# City Mobility and Fleet Electrification

# **Go Electric, Drive The Change®**



WE DELIVER.

ONCOR.

# **Objective:**

The goal of Oncor's Electric Vehicle campaign "Go Electric, Drive The Change" is to enable customer benefits of:

- cleaner air
- lower vehicle operating/maintenance cost
- convenience of home/business site charging

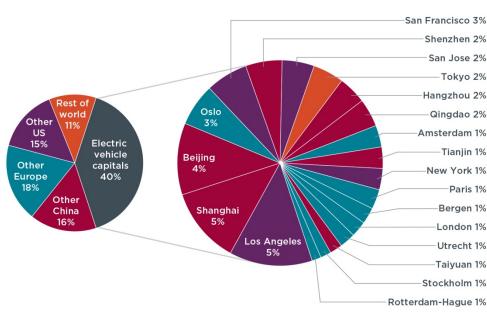
These benefits are supported by accelerating the adoption of EV's and the expansion of high capacity charging infrastructure across our service area.



# Global Events Driving EV adoption: China Leads the Way

- 1. China has passed requirements that 10% of 2019 vehicles sold must be battery electric.
- 2. China has mandated that only vehicles with a range >200 miles on a single charge are eligible for national incentives.
- 3. Every major automotive manufacturer now has China partnerships to produce electric vehicles for global sales.
- 4. China has over 300 manufacturers developing and readying production of electric vehicles.

#### **Global EV Adoption Leaders**



**Figure 4.** Estimated cumulative electric vehicle sales in electric vehicle capitals, expressed as percentages of the global electric vehicle stock through 2016.

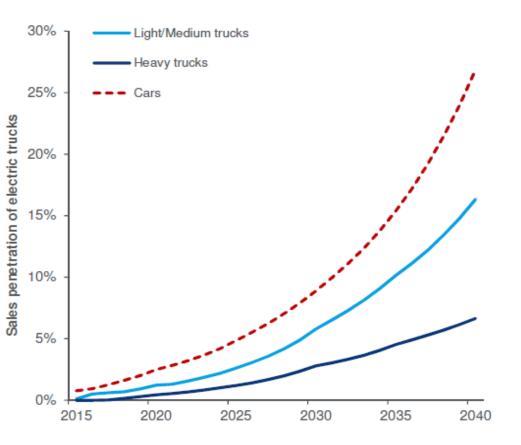
Source: The International Council on Clean Transportation



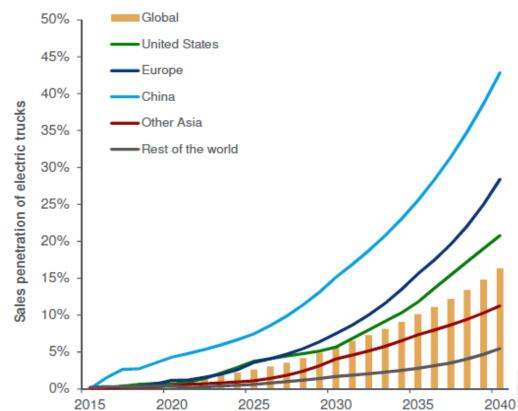
# Light and medium-size trucks see electrification, especially in China

#### Electrification of heavy trucks is delayed

#### Global electric vehicle sales by segment



# Sales of light and medium electric trucks by region



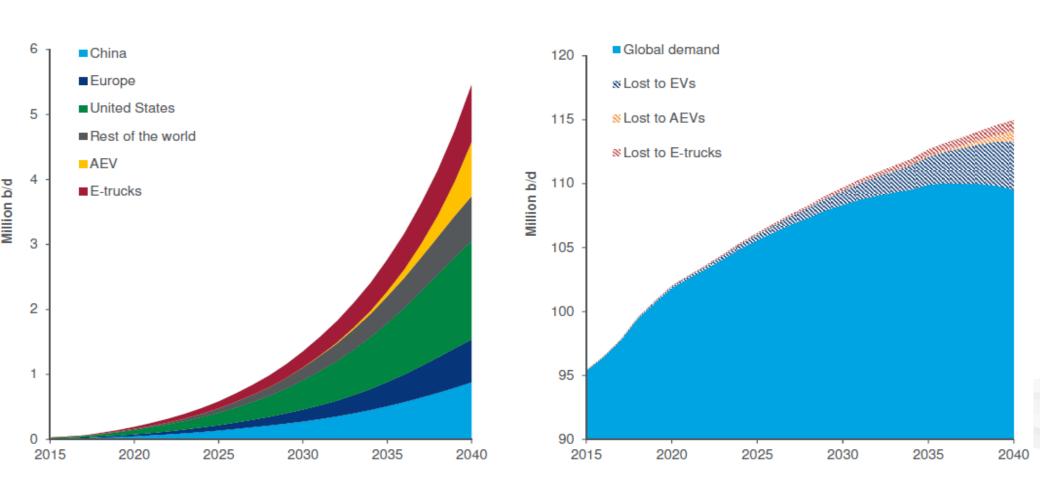


# Electric cars and trucks displace 5.5 million b/d oil demand by 2040

The greatest impact will be in the US, mainly due to higher miles travelled vs Europe

#### Global oil demand displaced by EVs

#### Global oil demand





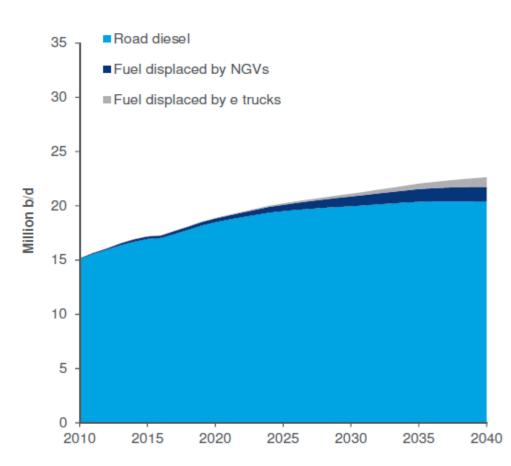
# Global gasoline demand is hit hard; Natural Gas Vehicles (NGVs) pose the bigger threat to diesel demand

