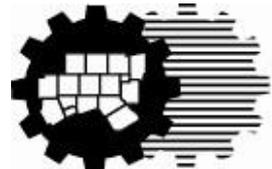




Pursuing Regional Transformations: NCTCOG Initiatives on Electric Vehicles and Solar Energy

**North Texas Renewable Energy Group
December 14, 2013**

Lori Clark, Principal Air Quality Planner



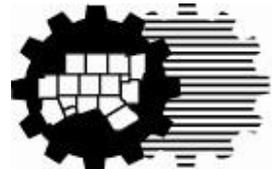
North Central Texas
Council of Governments





NCTCOG AND AIR QUALITY

WHO, WHAT, AND WHY?



North Central Texas
Council of Governments



WHO AND WHAT IS NCTCOG?

**Voluntary Association of, by, and for Local Governments
Established in 1966**

16-County Region Centered around Dallas-Fort Worth (DFW)

240 Member Governments (Cities, Counties, Special Districts)

Goals Include Planning for Common Needs, Cooperating for Mutual Benefit, and Coordinating for Sound Regional Development

Metropolitan Planning Organization Designation

12-County Metropolitan Planning Area

10-County Ozone Nonattainment Area

Responsibilities Include Reducing Congestion, Enhancing Mobility, and Improving Air Quality

CRITERIA AIR POLLUTANTS

Carbon Monoxide (CO)

Lead (Pb)

Nitrogen Oxides (NO_x)

Ozone (O₃) ←

**Particulate Matter
(PM₁₀ & PM_{2.5})**

Sulfur Dioxide (SO₂)

Future ? CO₂, NO₂, Etc.



NONATTAINMENT AREA TIMELINE

1-Hour Ozone Standard: 125 ppb
4 North Texas Counties Designated

1997 8-Hour Ozone Standard: < 85 ppb

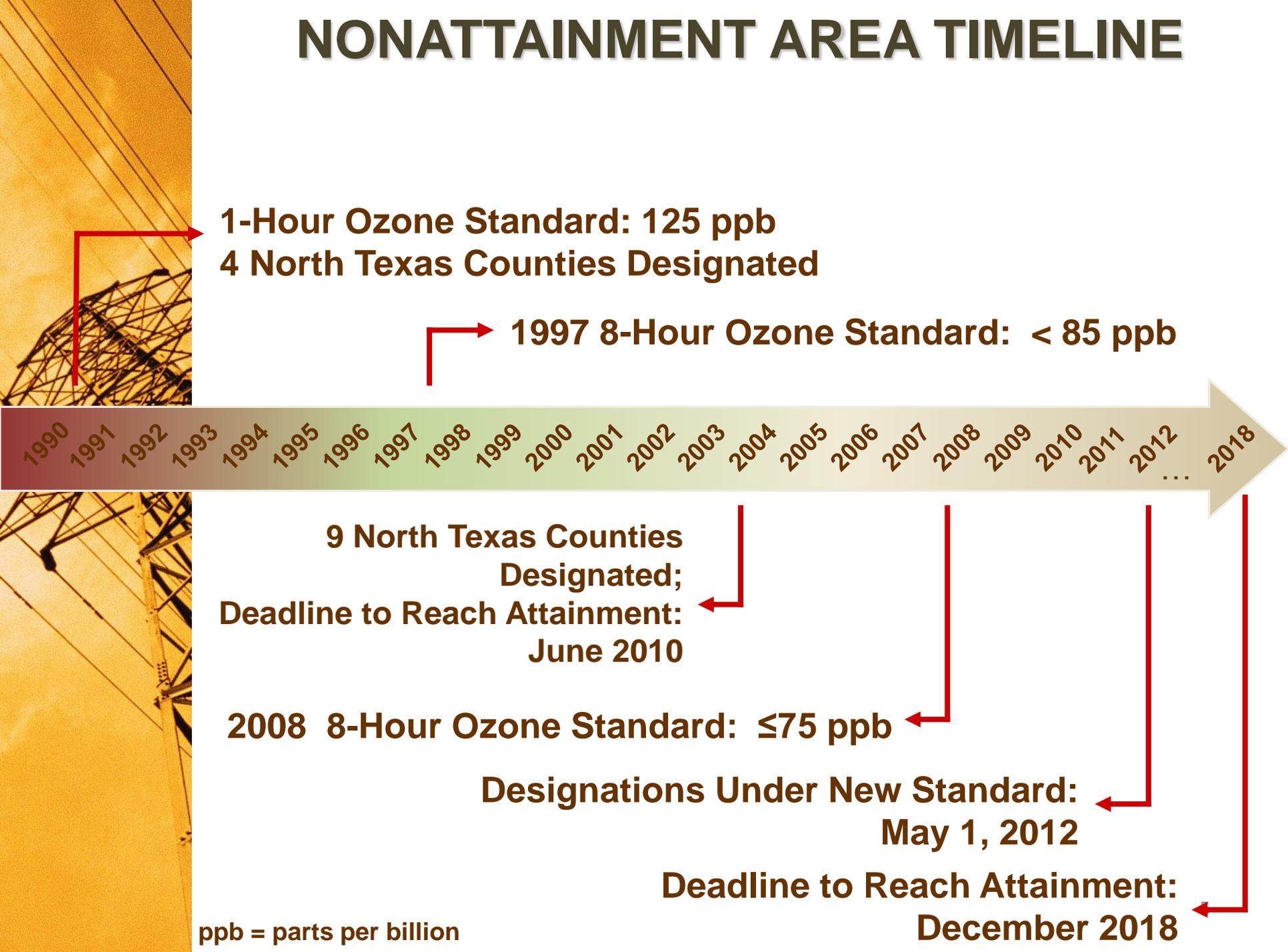
9 North Texas Counties Designated;
Deadline to Reach Attainment:
June 2010

