North Central Texas Council of Governments

Dallas-Fort Worth CLEAN CITIES

AGENDA

DALLAS-FORT WORTH CLEAN CITIES TECHNICAL ADVISORY COMMITTEE
Tuesday, May 6, 2025, 10:00am to 11:30 am
Dallas-Fort Worth Clean Cities/North Central Texas Council of Governments
(NCTCOG Guest Secured Wireless Connection Password: rangers!)

2:00 – 2:05	1. Welcome	Jose Correa
2:05 – 2:10	2. Committee Member Update	James Wood
2:10 – 2:15	3. Impacts of the New Administration	Lori Clark
2:15 – 2:45	4. DFWCC Strategic Plan Review (FY27 – FY30) a. Dallas Fort Worth Air Quality Improvement Plan: Clean Vehicle Measures b. Goal Revision c. Opportunities for Impactful Projects	Lori Clark/Savana Nance
2:45 – 3:00	5. Update on Federal EV Charging Station Awards a. Charging and Fueling Infrastructure (CFI) Community Award Update b. North Texas Reliable Electric Vehicle Infrastructure Project (NTx-REVI) Update	Jared Wright
3:00 – 3:15	6. Coalition Staff Updates	
	a. Department of Energy's Vehicle Technologies Office 2025 Notice of Funding Opportunity Concept Paper Support	Lori Clark
	b. DFWCC Director Transition Plan	Lori Clark
	c. DFWCC Fleet Assistance Standard Operation Procedure	Savana Nance
	d. DFWCC Annual Survey Update	Savana Nance
3:15 – 3:25	7. Upcoming Events, Engagements, & Funding Opportunities	
	a. May 14 - Local Government EV Charging Panel	Joslyn Billings
	b. May 21- North Texas Resilient Electric Vehicle Infrastructure Stakeholder Meetings	Hannah Thesing
	c. May 27- Energy Efficiency and Conservation Block Grant Funding Roundtable	Joaquin Escalante
	d. Summer 2025- NTX-ZEV	Savana Nance
	e. Update on Site Visit	Jose Correa
3:25 – 3:30	8. Questions/Comments/Feedback/Topics for next meeting	
3:30	Adjourn – Next Meeting July 28, 2025	

North Central Texas Council of Governments

Dallas-Fort Worth CLEAN CITIES

DFW Clean Cities Technical Advisory Committee Meeting

May 6, 2025

William Pitstick Conference Room

Agenda

2:00 – 2:05	1. Welcome
2:05 – 2:10	2. Committee Member Update
2:10 – 2:15	3. Impacts of the New Administration
2:15 – 2:45	4. DFWCC Strategic Plan Review (FY27 – FY30)
2:45 – 3:00	5. Update on Federal EV Charging Station Awards
3:00 – 3:15	6. Coalition Staff Updates
3:15 – 3:25	7. Upcoming Events, Engagements, and Funding Opportunities
3:25 – 3:30	8. Questions/Comments/Feedback/Topics for Next Time

1. Welcome
   -Jose Correa
2. Committee Member Update
   -James Wood
3. Impacts of New Administration
   - Lori Clark

4. DFWCC Strategic Plan Review (FY27-FY30)

DFWCC TAC Mission:

Improve air quality by promoting clean, reliable, accessible, and sustainable transportation technologies.

Key goals in multiple areas

Stable structure and growing team

Vehicle Goals

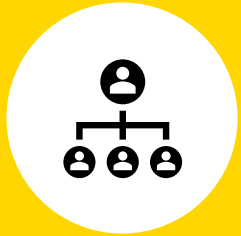
Facilitate alternative fuel adoption at 30 fleets
Achieve at least 100 EV registrations per zip code
Integrate EV technician training at community colleges

Infrastructure Goals

Support 100 EV charger deployments
Help scope 10 MHD fueling/charging projects
Collaborate on 25 resilient EV chargers

Energy Goals

Convert all public fleet CNG to RNG
Reduce “soft costs” of infrastructure development
Integrate EV charger training at community colleges



Organizational Goals

Develop new mission and vision statements
Transition all contacts to CRM
Transition Coalition website

4.a. DFW Air Quality Improvement Plan

Deliverable 1

Priority Climate Action Plan (PCAP)- Submitted March 1, 2024; www.publicinput.com/dfwAQIP

Requirements:

- Develop Plan to Improve Air Quality Through 2030
- Greenhouse Gas (GHG) Emissions Inventory (EI)
- GHG Reduction Measures
- Low-Income and Disadvantaged Communities (LIDAC) Analysis
- Review of Authority to Implement

Deliverable 2

Comprehensive Climate Action Plan (CCAP) -Due Winter 2025

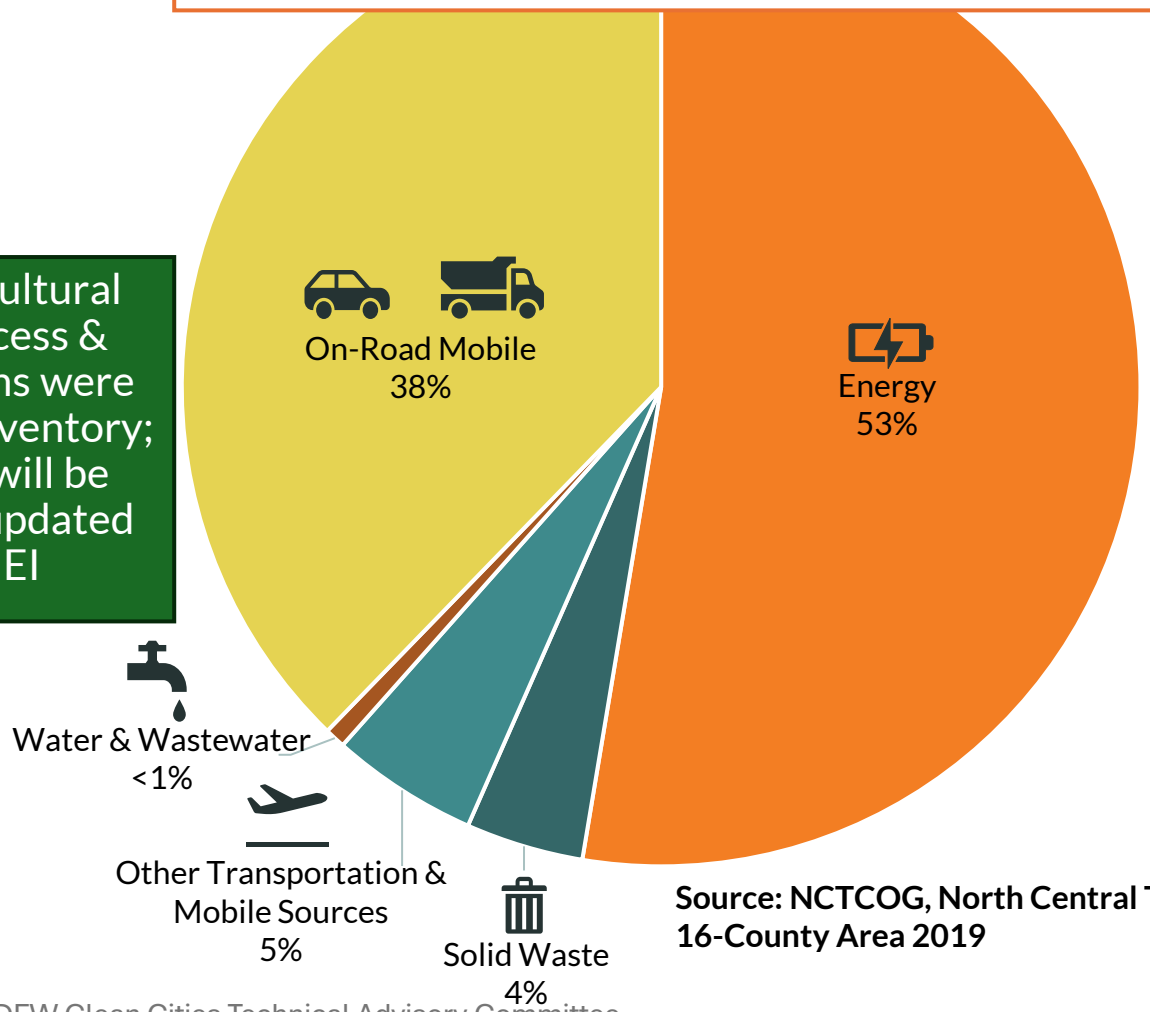
Requirements:

- Develop Plan to Improve Air Quality Through 2050
- All PCAP Requirements
- GHG EI Projections and Targets
- Benefits Analysis
- Funding Analysis
- Workforce Analysis

The DFW AQIP development is supported by funding from the Environmental Protection Agency's (EPA) Climate Pollution Reduction Grants (CPRG): Planning Grants

4.a. 2019 Greenhouse Gas Emissions Inventory

Total Metric Tons of Carbon Dioxide Equivalent (CO_2e) produced in 2019 is 105,435,559



Source: NCTCOG, North Central Texas 16-County Area 2019

Note: The agricultural emissions, process & fugitive emissions were not part of this inventory; These sectors will be included in the updated 2022 GHG EI

105,435,559 metric tons CO_2e is equivalent to:

24,593,399 gasoline-powered passenger vehicles driven for one year

93,115,723 electric-powered passenger vehicles driven for one year

8,524,124,749,926 number of smartphones charged

1,743,386,033 tree seedlings grown for 10 years

Greenhouse Gas Equivalencies Calculator | US EPA

4.a. Measure Requirements

	Timeframe	Quantifiable Emissions Reductions?*	Sectors	Funding Analysis	Cost Estimates	Tracking Metrics	Implementing Agencies	Other Requirements
PCAP	2025-2030	Yes	Priority Sectors Only	No	No	Yes	Yes	N/A
CCAP	2025-2050	Yes	All Sectors	Yes	Yes	Yes	Yes	Be **specific enough** to implement and measure **Support Targets for CCAP****

**Efforts which are necessary to undertake to achieve a measure but do not result in direct emission reductions (ex: workforce development) can be "bundled" with a measure.*

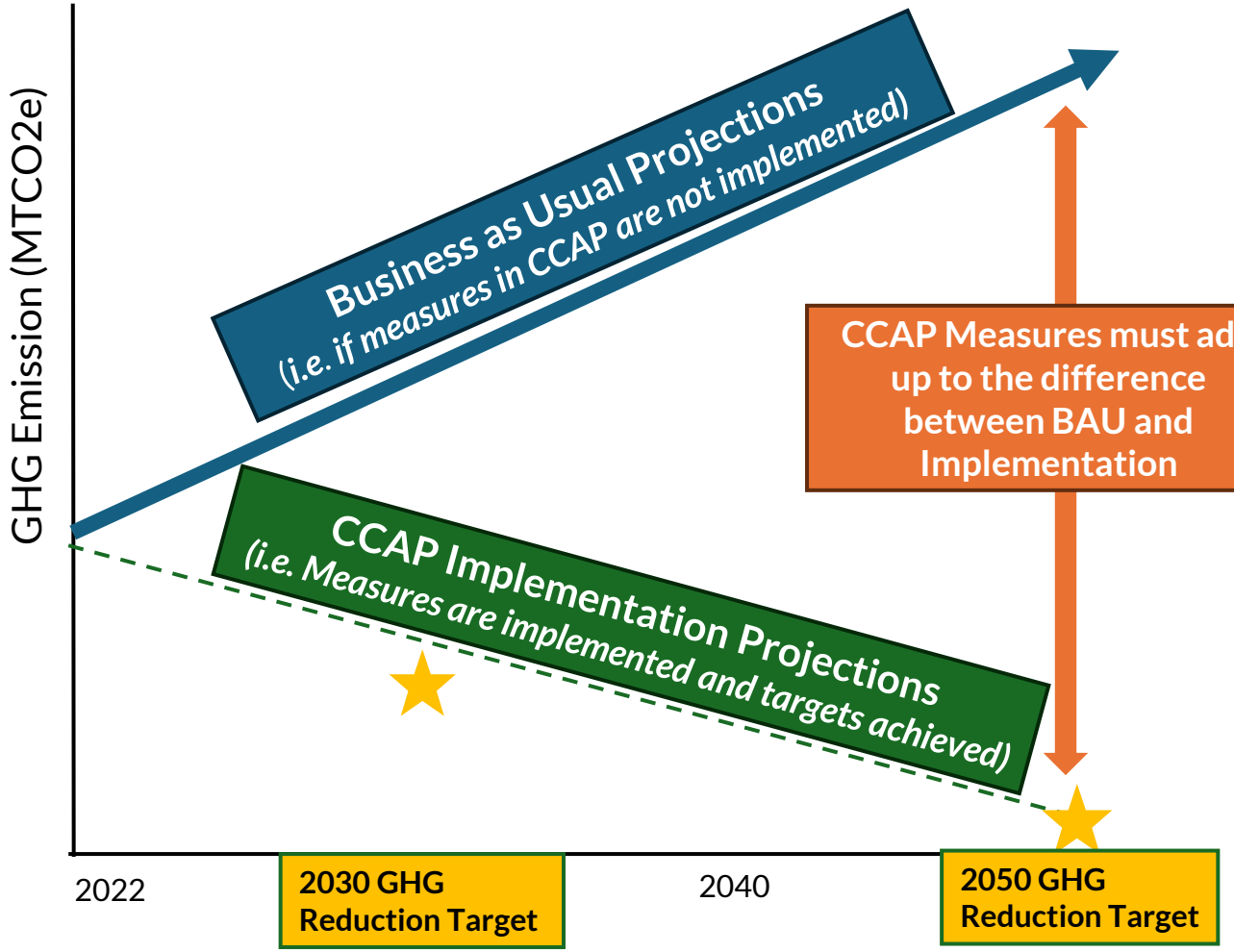
Targets should be **actionable, ambitious, achievable

