Post-NEVI Electric Vehicle Infrastructure Research

Workshop

Arlington, February 22, 2023

EV Strategic Plan Workshop Agenda

- 9:00 am – 9:15 am **Introduction and previous workshop recap**
- 9:15 am – 10:30 am **TxDOT/MPO panel discussion and Q&A**
- 10:30 am – 10:45 am **Break**
- 10:45 am – 12:00 pm **Freight, Fleet, Multi-housing panel and Q&A**
- 12:00-1:00 pm **Networking lunch**

EV Strategic Plan Workshop Agenda

- 1:00- 2:00 pm **Breakout group session I**
  - Equity and Inclusion
  - Energy Supply and Demand
  - Interagency Coordination
  - EV Grant Programs (USDOT and others)
- 2:00-2:15 pm Break
- 2:15-3:15 pm **Breakout group session II**
- 3:15-3:50 pm **Group report on breakout discussions**
- 3:50-4:00 pm Wrap-up

Research Project Overview

- TxDOT research project 0-7169: Post-NEVI Electric Vehicle Infrastructure Research (Freight, Fleet, and Multi-family Housing)
- Develop EV long-term strategic plan
  - Guide development of EV infrastructure in Texas
  - Meet needs of EV stakeholders
  - Maximize financial opportunities available to Texas
  - Guide effective and equitable distribution of infrastructure funding
- Goal: a stable and consistent EV charging network

Project Monitoring Committee

Research Project Manager: Joanne Steele, Research and Technology Implementation Division

Name	Title	Organization
Benjamin Cox	Transportation Engineer	Lubbock District
Brent Johnson	Roadside Facilities Section Director	Maintenance Division
Ernesto Jaimes	Engineering Assistant	Austin District
Harsh Doshy	Transportation Engineer	Maintenance Division
James Kuhr	Strategic Portfolio Project Manager	Strategy and Innovation Division
Lori Clark	Air Quality Management Program Manager & DFW Clean Cities Coordinator	North Central Texas Council of Governments (NCTCOG)
Patrick Hargrove	Engineering Assistant	Austin District
Ryan Granger	Strategic Research Analyst	Strategy and Innovation Division

Research Team Members

Name	Title	Organization
Edgar Kraus	Research Engineer (P.I.)	Texas A&M Transportation Institute
Joe Zietsman	Deputy Agency Director	Texas A&M Transportation Institute
Alice Grossman	Associate Research Scientist	Texas A&M Transportation Institute
Jacqueline Kuzio	Assistant Research Scientist	Texas A&M Transportation Institute
Harshit Shukla	Assistant Research Scientist	Texas A&M Transportation Institute
Mohammad Askariyeh	Assistant Research Scientist	Texas A&M Transportation Institute
Tara Ramani	Associate Research Engineer	Texas A&M Transportation Institute
Cesar Quiroga	Senior Research Engineer	Texas A&M Transportation Institute
Jolanda Prozzi	Senior Research Engineer	Texas A&M Transportation Institute
Thomas Overbye	Professor	TAMU Department of Electrical and Computer Engineering

Expected Research Products

- Assessment of EV planning analysis tools
- EV policy analysis framework
- Long-term statewide EV infrastructure strategies
  - Guidance for equitable deployment/densification of EV charging infrastructure in Texas
  - Guidance to maximize funding from federal formula and discretionary funding programs
  - Guidance to assist and engage regional/local transportation agencies to request funding from federal funding programs

Project Overview

- Task 1. Project management
- Task 2. Review of literature, programs, and regulations
- **Task 3. Regional Stakeholder Workshops**
  - 11/09/2022 (virtual)
  - **12/09/2022 (Austin)**
  - 02/01/2023 (NCTCOG Arlington)
- Task 4. Assessment of available data and tools to guide the analysis
- Task 5. Analysis of policies and funding opportunities
- Task 6. Develop long-term EV infrastructure strategic plan

Workshop Objectives

- Discuss TxDOT's plans for a statewide EV charging plan
- Identify stakeholder needs, active initiatives, planned activities, and concerns
- Discuss EV policy considerations
- Gather feedback on potential implementation strategies, including financial strategies
- Identify opportunities to coordinate activities among stakeholders

Workshop 1 Recap

- Virtually, about 100 participants
- Presentations from TxDOT, LCRA, ONCOR, and ERCOT
- Topics discussed in breakouts:
  - Funding and Finance
  - Equity and Inclusion
  - Energy Supply and Demand
  - Jobs and Workforce Development
  - Public Agency Fleet Transitions
  - Inter-Regional Connectivity
  - Customer Experience

Workshop 2 Recap

- In-person, about 40 participants from diverse background
- Presentations from TxDOT, Harris County, Houston-Galveston Area Council, and Harris County Toll Road Authority
- Topics discussed in breakouts:
  - Funding and Finance
  - Equity and Inclusion
  - Energy Supply and Demand
  - Interagency Coordination
  - EV Grant Programs

Workshop Discussion Points

- Details of TxDOT's NEVI plan, build out priority, funding for operations and maintenance
- Challenges to the electrical grid, electricity cost, reliability
- Charging infrastructure for fleet vehicles
- Lack of standardized communication infrastructure
- Electric cooperatives: forecasting revenues, planning info, TxDOT support
- Need for "clean cities" type coalition for areas outside big cities

Questions?

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- 3:15-3:50 pm **Group report on breakout discussions**
- 3:50-4:00 pm Wrap-up

Breakout Goals and Expectations

- Conduct high-level discussion on breakout topic
- Provide feedback and insight on breakout topic
  - What are critical issues?
  - Should TxDOT be involved, and if yes, how?
- **Bring back your top three items/concerns/issues that are most pressing and potential ways to address them**

Breakout Groups

- Equity and Inclusion (Alice Grossman)
- Energy Supply and Demand (Harshit Shukla)
- Interagency Coordination (Tara Ramani)
- EV Grant Programs (USDOT and others) (Jackie Kuzio)

Breakout Ground Rules

- Be courteous and hear one another out
- Keep an open mind and consider all ideas
- Keep workshop goals in mind
- Disagreement is ok, but work constructively towards a solution
- Participate: share ideas/thoughts, ask questions, and listen

Breakout Guidance and Recommendations

- Panelist will help guide the discussion
- Select a note taker
- Review notes halfway through session
- Consider “structured round” of comments based on emerging themes
- Select a presenter for report back

Post-NEVI Electric Vehicle Infrastructure Research

Workshop

Arlington, February 22, 2023

Workshop Summary

- Learned about TxDOT EV research and other TxDOT EV activities
- Gained perspective from EV stakeholders
- Conducted breakout discussions and provided feedback

Options to Provide Feedback

- Email comments to the research team
- Provide feedback in survey

Research Team Contact Information

Edgar Kraus (P.I.)

Research Engineer

Utility Engineering Program

Texas A&M Transportation Institute

e-kraus@tti.tamu.edu

210-321-1228

Joe Zietsman (Co-P.I.)

Deputy Agency Director

Texas A&M Transportation Institute

Director, Center for Advancing Research in Transportation Emissions, Energy, and Health (CARTEEH)

Texas A&M University System

j-zietsman@tti.tamu.edu

979-317-2796

Dallas-Fort Worth
CLEAN CITIES

Regional Planning for EV Charging Infrastructure

Lori Clark
Program Manager & DFW Clean Cities Director

Long-Term Texas Electric Vehicle Infrastructure Strategic Plan Workshop

February 22, 2023

Who We Are

Regional Planning Agency

North Central Texas Council of Governments

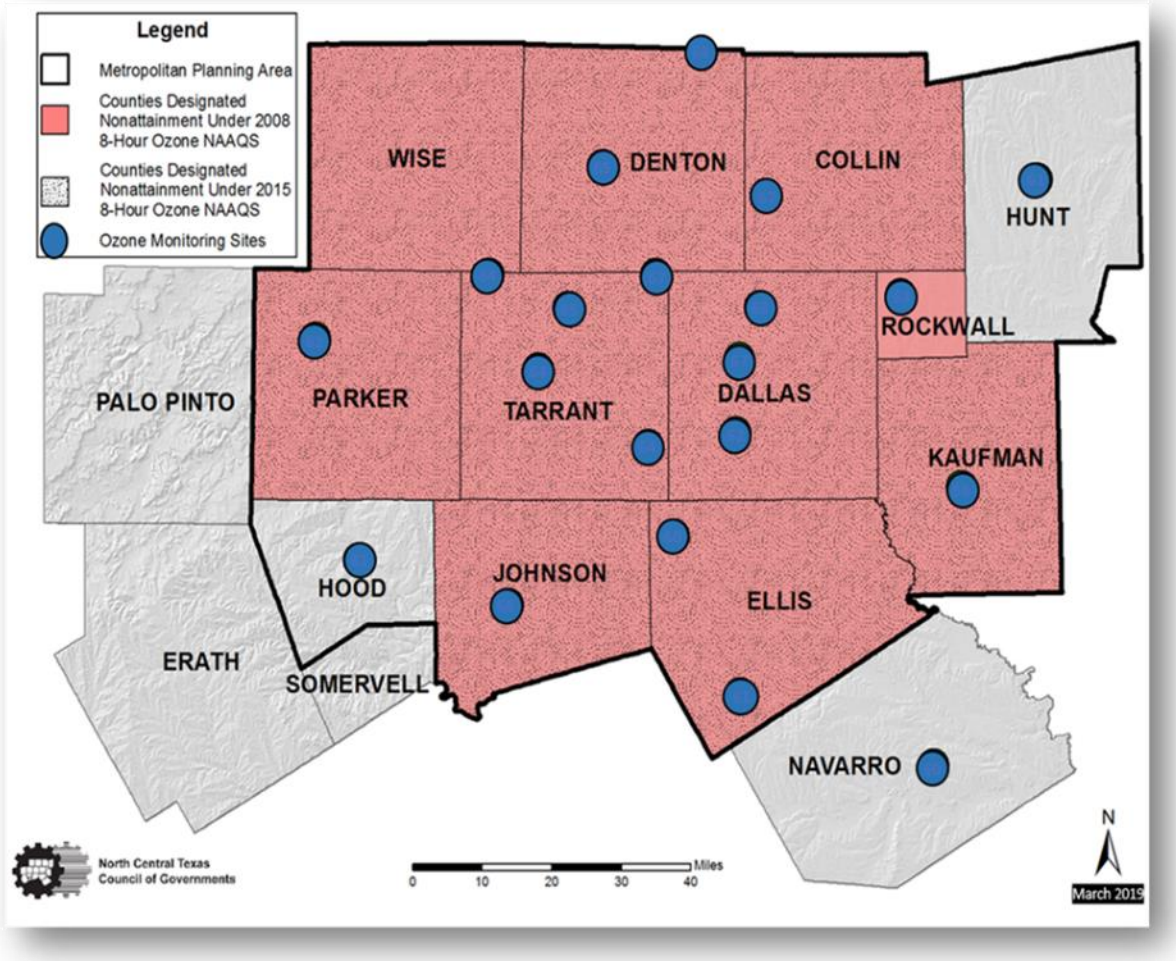
Metropolitan Planning Organization (MPO)

Regional Transportation Council

Department of Energy-Designated Clean Cities Coalition

Dallas-Fort Worth CLEAN CITIES

Sister Coalitions in Texas:
Alamo Area Clean Cities (San Antonio)
Houston-Galveston Clean Cities
Lone Star Clean Fuels Alliance (Austin)



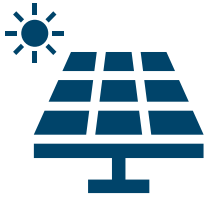
DFW Clean Cities Key Focus Areas & Goals

Fleet/Driver Guidance and Planning

- Support Transition to Zero Emission Vehicle (ZEV) and Other Alternative Fuel Technologies
- Assist Deployment of Clean Vehicle Technologies by Identifying, Promoting, and Providing Funding

Infrastructure Planning & Readiness

- Increase Equitable Access to EV Charging Infrastructure
- Ensure Local Governments are Informed and Prepared to Support Local EV Adoption
- Reduce Barriers, Delay, and Cost in Local Infrastructure Development
- Build Publicly-Accessible Infrastructure Network to Support ZEV Transition in Medium- and Heavy-Duty Sector



Energy Integration

- Minimize Negative Electric Grid Impacts Associated with Transportation Electrification
- Increase Local Availability of Renewable Fuels (electricity, natural gas, hydrogen, biodiesel)
- Improve Resilience against Fuel/Energy Interruptions