2008 8-Hour Ozone Standard: ≤ 75 ppb

Designations Under New Standard:
May 1, 2012

Deadline to Reach Attainment:
December 2018

ppb = parts per billion



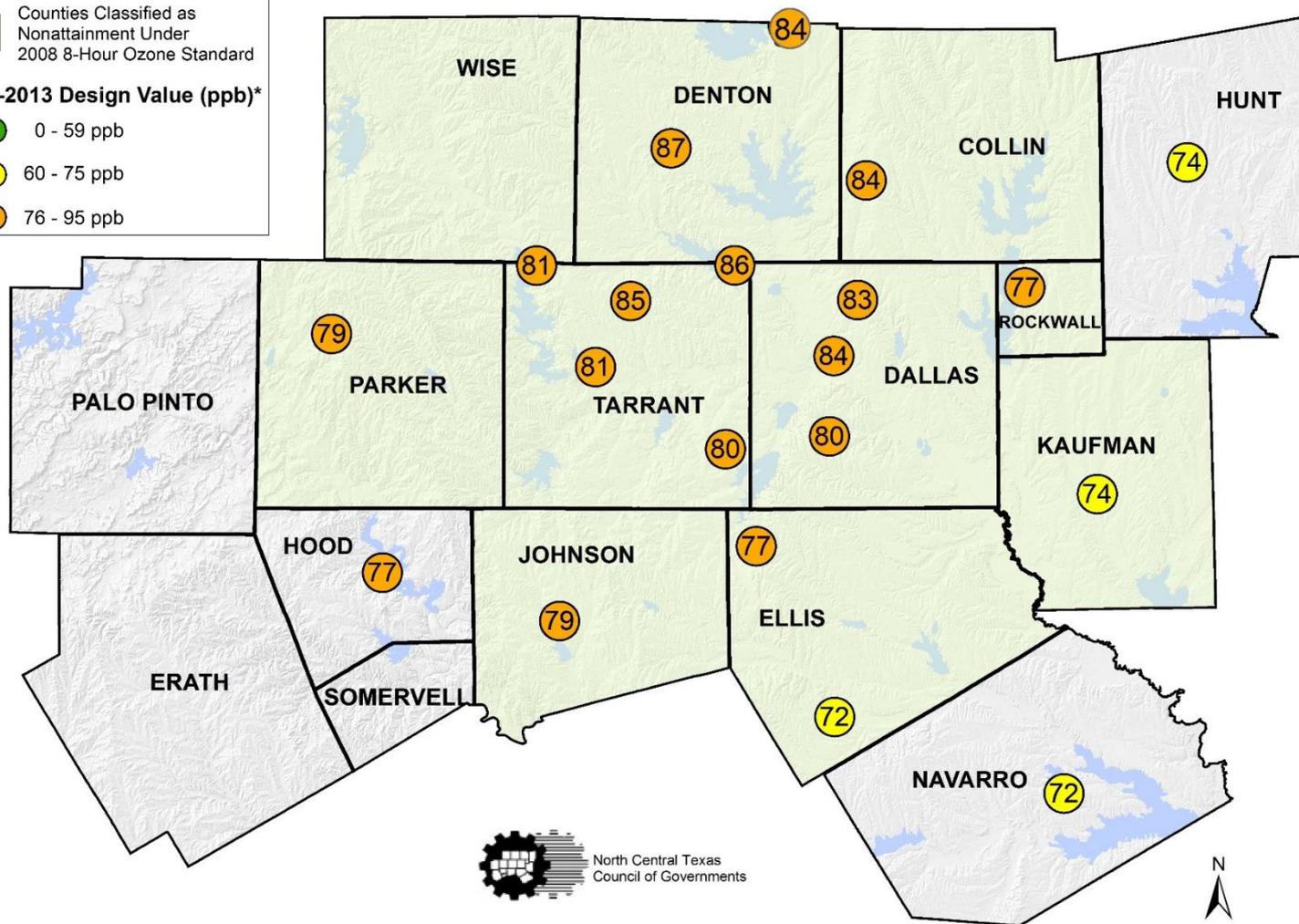
DFW NONATTAINMENT AREA AND 8-HOUR OZONE STANDARD DESIGN VALUES

Legend

Counties Classified as Nonattainment Under 2008 8-Hour Ozone Standard

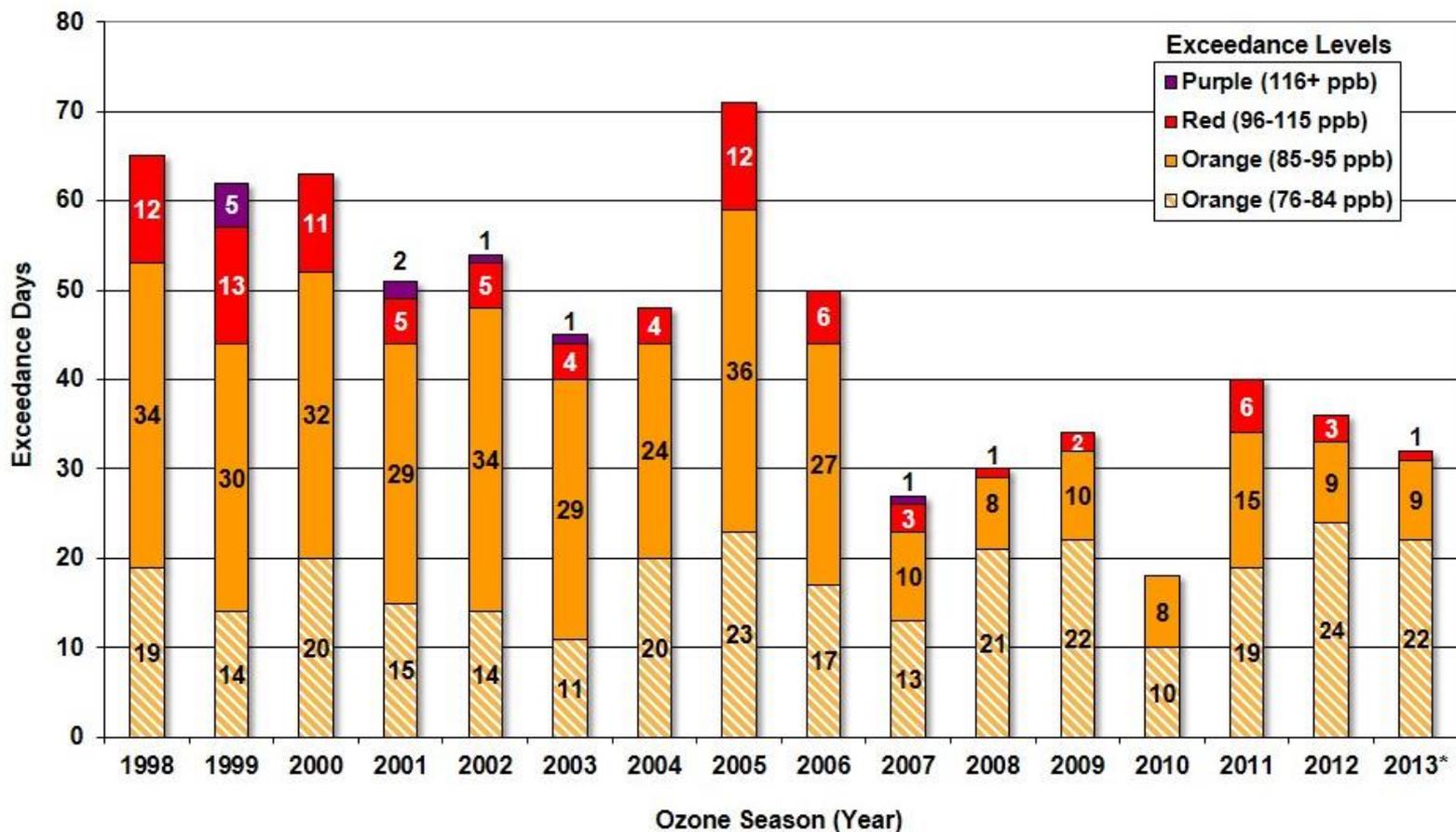
2010-2013 Design Value (ppb)*

- 0 - 59 ppb
- 60 - 75 ppb
- 76 - 95 ppb



* Not a full year of data, current as of October 15, 2013.

2013 OZONE SEASON EXCEEDANCE DAYS