4.a. Measure Requirements

Example CCAP Measures

Example EPA Measure with CCAP Appropriate Specification	Measure that is too Broad for CCAP
Alter 10 building codes to include IECC Net Zero Appendices	Reduce energy use in residential sector
Shift towards a clean renewable and resilient power grid through early retirement of coal/natural gas power plants at 500 MW per year	Achieve a carbon neutral electricity grid
Install 10 EV chargers in low-income communities	Reduce transportation emissions by 50%

Example CCAP Targets



4.a. CCAP Draft Clean Vehicle Measures

Measure	Related Goals/Targets	2022 Progress	2024 Progress**	Potential 2030/ 2050 Targets	Barriers to Achieving Targets In
Increase Public Sector Fleets adopt NO_X reducing fuels *(On or Off-Road Vehicles)*	DFWCC Strategic Plan Goal is 20 by 2027 City of Dallas/DFWIA Goals	0	~12	25? by 2030 40? by 2050	Lack of infrastructure; Federal investments rescinded;
Increase Private Sector Fleets adopt NO_X reducing fuels *(On or Off-Road Vehicles)*	DFWCC Strategic Plan Goal is 10 by 2027	0	~2	15? by 2030 25? by 2050	Fewer connections with private fleets; same as Public fleets
Potential "bundled" projects that are essential to achieving measures but don't provide emission reductions includes: Outreach and education, studies/research, infrastructure development, and workforce development					

What is a target for the measures that are actionable, achievable, and ambitious?

What are barriers to achieving the targets?

Are there other regional or local goals we should consider when developing targets?

*Baseline year; Consistent with development of DFWCC Strategic Plan
**Based on preliminary results from DFW Annual Survey; Not reflective of all 2024 efforts

4.a. CCAP Draft Clean Vehicle Measures

Measure	Related Goals/Targets	Adoption in 2022*	2024 Adoption **	Potential Target for 2030 and 2050	Barriers to Achieving Targets
Increase EV registration by consumers/general public in the 12-county Metropolitan Planning Area	DFWCC Strategic Plan Goal is all zip codes have 100+ EVs by 2027	**58,609** total EV adopted Number of Zip Codes with EV Registration: >100 EV: **136** Zip codes with <100 EV: **185** Zip codes with no EV: **21**	**122,609** total EV adopted Number of Zip Codes with EV Registration: >100 EV: **179** Zip codes with <100 EV: **148** Zip codes with no EV: **15**	Total EVs adopted Zip Codes with EV Registration? Different metric?	Lack of infrastructure; Federal investments rescinded;
Potential "bundled" projects that are essential to achieving measures but don't provide emission reductions includes: Outreach and education, studies/research, infrastructure development, and workforce development					

What is a target for the measures that are actionable, achievable, and ambitious?

What are barriers to achieving the targets?

Are there other regional or local goals we should consider when developing targets?

*Based on January 2023 EVNT Data

**Based on January 2025 EVNT Data

4.a. CCAP Draft Clean Vehicle Measures

Measure	Related Goals/Targets	Implementing Agency	Baseline Adoption in 2022	2024 Adoption	Potential Target for 2030 and 2050	Barriers to Achieving Targets
Demo a zero-emission locomotive in DFW	Unknown	TBD; Local Transit Agencies or Freight Companies	0	0	1 by 2030 5 by 2050	Lack of infrastructure; Cost;
Install Wayside Power for TRE	Unknown	DART/Trinity Metro	Unknown	Unknown	9 by 2030 (CPRG Implementation Grant request)	Lack of funding
Potential "bundled" projects that are essential to achieving measures but don't provide emission reductions includes: Outreach and education and infrastructure development						

What is a target for the measures that are actionable, achievable, and ambitious?

What are barriers to achieving the targets?

Are there other regional or local goals we should consider when developing targets?

What other measures should we consider?

4.b Goal Revision: Clean Vehicle Initiatives

Vehicle Goals

- Facilitate alternative fuel adoption at 30 fleets
- Achieve at least 100 EV registrations per zip code
- Integrate EV technician training at community colleges

Program	Goal	Description	Overall Status
Clean Vehicle Initiatives	1	Increase Number of Public Fleets Adopting NO_X Reducing Fuel by 20	On Track
	2	Increase Number of Public Fleets Adopting NO_X Reducing Fuel by 10	On Track
	3	Increase EV registration by consumers/general public	On Track
	4	Expand EV workforce training programs at community colleges	On Track

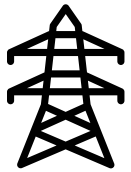
4.b Goal Revision: Alternative Fuel Infrastructure Initiatives

Infrastructure Goals

- Support 100 EV charger deployments
- Help scope 10 MHD fueling/charging projects
- Collaborate on 25 resilient EV chargers

Program	Goal	Description	Overall Status
Alternative Fuel Infrastructure Initiatives	1	Support development of 100 new publicly accessible light-duty electric vehicle charging stations	On Track
	2	Support development of 10 medium/heavy-duty alternative fuel charging or refueling stations	On Track
	3	Support development to support 25 publicly accessible EV charging projects that increase resiliency, reliability, and emergency preparedness of the EV charging network	On Track

4.b Goal Revision: Clean Energy Initiatives

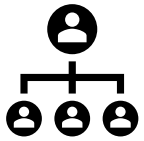


Energy Goals

- Convert all public fleet CNG to RNG
- Reduce “soft costs” of infrastructure development
- Integrate EV charger training at community colleges

Program	Goal	Description	Overall Status
Clean Energy Initiatives	1	Assist public fleets in transitioning from compressed natural gas to renewable natural gas (RNG)	On Track
	2	Support and expedite deployment of clean vehicle technologies and alternative fuel infrastructure.	On Track
	3	Expand the workforce training programs	On Track
	4	Minimize negative electric grid impacts from transportation electrification	On Track

4.b. Organization Goals/Capacity Building



Organizational Goals

- Develop new mission and vision statements
- Transition all contacts to CRM
- Transition Coalition website

Program	Goal	Description	Overall Status
Organizational Goals/Capacity Building	1	Develop new mission statement, and potentially also a vision statement, with Advisory Committee input by Spring 2024.	Complete
	2	Transition all contacts and contact lists into CRM by end of calendar year 2024.	Behind
	3	Transition Coalition website from Wix to Kentico platform by December 2024.	Slightly Behind

4c. Opportunities for Impactful Projects

See Handout

How should we revise the goals? Which have become less important or are largely accomplished?

What goals are most important?

Which goals need the most additional resources?

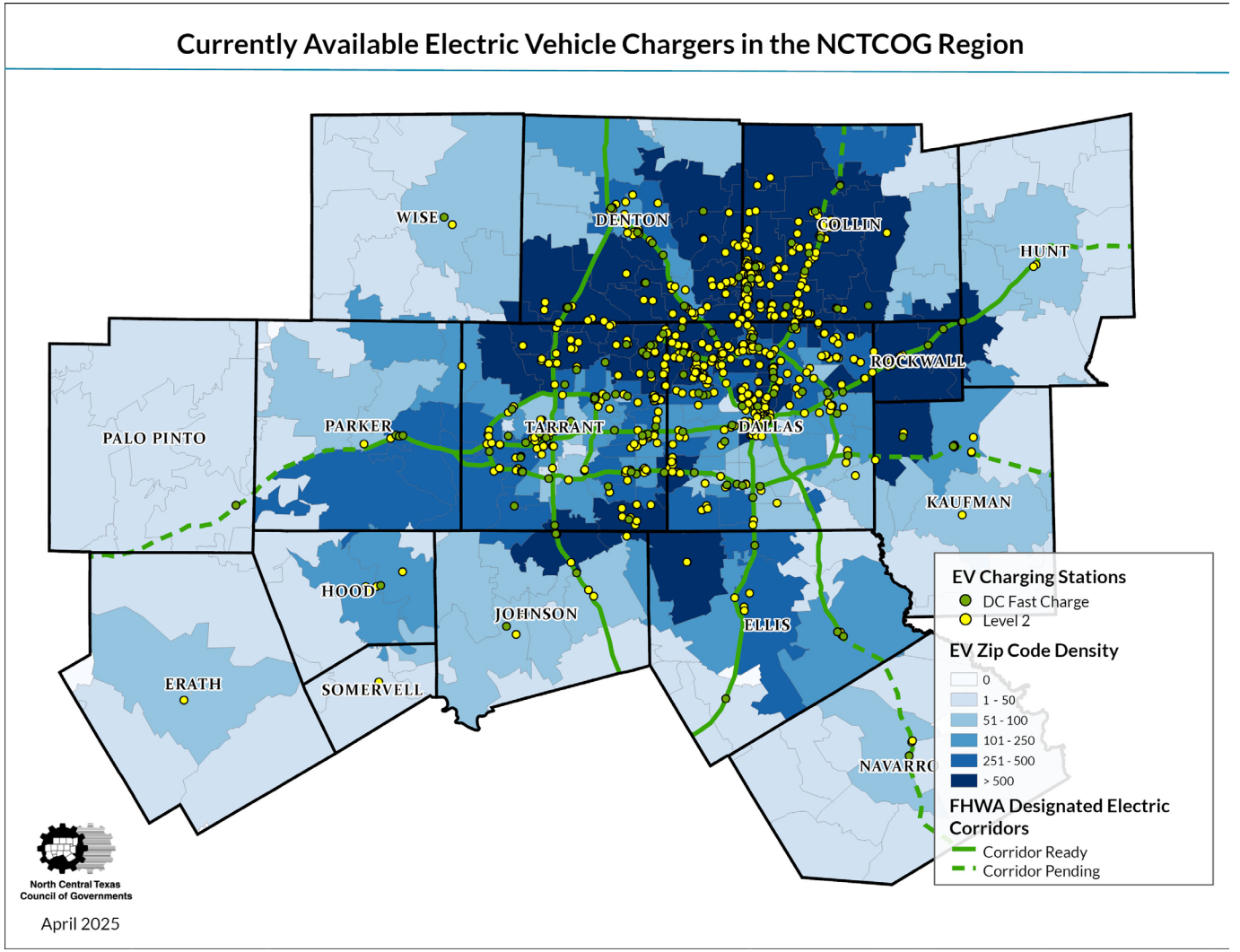
What specific actions should Coalition staff take to achieve the goals?

5.a. Charging and Fueling Infrastructure (CFI) Community Award

$15 Million Award from the Federal Highway Administration under the Charging and Fueling Infrastructure (CFI) Community Program

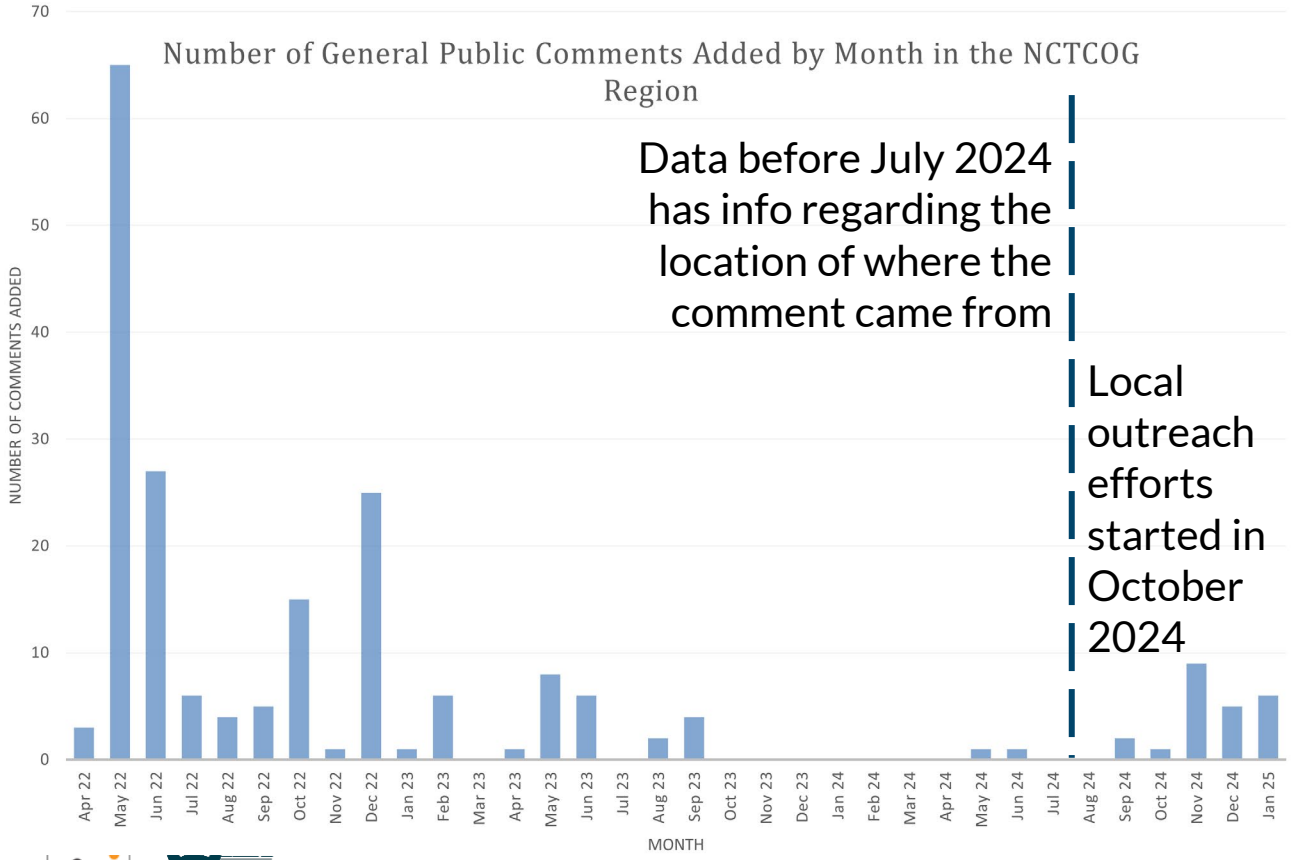
Build additional charging stations on public sector property across 16-county region to fill gaps in existing regional charging network

