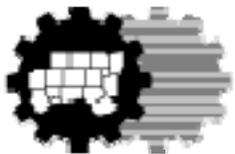




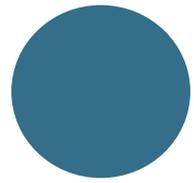
LOCALLY ENFORCED IDLING RESTRICTIONS

Rocky Mountain Fleet Management Association

November 6, 2008

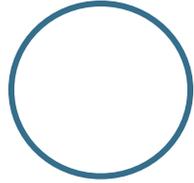


**Amanda Brimmer, E.I.T.
North Central Texas Council of Governments**



LOCALLY ENFORCED IDLING RESTRICTIONS

Overview



- **Background**



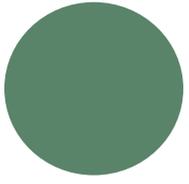
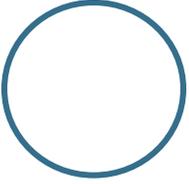
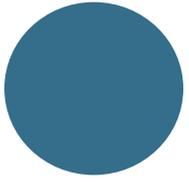
- **Benefits**
- **Idling Restrictions In The U.S. & Texas**
- **Texas Idling Rule**
- **Local Government Implementation**
- **Technology Options**



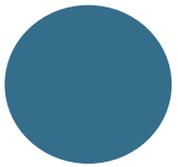
- **Incentives & Funding Opportunities**



