	98	98	89	94	97	91
93	95	96	98	98	98	97	91
77	90	0	87	89	90	78	84
77	47	64	78	66	63	74	72
77	58	38	79	74	71	59	72
83	57	73	84	73	71	58	76
54	61	67	60	75	67	55	49
49	81	0	35	60	57	0	72
73	88	0	56	91	51	85	92
68	81	83	70	84	79	84	88
83	91	94	94	95	75	86	89
76	72	32	76	75	45	80	83
88	92	81	90	93	92	85	93
73	80	55	79	88	82	70	85
80	88	44	75	72	50	85	85
54	82	0	60	80	52	81	88
74	78	49	79	88	81	65	83
69	90	84	88	64	89	89	92
66	87	0	63	63	44	72	83
17	35	0	13	17	8	27	25
61	72	57	55	72	54	75	55
62	86	0	74	84	76	71	60
61	70	85	49	85	58	79	56
69	77	89	58	90	69	87	68
83	91	93	62	98	95	98	80
63	69	80	51	96	88	85	70
81	53	58	32	81	68	63	37
42	64	0	50	80	77	69	69
58	78	36	47	67	78	83	65
76	86	39	64	82	89	90	81
82	96	0	69	92	93	96	86
81	91	87	56	89	89	89	91
78	92	0	58	89	88	90	91
38	86	53	40	87	86	89	77
23	76	49	21	68	67	76	64
46	79	0	48	66	63	75	25
29	60	0	29	47	46	55	14
62	65	0	54	80	82	67	80
49	85	82	32	91	80	88	75
90	96	84	82	90	89	81	91
30	55	69	17	72	61	0	56
53	67	86	35	88	83	71	81
91	98	99	92	99	98	97	91
86	86	95	86	94	79	80	91
37	54	0	28	47	60	62	45
8	11	0	7	12	8	0	4
57	84	33	57	68	60	81	30
80	85	0	68	91	93	90	93
16	46	0	13	39	37	33	4
48	96	55	52	96	96	93	17
91	94	90	92	91	95	93	97
66	82	79	67	93	92	81	73

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481210216373	48	121	021637	3	Yes	Yes	Yes	89	92	84	84	66
483499701002	48	349	970100	2	Yes	No	Yes	78	66	38	39	62
483671404102	48	367	140410	2	Yes	No	Yes	64	82	27	32	54
481130180022	48	113	018002	2	Yes	No	Yes	86	85	83	82	64
481130181211	48	113	018121	1	Yes	Yes	Yes	91	92	78	88	71
482511303031	48	251	130303	1	Yes	No	Yes	82	87	57	40	62
484391228021	48	439	122802	1	Yes	Yes	Yes	99	99	98	99	88
484391219051	48	439	121905	1	Yes	Yes	Yes	81	81	77	92	57
481130139023	48	113	013902	3	Yes	Yes	No	91	93	88	85	68
484391055132	48	439	105513	2	Yes	No	Yes	85	88	73	82	64
480850320102	48	085	032010	2	Yes	No	Yes	85	89	70	81	63
481130063011	48	113	006301	1	Yes	Yes	Yes	91	91	85	87	71
483630009001	48	363	000900	1	Yes	Yes	Yes	76	88	60	46	28
483630009002	48	363	000900	2	Yes	Yes	Yes	83	93	67	49	30
483630008001	48	363	000800	1	Yes	Yes	Yes	89	97	73	51	32
481130056002	48	113	005600	2	Yes	Yes	Yes	98	97	95	96	82
481130091041	48	113	009104	1	Yes	Yes	Yes	93	92	81	91	75
481130181264	48	113	018126	4	Yes	No	Yes	72	72	65	70	51
481130145013	48	113	014501	3	Yes	No	Yes	73	75	72	86	50
480850308023	48	085	030802	3	Yes	No	Yes	82	89	75	79	61
482319616002	48	231	961600	2	Yes	No	Yes	76	68	32	40	62
482319616004	48	231	961600	4	Yes	No	Yes	82	75	38	44	69
483630006002	48	363	000600	2	Yes	No	Yes	57	74	59	33	55
483630007001	48	363	000700	1	Yes	No	Yes	60	75	39	35	57
483630001001	48	363	000100	1	Yes	No	Yes	47	69	10	33	21
483630002001	48	363	000200	1	Yes	No	Yes	52	74	11	40	24
483630001003	48	363	000100	3	Yes	No	Yes	41	63	8	28	17
482511311004	48	251	131100	4	Yes	Yes	Yes	90	95	84	47	74
482511304053	48	251	130405	3	Yes	Yes	No	89	90	63	85	68
482511303021	48	251	130302	1	Yes	Yes	Yes	85	91	67	43	67
481130136181	48	113	013618	1	Yes	No	Yes	80	84	70	74	55
481130137151	48	113	013715	1	Yes	Yes	No	91	94	88	86	69
481130137161	48	113	013716	1	Yes	Yes	No	88	91	84	82	65
481130137181	48	113	013718	1	Yes	Yes	Yes	93	95	90	98	72
481130054003	48	113	005400	3	Yes	Yes	Yes	95	94	91	92	76
481130137202	48	113	013720	2	Yes	No	Yes	59	65	55	61	41
481130137201	48	113	013720	1	Yes	Yes	Yes	91	93	85	85	68
481210211002	48	121	021100	2	Yes	Yes	Yes	89	94	89	87	91
481130187003	48	113	018700	3	Yes	Yes	Yes	96	97	90	94	80
481130181262	48	113	018126	2	Yes	No	Yes	86	86	79	82	64
481210205061	48	121	020506	1	Yes	No	Yes	59	70	42	63	44
481130098022	48	113	009802	2	Yes	Yes	Yes	97	98	94	95	97
481210205041	48	121	020504	1	Yes	Yes	Yes	91	96	83	90	74
481210216191	48	121	021619	1	Yes	No	Yes	75	80	73	70	51
483499704001	48	349	970400	1	Yes	No	Yes	78	56	29	40	25
481210216343	48	121	021634	3	Yes	Yes	No	89	92	85	83	66
484391035004	48	439	103500	4	Yes	Yes	Yes	99	99	97	97	86
484391235001	48	439	123500	1	Yes	Yes	Yes	96	97	97	93	96
484391046021	48	439	104602	1	Yes	Yes	Yes	95	96	87	92	77
484391036021	48	439	103602	1	Yes	Yes	Yes	90	91	82	85	68
484391231002	48	439	123100	2	Yes	Yes	Yes	94	96	94	92	76
484391231001	48	439	123100	1	Yes	Yes	Yes	97	97	96	95	80
484391219053	48	439	121905	3	Yes	Yes	Yes	85	86	81	95	62
484391055053	48	439	105505	3	Yes	No	Yes	58	63	50	62	42
484391131161	48	439	113116	1	Yes	Yes	Yes	87	88	82	95	87
484391235002	48	439	123500	2	Yes	No	Yes	42	44	49	55	52
484971505003	48	497	150500	3	Yes	Yes	Yes	82	95	70	46	72
481130180011	48	113	018001	1	Yes	Yes	No	93	92	90	90	74
481130190132	48	113	019013	2	Yes	Yes	Yes	99	99	95	97	86
481130190161	48	113	019016	1	Yes	No	Yes	67	71	65	65	46
481130190163	48	113	019016	3	Yes	Yes	Yes	98	99	97	96	84
481130190281	48	113	019028	1	Yes	Yes	No	91	93	81	87	70
481130190293	48	113	019029	3	Yes	Yes	No	87	90	75	82	65
481130098041	48	113	009804	1	Yes	Yes	Yes	99	99	99	99	99
481130106011	48	113	010601	1	Yes	Yes	Yes	96	96	90	93	78
481130190322	48	113	019032	2	Yes	Yes	Yes	92	94	84	88	72
481130190332	48	113	019033	2	Yes	Yes	Yes	95	96	89	92	77
481130190341	48	113	019034	1	Yes	Yes	Yes	91	93	87	86	69
481130190342	48	113	019034	2	Yes	Yes	Yes	89	91	85	84	67
481130165162	48	113	016516	2	Yes	Yes	Yes	89	88	82	84	67
481130165172	48	113	016517	2	Yes	Yes	No	91	89	83	87	70
481130165183	48	113	016518	3	Yes	No	Yes	87	86	75	82	64