Electrification Transition Goals Of Manufacturers

(% of Sales) | Data as of 11/10/2021

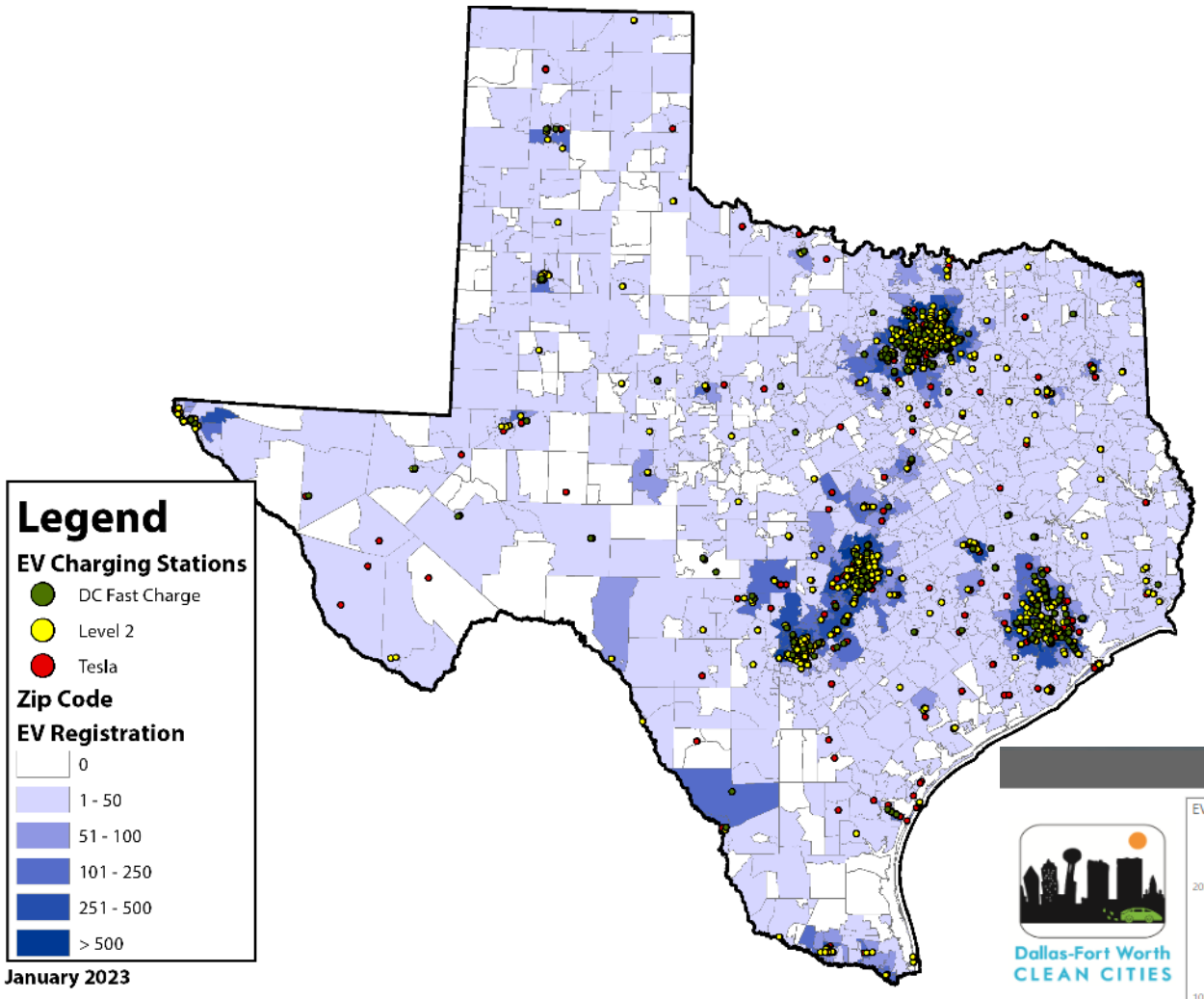
*This list is not comprehensive, and manufacturers are not endorsed by NCTCOG

FCEV – Fuel Cell Electric Vehicle
PHEV – Plug-In Hybrid Electric Vehicle
ICE – Internal Combustion Engine

% of sales that do not use ICEs
Electrification plans includes hybrids or only applies to new models
OEM has phased out ICEs in a region other than the United States
Carbon neutrality goal
Signed UN COP26 (No ICE Sales by 2035)

	2025	2030	2035	2040	2045	2050
Audi	100% (Only New Models) by 2026	100% by 2033				
BMW		50%				
Ford		40% Globally *(100% in Europe)*		Signed UN COP26		Carbon Neutral
General Motors			100% *(Aspirational)*	Carbon Neutral		
Honda		40% *(Includes FCEVs)*	80% *(Includes FCEVs)*	100% *(Includes FCEVs)*		
Hyundai		30% *(Includes FCEVs)*		80% *(Includes FCEVs)*	Carbon Neutral	
Kia		40% *(Includes Hybrids)*				
Mercedes-Benz	50%	100% *(In Select Markets)*		Signed UN COP26		
Nissan		40% *(100% New Models)*				Carbon Neutral
Stellantis		40%; 70% in Europe *(Includes PHEVs)*				
Subaru		40% *(Includes Hybrids)*				Carbon Neutral
Toyota		15% *(70% with Hybrids)*				
Volkswagen	20%	50%		100%		Carbon Neutral
Volvo	50%	100%		Carbon Neutral		

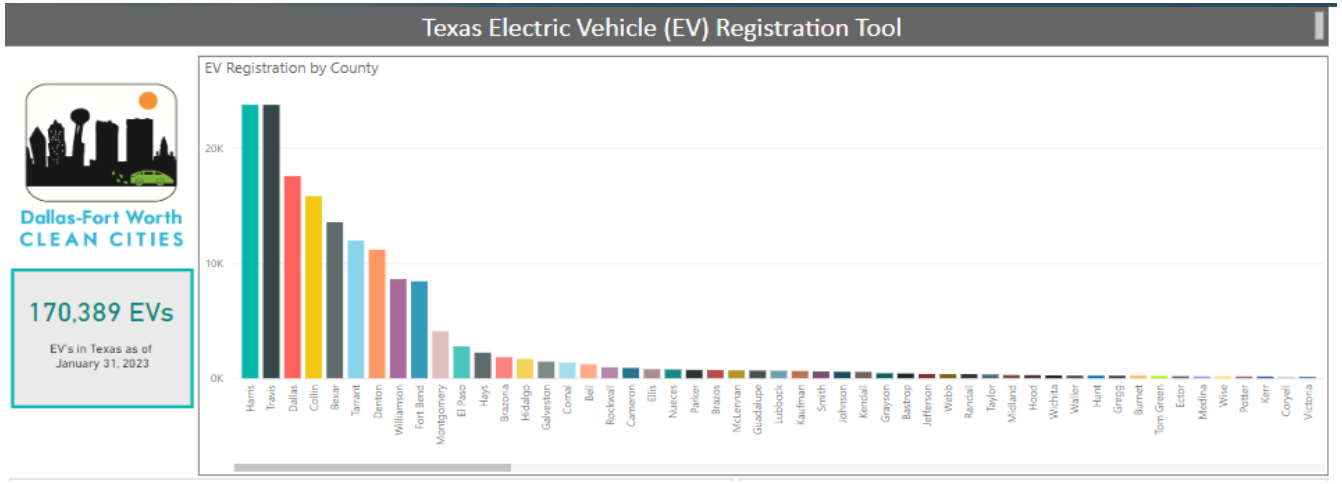
EV Data And Trends



EV Registration Data
www.dfwcleancities.org/evnt -> EVs & Texas
As of January 31, 2023:
~170K EVs in Texas

September 2021:
~93K EVs in Texas

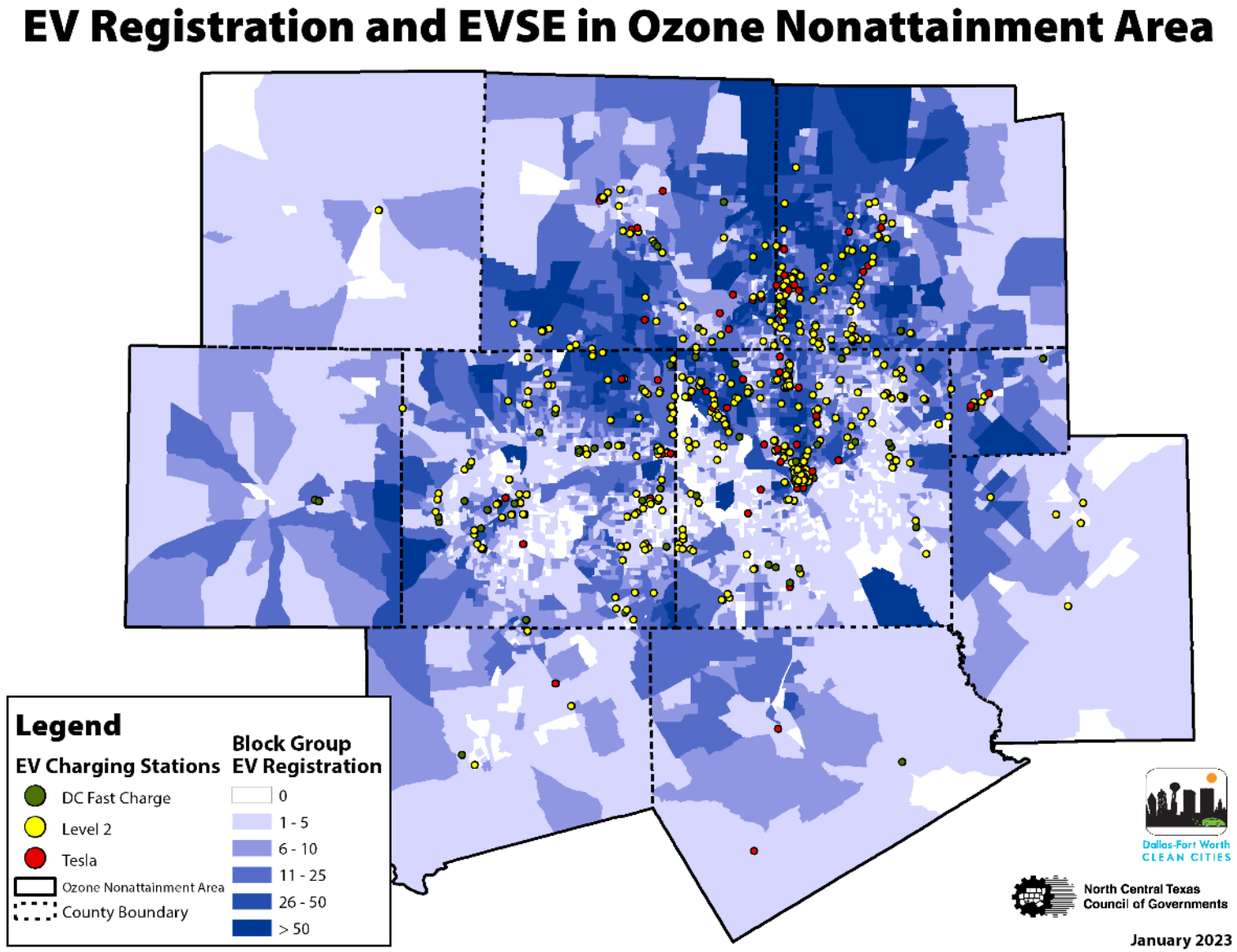
Charging Station Dashboard
https://txdot.mysocialpinpoint.com/tx_ev_plan
As of January 31, 2023:
2,335 Charging Sites Statewide



EV Adoption and Infrastructure Availability

County	Level 2 Plugs*	DC Fast Charge Plugs*
Collin	238	6
Dallas	574	20
Denton	98	15
Ellis	0	4
Johnson	5	2
Kaufman	12	0
Parker	4	2
Rockwall	9	5
Tarrant	354	26
Wise	2	1

**As of January 2023; Excludes Tesla Stations*



Texas EV Charging Plan Impacts To NCTCOG Region

Proposed Allocation for MPO Area: ~$64.5M Construction/Installation

MPO Role to Collaborate with TxDOT:

- Recommend Charger Types and General Locations
- Collaborate on Solicitation
- Lead Equity and Public Engagement

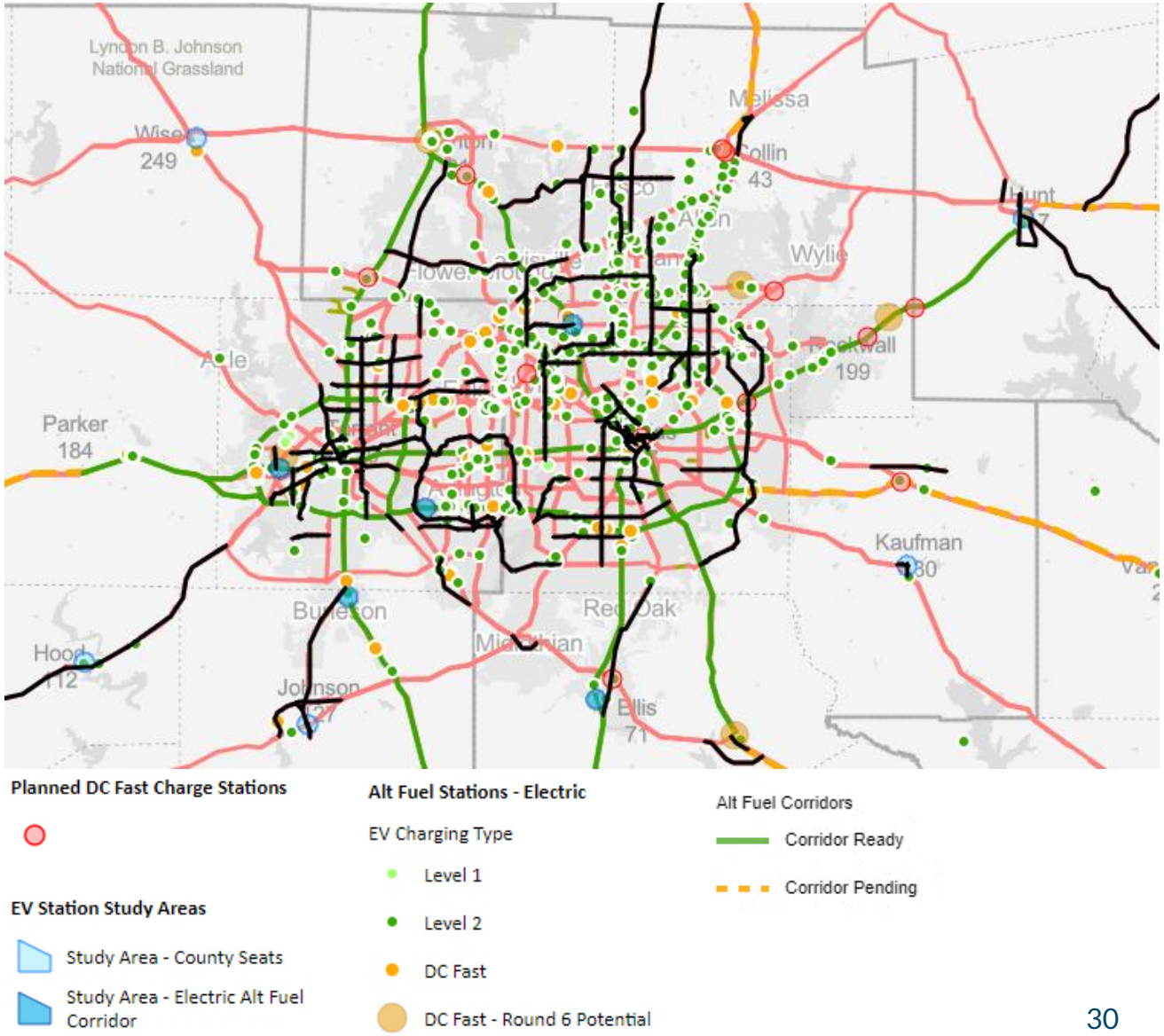
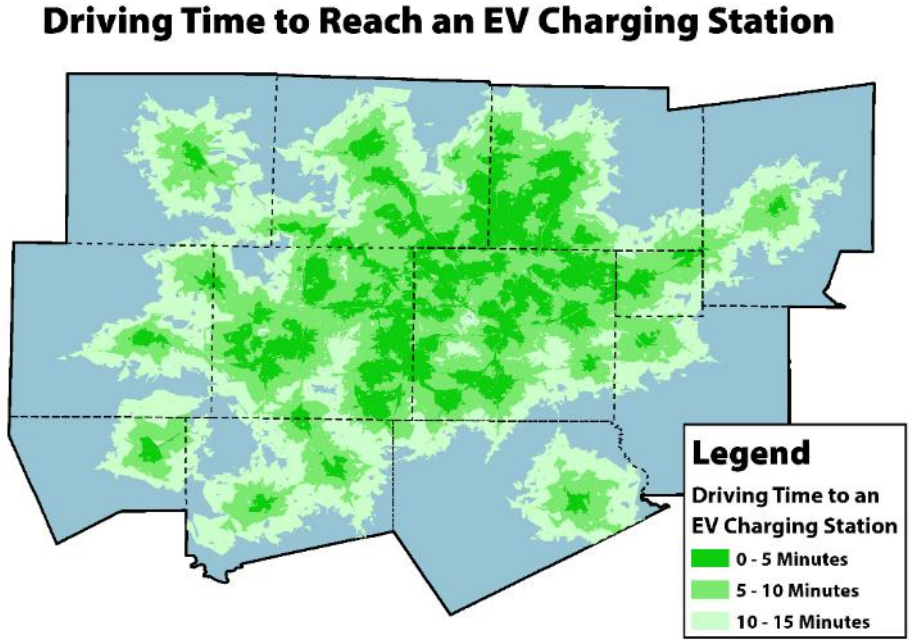


