

# TCC Conference



**Dallas-Fort Worth  
Clean Cities Coalition**  
April 28, 2016

**Kenny Bergstrom**  
Communications Specialist  
[kbergstrom@nctcog.org](mailto:kbergstrom@nctcog.org)

**Clean Cities was created by the Department of Energy (DOE) to Address the Requirements of the Energy Policy Act (EPAAct) of 1992:**

- To advance the nation's economic, environmental, and energy security by supporting local practices that contribute to the reduction of petroleum consumption in the transportation sector.
- Currently, the National Clean Cities Program is part of the Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Program.

# Objectives of the Clean Cities Program



## About 90 Volunteer Coalitions That Develop Public/Private Partnerships to:

- Facilitate the deployment of alternative fuel vehicles (AFVs)
- Support the installation of an alternative fuel refueling infrastructure
- Increase the use of fuel blends (i.e. diesel/biodiesel & ethanol/gasoline)
- Accelerate sales of hybrid electric vehicles
- Promote informed consumer choice on fuel economy
- Encourage the use of idle reduction technologies/policies for heavy-duty trucks and other vehicles



## **Coordinators**

- Local Champion and Point of Contact
- Strong Local Relationships and Understanding of Player and Issues

## **Coalitions**

- Members/Stakeholders are Committed to the Mission
- Build Bridges in the Local Community to Mutually Address Barriers

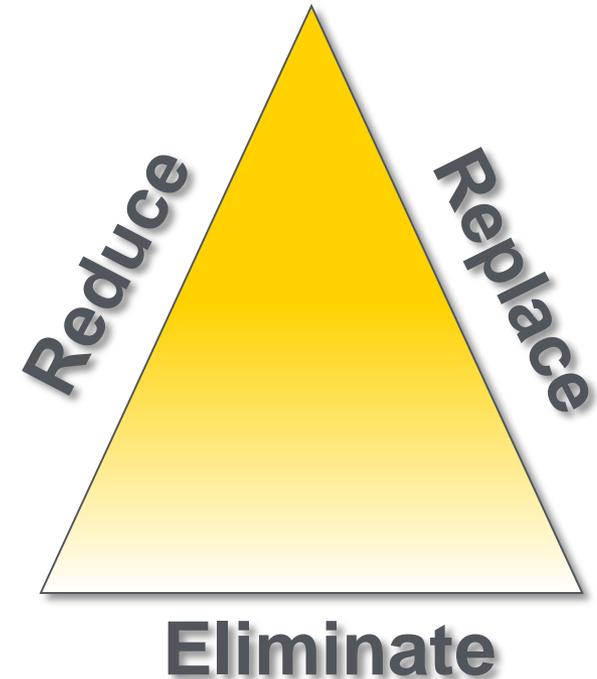
## **Local Strategy to Advance a National Goal**

- Local Involvement Works Effectively in Communities
- National Leadership Adds Legitimacy to Local Activities and Assists with Information Transfer Among Coalitions