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US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
61	90	0	62	76	73	87	35
24	44	69	23	48	29	41	77
37	11	33	56	47	15	34	44
57	83	74	69	74	61	80	15
75	62	48	62	92	80	75	88
70	57	47	36	60	45	0	65
95	99	72	96	96	97	92	99
66	79	55	72	82	77	77	80
72	71	91	75	89	83	83	91
71	79	31	78	82	40	86	59
66	78	0	48	87	44	69	83
75	85	95	90	84	59	0	90
87	50	89	49	91	71	80	88
91	82	96	57	94	78	95	93
98	93	95	68	98	91	98	97
86	90	98	98	91	74	0	97
69	86	96	90	83	79	79	71
42	34	0	45	70	41	51	59
68	73	41	68	58	64	51	75
44	77	0	27	81	74	64	73
52	43	29	61	34	18	59	59
68	42	44	65	49	24	52	48
85	30	71	34	80	60	56	68
84	37	50	35	78	73	67	79
31	0	52	8	10	3	37	61
30	18	66	10	32	3	39	84
59	0	44	16	34	10	31	27
88	83	87	46	92	83	93	70
88	19	50	53	70	51	48	77
79	67	43	37	87	74	74	60
45	72	0	49	63	61	67	74
70	87	54	74	91	89	84	93
67	88	74	66	89	86	72	86
73	84	56	74	94	89	74	92
80	91	94	94	88	59	81	94
33	57	20	32	60	55	58	19
67	88	37	68	90	86	74	40
41	89	45	41	90	87	89	52
86	94	94	76	98	96	88	94
59	67	0	62	85	65	72	74
30	43	39	12	27	48	43	38
86	94	96	94	97	93	97	90
59	30	0	38	66	65	0	19
51	60	0	39	62	69	56	61
29	11	67	18	63	26	0	67
60	89	0	61	71	66	76	31
94	95	99	92	95	92	98	97
88	92	96	88	95	91	87	94
86	91	92	82	86	85	94	93
78	87	85	69	79	74	81	77
86	95	87	87	96	90	85	93
90	97	96	90	98	93	79	96
72	85	42	78	87	82	80	84
43	53	36	49	58	25	55	27
91	87	45	81	89	89	86	84
30		0				47	
11	59	84	53	86	27	82	92
68	95	65	76	90	67	88	74
88	99	77	86	99	99	96	90
32	68	0	43	72	68	55	62
80	99	0	87	99	98	94	97
68	80	0	63	84	84	70	85
67	81	0	57	87	81	81	82
96	88	78	99	99	99	99	97
91	67	89	97	97	95	91	95
70	87	47	70	94	94	83	73
81	94	79	77	97	97	93	79
60	89	48	70	92	90	79	85
57	88	0	69	91	88	78	86
69	83	36	80	91	79	84	37
73	77	54	82	91	79	86	40
69	66	68	79	89	73	79	32

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
482511302141	48	251	130214	1	Yes	No	Yes	82	87	66	80	62
482511302142	48	251	130214	2	Yes	No	Yes	68	74	52	69	49
483671404092	48	367	140409	2	Yes	Yes	Yes	84	93	65	44	68
483671404091	48	367	140409	1	Yes	Yes	Yes	80	91	60	41	64
483671404101	48	367	140410	1	Yes	No	Yes	59	79	24	28	51
483671401023	48	367	140102	3	Yes	No	Yes	80	89	83	84	66
483671401021	48	367	140102	1	Yes	No	Yes	71	82	75	76	58
483671401022	48	367	140102	2	Yes	Yes	Yes	81	90	84	84	67
482319610002	48	231	961000	2	Yes	No	Yes	61	56	56	28	51
482319615032	48	231	961503	2	Yes	No	Yes	78	71	33	41	64
483970405032	48	397	040503	2	Yes	Yes	No	93	91	84	92	76
482511302123	48	251	130212	3	Yes	No	Yes	74	80	34	33	55
482319605001	48	231	960500	1	Yes	No	Yes	50	42	20	64	44
481130178054	48	113	017805	4	Yes	Yes	Yes	94	92	90	91	76
481210206013	48	121	020601	3	Yes	Yes	Yes	92	96	90	90	74
481210208002	48	121	020800	2	Yes	Yes	Yes	90	95	88	88	91
481210217422	48	121	021742	2	Yes	Yes	No	92	95	88	88	92
481130136091	48	113	013609	1	Yes	Yes	Yes	87	90	86	82	87
481130136092	48	113	013609	2	Yes	No	Yes	51	56	54	58	59
481130179001	48	113	017900	1	Yes	Yes	Yes	92	91	89	89	72
481130179002	48	113	017900	2	Yes	No	Yes	88	87	85	84	67
484391142032	48	439	114203	2	Yes	No	Yes	57	72	31	64	44
481439506001	48	143	950600	1	Yes	No	Yes	71	82	41	45	27
481439507002	48	143	950700	2	Yes	No	Yes	56	70	8	35	21
481210217432	48	121	021743	2	Yes	Yes	No	86	90	83	81	87
481210206012	48	121	020601	2	Yes	Yes	Yes	89	94	87	86	69
481210208003	48	121	020800	3	Yes	No	Yes	80	88	79	78	85
481210217442	48	121	021744	2	Yes	Yes	Yes	95	97	93	91	94
481210217453	48	121	021745	3	Yes	Yes	Yes	93	96	91	89	93
481130202002	48	113	020200	2	Yes	Yes	Yes	92	89	86	88	72
481130178053	48	113	017805	3	Yes	Yes	Yes	91	89	86	87	71
481210210002	48	121	021000	2	Yes	Yes	No	93	97	93	91	94
481210213011	48	121	021301	1	Yes	Yes	No	85	91	86	82	88
484391015001	48	439	101500	1	Yes	No	Yes	76	79	72	72	53
484391046012	48	439	104601	2	Yes	Yes	Yes	95	96	89	93	77
484391046031	48	439	104603	1	Yes	Yes	Yes	98	98	92	96	83
484391046032	48	439	104603	2	Yes	Yes	Yes	95	96	88	93	78
484391047012	48	439	104701	2	Yes	Yes	Yes	97	98	93	95	81
484391057031	48	439	105703	1	Yes	No	Yes	80	83	74	77	58
480850320131	48	085	032013	1	Yes	No	Yes	70	76	63	67	48
484391062012	48	439	106201	2	Yes	Yes	Yes	91	92	82	87	70
484391058001	48	439	105800	1	Yes	Yes	Yes	94	96	90	92	77
484391062022	48	439	106202	2	Yes	No	Yes	83	85	74	78	60
481210217431	48	121	021743	1	Yes	Yes	No	92	95	89	87	91
484391065031	48	439	106503	1	Yes	No	Yes	82	84	72	77	58
484391065032	48	439	106503	2	Yes	No	Yes	76	78	66	71	52
484391065033	48	439	106503	3	Yes	Yes	Yes	89	90	80	84	67
481210216131	48	121	021613	1	Yes	Yes	No	90	93	83	84	67
483499702002	48	349	970200	2	Yes	No	Yes	51	35	25	62	42
483499705002	48	349	970500	2	Yes	No	Yes	76	62	66	78	60
483499706001	48	349	970600	1	Yes	No	Yes	65	64	19	31	53
480850316242	48	085	031624	2	Yes	No	Yes	49	55	45	57	36
480850316243	48	085	031624	3	Yes	Yes	Yes	89	92	84	84	67
480850308022	48	085	030802	2	Yes	Yes	Yes	88	93	81	84	67
484391025001	48	439	102500	1	Yes	Yes	Yes	93	95	88	90	74
481130078212	48	113	007821	2	Yes	Yes	Yes	98	98	97	96	83
483499710002	48	349	971000	2	Yes	No	Yes	72	54	25	35	22
484391219061	48	439	121906	1	Yes	Yes	Yes	82	82	78	93	58
484391057032	48	439	105703	2	Yes	Yes	Yes	88	90	82	84	67
484391055131	48	439	105513	1	Yes	No	Yes	76	80	63	74	55
481130145021	48	113	014502	1	Yes	Yes	Yes	97	98	96	95	80
484391132062	48	439	113206	2	Yes	Yes	No	92	94	87	88	72
481130146011	48	113	014601	1	Yes	Yes	Yes	91	92	89	86	69
481130147012	48	113	014701	2	Yes	Yes	Yes	95	95	93	91	75
484391131092	48	439	113109	2	Yes	Yes	No	79	80	76	91	81
484391131042	48	439	113104	2	Yes	Yes	No	78	80	72	90	54
484391131043	48	439	113104	3	Yes	Yes	No	84	85	78	94	60
484391217033	48	439	121703	3	Yes	Yes	Yes	97	97	95	95	81
484391228022	48	439	122802	2	Yes	Yes	Yes	90	91	86	97	68
484391113091	48	439	111309	1	Yes	Yes	No	92	91	80	89	73
481130144072	48	113	014407	2	Yes	Yes	Yes	92	93	90	98	71
481130182041	48	113	018204	1	Yes	Yes	Yes	99	99	95	97	86