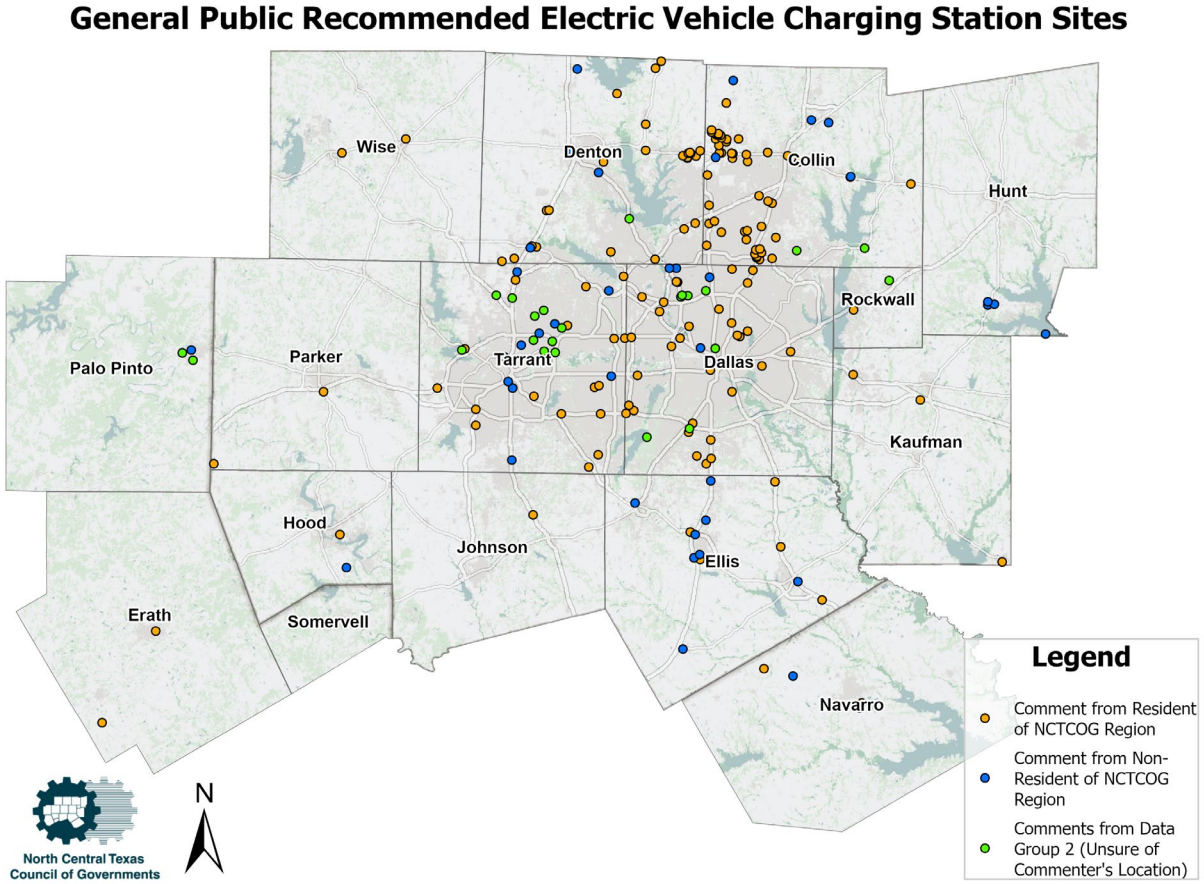
Procured Kimley-Horn and Associates, Inc. to serve as the "Deployment Dream Team" to expedite requirements and ensure timely implementation by facilitating key processes: permitting, zoning, utility coordination, etc.



5. a. CFI Community Award

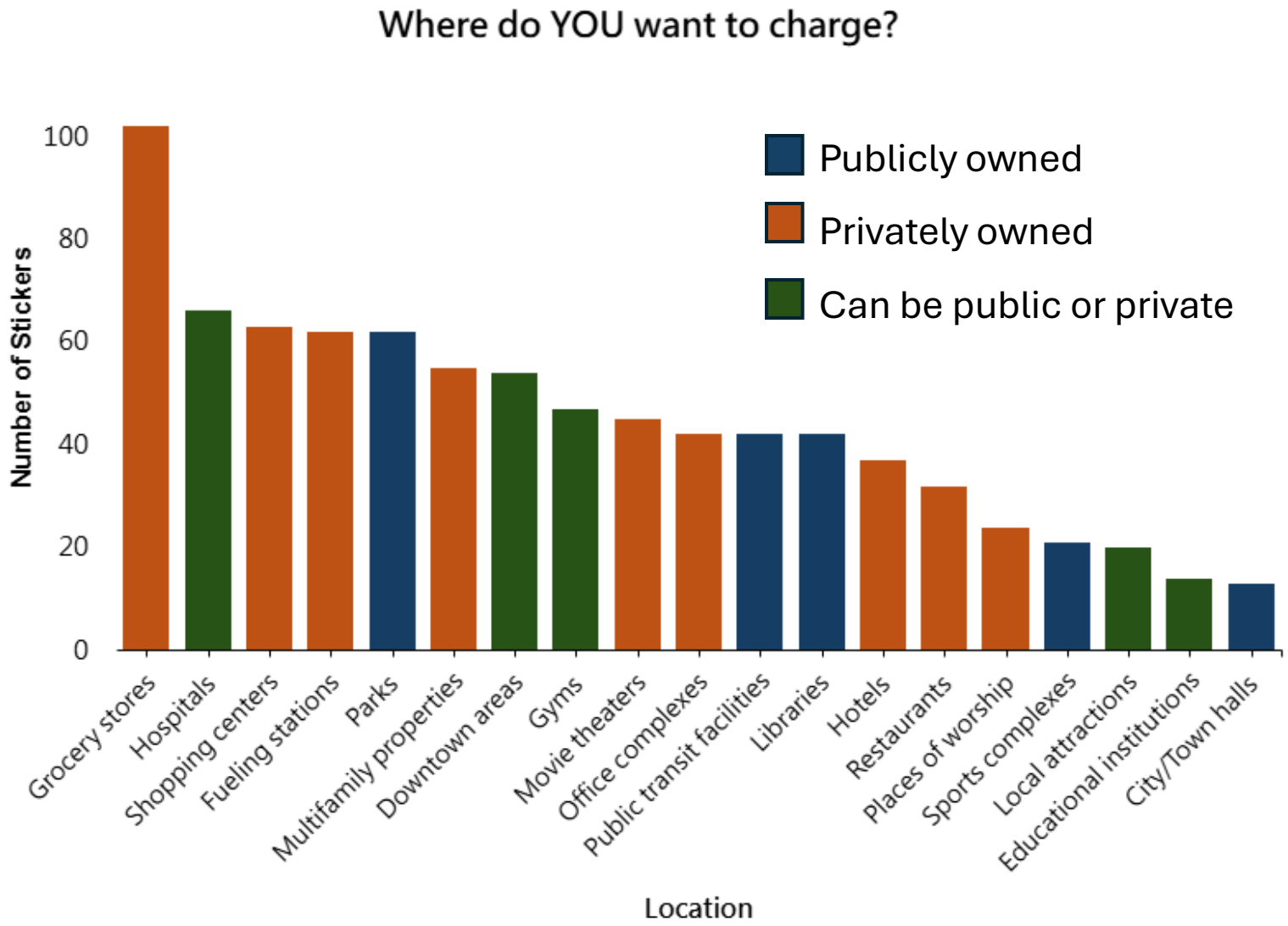
Received GIS data on comments received on TxDOT Interactive Map and analyzed comments in or from our region





5.a. CFI Community Award

- Completed 13 outreach events with the poster since October 2024
- Received a total of 845 votes on preferred location types
- Currently promoting our website through eblasts, LinkedIn, Facebook, and Instagram to collect feedback via the TxDOT Interactive Map



5.a. Proposed CFI Community Award Community Accessibility Metric

May 2023 RTC	FHWA Application	Current Inclusion in Community Accessibility Metric
At least 50% in Justice40 Areas	At least 50% in Justice40 areas	Increase score in areas with below regional averages for below poverty and above average minority population
Low- and- moderate income neighborhoods	Low- and moderate-Income neighborhoods	
Fill gaps in access to charging infrastructure	Gaps in existing infrastructure network, primarily in underserved and rural areas Underserved or hard-to-reach communities where the private sector may not invest absent federal funding	Decrease score for existing publicly accessible charging stations nearby Increase score for locations not in urbanized area
Rural areas	Rural locations	
Low ratio of private parking to households	Community with low ratio of private parking spaces to Households, or high ratio of multifamily to single family homes	Decrease score for nearby single-family homes Increase score for nearby multi-family homes
Multi-modal hubs and shared-use fleets and services	Multi-modal hubs and shared-use fleets and services	Increase score if site could serve airports, transit facilities, large campuses or other special generators Increase score for nearby transit facilities
Fleet vehicles that operate in communities	Fleet vehicles that serve and operate in Communities	Increase score if site has potential to serve public agency fleets

5.b. North Texas Reliable EV Infrastructure Project

Funded by the Federal Highway Administration (FHWA) EV Charger Reliability and Accessibility Accelerator Program (National EV Infrastructure Formula Program set-aside)

- Goal: increase reliability of EV charging stations

$3.66 Million Awarded ($3.36 Million Pass-Through, $300,000 NCTCOG Administrative Costs)

- 20% match to be provided by private sector for pass-through funding
- Transportation Development Credits used as match for NCTCOG administrative costs
- Award fully obligated

Work Scope Includes Repair, Replacement, or Upgrade of Chargers listed as "broken" or "non-operational" by FHWA on October 11, 2023

- Meet federal standards for number and speed of charging ports, payment methods, pricing, interoperability, communication protocols
- May upgrade to Direct Current (DC) Fast Charge if within 1 mile of a designated EV highway corridor

5.b. North Texas Reliable EV Infrastructure Project

Charging Station Owner	Location	City	Property Type	Score	Existing Charger Type	Eligible for DC Fast Charge Upgrade?	Estimated Federal Award
EV Network	City of Plano Downtown Parking Lot	Plano	Public Sector	84	Level 2	Yes	$743,458
EV Network	City of Plano Oak Point Rec Center	Plano	Public Sector	79	Level 2	Yes	$743,458
EV Network	NCTCOG Offices	Arlington	Office	66	Level 2	Yes	$743,458
Site Host	Dallas County Government Building	Dallas	Public Sector	65	Level 2	Yes	$720,000
Site Host	Duncanville Shopping Center	Duncanville	Retail	62	Level 2	No	$60,000
Site Host	Dallas County Government Building	Garland	Public Sector	58	Level 2	No	$70,000
Site Host	Cinemark Frisco	Frisco	Retail	55	Level 2	No	$60,000
EV Network	Boston Pizza Restaurant	Irving	Retail	48	Level 2	Yes, Declined	$22,970
						Total Federal Funding Awarded:	**$3,163,344**
						Total Federal Funding Remaining:	**$196,656**

