



North Central Texas
Council of Governments



Dallas-Fort Worth
CLEAN CITIES



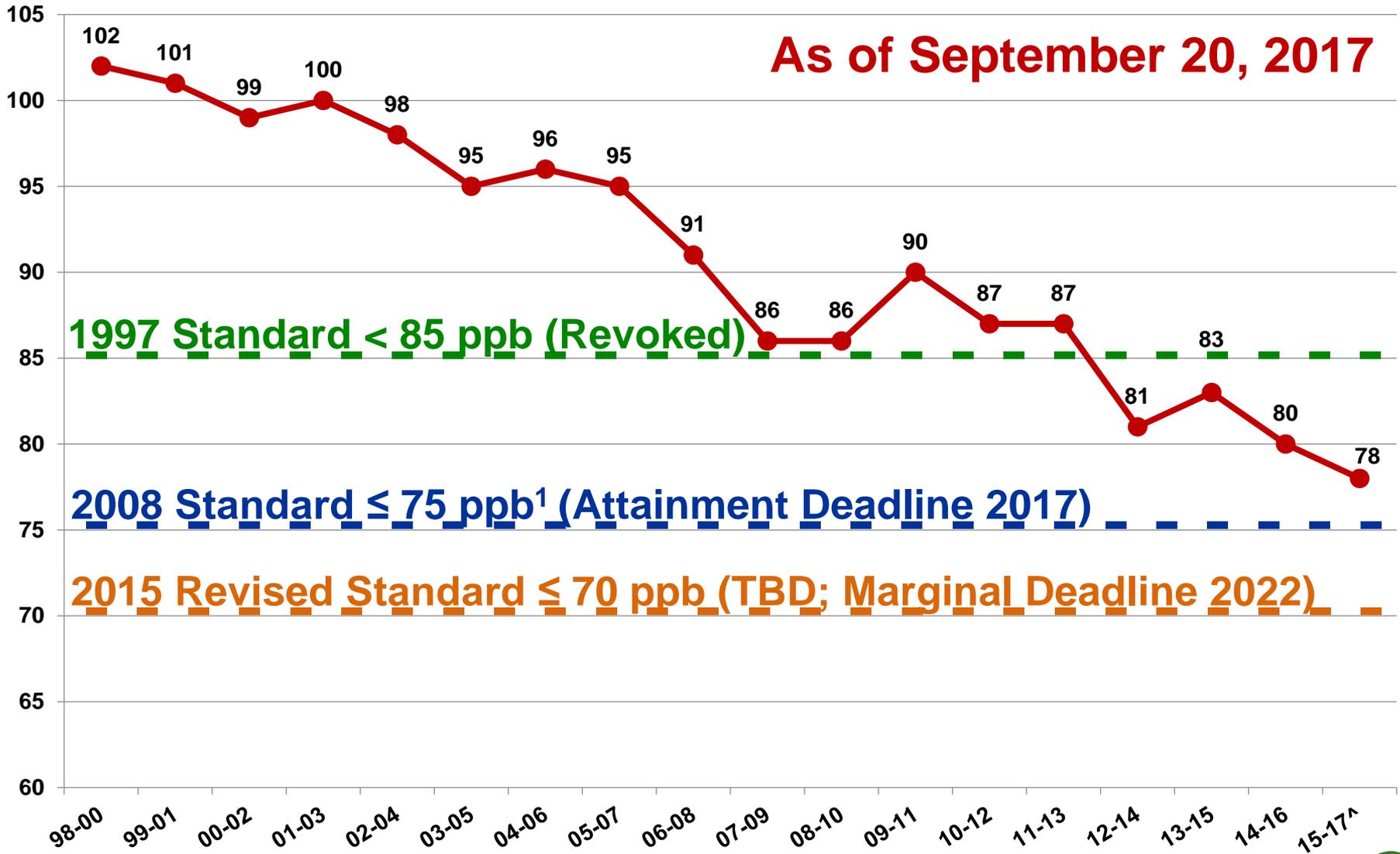
Charging Ahead: The State of Electric Vehicles in North Texas

Air & Waste Management Association
September 26, 2017



Lori Clark, Program Manager, NCTCOG

Eight-Hour Ozone Historical Trends

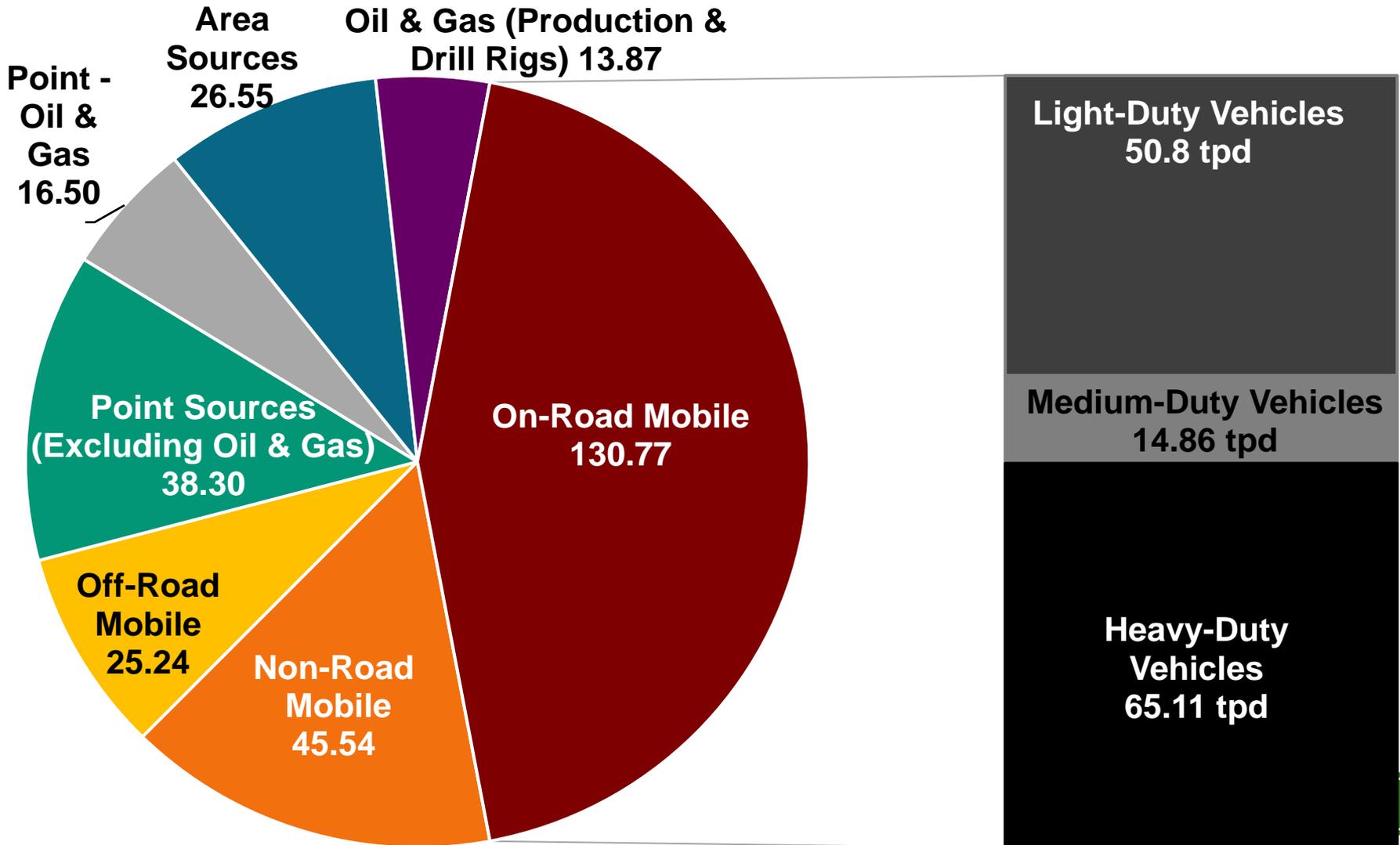


¹Attainment Goal - According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the *Design Value* (three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration) is equal to or less than 70 parts per billion (ppb).