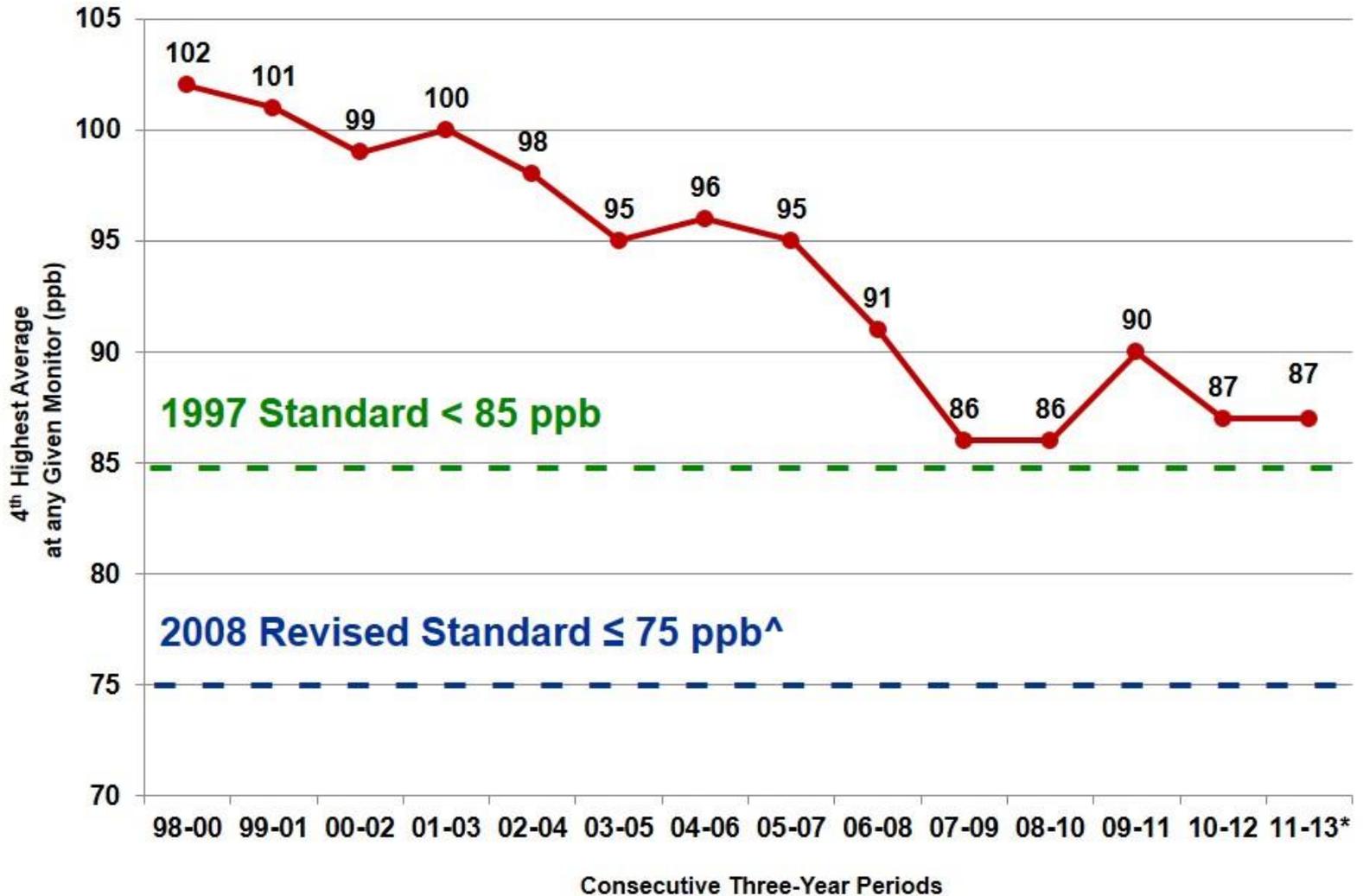
Exceedance Level indicates daily maximum 8-hour average ozone concentration. Exceedance Levels are based on Air Quality Index (AQI) thresholds established by the EPA for the for the revised ozone standard of 75 ppb.

 = Additional level orange exceedance days under the revised standard that were not exceedances under the previous 84 ppb standard. (AQI level orange = 76-95 ppb)

* Not a full year of data, current as of 10/15/2013

Source: TCEQ
http://www.tceq.state.tx.us/cqi-bin/compliance/monops/8hr_monthly.pl
 ppb = parts per billion