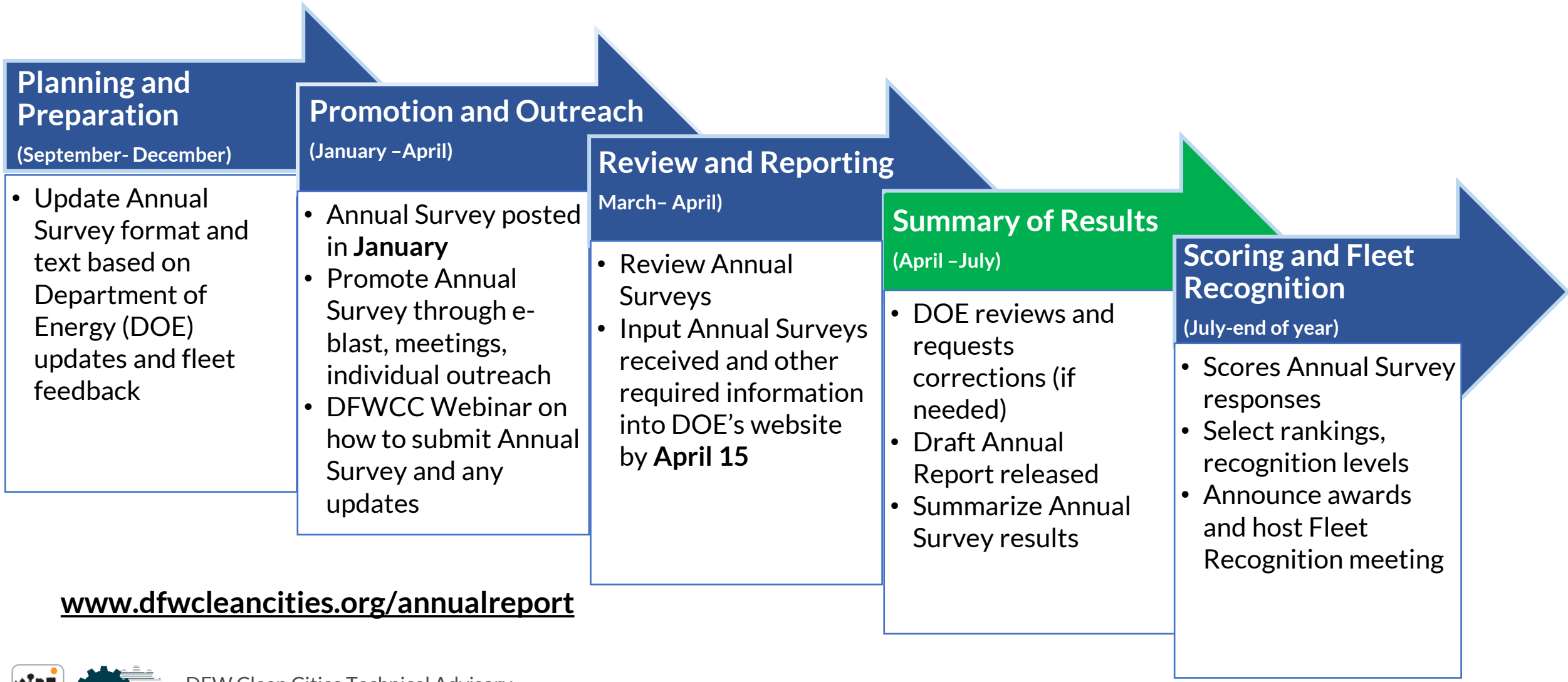
6.a. - c. Coalition Staff Update

6.a. Department of Energy's Vehicle Technologies Office 2025 Notice of Funding Opportunity Concept Paper Support

6.b. and c. DFWCC Standard Operating Procedure Update

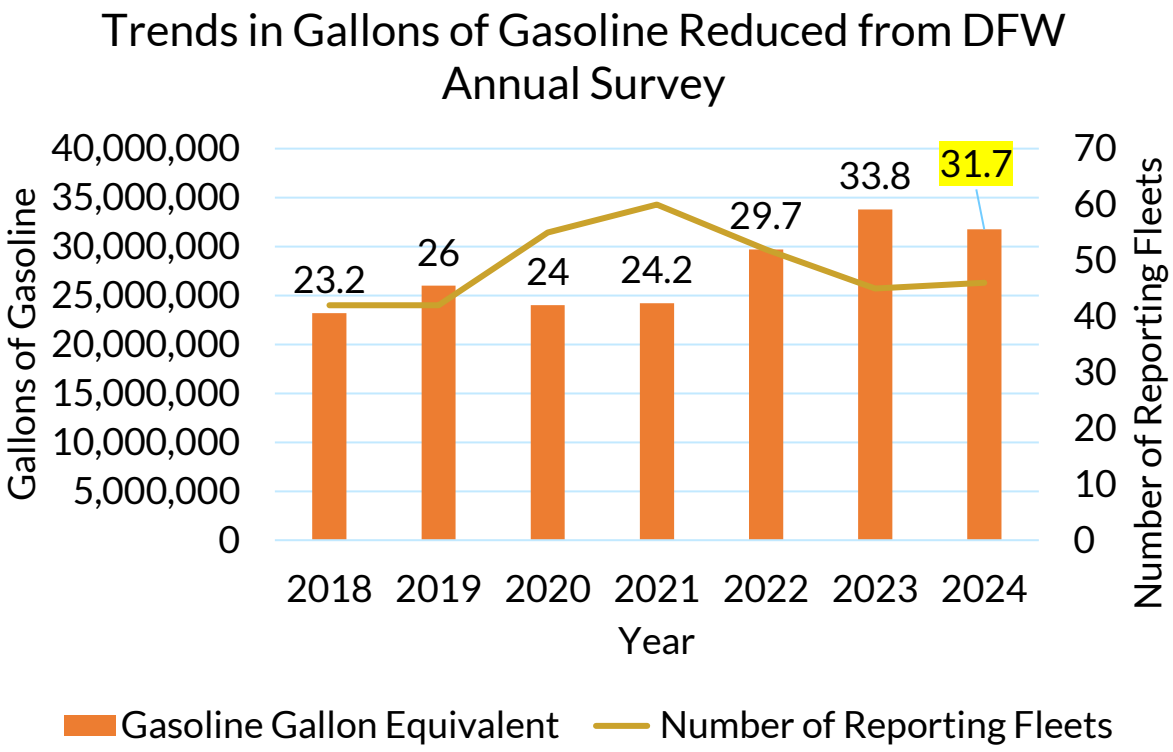
Standard Operating Procedure	Developed by	Status
Record Keeping	Host Agency (NCTCOG) Procedures Govern	In Place
Financial Management	Host Agency (NCTCOG) Procedures Govern	In Place
Coalition Director Transition Plan	Coalition Staff	Draft Completed; Input requested by Next DFWCC TAC Meeting
Technical Assistance	Coalition Staff	Draft Completed; Input requested by Input requested by Next DFWCC TAC Meeting
Stakeholder Engagement Process	Coalition Staff	In Process, to be complete by October 2025
Communications	Coalition Staff	In Process, to be complete by October 2025
Events	Coalition Staff	In Process, to be complete by October 2025

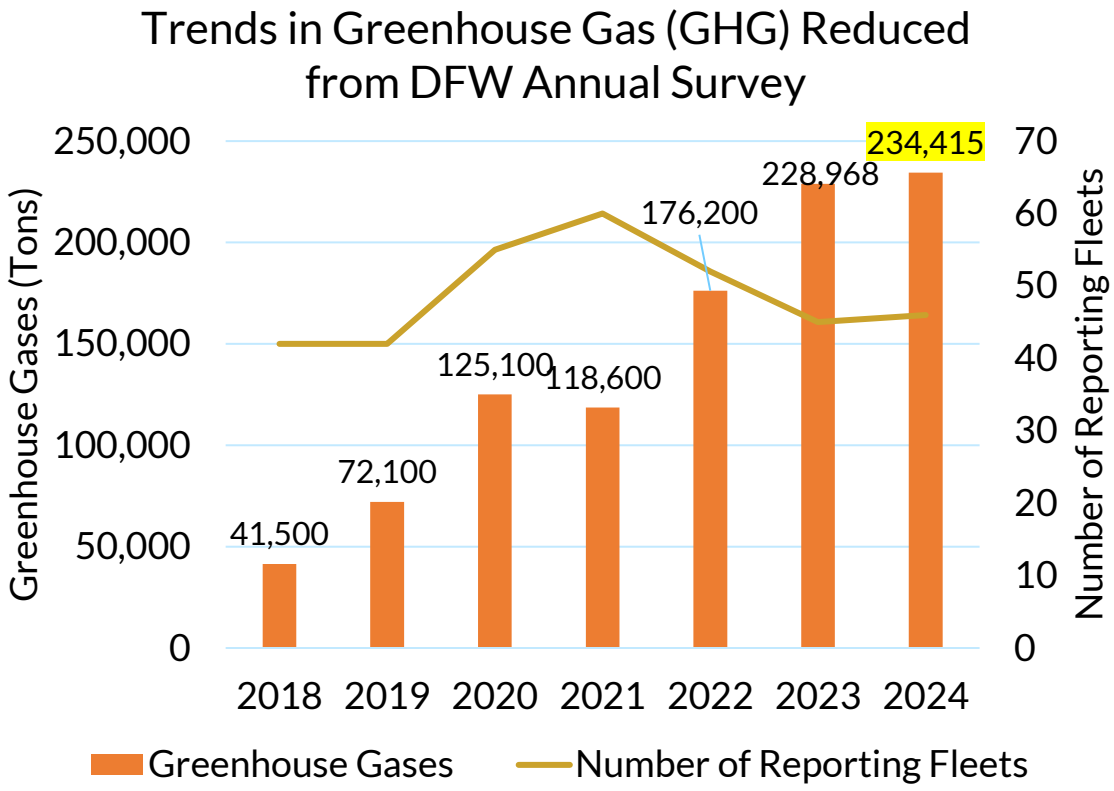
6.d. DFW Clean Cities Annual Survey Update



www.dfwcleancities.org/annualreport

6.d. DFW Clean Cities Annual Survey Update*





**As of April 30, 2025; Final results available Summer 2025*

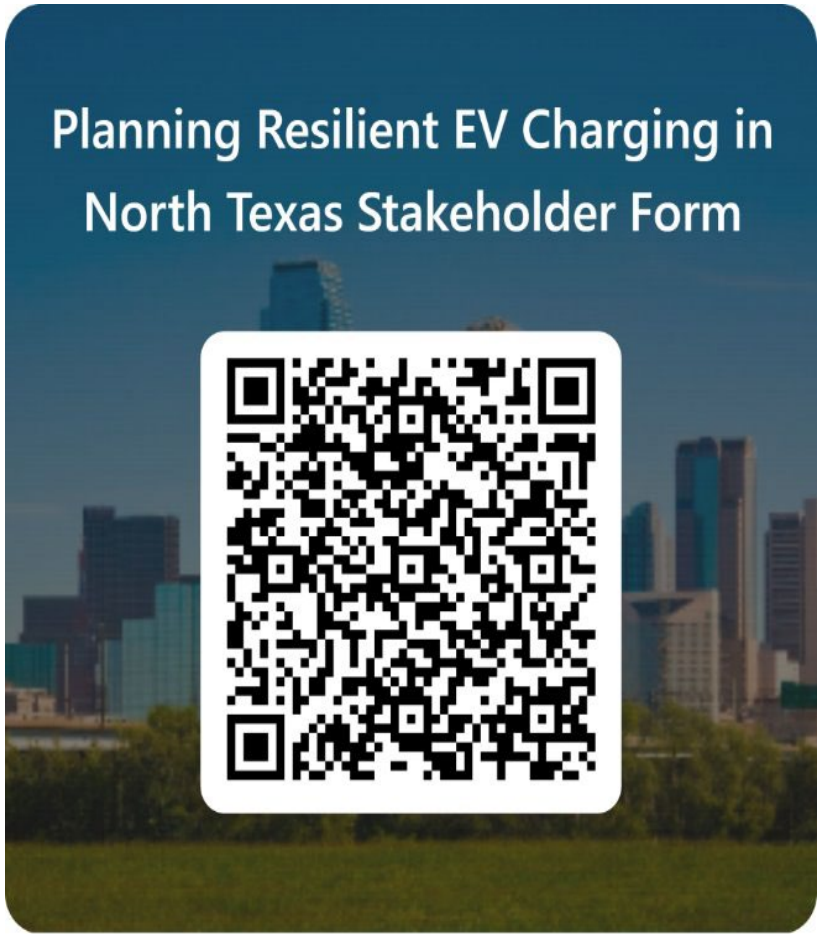
7.a. Upcoming Events and Engagement Opportunities

Regional EV Infrastructure Working Group

Topic: Panel discussion of public agencies establishing a fee and collecting revenue from publicly owned charging stations
Date: Wednesday, May 14, 2025
Time: 1:00 – 2:00 pm CST
Location: Virtual via Microsoft Teams

Go to dfwcleancities.org/events to register!