Global gasoline demand set to peak by 2030

#### Global demand for gasoline

#### ■ Road gasoline ■ Fuel displaced by EVs Million b/d

#### Global demand for road diesel





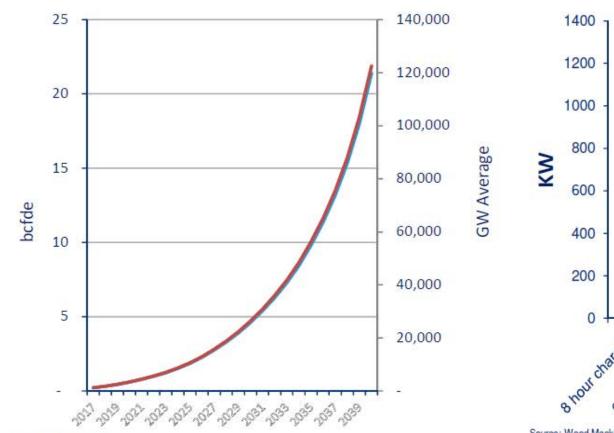


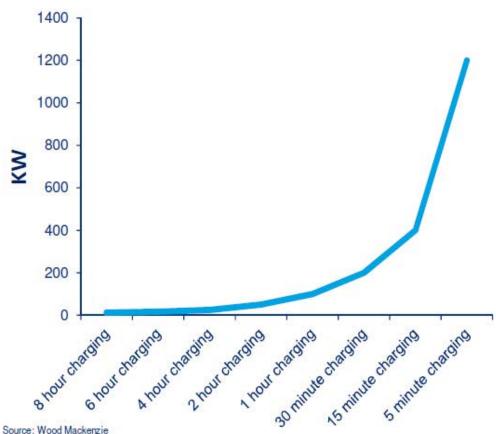
# Impact on system demand will vary based on time and rate of charging

Total power demand from EV's: exceedingly faster charging can create unnecessary or unintended spikes in loads or reliability metrics

#### Impact on total global power demand

#### Faster charging demand implications







# Potential City Actions to Promote Electric Vehicle Adoption

- 1. Electrify the city-owned fleet as appropriate
- 2. Electrify the city or regional public transit fleet as appropriate
- 3. Designate preferred public charging sites
- 4. Set standards and/or work with developers to include on-site charging for apartments, condos, commercial and industrial new construction.
- 5. Work with apartment complex, commercial and industrial site owners to provide on-site charging in response to tenant or employee requests.
- 6. Preferential parking or designated EV or low emissions only street access in areas of high congestion or emissions.



# **City Fleet Electrification**



#### **Overview**

The economics of fleet electrification have recently turned favorable for certain classes of vehicles. As a result Oncor evaluated its own fleet and determined most light duty class vehicles, if battery electric rather than internal combustion, could save Oncor up to \$1,000 per year or more depending on their use profile.

Based on pubic source research many sources expect over the next five years that most classes of fleet vehicles may be more economical to operate if electric.

As a result of our analysis, Oncor has commenced electrifying its fleet.



# Fleet Style Electric Vehicles With Announced Release Dates by 2022

Ford 24 hybrid and 16 electric or plug electric vehicles

GM 20 new electric or plug electric vehicles

Toyota 10 electric, plug electric or Fuel Cell vehicles

Nissan 8 electric or plug electric vehicles

Hyundai 38 electric, plug electric or fuel cell vehicles by 2025

**Volvo FL** Class 4 vehicle for vans or garbage trucks



#### **Transit Fleet Electrification**

DART Trains are electric

DART busses are primarily CNG (645 of 660)

With the exception of six EV convention site route busses.

Several cities in China already are 100% transit electric
Major effort to convert all city busses to electric by 2030
Intercity busses with mileage of over 1,000 miles are operational in China today although few in number.



# **Governmental Alternative Fuel Fleet Grant Program**

The Texas Commission on Environmental Quality (TCEQ) will establish and administer a grant program for governmental alternative fuel fleets to provide grants for the purchase or lease of a new vehicle and the purchase, lease, or installation of alternative fueling equipment. Eligible alternative fuels include natural gas, propane, hydrogen, and electricity. State agencies and political subdivisions are eligible to apply for a grant under the program if the entity operates a fleet of more than 15 vehicles. Mass transit and school transportation providers will also be eligible for grants.

TCEQ will establish standardized vehicle grant amounts based on the incremental costs associated with the purchase or lease of different categories of motor vehicle, including the fuel type, vehicle class, and other categories TCEQ considers appropriate. TCEQ will also establish standardized fueling equipment grant amounts.

(Reference [Senate Bill] (http://www.capitol.state.tx.us/BillLookup/BillNumber.aspx) 1731, 2017)



# What You Can Do, What We Will Do

# You

- Determine operational constraints and appropriate vehicles that can best address them.
- •Determine whether State or Federal financial assistance may be available to your municipality.
- •Analyze the total cost of ownership of electric vehicles in your fleet.
- •Determine where and how you will charge your electric fleet vehicles
- Work with Oncor to minimize the cost of delivering power to your charging infrastructure
- Design site modifications necessary
- Make site modifications
- Install level 2 / DC Fast Charging infrastructure and signage as appropriate
- Develop criteria for expanding fleet electrification and infrastructure

## Oncor

- Advise on your site plans to reduce the cost of delivering power to your charging infrastructure
- Coordinate system upgrades (if any) that will be needed to support
- Work with your contractors to deliver power to agreed upon charging sites.
- Connect and test electrical infrastructure to the meter.



# **Public Charging**



# What You Can Do, What We Will Do

## You

- Determine preferred sites in your city where your analysis indicates underserved populations, lower income and visitor populations would best be able to access public charging.
- Work with Oncor to plan how to minimize the cost of delivering power to such sites.
- Develop expedited permitting process and forms.
- Make information about these preferred sites available to charging infrastructure providers.
- Develop criteria for expanding fleet electrification and infrastructure

# Oncor

- Advise on your site plans to reduce the cost of delivering power to the proposed charging infrastructure
- Coordinate system upgrades (if any) that will be needed to support
- Work with developer contractors to deliver power to agreed upon charging sites.
- Connect and test electrical infrastructure to the meter.



# Multiple Residential, Commercial and Industrial Charging



# What You Can Do, What We Will Do

# You

- Determine what approach best meets the needs for establishing EV charging standards.
- •Develop an expedited permitting process and forms.
- Outreach to owners and or developers as to standards and provide forms needed.
- •Develop criteria for expanding electrification and infrastructure

# Oncor

- Advise on site plans to reduce the cost of delivering power to charging infrastructure
- Coordinate system upgrades (if any) that will be needed to support
- Work with your contractors to deliver power to agreed upon charging sites.
- Connect and test electrical infrastructure to the meter.





#### ONCOR NEW CONSTRUCTION MANAGEMENT - EV

2018 Electric Vehicle (EV) Requests

Stephanie Garrett - Manager, New Construction Management

# **Accessing Oncor**

#### Starting New EV Service

To start service with Oncor the customer can call into the contact center (888.222.8045) or email <a href="NewConstructionManagement@oncor.com">NewConstructionManagement@oncor.com</a>. The Project Manager assigned to the project for those areas will require three simple pieces of information: Load, Site Plan, and Timeline. These items help determine the size of facilities that Oncor will need to install, where we might install them on the site, and the customer expectations of when service is required. The project will then follow the basic process below: Depending on the scope of work the project can have a general timeframe from 30days to 90days to complete service.



#### **Required Documents**

Oncor must have the following to schedule a crew for installation of facilities:

- Signed service agreement
- Easement\*
- Civil completed\* Site Ready
- Payment received\*

#### Construction

During the construction phase it is important to keep the area clear of debris for our crews to perform the work necessary to provide service. If customer civil work is being performed this must be inspected by an Oncor Inspector and follow Oncor's Construction Specifications (Oncor- Construction Guidelines). Construction timeframes will range from two weeks to four weeks depending on the scope of work for the project.