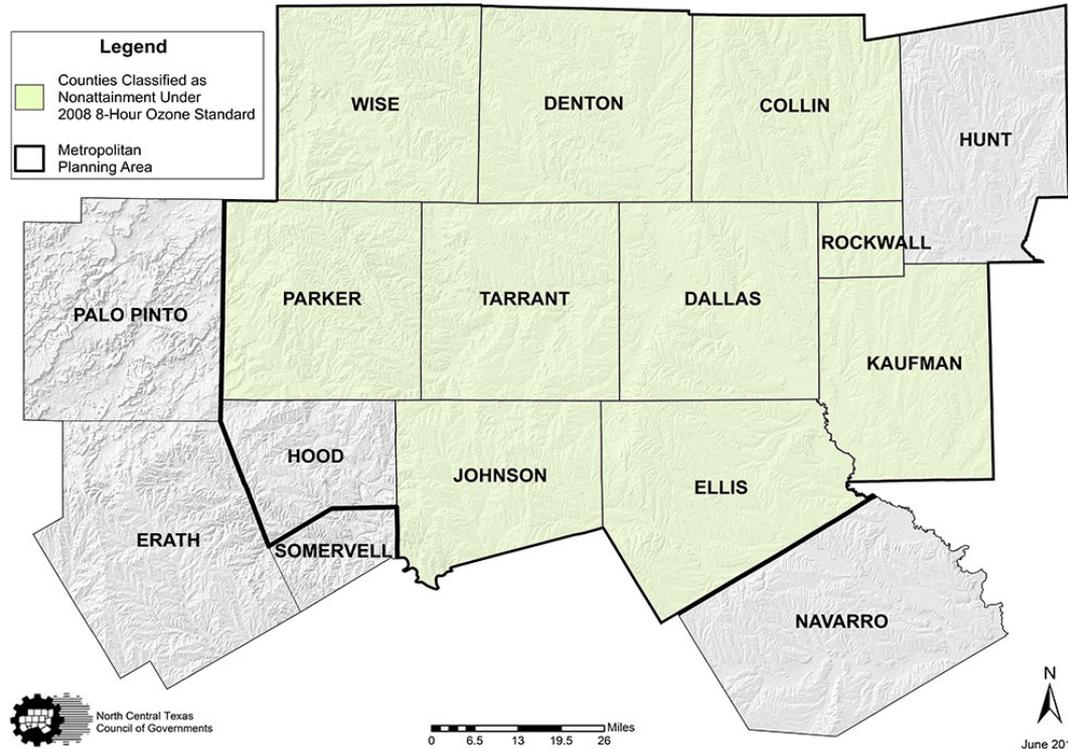
# Petroleum Replacement Strategies



- Replace petroleum with alternative fuels and low-level blends.
- Reduce by promoting energy efficiency in vehicles through advanced technologies and more fuel efficient vehicles.
- Eliminate by promoting idle reduction, greater use of mass transit, trip elimination, and other congestion mitigation approaches.



# DFW Clean Cities



Population: 7 Million

Land Area: 8,124 sq. mi.

Coalition Designated: 1995

Number of Stakeholders: 169

## Who We Are

In 1995, the Dallas-Fort Worth Clean Cities (DFWCC) became one of the first Clean Cities under the Energy Policy Act's provision for an organization that promotes the use of alternative fuels to lessen America's dependence on foreign sources of petroleum.

## Vision Statement

Leading the region in petroleum and emissions reduction measures to improve air and increase energy security.

## Mission Statement

Dallas-Fort Worth Clean Cities is a locally based, public/private partnership that seeks to advance energy security, protect environmental and public health, and stimulate economic development by promoting practices and decisions to reduce petroleum consumption and improve air quality, primarily in the transportation sector.

## Public Fleets:

City of Dallas  
City of Denton  
City of Fort Worth  
City of Irving  
City of Richardson  
Dallas Area Rapid Transit  
DFW International Airport  
Fort Worth ISD  
Fort Worth Transportation  
Authority  
Mansfield ISD  
Tarrant County  
TxDOT

## Private Fleets:

AT&T  
Dean Foods  
McShan's Florist  
Frito-Lay  
Super Shuttle  
Schwann Food Service  
Verizon



# Alternative Fuels Portfolio of Technologies



## Alternative Fuels and Vehicles

- Biodiesel (B100)
- Electricity
- Ethanol (E85)
- Hydrogen
- Natural Gas
- Propane

## Fuel Blends

- Biodiesel/Diesel Blends  
(B2, B5, B20)
- Ethanol/Gasoline Blends (E10)
- Hydrogen/natural Gas Blends  
(HCNG)

## Fuel Economy

- Fuel Efficiency
- Behavioral Changes
- Vehicle Maintenance Initiatives
- Vehicle Miles Traveled (VMT)

