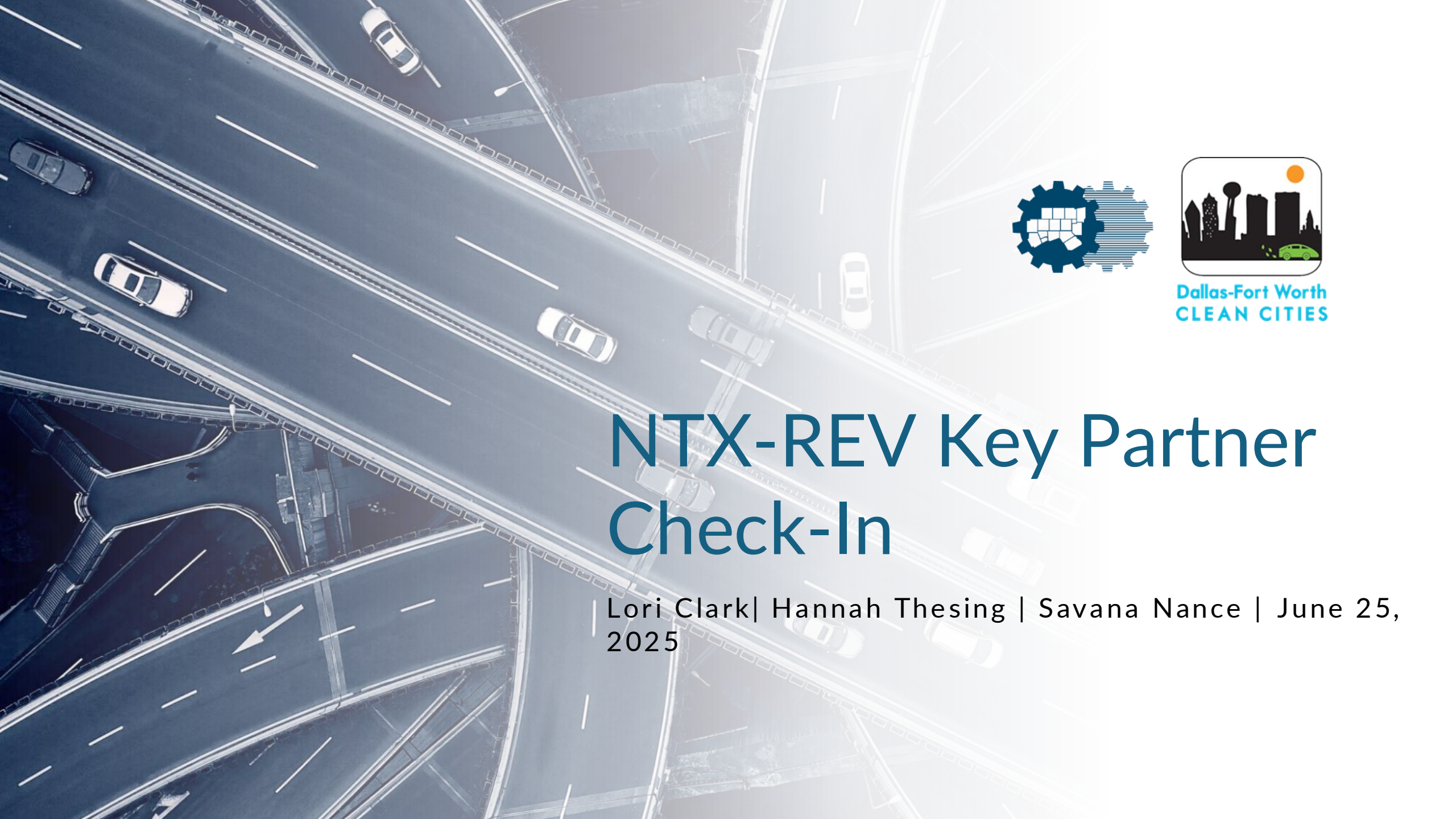

Dallas-Fort Worth
CLEAN CITIES

NTX-REV Key Partner Check-In

Lori Clark| Hannah Thesing | Savana Nance | June 25, 2025

Department of Energy (DOE) Acknowledgement

This material is based upon work supported by the Joint Office of Energy and Transportation through the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under Award Number DE-E0011235.