#### Meter Installation

When it is time for the meter to be installed it is important to make sure that the following is completed and coordinated:

- Oncor will provide an ESID number to the customer to use to make "Application for Service" with the Retail Electric Provider of their choice (<u>www.powertochoose.org</u>).
- City must send in a confirmed city inspection to Oncor's New Construction Management Center (NCMC) at <u>c3ncmc@oncor.com</u> or Fax: 888.222.9716 on the previously provided ESID account.\*
- Customer must then apply for service on the same ESID Account provided previously with their selected Retail Electric Provider.
- Once the inspection and the application for service have been received Oncor will receive an order to set the meter.

<sup>\*</sup>Note: In areas outside of the City boundaries, City inspections may not be required but meter base installations will still need to follow Oncor's service guidelines (Oncor- Electric Service Guidelines).



<sup>\*</sup>Items are "if applicable" and forms sent to customer via Project Manager

# Back up



# Electric delivery vehicles in production or planned

DETROIT (Reuters Feb 22, 2018) - United Parcel Service Inc on Thursday said it would partner with truck maker Workhorse Group Inc to build an all-new electric van for the package delivery company's fleet.

Manufacturers are racing to bring cost-effective electric vehicles with sufficient battery range to market. Here are some other recent developments:

- \* In September, <u>Daimler AG</u> unveiled its battery-powered <u>eCanter truck</u> and announced UPS as its first U.S. commercial customer.
- \* In November, U.S. truck leasing and rental company <u>Ryder System Inc.</u> said it would <u>buy 125 delivery vans from Chanje</u>, a unit of <u>China's FDG Electric Vehicles Ltd.</u> which has annual production capacity of 100,000 units from its factory in China.
- •SAIC Motor Corp Ltd, China's largest automaker, has <u>developed an electric van that went on sale in Germany in January.</u>
- •In February <u>UPS</u> announced it <u>will purchase 50 Workhorse electric vans with 100 mile range for a price lower than comparable diesel vans without subsidies leading to a lower total cost of operations. These vans will be <u>test driven in Dallas</u>, Los Angeles and Atlanta.</u>
- •<u>Volvo</u> announced the <u>FL Electric class 4 van with up to 185 mile range</u> on a 300kWh battery pack that <u>charges by DCFC in 1-2 hours or level 2 AC charging in less than 10 hours</u>.
- \* <u>DHL and Ford Motor Co</u> have co-developed an <u>electric van for the Deutsche Post AG</u> unit. Production began in the second quarter and plans to deliver 2,500 vehicles by the end of 2018.
- \* <u>Nissan Motor Co</u>, unveiled a <u>concept model of its e-NV200 electric van with refrigeration capabilities</u> and plans to introduce the e-NV200 series in China in the near term.



# **Economics – per Workhorse Electric Van CEO Stephen Burns**

"Fleet operators used to the costs of buying fuel for 6-mpg delivery trucks will see a clear financial benefit to an electric truck from Day One if they're leasing it, Burns said, when lease payments, fuel, and maintenance are added together.

And that's even without the Federal tax credit for buying a plug-in electric truck, he claims.

The lack of a transmission in electric trucks is particularly appealing to fleet operators, Burns said, who must typically spend significant money on regular transmission maintenance in trucks that operate entirely in stop-and-go traffic.

Many operators, in fact, will save more on the maintenance of their trucks than they do by eliminating or vastly reducing their fuel purchases.

Even for those operators who buy their trucks outright, the payback is between two and three years."

# **Making Electric Charging Affordable**

UPS recently rolled out "smart charging" software at a central London facility that allowed the company to nearly triple its local electric fleet to 170 delivery vans.

The smart charging technology determines when and how fast to charge vehicles. If vehicles are not scheduled for a full route the next day, the system can opt not to fully charge them and charge other vehicles more. Without the software, UPS would have had to install enough infrastructure to charge all the vehicles at the same time.



# **Programs from TCEQ Texas Clean Fleet Program**

For the ten non-attainment counties in the Oncor service area, TCEQ may provide assistance.

Grants are made for fleet owners of at least 75 over the road vehicles, with at least 20 on road diesel vehicles eligible for replacement.

Currently the program has made all awards under the 2015 funding and is working through a program restart under 2017 funding.

## **Contact person:**

**Gloria Lyall** 512-239-3602



# Other Municipal Only Assistance from TCEQ

**Texas Clean School Bus Program** 

https://www.tceq.texas.gov/airquality/terp/school-buses.html

The EPA has a similar rebate program (2010 Congressional program expired a year ago) and grant program (2018 version closed a few months ago), both as diesel reduction only

Fleets for the Future ... gov't/councils bulk purchase program (locally as a NCTCOG partner)

http://www.fleetsforthefuture.org/dallas-fort-worth/





# Renewable Natural Gas for Fleets

August 21, 2018





## **2017 CLEAN ENERGY RENEWABLES HIGHLIGHTS**

78<sub>MM</sub> GALLONS SOLD

24 RNG SUPPLY SOURCES



# **Driving Future Growth**

The Cleanest Fuel Available in the U.S. Today.

100% Renewable Fuel

- Can be CNG or LNG
- Achieves Sustainability Goals for companies and agencies faster than
- any other initiative.

Can be sent to any of Clean Energy's 570+ public and private stations

Lowers GHG by 70%





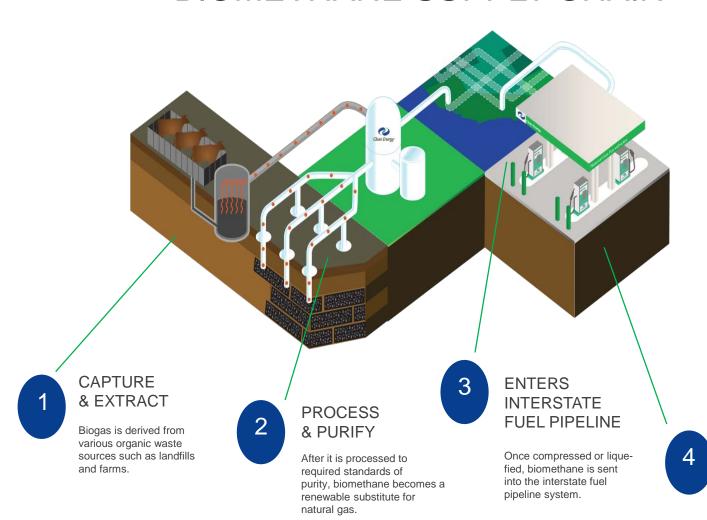








# **BIOMETHANE SUPPLY CHAIN**



MADE AVAILABLE AT FUELING STATIONS

The biomethane is routed to designated Clean Energy stations that fuel an array of commercial vehicles.

# Renewable Fuel Standard

 The Energy Independence and Security Act ("EISA") established the RFS2 and increases volume of renewable fuel required to:

36 Billion gallons by 2022 and moves the focus of renewable fuels from traditional sources to "advanced" and "cellulosic" biomass feedstocks.