8-HOUR OZONE STANDARD TRENDS

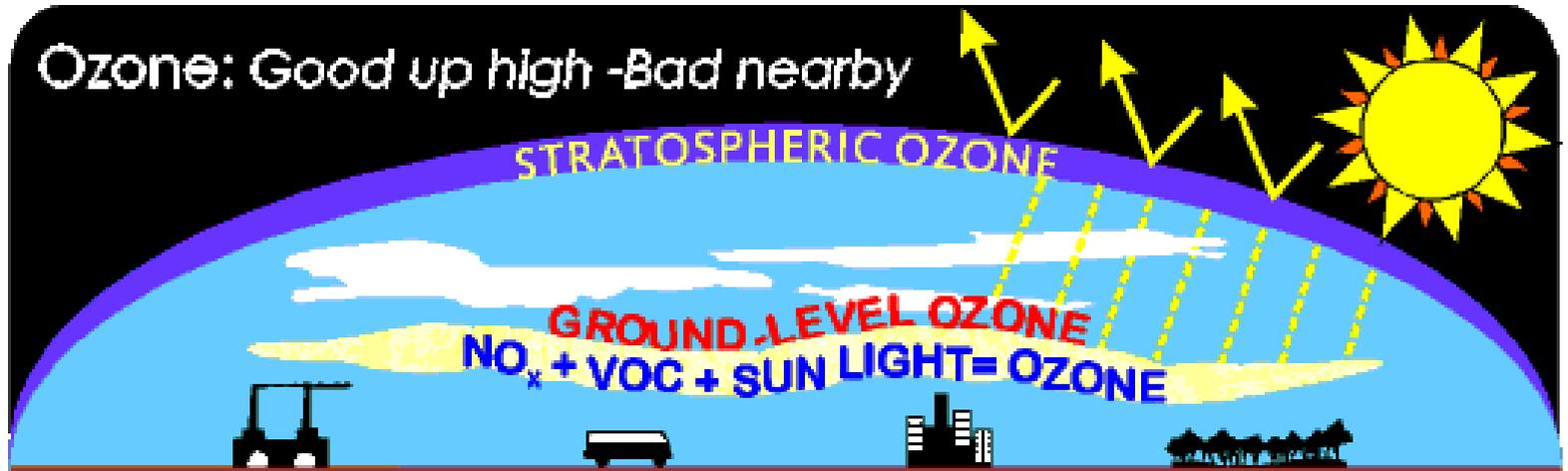


[^]Attainment Goal - According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is equal to or less than 75 parts per billion (ppb).

* This data has not been verified by the TCEQ. This is the most current data, but it is not official until certified by TCEQ technical staff.

Source: NCTCOG TR Dept

GROUND LEVEL OZONE FORMATION



**Point
Sources**

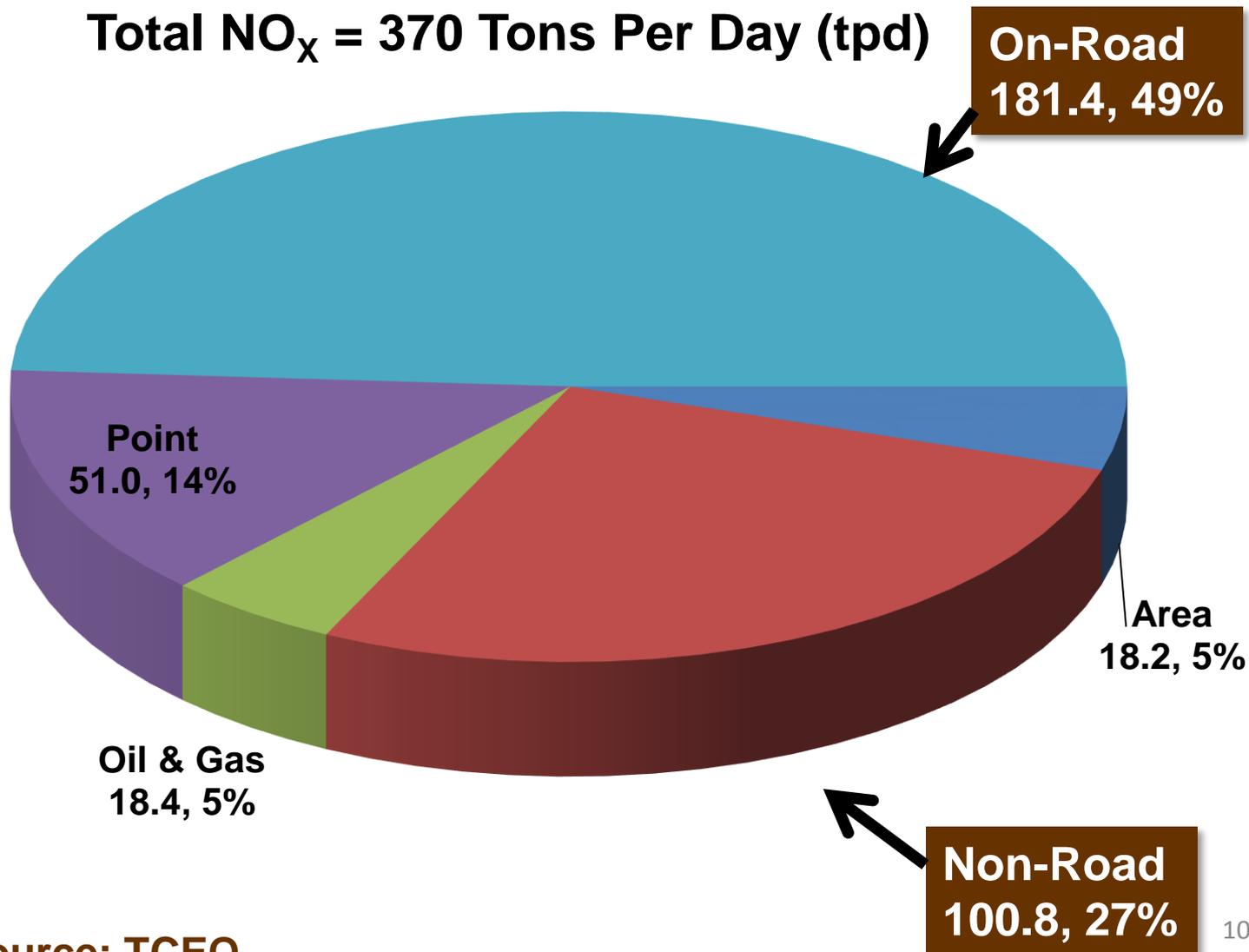
**Mobile
Sources**

**Area
Sources**

**Biogenic
Sources**

DFW NONATTAINMENT AREA 2012 NO_x EMISSIONS INVENTORY*

Total NO_x = 370 Tons Per Day (tpd)