[^]Not a full year of data

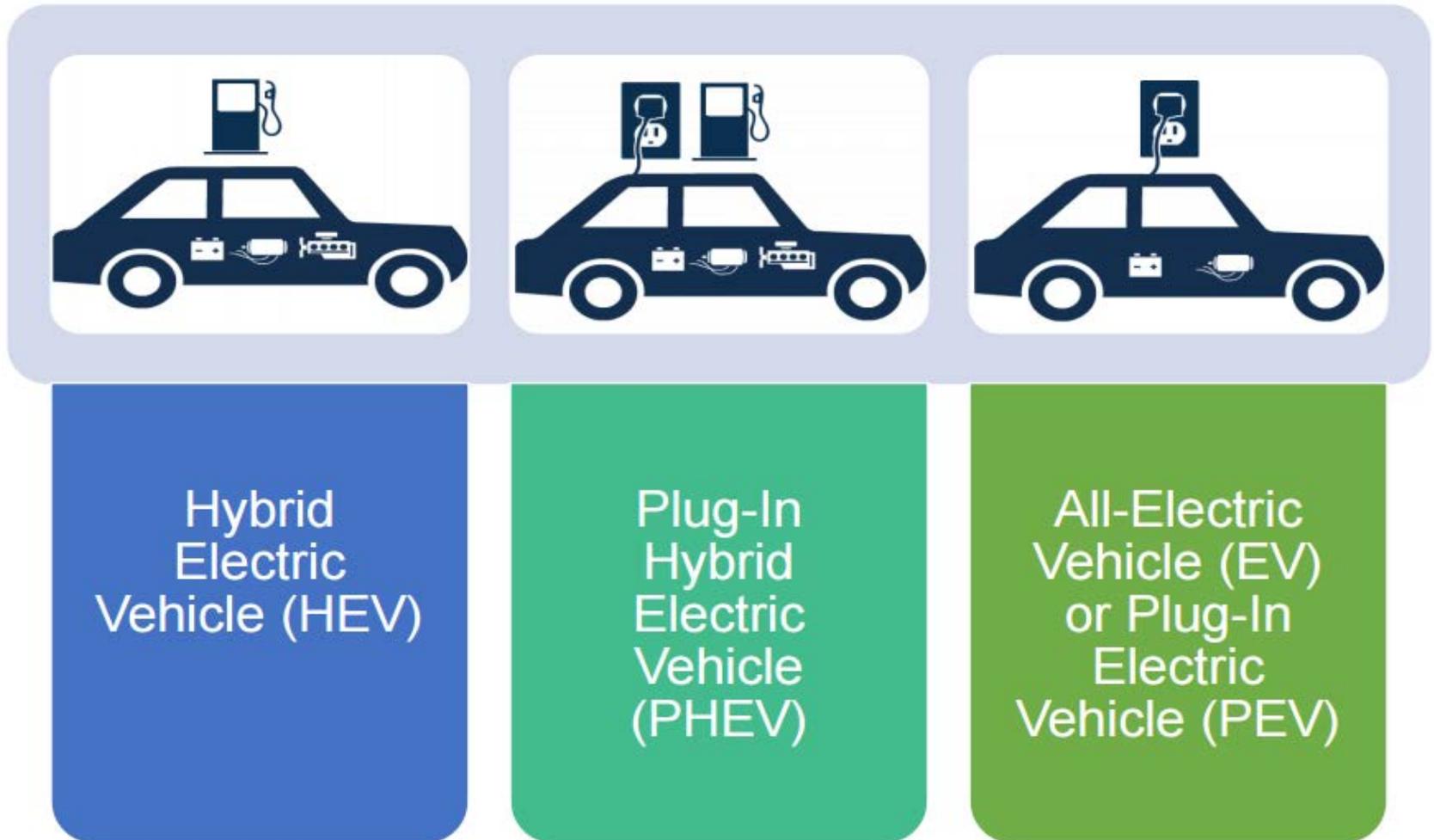
Estimated 2017 Nitrogen Oxides (NO_x) Emissions Inventory

Source Category Estimates = 296.77 tons per day (tpd)

