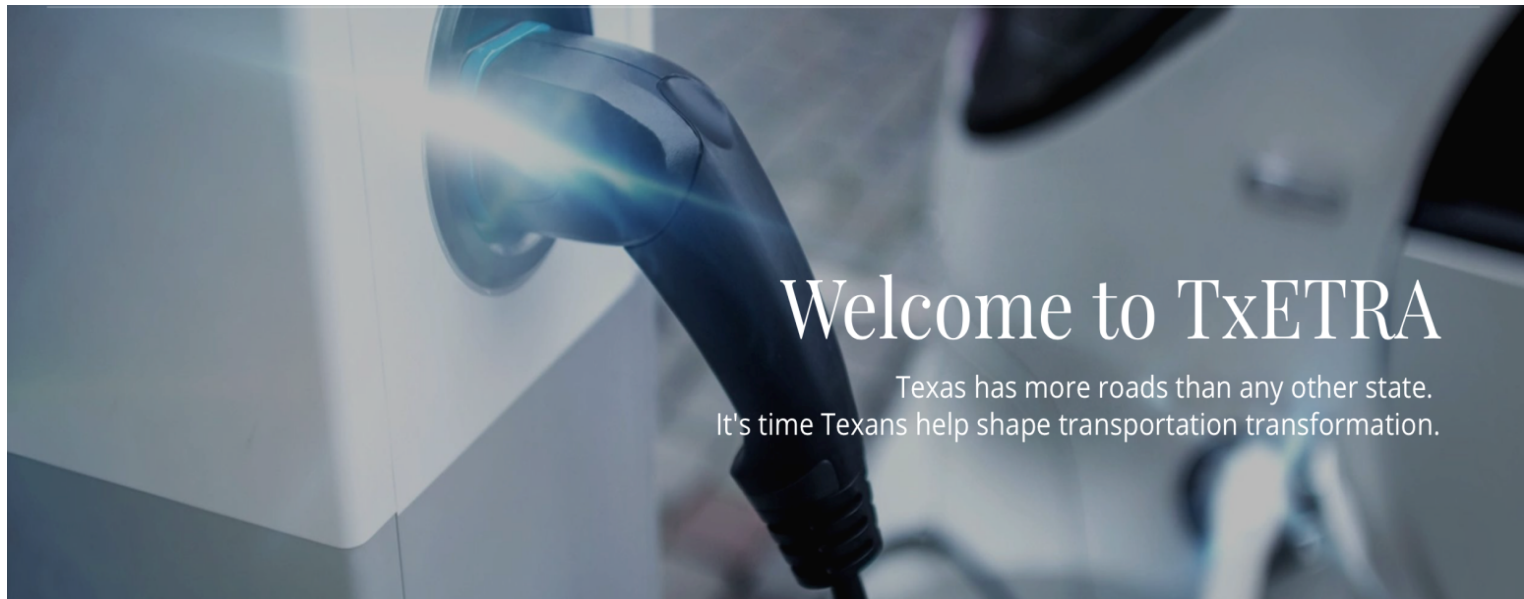


# Texas Electric Transportation Resources Alliance

Creating the Policies that Pave the Way for the Electrification of Transportation in Texas



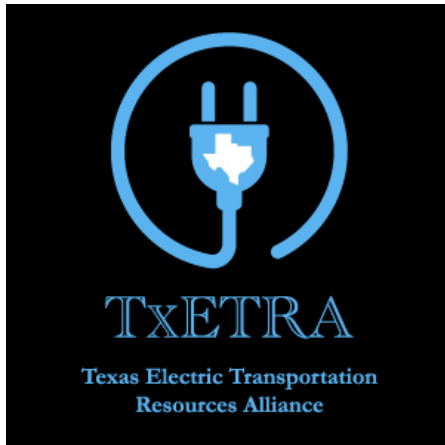
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# Our Mission

*Leading Texas Toward An Electrical Transportation Future  
In the Most Cost-Effective Way  
Providing Maximum Benefit to the Citizens of this State*



[txetra.org](http://txetra.org)

[Technical and Outreach Committees](#) are working on legislative and regulatory policy recommendations relating to: Electricity Grid Impact, Charging Infrastructure, Public Transportation, Economic Development, Public Education, Equity and EV Tax Policy.