#### **GOALS:**

- Decrease US dependence on foreign oil
- Improve air quality
- Support and increase green jobs

# Renewable Fuel Standard – The Basics

- Obligated Parties\* producers and importers of gasoline and diesel
- Renewable Fuel Producers\*\* EPA-approved companies who make renewable fuels
- Non-Obligated Parties companies who do not produce or import gasoline or diesel
- Small Refineries/Small Refiners Refiners exempted from RVOs
- \* These entities have annual RVOs for the year they perform this activity
- \*\* These entities generate RINs

#### Common Abbreviations:

RVO = Renewable Volume Obligation

**EMTS** = **EPA** Moderated Transaction System

QAP = Quality Assurance Plan

# Renewable Fuel Standard, cont'd.

 Renewable Fuel Standard 2 (RFS2) sets mandates for the consumption of renewable fuels in the US. Renewable volume obligation (RVO) indicate the volumes of specific renewable fuel categories.

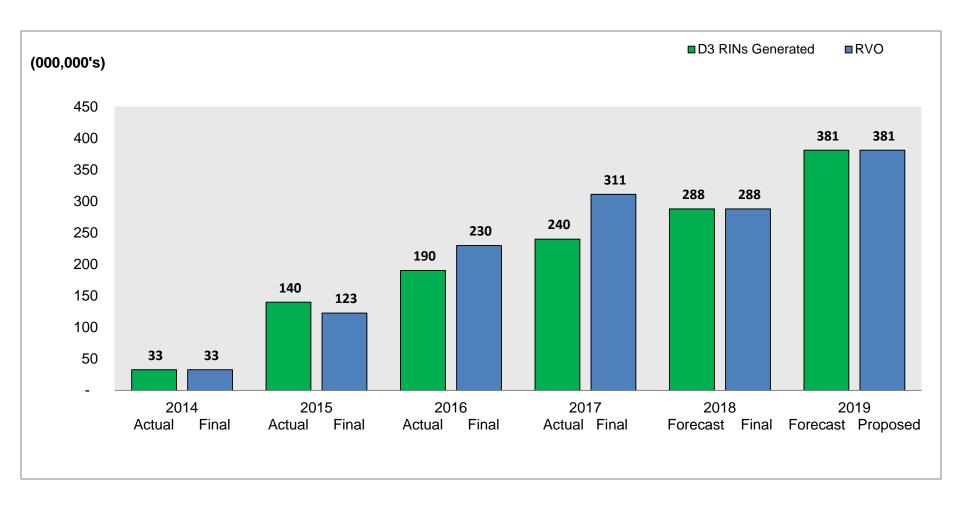
#### **How it Works**

- RINs (Renewable Identification Numbers) are generated by the producer or importer of renewable fuels for each gallon of biofuel produced and reported to EPA
- RINs are then sold to obligated parties (gasoline and diesel producers and/or importers)
- Obligated parties must achieve 36 billion gallons of renewable fuel by 2022

#### **Clean Energy Renewables Role**

 CER contract, markets and distributes RNG from producers to its vehicle fuel infrastructure, managing the entire value chain with respect to compliance, reporting, generation and monetization of environmental attributes (RINs and/or LCFS credits)

# **RNG Industry Growth**



# Renewable Fuel Standard

# Renewable Fuel Standard (billions of gallons per year)





www.CleanEnergyFuels.com









Thank you

# History of CNG at DFW International Airport

- Constructed first CNG station in 2002
- Added second fueling island
- Added additional compressors
- Added additional storage
- Consume 1.6 million DGE annually
  - 213 delivery trucks annually
- This station supports the operation of 263 Airport Vehicles









## History of CNG at DFW International Airport

- Constructed second CNG station in 2010
- Dual compressors
- Separate fueling islands (Private/Public)
- Consume 706,318 DGE annually
  - 94 delivery trucks annually
- This station supports the operation of 54 Airport vehicles







### Compressed Natural Gas Fleet

- Regional National Ambient Air Quality Standard (NAAQS) non-attainment for ozone
  - 13% well-to-wheel reduction of emissions when compared to diesel
  - Piped fuel reduces transport emissions
- 100% CNG bus fleet
  - 187 buses
  - Average 58,000 mi/yr/bus
  - Drive over 11 million miles/yr
- 86% of fleet fuel is CNG





#### Renewable Natural Gas

- Drop-in solution
- Local landfill methane capture project
- 70%+ lifecycle emissions reduction
- The RNG supplied will increase annually from 10% to 90% through 2025
  - 15,000 metric tons per year of emissions reductions
  - Equivalent to removing 3,200 passenger vehicles from the road for a year
- Since October 2017, DFW has received 30% RNG







### **VOLKSWAGEN SETTLEMENT UPDATE**

DFW Clean Cities Bi-Annual Meeting August 21, 2018

Lori Clark
Program Manager
DFW Clean Cities Coordinator



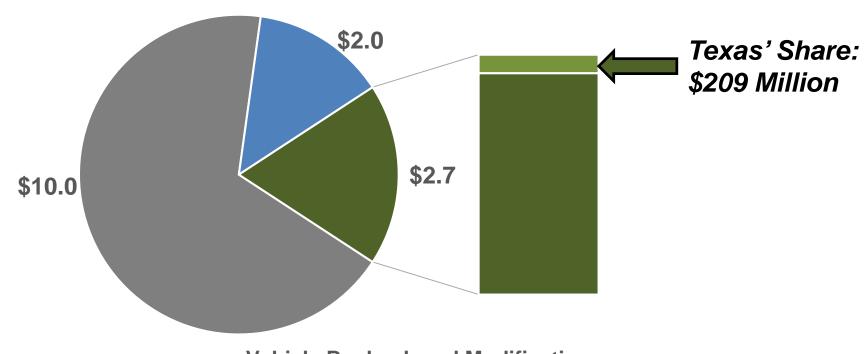
#### **SETTLEMENT BREAKDOWN**

**Total Settlement to Date: \$14.7 Billion** 

Zero Emission Vehicle (ZEV) Investment - Managed by Electrify America

**Environmental Mitigation Trust (Trust) - Distributed to States** 

Settlement Breakdown (\$ in Billions)

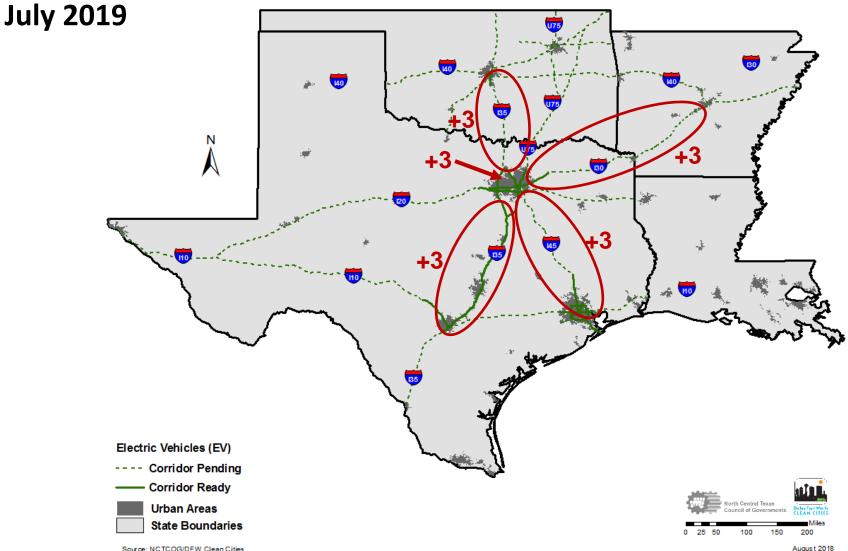


- Vehicle Buyback and Modification
- ZEV Investment
- Environmental Mitigation Trust