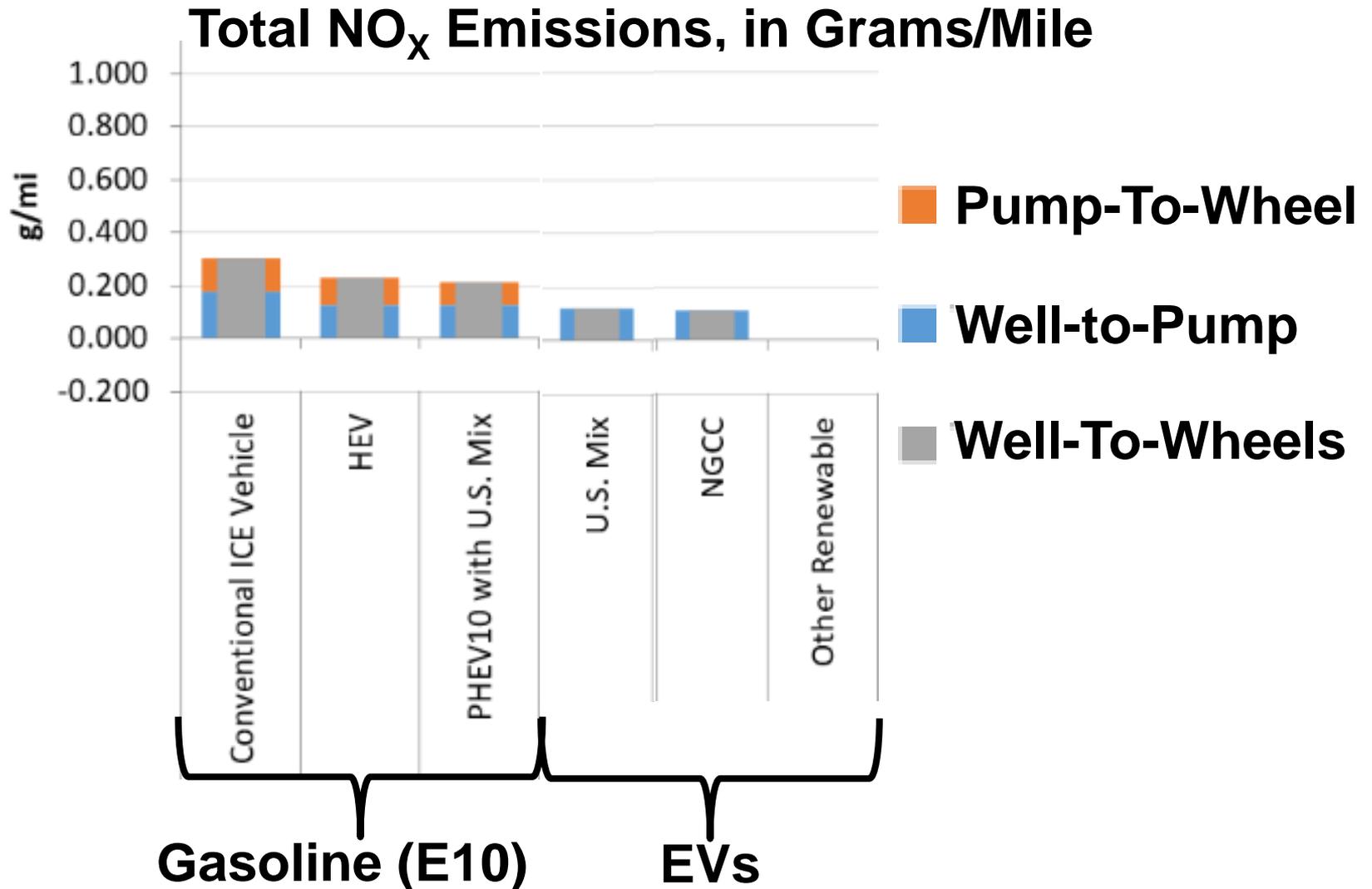


EV Basics

EVs



EV Benefits - Emissions

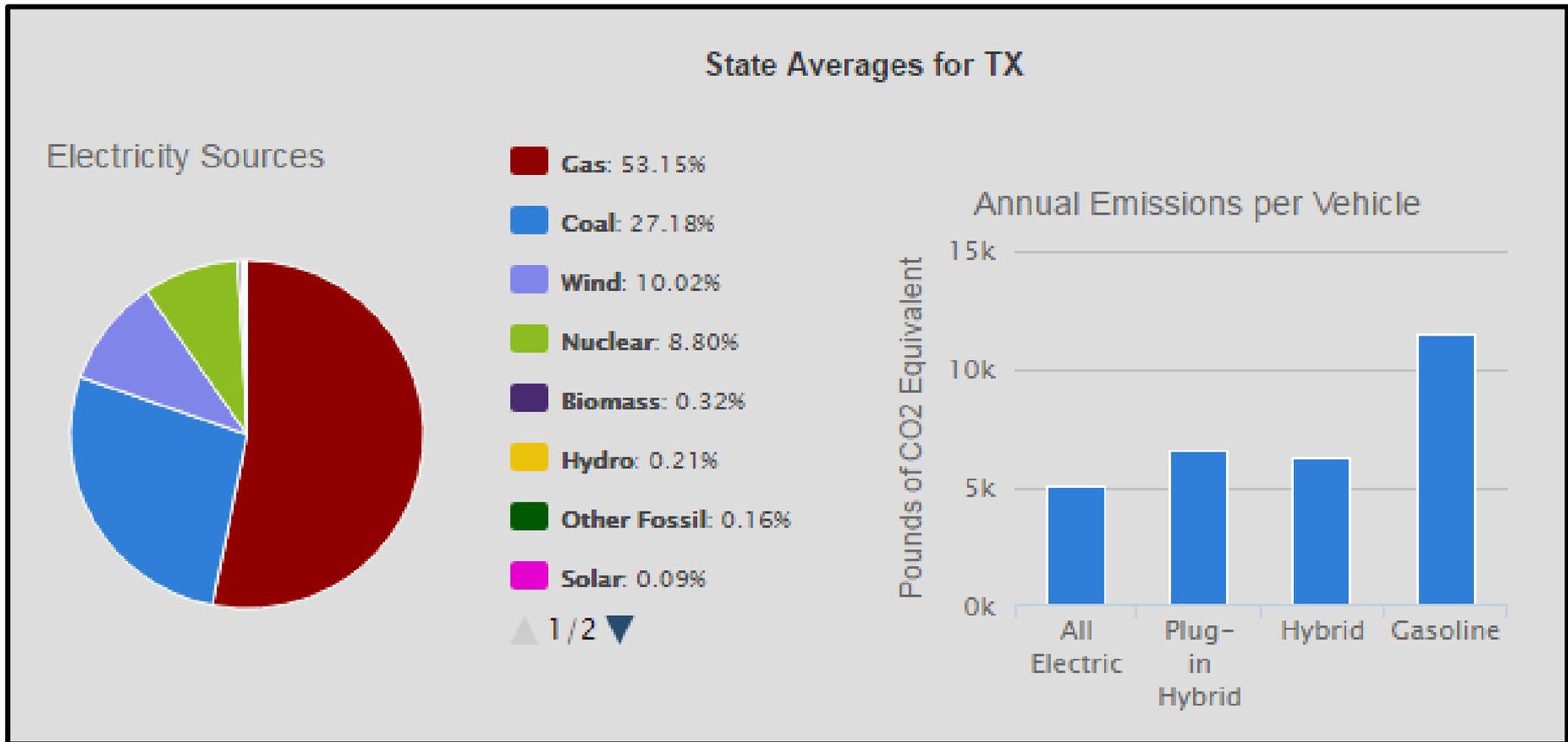


ICE=Internal Combustion Engine; HEV=Hybrid Electric Vehicle; PHEV=Plug-In Hybrid Electric Vehicle; NGCC=Natural Gas Combined Cycle