Image Source: TxDOT Statewide Planning Map, https://www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html

Infrastructure Needs Outside Scope of Texas EV Charging Plan



Level 2 Intra-Regional Charging
(aka “Community Charging”)

Photo source: Portland General Electric & Daimler Truck

Medium- and Heavy-Duty Infrastructure

Medium- and Heavy-Duty Truck Impact on Regional Air Quality

Medium/Heavy Duty Vehicle Impacts:

~5 % of Miles Traveled

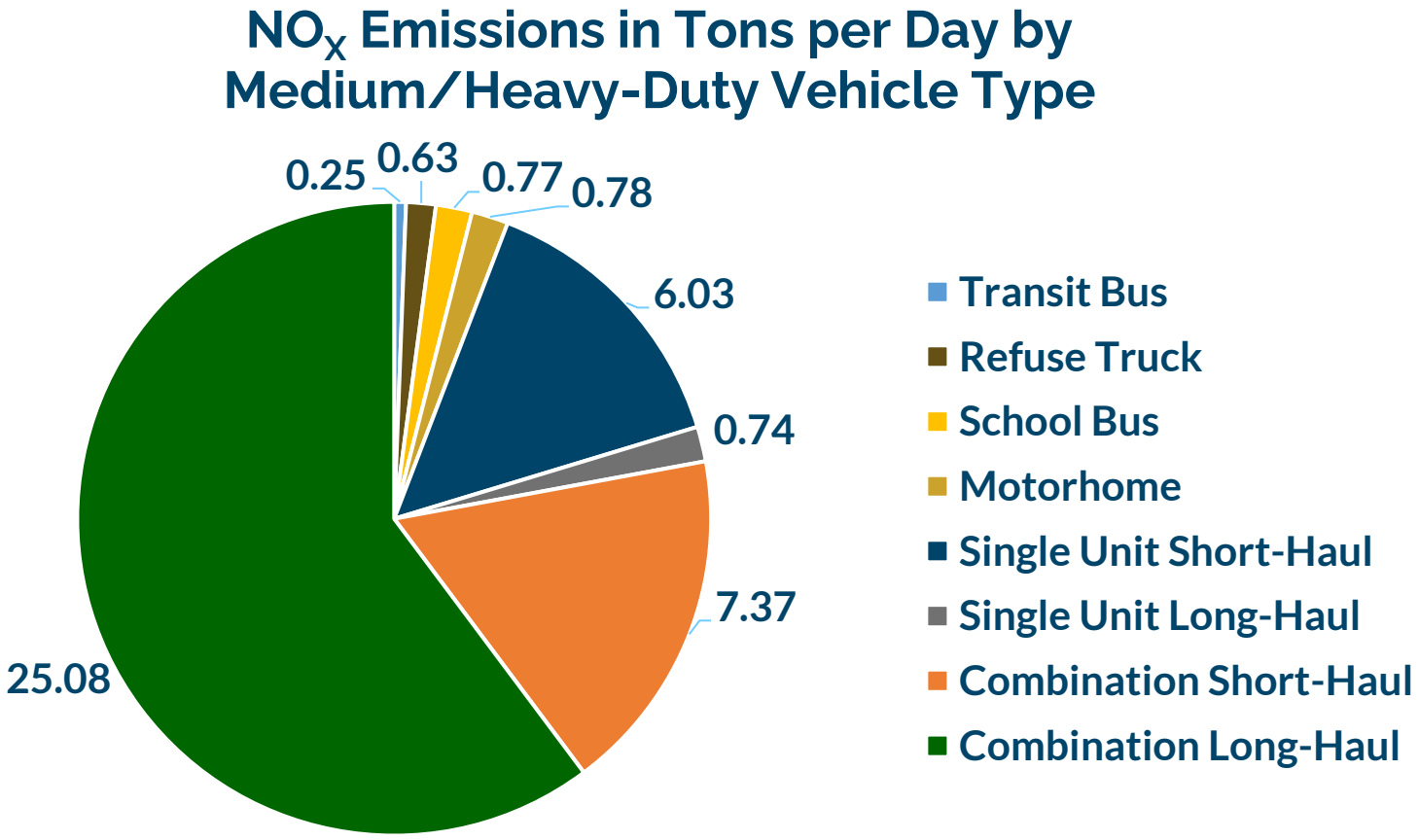
~40% of Nitrogen Oxides (NO_X)

Key Factors in Choosing Zero Emission Vehicle (ZEV) Platform:

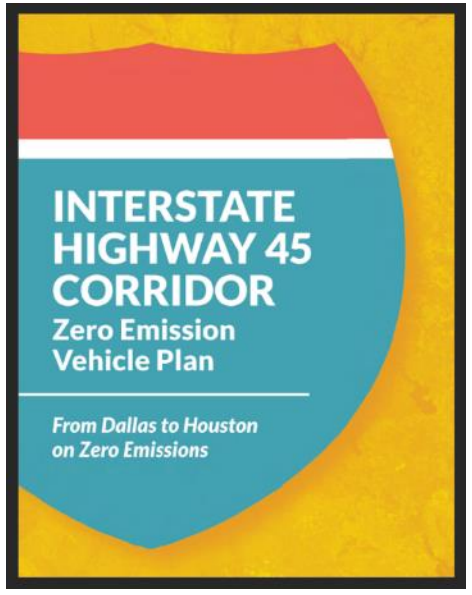
Weight

Refueling Time

Range (Route Length)



IH 45 Corridor Zero Emission Vehicle Infrastructure Plan



Provide Actionable Recommendations to Facilitate ZEV Deployments:

Battery Electric

Hydrogen Fuel Cell Electric

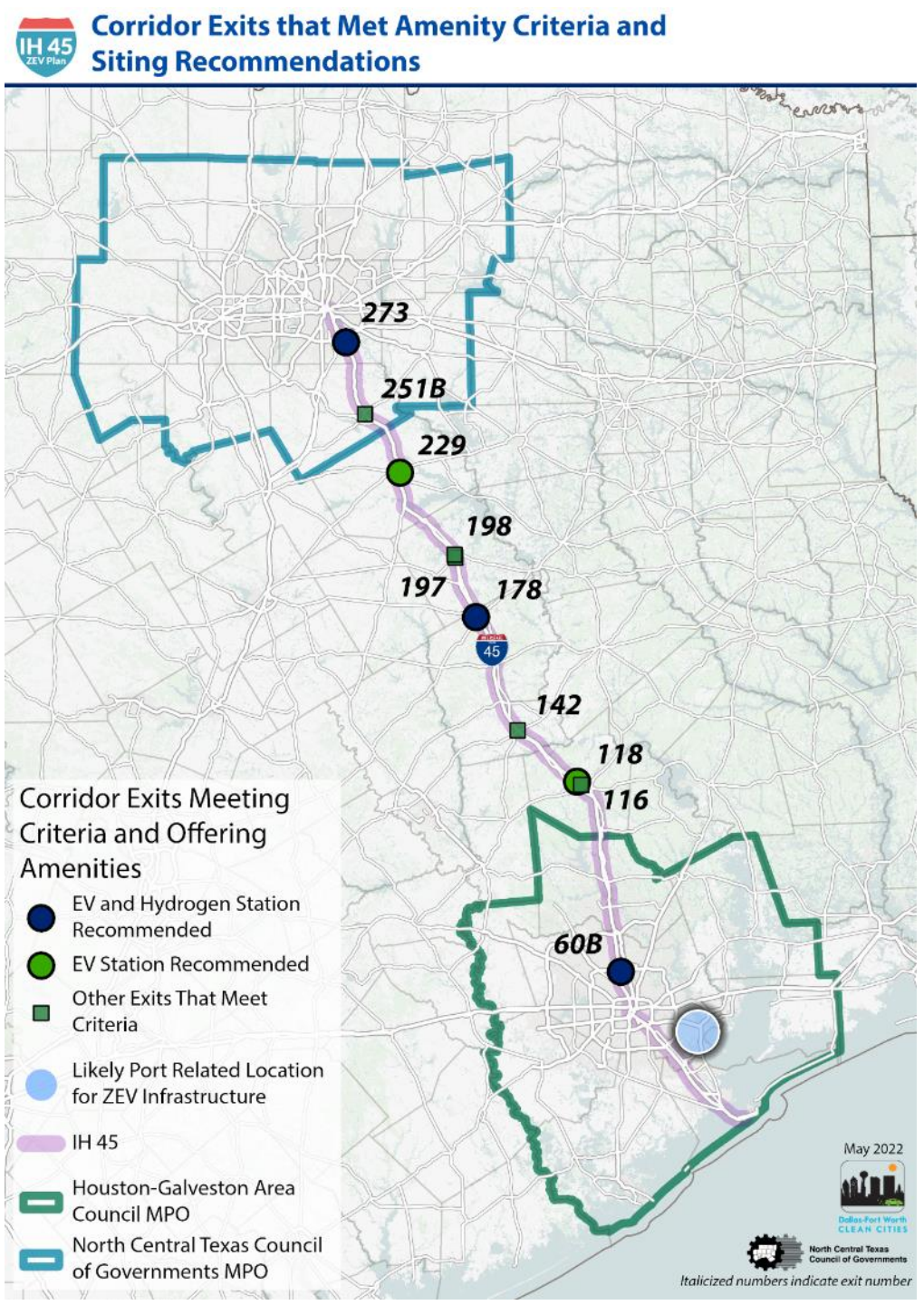
Support Future Strategic Initiatives

(e.g. Autonomous Vehicles)

Engage Wide Range of Stakeholders

www.nctcog.org/IH45-ZEV

Long-Term Texas EV Infrastructure Strategic Plan Workshop

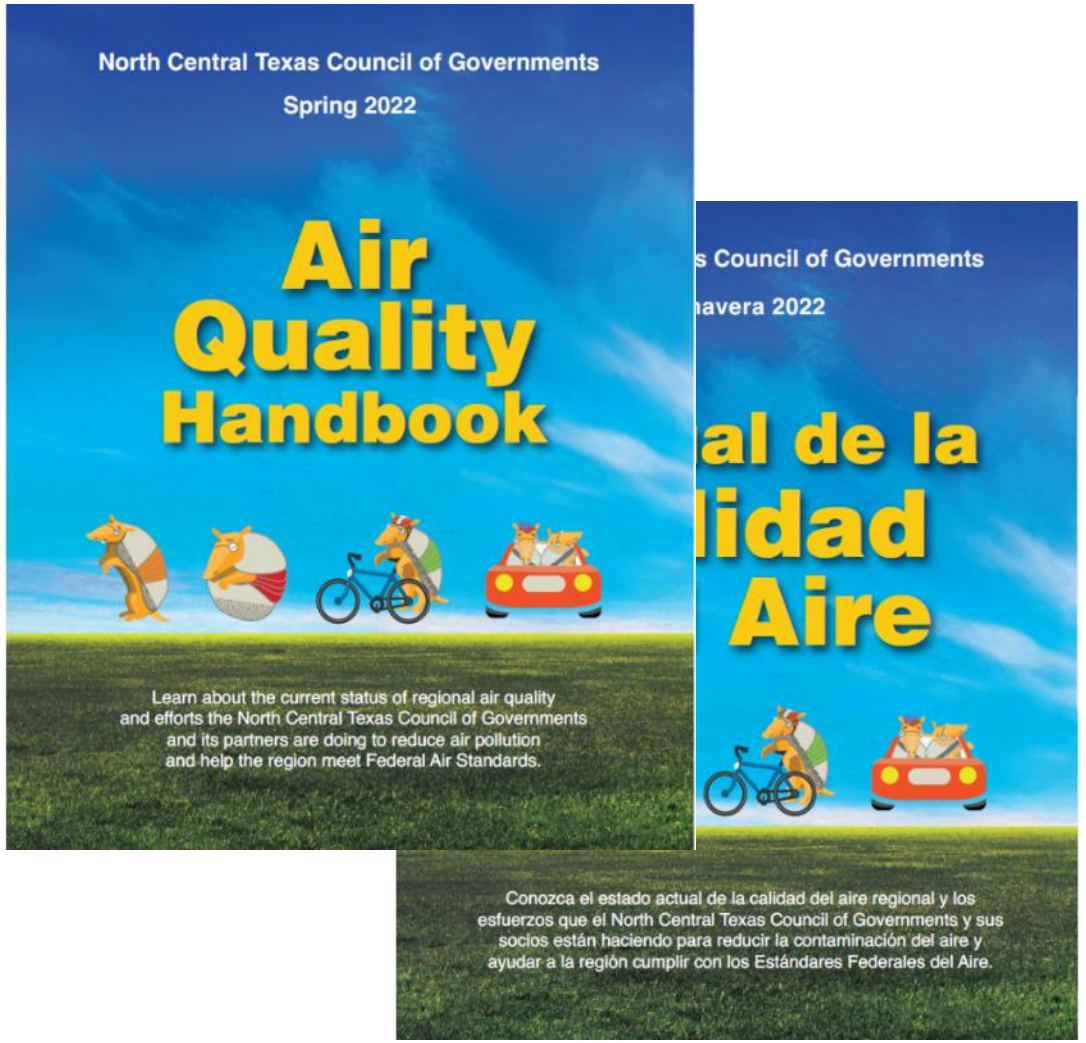


Contact Us

Lori Clark
Program Manager
lclark@nctcog.org

cleancities@nctcog.org

www.dfwcleancities.org
www.nctcog.org/airquality



2023

Electrifying West Texas

Lubbock MPO's website: https://ci.lubbock.tx.us/pages/Lubbock-Metropolitan-Planning-Organization,