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US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
79	50	50	47	59	37	64	50
62	52	0	33	44	21	55	53
56	52	0	85	61	26	0	63
53	28	30	81	49	25	0	54
29	17	36	46	49	9	0	41
79	78	82	80	60	87	80	81
66	67	49	76	49	74	77	71
75	73	78	83	57	82	77	76
13	53	59	21	65	46	63	62
56	23	44	52	78	37	0	66
61	61	0	76	88	73	67	79
65	21	47	41	42	25	0	55
46	19	23	9	63	6	33	27
70	93	0	85	95	88	93	65
43	74	70	43	83	87	94	88
38	93	0	44	93	91	64	15
74	78	0	60	86	89	75	92
55	79	39	64	87	80	76	79
23	40	26	28	55	46	47	41
67	92	89	78	86	79	85	41
60	86	83	72	80	70	83	14
19	22	33	72	47	20	43	35
8	81	81	15	89	2	77	75
2	14	57	6	20	0	0	54
62	82	49	48	76	78	84	86
38	89	82	38	78	82	88	83
33	71	35	31	81	77	71	47
81	81	53	65	92	92	91	94
77	81	62	63	90	91	85	93
66	67	81	94	92	82	69	92
64	88	44	79	83	79	89	48
45	89	64	47	94	93	89	46
37	90	0	34	73	76	86	82
59	73	74	58	69	61	66	62
87	95	95	83	84	85	94	93
92	91	98	88	96	93	97	96
88	83	91	81	90	91	89	91
92	72	97	90	97	87	90	95
68	75	0	67	80	54	72	75
44	64	0	28	67	30	62	66
79	87	91	74	77	83	85	82
88	97	87	85	96	81	94	93
69	72	83	61	65	72	73	70
73	86	0	58	88	87	88	91
67	85	31	56	66	65	73	23
59	76	56	49	60	57	68	22
76	86	79	67	76	69	86	42
64	84	30	63	84	76	76	48
24	21	31	7	42	28	44	55
52	38	78	13	72	50	74	82
9	32	59	10	60	13	37	65
23	41	0	18	40	37	47	52
62	87	31	57	78	76	77	92
51	90	0	33	87	80	87	78
81	87	95	93	79	66	90	68
75	81	79	91	88	82	95	92
13	13	30	6	51	12	35	31
67	65	69	74	83	79	75	76
78	86	34	75	89	65	83	85
61	74	33	69	75	31	74	47
96	93	86	96	91	94	96	97
78	77	85	75	91	87	81	76
88	90	80	86	83	87	82	90
92	93	89	92	93	94	92	93
69	80	0	73	80	82	76	78
65	61	29	68	80	77	73	72
72	67	29	74	84	84	71	78
90	97	94	90	93	90	98	95
77	86	81	80	83	82	79	90
84	68	79	69	88	86	84	58
87	89	71	87	90	82	88	86
94	98	95	84	99	98	95	99

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130182051	48	113	018205	1	Yes	Yes	Yes	94	95	85	92	76
481130182061	48	113	018206	1	Yes	Yes	Yes	94	94	86	91	75
481130182062	48	113	018206	2	Yes	Yes	Yes	98	98	93	96	83
481130183002	48	113	018300	2	Yes	Yes	Yes	98	98	94	97	84
481130184012	48	113	018401	2	Yes	Yes	Yes	95	96	91	93	78
481130184013	48	113	018401	3	Yes	Yes	Yes	90	91	84	86	69
481130184031	48	113	018403	1	Yes	Yes	Yes	92	92	85	88	71
481130065012	48	113	006501	2	Yes	Yes	Yes	97	97	89	95	80
484391014034	48	439	101403	4	Yes	Yes	Yes	96	97	92	94	79
482570505003	48	257	050500	3	Yes	Yes	Yes	92	86	90	93	77
481130190131	48	113	019013	1	Yes	Yes	Yes	99	99	95	97	86
482570505002	48	257	050500	2	Yes	No	Yes	34	24	32	54	33
482570511001	48	257	051100	1	Yes	No	Yes	79	66	57	39	62
482570511002	48	257	051100	2	Yes	No	Yes	66	51	43	28	50
482570511003	48	257	051100	3	Yes	No	Yes	83	71	62	42	66
482570505001	48	257	050500	1	Yes	Yes	Yes	89	81	86	90	74
484391101023	48	439	110102	3	Yes	Yes	Yes	96	97	93	93	96
484391102022	48	439	110202	2	Yes	Yes	Yes	95	97	93	93	78
484391102045	48	439	110204	5	Yes	Yes	No	96	97	94	93	96
483630007002	48	363	000700	2	Yes	No	Yes	63	78	42	38	60
481130153041	48	113	015304	1	Yes	Yes	Yes	90	91	83	97	68
483630005001	48	363	000500	1	Yes	No	Yes	64	80	52	40	24
483630005002	48	363	000500	2	Yes	No	Yes	57	75	45	35	22
483630006001	48	363	000600	1	Yes	No	Yes	66	81	67	40	62
481130192021	48	113	019202	1	Yes	Yes	Yes	90	92	87	85	89
481130192022	48	113	019202	2	Yes	No	Yes	85	88	83	79	85
483630001002	48	363	000100	2	Yes	No	Yes	52	75	12	37	23
483630006003	48	363	000600	3	Yes	No	Yes	66	81	67	40	62
481130186002	48	113	018600	2	Yes	No	Yes	62	65	52	63	43
481130187002	48	113	018700	2	Yes	Yes	Yes	96	97	89	94	79
481130187001	48	113	018700	1	Yes	Yes	Yes	94	95	85	91	75
481130188011	48	113	018801	1	Yes	Yes	Yes	94	95	86	92	76
481130169033	48	113	016903	3	Yes	No	Yes	81	68	58	37	59
481130192082	48	113	019208	2	Yes	Yes	Yes	97	98	97	95	97
481130192081	48	113	019208	1	Yes	Yes	Yes	89	92	88	84	89
481130188013	48	113	018801	3	Yes	Yes	Yes	94	96	86	92	76
481130188021	48	113	018802	1	Yes	No	Yes	80	82	68	75	57
481130189001	48	113	018900	1	Yes	No	Yes	66	69	54	65	45
481130189002	48	113	018900	2	Yes	Yes	Yes	96	97	88	93	78
481130189003	48	113	018900	3	Yes	Yes	Yes	94	95	85	91	75
481130189004	48	113	018900	4	Yes	Yes	Yes	94	95	85	91	75
481130190192	48	113	019019	2	Yes	No	Yes	68	72	65	66	47
481130199001	48	113	019900	1	Yes	Yes	Yes	94	94	86	91	75
481130199002	48	113	019900	2	Yes	Yes	Yes	96	96	88	93	78
480850316111	48	085	031611	1	Yes	Yes	No	89	92	83	84	67
482511307002	48	251	130700	2	Yes	Yes	Yes	86	92	82	43	68
482511308001	48	251	130800	1	Yes	Yes	Yes	99	99	98	53	89
482511308002	48	251	130800	2	Yes	Yes	Yes	90	95	85	47	73
482511309002	48	251	130900	2	Yes	Yes	Yes	96	98	90	51	83
481130171021	48	113	017102	1	Yes	Yes	Yes	95	90	78	49	78
481130171011	48	113	017101	1	Yes	Yes	Yes	97	93	90	95	81
481130176051	48	113	017605	1	Yes	Yes	Yes	92	89	83	88	72
481130123023	48	113	012302	3	Yes	Yes	Yes	95	94	89	92	77
481130136262	48	113	013626	2	Yes	No	Yes	59	65	61	61	65
481130136251	48	113	013625	1	Yes	No	Yes	84	87	83	77	84
481130205001	48	113	020500	1	Yes	Yes	Yes	99	99	99	97	86
481130205002	48	113	020500	2	Yes	Yes	Yes	98	98	98	96	82
481130181412	48	113	018141	2	Yes	No	Yes	84	83	77	81	63
481130087042	48	113	008704	2	Yes	Yes	Yes	97	95	92	94	80
481130144081	48	113	014408	1	Yes	Yes	Yes	98	98	97	99	83
481130143062	48	113	014306	2	Yes	Yes	Yes	96	97	95	99	79
481130122081	48	113	012208	1	Yes	Yes	Yes	97	97	93	96	82
481130122082	48	113	012208	2	Yes	Yes	Yes	97	96	92	95	81
481130136252	48	113	013625	2	Yes	No	Yes	78	82	78	72	80
481130137251	48	113	013725	1	Yes	No	Yes	76	81	69	71	52
481130166261	48	113	016626	1	Yes	No	Yes	80	75	59	35	57
481130137191	48	113	013719	1	Yes	Yes	No	89	92	86	83	66
481130012041	48	113	001204	1	Yes	Yes	Yes	98	97	96	96	82
481130136152	48	113	013615	2	Yes	Yes	Yes	99	99	99	97	98
481130163013	48	113	016301	3	Yes	Yes	Yes	92	93	80	88	72
481130166262	48	113	016626	2	Yes	No	Yes	89	86	71	44	68
481130203003	48	113	020300	3	Yes	Yes	Yes	91	90	87	87	70