Source: Argonne National Laboratory Well-to-Wheels Emissions Calculator

EV Benefits - Emissions

Well-to-Wheels Carbon Dioxide (CO₂) Emissions



EV Benefits - Cost

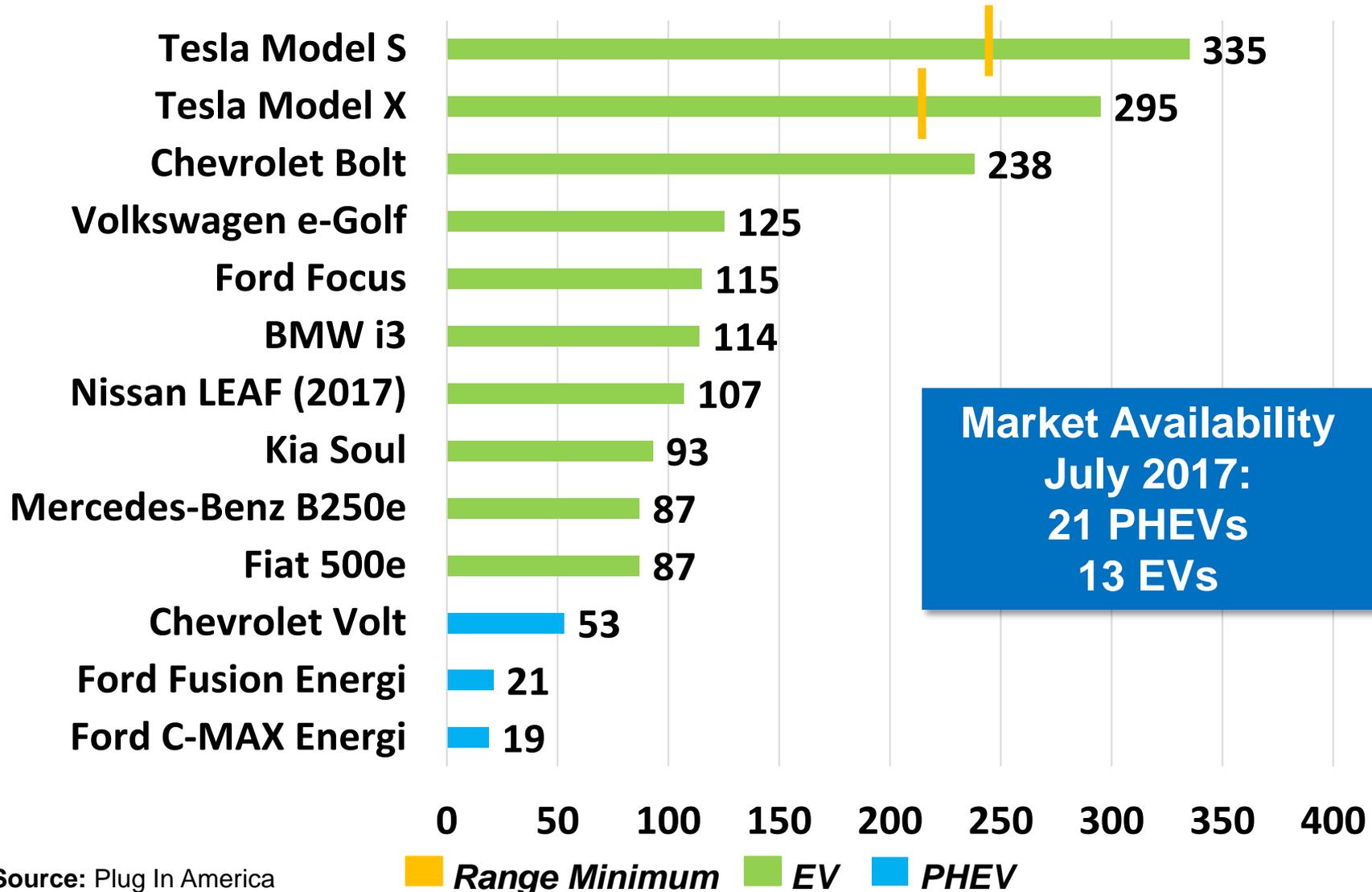
Type of Cost	Electric Vehicles		Conventional Gasoline Vehicles	
	2017 Nissan LEAF	2017 Chevrolet Volt	2017 Chevrolet Cruze	2017 Toyota Camry
Annual Fuel Use	3,652 kWh electricity	68 gallons gasoline + 2,812 kWh electricity	342 gallons gasoline	422 gallons gasoline
Annual Fuel Cost	\$402	\$473	\$815	\$1,003
Annual Operating Cost	\$2,507	\$2,730	\$3,072	\$3,261
Cost per Mile	\$0.21	\$0.23	\$0.26	\$0.27

EV Benefits – Energy Security



EV Benefits – Maturing Market

Electric Range per Model (all 2017)



Regional Electric Vehicle (EV) Efforts

Dallas-Fort Worth Clean Cities *Clean Transportation, Made Easy*



Dallas-Fort Worth
CLEAN CITIES

evnt
Electric Vehicles North Texas

Website: www.dfwcleancities.org/evnt

Regional Events - National Drive Electric Week

Vehicle	Registered
Tesla Model S	71
Chevrolet Volt	28
Nissan LEAF	22
Tesla Model X	13
BMW i3 REX	5
Chevrolet Bolt	5
Cadillac ELR	3
Fiat 500e	3
Ford Focus Electric	3
BMW i3	2
Ford Fusion Energi	2
Toyota Plug-in Prius	2
Chevy Spark EV	1
Fisker Karma	1
Ford C-MAX Energi	1
Hyundai Sonata Plug-In	1
Tesla Roadster	1
Toyota RAV4 EV (2012 and later)	1
Volkswagen e-Golf	1
Zero Motorcycle	1
20 Models	167



**LARGEST
GATHERING
OF ELECTRIC
VEHICLES IN
TEXAS**

FREE Webinar Series, Noon – 1 pm Every Day

September 11: EV 101

September 12: Workplace Charging

September 13: Opportunities for Utilities

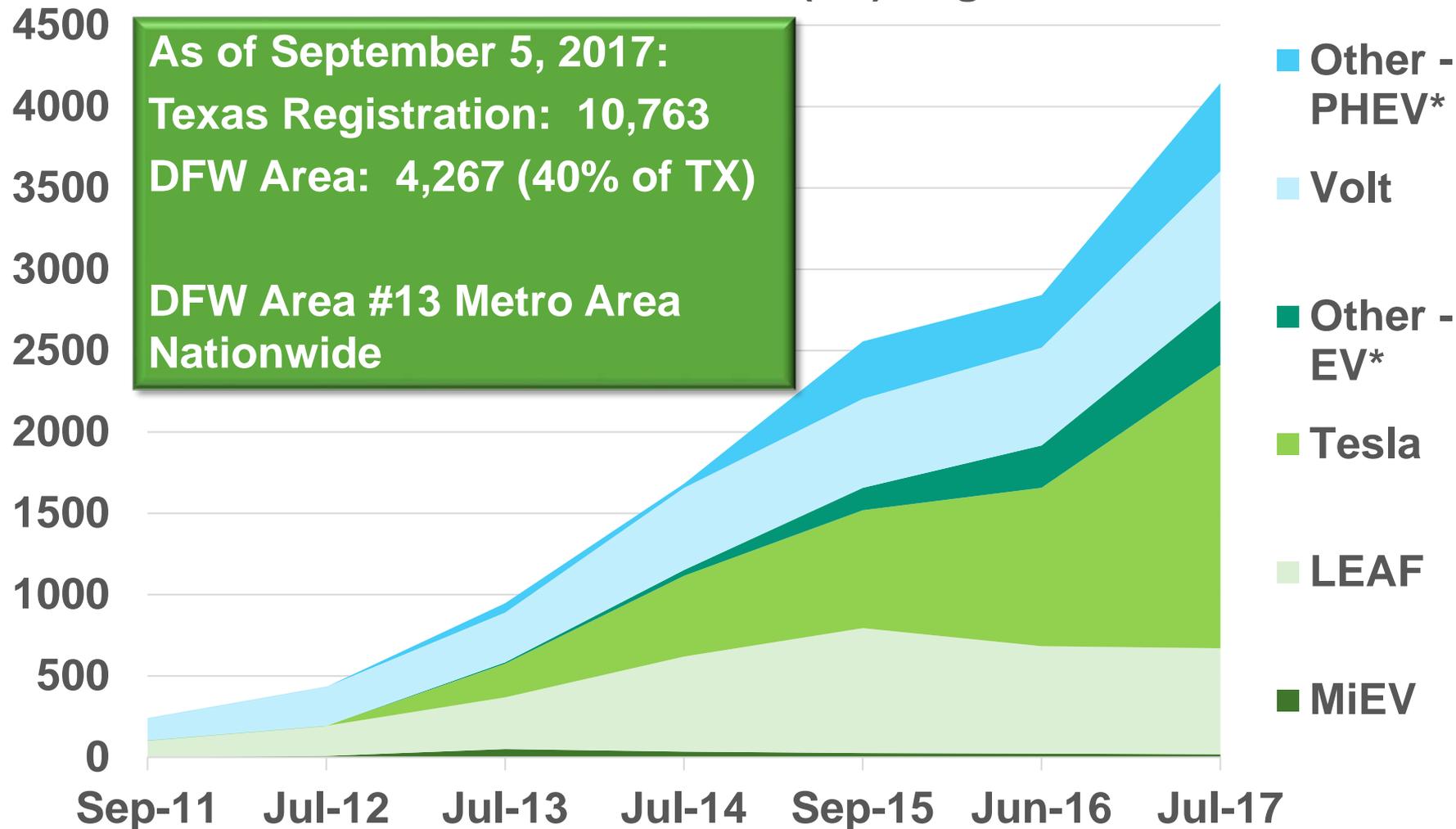
September 14: Municipalities & EVs

September 15: How to Sell an EV

www.DriveElectricDFW.org

Regional Trends

North Texas Electric Vehicle (EV) Registration Trends



*Other EV includes the BMW i3, Chevrolet Bolt, Fisker Karma, Ford Focus Electric; Other PHEV includes the BMW i8, Ford C-Max Energi, Ford Fusion Electric, Chevrolet Bolt, Chevrolet Spark EV, Fiat 500e, and Mercedes B250e