7. b. & c. Upcoming Events and Engagement Opportunities



May 21: North Texas Resilient Electric Vehicle (NTx-REV Infrastructure Stakeholder Meeting)

- Ensure continuation of critical electric vehicle (EV) operations through hardening of EV infrastructure
- Evaluate strategies, technologies, & equipment via Tabletop Scenario and Technology Demonstration

Go to www.dfwcleancities.org/ntx-rev for more information

May 27: Energy Efficiency and Conservation Block Grant Funding Roundtable

- Grant awardees will share their plans and project progress with other local governments to show what is energy efficiency projects are possible with funding

Go to www.dfwcleancities.org/events for more information

7.d North Texas Zero-Emission Vehicle Project (NTx-ZEV)

Go to www.nctcog.org/NTxZEV for more information

	Vehicle & Infrastructure ~$58 million available	ZEV Workforce Development ~$1.2M available
Eligible Projects	Any battery-electric or hydrogen fuel cell Class 6 or 7 vocational vehicle and infrastructure; Public and private entities eligible* Must replace a non-zero emission (gasoline, diesel, propane, natural gas) Class 6 or7 vehicle	Fund workforce development projects, such as: - First responder training - Mechanic training for vehicles/infrastructure - Driver training
Project Selection	Call for Projects – **Expected to open Summer 2025** Priority given to operations in 10 county ozone nonattainment area**	Strategic Selection or Other Selection Process
Funding Level	Maximum federal share allowed by EPA **33% to 65% per battery-electric vehicle** **60% to 80% per hydrogen fuel cell vehicle**	Workforce costs not subject to maximum federal share

Fleets interested in learning more about available heavy-duty zero-emission vehicles can go to www.dfwcleancities.org/events to view slides and recordings from NCTCOG's 3-Part ZEV Webinar Series

*Must adopt Clean Fleet Policy **Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise

Contact Us

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Summary of DFW Clean Cities FY 2024-2027 Goals and Implementing Resources

Program	Goal	Description	Implemented Through*	Fiscal Year 2026	Fiscal Year 2027	Market Development Events/ Workshops/ Meetings	Infrastructure Planning and Development	Technical Assistance/ Fleet Coaching	Technical Training/ Education
Clean Vehicle Initiatives	1	20 Public Fleets Transition to Alternative Fuel	EPA Clean Heavy-Duty Vehicle Program (Rebates for fleets to replace emitting vehicles with ZEVs; first responder ZEV training; ZEV workforce development plan)	X	X	X			X
	2	10 Private Sector Fleets Transition to Alternative Fuel	EPA Clean Heavy-Duty Vehicle Program (Rebates for fleets to replace emitting vehicles with ZEVs; first responder ZEV training; ZEV workforce development plan)	X	X	X			X
	3	Increase EV registration by consumers/general public							
	4	Expand EV workforce training programs at community colleges	GUMBO	X					X
Clean Energy Initiatives	1	Assist public fleets in transitioning from compressed natural gas to renewable natural gas (RNG)							
	2	Support and expedite deployment of clean vehicle technologies and alternative fuel infrastructure.	Charging Smart (Technical assistance for municipalities to earn EV-friendly designation)	X				X	
	3	Expand the workforce training programs	GUMBO (Deploy EV charging station technician training curriculum)	X					X
			EPA Clean Heavy-Duty Vehicle Program (Rebates for fleets to replace emitting vehicles with ZEVs; first responder ZEV training; ZEV workforce development plan)	X	X				X
	4	Minimize negative electric grid impacts from transportation electrification	Air Quality Initiatives: Energy Efficiency : Collaborate, evaluate impacts, and develop resources addressing electric grid impacts associated with electrification of transportation and deploy strategic electrification infrastructure to assess impacts and fill gaps.	X	X		X		
			North Texas Resilient EV Charging Project (Develop a Resilient EV Charging Plan for North Texas)	X	X		X		
Alternative Fuel Infrastructure Initiatives	1	Support development of 100 new publicly accessible light-duty electric vehicle charging stations	CFI Community Award (Deploy up to 100 new charging points and expedite through a Dream Team consultant)	X	X		X		
			Texas EV Charging Plan (Deploy EV charging stations using NEVI funding)	X	X		X		
			Texas Hydrogen and Electric Freight Infrastructure Project (Deploy up to 5 hydrogen fueling stations around the Texas Triangle)	X	X		X		
	2	Support development of 10 medium/heavy-duty alternative fuel charging or refueling stations	Houston 2 Los Angeles I-10 Hydrogen Corridor Project (Conduct community engagement to inform hydrogen infrastructure planning)	X			X		
			Texas EV Charging Plan (Deploy EV charging stations using NEVI funding)	X	X		X		
			Alternative Fuels Corridor Planning (Plan infrastructure to support medium-heavy duty alternative fuel use along corridors.)	X	X		X		
	3	Support development to support 25 publicly accessible EV charging projects that increase resiliency, reliability, and emergency preparedness of the EV charging network	North Texas Resilient EV Charging Project (Develop a Resilient EV Charging Plan for North Texas)	X	X		X		

*Any goal that is accomplished simply through staff time/effort (e.g. planning efforts) can be implemented through STBG Formula Funding (~$1M per year) or the DFW Clean Cities Cooperative Agreement (~$100K per year)

Cover Page

1. Project Title:
Multi-level Electric Vehicle Workforce Training and Certification

2. Topic Area of Interest:
Electric Vehicle Workforce Development

3. Technical/Business Points of Contact:
(1) Technical Point of Contact: Liwei Zhou, liwei.zhou@uta.edu
(2) Business Point of Contact: Sarah Panepinto, ogcs@uta.edu

4. Team Member Organizations:
(1) University of Texas at Arlington (UTA)
(2) North Central Texas Council of Governments (NCTCOG)
(3) Dallas College
(4) Tarrant County College
(5) Blink Charging
(6) Green Careers Dallas
(7) On The Road Companies
(8) Texas Workforce Commission
(9) Workforce Solutions for North Central Texas
(10) Workforce Solutions for Tarrant County

Project Description

1. Project Summary and Targets:

The "Multi-level Electric Vehicle Workforce Training and Certification" project aims to develop and implement a comprehensive, three-tiered EVSE (Electric Vehicle Supply Equipment) technician and EV maintenance technician training program targeting North Texas. The program will create pathways for trainees ranging from entry-level (high school or equivalent) to intermediate (community college level) and advanced (university and incumbent worker level).

The program contents mainly include: (1) Focus on light-, medium-, and heavy-duty zero-emission vehicle (ZEV) technologies and Level 2 & 3 charging infrastructure; (2) Offer differentiated tracks: EVSE Installation, EVSE Maintenance/Repair, and EV Diagnostics & Advanced System Integration; (3) Deliver stackable certifications and align with recognized credentials such as Electric Vehicle Infrastructure Training Program (EVITP), Texas Workforce Commission-approved programs, and other EERE curriculum resources; (4) Serve high school students, community college students, incumbent workers with dedicated pathways.

The targets of the program mainly include: (1) Train and certify at least 2000-3000 participants across three levels within the project period; (2) Strengthen EV career pathways by connecting training with local employers and labor market demand; (3) Foster industry-community collaboration by integrating Community-Based Organizations (CBOs) and local workforce boards; (4) Develop a replicable EV workforce training model adaptable for regional and national use.

2. Proposed Activities:

This project mainly includes four activities as follows:

(1) **Entry-Level EVSE and EV Workforce Training:** The target trainees are: High school students, unemployed adults, or those with limited prior experience. The proposed activities include: (a) Work-based learning partnerships with Green Careers Dallas, On the Road Companies, and potentially Independent School Districts (ISDs). (b) Basic EV awareness, workplace readiness, and introductory diagnostic skills (basic maintenance, visual inspection, and basic EVSE troubleshooting). (c) Alignment with Texas Education Agency (TEA) and Career and Technical Education (CTE) programs. (d) Exploration of automotive and EV career ladders.

(2) **Intermediate-Level EVSE Technician and EV Technician Training:** The target trainees are: Community college students and transitioning workers. The proposed activities include: (a) Classroom and lab training through Dallas College and Tarrant County College. (b) Courses in EVSE maintenance, preventative service, troubleshooting, and repair. (c) Specific courses for battery systems, EV motor drive maintenance, and grid-interactive equipment. (d) Dedicated EVSE Installer pathway aligned with EVITP for electricians and licensed journeymen.

(3) **Advanced-Level EV Systems and Grid Integration Training:** The target trainees are: university students, incumbent workers, and technicians seeking upskilling. The proposed activities include: (a) Advanced power electronics, EV circuit design, vehicle-to-grid (V2G) courses and workshops. (b) EV hardware design hands-on lab training led by UTA's Electrical Engineering Department in collaboration with Blink Charging and Oncor. (c) Lab-based projects and pilot studies. (d) Field demonstrations involving regional fleets and EVSE operations.

(4) **Industry Seminars, Work-Based Learning, and Certification:** This step is delivered by UTA, DFWCC, Blink Charging, Green Careers Dallas, and employer partners. We will organize the seminars based on hiring needs, hands-on EVSE troubleshooting, advanced EV diagnostics, and grid services. Also, the formal assessments for credentialing will be implemented for the EV

career related certification. We will also provide the on-the-job training opportunities at On The Road Garage and Blink Charging sites.

All training levels will leverage existing EERE training materials, EVITP curriculum (for electricians), and Texas EV workforce resources for better alignment. CBOs such as Green Careers Dallas will focus on connecting local populations to these EV career related pathways.

3. State-of-the-art and Existing Problems in North Texas:

(1) **State-of-the-Art:** (a) North Texas is a leading region for EV deployment, but workforce programs are largely focused on light-duty vehicle installation and lack comprehensive training for MD/HD EV systems and maintenance. (b) EVITP and limited EVSE installer training exists for licensed electricians but does not fully address broader EVSE technician roles (maintenance, troubleshooting). (c) On The Road Garage has pioneered smart car and collision technology apprenticeships but is looking to expand into EV-specific training.

(2) **Existing Problems and Challenges:** (a) **Skills Gap:** A lack of trained entry-level and mid-level EV technicians in local area. (b) **Mismatch:** Training has been primarily for installation by electricians, leaving gaps in EVSE maintenance and EV repair technician pipelines. (c) **Employer Needs:** Fleet operators, charging companies, and dealerships struggle to find talent qualified in advanced EV systems and grid-integrated charging. (d) **Limited Integration:** Existing programs are not well coordinated between K-12, colleges, workforce boards, and industry.

4. Outcome and Impact:

(1) Train at least 2000-3000 workers (entry, intermediate, advanced).

(2) Certify at least 1000-2000 individuals with nationally or regionally recognized credentials.

(3) Create a scalable, stackable credential system tied directly to real employment opportunities.

(4) Improve regional EVSE maintenance and repair capacity.

(5) Foster long-term partnerships between educational institutions, CBOs, employers, and workforce agencies.

5. Technical Risks:

The potential technical risks and the corresponding solutions mainly include: (1) Difficulty recruiting participants from target populations: Green Careers Dallas, Workforce Solutions, and CBOs will lead focused outreach; (2) Limited access to EVSE equipment for training: Solicit donations of non-functional or end-of-life chargers from Blink and other industry partners, following the GUMBO model; (3) Curriculum misalignment with evolving industry needs: Continuous industry input via DFWCC, Blink Charging, and On The Road Companies. Use of existing EERE, EVITP, and Texas-specific EV workforce materials as the foundation.

6. Project Team Capabilities:

(1) UTA: Expertise in power electronics, EV systems, grid integration. UTA's Electrical Engineering Department has advanced research labs and makerspaces to support hands-on training. They also have the previous experience of leading the DOE workforce training project of "Community Energy Innovation" to provide the power electronic hands-on lab-to-job training. UTA professors will design and deliver the curriculum for EV-related courses and seminars, tailored to job demands from industry feedback and provide the EV career related certification. UTA will lead the team member management, curriculum development, advanced EV lab training, university-level EV circuit design training, and grid integration.

(2) DFWCC is a DOE-designated Clean Cities coalition with decades of experience coordinating clean transportation initiatives across North Texas. DFWCC will coordinate engagement with fleet owners, industry partners, and local governments to align training with workforce needs. DFWCC will organize industry seminars, workshops, ensuring trainees are introduced to up-to-date job opportunities and hiring processes.

(3) Dallas College and Tarrant County College: Both institutions have robust technical education programs and serve a wide range of student population. They will implement certification courses in EV maintenance, EVSE installation, and related topics, offering scalable workforce training.

(4) Blink Charging: Blink will offer practical training program on EVSE installation and maintenance, provide equipment for training, and participate in workshops and seminars. They will offer internship and on-the-job training opportunities for program trainees. Also, their onsite EV charging network of the facilities and infrastructures will be leveraged for the EV workforce training program managed by their engineers and trainers.

(5) Green Careers Dallas: They focus on outreach, recruitment, and pre-apprenticeship training targeting entry-level populations. They specialize in bridging the gap between education, industry, and trainees with real employer needs. They bring valuable knowledge of successful models like Louisiana's GUMBO program and has strong relationships with local ISDs, including Dallas ISD, Lancaster ISD, and DeSoto ISD. Through these partnerships, GCD will lead targeted outreach and entry-level EVSE technician readiness for high school students and community members. Leveraging its connections to the Texas Education Agency (TEA) and existing Career and Technical Education (CTE) frameworks, they will facilitate the integration of EV-related training into high school-level practicum courses. Also, they will support the project by engaging with additional stakeholders, such as the IBEW, local unions, and potential EV employers, ensuring a community-centered, inclusive pipeline into the EV and EVSE workforce.

(6) On The Road Companies: They have rich experience in advanced automotive training programs, EVSE repair experience, site-based work-based learning, hands-on facilities. They bring significant capabilities in EV and advanced automotive workforce development through its registered apprenticeship programs and its operational training centers, On the Road Garage (OTRG). OTRG has extensive experience delivering hands-on, work-based learning in electric vehicle systems, EVSE maintenance, smart car technologies, and autonomous vehicle diagnostics. Their training programs serve a wide range of learners, including underserved populations, and integrate real-world vehicle service and repair operations as part of the learning experience. OTRG is actively engaged with EV fleets such as Rivian and Canoo, and autonomous vehicle partners like Aurora Innovation, making them one of the few organizations in Texas with proven EV-focused technician training. For this project, OTRG will serve as a critical partner by offering work-based learning facilities, contributing EVSE and EV repair curriculum components, and supporting participant placement through its employer network.