Lubbock MPO at 916 Main Street Suite 1210, Lubbock, TX 79401

Electrifying West Texas

Existing Policy

- Determine the existing barriers, incentives, challenges, and opportunities in the community.
- Understand how existing policies and programs encourage or impede deployment to underserved communities.
- Policies with the potential to be extremely beneficial or extremely difficult to implement EVs:
  - Zoning, construction permits, parking, building codes, incentives, and air quality are all aspects to consider.

Policy Agenda

Promoting transportation electrification through public policy and coordinated programming

- EV readiness ordinance: require new construction to be equipped to charge EVs as demand grows.
- Parking evaluation: % of parking spaces must be "EV capable. “
- Access to charging: EV drivers' ability to locate a charging station and the presence of suitable charging options.

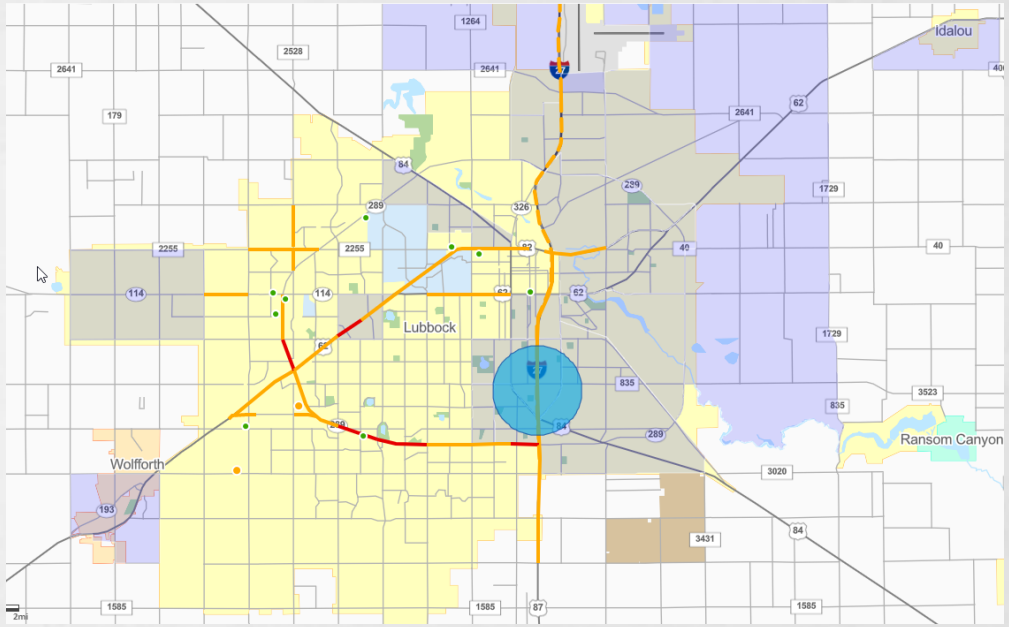
Regional Planning

- Develop consensus solutions to regional challenges
- Improve equitable access to transportation

- Address disproportionate negative impact of transportation system on protected communities

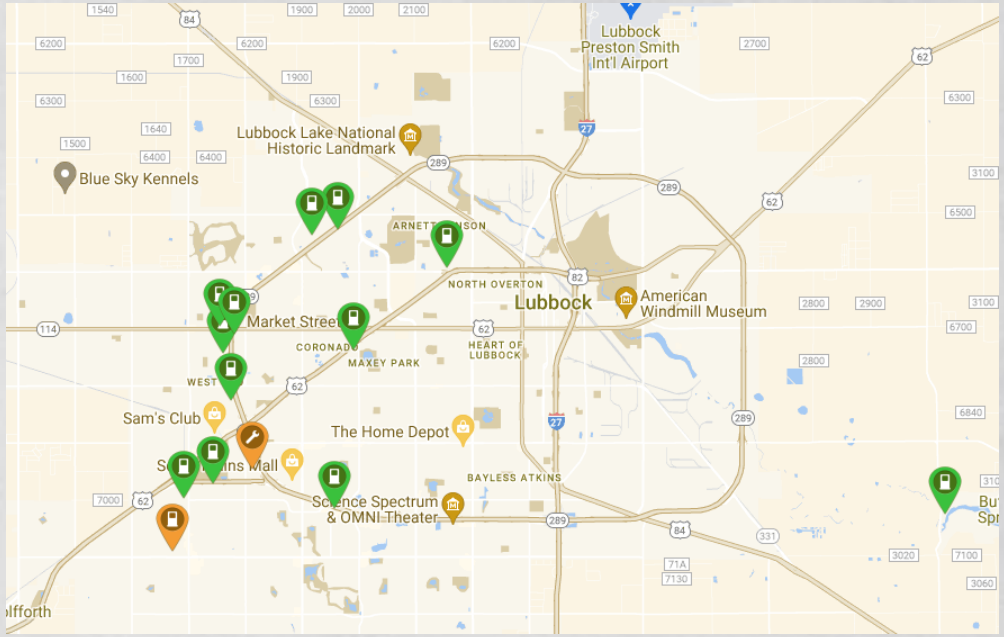
Electrifying West Texas

Planner's View



- Identify critical EV deployment sites, such as private and public, local and state-owned facilities. Work with the appropriate agency or stakeholder to make deployment in these areas a reality.
- EV considerations should be incorporated into the MPO's long-range transportation plan.
- Aid in the coordination of regional EV networks.

Public View



The general public evaluates the EVs by the availability of EV charging stations and associated barriers.

- Vehicle price
- Do zoning ordinances and building codes preclude the installation of personal EV charging stations?
- Are public locations available in low-income, rural, and disadvantaged communities?

Questions

TxDOT's National Electric Vehicle Infrastructure (NEVI) Plan

Post-NEVI Electric Vehicle Infrastructure Research

February 22, 2023

Federal Infrastructure Investment & Jobs Acts (IIJA)

- The federal Infrastructure Investment & Jobs Act (IIJA), signed into law on November 15, 2021, established a $5 billion National Electric Vehicle Infrastructure (NEVI) Formula Program and a $2.5 billion Discretionary Grant Program to establish a nationwide network of 500,000 electric vehicle (EV) chargers by 2030
- The goal of the NEVI Program is to ensure a convenient, reliable, affordable, and accessible charging experience for all users
- With TxDOT as passthrough entity, Texas will receive $407.8 million in FY 2022-2026
- Funds will be split between federal and state, 80 and 20 percent respectively (private sector third parties are able to fund the state's share)

Federal Infrastructure Investment & Jobs Acts (IIJA) — NEVI Program

- The Federal Highway Administration (FHWA) anticipates most states will contract with private entities for the installation, operation, and maintenance of EV charging infrastructure
- NEVI funds must first go towards designated alternative fuel corridors (AFCs) along public roads
- The Texas Commission on Environmental Quality (TCEQ) and the Comptroller's State Energy Conservation Office (SECO) are partners in the development/approval of the EV Infrastructure Plan

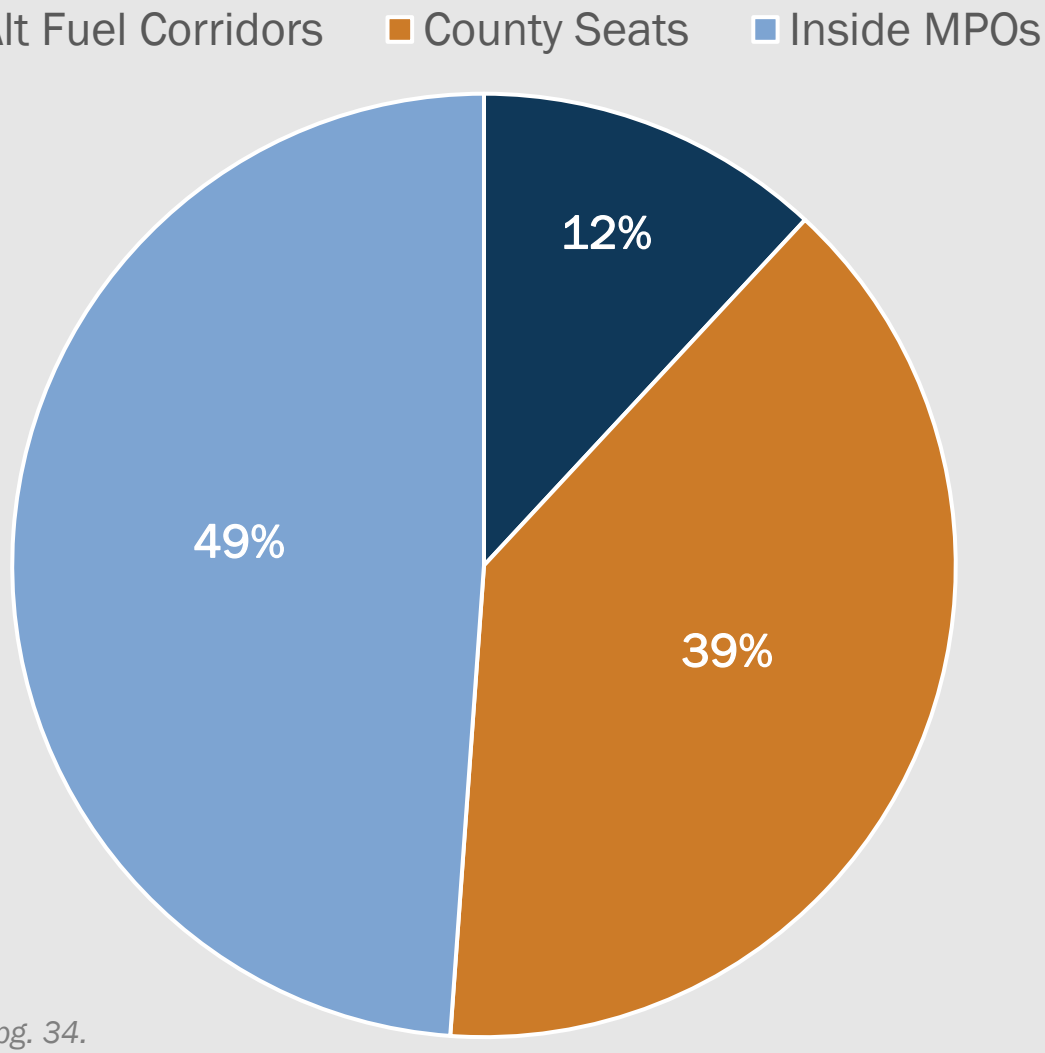
Key Dates

- **March 25** - Launch of Texas Electric Vehicle Infrastructure landing page and online engagement site (Social Pinpoint)
- **May 23** - Draft Texas Electric Vehicle Infrastructure Plan published
- **June 7** - Virtual public meeting held
- **June 14** - Multi-state tribal outreach and consultation
- **June 22** - Comment deadline for virtual public meeting
- **July 28** - Submitted Plan to FHWA
- **September 27** - Plan approved by FHWA
- **October 11** – FHWA apportioned $86.8M for FY 2023