## Hybrids

- Light- and Heavy-Duty HEVs
- PHEVs

## Idle Reduction

- Heavy-Duty Trucks
- School Buses
- Truck Stop Electrification

## Biodiesel

- Domestically produced, renewable fuel
- Manufactured from vegetable oils, animal fats, or recycled restaurant grease
- Reduces tailpipe emissions of unburned hydrocarbons carbon monoxide, and particulate matter
- Nontoxic and causes far less damage than petroleum diesel if spilled
- New clean diesel technology much cleaner than previous generation



## Ethanol

- Renewable fuel made from various plant materials
- More than 95 percent of US gasoline contains ethanol in low-level blends
- Contains about 27 percent less energy than a gallon of gasoline but high-octane provides increased performance



## Battery Electric Vehicle

- Onboard rechargeable batteries
- Can be recharged from a variety of resources including oil, coal, nuclear energy, natural gas, wind, and solar
- Various ranges depending on the vehicle, most are over 60 miles
- Cost-effective refueling compared to gasoline



## Plug In Hybrid

- Onboard rechargeable batteries
- Range assisted by onboard generator
- Recharge time typically lower than all-electric

## Hybrid

- Combines electric and gasoline
- Provides increased fuel economy
- Limited speed for electric only



## Compressed Natural Gas

- Odorless, nontoxic, gaseous mixture of hydrocarbons, mostly methane
- Stored in cylinders at a pressure of 3000-3,600 psi
- Achieve roughly the same fuel economy as gasoline vehicle
- Can be used in light-, medium-, and heavy-duty vehicles
- Measured in gasoline gallon equivalent (GGE)



## Liquefied Natural Gas

- Produced by purifying natural gas and cooling it to -260 degrees and turning into liquid
- Stored in double-walled, vacuum-insulated pressure vessels
- Great application for long-haul trucks
- Liquid state is more dense; more energy can be stored



## Liquefied Petroleum Gas (LPG)

- Colorless, odorless liquid
- Presents no threat to soil, surface water, or groundwater
- Produced as a by-product of natural gas processing and crude oil refining
- Accounts for about 2 percent of the energy used in the US
- Once pressure is released, the liquid propane vaporizes and turns into gas that is combustible
- Lower BTU rating than gasoline but has much higher octane rating
- Clean burning fuel allows increased engine life and increased maintenance intervals
- Third most used fuel behind gasoline and diesel
- Propane autogas consists of 90 propane and a mixture of other gases, primarily butane.



## Hydrogen

- Potentially emissions-free alternative fuel
- Most abundant element on Earth but almost always paired with other compounds
- Can be used along with oxygen in a fuel cell to create electricity i.e. fuel cell vehicle

## Idle Reduction

- It's estimated that more than 650,000 long-haul trucks idle during required rest stops every year, wasting more than 685 million gallons of fuel.
- Many cities and municipalities have idle reduction ordinances in place
- On-board equipment and truck stop electrification can be used to prevent idling

## Parts and Equipment

- Low rolling resistance tires can improve efficiency
- Improved aerodynamics can increase MPG
- Telematics systems can help fleets monitor fuel economy