The "Top 5" Lists



Cities	Number
Austin	1,414
Houston	940
Dallas	640
San Antonio	503
Plano	250

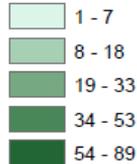
Makes/Models	Number
Tesla Model S	3,152
Chevrolet Volt	2,328
Nissan LEAF	1,590
Tesla Model X	1,084
Ford Fusion	955

Counties	Number
Travis	1,765
Dallas	1,600
Harris	1,568
Collin	919
Tarrant	887

Regional Trends

Vehicle Registration by ZIP Code and Infrastructure Availability

EV Registration by ZIP Code



None

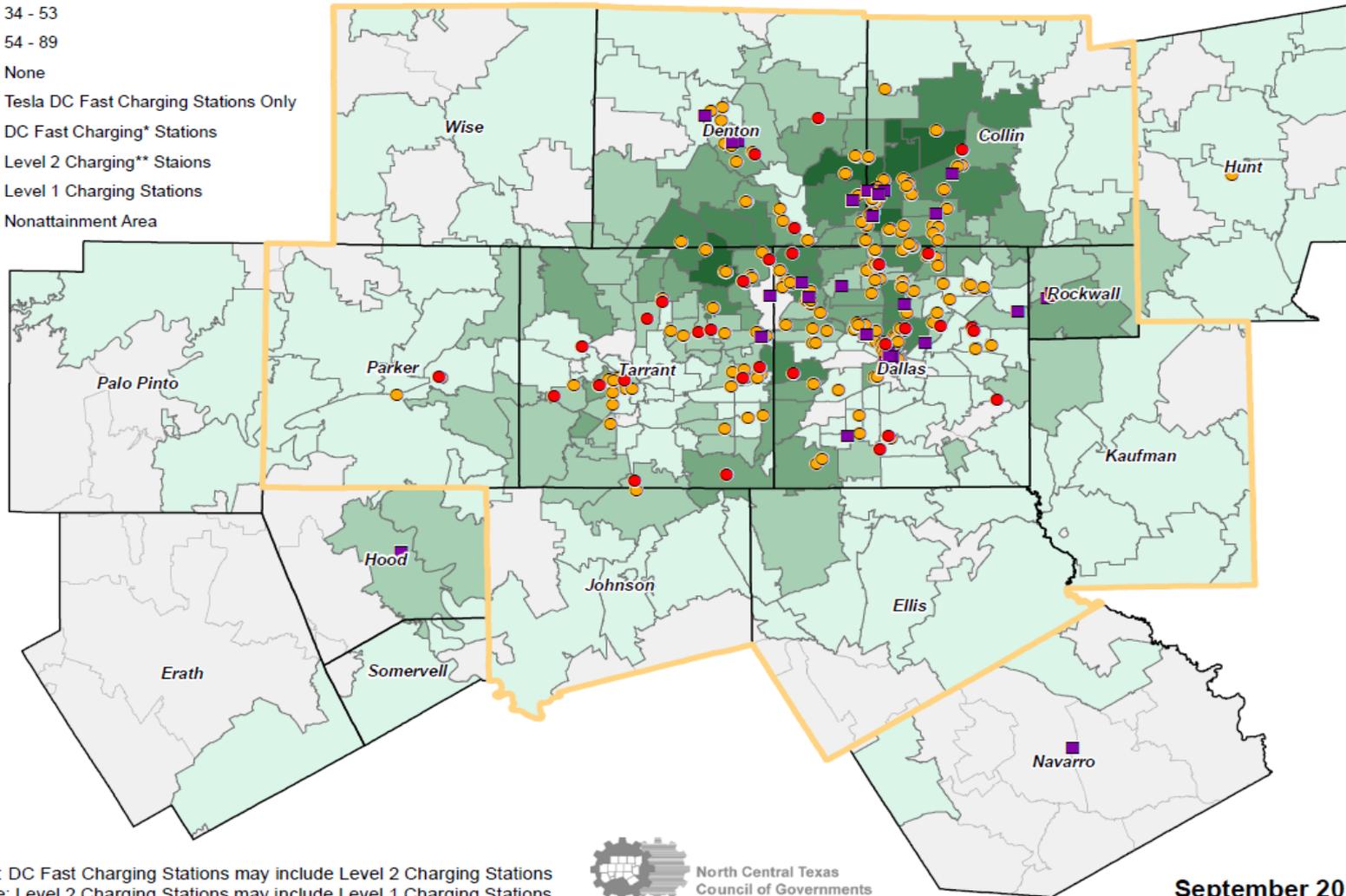
■ Tesla DC Fast Charging Stations Only

● DC Fast Charging* Stations

● Level 2 Charging** Stations

● Level 1 Charging Stations

▭ Nonattainment Area



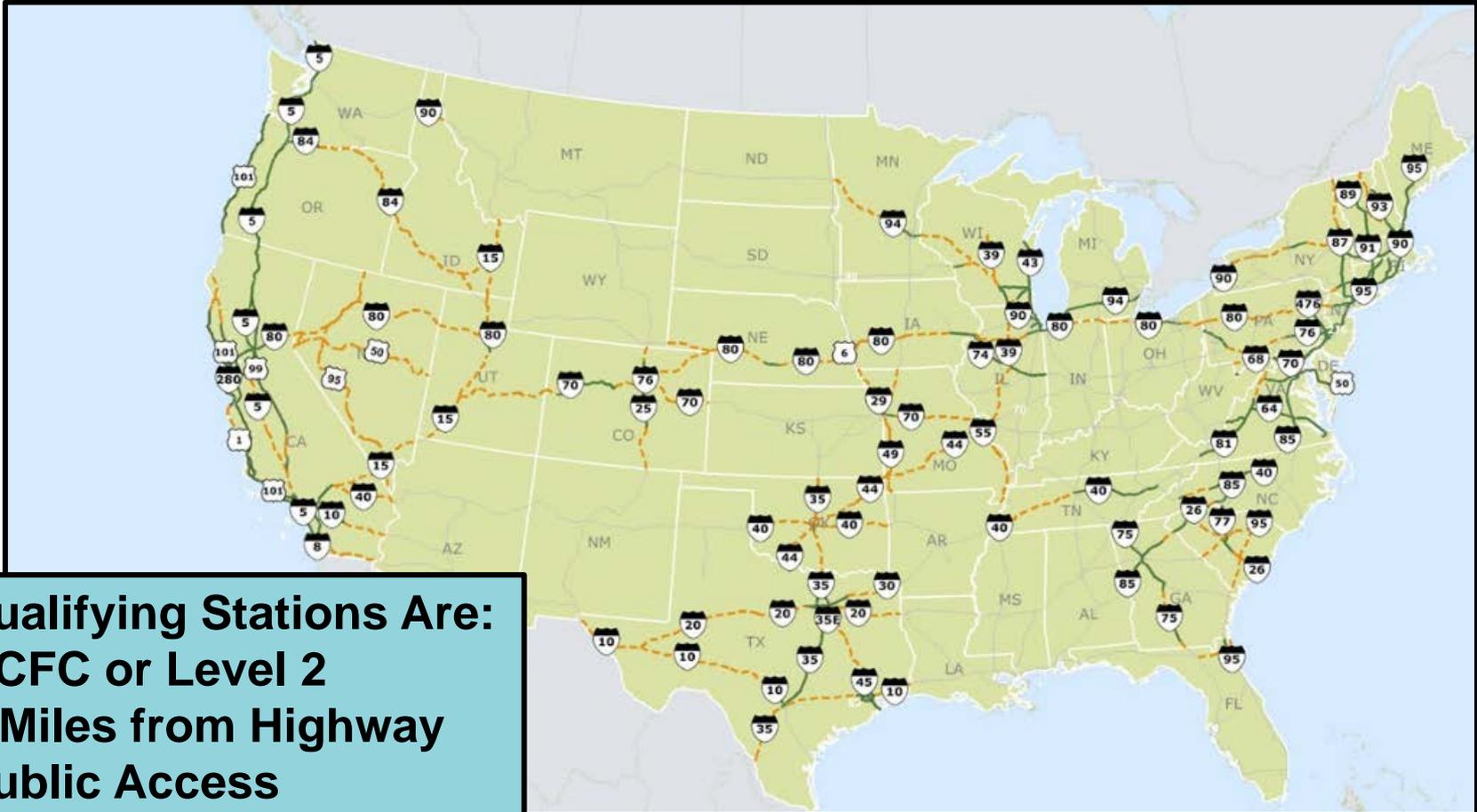
*Note: DC Fast Charging Stations may include Level 2 Charging Stations

**Note: Level 2 Charging Stations may include Level 1 Charging Stations

Recent Developments: Alternative Fuel Corridors