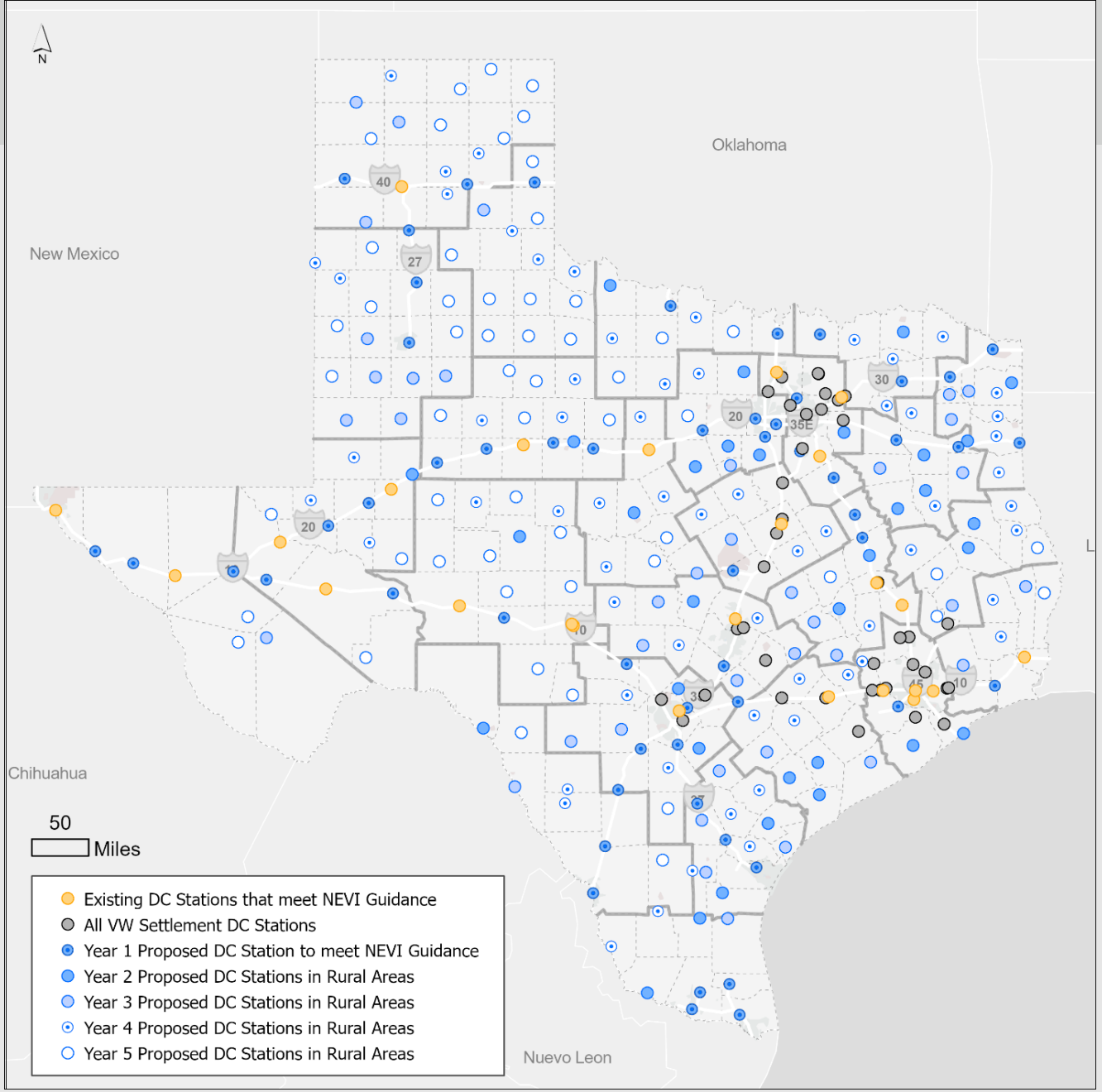
NEVI Program Charging Network Timeline

- **Phase One** will focus on building out the Electric Alternative Fuel Corridors to meet FHWA guidance
- **Phase Two** (once Electric Alt Fuel Corridors are completed) will be split into two areas of geographic focus:
  - County seats in rural counties
  - Within the boundaries of federally designated metropolitan planning organizations (MPOs)

TxDOT NEVI Funding Allocations



Source: Texas Electric Vehicle Infrastructure Plan, pg. 34.


N
Oklahoma
New Mexico
Chihuahua
Nuevo Leon
40
27
20
30
35E
10
50
Miles
Existing DC Stations that meet NEVI Guidance
All VW Settlement DC Stations
Year 1 Proposed DC Station to meet NEVI Guidance
Year 2 Proposed DC Stations in Rural Areas
Year 3 Proposed DC Stations in Rural Areas
Year 4 Proposed DC Stations in Rural Areas
Year 5 Proposed DC Stations in Rural Areas

NEVI Program Next Steps

- Coordinating with FHWA on opening the program

TxDOT Website, Maps, Dashboards, and Other Resources

Texas Electric Vehicle Infrastructure Plan

As required by the National Electric Vehicle Infrastructure Formula Program, TxDOT submitted its Texas Electric Vehicle Infrastructure Plan to the federal Joint Office of Energy and Transportation. The submitted Plan can be found below.

Review the EV Infrastructure Plan

TxDOT will continue to be open to questions and comments as it continues the NEVI program, and those can be submitted online. We encourage the public to periodically visit this site for updates on new locations, FAQs, and further planning updates as the program progresses. TxDOT thanks the public for its extensive input on the Plan and looks forward to working with you as it develops. We also encourage you to explore the links below to find further details and interactive information about the progress of electric vehicle charging capabilities across the state.

Plan Approved

The Texas Electric Vehicle Infrastructure Plan has been approved by the Federal Highway Administration. More to come over the next few months as we transition from plan to implementation.

- Texas Electric Vehicle Infrastructure Plan – Approval Letter

Resources

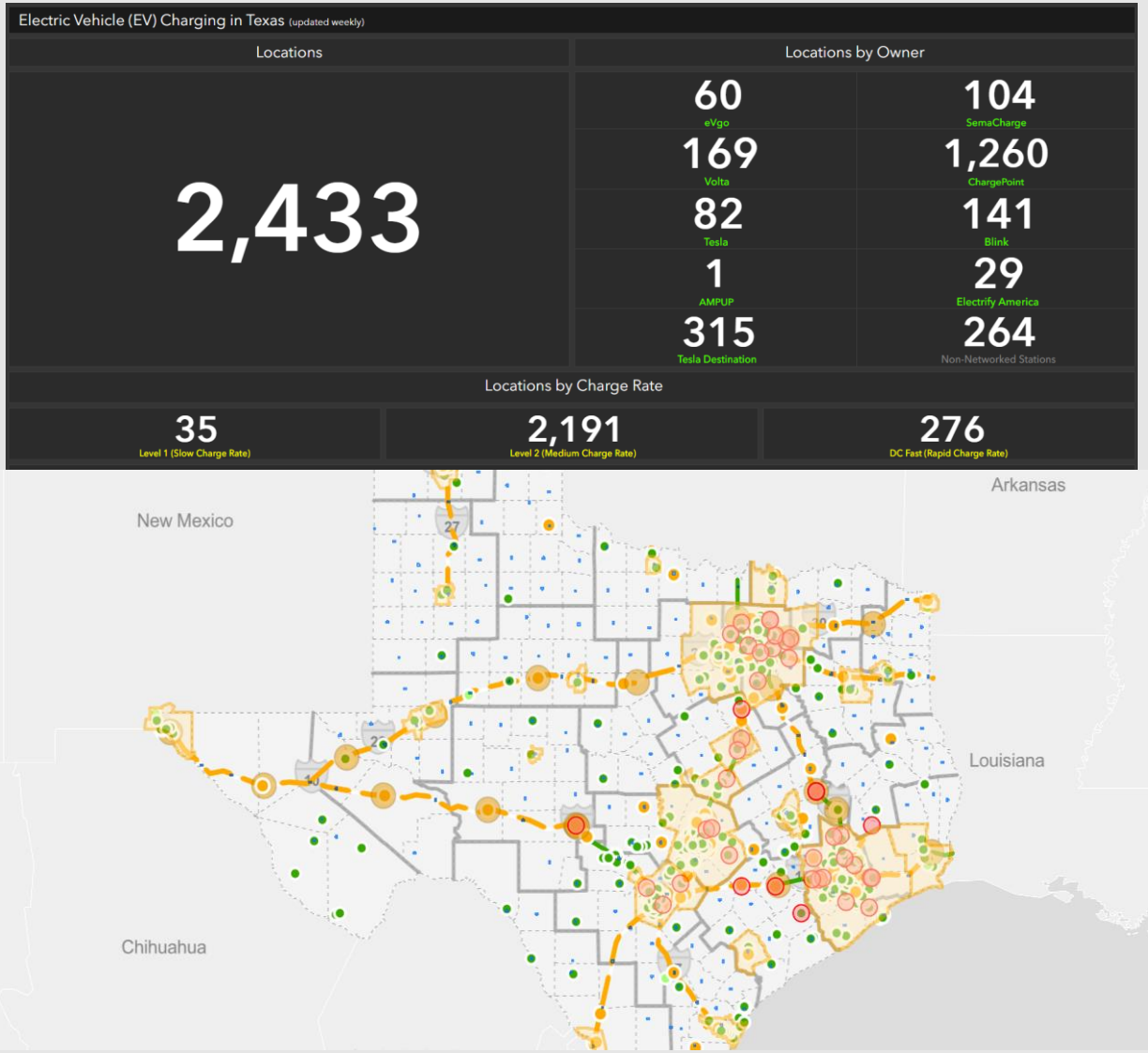
Resources are available to help visualize the Alternative Fuel Corridors, existing charging stations, obtain EV driving tips, and EV charging study areas:

- Interactive Map (Suggest charging stations locations on this map)
- EV Charging Survey (Provide your feedback on vehicle use, EV charging, EV benefits, and costs)
- Statewide Planning Map (Under "Overlays," select "Alt Fuels – Electric")
- TxDOT Open Data Portal (Data available in multiple formats)
- Public NEVI Planning Map (Includes transmission lines and EV study areas when you zoom in)

Subscribe to updates

Email address

Sign up



Contact Us

TxDOT NEVI Program

TxDOT_NEVI@txdot.gov

Regional NEVI Planning (Waco)

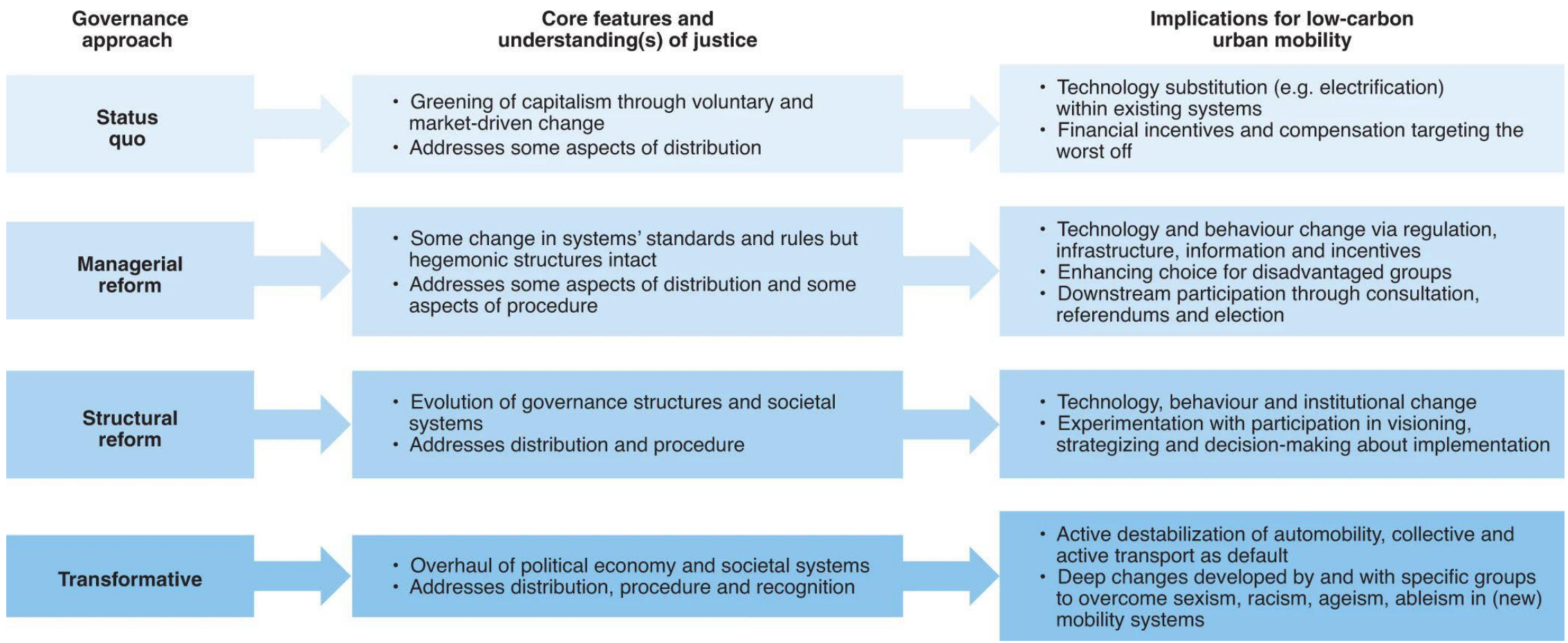
The standard

- Inventory and baseline
- Equity Concerns:
  - Winners and losers in transition to clean energy
  - Low-income communities & multi-occupant dwellings
  - Denver’s e-bike incentive program: Almost 5,000 redeemed. 3, 12, 14k
- Zoning & land use concerns
- Parking regs
- A process for including NEVI into MTP process

New Concerns

- Cost of charging equipment and rate of adoption
- Desired locations and capacity to deliver
- Planning for a mid-transition period
- The need for coordination and cooperation among cities
- E-bikes, mopeds, scooters, adaptive e-bikes

Current Food for Thoughts



Waco Metropolitan Planning Organization

City of Dallas

City of Dallas Multifamily Electric Vehicle Charging Initiatives

February 22, 2023

Pharr Andrews, Sr. Climate Coordinator
Office of Environmental Quality and Sustainability

GOAL 3: DALLAS' COMMUNITIES HAVE ACCESS TO SUSTAINABLE, AFFORDABLE, *TRANSPORTATION* OPTIONS.

Objectives

- Shift the surface transportation system to move people and goods in fuel-efficient vehicles.
- Reduce trips where people drive alone.
- Synergize jobs and housing with transportation infrastructure to increase access to walking and biking options, and public transit.
- Ensure that walking, biking, public transit, vehicular transportation infrastructure is reliable and safe.