(7) Texas Workforce Commission & Workforce Solutions Government Agencies: They will provide career counseling, wrap-around services, job placement support to ensure trainees secure employment in the EV industry, and alignment with statewide workforce strategies.

Cover Page

1. Project Title:
Deployment-Ready, Grid-Friendly High-Power Charging Solutions for Medium and Heavy-Duty Zero Emission Vehicles

2. Topic Area of Interest:
Vehicle Technology Integration - Open Topic

3. Technical/Business Points of Contact:
(1) Technical Point of Contact: Liwei Zhou, liwei.zhou@uta.edu
(2) Business Point of Contact: Sarah Panepinto, ogcs@uta.edu

4. Team Member Organizations:
(1) University of Texas at Arlington
(2) North Central Texas Council of Governments (NCTCOG)
(3) Blink Charging
(4) UL Solutions
(5) Oncor Electric Delivery

Project Description

1. Project Summary and Objectives:

This project, entitled "Deployment-Ready, Grid-Friendly High-Power Charging Solutions for Medium and Heavy-Duty Zero Emission Vehicles", proposes the development, demonstration, and deployment of innovative, deployment-ready high-power charging infrastructure for medium- and heavy-duty zero-emission vehicles (MDHD-ZEVs) to support North Texas and national freight decarbonization goals. The project will produce charging hardware and software solutions tailored to the unique needs of MDHD fleets and freight corridors, enabling reduced total infrastructure costs, grid-friendly operation, and accelerated adoption of MDHD ZEV technologies.

The key objectives include:

(1) Hardware Innovation: Develop a modular, high-power, compact, and cost-effective charging system with improved power density, higher efficiency, and innovative heavy-cable management to reduce operator burden.

(2) Software Innovation: Design optimal charging control strategies to minimize grid impact, enhance charging power quality, and support relaxed interconnection requirements.

(3) Field Deployment and Validation: Achieve UL Solutions compliance, integrate the developed charging technology into local EV charging infrastructure network, and demonstrate at selected North Texas locations with real fleet operations.

2. Technical Approach:

(1) Hardware Development: UTA, leveraging its expertise in power electronics, will collaborate with Blink Charging to design the high-power charger (from 50kW to 200kW) based on scalable modules which includes the innovations as follows:

(a) Utilize wide-bandgap semiconductors (Silicon Carbide MOSFETs) to enhance switching frequency, power density, and energy efficiency.

(b) Innovate EMI filtering and thermal management to achieve compactness without compromising reliability.

(c) Incorporate optimal heavy-cable management solutions to ease manual handling for MDHD operators.

(d) Address total cost of ownership by reducing installation footprint and component count.

(2) Software Development: UTA will lead the development of advanced control algorithms to be partnered with Blink Charging as follows:

(a) Optimize charging profiles to minimize peak demand and adverse grid impacts.

(b) Enhance power quality (reduce harmonics, voltage flicker) for smoother grid interconnection.

(c) Enable advanced features such as V2G readiness and demand charge mitigation.

(d) Improve operational efficiency and system resilience under variable fleet schedules.

(3) Standard Compliance and Grid Integration: UL Solutions will work with UTA and Blink Charging to validate safety and interoperability requirements. The chargers will be designed to comply with:

(a) UL 2202, UL 2231, and UL 1741SA (if grid-interactive).

(b) IEEE 2030.5, ISO 15118, and OCPP 2.0.1 for communication and interoperability.

Oncor will provide technical guidance to ensure grid integration with minimal upgrade requirements.

(4) Deployment and Demonstration: The validated charging system will be deployed at selected freight-focused sites with the help of DFWCC and Blink Charging network in the DFW region. NCTCOG, as the host of the Dallas-Fort Worth Clean Cities Coalition (DFWCC), will play a key role in coordinating with regional fleets, municipalities, and site hosts to identify and prioritize deployment locations, focusing on high-impact freight corridors and urban freight centers. The project will:

(a) Demonstrate full operation under real-world MDHD fleet use.
(b) Evaluate system performance, grid impact, and operational cost savings.
(c) Produce data-driven insights to inform scalable adoption of the solution.

3. State-of-the-Art and Challenges:

The state-of-the-art and existing problems mainly include the follow aspects:

(1) High infrastructure cost due to bulky systems and grid upgrade needs.
(2) Operational complexity in handling heavy-duty charging cables.
(3) Lack of advanced grid-friendly charging control.
(4) Limited interoperability and readiness for V2G applications.

Although Energy Star-rated and MCS prototype chargers exist, few commercially viable systems balance high power, power quality, compactness, and grid friendliness. Existing chargers either require significant site modifications or cause undesirable grid disturbances under rapid charging.

4. Expected Outcomes and Impact:

(1) The outcomes of the project include:

(a) A UL-compliant, deployment-ready high-power MDHD charging system.
(b) Hardware innovations reducing system size and cost by at least 15%-20%.
(c) Software innovations reducing grid disturbances and improving demand charge management.
(d) Demonstrated successful integration into the local EV charging network with real fleet operations.
(e) Technical reports and best practices to guide replication and popularization.

(2) Regional and national impacts include:

(a) Enabling faster and more cost-effective MDHD fleet electrification.
(b) Reducing grid stress associated with large-scale MDHD charger deployments.
(c) Advancing North Texas leadership in freight corridor decarbonization.

5. Technical Risks and Mitigation:

The potential technical risks and solutions mainly include:

(1) Software may require refinement to achieve grid power quality targets: Early and continuous testing with Oncor support and hardware-in-the-loop simulations.
(2) Delay in UL certification: Early engagement with UL Solutions starting at the design phase.
(3) Limited fleet participation for demonstration: Leverage NCTCOG and Blink's existing relationships with fleets for site selection and coordination.

6. Project Team Capabilities:

(1) University of Texas at Arlington (UTA): UTA serves as the technical lead for this project, bringing advanced research expertise in power electronics, high-power converter design, grid integration, and transportation electrification. UTA's Power Electronics Research Lab is equipped

with state-of-the-art facilities for prototyping, hardware-in-the-loop testing, and system validation of high-power chargers. The university has a strong track record of delivering DOE- and industry-sponsored projects related to electric vehicle charging, vehicle-to-grid (V2G) technology, and power quality improvement. UTA will lead the hardware and software design of the MDHD charging system, develop optimal control algorithms for grid-friendly charging, and oversee system validation both in the lab and during the field deployment.

(2) Dallas-Fort Worth Clean Cities Coalition (DFWCC): NCTCOG, as the host of the DFW Clean Cities Coalition, will serve as the project's stakeholder engagement and regional deployment partner. NCTCOG has extensive experience coordinating multi-stakeholder clean transportation and infrastructure projects across North Texas, particularly in the medium- and heavy-duty vehicle sector. The coalition's existing partnerships with fleets, regional agencies, and utilities will facilitate site selection, fleet recruitment, and project dissemination. NCTCOG will also ensure alignment of project outcomes with local freight electrification strategies and promote best practices throughout the national Clean Cities network.

(3) Blink Charging: Blink Charging will lead the deployment, operation, and integration of the developed high-power chargers for local demonstration. As a leading EVSE manufacturer and network operator with nationwide coverage, Blink has direct experience deploying Level 2 and DC fast chargers, including in North Texas. Blink will work closely with UTA and UL Solutions to incorporate the newly developed hardware and software into the local EV infrastructure. Blink will also coordinate charger installation at pilot sites, provide field data for performance analysis, and support broader popularization strategies after the demonstration phase.

(4) UL Solutions: UL Solutions will serve as the project’s compliance, safety, and interoperability validation partner. As the leading certification body for EVSE equipment and grid-interactive technologies, UL Solutions will work closely with UTA during the design phase to guide the system's adherence to key standards such as UL 2202, UL 2231, and communication protocols (ISO 15118, OCPP 2.0.1, IEEE 2030.5). UL will carry out formal certification testing, ensuring that the developed chargers are suitable for real-world deployment. UL Solutions’ early and continuous engagement will help de-risk the compliance process and accelerate time-to-market.

(5) Oncor Electric Delivery: Texas' largest electric delivery utility, will play a critical role in guiding grid integration of the high-power chargers. Oncor will support power quality analysis, grid impact assessment, and interconnection planning to ensure minimal distribution system upgrades are needed for deployment. Oncor's past work with EVSE integration and its commitment to supporting transportation electrification will provide valuable real-world insights into grid considerations for MDHD fleet charging. Oncor will also advise on replicability strategies to ensure that the project’s technical outcomes are scalable across other freight corridors in Texas and nationally.

Project Title: Leveraging Advanced Metering Infrastructure for Optimized Electric Vehicle Grid Integration and Smart Charge Management

Department of Energy
Office of Energy Efficiency and Renewable Energy (EERE)
Fiscal Year 2025 Vehicle Technology Office Program-Wide
Notice of Funding Opportunity Number: DE-FOA-0003514

Topic Area 5 Optimized Grid Planning for Electric Vehicles Using Advanced Metering Infrastructure

Lead Organization: Southern Methodist University

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North Central Texas Council of Governments	Lori Clark
Denton Municipal Electric (DME), Denton, TX	Aaron Bennion

***Background**:* Advancements in Smart Charge Management (SCM) technology have enabled electric vehicles (EVs) to provide valuable grid services like load shifting, demand response, and voltage regulation. To support smarter grid planning, a host of utilities have deployed Advanced Metering Infrastructure (AMI), which offers real-time data collection and two-way communication. However, most utilities lack the necessary backend integration to fully utilize AMI's capabilities for streamlining EV charging energization and optimizing load management. This proposal aims to address that gap by leveraging AMI data to improve grid planning, accelerate EV interconnection processes, and enhance grid reliability.

State of the Art & Challenges: The integration of AMI into EV grid planning offers a promising solution for optimizing charging infrastructure and enhancing grid reliability. Existing literature highlights the benefits of AMI-enabled demand response, real-time load monitoring, and dynamic pricing for managing EV loads efficiently. For example, the authors in [1] describe the architecture and algorithms of the Adaptive Charging Network, which uses AMI data to store information and support EV charging at scale. In [2], the authors co-optimize flexible household consumption, EV charging, and behind-the-meter distributed energy resources under the net energy metering tariff. In [3], the authors propose an efficient privacy-preserving authentication scheme for vehicle-to-grid communication, allowing EV users to seamlessly charge or discharge based on AMI data. In [4], the authors present an EV trip information inference system to infer the EV trip information of a residential home using AMI data. The authors in [5] propose a distributed control algorithm to optimize EV charging and discharging in compliance with distribution network operating limits, coordinating with AMI to receive prices for energy delivered to and from the grid.

These frameworks have provided exceptional paradigms and advanced the development of AMI tailored specifically for EV charging and discharging. However, several emerging challenges remain in the literature, such as 1) the complexity of coordinating distribution networks, SCM, and EV operations with AMI data and 2) accurately predicting the charging demand of EVs is challenging due to the uncertainty in user behavior, charging patterns, and the growing adoption rate of EVs and 3) accommodating a large number of EV charging or discharging and making the optimal decision are time-consuming and complicated.

***Key Innovations*:** This proposal addresses the above-emerging challenges and presents the following key innovations: 1) We propose a novel bi-level energy management framework, incorporating the energy management of distribution systems that includes AMI data at the upper level and the control of EV charging and discharging that coordinate with SCM technologies at the lower level. 2) We propose a novel Wasserstein-moment-based distributionally robust optimization (DRO) method to manage the uncertainty arising from EV actions, which better captures uncertainty and reduces decision conservatism. 3) We present a novel decentralized machine-learning based alternating direction method of multipliers (ML-ADMM) for the lower-level EV control module. The developed ML-ADMM algorithm can quickly converge to the globally optimal values and satisfy the global and local constraints. 4) We propose a novel hybrid smart meter architecture for AC/DC charging facilities,

which is coupled with AMI-based control frameworks and demographic modeling for effective grid integration support and real-time communication between each EVs.
Technical Approach: The proposed framework depicting the control process is visualized in Figure 1:

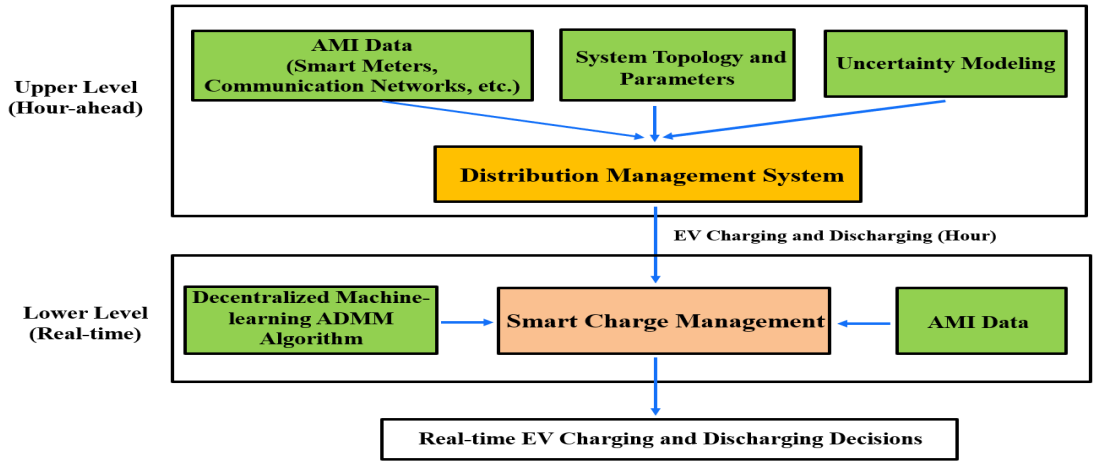

Figure 1. Framework of the bi-level energy management model.