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US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
78	93	67	73	96	88	77	81
77	90	92	71	96	91	90	82
87	94	98	81	99	96	96	89
85	96	98	84	99	99	91	92
76	86	62	78	97	96	93	82
66	85	63	67	93	89	78	74
68	92	57	71	92	83	90	75
90	78	98	97	98	90	89	94
88	80	93	83	86	80	82	31
69	85	78	98	96	92	93	93
90	98	93	86	99	99	98	92
18		0				38	
69	75	37	68	39	78	83	70
30	30	24	53	28	60	46	60
48	80	80	73	43	75	71	81
80	77	71	95	94	88	80	92
86	95	94	85	96	93	87	92
85	75	89	85	97	93	90	91
86	88	90	86	97	95	90	90
82	33	69	36	80	67	75	80
86	79	0	88	90	82	88	84
82	68	86	37	81	61	73	80
74	44	80	32	76	55	65	74
87	65	74	39	81	65	69	79
65	92	77	67	91	89	84	86
56	73	50	61	87	84	76	79
60	0	58	17	19	9	39	40
88	69	57	41	83	75	79	82
37	58	67	34	69	68	58	43
84	96	98	77	98	97	90	92
80	77	93	71	96	94	85	87
96	94	66	70	96	93	91	93
48	37	60	74	63	76	57	78
75	96	0	85	98	97	0	95
57	85	0	69	91	88	86	84
92	87	97	72	96	95	86	93
67	80	58	48	84	81	71	80
50	56	34	34	71	68	51	47
84	83	82	75	97	96	80	91
84	87	93	71	96	95	75	86
80	88	81	72	96	95	90	89
34	56	0	43	73	71	60	58
86	87	94	95	96	85	86	91
89	90	98	96	97	88	89	92
65	88	0	51	80	55	85	77
85	60	63	38	90	80	85	57
99	91	0	74	99	99	99	93
88	89	93	44	92	83	92	63
96	75	94	59	98	93	86	70
82	95	71	87	86	58	89	87
85	95	75	90	82	58	90	88
67	79	0	83	81	80	75	68
74	92	0	85	92	89	92	61
33	60	18	38	57	40	61	55
59	85	0	63	79	69	82	81
93	98	69	99	99	97	98	99
90	91	52	99	98	96	83	97
59	88	0	55	64	50	77	81
80	91	96	98	96	86	92	96
96	96	51	96	97	90	98	95
91	82	58	91	86	91	94	95
77	87	71	92	97	81	92	93
76	98	58	92	96	81	93	93
52	79	0	55	73	63	53	75
48	68	0	52	72	75	65	75
59	58	0	61	59	35	65	31
67	88	35	64	87	85	79	57
80	96	97	94	96	89	98	89
84	98	0	91	97	90	98	96
84	64	80	94	87	84	86	81
73	75	40	73	71	44	84	40
67	93	88	88	91	77	90	91

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130078191	48	113	007819	1	Yes	Yes	Yes	93	94	91	89	73
481130153042	48	113	015304	2	Yes	Yes	Yes	97	97	93	99	81
481130144071	48	113	014407	1	Yes	Yes	Yes	96	96	94	99	77
481130056003	48	113	005600	3	Yes	Yes	Yes	97	97	95	95	81
481130110022	48	113	011002	2	Yes	No	Yes	79	78	72	74	56
481130144051	48	113	014405	1	Yes	Yes	Yes	96	96	94	99	77
481130144052	48	113	014405	2	Yes	Yes	Yes	95	96	94	99	77
481130145023	48	113	014502	3	Yes	Yes	Yes	98	99	98	97	84
481130116012	48	113	011601	2	Yes	Yes	Yes	93	91	83	91	75
481130107042	48	113	010704	2	Yes	Yes	Yes	99	99	94	97	85
481130094011	48	113	009401	1	Yes	Yes	No	96	97	91	93	95
481130060021	48	113	006002	1	Yes	Yes	Yes	97	96	94	95	81
481130192122	48	113	019212	2	Yes	Yes	Yes	99	99	99	99	99
481130192132	48	113	019213	2	Yes	Yes	Yes	97	98	96	95	96
481130061002	48	113	006100	2	Yes	No	Yes	86	85	79	81	63
481130108053	48	113	010805	3	Yes	Yes	Yes	90	90	77	86	69
481130108051	48	113	010805	1	Yes	Yes	Yes	95	94	84	91	76
481130108052	48	113	010805	2	Yes	Yes	Yes	95	95	84	92	76
481130190393	48	113	019039	3	Yes	Yes	No	90	92	83	85	68
481130163012	48	113	016301	2	Yes	No	Yes	86	86	71	81	63
481130163011	48	113	016301	1	Yes	Yes	Yes	94	94	82	90	74
484391131162	48	439	113116	2	Yes	Yes	Yes	83	84	78	93	84
481130099001	48	113	009900	1	Yes	Yes	Yes	84	87	84	94	85
481130107011	48	113	010701	1	Yes	Yes	Yes	98	98	96	97	84
481130166213	48	113	016621	3	Yes	Yes	No	97	93	87	95	81
481130166222	48	113	016622	2	Yes	No	Yes	74	64	55	71	52
481130169021	48	113	016902	1	Yes	Yes	Yes	97	94	89	50	81
481130120002	48	113	012000	2	Yes	Yes	Yes	94	92	85	92	76
481130126013	48	113	012601	3	Yes	Yes	Yes	99	99	97	97	86
481130126011	48	113	012601	1	Yes	Yes	Yes	95	95	91	92	77
481130153053	48	113	015305	3	Yes	Yes	Yes	94	95	89	98	74
481130153062	48	113	015306	2	Yes	Yes	No	93	94	86	98	73
481130142041	48	113	014204	1	Yes	Yes	Yes	91	92	88	86	69
481130147013	48	113	014701	3	Yes	Yes	Yes	96	96	95	93	78
481130192131	48	113	019213	1	Yes	Yes	Yes	93	95	92	90	93
481130078192	48	113	007819	2	Yes	Yes	Yes	92	93	90	88	72
481130180021	48	113	018002	1	Yes	No	Yes	81	80	78	77	59
481130025001	48	113	002500	1	Yes	Yes	Yes	97	96	94	94	80
481130144082	48	113	014408	2	Yes	No	Yes	67	69	65	82	46
481130178052	48	113	017805	2	Yes	No	Yes	84	81	78	80	62
481130146031	48	113	014603	1	Yes	Yes	Yes	97	97	96	94	80
481130159003	48	113	015900	3	Yes	Yes	Yes	92	92	83	88	71
481130190353	48	113	019035	3	Yes	No	Yes	66	70	64	65	45
481130190352	48	113	019035	2	Yes	Yes	Yes	95	96	93	92	76
481130181411	48	113	018141	1	Yes	No	Yes	74	72	66	72	53
481130181212	48	113	018121	2	Yes	No	Yes	85	86	69	80	62
481130171012	48	113	017101	2	Yes	Yes	Yes	96	93	90	95	81
481130181413	48	113	018141	3	Yes	Yes	Yes	92	91	86	90	74
481130190271	48	113	019027	1	Yes	Yes	No	89	91	78	85	68
481130190273	48	113	019027	3	Yes	Yes	No	96	97	89	94	80
481130166212	48	113	016621	2	Yes	Yes	No	93	88	81	90	74
481130183004	48	113	018300	4	Yes	Yes	Yes	93	94	86	90	74
481130186003	48	113	018600	3	Yes	No	Yes	79	82	68	75	56
481130024002	48	113	002400	2	Yes	Yes	Yes	92	92	90	88	72
481130068002	48	113	006800	2	Yes	Yes	Yes	97	97	95	95	81
481139801001	48	113	980100	1	Yes	No	Yes	0	0	0	0	0
481130004052	48	113	000405	2	Yes	No	Yes	86	86	86	80	62
481130088012	48	113	008801	2	Yes	Yes	Yes	92	91	87	88	71
481130096101	48	113	009610	1	Yes	Yes	Yes	99	99	99	98	99
481130054001	48	113	005400	1	Yes	Yes	Yes	92	91	89	88	72
481130086041	48	113	008604	1	Yes	Yes	Yes	97	96	92	95	81
481130057002	48	113	005700	2	Yes	Yes	Yes	97	97	95	95	82
481130087032	48	113	008703	2	Yes	Yes	Yes	98	97	95	97	84
481130061001	48	113	006100	1	Yes	Yes	Yes	97	97	94	96	82
481130110021	48	113	011002	1	Yes	No	Yes	82	81	75	77	59
481130182042	48	113	018204	2	Yes	Yes	Yes	97	98	91	95	82
481130130101	48	113	013010	1	Yes	Yes	Yes	91	92	88	87	70
481130136261	48	113	013626	1	Yes	Yes	Yes	98	99	98	96	97
481130137172	48	113	013717	2	Yes	Yes	Yes	96	97	94	93	78
481130176042	48	113	017604	2	Yes	Yes	No	94	91	86	92	76
481130182063	48	113	018206	3	Yes	Yes	Yes	95	95	88	93	78
481130113001	48	113	011300	1	Yes	Yes	Yes	89	86	84	84	67