Targets

Publicly available EV charging

- 1,500 outlets to support 39,000 vehicles by 2030

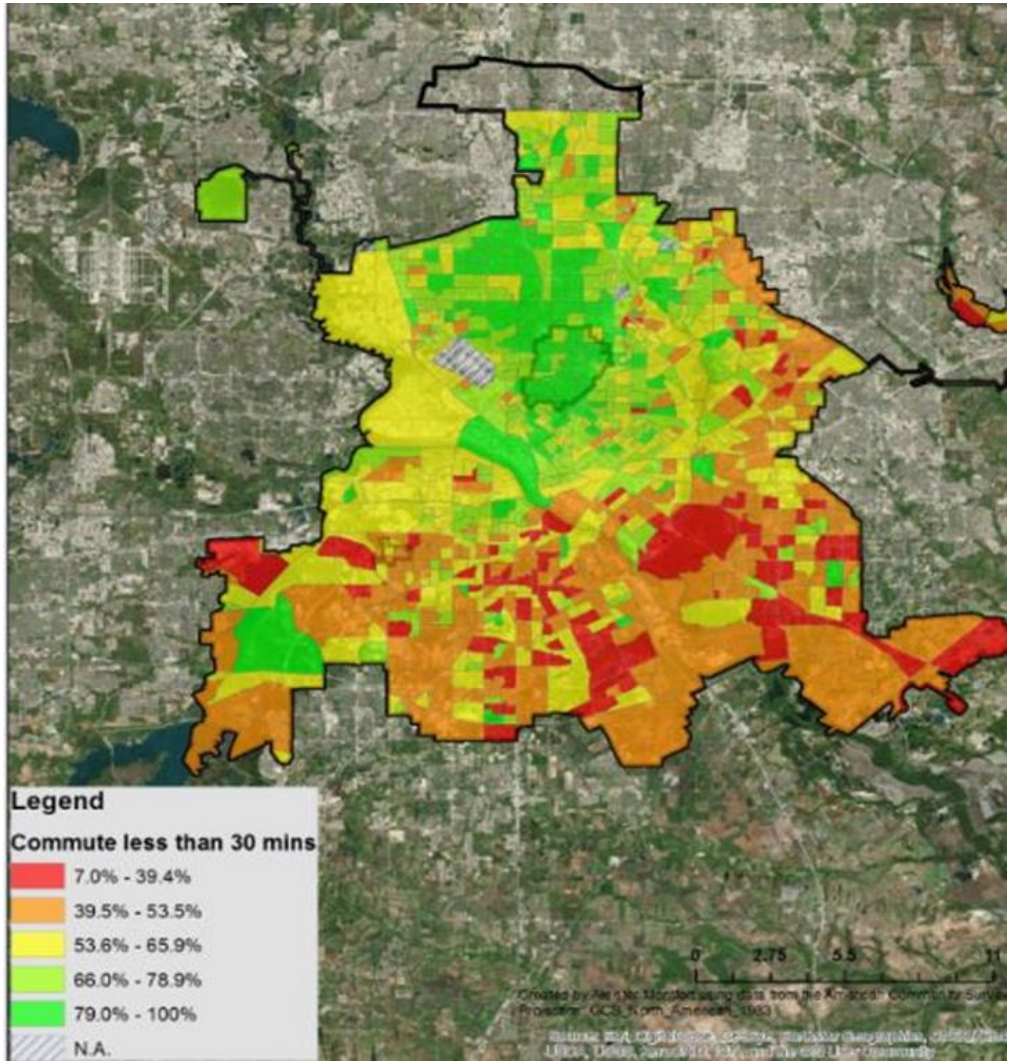
Electric fleets

- All new transit vehicle purchases by the City, DISD, DART fully electric by 2030
- 100% electrified fleet by 2040

Single occupant vehicle travel mode shift

- 88% to 79% in 2030
- 88% to 62% in 2050

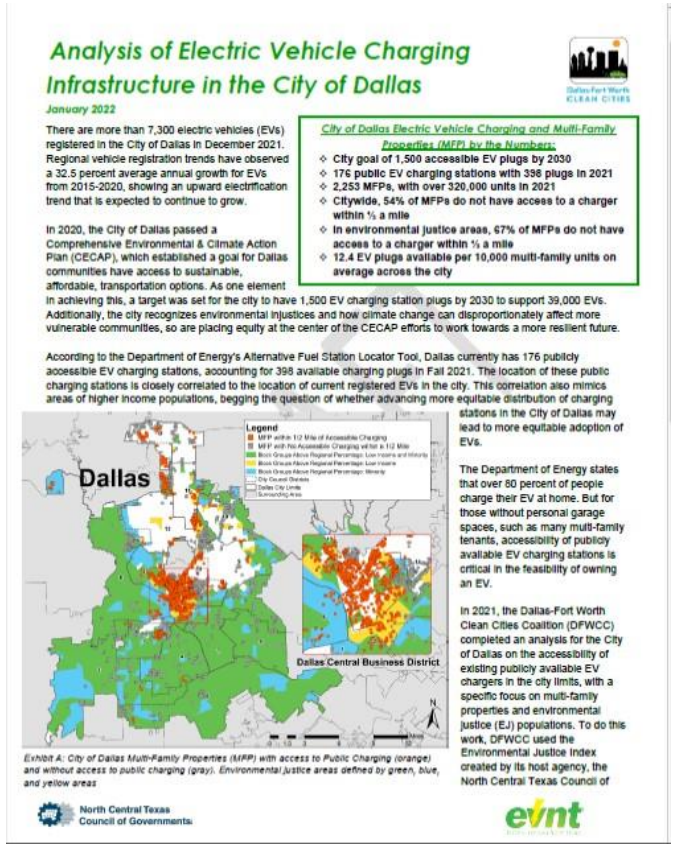
GOAL 3: *TRANSPORTATION* UNDER AN EQUITY LENS



"Climate change affects all, but not all people are affected equally."

- Jacqueline Patterson, Director of the NAACP Environmental and Climate Justice Program

Analysis of EV Charging Infrastructure



Analysis of Electric Vehicle Charging Infrastructure in the City of Dallas

January 2022

There are more than 7,300 electric vehicles (EVs) registered in the City of Dallas in December 2021. Regional vehicle registration trends have observed a 32.5 percent average annual growth for EVs from 2015-2020, showing an upward electrification trend that is expected to continue to grow.

In 2020, the City of Dallas passed a Comprehensive Environmental & Climate Action Plan (CECAP), which established a goal for Dallas communities have access to sustainable, affordable, transportation options. As one element in achieving this, a target was set for the city to have 1,500 EV charging station plugs by 2030 to support 39,000 EVs. Additionally, the city recognizes environmental injustices and how climate change can disproportionately affect more vulnerable communities, so are placing equity at the center of the CECAP efforts to work towards a more resilient future.

City of Dallas Electric Vehicle Charging and Multi-Family Properties (MFP) by the Numbers:

- City goal of 1,500 accessible EV plugs by 2030
- 176 public EV charging stations with 398 plugs in 2021
- 2,253 MFPs, with over 320,000 units in 2021
- Citywide, 54% of MFPs do not have access to a charger within ½ a mile
- In environmental justice areas, 67% of MFPs do not have access to a charger within ½ a mile
- 12.4 EV plugs available per 10,000 multi-family units on average across the city

According to the Department of Energy's Alternative Fuel Station Locator Tool, Dallas currently has 176 publicly accessible EV charging stations, accounting for 398 available charging plugs in Fall 2021. The location of these public charging stations is closely correlated to the location of current registered EVs in the city. This correlation also mimics areas of higher income populations, begging the question of whether advancing more equitable distribution of charging stations in the City of Dallas may lead to more equitable adoption of EVs.

Exhibit A: City of Dallas Multi-Family Properties (MFP) with access to Public Charging (orange) and without access to public charging (gray). Environmental justice areas defined by green, blue, and yellow areas

The Department of Energy states that over 80 percent of people charge their EV at home. But for those without personal garage spaces, such as many multi-family tenants, accessibility of publicly available EV charging stations is critical in the feasibility of owning an EV.

In 2021, the Dallas-Fort Worth Clean Cities Coalition (DFWCC) completed an analysis for the City of Dallas on the accessibility of existing publicly available EV chargers in the city limits, with a specific focus on multi-family properties and environmental justice (EJ) populations. To do this work, DFWCC used the Environmental Justice Index created by its host agency, the North Central Texas Council of

North Central Texas Council of Governments

evnt

ANALYSIS GOALS

Assess Resident Proximity to Public-Access EV Charging Stations

Identify Charging Gaps to Guide Equitable and Strategic EV Charging Station Investments

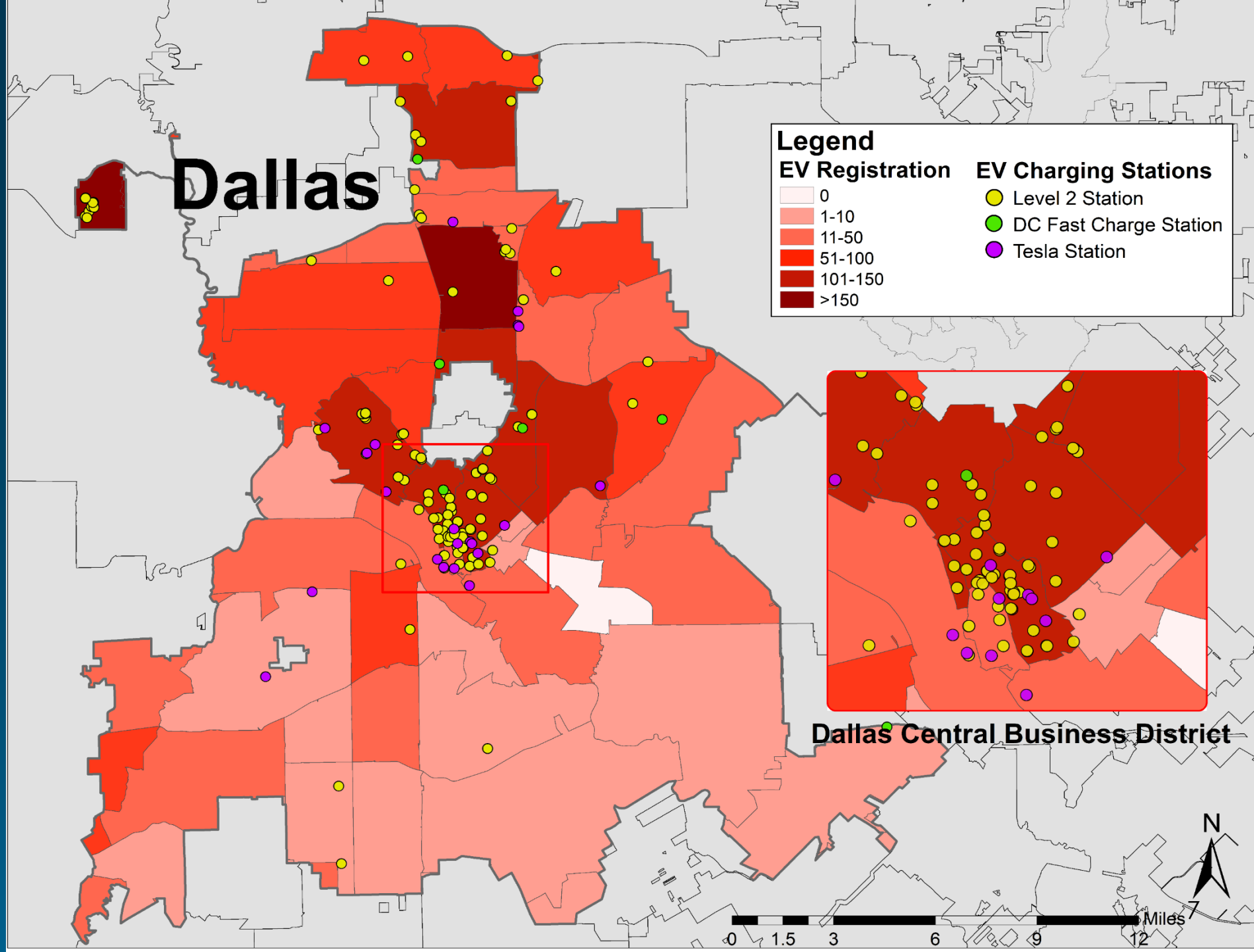
Promote Existing Funding Opportunities for New EV Charging Stations

EXISTING EV REGISTRATION BY ZIP CODE & PUBLIC EV CHARGING STATIONS

176

Existing Publicly Accessible EV Charging Stations in the City of Dallas

Data indicates a correlation between proximity to EV charging stations and EV registration.