#### NATIONAL ZEV INVESTMENT PLAN

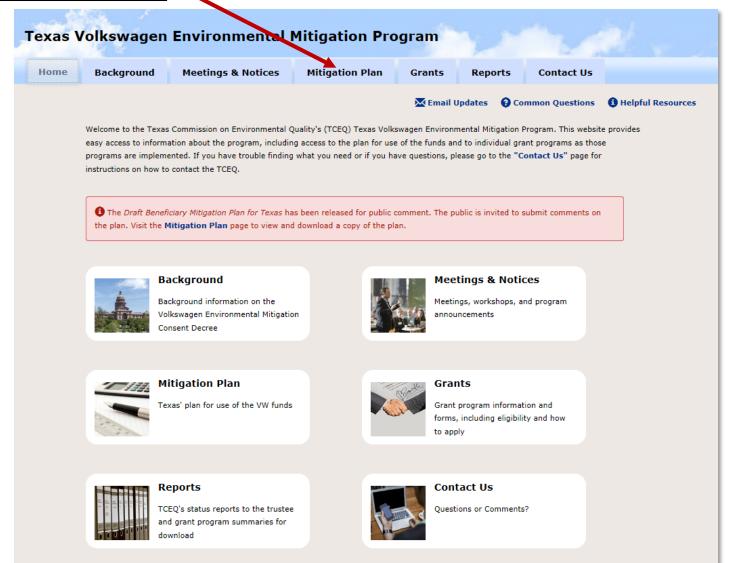
\$1.2 Billion Commitment Nationwide (Outside California)

\$300 Million "Cycle 1" Funding Includes New Recharging Stations by



#### **ENVIRONMENTAL MITIGATION TRUST**

Draft Beneficiary Mitigation Plan for Texas Released August 8, 2018 <a href="https://www.texasVWFund.org">www.texasVWFund.org</a>



#### TCEQ GOALS FOR USE OF FUNDS

- 1. Reduce Nitrogen Oxides (NO<sub>x</sub>) Emissions
- 2. Reduce the Potential for Exposure of the Public to Pollutants
- 3. Prepare for Increased and Sustained Use of ZEVs
- 4. Complement Other Incentive Funding Programs



#### **ELIGIBLE PROJECT TYPES**

X = NOT Included in TCEQ Draft Beneficiary Mitigation Plan for Texas

#### **Eligible Mitigation Actions 1-9**

- 1. Replace/Repower Freight and Port Drayage Trucks (Class 8) **Includes Dump Trucks, Waste Haulers, Concrete Mixers**
- 2. Replace/Repower School, Shuttle, and Transit Buses (Class 4-8)
- **X** Replace/Repower Freight Switchers
- Replace/Repower Ferries/Tugs
- 5. Install Ocean-Going Vessels Shorepower
- 6. Replace/Repower Freight Trucks (Class 4-7) Includes Dump Trucks, Waste Haulers, and Concrete Mixers
- 7. Replace/Repower Airport Ground Support Equipment
- 8. Replace/Repower Forklifts and Port Cargo Handling Equipment
- 9. Deploy Light-Duty ZEV Supply Equipment

#### **Eligible Mitigation Action 10**

Diesel Emission Reduction Act Option for State Clean Diesel Program

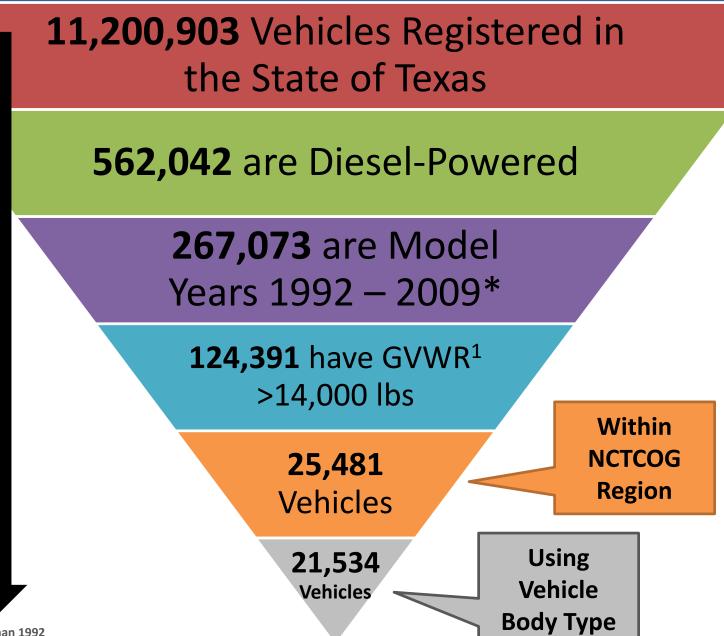
#### PROPOSED FUNDING LEVELS FOR TEXAS: ON-ROAD

Class 4-7 Local Freight Trucks
Class 8 Local Freight Trucks and Port
Drayage Trucks

Class 7-8 Refuse Haulers School Buses Transit/Shuttle Buses

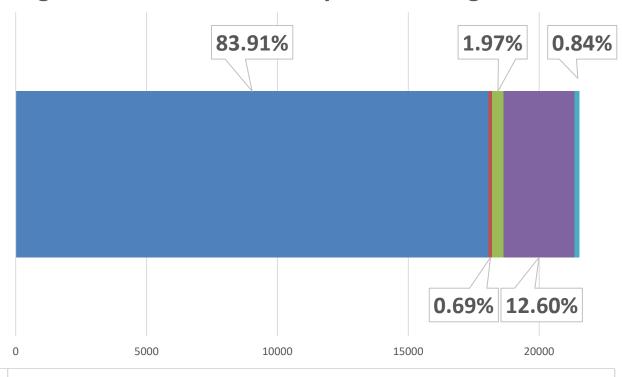
Project Type	Ownership	New Fuel Type	Funding Allowed by Trust	Funding Proposed by TCEQ
Replace or Repower	<b>Govt Owned</b>	Electric Alt Fuel/Hybrid Diesel	100% 100% 100%	60% 60% 60%
Replace	Non-Govt Owned	Electric Alt Fuel/Hybrid Diesel	75% 25%* 25%*	60% 25%* 25%*
Repower	Non-Govt Owned	Electric Alt Fuel/Hybrid Diesel	75% 40% 40%	60% 40% 40%