[Our Founders](#) include many of the same people who founded TREIA and the Texas Wind Coalition. This coalition conducted studies and developed policies that led to *Texas's Renewable Energy boom* in the 1980's and 90's – and successfully spearheaded the *Texas Emissions Reduction Program* (TERP).

# Volkswagen Made Headlines in 2016 over “Dieselgate”

CNN Money U.S. +

Business Markets Tech Media Personal Finance Small Biz Luxury

stock tickers



## Volkswagen agrees to record \$14.7 billion settlement over emissions cheating

by Chris Isidore and David Goldman @CNNMoney

🕒 June 28, 2016: 2:09 PM ET

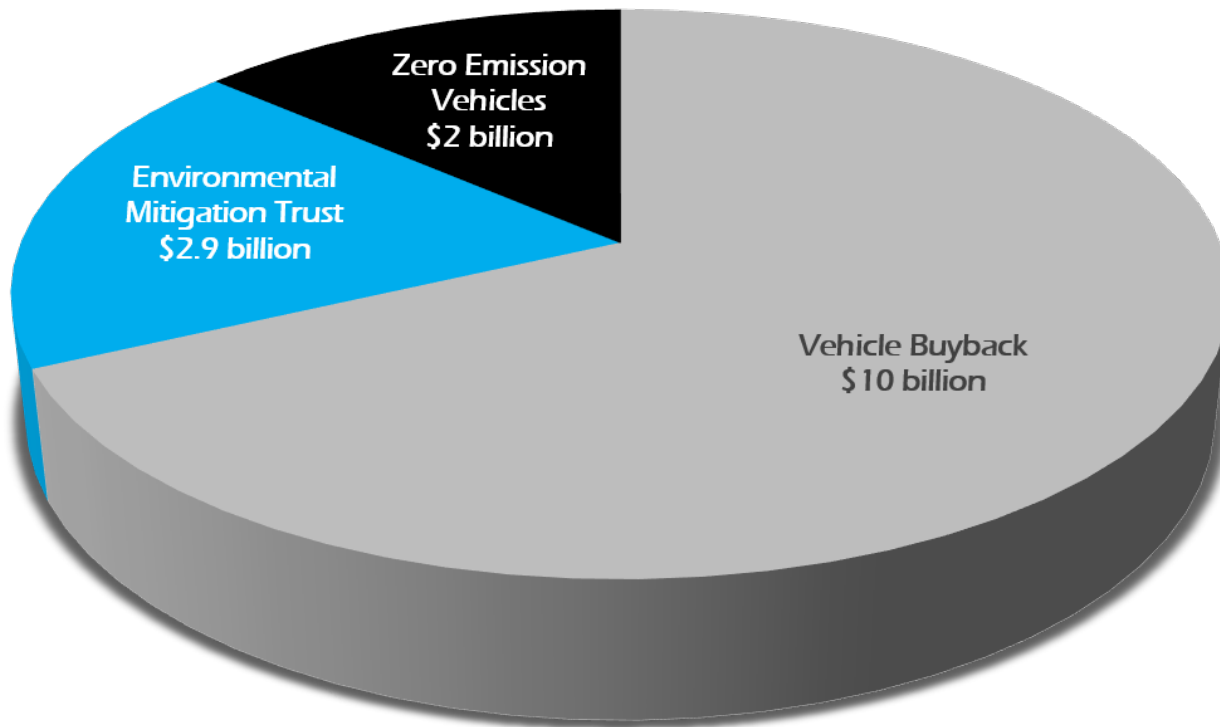
👍 Recommend 18K



TxETRA

Texas Electric Transportation Resources Alliance

VW was sued by the EPA and ordered to pay \$14.9 Billion for violating the Clean Air Act. The breakdown is shown below.