- **Resources**

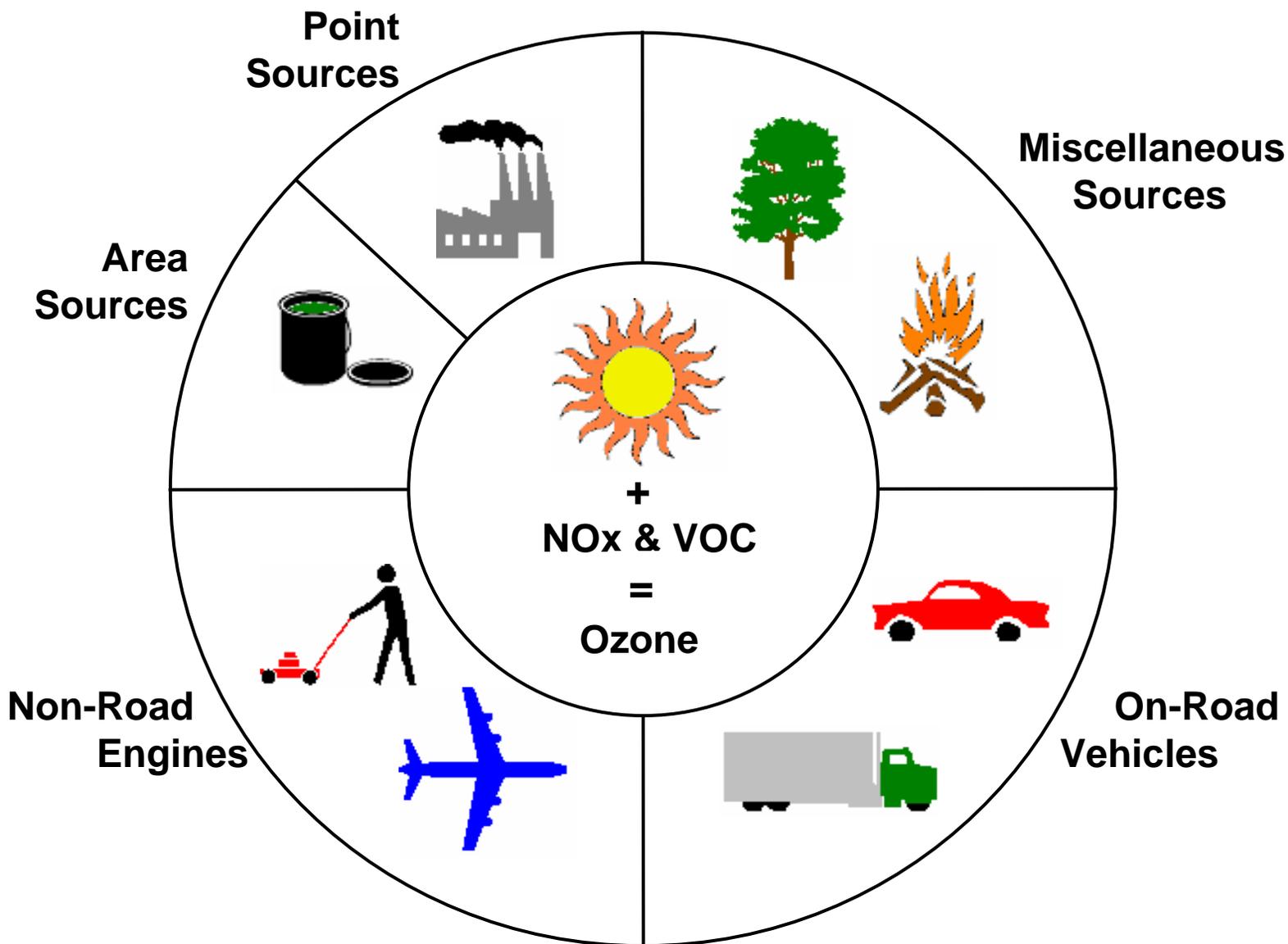


Background



STATE OF AIR QUALITY IN NORTH TEXAS

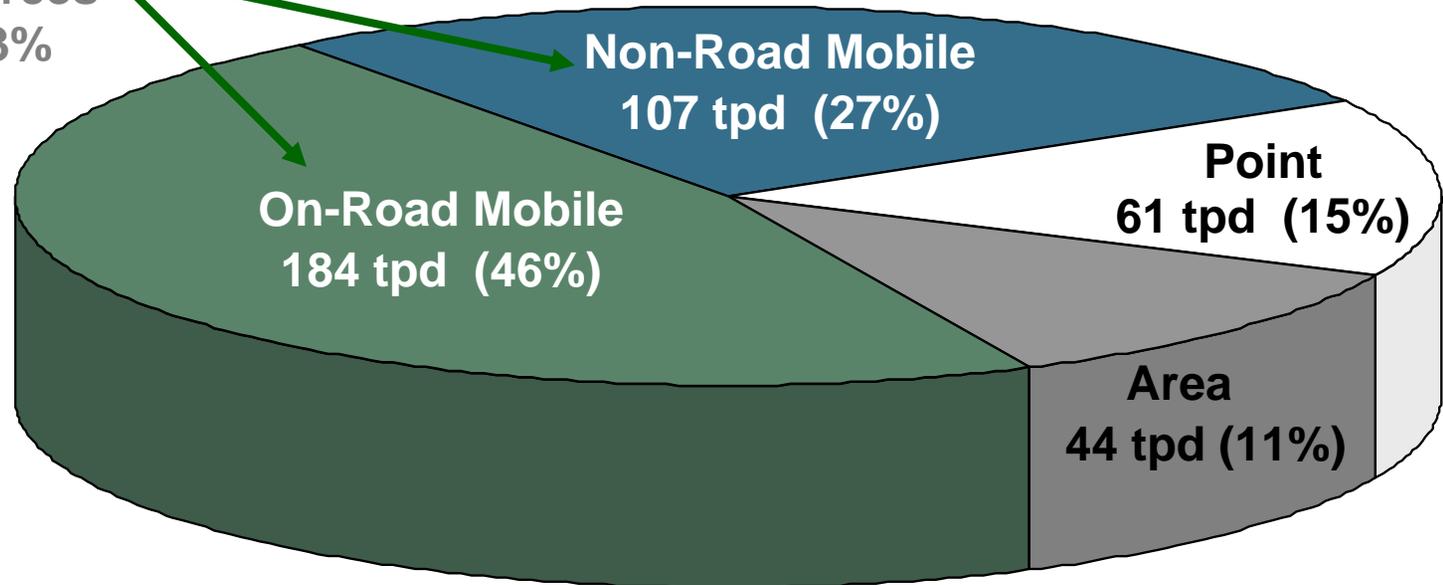
Ozone Formation



DALLAS-FORT WORTH NONATTAINMENT AREA 2009 Nitrogen Oxide (NO_x) Emissions Inventory

Emission Source Category Estimates

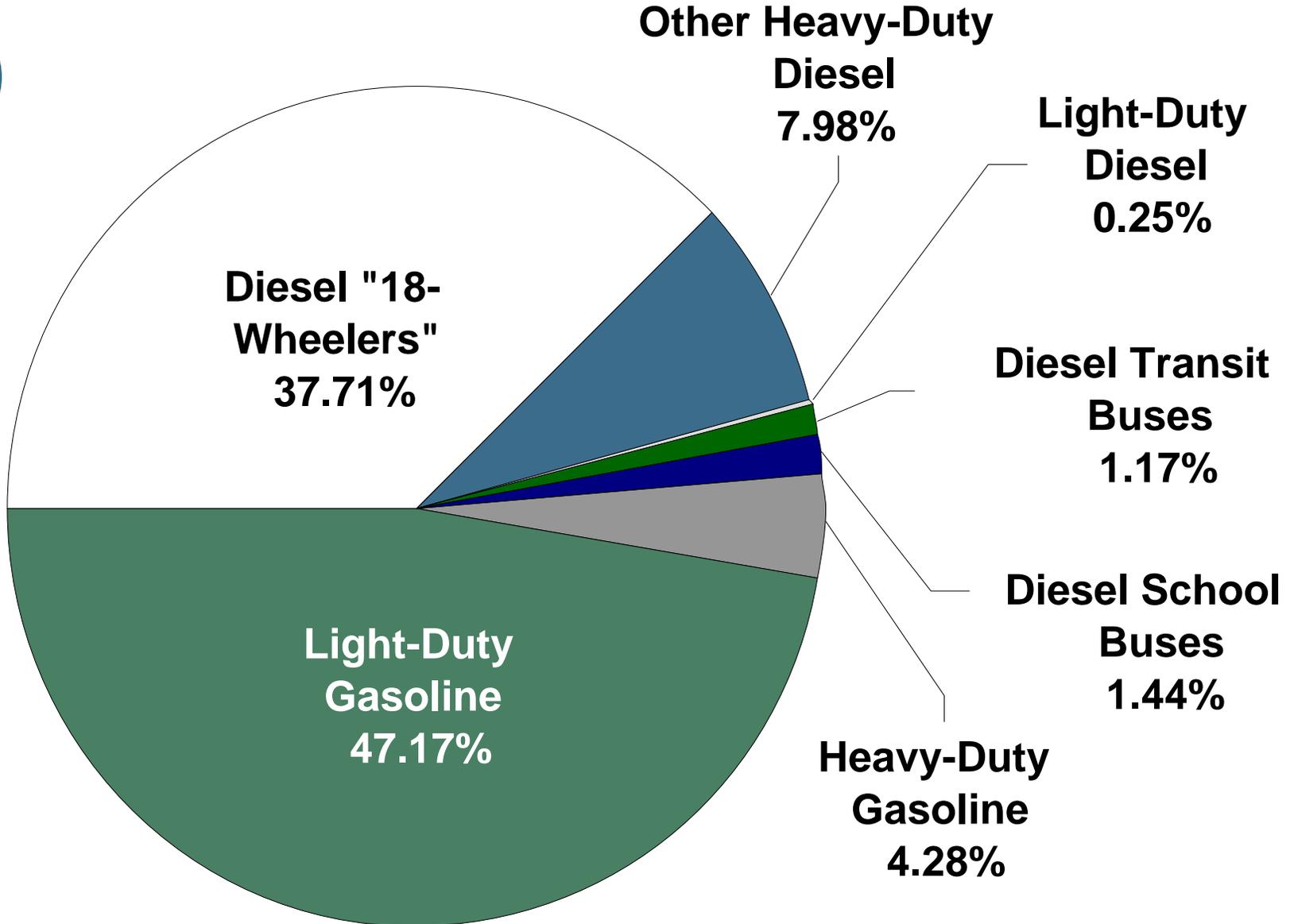
Total Mobile Sources
73%



Total NO_x = 396 Tons Per Day (tpd)