#### **ELIGIBLE ON-ROAD VEHICLES BREAKDOWN**



#### **ON-ROAD VEHICLE CATEGORY FOCUS AREAS**

#### **Total Number of Eligible Vehicles in 12-County NCTCOG Region**



■ Class 8 Local Freight & Port  Drayage Trucks	18,067
■ Class 4-8 School Buses	148
■ Class 4-8 Transit and Shuttle  Buses	424
■ Class 4-7 Local Freight Trucks	2,714
■ Class 7-8 Refuse Vehicles	181

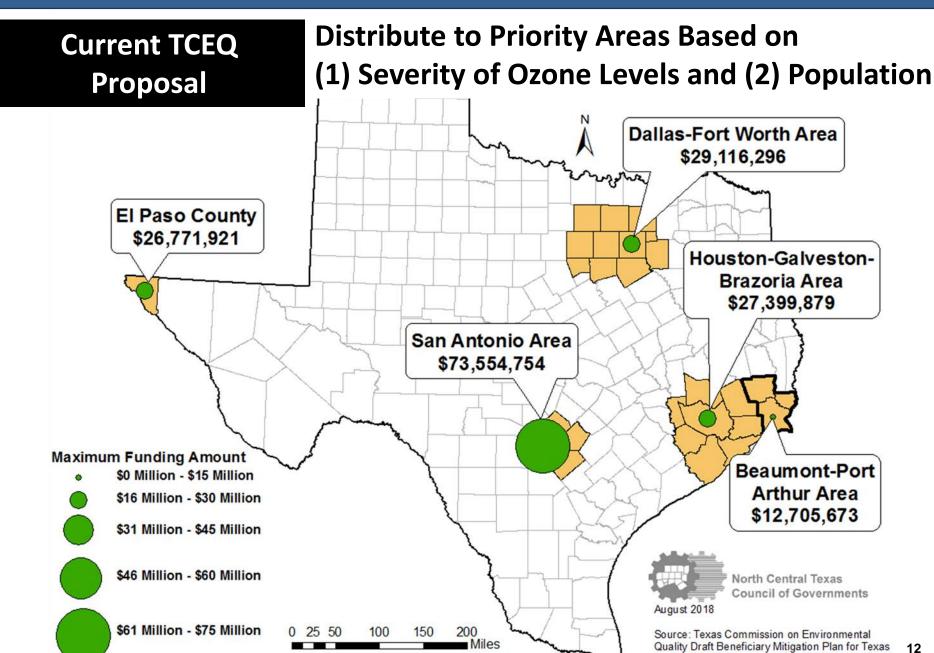
#### PROPOSED FUNDING LEVELS FOR TEXAS: OTHER

Project Type	Ownership	Fuel Type	Funding Allowed by Trust	Funding Proposed by TCEQ
Install ZEV Supply Equipment	<b>Govt Owned</b>	Electric Hydrogen	100% 25-33%	<b>50%</b> 25%-33%
	Non-Govt Owned	Electric Hydrogen	60%-80% 25%-33%	<b>50%</b> 25%-33%
Replace/Repower Airport Ground	<b>Govt Owned</b>	Electric	100%	60%
Support Equipment	Non-Govt Owned	Electric	75%	60%
Replace/Repower Forklifts or Port Cargo-	<b>Govt Owned</b>	Electric	100%	60%
Handing Equipment	Non-Govt Owned	Electric	75%	60%

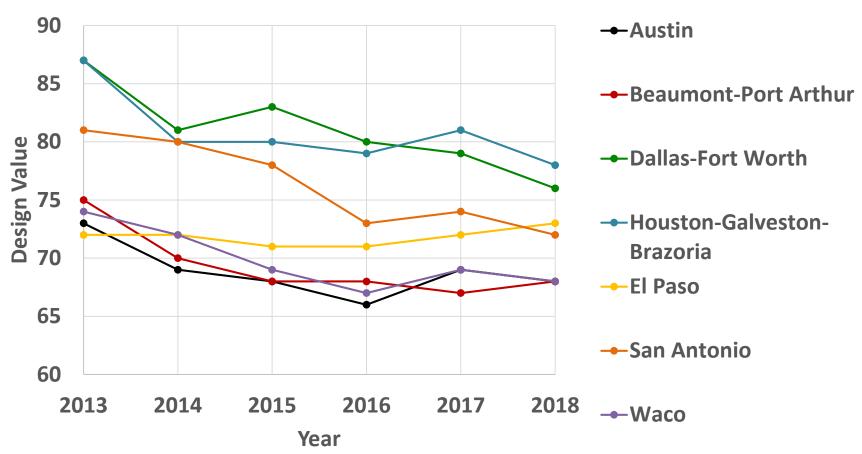
#### **Previous Regional Transportation Council (RTC) Recommendation**

Allow Administration through Select Regional Councils; Funding Proportional to Number of Registered Violating Vehicles

Texas Regional Council	RTC-Recommended Settlement (\$ in Millions)
Alamo Area Council of Governments (San Antonio Area)	\$27.4
Capital Area Council of Governments (Austin Area)	\$32.9
<b>Houston-Galveston Area Council</b>	\$58.9
North Central Texas Council of Governments	\$63.0
Rio Grande Council of Governments (El Paso Area)	\$5.9
Rest of State	\$20.9





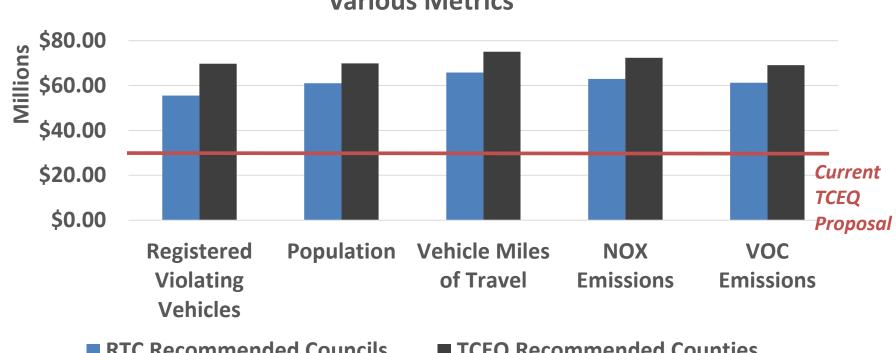


Austin and Waco Areas have Higher Observed Ozone Levels than Beaumont-Port Arthur

#### **Proposed Comment:**

Re-Evaluate Methodology for Geographic Distribution to Ensure Fair Share Allocation to DFW Ozone Nonattainment Area: **Previous RTC Recommendation = \$63 Million** 

#### Potential Fair Share Allocations to NCTCOG Based on **Various Metrics**



■ RTC Recommended Councils

**■ TCEQ Recommended Counties** 

#### POTENTIAL NCTCOG COMMENTS

## Allow Administration through Councils of Government/Metropolitan Planning Organizations in Priority Areas

NCTCOG Would Not Charge Administrative Costs

#### **Ensure Fair Share Allocation to Regions**

NCTCOG Should Receive \$63 Million

#### **Utilize Latest/Greatest Quantification Methodologies**

 Select Tool that Estimates Multipollutant Benefits and Accurately Reflects Real-World Emissions Benefits of Alternative Fuels Relative to Diesel Engines (e.g. Argonne National Laboratory AFLEET Tool and EPA Diesel Emissions Quantifier)