Agenda

Project Timeline Update

Project Progress

Updated Draft NTX-REV Plan Outline

Key Sections and Takeaways

- Identified Critical Transportation Assets
- Inventory of Resilient Technology
- SWOT Analysis

Moving Forward- Additional Supporting Initiatives

Project Timeline Update

Period 1: October 2024- July 2025*

Key Milestones:

Draft NTX-REV Plan - **Will be Submitted June 30**

Related activities that support this project will continue; but specific milestones will be paused

Period 2: August 2025 – September 2026*

Key Milestones:

Tabletop and Demo Project Development - **PAUSED**

Period 3: October 2026 – March 2027*

Key Milestones:

Plan Finalization and Distribution – **PAUSED**

Project Progress

Research and Engagement:

- Established Project Team (i.e. Project Partners and Stakeholders), representing 40+ entities and 70+ individuals and hosted 5 meetings
- Assessed existing regional resilience plans and pilot projects
- Held 8 presentations/meetings with other groups/entities to collect input and provide information
- Developed inventory of available resiliency technologies to be used off-grid

Drafting:

- Inventory of resiliency technologies/strategies
- Key critical transportation assets in region
- Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis
- Gap Analysis
- Identification of feasible resiliency strategies for region

Draft NTX-REV Outline

Introduction

Purpose and/Objectives

Scope
- Planning Stakeholders/Regional Engagement

Situation Overview
- State of the Grid
- State of Vehicle Electrification
- Electric Vehicle Infrastructure Overview
- State of Emergency Preparedness for Off-Grid Operations

Inventory of Resiliency Technologies

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis
- SWOT Analysis Overview
- SWOT Analysis Development
- Detailed SWOT Analysis

Risk Assessment

Planning Considerations

Planning Assumptions

Gap Analysis

Identify Feasibility of Resilience Strategies

Preparedness

Activation, Notification, Implementation Recovery

Conclusion

Green Topics will be included in draft Ntx-REV Plan

***Black** Will be included in final NTx-REV Plan*

NTX-REV Key Partner Check In

Key Takeaways: Stakeholder Engagement

Critical Transportation Assets

- **Municipalities:** Any vehicle could be used in an emergency; but medium-duty trucks are most common
- **Transit Agencies:** Cutaways or sedans
- **Airports:** Air-side equipment

Resiliency Technologies of Interest

- Mobile/flexible resiliency technologies are preferred
- If stationary, must be in centralized location
- Existing resiliency technologies (i.e. generators) is common; but is primarily supporting conventional fuel vehicles
- Integration of resiliency technologies and EV charging has begun; but is not widespread

DRAFT- Inventory of Resiliency Technologies

Technology	Independent Power Source	Energy Storage	Operable in Region?	Regional Example?
Energy Storage Systems: Batteries/ Hydrogen Fuel Cell	No	Yes	Yes	Xcharge North America City of Allen Battery System
On Site Renewable Generation: Solar or Wind	Yes; Intermittent	No	Yes	STAR Transit- Solar Generation
Generators: Gasoline, Natural Gas, or Diesel	No	Yes	Yes	Most local governments have generators, but not all are paired/connected to EV Charging
Mobile Charging: Mobile Charging Unit or Vehicle to Vehicle (V2V) or Battery Swapping	No	Yes	Mobile Unit; Yes V2V/Battery Swapping; Unknown	At least one company offers mobile charging to fleets in Dallas-Fort Worth
Microgrids	Yes	Yes	Yes	University of North Texas Zero Lab Dallas County/City of Grand Prairie (Beam Global EV Arc)

DRAFT- Critical Transportation Assets

Vehicle Type	Likelihood of Use	Example Critical Operations	EV Battery Size* (kWh)	EV Range* (miles)	Gas/Diesel Range (miles)*	Regional Electric Example
Medium-Duty Pickup Trucks	High	Water/Electricity Repair	N/A	N/A	TBD	N/A
Box/Straight Truck (Class 6-8)	High	Public Safety (Fire Truck); Construction (Dump Truck); Refuse	60-280	100-218	TBD	City of Denton; City of Plano
Medium-Duty Multi Truck (Cabover)	High	Debris removal/municipal services	67-165	150-320	TBD	TBD
Box/Straight Truck (Class 4/5)	High	Misc. municipal services	60-210	41-235	TBD	TBD
Light-Duty Pickup	Medium	Misc. municipal services	92.5-215	258-422	384-708	City of McKinney/Grand Prairie/Farmers Branch, Tarrant County
Step Van	Medium	Transport of critical goods	127-343	100-250	TBD	TBD
Tractor/Semi	Medium	Transport of critical goods (drayage or long-haul)	105-1,000	100-500	TBD	Truck Kings LLC
Sedan	Medium	Public Safety (Police or Environmental Services)	32-53	114-361	324-555	City of Carrollton; Dallas County
Shuttle Bus/Passenger	Medium	Transport for medical services or evacuation	113-194	150-200	TBD	STAR Transit
Transit Bus (full-size)	Low	Evacuation of residents	120-738	150-400	TBD	Trinity Metro; Dallas Area Rapid Transit
School Bus	Low	Transportation of residents	118-388	90-300	TBD	Several school district in North Texas have adopted EV buses

