TCC Conference

Dallas-Fort Worth Clean Cities Coalition

April 28, 2016

Kenny Bergstrom
Communications Specialist
kbergstrom@nctcog.org

The Clean Cities Mission

Clean Cities was created by the Department of Energy (DOE) to Address the Requirements of the Energy Policy Act (EPAct) 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

Coalition Locations

Assets of Clean Cities

Coordinators

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

Coalitions

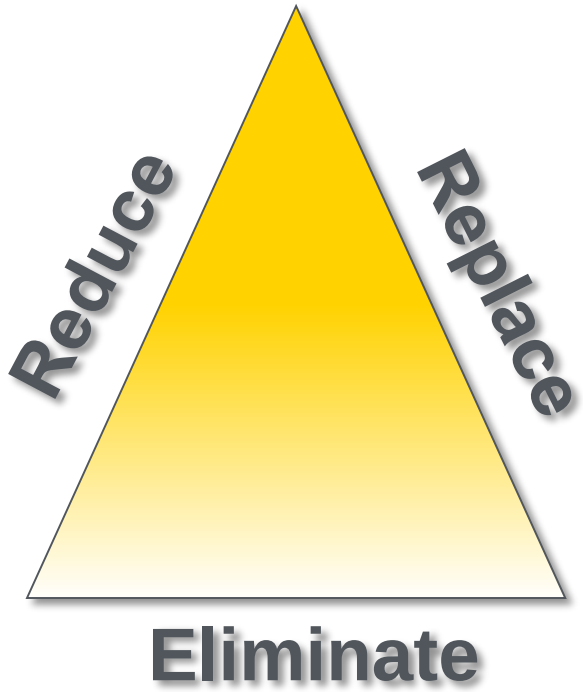
- Members/Stakeholders are Committed to the Mission
- Build Bridges in the Local Community to Mutually Address Barriers

Local Strategy to Advance a National Goal

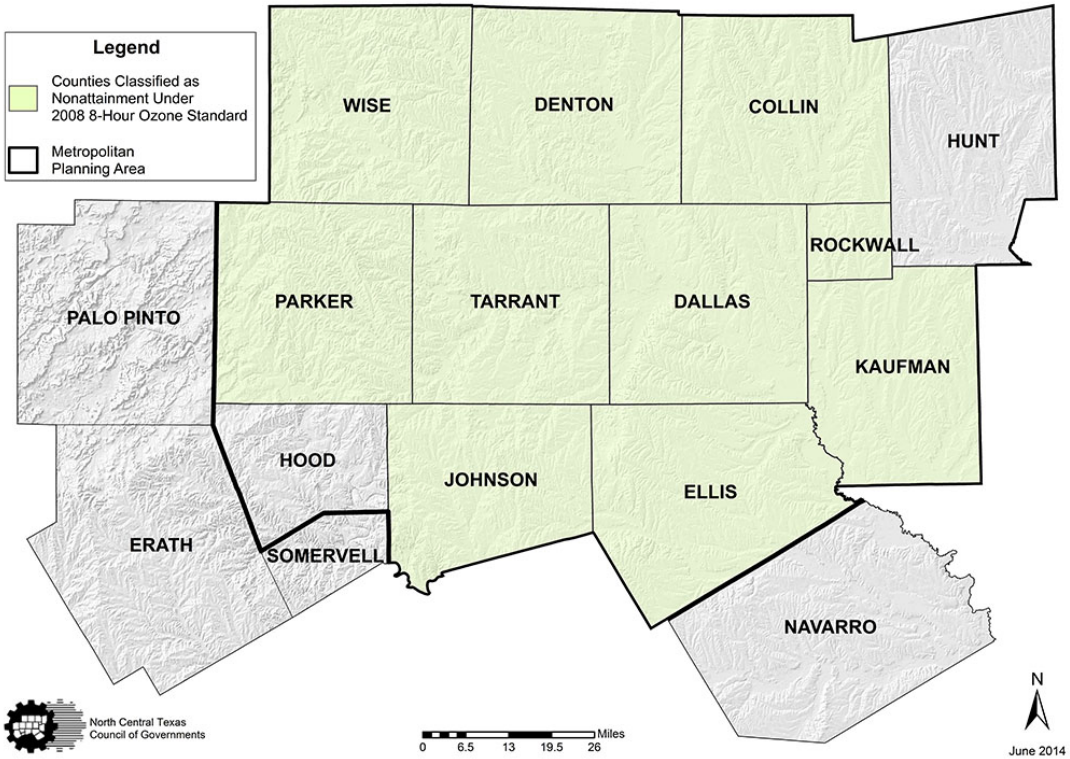
- Local Involvement Works Effectively in Communities
- National Leadership Adds Legitimacy to Local Activities and Assists with Information Transfer Among Coalitions

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

DFW Clean Cities

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.