#### MITIGATION TRUST SCHEDULE

Milestone	Date
Draft Beneficiary Mitigation Plan for Texas Released	August 8, 2018
Surface Transportation Technical Committee Meeting	August 24, 2018
RTC Meeting	September 13, 2018
TCEQ Public Hearings -At NCTCOG Offices	September 10-26, 2018 -September 14, 2018
<b>Deadline for Comments</b>	October 8, 2018
First Application Round Opens	Expected by End of 2018

#### **OTHER FUNDING & INCENTIVES - FLEETS**

Program	Funding Level
Clean Fleets North Texas 2018 Call for Projects	45% for Electric
-Replace Older Heavy-Duty Diesel Vehicles or	35% for CARB Low-NOX
Equipment	(LPG or CNG)
	25% for All Others
<b>Light-Duty Motor Vehicle Purchase or Lease</b>	\$2,500 for EVs;
Incentive Program (LDLIP)	\$5,000 for LPG/CNG
-Purchase or Lease New Vehicles (Conversions	
Allowed for Natural Gas or Propane)	
Texas Natural Gas Vehicle Grant Program	Set Amounts Based on
-Replace or Repower Gasoline or Diesel Vehicles	<b>Vehicle Characteristics</b>
with Natural Gas or Propane	

#### **OTHER FUNDING & INCENTIVES - CONSUMERS**

#### **Promote Citizen Purchases!**

Vehicle Incentives	Amount	Agency
Plug-In Electric Drive Motor Vehicle  Credit	Up to \$7,500	Federal
<u>Light-Duty Motor Vehicle Purchase or</u> <u>Lease Incentive Program (LDLIP)</u>	Up to \$2,500	State of Texas
AirCheckTexas Drive a Clean Machine Program	Up to \$3,500	Participating Counties
Total Possible Savings Per Vehicle	: Up to \$1	3,500

PLUS an Extra \$3,000 off a Nissan LEAF for Oncor customers!

#### FOR MORE INFORMATION

Lori Clark
Program Manager
DFW Clean Cities Coordinator
817-695-9232
Iclark@nctcog.org

Nancy Luong
Air Quality Planner
817-704-5697
nluong@nctcog.org





Go To www.nctcog.org/airquality; Select "Funding and Resources"

#### 2018 Fleet Recognition Awards





DFW Clean Cities Bi- Annual Meeting
August 21, 2018

**Bailey Muller**Air Quality Planner, NCTCOG

### DFWCC Annual Report Results: 2017

Fleet Surveys Received: 33



NOx



23,266,539

Gasoline gallon equivalents reduced

782,428

Pounds of NOx reduced

181

Stakeholders

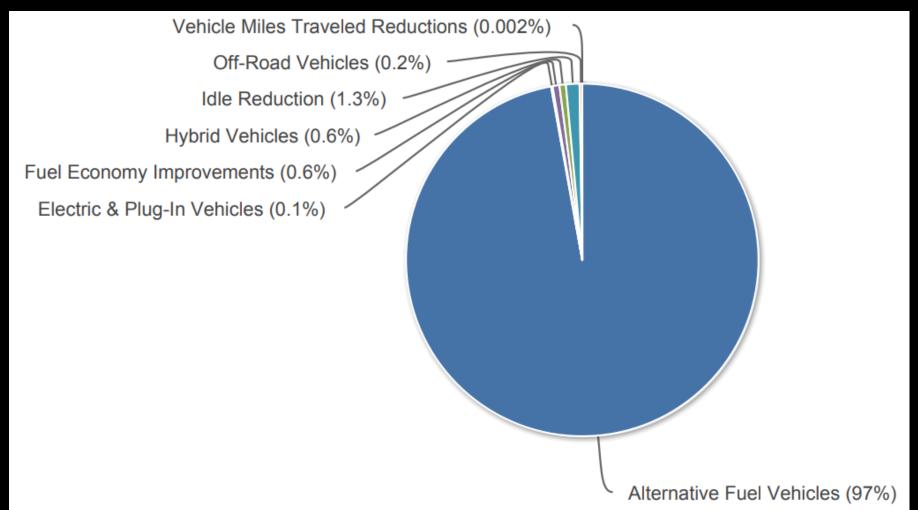
See the DFWCC annual report for more details:

https://www.dfwcleancities.org/annualreport

Image source: Getty images

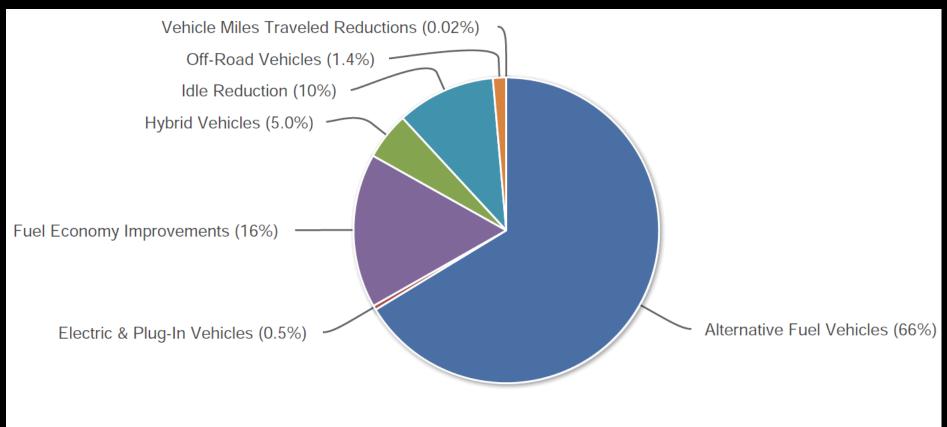
## 2017 Gallons of Gasoline Equivalent Reduced by Strategy