**Estimates based on NCTCOG research*

SWOT Analysis Overview

SWOT Analysis Purpose

- Analysis of risks and threats; primarily focused on critical transportation assets/operations
- Identify mitigation strategies to address these risks

SWOT Analysis Development

- Meetings with Project Team
- Listening Sessions
- Research on existing plan(s), regional technology, infrastructure, assets, and pilot projects

Detailed SWOT Analysis

Strengths:

- Existing city and county all-hazard emergency management plans and resilience plans
- Regional mutual aid agreements
- Existing EV charging and/or resiliency technologies
- Diverse energy sources powering the Texas grid

Weaknesses:

- Grid capacity and constraints combined with isolation of Texas grid
- Increasing length and frequency of grid outages
- Lack of integrated planning for EV charging and resiliency
- Siloed communication amongst regional jurisdictions
- Absence of wide-spread data on EV charging with resiliency technologies
- Uneven access to public EV charging

Detailed SWOT Analysis

Opportunities:

- Expansion of existing regional electrified assets and operations
- Regional electrification pilot projects
- Regional funding and technical assistance
- Stakeholder group (s) and regional coordination

Threats:

- Rapid population and economic growth
- Severe weather/natural disasters
- Technological failures and cybersecurity threats
- Human factors

DRAFT- Gap/Feasibility Analysis Comparisons

Method 1: Estimate equivalent electrical backup power for conventional fuels

EX: Calculate current onsite fuel storage capacity + number of gallons of fuel in critical transportation assets, then estimate equivalent electricity need

Potential issue: does not take into account electric vehicles increased fuel efficiency

Method 2: Compare the energy generation/energy storage capacity of resiliency technologies to battery capacity of critical transportation assets

EX: Compare the energy storage capacity of solar-integrated EV Charger to battery capacity of refuse truck to determine

how much additional range can be provided

Example- Gap/Feasibility Analysis; Box/Straight Truck (Class 6-8)

Public Safety (Fire Truck) or Construction (Dump Truck) or Refuse Truck

280kWh battery capacity; 218 miles of range

Technology	Energy Storage Capacity *(i.e battery storage/fuel tank)*	Charging Speed	Generating Capacity	Number of "Refills" for Electric Vehicle	Benefits	Considerations
Mobile Battery*	300- 500kWh: *assumed 500 kWh*	80-125 kW	N/A	~1.8	Mobile/Easy To Use	Cannot "Generate" New Power Unless Connected To Grid Or Swapped Out
Solar Integrated EV Charging**	20-40kWh: *assumed 40kWh*	5.76 kW	4.3 kW per solar panel *(not factored into refill)*	~0.14 *(solar will add more)*	Energy Generator and Storage; Semi Mobile	Slow Charging And Energy Generation
Generator (Natural Gas)***	180kW - 600kW: *assumed 600kw*	90-350 kW	N/A	~2.14	Significant Energy Storage Capacity; Can Refill with Existing Fuel Sources	Emissions; Less Mobile Due to Size

*https://www.sparkcharge.io/mobile-battery-ev-charger

** https://beamforall.com/wp-content/uploads/2021/06/BEAM-EV-ARC-2020-Info-Sheet-v1.1.pdf

***https://www.pioneer-emobility.com/products/e-boost-pod

Additional Supporting Initiatives

Image Provided By Dallas Area Rapid Transit

Regional Survey to Technology Vendor Stakeholders

- Collect information on resilient EV Charging in North Texas

- Key questions:
  - Charging rate/type/connector of EV chargers
  - Resiliency technology used to provide off-grid charging
  - Length of time available for off-grid operations
  - Accessibility (i.e. public or private)

Technology Vendor RFI

Collect additional/latest information on specifications of resiliency technologies

Guidelines for technology vendors until **completion of demonstration in BP2 or date determined by NCTCOG**:

1. *Technology Vendors will not give input on any criteria which might be used for the RFI/RFP*
2. *Technology Vendor group will be kept separate from local government/public works group*

Questions?

Image Provided By Dallas Area Rapid T

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