DALLAS-FORT WORTH NONATTAINMENT AREA

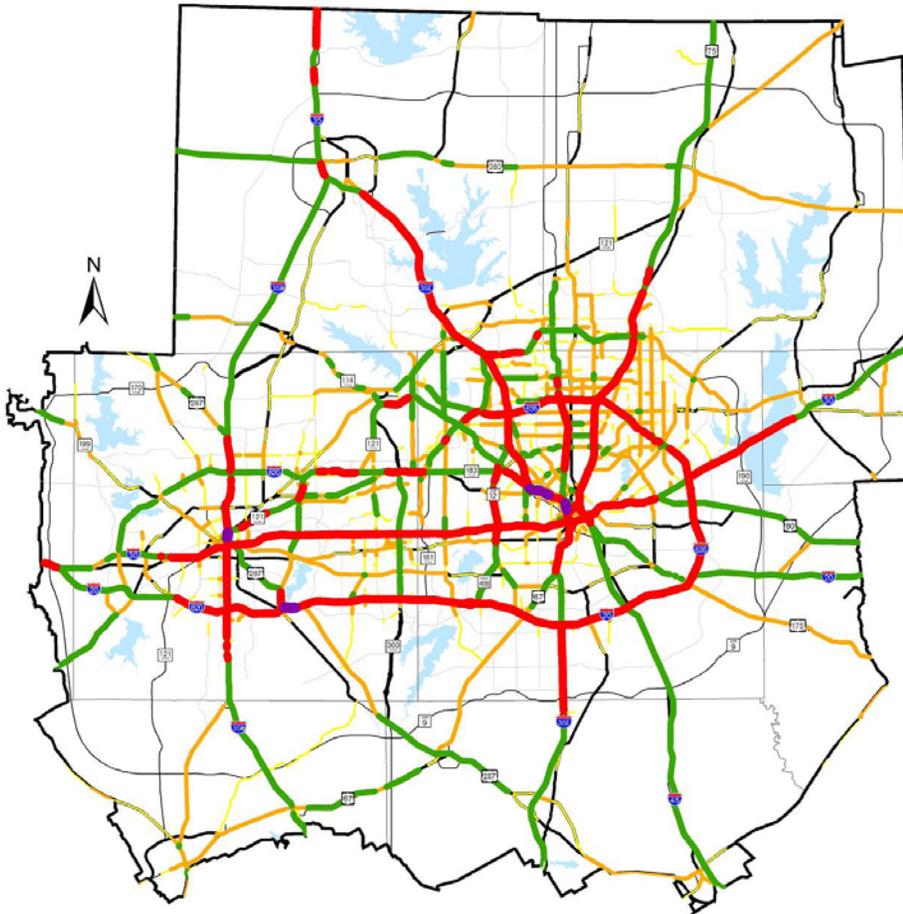
2009 On-Road NO_x Emissions Inventory



REGIONAL TRUCK VOLUMES

Dallas-Fort Worth Nonattainment Area

2005 Truck Volumes



2030 Truck Volumes

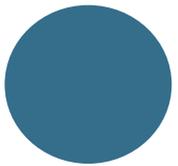
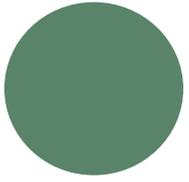
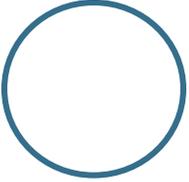
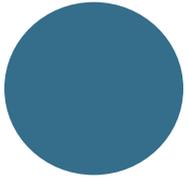


8-HOUR OZONE STATE IMPLEMENTATION PLAN

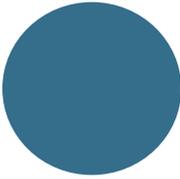
Dallas-Fort Worth Nonattainment Area

NORTH CENTRAL TEXAS STATE IMPLEMENTATION PLAN VOLUNTARY MOBILE EMISSION REDUCTION PROGRAM (VMEP) EMISSION BENEFITS BY PROGRAM TYPE				
PROGRAM TYPE	2009 NO _x BENEFITS (tons per day)		2009 VOC BENEFITS (tons per day)	
	Modeled	Post- Processed	Modeled	Post- Processed
Clean Vehicle Program	0.00	0.24	0.00	0.05
Employee Trip Reduction	0.43	0.00	0.28	0.00
Locally Enforced Idling Restriction	0.00	0.62	0.00	0.02
Diesel Freight Idling Reduction Program	0.00	0.33	0.00	0.01
SmartWay Transport Demonstration Project	0.00	0.00	0.00	0.00
Public Agency Policy for Construction Equipment	0.00	0.06	0.00	0.01
Aviation Efficiencies	0.00	0.95	0.00	0.24
TOTAL BENEFITS (tons per day)	0.43	2.20	0.28	0.33

(1) NO_x = Nitrogen Oxides, VOC = Volatile Organic Compounds

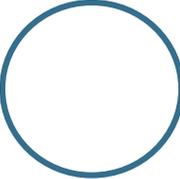


Benefits

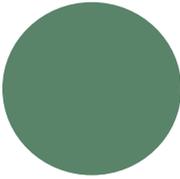


LOCALLY ENFORCED IDLING RESTRICTIONS

Why Is It Important?

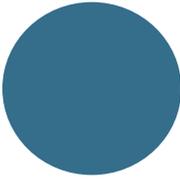


Idling Emissions Contribute to Air Pollution, Which Can Cause Adverse Health Effects



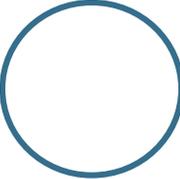
In Addition, the U.S. EPA Estimates that Excess Idling is Responsible for:

- **Over 1 Billion Gallons of Diesel Fuel Consumed Annually**
- **11 Million Tons of Carbon Dioxide, 200,000 Tons of Nitrogen Oxides, and 5,000 Tons of Particulate Matter Emitted Annually**
- **Increased Engine Maintenance Costs**
- **20% Decrease in Engine Life**
- **Elevated Noise Levels**

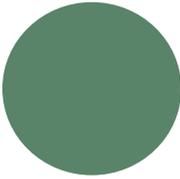


LOCALLY ENFORCED IDLING RESTRICTIONS

What is Diesel Exhaust?



Gaseous Components of Diesel Exhaust:



Carbon Dioxide (CO₂)

Oxygen (O₂)

Nitrogen (N₂)

Water Vapor (H₂O)

Carbon Monoxide (CO)

Nitrogen Compounds (NO_x)

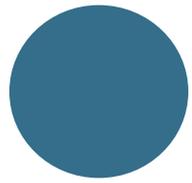
Sulfur Compounds (SO_x)

Low-Molecular-Weight Hydrocarbons (HC)

Particulate Matter (PM)

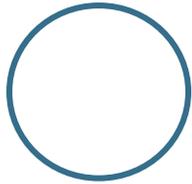


1 Gallon Diesel Burned = 22.2 lbs CO₂ Emitted

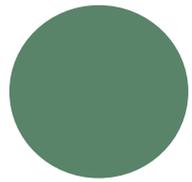


LOCALLY ENFORCED IDLING RESTRICTIONS

What Makes Diesel Exhaust So Dangerous?



Pollutants in diesel lead to the formation of ozone which contributes to smog.



Prolonged exposure to ozone can lead to adverse health effects including:

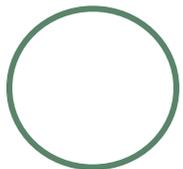
Irritation of the Airways

Reduced Lung Function

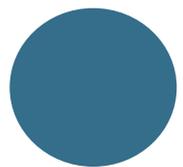
Coughing

Irritation of the Throat and Chest

Inability to Breathe as Vigorously as Normal



Diesel exhaust also contains particulate matter and many air toxins which are harmful to human health.