DFW Clean Cities

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

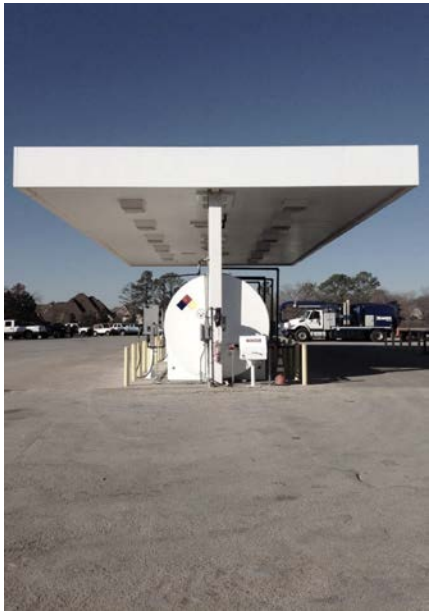
Biofuels

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



Electric Drive

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

Natural Gas

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 -26(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

Propane

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, Idle Reduction, Others

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

Importance of the Program

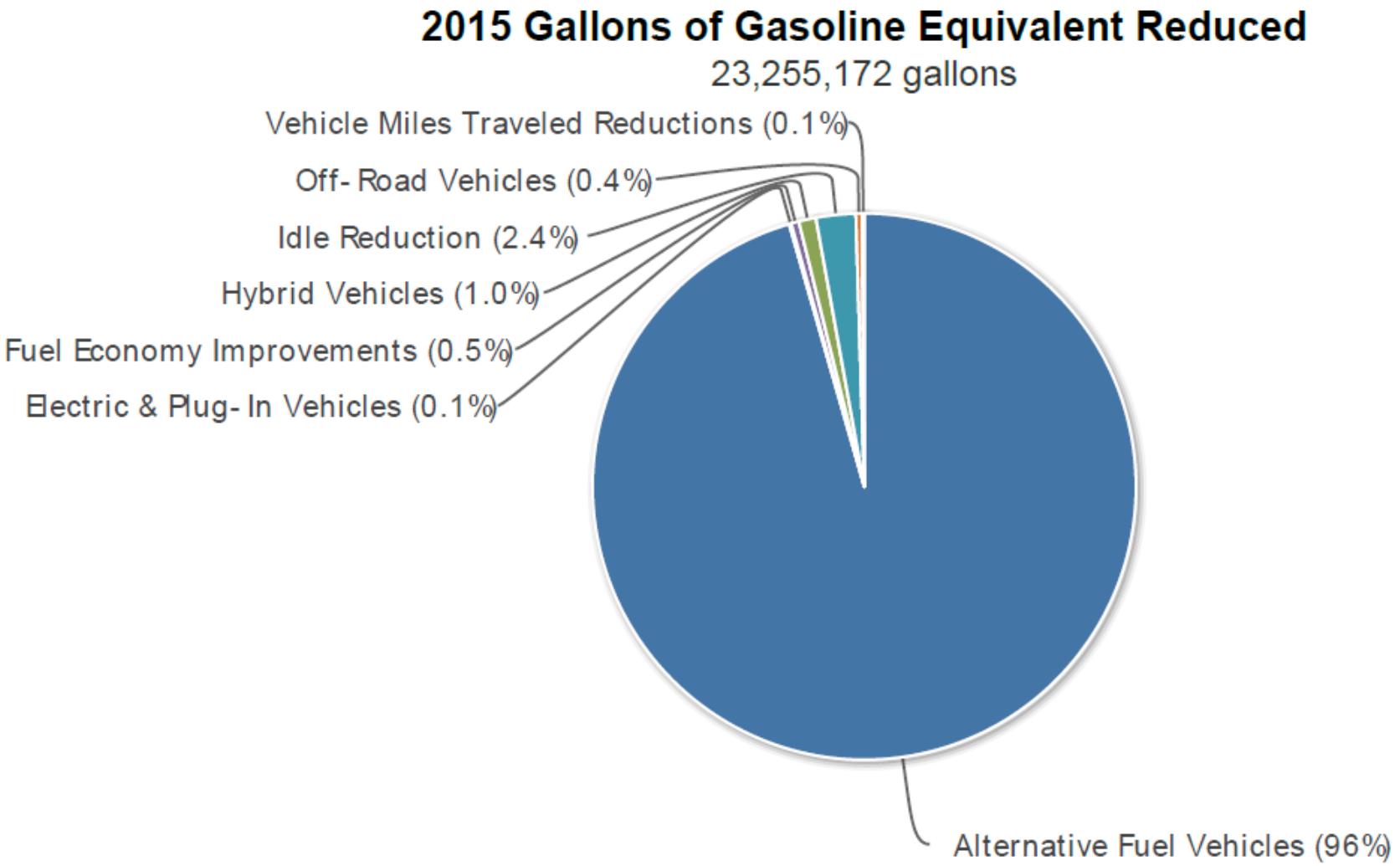
Improve Air Quality

Reduce Greenhouse Gas Emissions

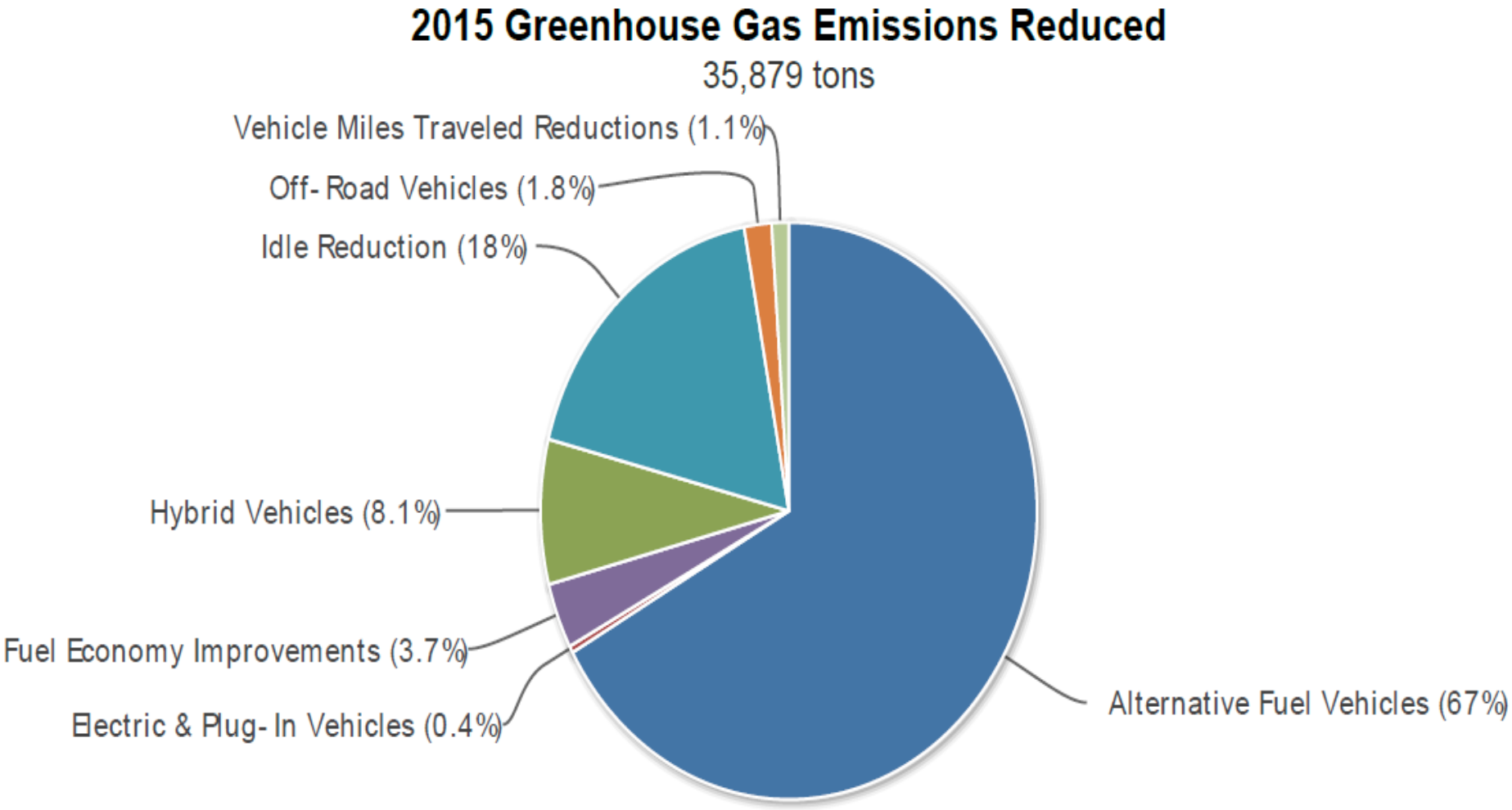
Enhance Energy Security

Create Energy Related Jobs in the US

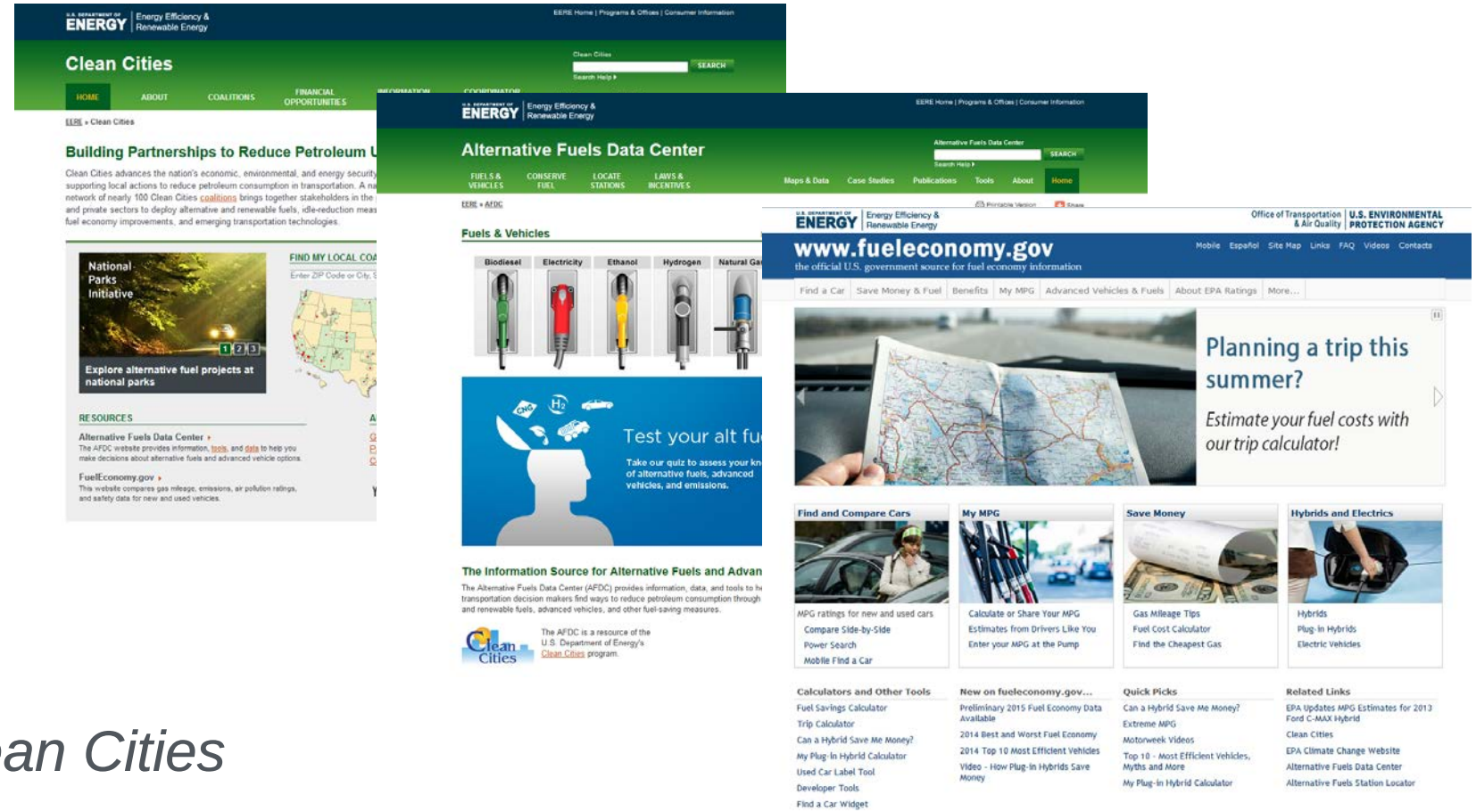
Local Petroleum Displacement



Local Emissions Reductions



Clean Cities Web Resources



Clean Cities

AFDC

FuelEconomy.gov

MotorWeek Collaboration

Helpful Tools

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

Alternative Fuels & Advanced Vehicles Data Center:

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

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

Contact Information

Kenny Bergstrom

Communications Specialist

DFW Clean Cities

817-704-5643

kbergstrom@nctcog.org

DFW Clean Cities Website

www.dfwcleancities.org

NCTCOG Funding Website

www.nctcog.org/aqfunding

Dallas-Fort Worth
CLEAN CITIES