# Volkswagen (non-buyback) Settlement Goals

1. Reduce NOx emissions.
2. Reduce the Potential for Exposure of the Public to Pollutants.
3. Prepare for Increased and Sustained Use of Zero Emission Vehicles (ZEV).
4. Complement Other Incentive Funding Programs.



# Texas Portion of the VW Settlement: \$209 Million



- EV Charging Infrastructure – \$31 M
- Environmental Mitigation – \$178 M



# TCEQ – Preamble to the Draft Plan (Excerpts)

- ▶ The [TCEQ seeks to be fuel-neutral in implementing this plan](#), while expanding NOX-reduction opportunities by complimenting TERP. However, the [Trust Agreement specifically promotes specific fuels](#). The draft plan includes the same cost percentages as set out in the Trust Agreement, with several exceptions:
  - ▶ For projects to replace or repower government-owned vehicles or equipment and projects to replace or repower privately-owned vehicles or equipment *with all-electric models, the plan sets a limit of 60%* of costs to ensure that applicants have a financial stake in the project
  - ▶ For privately-owned vehicles or equipment replaced or repowered with *diesel or alternative fuel* models, the plan provides the maximum reimbursement allowed under the Trust Agreement; i.e., *25% for replacements or 40% for repowers*)
  - ▶ A limit of *50% of eligible costs* is set for light-duty zero emission vehicle (*ZEV electric charging*) equipment projects
  - ▶ Limits on *hydrogen fueling stations* for hydrogen fuel cell vehicles are set according to the Trust Agreement
  - ▶ Certain stakeholders recommended that the TCEQ take a longer-term view in using the funds, including *setting aside a percentage of the funding to provide an incentive for companies involved in developing new generations of electric vehicles and charging systems to locate in Texas*. The incentive to these manufacturers would be the expectation that the funds would be available for grants for the purchase of the new vehicles and technologies, as those are developed



# TCEQ – Preamble to the Draft Plan (Excerpts) Cont'd.

- ▶ Specifically, the [Dallas–Fort Worth \(DFW\), Houston–Galveston–Brazoria \(HGB\), and San Antonio \(Bexar County\) areas are currently designated nonattainment](#) for the 2015 ozone NAAQS. Two other areas of primary interest from an ozone NAAQS perspective are [El Paso and Beaumont–Port Arthur \(BPA\)](#). Preliminary data for 2018 indicate that El Paso has some monitored values in excess of the 2015 NAAQS for ozone. The BPA area is considered a priority for mitigation for several reasons.
- ▶ First, the [BPA area is under a federally enforceable ozone maintenance plan](#) and was designated nonattainment for the revoked 1997 eight-hour ozone NAAQS. In addition, the BPA area has a history of higher ozone, including the period when the subject vehicles were being sold and driven. Specifically, the BPA area had ozone design values of 80 ppb as recently as 2012 and as high as 92 ppb in 2004.
- ▶ Given this information, coupled with a [desire to focus resources in a limited number of geographic areas to maximize the impact of the mitigations actions](#), the following areas are proposed as Priority Areas under this plan: [DFW, HGB, San Antonio, El Paso, and BPA](#). The draft plan allocates [81% of the funds for projects in these areas](#).





# TCEQ Priority Areas

0. Light-Duty Zero Emission Vehicle (ZEV) Supply Equipment
1. Class 4 – 7 Local Freight Trucks
2. Class 8 Local Freight Trucks and Port Drayage Trucks
3. Class 7 – 8 Refuse Vehicles
4. School Buses
5. Transit and Shuttle Buses
6. Electric Forklifts and Port Cargo Handling Equipment
7. Electric Airport Ground Support Equipment
8. Ocean-Going Vessel Shore Power

# TCEQ Proposed Funding Allocation

Table 1. Funding Allocation by Area

Area	Counties	Maximum Funding Amount	Percentage of Total Funds
San Antonio Area	Bexar, Comal, Guadalupe, Wilson	\$73,554,754	35.14%
Dallas-Fort Worth Area	Colin, Dallas, Denton, Ellis, Hood, Johnson, Kaufman, Parker, Rockwall, Tarrant, Wise	\$29,116,296	13.91%
Houston-Galveston-Brazoria Area	Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Waller	\$27,399,879	13.09%
El Paso County	El Paso	\$26,771,921	12.79%
Beaumont-Port Arthur Area	Hardin, Jefferson, Orange	\$12,705,673	6.07%
<b>Totals</b>		\$169,548,523	81.0%