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
64	88	0	83	75	66	88	80
97	83	0	96	97	95	87	96
92	79	54	92	94	85	91	91
86	98	98	97	89	69	93	96
56	68	67	79	76	53	60	71
93	74	74	93	91	81	93	94
91	96	90	92	89	85	92	94
98	84	90	97	95	96	89	99
69	84	93	92	78	73	86	94
97	98	82	99	99	97	98	98
81	95	97	92	95	88	90	79
85	97	51	97	91	72	91	96
91	99	0	94	99	99	99	99
82	98	71	83	98	97	97	95
66	85	57	84	87	59	71	81
79	79	0	88	92	82	70	84
83	91	43	93	96	85	80	90
83	85	70	93	96	84	87	90
62	81	47	65	91	89	80	79
76	65	0	88	78	76	69	78
85	90	60	94	90	85	82	91
83	80	0	76	85	85	74	77
73	74	38	72	78	78	82	81
95	97	98	99	99	97	92	97
85	85	0	89	71	68	84	52
50	66	0	60	40	33	47	23
75	89	81	96	94	94	89	97
72	89	0	87	89	89	91	67
86	99	0	88	99	96	98	89
75	90	0	79	96	90	89	77
92	75	73	93	91	86	86	89
93	58	72	94	87	87	83	90
84	89	60	86	88	90	65	91
93	97	78	94	95	96	88	96
68	96	65	76	95	95	88	91
63	89	66	82	74	66	91	79
50	86	46	60	65	52	76	12
74	97	96	93	98	84	92	89
58	26	21	62	68	55	56	59
53	77	0	70	78	72	75	41
96	81	93	95	94	95	89	97
85	82	64	94	83	87	79	88
31	68	0	43	71	69	57	58
68	90	38	79	96	95	93	91
46	79	0	41	53	41	58	79
64	61	0	52	87	73	78	85
89	95	70	87	77	58	95	94
72	93	0	66	74	62	84	95
68	86	0	61	86	83	70	86
81	91	0	74	94	84	80	96
77	84	0	84	68	62	76	47
73	84	92	72	96	94	82	86
65	70	82	52	84	83	70	65
66	95	92	86	89	81	94	75
90	95	99	98	98	86	95	96
0	0	0	0	0	0	0	0
59	83	56	85	78	83	70	77
71	85	93	94	90	61	83	91
92	99	79	95	99	97	97	95
75	91	95	93	84	57	78	91
81	94	95	98	98	74	97	98
85	96	94	98	93	77	81	97
86	69	97	99	98	84	96	98
87	97	92	97	97	77	90	96
59	75	78	83	72	57	72	75
87	67	84	78	98	95	94	97
64	93	42	72	93	91	87	70
83	82	0	88	97	87	98	76
82	91	85	81	96	94	91	96
75	95	65	85	81	71	91	91
78	96	94	75	97	91	87	86
67	58	45	91	81	77	70	87

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
481130136061	48	113	013606	1	Yes	No	Yes	64	70	64	63	44
481130137203	48	113	013720	3	Yes	No	Yes	82	86	76	76	57
481130176052	48	113	017605	2	Yes	No	Yes	88	85	79	84	67
481130096103	48	113	009610	3	Yes	Yes	Yes	99	99	99	99	99
481130166073	48	113	016607	3	Yes	Yes	Yes	94	93	89	91	75
481130166071	48	113	016607	1	Yes	Yes	Yes	90	88	83	85	68
481130109032	48	113	010903	2	Yes	No	Yes	87	86	75	82	64
481130109031	48	113	010903	1	Yes	Yes	Yes	93	92	83	89	73
481130130111	48	113	013011	1	Yes	Yes	Yes	96	96	94	93	78
481130130113	48	113	013011	3	Yes	Yes	Yes	94	95	92	91	75
481130130112	48	113	013011	2	Yes	Yes	Yes	94	95	92	90	74
481130190181	48	113	019018	1	Yes	Yes	Yes	88	90	81	83	65
481130093011	48	113	009301	1	Yes	Yes	Yes	98	97	93	97	84
481130093044	48	113	009304	4	Yes	Yes	Yes	97	95	89	95	81
481130106021	48	113	010602	1	Yes	Yes	Yes	96	96	92	93	78
481130167041	48	113	016704	1	Yes	No	Yes	84	79	64	39	62
481130168031	48	113	016803	1	Yes	Yes	No	90	85	67	45	70
481130176022	48	113	017602	2	Yes	Yes	Yes	95	93	88	92	77
481130182052	48	113	018205	2	Yes	Yes	Yes	94	94	84	91	75
481130181271	48	113	018127	1	Yes	Yes	No	91	90	85	87	70
481130184021	48	113	018402	1	Yes	Yes	No	89	89	81	85	68
481130186001	48	113	018600	1	Yes	Yes	Yes	88	89	78	83	66
481130192023	48	113	019202	3	Yes	No	Yes	67	72	66	65	72
481130152022	48	113	015202	2	Yes	Yes	Yes	96	96	94	99	77
481130180013	48	113	018001	3	Yes	Yes	No	90	89	87	86	69
481390610001	48	139	061000	1	Yes	No	Yes	73	57	37	34	56
481130185012	48	113	018501	2	Yes	Yes	Yes	92	93	86	89	72
481210216451	48	121	021645	1	Yes	Yes	No	99	99	98	97	86
481210201182	48	121	020118	2	Yes	Yes	No	82	90	60	81	63
481210214112	48	121	021411	2	Yes	Yes	No	99	99	97	97	86
481210201231	48	121	020123	1	Yes	Yes	No	86	92	69	83	65
481210203152	48	121	020315	2	Yes	Yes	No	88	93	76	84	67
481210206041	48	121	020604	1	Yes	Yes	No	83	90	80	80	62
481210204041	48	121	020404	1	Yes	Yes	No	82	90	76	40	63
481210209001	48	121	020900	1	Yes	No	Yes	70	80	73	70	51
481210210001	48	121	021000	1	Yes	Yes	No	91	95	91	88	92
481210212033	48	121	021203	3	Yes	No	Yes	81	88	80	78	60
481210216344	48	121	021634	4	Yes	Yes	No	92	94	88	87	70
481210212032	48	121	021203	2	Yes	Yes	Yes	89	94	88	86	69
481210217172	48	121	021717	2	Yes	Yes	No	87	91	84	81	87
481210214162	48	121	021416	2	Yes	Yes	No	86	91	75	82	65
481210212041	48	121	021204	1	Yes	Yes	Yes	95	97	94	93	77
481210214142	48	121	021414	2	Yes	Yes	No	94	97	86	92	76
481210212042	48	121	021204	2	Yes	No	Yes	35	40	36	53	32
481210212043	48	121	021204	3	Yes	Yes	Yes	89	94	88	86	69
481210213012	48	121	021301	2	Yes	Yes	No	96	98	96	95	97
481210208001	48	121	020800	1	Yes	Yes	Yes	90	95	88	88	92
481210207003	48	121	020700	3	Yes	Yes	No	87	93	87	85	68
481210206031	48	121	020603	1	Yes	Yes	No	91	95	89	89	73
481210201272	48	121	020127	2	Yes	Yes	No	86	91	75	81	63
481210217452	48	121	021745	2	Yes	No	Yes	69	75	67	66	73
481210212031	48	121	021203	1	Yes	Yes	Yes	95	98	94	93	78
481210202081	48	121	020208	1	Yes	Yes	No	78	90	59	39	62
481210214211	48	121	021421	1	Yes	Yes	No	85	90	79	81	63
481210216413	48	121	021641	3	Yes	Yes	No	90	93	84	84	67
484391130051	48	439	113005	1	Yes	Yes	Yes	92	92	87	98	71
484391220011	48	439	122001	1	Yes	Yes	Yes	99	99	98	99	86
484391220012	48	439	122001	2	Yes	Yes	Yes	89	90	85	97	67
484391220022	48	439	122002	2	Yes	Yes	Yes	87	88	83	95	87
484391219071	48	439	121907	1	Yes	Yes	Yes	97	97	94	99	80
484391219042	48	439	121904	2	Yes	Yes	Yes	94	95	92	98	75
484391219081	48	439	121908	1	Yes	Yes	Yes	99	99	98	99	86
484391219041	48	439	121904	1	Yes	Yes	Yes	97	97	95	99	80
484391115224	48	439	111522	4	Yes	Yes	Yes	81	82	77	92	57
484391115222	48	439	111522	2	Yes	Yes	Yes	86	86	82	95	62
484391115563	48	439	111556	3	Yes	Yes	No	98	98	97	99	85
484391115711	48	439	111571	1	Yes	Yes	No	92	92	88	98	71
484391115361	48	439	111536	1	Yes	Yes	No	85	86	81	95	86
484391142052	48	439	114205	2	Yes	Yes	No	88	94	60	86	69
484391060051	48	439	106005	1	Yes	Yes	Yes	92	94	89	89	73
484391052072	48	439	105207	2	Yes	Yes	Yes	93	95	86	91	76
484391023024	48	439	102302	4	Yes	Yes	Yes	92	94	85	90	74