LOCALLY ENFORCED IDLING RESTRICTIONS

Savings \$\$\$

Unnecessary Idling Wastes Money and Resources

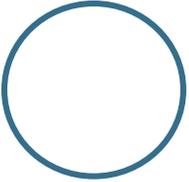
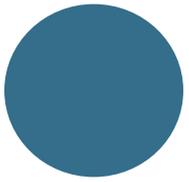
EXAMPLE)

Idling = 7 hours/day * 5 days/week * 50 weeks/year
= 1,750 hours idling/year

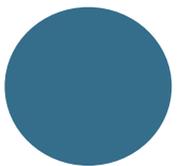
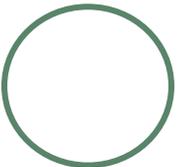
Idling = 1 gallon diesel/hour * \$3.00-4.00/gallon diesel
= \$5,250-\$7,000/year

Engine Manufacturers, including Cummins, state that excessive idling should be avoided when possible as it results in:

- Reduced Fuel Economy
- Increased Engine Wear
- Excessive Carbon Buildup on Pistons, Piston Rings, Injector Tips, Valves, Etc.
- Increased Frequency of Maintenance and Repairs such as Oil Changes and Replacement of Belts/Hoses



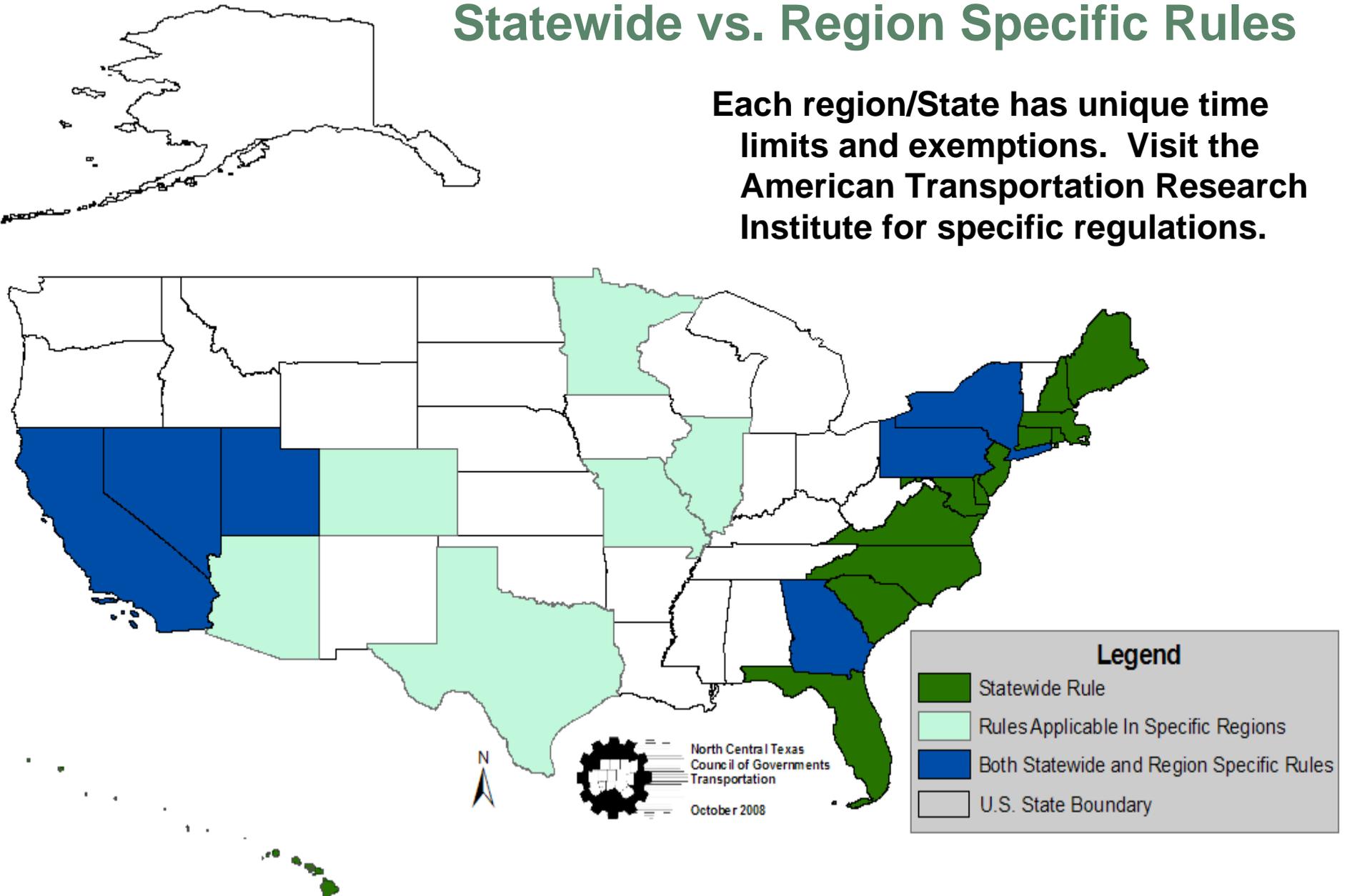
Idling Restrictions In The U.S. & Texas



U.S. IDLING RESTRICTIONS

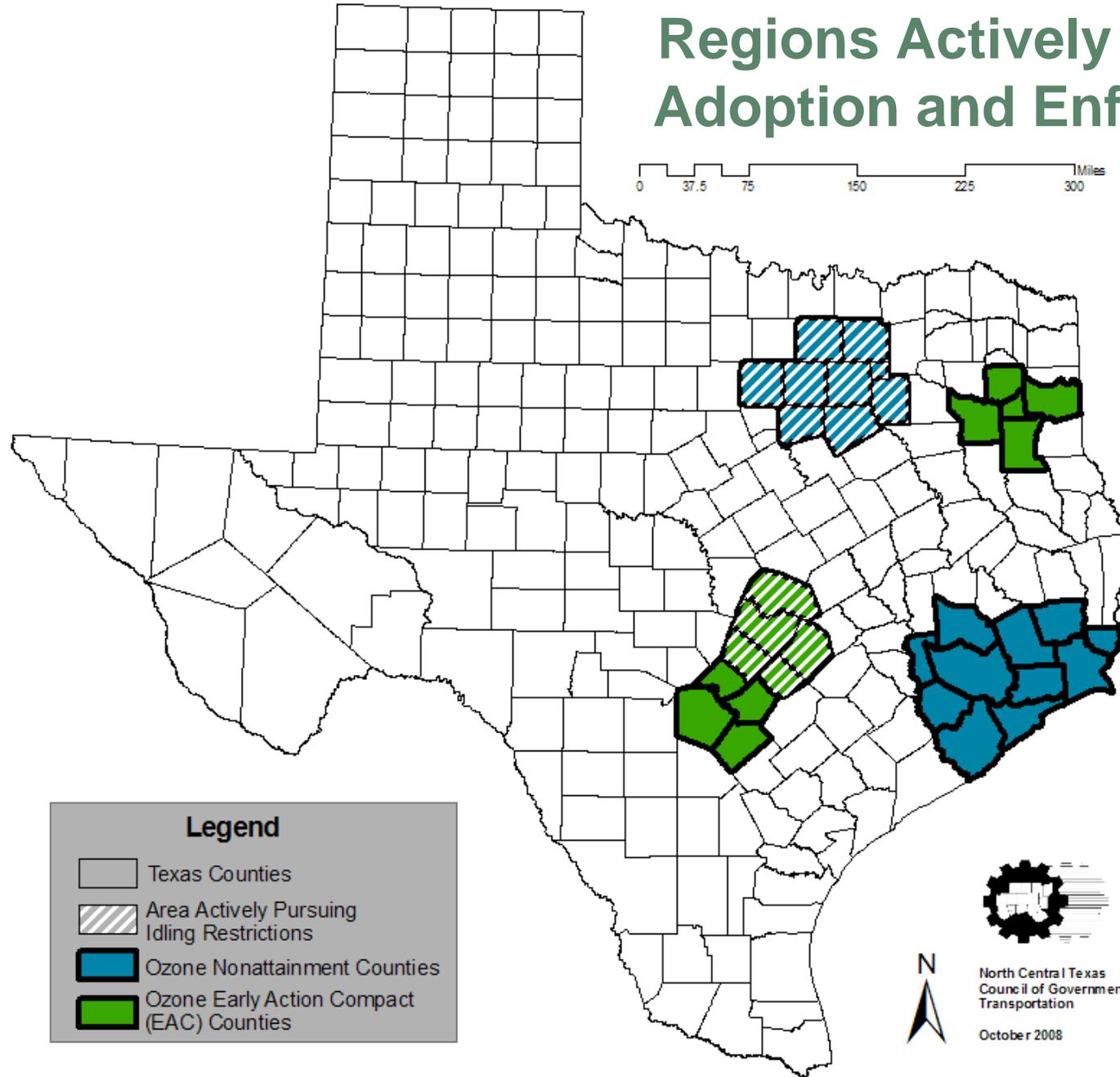
Statewide vs. Region Specific Rules

Each region/State has unique time limits and exemptions. Visit the American Transportation Research Institute for specific regulations.



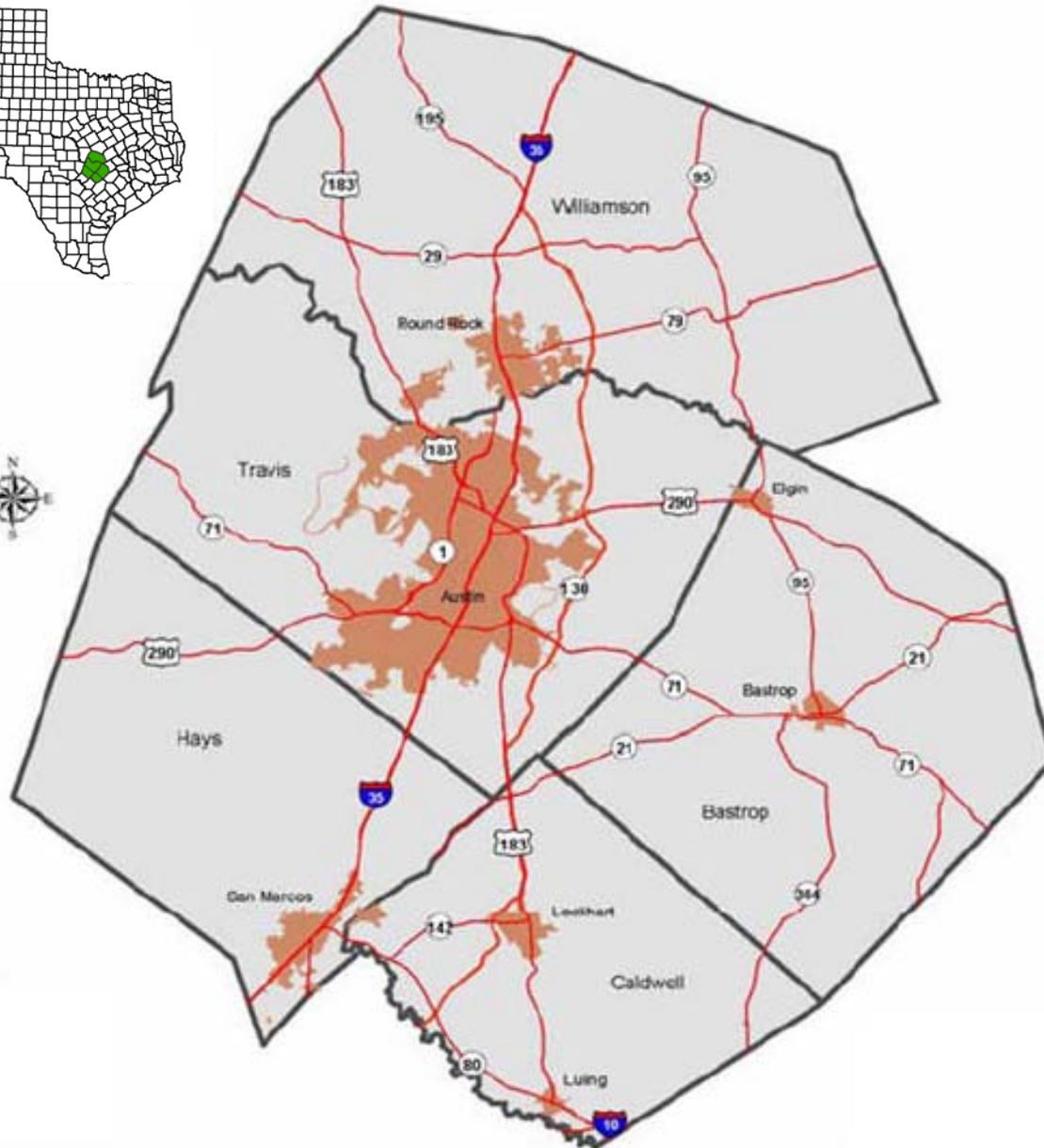
TEXAS IDLING RESTRICTIONS RULE

Regions Actively Pursuing Adoption and Enforcement



LOCALLY ENFORCED IDLING RESTRICTIONS

Central Texas Area



Entities

Counties:

Bastrop

Caldwell

Hays

Travis

Williamson

Cities:

Austin

Bastrop

Lockhart

Luling

Round Rock

San Marcos

LOCALLY ENFORCED IDLING RESTRICTIONS

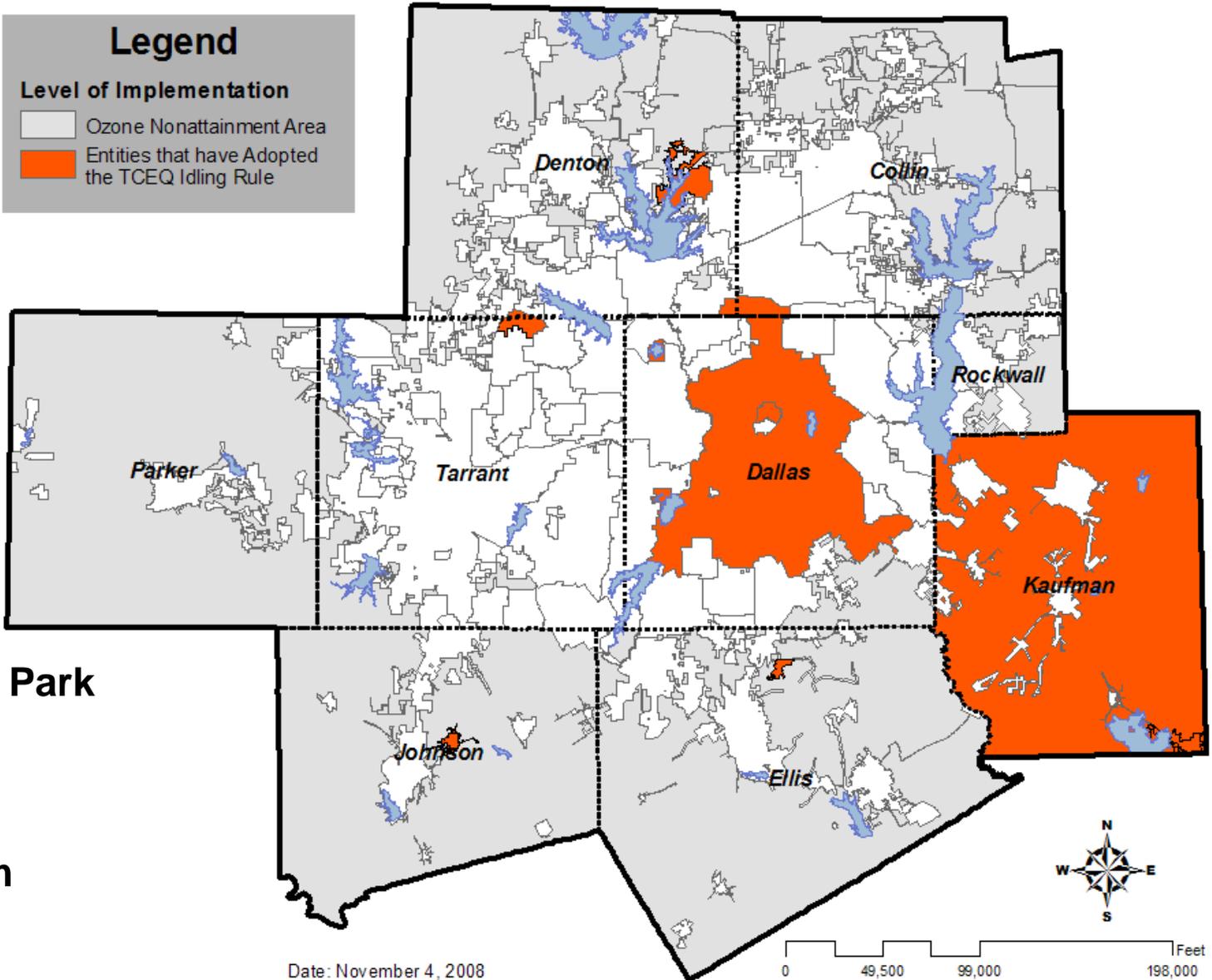
North Central Texas Area



Legend

Level of Implementation

- Ozone Nonattainment Area
- Entities that have Adopted the TCEQ Idling Rule



Entities

City of Dallas

City of Pecan Hill

City of University Park

Kaufman County

Town of Keene

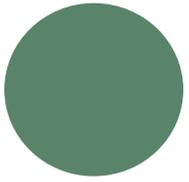
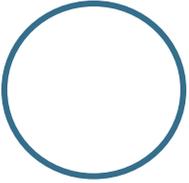
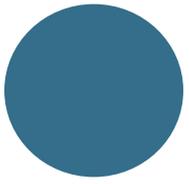
Town of Little Elm

Town of Mabank

Town of Westlake

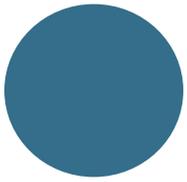
Date: November 4, 2008

0 49,500 99,000 198,000 Feet



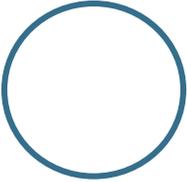
Texas Idling Rule





MOTOR VEHICLE IDLING RESTRICTIONS

Texas Commission on Environmental Quality



Texas Administrative Code (TAC)



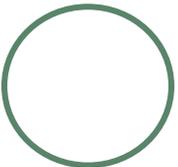
TITLE 30

Part 1

Chapter 114

Subchapter J

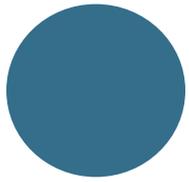
Division 2



Locally Enforced Motor Vehicle Idling Limitations

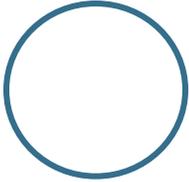
§ 114.510-114.517





LOCALLY ENFORCED IDLING RESTRICTIONS

TCEQ Rule Timeline



Original Rule Effective Date

December 9, 2004



EPA Model State Law Released

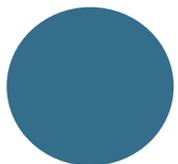
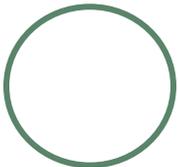
May 4, 2006