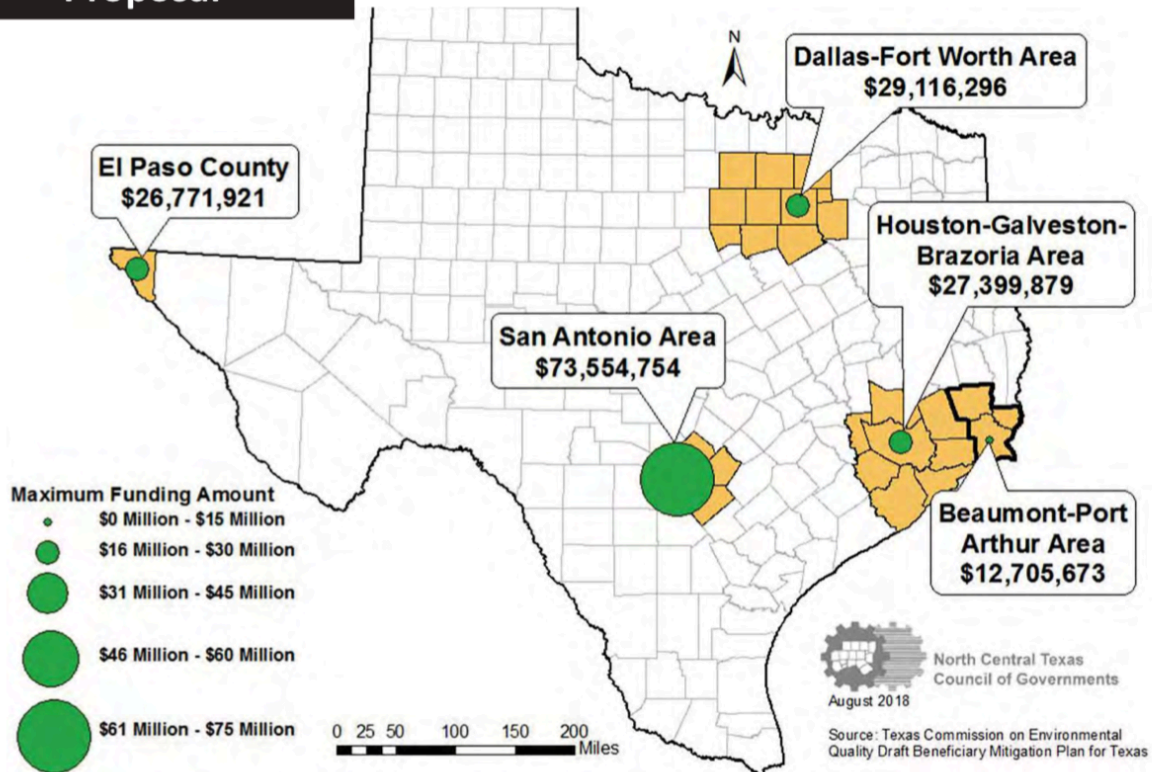
Zero Emissions Vehicle Program 15%  
Administration 4%