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
32	62	0	38	60	51	44	51
54	81	0	55	79	76	73	33
61	78	48	78	79	78	69	60
97	99	91	98	99	99	99	99
79	96	48	88	95	91	95	47
71	93	0	83	91	85	88	38
69	80	40	79	89	80	0	31
80	90	35	87	95	87	85	60
73	97	65	81	97	97	95	81
69	95	63	78	96	95	91	78
68	95	0	77	96	95	93	76
56	75	29	64	90	88	63	80
82	97	99	97	88	79	97	75
78	92	92	97	93	79	75	97
93	97	75	97	97	95	89	95
58	53	69	82	81	78	71	30
67	80	60	87	81	84	84	40
77	89	70	85	89	88	92	70
76	74	39	70	95	87	88	94
65	91	50	71	90	75	86	74
63	86	43	66	91	83	80	75
65	70	91	62	91	90	0	76
35	66	66	39	71	66	53	62
94	77	70	94	86	89	96	95
65	83	87	73	87	70	70	54
36	34	55	19	66	32	43	76
75	92	92	72	95	94	90	74
88	79	78	80	95	89	81	95
60	0	53	16	46	16	82	80
88	98	0	69	85	68	99	82
62	31	0	27	28	30	0	40
56	45	30	46	45	44	60	69
32	67	0	28	62	72	71	81
31	50	0	29	69	69	76	7
23	66	59	22	75	74	60	8
43	92	81	43	91	90	92	53
33	66	33	28	61	69	70	80
65	93	76	65	73	70	87	35
40	66	58	35	70	79	79	88
63	79	57	49	76	76	80	86
52	76	0	37	50	60	60	18
56	91	0	46	73	87	89	94
52	41	75	44	62	82	69	92
13		0				33	
43	92	63	37	68	82	78	86
57	97	0	55	91	94	97	69
43	88	0	42	90	88	92	55
35	88	75	38	90	88	81	12
42	84	66	42	79	84	93	89
53	61	41	37	42	64	68	83
47	38	24	31	65	66	61	68
51	94	0	47	76	85	81	95
22	22	44	32	53	37	50	20
56	85	57	37	53	49	78	14
62	85	0	64	76	78	86	32
85	92	36	90	93	94	90	88
95	91	99	96	99	99	95	98
80	90	54	83	91	89	80	84
86	88	48	81	88	89	85	82
90	82	83	94	98	97	94	93
86	95	74	91	96	95	90	91
95	95	72	98	99	99	99	98
91	98	82	94	98	98	96	93
65	81	60	70	77	72	70	77
70	61	35	75	83	76	0	80
93	99	66	96	99	98	97	98
80	60	0	86	93	88	79	86
71	86	0	78	87	84	81	83
55	78	70	90	85	42	88	58
84	94	69	77	95	79	84	93
79	94	45	95	73	77	94	92
79	87	92	92	84	63	91	41

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
484391060023	48	439	106002	3	Yes	Yes	Yes	87	89	83	83	66
484391107032	48	439	110703	2	Yes	No	Yes	54	61	42	61	65
484391115362	48	439	111536	2	Yes	Yes	No	79	80	75	91	81
484391107042	48	439	110704	2	Yes	Yes	Yes	92	94	81	90	73
484391060044	48	439	106004	4	Yes	No	Yes	78	80	62	74	56
484391115363	48	439	111536	3	Yes	Yes	No	81	82	77	92	83
484391060022	48	439	106002	2	Yes	Yes	Yes	89	90	84	85	68
484391112022	48	439	111202	2	Yes	No	Yes	80	82	62	76	57
484391112023	48	439	111202	3	Yes	Yes	Yes	95	96	83	93	78
484391111022	48	439	111102	2	Yes	Yes	Yes	92	93	86	89	72
484391060043	48	439	106004	3	Yes	Yes	Yes	93	94	80	90	74
484391111041	48	439	111104	1	Yes	No	Yes	87	88	78	82	65
484391114102	48	439	111410	2	Yes	Yes	No	93	94	84	90	74
484391230012	48	439	123001	2	Yes	Yes	No	89	92	81	86	69
484391104013	48	439	110401	3	Yes	No	Yes	69	76	55	69	49
484391111021	48	439	111102	1	Yes	Yes	Yes	94	95	88	91	75
484391104012	48	439	110401	2	Yes	No	Yes	71	78	58	70	51
484391104011	48	439	110401	1	Yes	Yes	Yes	86	91	73	83	66
484391137153	48	439	113715	3	Yes	Yes	No	82	86	76	93	83
484391006022	48	439	100602	2	Yes	No	Yes	82	86	70	79	61
484391230021	48	439	123002	1	Yes	Yes	No	89	92	81	86	69
484391105004	48	439	110500	4	Yes	No	Yes	79	83	70	76	57
484391005062	48	439	100506	2	Yes	Yes	Yes	94	96	89	92	77
484391104014	48	439	110401	4	Yes	Yes	Yes	88	92	75	85	68
484391137131	48	439	113713	1	Yes	Yes	No	83	87	80	93	84
484391115061	48	439	111506	1	Yes	Yes	No	95	96	88	92	77
484391006024	48	439	100602	4	Yes	No	Yes	29	31	20	52	30
484391005061	48	439	100506	1	Yes	Yes	Yes	96	98	92	95	80
484391104021	48	439	110402	1	Yes	Yes	Yes	92	94	84	89	73
484391111042	48	439	111104	2	Yes	Yes	Yes	97	98	92	95	82
484391131191	48	439	113119	1	Yes	Yes	No	82	83	75	93	58
484391111032	48	439	111103	2	Yes	Yes	Yes	89	90	81	85	68
484391134072	48	439	113407	2	Yes	Yes	No	94	95	86	98	93
484391064002	48	439	106400	2	Yes	Yes	Yes	92	93	84	88	71
484391064001	48	439	106400	1	Yes	Yes	Yes	95	95	88	92	76
484391111031	48	439	111103	1	Yes	Yes	Yes	94	95	88	92	76
484391114051	48	439	111405	1	Yes	No	Yes	37	36	25	53	32
484391050095	48	439	105009	5	Yes	No	Yes	0	0	0	0	0
484391134071	48	439	113407	1	Yes	Yes	No	99	99	96	99	99
484391006021	48	439	100602	1	Yes	No	Yes	63	70	52	65	46
484391105006	48	439	110500	6	Yes	No	Yes	81	85	71	77	58
484391105002	48	439	110500	2	Yes	Yes	Yes	96	97	91	94	80
484391060021	48	439	106002	1	Yes	No	Yes	37	38	34	53	32
484391060042	48	439	106004	2	Yes	No	Yes	72	75	56	70	51
484391065202	48	439	106520	2	Yes	Yes	Yes	95	96	88	92	76
484391012011	48	439	101201	1	Yes	No	Yes	85	87	78	80	86
484391007001	48	439	100700	1	Yes	Yes	Yes	93	95	88	91	75
484391007003	48	439	100700	3	Yes	Yes	Yes	99	99	96	97	87
484391008002	48	439	100800	2	Yes	Yes	Yes	95	96	92	92	77
484391008001	48	439	100800	1	Yes	Yes	Yes	97	98	95	95	82
484391133023	48	439	113302	3	Yes	Yes	No	94	95	86	90	74
484391007004	48	439	100700	4	Yes	Yes	Yes	90	92	83	86	70
484391021022	48	439	102102	2	Yes	Yes	No	87	90	84	84	66
484391005052	48	439	100505	2	Yes	Yes	Yes	94	96	89	92	76
484391140031	48	439	114003	1	Yes	Yes	No	90	94	85	87	70
484391065222	48	439	106522	2	Yes	No	Yes	87	89	78	82	64
484391050092	48	439	105009	2	Yes	Yes	Yes	94	96	94	92	94
484391065091	48	439	106509	1	Yes	Yes	No	82	84	69	93	58
484391102062	48	439	110206	2	Yes	Yes	No	98	99	97	97	85
484391050091	48	439	105009	1	Yes	Yes	Yes	99	99	98	97	98
484391050093	48	439	105009	3	Yes	Yes	Yes	92	94	91	88	92
484391002013	48	439	100201	3	Yes	Yes	Yes	97	98	97	96	97
484391050094	48	439	105009	4	Yes	Yes	Yes	98	98	97	96	97
484391103011	48	439	110301	1	Yes	Yes	Yes	90	92	85	86	69
484391101041	48	439	110104	1	Yes	No	Yes	86	89	82	81	63
484391103013	48	439	110301	3	Yes	Yes	Yes	97	98	95	96	82
484391137142	48	439	113714	2	Yes	Yes	No	90	93	85	97	89
484391103012	48	439	110301	2	Yes	Yes	Yes	89	91	83	85	68
484391137151	48	439	113715	1	Yes	Yes	No	78	83	73	90	80
484391049001	48	439	104900	1	Yes	Yes	Yes	97	98	95	95	96
484391101043	48	439	110104	3	Yes	Yes	Yes	91	93	88	87	70
484391101042	48	439	110104	2	Yes	No	Yes	78	81	74	73	54