*Source: TCEQ



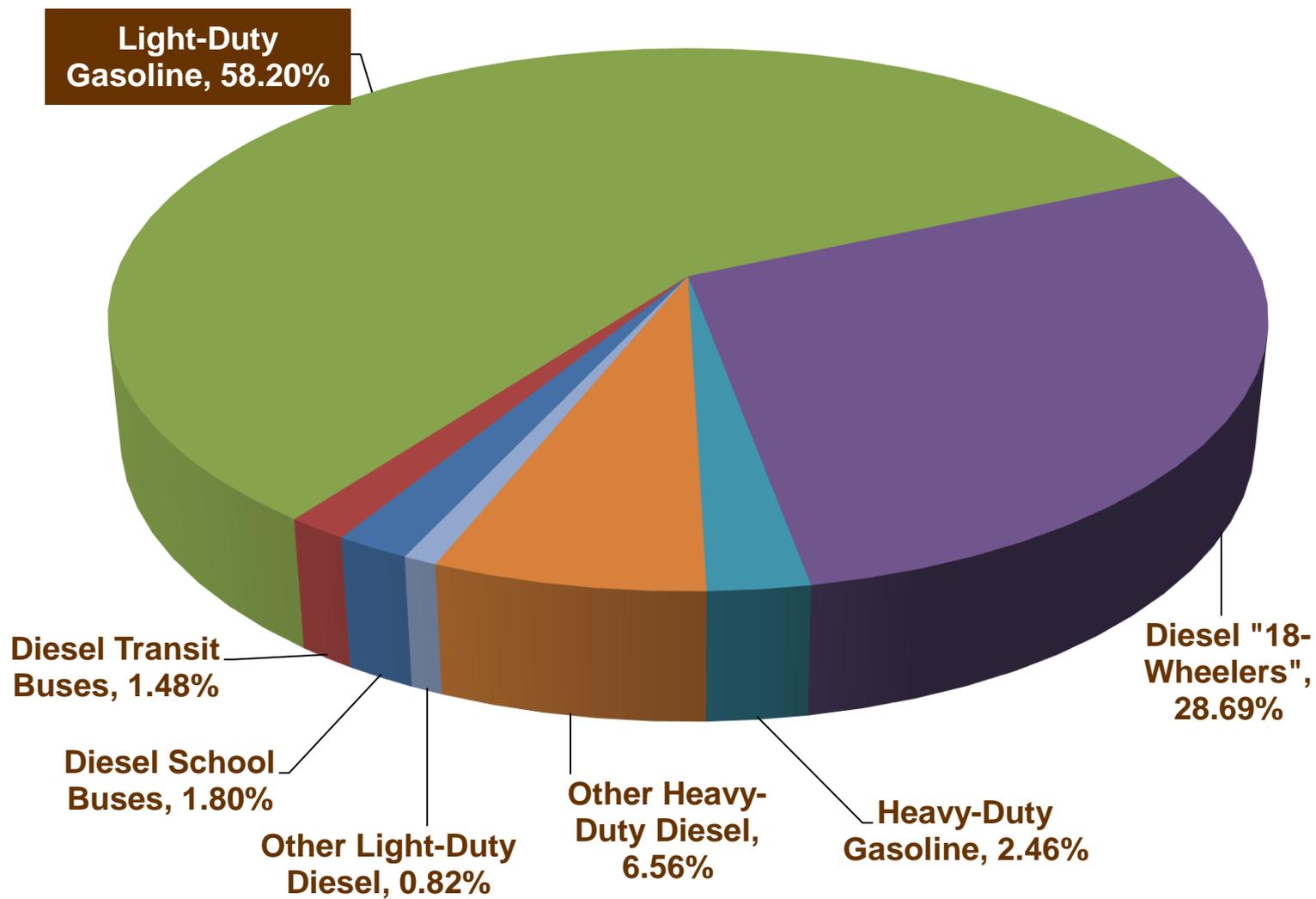
INNOVATIVE STRATEGIES: ON-ROAD



Dallas-Fort Worth
CLEAN CITIES

www.nctcog.org/evnt
www.dfwcleancities.org

ON-ROAD NO_x EMISSIONS INVENTORY* BY SECTOR



*Source: TCEQ



INITIAL AREAS OF FOCUS

Establish Stakeholder Group

Vehicles

- Establish DFW Area as Launch Market
- Implement Incentives for Purchase

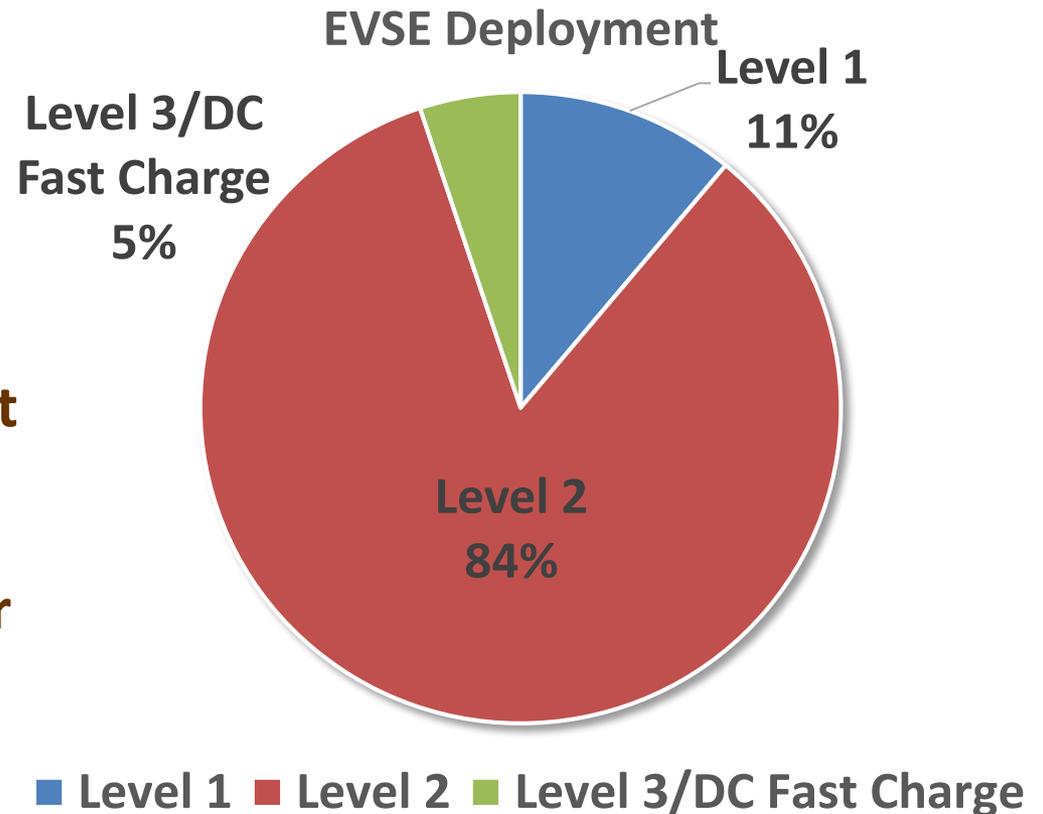
Infrastructure

- Implement Public Recharging Infrastructure
- Streamline PEV Purchase and In-Home Charging Installation Process