**Improve Air Quality**

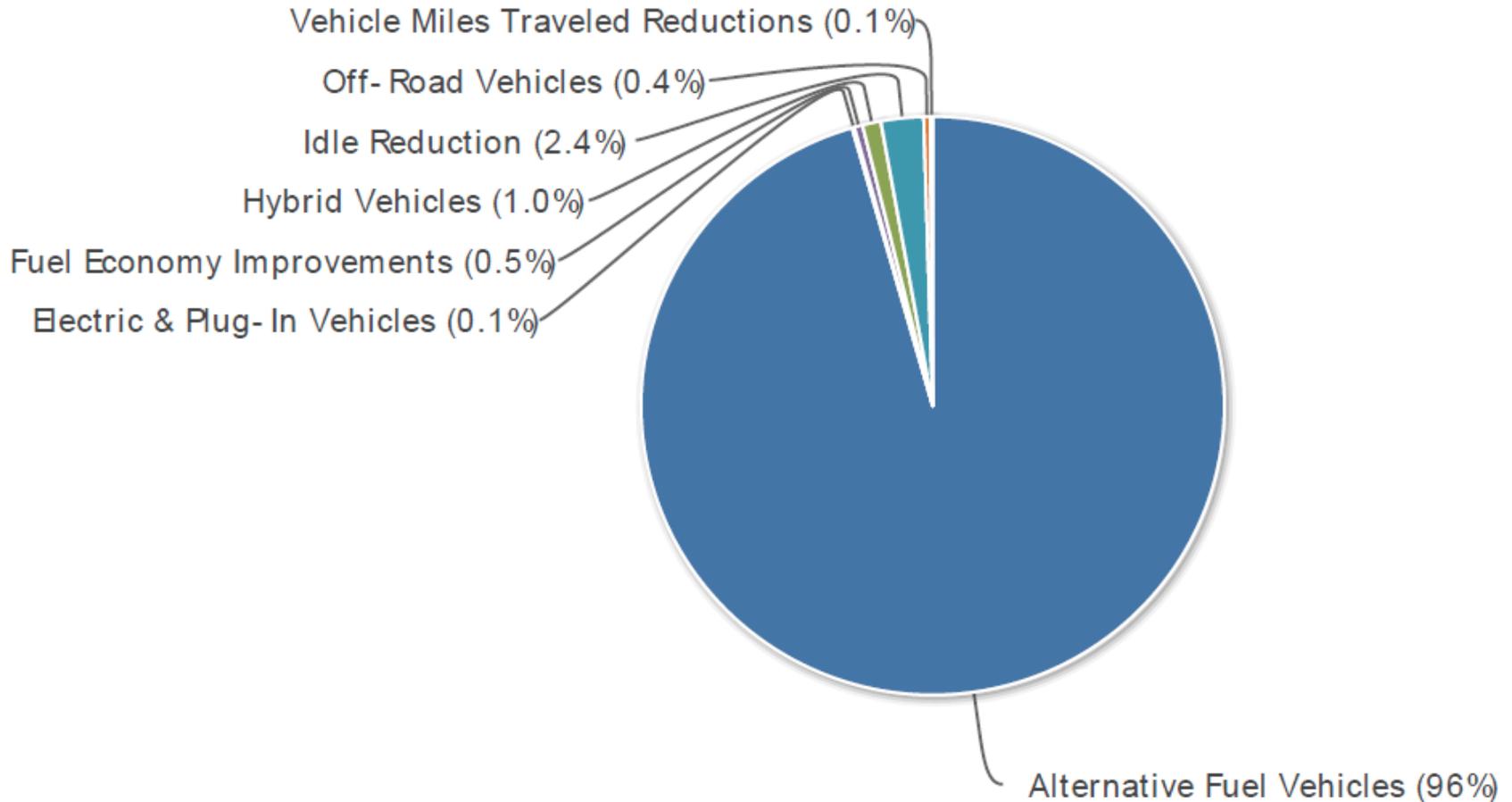
**Reduce Greenhouse Gas Emissions**

**Enhance Energy Security**

**Create Energy Related Jobs in the US**

## 2015 Gallons of Gasoline Equivalent Reduced

23,255,172 gallons



## 2015 Greenhouse Gas Emissions Reduced

35,879 tons

Vehicle Miles Traveled Reductions (1.1%)

Off-Road Vehicles (1.8%)