# TCEQ Current Statewide Funding Map - at a Glance

## GEOGRAPHIC ELIGIBILITY & FUNDING DISTRIBUTION

**Current TCEQ Proposal**

**Distribute to Priority Areas Based on (1) Severity of Ozone Levels and (2) Population**



# Example Funding Allocation

**Table 2. Example Funding Allocation and NO<sub>x</sub> Emissions Reductions (based on a 5-year activity life)**

<b>Category (Replacement Only)</b>	<b>Example Funding Allocation</b>	<b>Tons of NO<sub>x</sub> Reduced</b>	<b>Cost Per Ton of NO<sub>x</sub> Reduced</b>	<b>Number of Vehicles &amp; Equipment</b>
Electric Forklifts and Port Cargo Handling Equipment and Airport Ground Support Equipment	\$28,258,088	1,189	\$23,776	418
Class 8a Refuse Vehicles	\$28,258,087	468	\$60,381	209
School Buses	\$28,258,087	286	\$98,805	473
Transit and Shuttle Buses	\$28,258,087	313	\$90,281	108
Class 6 Local Freight Truck	\$28,258,087	999	\$66,024	1,271
Class 8b Local Freight Trucks	\$28,258,087	2,699	\$10,470	733
<b>Totals</b>	<b>\$169,548,523</b>	<b>5,954</b>	<b>\$29,913</b>	<b>3,212</b>



# Example NO<sub>x</sub> Emissions Reductions

Table D.3 Example NO<sub>x</sub> Emissions Reduction and Cost Effectiveness (replacement of 2000 model year)

Vehicle/Equipment	New Fuel <sup>1</sup>	Total 5-yr NO <sub>x</sub> Reduction (tons)	Estimated Cost	Example Grant Amount	Cost Per Ton of NO <sub>x</sub> Reduced
School Bus <i>(assumes govt. only)</i>	Diesel	0.5905	\$90,000	\$54,000	\$91,448
	Alt. Fuel	0.6183	\$109,333	\$65,600	\$106,097
	Electric	0.6216	\$290,000	\$174,000	\$279,923
Class 8a Refuse Truck <i>(assumes govt. only)</i>	Diesel	2.1804	\$210,000	\$126,000	\$57,692
	Alt. Fuel	2.2830	\$240,000	\$144,000	\$63,075
	Electric	2.2951	\$560,000	\$336,000	\$146,399
Transit Bus <i>(assumes govt. only)</i>	Diesel	2.7857	\$300,000	\$180,000	\$64,616
	Alt. Fuel	2.9168	\$355,000	\$213,000	\$73,025
	Electric	2.9323	\$650,000	\$390,000	\$133,001
Class 8b Local Freight Truck <i>(assumes non-govt. only)</i>	Diesel	3.5905	\$140,000	\$35,000	\$9,748
	Alt. Fuel	3.7594	\$168,333	\$42,083	\$11,194
Class 6 Local Freight Truck <i>(assumes non-govt. only)</i>	Diesel	0.7663	\$75,000	\$18,750	\$24,468
	Alt. Fuel	0.8023	\$103,000	\$25,750	\$32,095
	Electric	0.8066	\$190,000	\$114,000	\$141,334
Cargo Handling Equipment	Electric	3.7560	\$150,000	\$90,000	\$23,962
Airport Ground Support Equipment (aircraft tug)	Electric	2.2910	\$90,000	\$54,000	\$23,570

<sup>1</sup>Alt. Fuel means Alternative Fuel, which may include natural gas or propane.



# The VW Settlement Plan Mandates a 15% set-aside (or \$31 M) for EV Charging Station Infrastructure

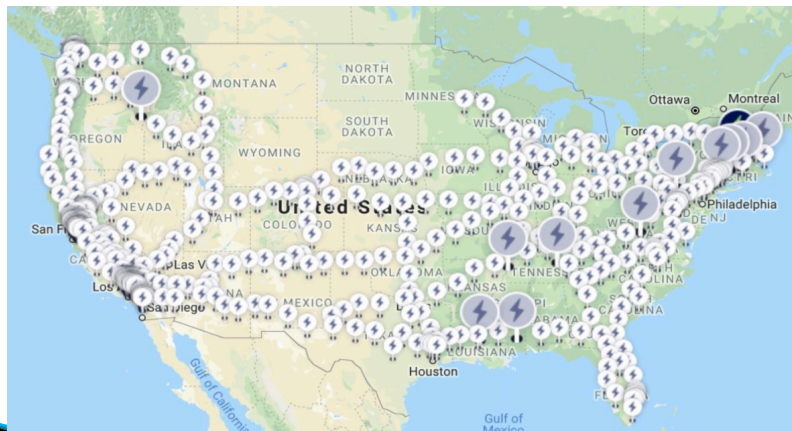
## Charging Station Location Process Explained:

- As a result of the Volkswagen Settlement, **VW of America started a new company called “Electrify America”** aimed at increasing the abundance of zero emission vehicles (ZEVs) in the U.S. by **investing a total of \$2 billion dollars into electric vehicle (EV) changing infrastructure.** This group is will be building charging stations on Interstate highways across America.
- The \$31 Million set-aside in the Texas VW Settlement Plan seeks to augment Electrify America charging station locations with stations in rural areas and major state highways.



# Electrify America plan

Appendix A: Map of Designated EV Corridors



## To reduce range anxiety:

- ▶ About every 50 miles along interstate and intercity corridors
- ▶ Beyond where the *Electrify America* stations will be
- ▶ **1st Phase**
  - I-35 corridor and
  - Houston
- ▶ **2nd Phase**
  - Estimated 64 stations
  - About 77 miles apart – max 120 miles



# TxETRA Recommendation

## Use the Plan's Mandated 15% set-aside (\$31.4 M) to *Accelerate* EV Growth by Assuring Equitable Access to Chargers

### 1. Frequency:

- a. About every 50 miles by 2020 in interstate and interurban highways (71 or 290 between Austin and Houston)
- b. Urban-suburban areas based on density of EV ownership.

### 2. Location:

- a. Where power line capacity is adequate.
- b. Beyond where other charging networks (like Electrify America) will already be building.
- c. Locations, accessible and attractive to a wide variety of consumers, such as big gasoline retailers, restaurants, and big-box grocery and retail stores.
- d. Based on where EVs are registered.

### 3. Accessible to All.

- a. Assure that the charging stations can use all providers
- b. Accessible to all apps
- c. **Re-leasable** if a charging company defaults

### 4. Smart Charging Stations

Should be interconnected and interoperable so that they can transmit and receive data to and from utilities, charging station owners, grid operators, vehicle owners, and apps.

### 5. Assure Equity (*See Next Slide Detail*)

We recommend 25% of the VW Settlement Charging Funds be set aside for multi-family and public facilities in low-income communities.

### 6. Reallocated Funds Fairly

It's a mitigation fund:

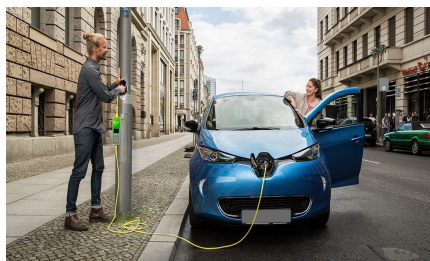
- ▶ Redistribute the funds based on where the VWs were emitting excess pollutants.





# Assure Charging Equity

- **37% of Texans are poor.** EVs can lower the cost of transportation.
- A whopping **40.2% of a low-income's family's income goes to transportation** – contrasted to **13% for average families.**
- Studies have shown that the **fuel and maintenance costs of owning an EV are about one third** of that of a conventional gasoline-fueled vehicle.
- Texas should **promote the availability of used #EVs** – now coming into the used-car market. A recent *Consumer Reports* study found that **currently, it is significantly cheaper to buy a used EV than a similar quality gasoline-fueled car.**
- It makes sense to focus on increasing EVs in **low-income communities, which have been exposed to far higher levels of diesel particulates** than other communities.
- **More than 50% of low income families rent.** A mix of charging facilities at homes, apartments, and street-side would work well to mitigate need.
- We recommend **25% of the VW Settlement Charging Funds be set aside for low-income communities**, focusing on multi-family and public facilities.