RECHARGING INFRASTRUCTURE

452 Public Access Locations

Dallas is the 2nd most EV-Ready city based on number of charging stations per capita.*

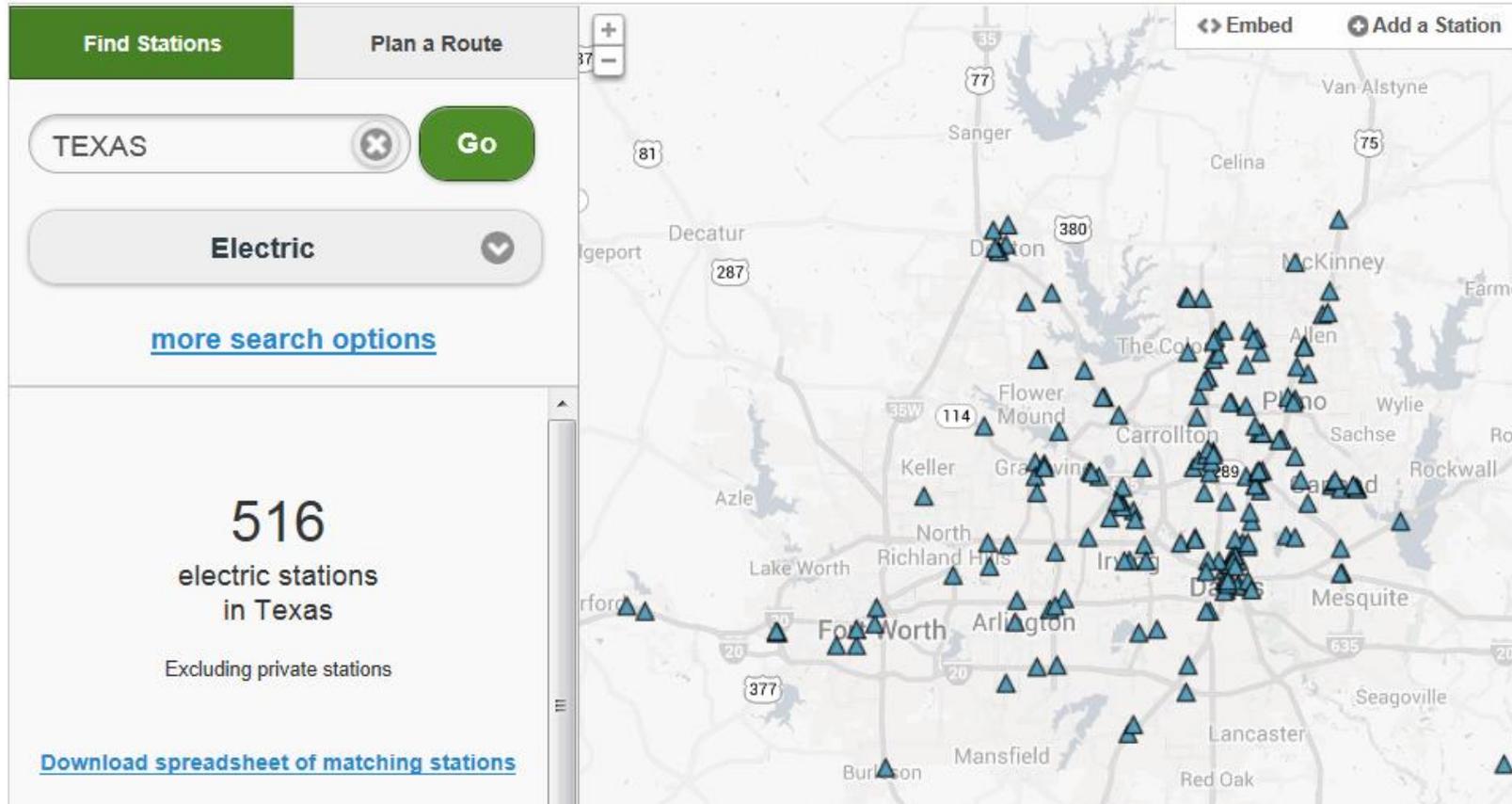


*Source: PlugShare, September 2012

ALTERNATIVE FUELING STATION LOCATOR

Electric Vehicle Charging Station Locations

Find electric vehicle charging stations near an address or ZIP code or along a route in the United States. For more alternative fueling stations, use the [Alternative Fueling Station Locator](#).