23,266,539 Gallons



## 2017 Greenhouse Gas Emissions Reduced

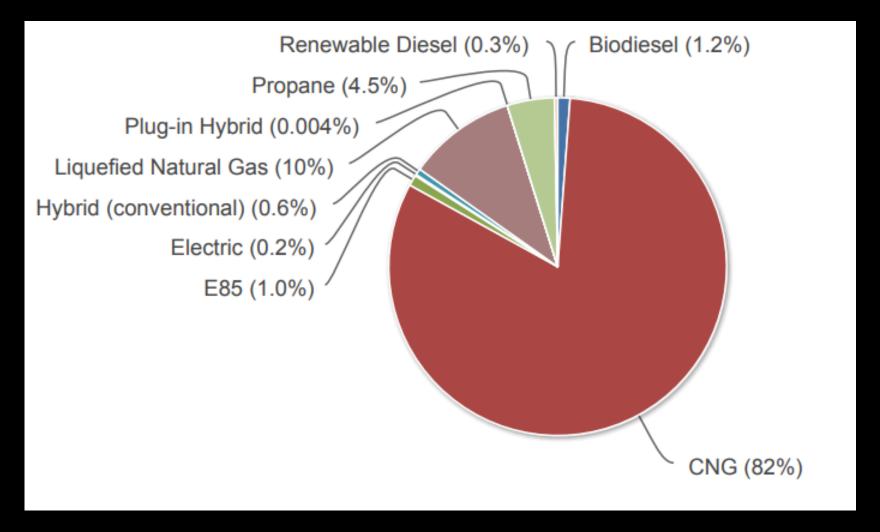
32,875 Tons



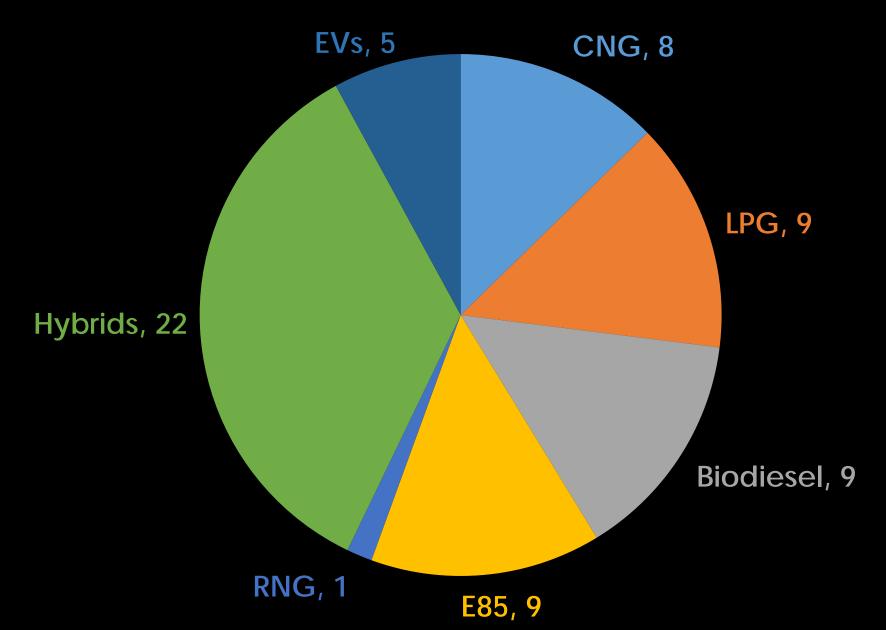
Equivalent to saving 35,128 acres of forests

# Gallons of Gasoline Equivalent Reduced for Alternative Fuel Projects

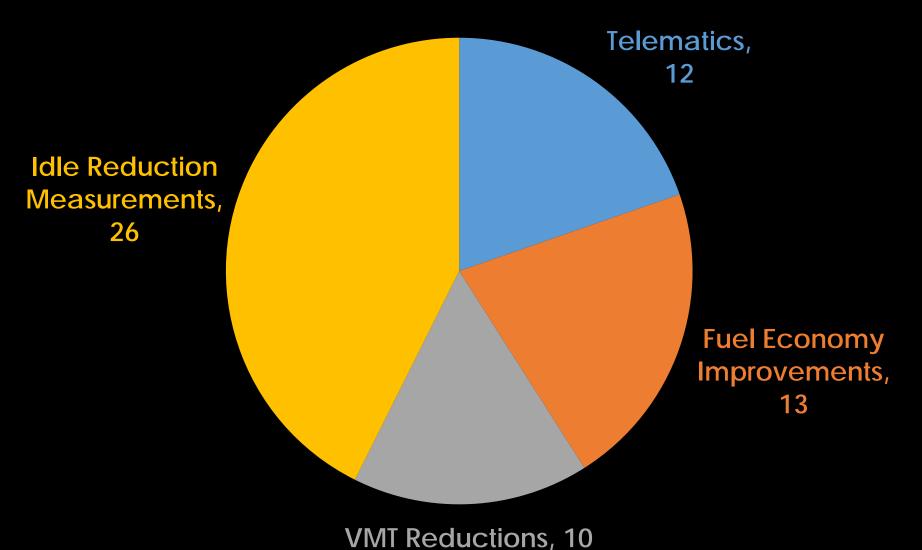
22,542,676 Gallons



## FLEETS USING ALTERNATIVE FUELS 33 REPORTED FLEETS



# FLEETS EMPLOYING FUEL EFFICIENCY MEASURES 33 REPORTED FLEETS



## And the Fleet Recognition Winners Are....

# 2018 DFW Clean Cities Fleet Recognition Awards



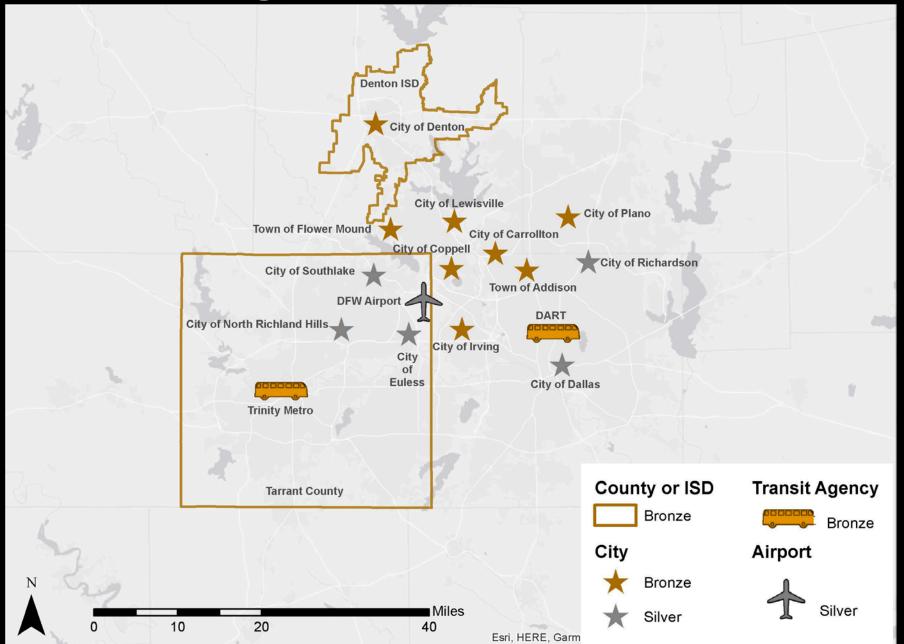


# 2018 DFW Clean Cities Fleet Recognition Awards





### Congrats to All Awardees!



#### For Further Information

Bailey Muller
Air Quality Planner
bmuller@nctcog.org

Lori Clark
Program Manager
DFW Clean Cities Coordinator
<a href="mailto:lclark@nctcog.org">lclark@nctcog.org</a>

### www.dfwcleancities.org



# Thank you to our DFW Clean Cities Sponsors

### -chargepoin+







For sponsorship levels and benefits, please visit:

https://www.dfwcleancities.org/sponsorus

Or contact <u>cleancities@nctcog.org</u>