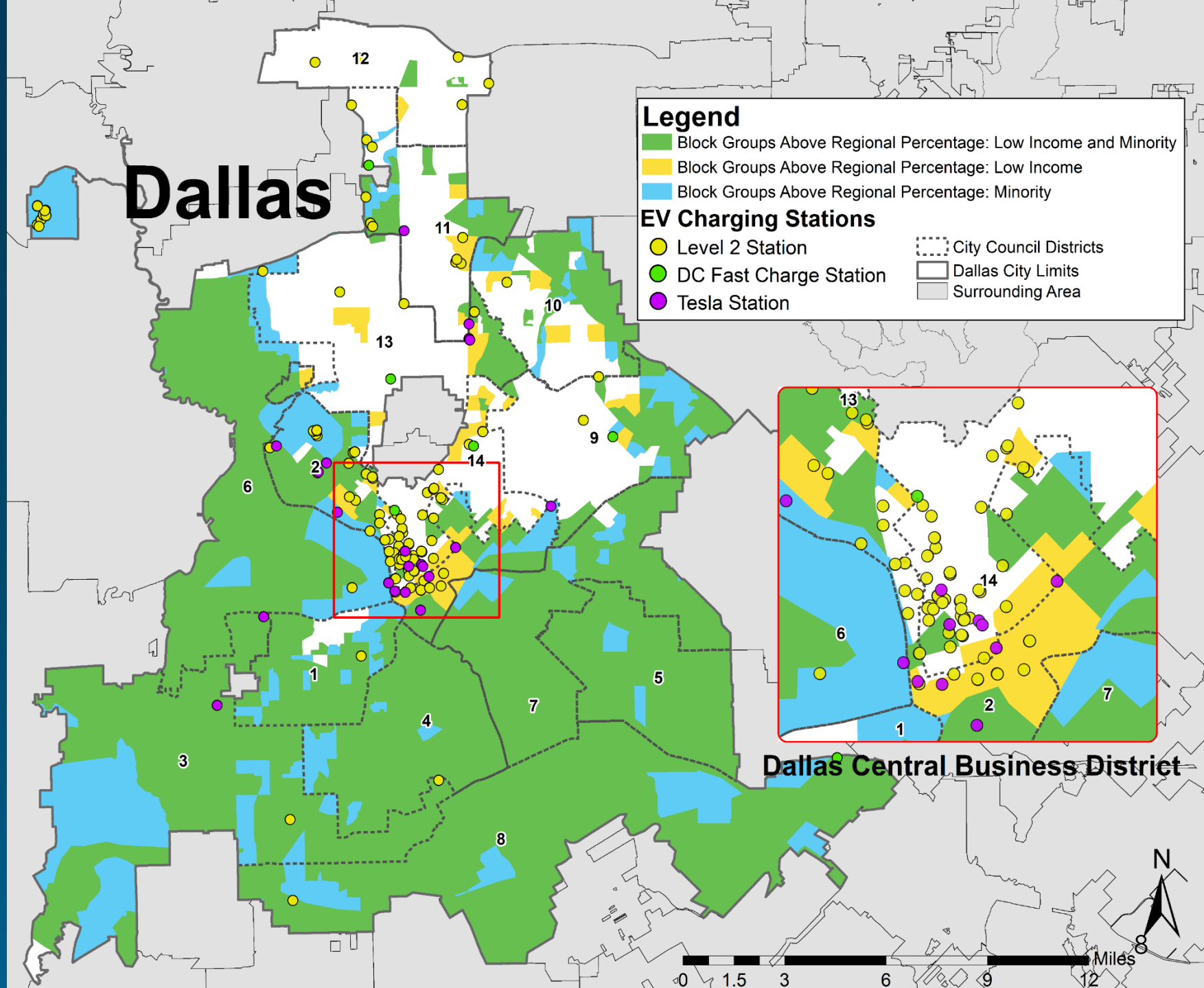


NCTCOG ENVIRONMENTAL JUSTICE INDEX AND PUBLIC EV CHARGING STATIONS

Relatively few EV charging stations are located in Environmental Justice areas.

The NCTCOG Environmental Justice (EJ) Index identifies block groups that are above the region's percentage for low-income (below poverty) individuals (16.11% of population), minority (54.67% of population), or both.

Source: NCTCOG Environmental Justice Index



MULTI-FAMILY PROPERTIES (MFP) & EV CHARGING INFRASTRUCTURE

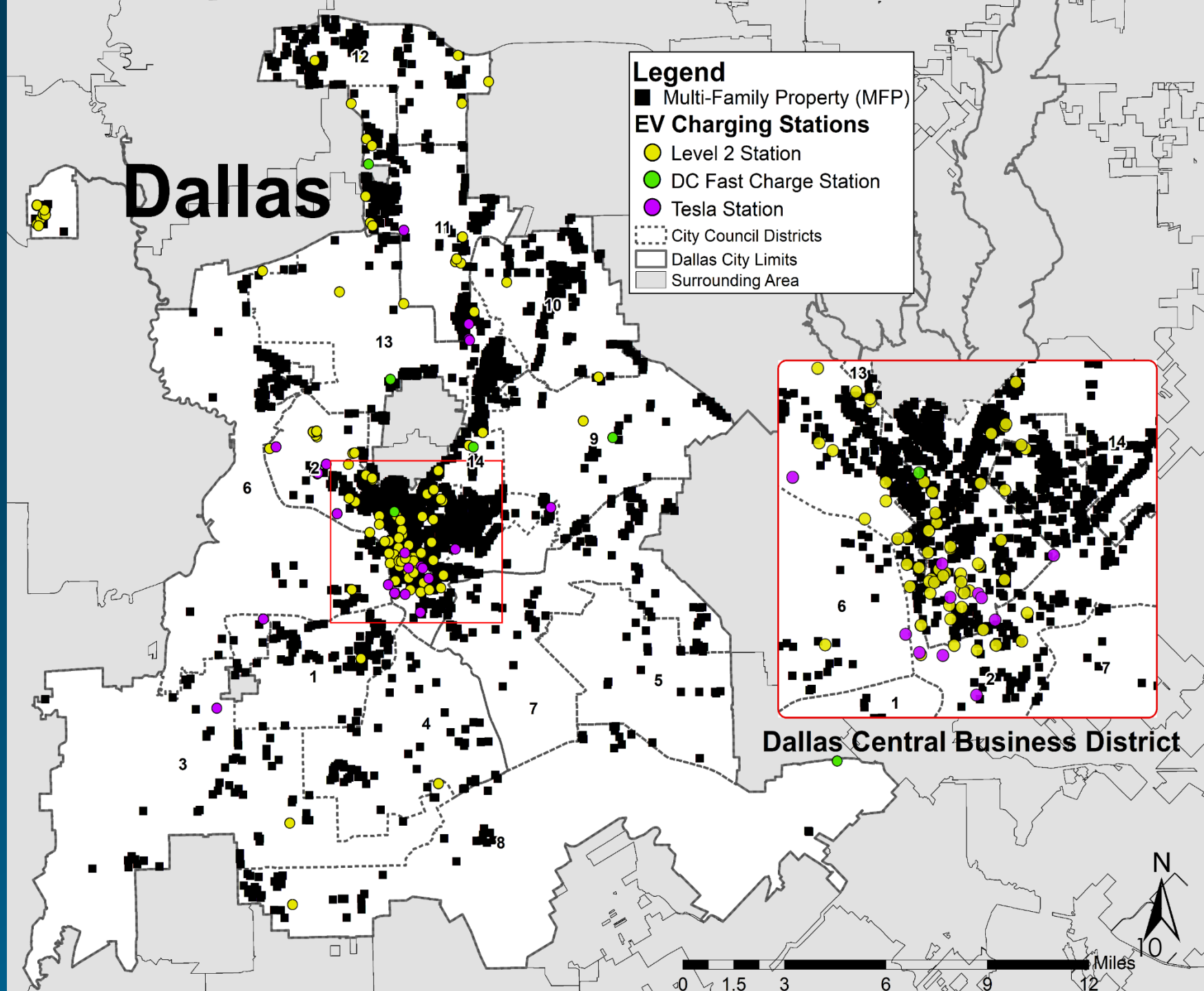
Lack of access to EV charging is one of the top barriers to adoption

↳ Most multi-family residents do not have the ability to charge their car at home

Many multi-family residents rely on workplace or public charging stations elsewhere to charge their vehicles

High Percent of Residents in the Dallas Urbanized Area Living in Apartments

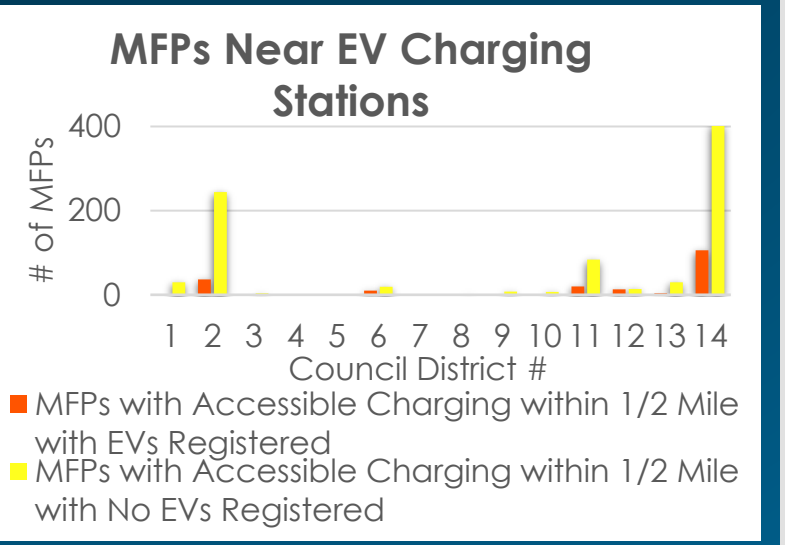
MULTI-FAMILY PROPERTIES AND LOCATION OF PUBLIC ACCESS EV CHARGING STATIONS



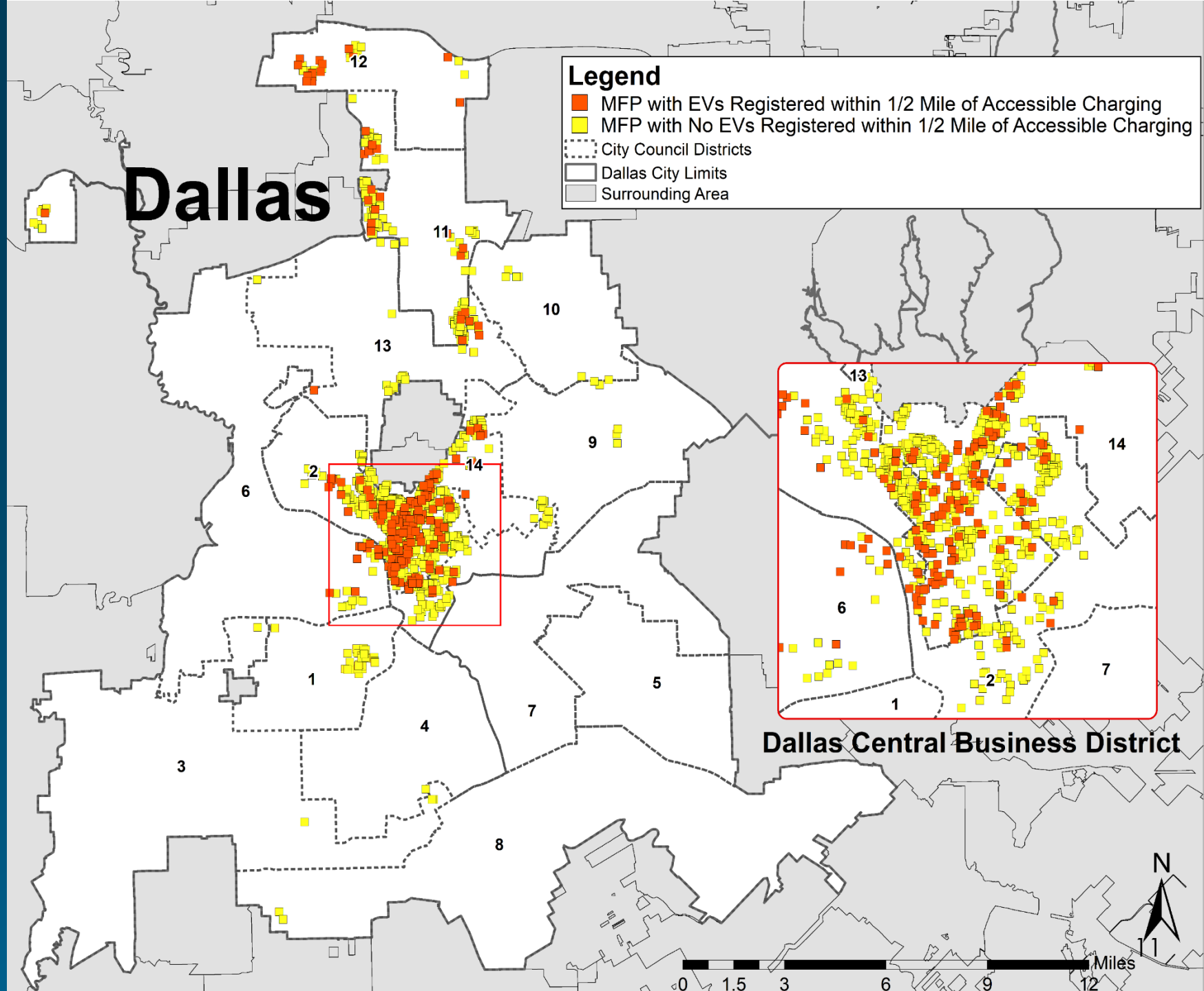
Source: NCTCOG Data (from Texas DMV Registration), U.S. DOE, Alternative Fuels Station Locator