Energy Management of Distribution Systems in the Upper Level: In the upper level, the model determines the optimal setpoints of EV charging and discharging at each time slot (an hour) based on the AMI data (e.g., electricity consumption) and system information. The proposed model also incorporates the uncertainty arising from EV actions, which applies the Wasserstein-moment-based DRO method. The objective function is to minimize the energy purchase cost, degradation cost of energy storage systems (ESSs), and worst-case expected cost for accommodating uncertainty. Meanwhile, the upper-level model considers traditional power distribution network constraints (e.g., power flow and voltage), generation constraints from dispatchable generators, ESSs, EV, photovoltaic, and responsive loads. As a result, the upper-level model is a mixed-integer optimization problem, aiming to find the best decisions regarding EV charging and discharging.
Control of EV Charging and Discharging in the Lower Level: In the lower level, the EV decisions obtained from the upper level will be sent to the first tracking step (15 minutes). According to these setpoints and real-time AMI data, SCM controls EVs to minimize the deviations from the setpoints. Each EV acts as an agent with a time-varying cost function and tracks the reference signal from the upper level by controlling its real power output. At each tracking step, each EV adjusts its charging and discharging actions cooperatively to ensure the real power balance based on the real-time system conditions. In other words, the charging or discharging of EVs should be as close to the upper-level setpoints at the current time slot as possible. To efficiently accommodate numerous EVs, we present a novel decentralized ML-ADMM for the lower-level EV control module, where each agent uses deep learning to learn the consensus parameters on the coupling branches. The developed ML-ADMM algorithm can quickly converge and satisfy the global and local constraints.

Optimization for EV Charging Hubs: A novel hybrid smart meter architecture will be designed to support both AC and DC charging facilities, optimized for system efficiency and accuracy in real-time power monitoring. Designed with a focus on user needs, this architecture will leverage AMI-based technologies to enable real-time data collection, demand forecasting, and adaptive control for optimized charging management. The strategic placement of EV chargers and smart meters will be fine-tuned using geospatial analytics to enhance load distribution, stabilize the grid, and minimize disruptions. The inclusion of DERs will enable adaptive power routing, fostering greater system coordination, scalability, resilience, and operational efficiency for the evolving EV charging infrastructure. Additionally, spatiotemporal demand modeling will leverage end-user demographic data, providing precise predictions of charging patterns across residential, commercial, and industrial sectors to support effective demand-side management.

Validation, Demonstration, and Case Studies: Based on the designed bi-level framework, we will first implement the optimization model within a digital twin platform, leveraging the Center for Digital and Human-Augmented Manufacturing at SMU, to simulate and optimize system performance. Next, we will conduct physical testing at UNT using existing facilities such as Power Hardware-in-the-Loop, dedicated EV research stations, and a solar-powered smart building. Finally, a real-world demonstration of the bi-level framework will be deployed at Denton Municipal Electric (DME), to evaluate the effectiveness, robustness, and reliability of the proposed approach.

Performance Targets: 1) Achieve a projected cost savings of at least 15% compared to traditional EV charging and discharging methods. 2) Efficiently manage scenarios involving a large number of EVs (e.g., 2000) simultaneously in distribution networks. 3) Reduce at least 20% computational time compared to existing baselines.

Potential Impact on the Relevant Field and Application: The proposed project will enhance grid planning for numerous EV charging and discharging with AMI while keeping minimum cost and high computational efficiency.

Technology Development and Long-Term Success: The proposed project location offers a robust EV adoption landscape supported by AMI and novel techniques. This project fosters technology development through continuous performance monitoring and adaptive grid management, which ensures long-term success and scalability.

Technical Risks: While this project brings potential advancements, it also carries technical risks such as the implementation of machine learning technologies like ML-ADMM. Mitigation strategies include rigorous validation and tuning of the learning models with historical and simulated data, and maintaining model robustness by conducting comprehensive sensitivity analyses.

Impact of DOE Funding: The DOE funding will be instrumental in accelerating the development and deployment of this project. It will provide the crucial resources needed to investigate advanced techniques and overcome technical risks.

References:

[1] Z. J. Lee *et al.*, "Adaptive Charging Networks: A Framework for Smart Electric Vehicle Charging," *IEEE Transactions on Smart Grid*, vol. 12, no. 5, pp. 4339-4350, Sept. 2021.

[2] M. Jeon, L. Tong and Q. Zhao, "Co-optimizing Consumption and EV Charging under Net Energy Metering," *2023 IEEE Power & Energy Society General Meeting (PESGM)*, Orlando, FL, USA, 2023, pp. 1-5.

[3] P. Gope and B. Sikdar, "An Efficient Privacy-Preserving Authentication Scheme for Energy Internet-Based Vehicle-to-Grid Communication," *IEEE Transactions on Smart Grid*, vol. 10, no. 6, pp. 6607-6618, Nov. 2019.

[4] L. Kang, H. Shen, S. Xu and Y. Li, "Electric Vehicle Trip Information Inference Based on Time-Series Residential Electricity Consumption," *IEEE Internet of Things Journal*, vol. 10, no. 17, pp. 15666-15678, Sept. 2023.

[5] N. I. Nimalsiri, E. L. Ratnam, M. Perera and S. K. Halgamuge, "Distributed Coordination of Electric Vehicles in Unbalanced Distribution Grids: Enhancing Resilience to Peer-to-peer Communication Failures," *IEEE Transactions on Industry Applications*, in press, 2025.

Dallas-Fort Worth Clean Cities Coalition

Coalition Director Succession/Transition Plan

*The Coalition must **develop and maintain coalition director succession or transition plan documentation**. This documentation must include coalition activities, SOPs, and stakeholder contact information. The coalition director must **work with the stakeholder group to review (and update, when necessary) the plan and documentation at least annually**. The coalition director must make documentation available to the stakeholder group and host organization management (if the Coalition is hosted).*

The Dallas-Fort Worth Clean Cities Coalition (DFWCC) is hosted by the North Central Texas Council of Governments (NCTCOG). The Coalition mission and objectives are closely aligned with key objectives of the NCTCOG Transportation Department, which has air quality planning responsibilities associated with ozone nonattainment and thus carries out transportation projects that reduce ozone-forming pollution, including projects that reduce emissions from vehicles through use of alternative fuels. Thus, Coalition staff are employed in the NCTCOG Transportation Department Clean Fleet & Energy Program area. The team structure is illustrated in the attached organizational chart.

As shown in the organizational chart, the Coalition is robustly staffed. The team structure includes the Director, a level of middle managers, and a level of front-line planners.

All team members attend a core minimum suite of Clean Cities and Communities e-learning modules and Clean Cities and Communities webinars to develop expertise about the national partnership. All staff have access to all Coalition files, as does host agency staff. This ensures that there are always staff other than the Director with elevated levels of responsibility, experience, and expertise who are familiar with Coalition activities and would ensure continuity of operations.

In the event the Director resigns or is reassigned to a different role, the Coalition Director role would be transitioned to one of the middle managers as determined by the Coalition Director in consultation with host agency management and the candidate managers.

In the event the Director's departure is unforeseen/unplanned, host agency management and candidate managers would coordinate to determine best fit for the next Director position.

The change in Coalition leadership should be conveyed to:

- The Coalition's Regional Manager to convey the change in structure and request a copy of the latest Clean Cities and Communities Handbook. The handbook contains key steps and information for the new Director to get integrated into the national Clean Cities and Communities network.
    - Neil Kirschner:
- Chair and Vice-Chair of the DFW Clean Cities Technical Advisory Committee
    - Jose Correa:
    - Dwayne Bianco:
- Coalition Stakeholders & interested parties
    - A contact list is maintained by Coalition staff

Information should be updated at:

- Coalition page at https://cleancities.energy.gov/coalitions/dallas-fort-worth
    - Point of contact:
- Coalition website at www.dfwcleancities.org
-

Dallas-Fort Worth Clean Cities Coalition (DFWCC)

Fleet Technical Assistance Standard Operating Procedure (SOP)

This document outlines the standard operating procedures coalition staff should take to aid fleets/stakeholders interested in learning more about transitioning to alternative fuel vehicles. This includes engaging with fleets, identifying funding, and conducting an analysis of emissions reductions and total cost of ownership from transitioning from conventional fuels to alternative fuels.

Assumptions:

- Coalition staff have a basic understanding of typical fleet/vehicle operations for public/private entities, alternative fuel vehicles(benefits and negatives), alternative fuel infrastructure, and air quality issues in Dallas-Fort Worth (DFW) (i.e., Internal Combustion Engines (ICE) vehicles emit nitrogen oxides (NO_X) and volatile organic compounds (VOC) emissions which leads to increased formation of ground-level ozone, nonattainment issues, etc.).
- Assistance is *requested* from a fleet/stakeholder.

Fleet Assistance Steps:

Once a fleet/stakeholder has contacted DFWCC staff and requested assistance with something related to alternative fuel vehicles (i.e., general interest/information, vehicle transition goals, specific vehicle replacement assistance, help with funding, infrastructure, etc.), Coalition staff should:

1) **Request to set up a one-on-one meeting with fleet (via Microsoft Teams/Zoom or in-person)**
    - **a.** Identify what Coalition staff should be included in the meeting.
        i. *Refer to the coalition organization chart for coalition staff areas of expertise and involvement in team projects/initiatives*).
    - **b.** Identify any DFWCC Technical Advisory Committee (TAC) members which may need to be included based on the fleet's requested topic and TAC members experience.
    - **c.** Identify three meeting times based on staff availability and send to the fleet ***or*** ask the fleet for their availability.
    - **d.** Consider if any resources/other materials should be sent ahead of the meeting to assist the fleet or help facilitate discussion:
        i. Examples could include relevant or upcoming funding opportunities, events, or other engagement/informational opportunities. Additionally, consider sending key resources included in ***Appendix A*****.**
        ii. In certain instances, it might be appropriate to request vehicle data points from a fleet prior to the meeting. For example, a fleet wants to know if there

are electric vehicles that meet their operational requirements. Appenidx B contains a template Excel file to send to fleets. Typical data points to request include:

1. *Engine Model Year*
2. *Vehicle Make/Model/Type*
3. *Gross Vehicle Weight Rating*
4. *Fuel Type*
5. *Annual Fuel Use/Mileage*

Note: If the request can be answered via email, you may not need to set up a meeting (use discretion). However, it is important to set up a meeting with a new or less familiar fleet/stakeholder to identify their goals and ways DFWCC or the TAC can assist.

2) **Prepare for the meeting**
   - **a.** Check to see if the fleet/stakeholder has submitted an Annual Survey in the past. If they have, review to familiarize yourself with fleet data, accomplishments, or goals.
   - **b.** Review **Appendix C** and identify key questions to ask during meeting.
   - **c.** Set up the **CVI One Note** section for taking notes during the meeting and add the key questions.
   - **d.** Determine if any resources would be helpful to share with the fleet during the meeting. See **Appendix A** below.

Potential Scenarios:

Example Scenario 1: A fleet requested information on the potential cost savings from purchasing a light-duty electric vehicle versus a gasoline vehicle. Review total cost of calculators (typically the AFLEET tool), introduce the calculator during the meeting, and provide a link as a follow up (or offer to conduct calculations for the fleet).

Example Scenario 2: A fleet requested information on available electric vehicles for a specific vehicle type (i.e. SUV). Review the AFDC Vehicle Search Tool/ Fuel Economy Website/etc. prior to meeting, demo the tools during the meeting, and provide as a follow up.

Example Scenario 3: A fleet already determined what vehicles to replace with alternative fuel vehicles. Review/identify funding opportunities which may work, present to the fleet during the meeting, and follow up with the links to the funding opportunities after the meeting.

3) **Conduct the meeting and follow-up**
   - **a.** Typical Meeting Agenda:
     - i. Staff and Attendees Introductions
     - ii. NCTCOG: Key questions from **Appendix C.**
     - iii. Questions from Fleet *(if needed)*
     - iv. NCTCOG: Other information/services to offer the fleet/stakeholder.