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US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
81	86	66	68	91	69	78	85
35	18	50	65	28	46	36	58
63	53	37	74	83	77	64	74
77	76	89	95	67	82	91	91
66	51	24	52	80	43	61	74
66	83	32	75	84	80	72	79
86	87	82	73	92	79	78	89
68	52	0	54	82	47	65	71
89	76	71	79	97	77	80	89
84	81	64	74	94	82	86	83
85	74	57	74	95	78	75	85
76	88	68	67	89	78	82	81
86	95	56	71	82	86	92	87
75	92	65	91	68	75	78	79
41	56	55	75	58	39	52	45
86	93	71	75	93	86	90	89
45	62	56	78	55	44	50	48
64	85	85	91	66	71	69	61
55	70	0	50	80	79	55	75
63	57	83	88	59	71	57	65
75	88	47	91	67	75	77	78
60	64	85	83	61	64	0	56
84	90	89	93	96	83	91	61
65	88	78	90	77	60	86	60
59	74	0	56	60	38	72	77
88	80	68	80	94	88	92	68
18		0				24	
88	91	96	96	98	83	87	69
77	76	89	93	89	66	86	65
92	97	94	85	97	93	96	93
70	74	0	72	83	82	77	79
79	79	87	70	85	82	75	81
94	65	87	78	89	88	0	94
82	93	75	71	77	88	83	88
87	93	53	76	87	89	76	90
87	95	59	77	88	90	92	89
29		0				41	
0	0	0	0	0	0	0	0
99	96	98	91	97	97	0	99
43	35	53	73	40	54	41	44
63	57	85	84	65	62	63	59
86	85	98	97	88	81	88	80
30		0				38	
60	36	0	47	77	44	59	64
85	96	0	79	81	87	86	83
70	85	65	70	86	79	71	74
82	57	72	94	85	80	0	79
94	87	99	99	99	91	96	93
85	85	97	93	96	86	76	77
90	80	98	96	98	92	95	82
82	91	73	77	88	90	85	80
76	69	81	91	75	72	78	77
74	88	0	85	89	72	88	64
81	92	67	94	94	68	81	63
93	81	82	81	93	85	87	89
73	84	0	63	70	77	77	72
87	65	93	89	97	93	88	88
68	83	46	62	79	59	63	74
86	94	0	89	99	96	98	90
95	66	99	96	99	98	0	96
83	65	89	86	95	90	76	86
92	87	95	94	99	97	97	80
91	98	89	91	99	98	96	95
77	88	82	76	90	86	83	81
67	73	63	68	87	79	83	65
90	84	88	87	96	97	91	91
69	66	53	64	82	60	88	74
75	79	92	73	89	86	77	82
51	57	0	47	79	73	61	72
91	93	98	90	98	96	96	89
76	94	66	75	92	85	85	71
57	76	0	57	80	71	75	52