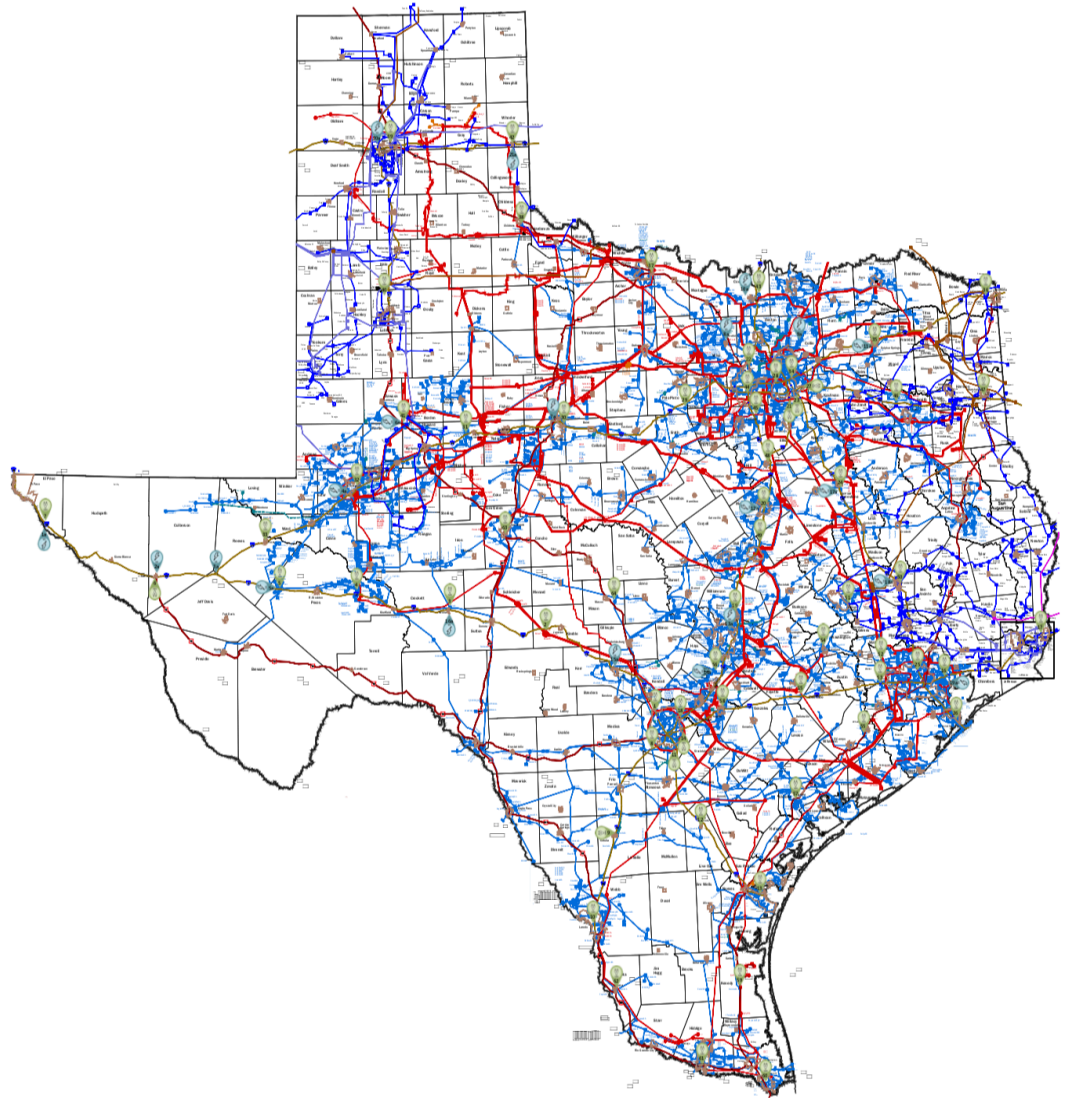


# TxEtra Recommendation for Stations Where Best to Locate Charging Stations

About every 50 miles by 2020 to support Intercity travel of Longer-Range BEVs along major highways connecting the Texas Triangle (DFW, Houston, SA, Austin)

Urban-suburban areas based on density of EV ownership, plus support for low/medium income charging station placement.