1. Conducting a Fleet Inventory Analysis (or portion of one (i.e. Funding Evaluation) for fleet –
    a. Data points needed for Fleet Inventory Analysis/Funding Evaluation in Template.
    b. Analysis Includes:
        i. Fleet Inventory Analysis: Identification of potential replacement vehicle(s) in current fleet and equivalent alternative fuel vehicle(s). Calculate potential cost and emission savings from transitioning to alternative fuels. *(typically calculated through AFLEET)*
        ii. **Funding Evaluation:** Identify potential funding opportunities for fleets.
2. Information on other vehicle related best practices:
    a. DFWCC Success Stories, Previous DFWCC Events, NCTCOG Clean Fleet Policy, DFWCC E-Blasts/Social Media/Upcoming Meetings and Events
3. Information on DFWCC/NCTCOG specific initiatives:
    a. Annual Survey & Fleet Recognition, NCTCOG RFPs & CFPs, DFWCC TAC and/or Stakeholder Commitment and/or Sponsorship

v. NCTCOG: Meeting Wrap Up and Next Steps

b. NCTCOG provide follow-up information to send to the fleet/stakeholder.
    i. Could include alternative fuel vehicle availability, open or soon-to-open funding opportunities/incentives, idle reduction strategies, fuel economy improvements, alternative fuel station map, policy implementation, maintenance or training information, vehicle emissions or total cost of ownership tools, safety information or first-responder training, etc. Additional resources are available in ***Appendix A.***

c. Send follow-up information via email to fleet/stakeholder *(within one week of meeting)*

4) Confirm fleet contact is in Customer Relationship Management (CRM) System
5) Document fleet as potential fleet to support DFWCC Strategic Plan Goals in Smartsheet
6) Contact fleet at least quarterly to check in on progress towards transitioning

DRAFT- Appendix A: List of Commonly Shared Resources for Fleets							
Resource Title/Link	**Category**	**Explanation**	**Resource Category**				
			General Information	Funding	Case Studies/ Research	Tools	Other
Dallas-Fort Worth Clean Cities (DFWCC)	DFWCC Resource	DFWCC home page.	Yes				
DFW Clean Cities Initiatives		Current DFWCC intiatives.	Yes				
DFW Clean Cities Annual Report		Emissions/energy trends from alternative fuel vehicle use).	Yes				
DFW Clean Cities Fleet Recognition Program		Information on DFWCC's award program for fleets.	Yes				
DFW Clean Cities Technical Advisory Committee		The Dallas-Fort Worth Clean Cities Coalition Technical Advisory Committee guides DFWCC's strategic direction, support its activities, and facilitate its capacity for growth. The Technical Advisory Committee can provide technical expertise.	Yes				
DFW Clean Cities Events		Upcoming DFWCC events/meetings.	Yes				
Electric Vehicles North Texas | DFWCC		Electric Vehicle Registration Data.	Yes			Yes	
North Central Texas Council of Governments (NCTCOG)- Transportation	NCTCOG Resources/Info	General Information on NCTCOG Transportation projects and information on the Transportation committees including the Regional Transportation Council (RTC) which serves as the policymaking body for the Metropolitan Planning Organization (MPO).	Yes				
NCTCOG - Air Quality		General information on the current status of air quality in NCTCOG's region.	Yes				
NCTCOG - Stay Informed		Sign up for the recommended e-blasts (and that are managed by our team) include Air Quality Funding Update, Clean School Bus Update, and Dallas-Fort Worth Clean Cities Coalition.	Yes	Yes	Yes	Yes	Yes
NCTCOG - Funding and Resources		Comprehensive list of funding opportunities for vehicle, infrastructure, and transportation-related energy projects.		Yes			
NCTCOG - For Fleets		Information on various NCTCOG intiatives to benefit fleets.	Yes	Yes	Yes	Yes	
NCTCOG - Clean Fleet Policy		Provides a framework for efficient and low-emitting fleet operations, supported and adopted by entities in the RTC.	Yes				
Clean Cities and Communities	DOE CC&C Website	National Clean Cities & Communities (CC&C) website.	Yes				
Air Grants: Funding for Vehicles, Equipment, and Fuel Infrastructure - Texas Commission on Environmental Quality - www.tceq.texas.gov	TCEQ Funding Summary Webpage	Funding Summary for TERP & TxVEMP.		Yes			
EERE: Alternative Fuels Data Center Home Page	DOE's AFDC Webpage	General information on the various alternative fuel types including benefits and considerations, related vehicles and infrastructure, and case studies and research papers.	Yes				
Alternative Fuels Data Center: Alternative Fueling Station Locator		Available tool used to locate alternative vehicle fueling stations in the U.S.				Yes	
Alternative Fuels Data Center: Federal and State Laws and Incentives		Collection of Federal and State laws and incentives available for alternative fuel vehicles and infrastructure.		Yes			
Alternative Fuels Data Center: Strategies to Conserve Fuel		Information on fuel efficiency efforts.	Yes				
Alternative Fuels Data Center: Tools		Available tools used to calculate various vehicle operation metrics.				Yes	
Alternative Fuels Data Center: Vehicle Conversions		Information on converting vehicles from one fuel type to another.				Yes	
Alternative Fuels Data Center: Fuel Prices		Average retail fuel prices of alternative fuels in the U.S.	Yes				
Alternative Fuels Data Center: Electricity		Information on using electricity as a transportation fuel.	Yes				
Alternative Fuels Data Center: Electric Vehicles for Fleets		Information on fleets using electriicty as a transporattion fuel.	Yes				
ev-fleets-checklist.pdf		Checklist template for use when introducing an electric vehicle into a fleet.	Yes				

DRAFT- Appendix A: List of Commonly Shared Resources for Fleets							
Resource Title/Link	**Category**	**Explanation**	**Resource Category**				
			General Information	Funding	Case Studies/ Research	Tools	Other
Fuel Economy	DOE/EPA fueleconomy.gov Website	Federal website managed by the DOE and EPA on available vehicles, fuel economy savings, incentives, and more.	Yes				
Power Search		Search tool used to find vehicles with specific filters.	Yes			Yes	
Find and Compare Cars		Search tool used to compare vehicle specs.	Yes			Yes	
Fuel Economy – Fuel Savings Calculator		Available tools used to calculate various vehicle operation metrics.				Yes	
My Plug-in Hybrid Calculator		Particularly helpful tool for calculating the fuel use of a plug-in hybrid vehicle.				Yes	
Tax Incentives		General information on the Federal clean vehicle and energy tax credits		Yes			
Clean vehicle and energy credits | Internal Revenue Service	IRS webpage	Federal website managed by the IRS which provides information on and includes how to apply for clean vehicle and energy tax credits		Yes			
AFLEET Tool - Argonne National Laboratory	Argonne National Lab	Comprehensive tool developed by Daniel Burnham and the DOE Argonne Natl Lab used to calculate various vehicle operation metrics.				Yes	
World Resource Institute: Electric School Bus Initiative	WRI	Various resources focused on electric school buses, including case studies, funding, example RFPs, and total cost of ownership tools	Yes	Yes	Yes	Yes	
Atlas Public Policy Dashboard for Rapid Vehicle Electrification (DRVE)	Atlas Public Policy	Dashboard for Rapid Vehicle Electrification, or DRVE, calculates the financial viability and environmental impact of light-, medium-, and heavy-duty vehicle electrification across an entire fleet.				Yes	
Electrification Coalition	Electrificatin Coalition	Various resources to assist with vehicle electrification including case studies, funding, and an inventory of other tools and resources	Yes	Yes	Yes	Yes	
EVolve Houston	EVolve Houston	Conducts events, develops resources, and provides information on electric vehicles for the greater Houston Area	Yes	Yes	Yes		Yes
Environmental Defense Fund: Fleet Electrification Solutions Center	EDF	Various resources to assist with vehicle electrification including case studies, funding, and an inventory of other tools and resources	Yes	Yes	Yes	Yes	
Transportatin Energy Institute (TEI)	TEI	The Transportation Energy Institute is a non-advocacy research organization dedicated to studying transportation-energy.	Yes		Yes		Yes
Climate Mayor's EV Purchasing Collaborative	Climate Mayor's Collaborative	Collaborative purchasing options for electric vehicles, charging equipment, and related services.					Yes
TX SHARE	NCTCOG Resources/Info	TXShare is a cooperative purchasing program created by NCTCOG.					Yes
North American Council for Freight Efficiency (NACFE)	NACFE	The North American Council for Freight Efficiency (NACFE) works to drive the development and adoption of efficiency enhancing, environmentally beneficial, and cost-effective technologies, services, and operational practices in the movement of goods across North America. As part of this effort, NACFE hosts educational webinars/events, conducts research, and more.			Yes		Yes
Texas EV Charging Plan	TxDOT	Information on the ~$400M provided to the Texas Department of Transportation for the installation of publicly accessible EV chargers. Includes a map for local governments, individuals, and other stakeholders to provide feedback on where they want to see EV charging stations.	Yes	Yes			Yes
Oncor EVolution	Oncor	EVolution is an Oncor education program that provides fleet customers with information on electric vehicles and the role of the electric utility. Oncor hosts these sessions throughout the entire Oncor Service Territory.	Yes				Yes
Current Emission Standards	EPA	Use to look up current emission standards for light-, medium-, and heavy-duty vehicles.					Yes
California Air Resources Board Engine Certification	CARB	Use to look up current or historical emission standards for light-, medium-, and heavy-duty vehicles.					Yes
Source: NCTCOG							

Appendix B: Fleet Inventory Template								
ID #	Engine Model Year	Vehicle Make/Model	Vehicle Type (i.e. School Bus, Class 6 Box Truck, Landscaping)	Gross Vehicle Weight Rating	Fuel Type	Annual Fuel Use	Annual Miles Travelled	Years of Planned Ownership Remaining
Source: NCTCOG								

Appendix C: List of Fleet Related Internal Documents

Title/Link	Description
Teams/Sharepoint	
Fleet Evaluations & Assistance	Location of files related to a fleet transition analysis (e.g. AFLEET calculations (total cost of ownership, fleet footprint), funding eligibility evaluations, fleet inventories)
ZEV Plan Transition Guide	Location of files related to the zero-emission vehicle (ZEV) Plan Transition Guide which will serve as a guide for external fleets looking to switch to electric or hydrogen fuel cell vehicles
Fleet Manager Master List	Master Contact List for Fleets
Fleet Inventory Template	Key data points needed for AFLEET calculations or funding analysis.
I: Drive	
"I:\Air_Quality\Projects+Programs\Clean Cities\Clean Fleet Policy"	Fleets that have adopted the Clean Fleet Policy and records of signed policies
"I:\Air_Quality\Projects+Programs\Clean Cities\Requests and Assistance"	Various files related to fleet support and transition planning, and various examples of fleet specific support examples/analyses
"I:\Air_Quality\Projects+Programs\Clean Cities\Requests and Assistance\Fleet Evaluations"	Location of funding eligibility evaluations completed for fleets
"I:\Air_Quality\Projects+Programs\Clean Cities\Clean School Bus"	Location of files and work done for ISDs in the region
"I:\Air_Quality\Projects+Programs\Clean Cities\Clean School Bus\OutreachMasterList.xlsx"	Master Contact List for ISDs
"I:\Air_Quality\Financial\GrantAgreements\TCEQ\Rider7-2022-2023"	Location of files for the 2022-2023 Rider 7 project, including fleet transition analyses done for 3 fleets in Hunt County (these should be used as reference)
OneNote	
CVI (Web view)	Clean Vehicle Initiatives (CVI) OneNote Section
Fleet Assistance (Web view)	Location for meeting notes with fleets

Appendix D: Question List for Introductory Meeting with Fleets

General overview of fleet info (most of this will be provided after the meeting by the fleet for the analysis as well):

- # of vehicles operated
- Types of vehicles operated
- Where do vehicles operate?
- How many miles are traveled?
- How much are your vehicles idling?
- Average vehicle downtime and where?
    - Where do vehicles go at night?
- Where and how do you currently refuel?
    - How do you pay for fuel? Can you negotiate a set price, or does it vary?
    - How do you document or track fuel costs?
- How is vehicle data tracked?
- Which data points are currently tracked for each vehicle?
    - Year, make model, VIN, Department/Use/Category, Odometer, Fuel type, Fuel use (in gallons), Annual miles traveled, Maintenance and repair costs, cost per mile
- How often do you replace vehicles (age/mileage/condition)?
    - What are your acquisition targets vs. budget for this year, next year?
- Do you have any preferred vehicle manufacturers? Are there any vehicle manufacturers you do not buy from?
- How do you assess fleet asset costs - total cost of ownership or capital costs only?

Alt Fuel Questions:

- Do you have any alternative fuels currently? What fuel(s) and vehicles?
- Have you had alternative fuel vehicles in the past? If so, what alternative fuel and what was your experience?
- If you were to add infrastructure, where would you put it?
    - Do you lease your facility, or do you own it?
    - When do you plan to move, if you do?
- Are there any barriers to your adoption of alternative fuel vehicles?
- Do you have any concerns when thinking about implementing an alternative fuel project or other petroleum reduction initiative? (e.g., price, range, availability, downtime, training, convincing decision-makers, getting staff on board with decisions)
- Who are your utilities? (if interested in EV, electric utility; if interested in natural gas, natural gas utility)
- If interested in EV: Does your organization have a facilities manager?

General Questions:

- What is most important to you? What goals do you have with regard to your fleet operations?
    - Supporting domestically produced fuel

    - Cost savings
    - Emissions reduction
    - Other
- Do you have any policies in place to reduce fuel use?
    - Idle reduction?
    - Green procurement?
    - Eco-driving/Driver training initiatives?
- Do you have any questions about petroleum reduction strategies? Are there any materials you would find helpful?
    - Case studies?
    - Calculators?
- Are you aware of any other alt fuel or vehicle collaboration opportunities that could be coordinated with this effort?
- What other individuals would need to be involved in a decision to implement any petroleum reduction initiatives you might pursue?
- Anything else we should know about your fleet?