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
484391115221	48	439	111522	1	Yes	Yes	Yes	96	96	94	99	79
484391107043	48	439	110704	3	Yes	No	Yes	72	78	59	71	52
484391107033	48	439	110703	3	Yes	No	Yes	80	85	67	78	84
484391052012	48	439	105201	2	Yes	Yes	Yes	95	97	90	94	79
484391023011	48	439	102301	1	Yes	No	Yes	84	88	77	81	63
484391220023	48	439	122002	3	Yes	Yes	Yes	97	97	95	99	97
484391220021	48	439	122002	1	Yes	Yes	Yes	98	98	96	99	97
484391130071	48	439	113007	1	Yes	No	Yes	38	37	34	62	32
484391130061	48	439	113006	1	Yes	Yes	Yes	83	84	77	93	59
484391219072	48	439	121907	2	Yes	Yes	Yes	99	99	98	99	86
484391115562	48	439	111556	2	Yes	Yes	No	90	90	86	97	68
484391115223	48	439	111522	3	Yes	Yes	Yes	80	81	76	92	56
484391115561	48	439	111556	1	Yes	Yes	No	85	85	81	95	62
484391060052	48	439	106005	2	Yes	No	Yes	80	83	77	77	58
484391108072	48	439	110807	2	Yes	Yes	No	89	92	77	87	70
484391110242	48	439	111024	2	Yes	Yes	No	91	93	75	88	71
484391052071	48	439	105207	1	Yes	Yes	Yes	95	97	89	94	79
484391115256	48	439	111525	6	Yes	Yes	No	93	93	89	89	73
484391115251	48	439	111525	1	Yes	Yes	No	94	94	91	91	75
484391115672	48	439	111567	2	Yes	Yes	No	91	91	79	87	71
484391107044	48	439	110704	4	Yes	Yes	Yes	93	95	83	91	75
484391237002	48	439	123700	2	Yes	Yes	No	88	90	86	83	66
484391107061	48	439	110706	1	Yes	Yes	No	88	92	74	86	69
484391057061	48	439	105706	1	Yes	Yes	No	98	99	95	97	84
484391065233	48	439	106523	3	Yes	Yes	No	87	89	81	96	64
484391134074	48	439	113407	4	Yes	Yes	No	87	89	77	96	87
484391060041	48	439	106004	1	Yes	Yes	Yes	97	98	89	96	82
484391112024	48	439	111202	4	Yes	Yes	Yes	92	93	77	89	73
484391114052	48	439	111405	2	Yes	No	Yes	82	83	67	77	59
484391105003	48	439	110500	3	Yes	No	Yes	83	87	74	79	61
484391066001	48	439	106600	1	Yes	Yes	Yes	94	97	87	92	77
484391104022	48	439	110402	2	Yes	Yes	Yes	94	96	87	92	76
484391066002	48	439	106600	2	Yes	Yes	Yes	89	93	80	86	69
484391114053	48	439	111405	3	Yes	No	Yes	83	84	68	79	61
484391006023	48	439	100602	3	Yes	Yes	Yes	89	93	79	87	70
484391105005	48	439	110500	5	Yes	No	Yes	67	72	58	67	47
484391112021	48	439	111202	1	Yes	Yes	Yes	95	96	83	93	78
484391065191	48	439	106519	1	Yes	Yes	Yes	93	94	85	89	73
484391065201	48	439	106520	1	Yes	Yes	Yes	92	93	84	88	71
484391005063	48	439	100506	3	Yes	Yes	Yes	90	93	84	87	70
484391007002	48	439	100700	2	Yes	Yes	Yes	95	97	91	94	79
484391008003	48	439	100800	3	Yes	Yes	Yes	95	96	92	92	77
484391105001	48	439	110500	1	Yes	Yes	Yes	92	94	85	89	73
484391065212	48	439	106521	2	Yes	No	Yes	86	88	77	81	63
484391065221	48	439	106522	1	Yes	No	Yes	72	75	63	69	49
484391005051	48	439	100505	1	Yes	Yes	Yes	94	96	89	91	76
484391002012	48	439	100201	2	Yes	Yes	Yes	98	99	98	97	98
484391002011	48	439	100201	1	Yes	Yes	Yes	99	99	99	98	99
484391049002	48	439	104900	2	Yes	Yes	Yes	94	96	92	92	94
484391135102	48	439	113510	2	Yes	Yes	No	86	88	81	95	86
484391130072	48	439	113007	2	Yes	Yes	Yes	85	86	79	95	62
484391110031	48	439	111003	1	Yes	Yes	No	89	91	84	85	68
484391047021	48	439	104702	1	Yes	Yes	Yes	99	99	97	98	87
484391047022	48	439	104702	2	Yes	Yes	Yes	97	97	93	95	81
484391047023	48	439	104702	3	Yes	Yes	Yes	97	98	94	95	82
484391115253	48	439	111525	3	Yes	Yes	No	92	92	88	87	71
484391115692	48	439	111569	2	Yes	Yes	No	91	91	87	86	69
484391052014	48	439	105201	4	Yes	Yes	Yes	88	91	81	85	68
484391107031	48	439	110703	1	Yes	No	Yes	76	81	62	74	81
484391052011	48	439	105201	1	Yes	No	Yes	79	84	72	77	58
484391052013	48	439	105201	3	Yes	Yes	Yes	96	97	91	95	80
484391023013	48	439	102301	3	Yes	Yes	Yes	92	94	86	89	73
484391023012	48	439	102301	2	Yes	Yes	Yes	88	91	81	85	68
484391023023	48	439	102302	3	Yes	Yes	Yes	96	98	91	95	81
484391023021	48	439	102302	1	Yes	Yes	Yes	88	91	81	86	68
484391115533	48	439	111553	3	Yes	Yes	No	89	90	85	85	68
484391052061	48	439	105206	1	Yes	Yes	Yes	95	97	90	94	80
484391060062	48	439	106006	2	Yes	No	Yes	79	82	75	75	57
484391060061	48	439	106006	1	Yes	Yes	Yes	90	92	87	87	70
484391052062	48	439	105206	2	Yes	Yes	Yes	89	93	81	87	70
484391023022	48	439	102302	2	Yes	Yes	Yes	88	91	80	85	68
484391110202	48	439	111020	2	Yes	Yes	No	92	94	86	90	74

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
87	94	66	89	93	89	82	93
52	74	32	79	45	58	76	71
59	80	40	85	50	65	76	82
85	89	76	96	83	81	88	86
67	86	78	87	64	68	80	71
95	85	98	93	97	97	85	96
98	94	96	95	98	98	95	96
25		0				38	
69	68	35	79	86	84	79	74
95	96	61	97	99	99	97	97
77	77	34	83	91	86	85	87
62	64	57	69	79	71	56	74
70	87	58	77	86	81	84	79
72	83	43	63	85	71	71	82
71	86	65	90	65	59	72	48
84	74	0	76	75	56	75	89
83	92	86	97	78	78	97	94
83	90	62	80	76	80	89	89
84	90	0	83	80	83	88	91
81	82	0	74	79	74	78	88
80	87	90	96	67	87	91	93
75	90	49	81	90	81	88	60
71	77	83	93	53	82	88	91
94	94	0	91	99	86	91	97
78	88	40	78	89	85	78	82
88	74	87	67	83	86	72	88
93	59	79	83	98	85	73	95
84	66	85	72	94	69	78	84
72	36	59	52	68	61	66	74
64	46	82	86	67	65	69	63
79	93	41	97	80	83	79	75
81	83	94	95	85	73	92	75
71	86	32	92	71	73	85	66
73	76	75	56	67	76	80	78
74	64	88	93	71	79	0	86
48	45	70	71	56	49	52	41
89	74	96	79	97	77	93	93
82	86	64	74	75	84	81	80
80	93	38	74	78	81	90	79
77	60	36	89	92	66	67	53
85	70	86	96	94	83	93	83
86	92	97	93	96	88	95	80
79	86	94	93	84	78	90	70
73	63	0	66	79	73	80	69
55	70	0	45	53	56	61	45
76	94	45	92	96	70	82	62
94	94	94	95	99	98	97	91
96	99	99	97	99	99	98	88
86	85	95	86	96	93	87	88
70	71	33	71	82	73	83	78
71	81	0	82	88	85	76	85
80	87	52	76	91	70	85	87
97	98	97	95	99	91	97	98
97	92	93	89	98	84	94	96
94	91	97	90	98	86	95	96
79	83	60	80	78	78	85	88
77	86	0	80	80	77	75	84
72	90	46	91	66	74	90	86
55	55	70	83	43	64	0	80
60	61	78	83	59	56	78	24
85	89	61	97	82	86	78	90
78	89	88	93	79	73	91	84
74	72	83	90	72	71	81	56
87	92	99	95	93	66	94	86
74	73	90	87	83	52	87	53
79	77	43	74	76	74	87	66
84	80	0	97	81	78	90	44
67	63	0	61	83	59	71	80
82	82	53	75	93	72	86	90
73	77	38	91	71	65	87	35
73	78	89	87	80	54	86	38
87	93	67	79	94	73	88	92

Low-Income and Disadvar

GEOID20	STATEFP20	COUNTYFP20	TRACTCE20	BLKGRPCE20	Disadvantaged	US Supp Index >=90%	CEJST's Disadvantaged	US Suppl. Index PM 2.5	US Suppl. Index Ozone	US Suppl. Index Diesel PM	US Suppl. Index Cancer Risk	US Suppl. Index Respiratory HI
484391130073	48	439	113007	3	Yes	Yes	Yes	94	95	90	98	75
484391115702	48	439	111570	2	Yes	Yes	No	95	95	93	92	77
484391115613	48	439	111561	3	Yes	Yes	No	92	91	83	88	72
484391107062	48	439	110706	2	Yes	Yes	No	99	99	93	98	88
484391107041	48	439	110704	1	Yes	No	Yes	77	82	64	74	56
484391115225	48	439	111522	5	Yes	Yes	Yes	96	96	94	99	79
482211602111	48	221	160211	1	Yes	Yes	No	77	86	33	42	65
482211602162	48	221	160216	2	Yes	No	Yes	39	47	10	13	38
482211603023	48	221	160302	3	Yes	No	Yes	48	59	9	24	15
482211602152	48	221	160215	2	Yes	Yes	Yes	78	86	31	43	66
482211602151	48	221	160215	1	Yes	Yes	Yes	86	92	40	47	74
482211602161	48	221	160216	1	Yes	No	Yes	71	80	26	38	60
482211603031	48	221	160303	1	Yes	Yes	No	79	88	25	46	71

ntaged Communities in North Texas

US Suppl. Index Toxic Releases to Air	US Suppl. Index Traffic Proximity	US Suppl. Index Lead Paint	US Suppl. Index Superfund Proximity	US Suppl. Index RMP Proximity	US Suppl. Index Hazardous Waste	US Suppl. Index Storage Tanks	US Suppl. Index Wastewater Discharge
86	82	82	93	96	95	91	89
85	89	0	89	95	89	88	91
80	89	0	80	70	79	79	51
93	96	99	99	78	99	98	99
57	45	79	84	44	69	58	80
88	92	72	90	96	92	92	95
33	65	0	45	55	15	77	90
24	14	19	21	11	6	24	56
32	36	32	19	12	3	33	58
57	16	0	53	27	14	60	91
66	21	53	63	33	18	83	95
51	8	38	50	17	11	0	86
45	79	68	54	50	19	82	94