EV OWNERSHIP AT MULTI-FAMILY PROPERTIES NEAR EV CHARGING STATIONS

CITYWIDE
MFPs with Access to Charging within ½ Mile
46%

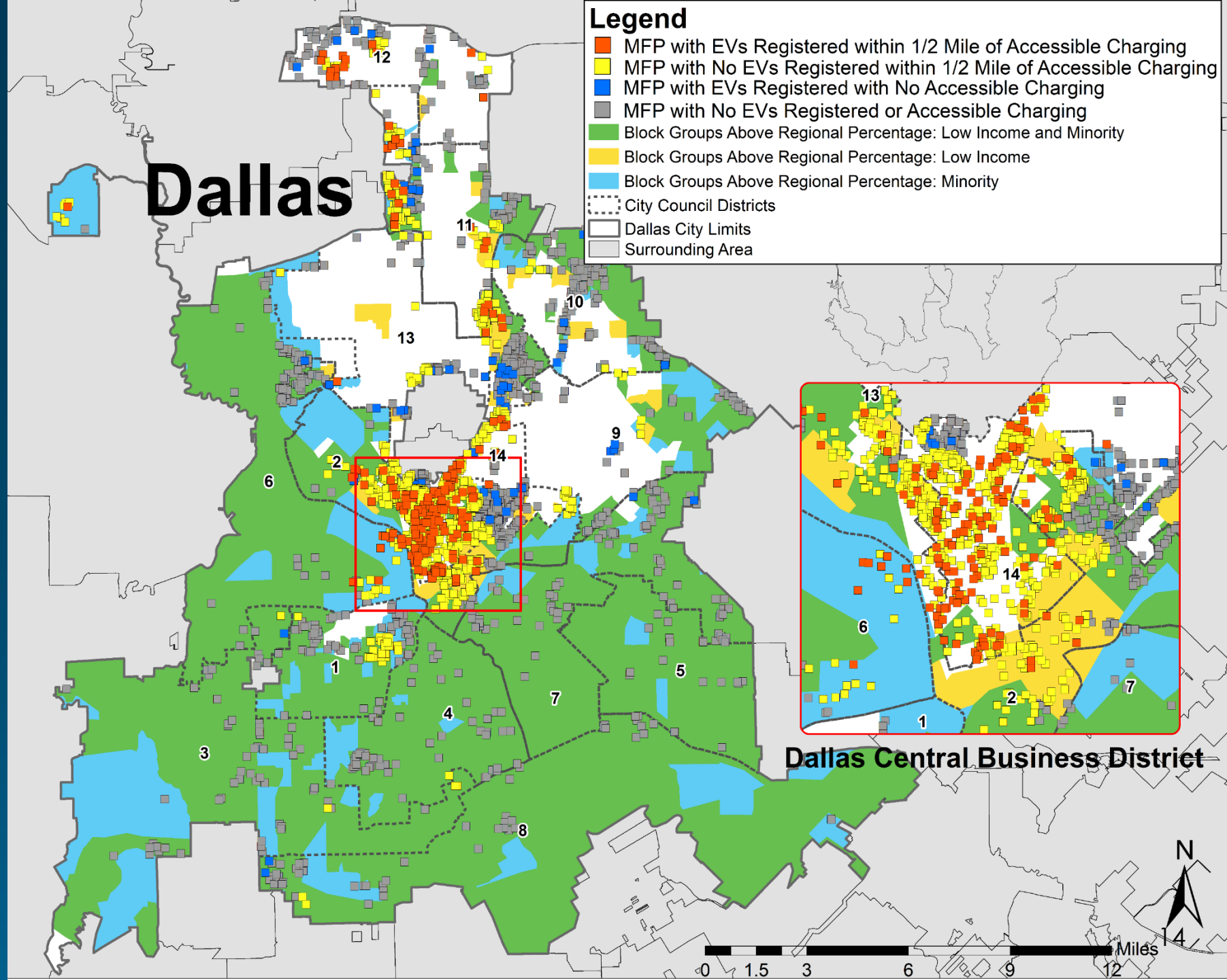


Source: NCTCOG Data (from Texas DMV Registration), U.S. DOE, Alternative Fuels Station Locator

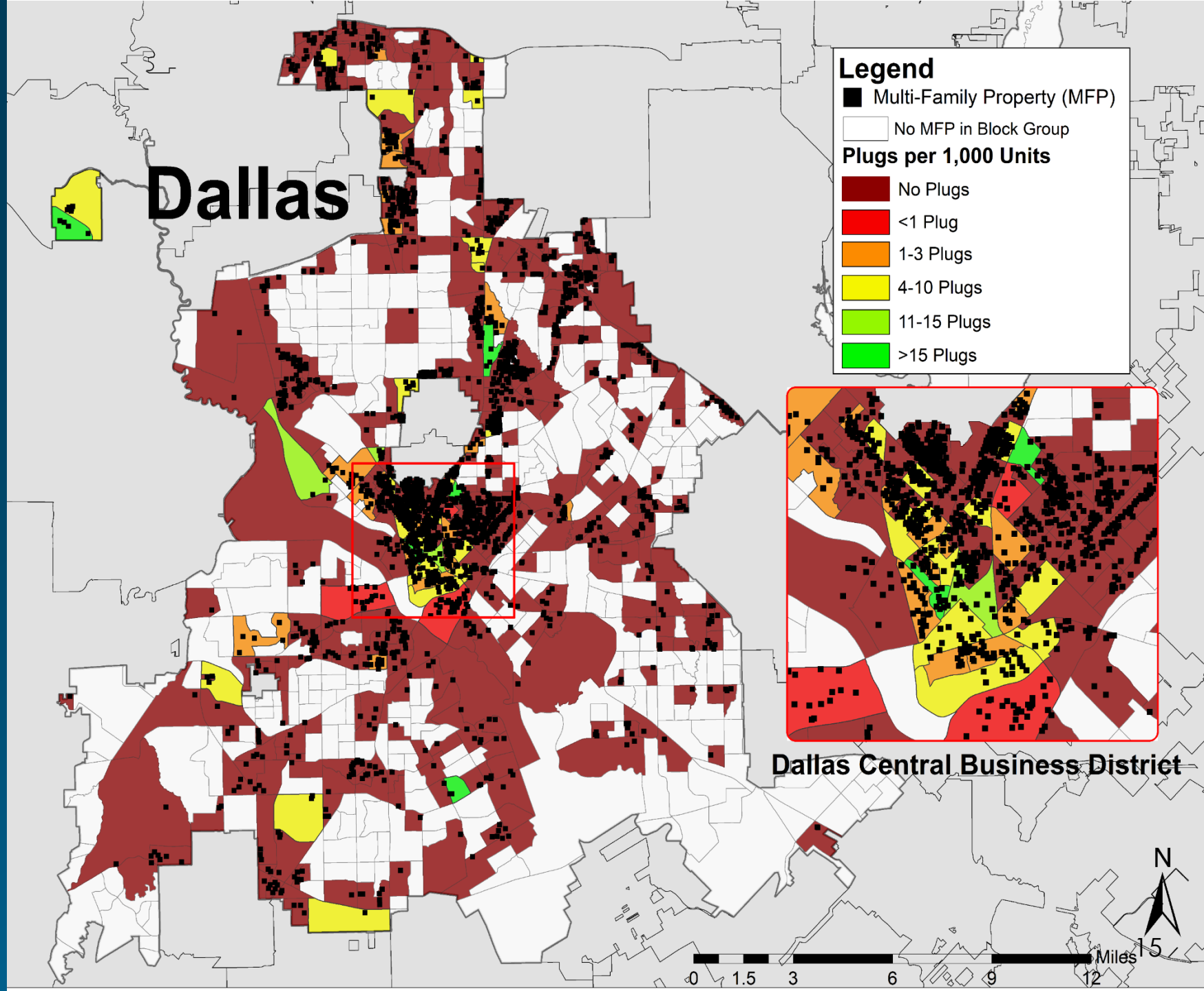


MULTI-FAMILY PROPERTIES WITH AND WITHOUT CHARGING STATION ACCESS OR REGISTERED EVs

CITYWIDE	
MFPs Without Nearby Charging	**MFPs in an EJ Area Without Nearby Charging**
54%	67%



MULTI-FAMILY PROPERTIES AND AVAILABILITY OF PUBLIC ACCESS EV CHARGING BY BLOCK GROUP



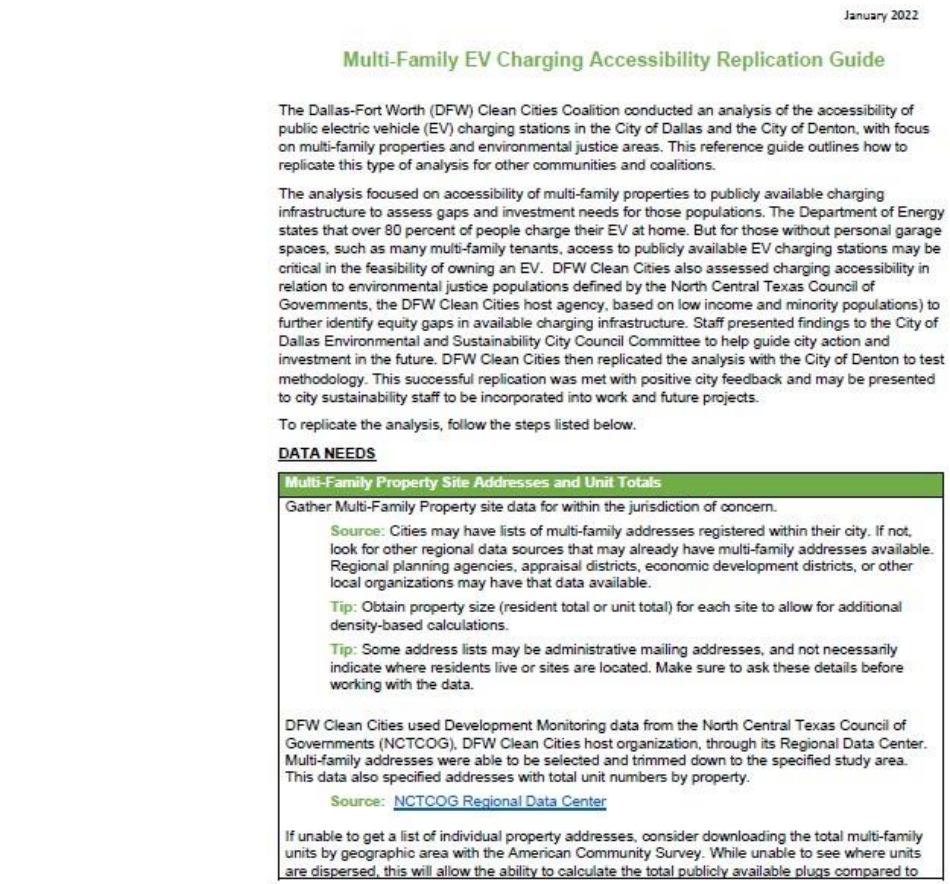
Source: NCTCOG Data (from Texas DMV Registration), U.S. DOE, Alternative Fuels Station Locator

CHARGING STATION ACCESS BY COUNCIL DISTRICT

Council District	Multi-Family Properties Without Nearby Charging		Public Charging Plugs per 10,000 MFP Units
	Overall	In an EJ Area	
1	68%	67%	2.2
2	29%	35%	28.3
3	93%	93%	10.0
4	98%	98%	0.0
5	100%	100%	0.0
6	73%	71%	17.9
7	100%	100%	0.0
8	96%	96%	2.5
9	86%	88%	5.6
10	94%	96%	1.1
11	46%	51%	8.0
12	76%	100%	3.1
13	81%	92%	11.9
14	30%	43%	21.4

In general, multi-family properties in an Environmental Justice area are less likely to have charging stations nearby.

Replication Guide



January 2022

Multi-Family EV Charging Accessibility Replication Guide

The Dallas-Fort Worth (DFW) Clean Cities Coalition conducted an analysis of the accessibility of public electric vehicle (EV) charging stations in the City of Dallas and the City of Denton, with focus on multi-family properties and environmental justice areas. This reference guide outlines how to replicate this type of analysis for other communities and coalitions.

The analysis focused on accessibility of multi-family properties to publicly available charging infrastructure to assess gaps and investment needs for those populations. The Department of Energy states that over 80 percent of people charge their EV at home. But for those without personal garage spaces, such as many multi-family tenants, access to publicly available EV charging stations may be critical in the feasibility of owning an EV. DFW Clean Cities also assessed charging accessibility in relation to environmental justice populations defined by the North Central Texas Council of Governments, the DFW Clean Cities host agency, based on low income and minority populations) to further identify equity gaps in available charging infrastructure. Staff presented findings to the City of Dallas Environmental and Sustainability City Council Committee to help guide city action and investment in the future. DFW Clean Cities then replicated the analysis with the City of Denton to test methodology. This successful replication was met with positive city feedback and may be presented to city sustainability staff to be incorporated into work and future projects.

To replicate the analysis, follow the steps listed below.

DATA NEEDS

Multi-Family Property Site Addresses and Unit Totals

Gather Multi-Family Property site data for within the jurisdiction of concern.

Source: Cities may have lists of multi-family addresses registered within their city. If not, look for other regional data sources that may already have multi-family addresses available. Regional planning agencies, appraisal districts, economic development districts, or other local organizations may have that data available.

Tip: Obtain property size (resident total or unit total) for each site to allow for additional density-based calculations.

Tip: Some address lists may be administrative mailing addresses, and not necessarily indicate where residents live or sites are located. Make sure to ask these details before working with the data.

DFW Clean Cities used Development Monitoring data from the North Central Texas Council of Governments (NCTCOG), DFW Clean Cities host organization, through its Regional Data Center. Multi-family addresses were able to be selected and trimmed down to the specified study area. This data also specified addresses with total unit numbers by property.

Source: NCTCOG Regional Data Center

If unable to get a list of individual property addresses, consider downloading the total multi-family units by geographic area with the American Community Survey. While unable to see where units are dispersed, this will allow the ability to calculate the total publicly available plugs compared to

Dallas-Fort Worth CLEAN CITIES

dfwcleancities.org

TARGETED MULTIFAMILY EV CHARGING INITIATIVES

- Direct mail TxVEMP grant announcements
- Collaborated with Apartment Association of Greater Dallas
- Worked with City of Dallas Housing Department
- Engaged Environment and Sustainability Committee
- Collaborated with British Consulate
- Annual Apartment Association Trade Show

NEXT STEPS MULTIFAMILY EV CHARGING INITIATIVES

- Engage Environmental Commission
- Work through Council Offices
- Partner with Zero Waste team
- Identify funding opportunities
- Highlight best practices
- Collaborate with Dallas Housing Authority

City of Dallas

City of Dallas Multifamily Electric Vehicle Charging Initiatives

Pharr Andrews, Senior Climate Coordinator
Office of Environmental
Quality & Sustainability
City of Dallas

DATA SOURCES: MULTI-FAMILY PROPERTIES

Data Set	Source	Date of Data Set in Analysis
Publicly Accessible EV Charging Stations	Department of Energy Alternative Fuel Station Locator	September 2021
EV Registration Data	NCTCOG Analysis from NCTCOG EV Registration Dataset	August 2020
Multi-Family Properties	NCTCOG Development Monitoring Program Dataset	August 2021
Environmental Justice Index	NCTCOG Environmental Justice Data	December 2020

DATA LIMITATIONS

EV registration analysis was pulled at a single date. Need to replicate efforts to get updated list of EVs registered at different multi-family properties.