EV Corridors Designated by the Federal Highway Administration

Signage-Ready if No More than 50 Miles Between Qualifying Stations

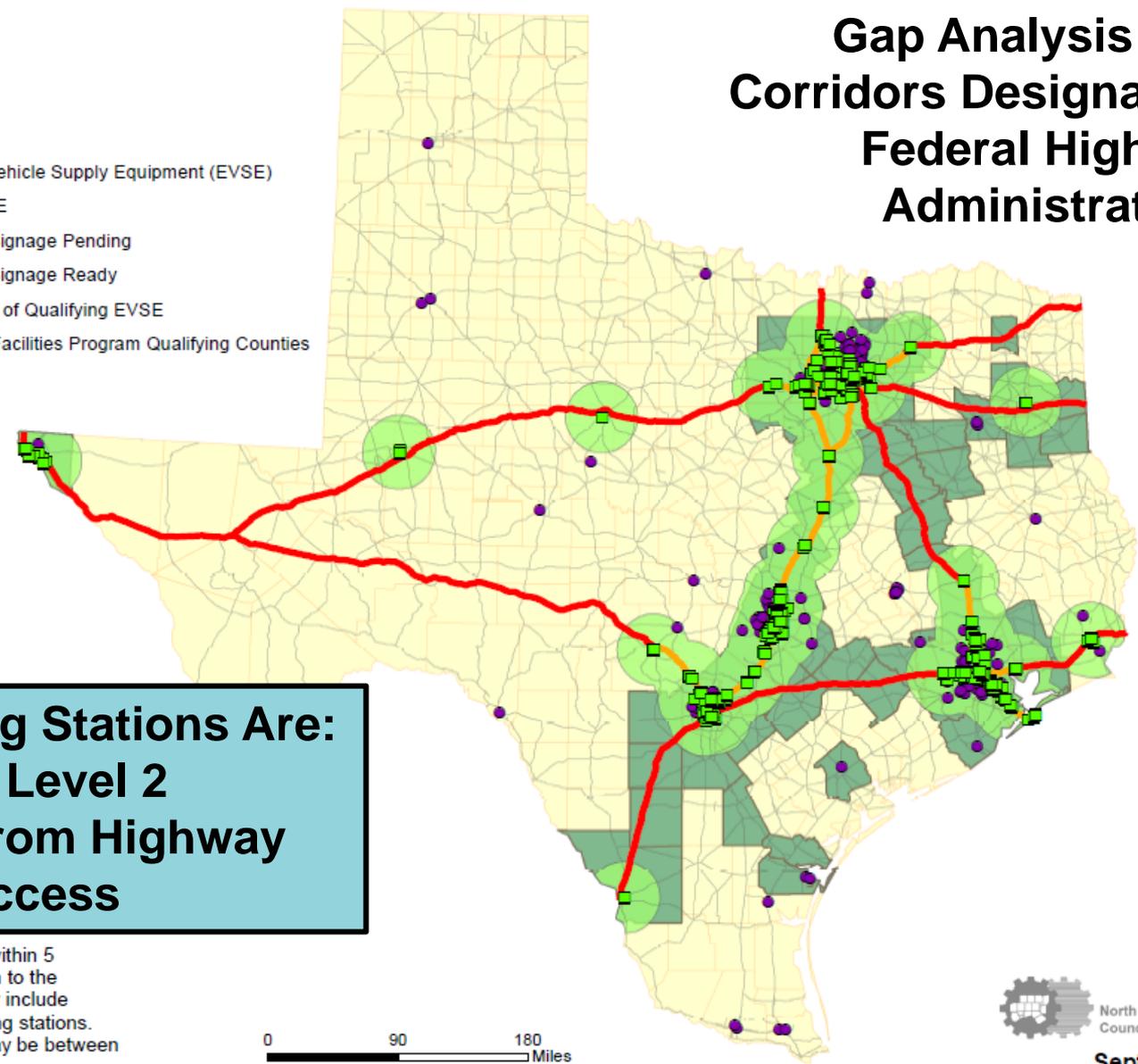


Qualifying Stations Are:
-DCFC or Level 2
-5 Miles from Highway
-Public Access

Recent Developments: Alternative Fuel Corridors

Gap Analysis of EV Corridors Designated by the Federal Highway Administration

- Qualifying Electric Vehicle Supply Equipment (EVSE)
- Non Qualifying EVSE
- FHWA Designated Signage Pending
- FHWA Designated Signage Ready
- Area within 25-Miles of Qualifying EVSE
- Alternative Fueling Facilities Program Qualifying Counties



Qualifying Stations Are:
-DCFC or Level 2
-5 Miles from Highway
-Public Access

Qualified EVSE must be within 5 miles of the highway, open to the public (no Tesla), and may include DCFC and Level 2 charging stations. No more than 50 miles may be between stations.