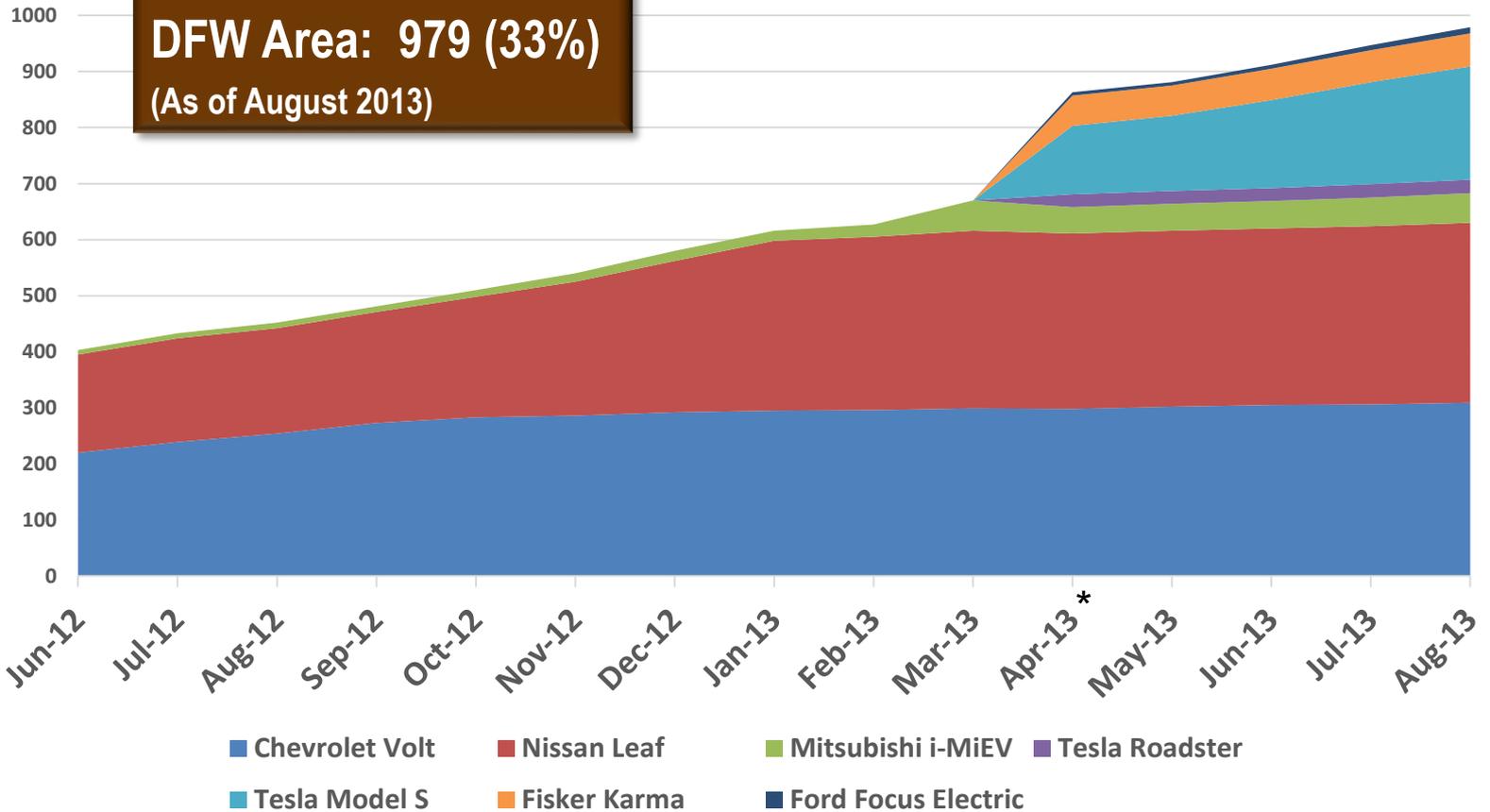
The screenshot displays the website's interface. On the left, a sidebar contains a search bar with 'TEXAS' entered, a 'Go' button, and a dropdown menu set to 'Electric'. Below this, it shows '516 electric stations in Texas' and a link to 'Download spreadsheet of matching stations'. The main area is a map of Texas with numerous blue triangle markers representing charging stations, primarily concentrated in the Dallas-Fort Worth and Austin areas. The map includes labels for various cities and highways.

www.afdc.energy.gov

Mobile App for iPhone

ELECTRIC VEHICLE REGISTRATION (CURRENT AS OF AUGUST 2013)

Total EV Registration:
Texas: 2,994
DFW Area: 979 (33%)
(As of August 2013)



*Four additional EV models tracked beginning April 2013

Source: NCTCOG



CURRENT AREAS OF FOCUS

Structure

Integrate Stakeholder Group with DFW Clean Cities Coalition

Vehicles

- **Promote Light-Duty Motor Vehicle Purchase or Lease Incentive Program**
- **Promote Fleet-Level Adoption**
- **Explore Dealer Partnerships and Education**
- **Evaluate Rental Car Partnerships**
- **Coordinate with Texas Department of Motor Vehicles to Record Fuel Type**

Infrastructure

- **Ensure Sufficient Resources After EV Project**
- **Facilitate Education for Permitting Officials**
- **Engage Local Businesses in Workplace Charging Challenge**
- **Integrate “EV-Ready” Practices into Regional Codes**

DFW CLEAN CITIES COALITION

National Clean Cities Program

- **Mission: Advance the Energy, Economic, and Environmental Security of the U.S. By Supporting Local Decisions to Reduce Petroleum Use in Transportation**
- **Goal: Reduce Petroleum Use by 2.5 Billion Gallons/Year**

DFW Clean Cities

- **Local Coalition**
- **Displaced 12.8 Million Gallons 2012**
- **Increase Reductions by 15% Year**



**Dallas-Fort Worth
CLEAN CITIES**

DFW CLEAN CITIES COALITION

Technologies:

- Alternative/ Renewable Fuels
- Fuel Economy
- Idle Reduction
- Trip Elimination

Services:

- Training and Information
- Technical Assistance
- Education and Outreach
- Connecting Fleets with Industry Partners

The screenshot displays the Alternative Fuels Data Center (AFDC) website. The main navigation bar includes 'Alternative Fuels Data Center' and a search field. Below the navigation, there are sections for 'Fuels & Vehicles' (with icons for Biodiesel, Electricity, Ethanol, Hydrogen, Natural Gas, and Propane) and 'Maps & Data' (with links to U.S. Alternative Fueling Stations, Alternative Fuel Vehicles in Use, and U.S. Hybrid Electric Vehicle Sales). A prominent banner for a truck stop electrification program reads 'Turn off the engine. Turn up the heat.' Below this, the 'Petroleum Reduction Planning Tool' is featured, which helps users create a plan for their fleet to reduce petroleum consumption and GHG emissions. The tool shows a 'My Current Plan' with various savings methods and their impact on petroleum reduction, GHG reduction, fuel cost savings, and overall impact on the plan. A bar chart on the right compares 'Annual Petroleum Reduction' (gallons) and 'Annual Greenhouse Gas Reduction' (tons of CO₂) against a 'Petroleum reduction goal'.

My Current Plan

Savings Methods	Petroleum Reduction gallon/yr	GHG Reduction tons CO ₂ /yr	Fuel Cost Savings \$/yr	Impact on Plan percent
Replace Vehicles (ADD ANOTHER)	3,265	40	\$9,876	96%
Replace 10 midsize gas cars with 5 mini-compact cars (HEV) using B5	3,265	40	\$9,876	96%
Use Alternative Fuel in Existing Vehicles (ADD TO PLAN)	0.00	0.00	\$0.00	0%
Reduce Idling (ADD TO PLAN)	0.00	0.00	\$0.00	0%
Reduce Mileage (ADD ANOTHER)	117	1	\$386	3%
Reduce miles traveled in 1 midsize gas car from 11,919 miles to 9,000 miles	117	1	\$386	3%
Drive Efficiently (ADD ANOTHER)	9	0.00	\$31	0%
Improve efficiency in 1 midsize gas car by 2%	9	0	\$31	0%
Total savings from plan per year	3,391 gallons	41 tons of CO ₂	\$10,293	100%

Annual Petroleum Reduction: 4,000 gallons (targeted), 3,391 gallons (actual)
Annual Greenhouse Gas Reduction: 50.0 tons of CO₂ (targeted), 41 tons of CO₂ (actual)