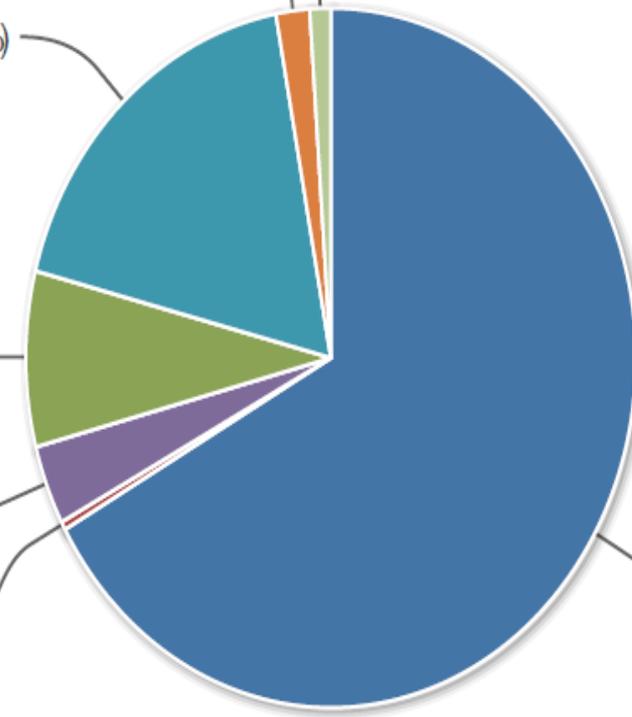
Idle Reduction (18%)

Hybrid Vehicles (8.1%)

Fuel Economy Improvements (3.7%)

Electric & Plug-In Vehicles (0.4%)

Alternative Fuel Vehicles (67%)



# Clean Cities Web Resources



U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

BERE Home | Programs & Offices | Consumer Information

**Clean Cities**

Search:  SEARCH

HOME ABOUT COALITIONS FINANCIAL OPPORTUNITIES INFORMATION COLLABORATION

BERE » Clean Cities

## Building Partnerships to Reduce Petroleum U

Clean Cities advances the nation's economic, environmental, and energy security supporting local actions to reduce petroleum consumption in transportation. A network of nearly 100 Clean Cities *coalitions* brings together stakeholders in the and private sectors to deploy alternative and renewable fuels, idle-reduction mea fuel economy improvements, and emerging transportation technologies.



### RESOURCES

[Alternative Fuels Data Center](#) »  
The AFDC website provides information, [tools](#), and [data](#) to help you make decisions about alternative fuels and advanced vehicle options.

[FuelEconomy.gov](#) »  
This website compares gas mileage, emissions, air pollution ratings, and safety data for new and used vehicles.

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

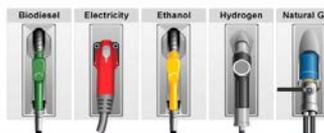
BERE Home | Programs & Offices | Consumer Information

**Alternative Fuels Data Center**

Search:  SEARCH

Maps & Data Case Studies Publications Tools About Home

### Fuels & Vehicles



Test your alt fu

Take our quiz to assess your kn of alternative fuels, advanced vehicles, and emissions.

**The Information Source for Alternative Fuels and Advan**

The Alternative Fuels Data Center (AFDC) provides information, data, and tools to he transportation decision makers find ways to reduce petroleum consumption through and renewable fuels, advanced vehicles, and other fuel-saving measures.



U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Office of Transportation & Air Quality U.S. ENVIRONMENTAL PROTECTION AGENCY

**www.fueleconomy.gov**

the official U.S. government source for fuel economy information

Mobile Español Site Map Links FAQ Videos Contacts

Find a Car Save Money & Fuel Benefits My MPG Advanced Vehicles & Fuels About EPA Ratings More...

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Office of Transportation & Air Quality U.S. ENVIRONMENTAL PROTECTION AGENCY

**www.fueleconomy.gov**

the official U.S. government source for fuel economy information

Mobile Español Site Map Links FAQ Videos Contacts

Find a Car Save Money & Fuel Benefits My MPG Advanced Vehicles & Fuels About EPA Ratings More...

Planning a trip this summer?

Estimate your fuel costs with our trip calculator!