Recent Developments: Volkswagen Settlement

Zero-Emission Vehicle (ZEV) Investment Program Managed through Electrify America, LLC

\$1.2 Billion Commitment Nationwide (Excludes California)

Cycle 1 (2017 – 2019)	Cycle 2 (2019 – 2021)	Cycle 3 (2022 – 2024)	Cycle 4 (2024 – 2026)
\$300 Million	\$300 Million	\$300 Million	\$300 Million



Charging Infrastructure Installation – Approximately \$250 Million

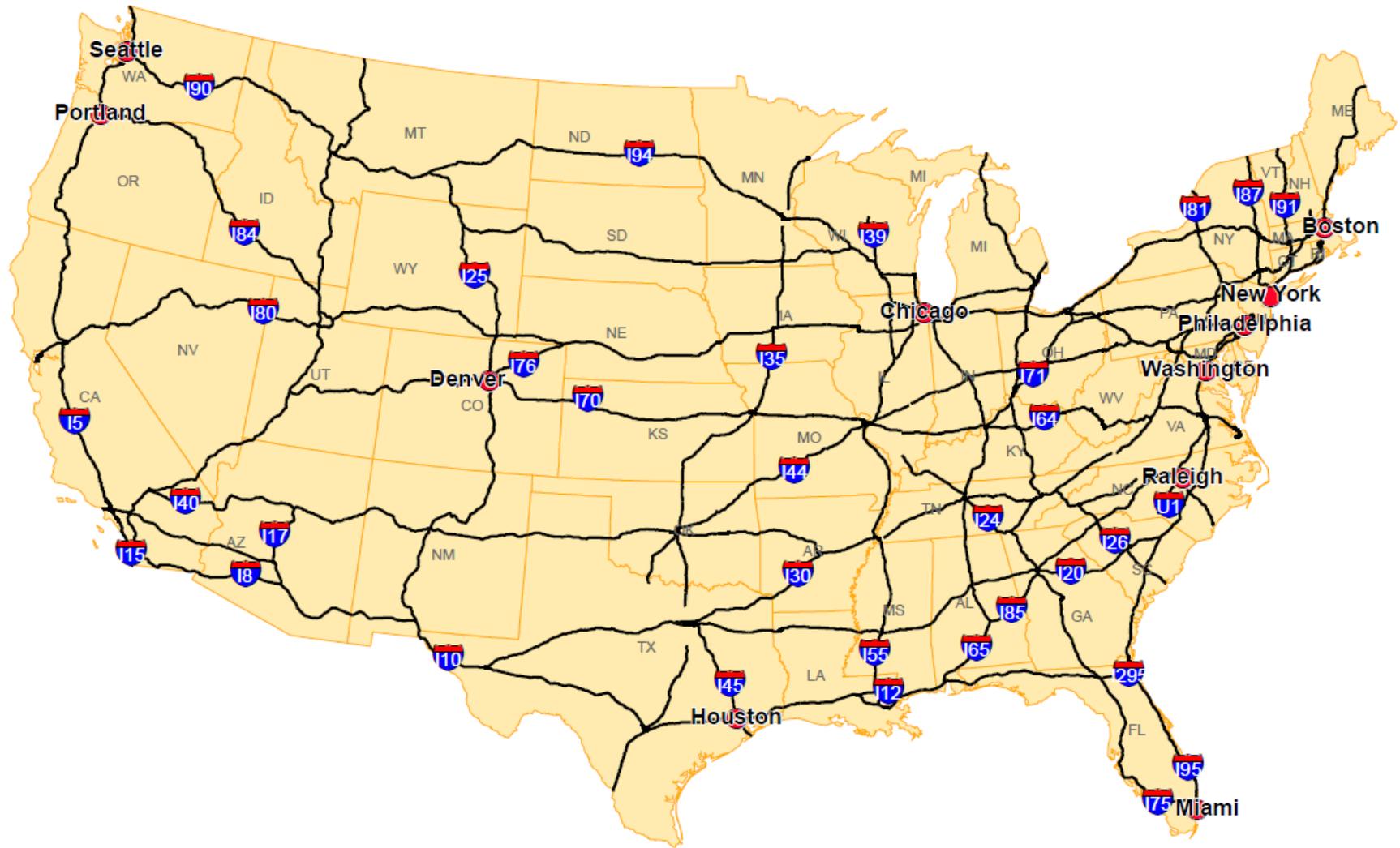
Long Distance Highway Network ~\$190 Million

Community Charging ~\$40 Million

Public Education Initiatives – Approximately \$25 Million

ZEV Access Initiatives – Under Development

Recent Developments: Volkswagen Settlement



- Metro Areas Selected for Community Charging
- Highways Selected for High-Speed Charging Network

Available Incentives

Vehicles

Amount	Incentive Program
Up to \$7,500	<u>Qualified Plug-In Electric Drive Motor Vehicle Tax Credit</u>
\$3,500	<u>AirCheckTexas Drive a Clean Machine Program</u>
\$2,500	<u>Light-Duty Motor Vehicle Purchase or Lease Incentive Program</u> <i>Coming Soon</i>

Infrastructure

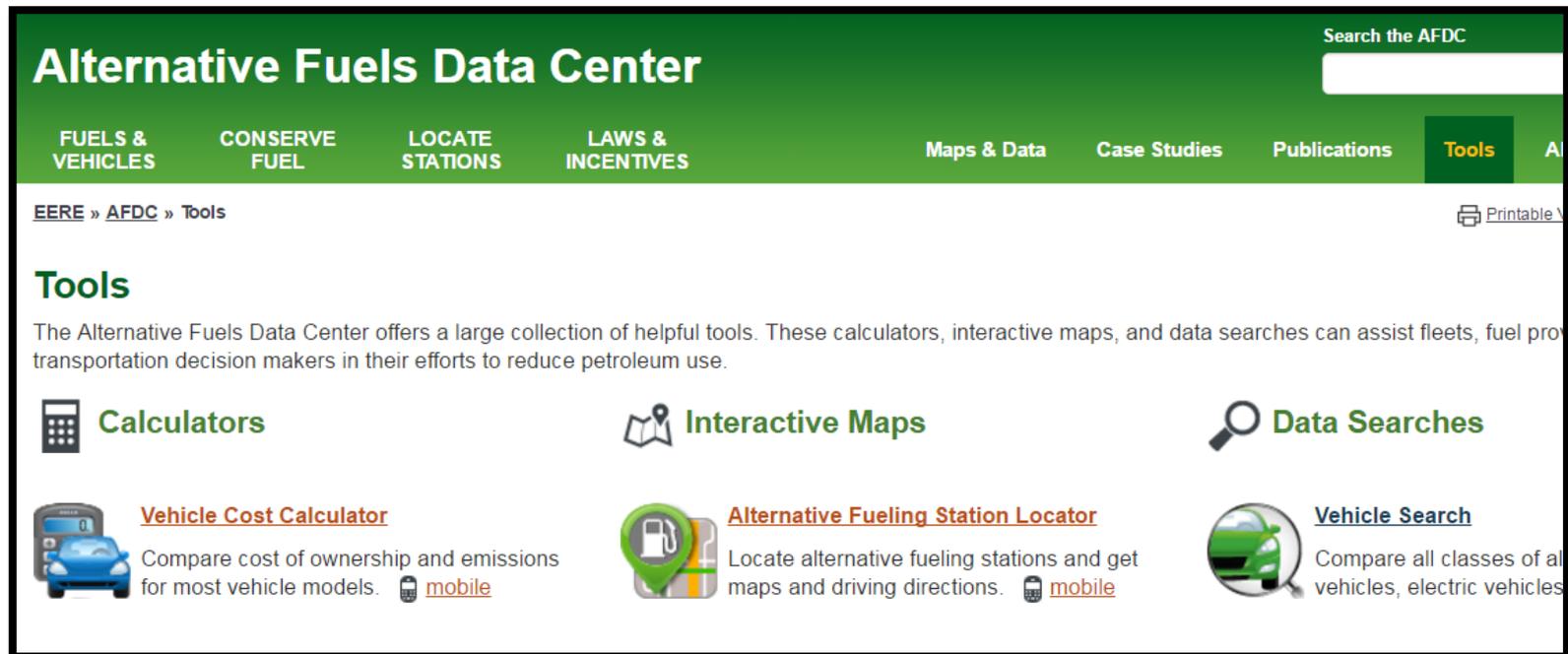
Amount	Incentive Program
Up to 50% Project Cost	<u>Alternative Fueling Facilities Program</u>
Up to 100% if Government-Owned; 80% if Non-Government Owned	Volkswagen Settlement Environmental Mitigation Trust???? <i>Texas Plans To Be Determined</i>