● Petroleum reduction goal



PROMOTE VEHICLE INCENTIVES

Light-Duty Motor Vehicle Purchase or Lease Incentive Program

Funding

- **\$2,500 Incentive Amount per Vehicle**
- **\$3.8 Million Available for 2014-2015 Biennium**

Eligibility

- **Purchases or Leases**
- **Individuals, Businesses, and State/Local Governments**
- **Vehicles Must be Registered and Operated in Texas for One Year**
- **Vehicles Must Incur 75% of Annual Mileage in Texas**

Pending TCEQ Rulemaking - Key Dates

- **December 18, 2013: Deadline to Submit Comments**
- **April 2014: Rule Adoption Anticipated**

WORKPLACE CHARGING CHALLENGE

Department of Energy Program

Goal to Increase Number of Employers Offering Workplace Charging by Tenfold in Five Years

Process - Employers sign Pledge as “Partners”

Commit to Assess Employee Demand

Develop Plan to Install Infrastructure

Share Progress

DFW Area Partners

Schnieder Electric, Carrollton

Verizon, Irving

Who’s Next?

HOME ABOUT THE PROGRAM TECHNOLOGIES INFORMATION RESOURCES FINANCIAL OPPORTUNITIES EV EVERYWHERE GRAND CHALLENGE DEPLOYMENT NEWS EVENTS

EEVE - Vehicle Technologies Office - EV Everywhere Grand Challenge

EV Everywhere Workplace Charging Challenge

Goals
Research & Development
Testing and Analysis
Workplace Charging
Partners
Ambassadors
Resources
Community and Fleet Readiness
Workforce Development
Plug-in Electric Vehicle Basics

Today, about half of the vehicles in the United States are parked at overnight locations with access to plugs, providing a great foundation for the country's plug-in electric vehicle (PEV) charging infrastructure. However, employers across the country are beginning to offer charging access in workplace lots, which serve as the next most-likely place a vehicle will spend time parked. In fact, the ability to charge at work can potentially double a PEV driver's all-electric daily commuting range. This untapped resource presents a significant opportunity to expand the country's PEV charging infrastructure.

To support the deployment of this infrastructure, DOE has launched the Workplace Charging Challenge, with a goal of achieving a tenfold increase in the number of U.S. employers offering

News

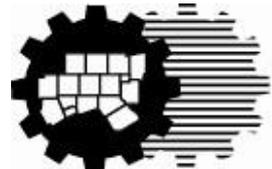
- 13 U.S. Employers Join the Workplace Charging Challenge June 11, 2013
- Energy Department Accelerates the Deployment of Advanced Vehicle Technologies with Private Industry Partnerships March 5, 2013
- EV Everywhere Charges Up the Workplace January 31, 2013



INNOVATIVE STRATEGIES

SOLAR READY II

www.nctcog.org/solar



North Central Texas
Council of Governments



Dallas-Fort Worth
CLEAN CITIES

SOLAR READY II GOALS

Department of Energy SunShot Initiative

Goal to Make Solar Energy Cost-Competitive With Other Energy Sources

Reduce costs
through
regulatory
reform

Increase access
to financing

Promote solar
adoption

SOLAR READY II PARTICIPANTS

National Partners

Mid-America Regional Council (MARC)

National Association of Regional Councils (NARC)

Meister Consultants Group

Council of State Governments

Regional Planning Councils





SOLAR READY II PROCESS

Establish Stakeholder Group

Identify Region-Specific “Soft Cost” Barriers

Engage Local Governments

Submit Data on Current Practices

Evaluate Existing Processes/Policies

Implement Best Management Practices

Administer Training Programs

“SOFT COST” BARRIER AREAS

Permitting

Zoning

Financing

Labor Cost

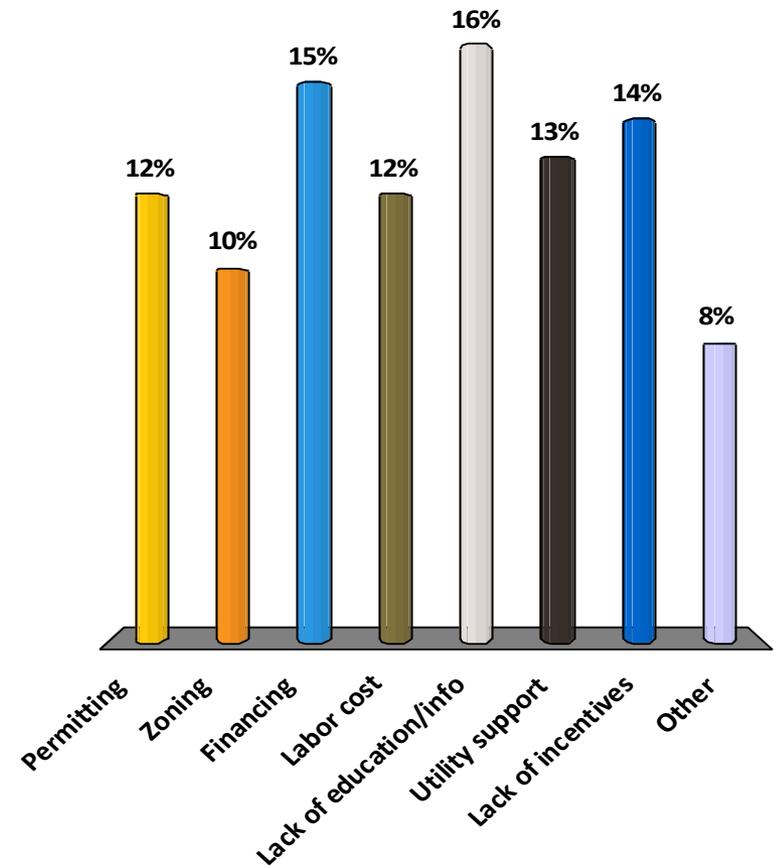
Lack of Education/Information

Utility Support

Lack of Incentives

Other

Results From Polling at
December 11 Meeting



BEST MANAGEMENT PRACTICES

Process Improvements

Standardize Permit Fees

Pre-Qualify Plans and Installers

Streamline Permits

Notify Utility

Planning Improvements

Improve Solar Access

Educate Developers

Educate Homeowners

Improve Solar Readiness

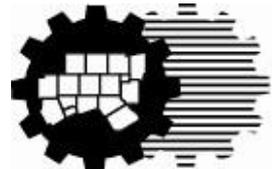
Engage HOAs



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