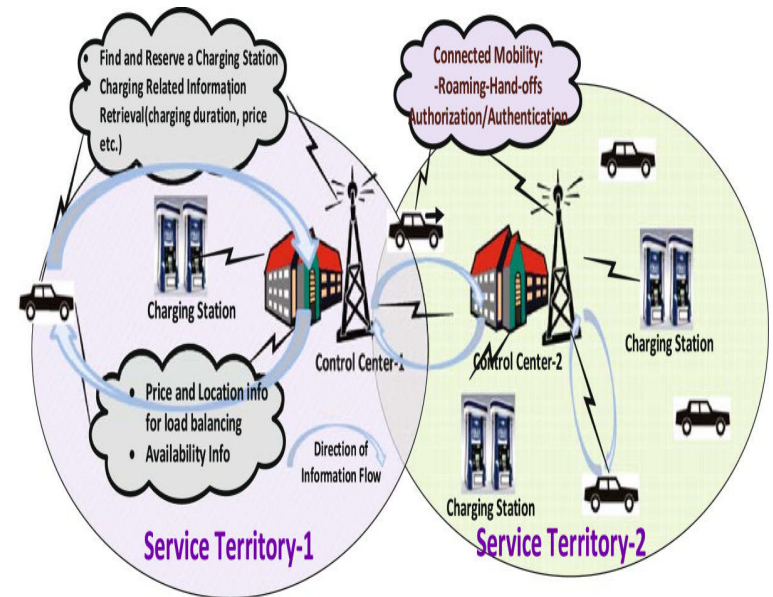
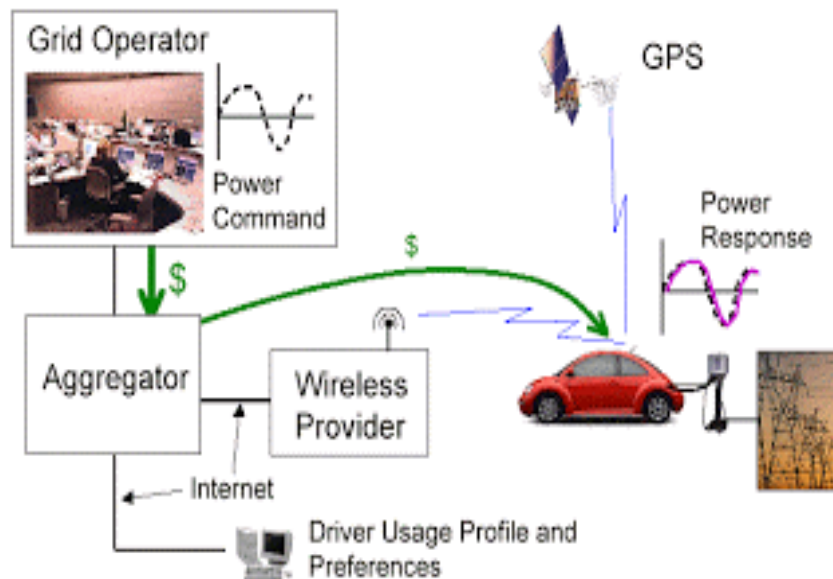
Key: Recommendations:  
Blue – Electrify America  
Green – TxEtra



# “Smart Chargers” are Inter-Connected and Inter-Operable:

Accessible to all Apps:

- Shares needed data for billing
- Allows the utilities to manage loads



# TxE TRA Opportunities

## *Make sure your voice is heard.*

PLEASE PROVIDE INPUT on [Charging Station Locations](#) and [Regional Funding](#) are available as follows:

1. [Public Hearing](#) – DFW – Friday, Sept 14 at 2 PM: North Texas C.O.G. at 616 Six Flags Drive, Arlington, Tx.
2. [Submit Written Testimony by \(Deadline\) October 8<sup>th</sup>](#) to TCEQ at: [VWsettle@tceq.texas.gov](mailto:VWsettle@tceq.texas.gov)

\* TxE TRA Committees are meeting October 4<sup>th</sup> to finalize recommendations. [Check this Website \(txetra.org\)](#) for updates on comment suggestions. For more information, please contact [smitty.txetra@gmail.com](mailto:smitty.txetra@gmail.com)