<p><b>Find and Compare Cars</b></p> <p>MPG ratings for new and used cars Compare Side-by-Side Power Search Mobile Find a Car</p>	<p><b>My MPG</b></p> <p>Calculate or Share Your MPG Estimates from Drivers Like You Enter your MPG at the Pump</p>	<p><b>Save Money</b></p> <p>Gas Mileage Tips Fuel Cost Calculator Find the Cheapest Gas</p>	<p><b>Hybrids and Electrics</b></p> <p>Hybrids Plug-In Hybrids Electric Vehicles</p>
--	--	---	--

<p><b>Calculators and Other Tools</b></p> <p>Fuel Savings Calculator Trip Calculator Can a Hybrid Save Me Money? My Plug-In Hybrid Calculator Used Car Label Tool Developer Tools Find a Car Widget</p>	<p><b>New on fueleconomy.gov...</b></p> <p>Preliminary 2015 Fuel Economy Data Available 2014 Best and Worst Fuel Economy 2014 Top 10 Most Efficient Vehicles Video - How Plug-in Hybrids Save Money</p>	<p><b>Quick Picks</b></p> <p>Can a Hybrid Save Me Money? Extreme MPG Motorweek Videos Top 10 - Most Efficient Vehicles, Myths and More My Plug-In Hybrid Calculator</p>	<p><b>Related Links</b></p> <p>EPA Updates MPG Estimates for 2013 Ford C-MAX Hybrid Clean Cities EPA Climate Change Website Alternative Fuels Data Center Alternative Fuels Station Locator</p>
---	---	---	---

Clean Cities

AFDC

FuelEconomy.gov

# MotorWeek Collaboration



## [Petroleum Reduction Planning Tool](#)

Create a plan for your fleet to reduce petroleum consumption and emissions.

## [CNG VICE Model 2.0](#)

Evaluate ROI and payback period for natural gas vehicles and infrastructure.

## [AFLEET Tool](#)

Calculate a fleet's petroleum use, cost of ownership, and air pollutant and GHG emissions.

## [AFDC Station Locator](#)

Find alternative fueling stations near an address or ZIP code or along a route in the United States.

# Important Websites and Resources



## **Clean Cities:**

[www.eere.energy.gov/ccities](http://www.eere.energy.gov/ccities)

## **Alternative Fuels & Advanced Vehicles Data Center:**

[www.afdc.energy.gov](http://www.afdc.energy.gov)

## **Clean Cities Coordinator Contact Information and Coalition:**

<https://cleancities.energy.gov/coalitions/contacts>

## **DOE EERE Information Center and Technical Response Service:**

<http://www.eere.energy.gov/afdc/informationcenter.html>

Phone: 1-800-EERE-INF (1-877-337-3463)

Email: [technicalresponse@icfi.com](mailto:technicalresponse@icfi.com)

Hours: 9 am – 6 pm EST

# How We Can Help



- Provide education on all alternative fuels
- Provide the public with unbiased information so they can make the best decision for their needs
- Inform interested parties on available funding initiatives
- Tour alternative fuel facilities and invite interested parties to attend
- Provide assistance to fleets looking to install infrastructure
- Data analysis for fleets looking to switch to an alternative fuel
- Training available for most alternative fuels, often free to attend
- Connect fleets with reputable vendors, installers
- Access to network of coalitions all over the country
- Technical questions about alternative fuel can be answered via the Clean Cities Technical Response Team



**Kenny Bergstrom**  
**Communications Specialist**  
**DFW Clean Cities**

817-704-5643

[kbergstrom@nctcog.org](mailto:kbergstrom@nctcog.org)

DFW Clean Cities Website

[www.dfwcleancities.org](http://www.dfwcleancities.org)

NCTCOG Funding Website

[www.nctcog.org/aqfunding](http://www.nctcog.org/aqfunding)



**Dallas-Fort Worth**  
**CLEAN CITIES**