National Resources

Alternative Fuels Data Center (US Department of Energy)

www.afdc.energy.gov

- Vehicle Search
- Vehicle Cost Calculator
- Alternative Fueling Station Locator



The screenshot shows the homepage of the Alternative Fuels Data Center (AFDC) website. The header is green with the title "Alternative Fuels Data Center" and a search bar. Below the header is a navigation menu with links for "FUELS & VEHICLES", "CONSERVE FUEL", "LOCATE STATIONS", "LAWS & INCENTIVES", "Maps & Data", "Case Studies", "Publications", and "Tools". The "Tools" link is highlighted. Below the navigation menu, there is a breadcrumb trail: "EERE » AFDC » Tools". The main content area is titled "Tools" and contains a paragraph: "The Alternative Fuels Data Center offers a large collection of helpful tools. These calculators, interactive maps, and data searches can assist fleets, fuel providers, and transportation decision makers in their efforts to reduce petroleum use." Below this paragraph are three columns of tool cards. The first column is titled "Calculators" and features a calculator icon and a card for "Vehicle Cost Calculator" with a car icon and a mobile phone icon. The second column is titled "Interactive Maps" and features a map icon and a card for "Alternative Fueling Station Locator" with a fuel pump icon and a mobile phone icon. The third column is titled "Data Searches" and features a magnifying glass icon and a card for "Vehicle Search" with a car icon and a mobile phone icon.

Alternative Fuels Data Center Search the AFDC

FUELS & VEHICLES CONSERVE FUEL LOCATE STATIONS LAWS & INCENTIVES Maps & Data Case Studies Publications **Tools** All

EERE » AFDC » Tools [Printable Version](#)

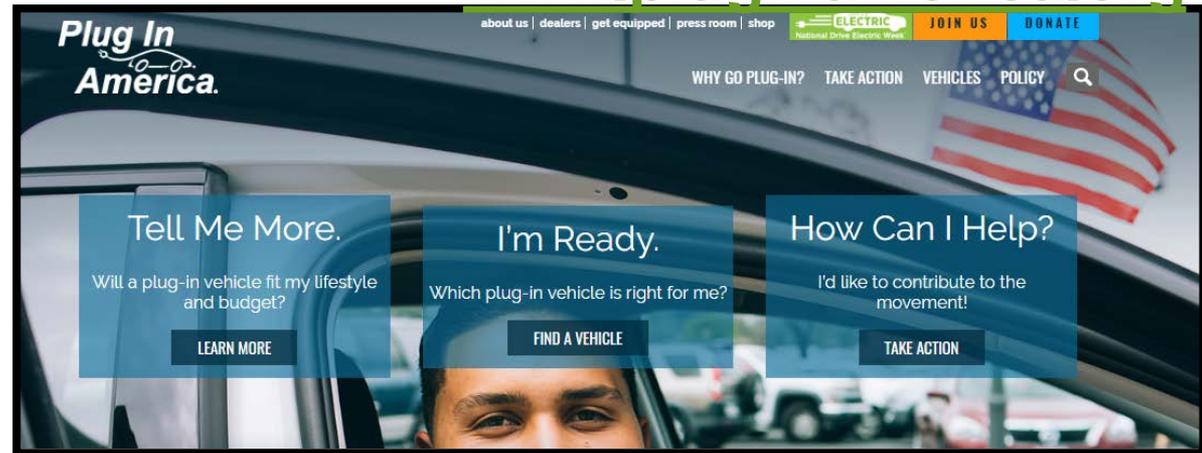
Tools

The Alternative Fuels Data Center offers a large collection of helpful tools. These calculators, interactive maps, and data searches can assist fleets, fuel providers, and transportation decision makers in their efforts to reduce petroleum use.

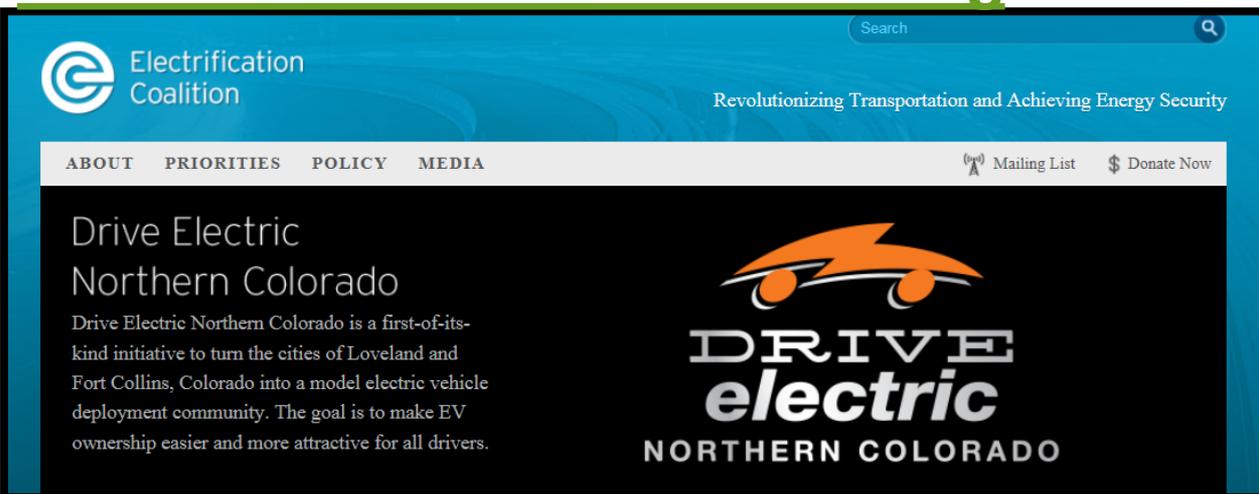
- Calculators**
 - Vehicle Cost Calculator**
Compare cost of ownership and emissions for most vehicle models. [mobile](#)
- Interactive Maps**
 - Alternative Fueling Station Locator**
Locate alternative fueling stations and get maps and driving directions. [mobile](#)
- Data Searches**
 - Vehicle Search**
Compare all classes of all vehicles, electric vehicles

National Resources

Plug In America: www.pluginamerica.org



The Electrification Coalition www.ElectrificationCoalition.org

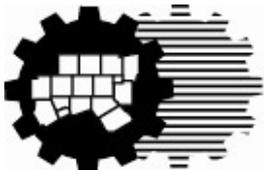


For More Information

Lori Clark
Program Manager
(817) 695-9232
LClark@nctcog.org

Kristina Ronneberg
Air Quality Planner
(817) 695-9226
KRonneberg@nctcog.org

www.dfwcleancities.org/evnt



**North Central Texas
Council of Governments**