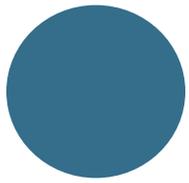
Amended Rule Effective Date

May 17, 2006

Rule Revision Adoption

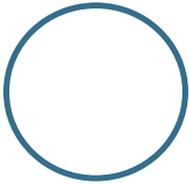
January 9, 2008



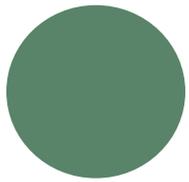


LOCALLY ENFORCED IDLING RESTRICTIONS

Control Requirements



No Gasoline or Diesel Powered Motor Vehicle Over 14,000 Pounds (GVWR) May Idle the Main Engine for More Than 5 Minutes When the Vehicle is Not in Motion



Applicable From April 1 Through October 31

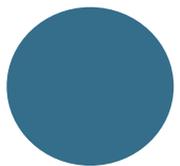
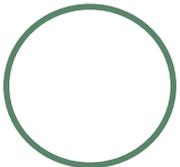
No Driver Using Vehicle's Sleeper Berth May Idle in:

A Residential Neighborhood

A School Zone

Within 1,000 Feet of a Hospital or School

Within a 2-Mile Radius of a Facility Offering External Heating and Air Conditioning



MOTOR VEHICLE IDLING RESTRICTIONS

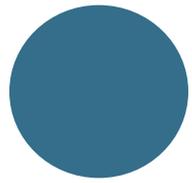
Applicability

Motor Vehicles with a Gross Vehicle Weight Rating of 14,000 Pounds or Greater, i.e.:

Flat Bed, Stake Trucks, Step Vans, Utility Trucks, Dump, Garbage, Fuel And Beverage Delivery Trucks, Tractor-Trailer Trucks, School And Transit Buses

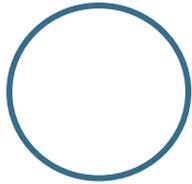
Only Within a Jurisdiction of a Local Government that Has Signed a Memorandum of Agreement with TCEQ to Delegate Enforcement of the Provisions to that Local Government

Jurisdiction-By-Jurisdiction Adoption Required



LOCALLY ENFORCED IDLING RESTRICTIONS

Exemptions



Vehicle Type

Vehicles With Sleeper Berth (Before Sept. 2009 Only)



Military, Emergency or Law Enforcement Vehicles

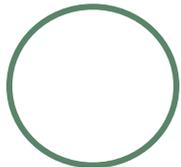
Airport Ground Support Equipment

**The Owner of a Vehicle Rented or Leased to a Person
Not Employed By Owner**

Operations

Idling Due to Traffic Congestion

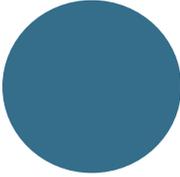
**Motors Run as Power Source for Mechanical
Operations**



**Idling During Operation for Maintenance/Diagnostic
Purposes**

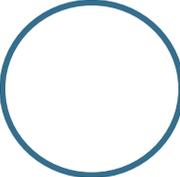


Operation of Engine Solely to Defrost a Windshield



LOCALLY ENFORCED IDLING RESTRICTIONS

Exemptions Continued



Air Conditioning And Heating Provision

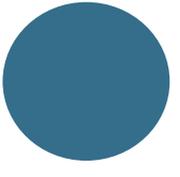


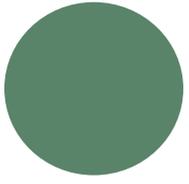
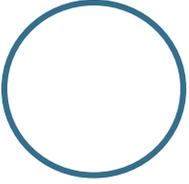
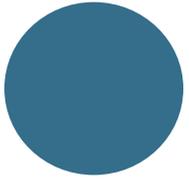
For Passenger Comfort and Safety in Vehicles Intended for Commercial/Public Passenger Transportation or Passenger Transit Operations (30 Minutes Maximum)

For Employee Health or Safety While Employee is Using Vehicle to Perform an Essential Job Function Related to Roadway Construction or Maintenance

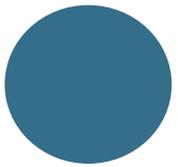


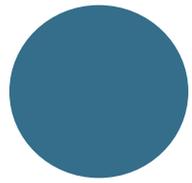
During Use of Sleeper Berth for a Government-Mandated Rest Period (Subsection Expires September 1, 2009)





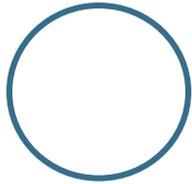
Local Government Implementation



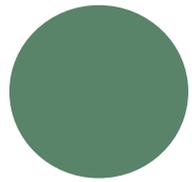


LOCALLY ENFORCED IDLING RESTRICTIONS

Implementation In North Central Texas



Three Stages

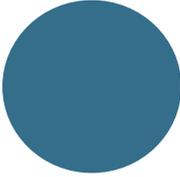


Stage 1: Initiation

Stage 2: Education

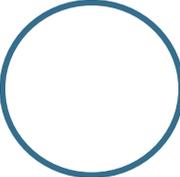
Stage 3: Enforcement





LOCALLY ENFORCED IDLING RESTRICTIONS

Stage 1: Initiation



Local Government Activity:

- **Adopt TCEQ Idling Limitation Rule**
- **Sign North Texas MOA**



NCTCOG Staff Assistance:

- **Develop Guide for Local Governments**
- **Provide Information to Council Members, Commissioners, and City/County Staff (Upon Request)**

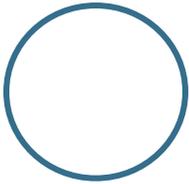


NOTE: For SIP reporting requirements, NCTCOG requests being notified following rule adoption and execution of MOA.



LOCALLY ENFORCED IDLING RESTRICTIONS

Stage 2: Education



Local Government Activity:

- Order and Install Signs in Areas Traditionally Known for Excessive Idling
- Promote Awareness of Restrictions and Idle Reduction Technology Options Within Jurisdiction



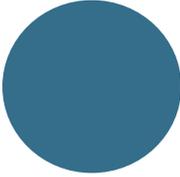
NCTCOG Staff Assistance:

- Develop for Regional Use:
 - Anti-idling Street Signs
 - Driver Education Brochures
 - Idling Complaint Hotline and Web site to Report Idling Vehicles

1-877-NTX-IDLE [COMING SOON]

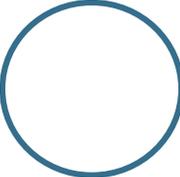
www.EngineOffNorthTexas.org





LOCALLY ENFORCED IDLING RESTRICTIONS

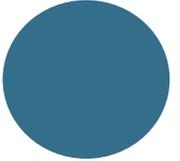
Stage 3: Enforcement

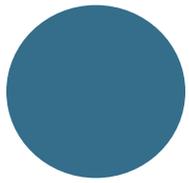


Local Government Activity:

- 
- **Identify Enforcement Personnel**
 - **Determine Procedures to Spot and Cite Violators**
 - **Log Citations for Requisite Reporting**

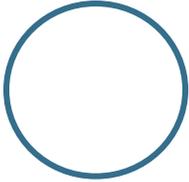
NCTCOG Staff Assistance:

- 
- 
- **Provide Training on Recommended Enforcement Procedures**
 - **Provide Training on NCTCOG Emissions Database (NED)**
 - **Facilitate Discussions Between Agencies on Potential Sources of Funding**



LOCALLY ENFORCED IDLING RESTRICTIONS

Enforcement & Penalties



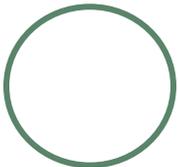
Enforcement:

City of Dallas - City Marshal's Office



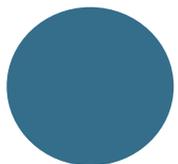
**Regional Emissions Enforcement Program -
Cooperation with Local Law Enforcement
Agencies (i.e. – Constable's Office, Marshal's
Office, Sheriff's Office, Local Police
Departments, and/or Code Enforcement Personnel)**

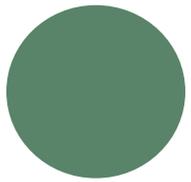
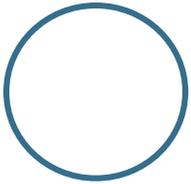
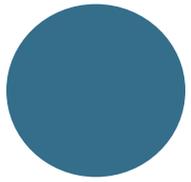
Penalties:



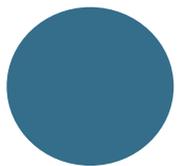
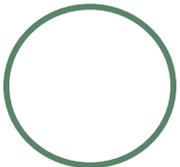
Fine Not to Exceed \$500 Per Offense

Each Violation is Considered a Separate Offense





Technology Options



IDLE REDUCTION TECHNOLOGIES

Options

	Technology	Cost	Features
On-Board	Automatic Start/Stop System	<\$1,000	Available from engine manufacturer, low driver acceptance
	Direct-Fired Heaters	\$900–\$1,200	Lightweight, available from engine manufacturer, heat only
	Auxiliary Power Units/Generator Sets	\$5,000–\$7,000	Addresses comfort needs, heavy, noise component, requires after-market retrofit
	Battery Powered Heating/AC	\$7,000–\$8,000	Addresses comfort needs, heavy, zero air emissions
On-Site	External Heating & A/C (Including Electrified Truck Stops)	~\$1.25-\$2.50 per hour	Some require truck modifications (i.e. electric heat/AC, inverter/charger) and others do not.

LOCALLY ENFORCED IDLING RESTRICTIONS

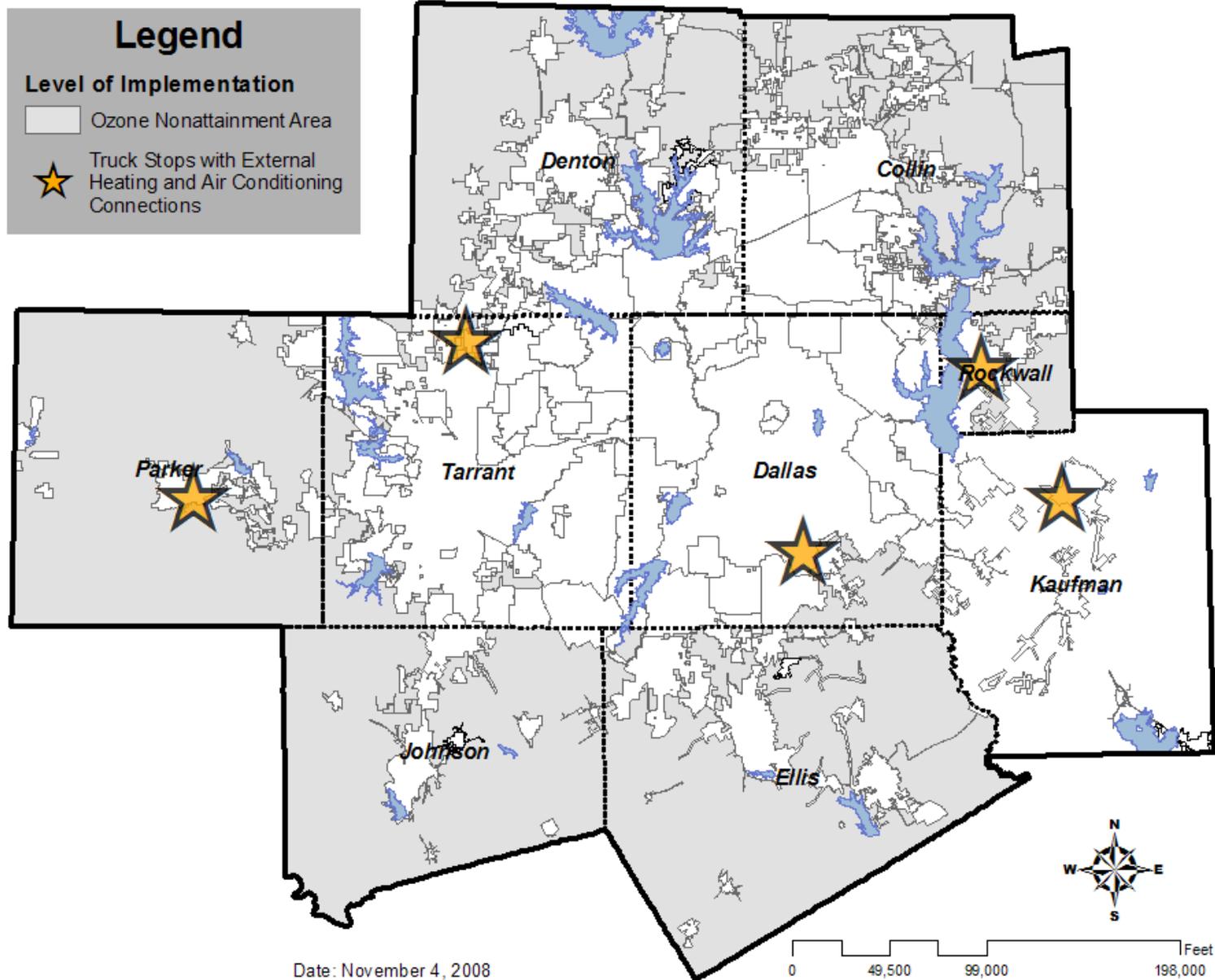
Idle Reduction Technology

On-Site Infrastructure



LOCALLY ENFORCED IDLING RESTRICTIONS

Truck Stops With Electrification Options in DFW



Date: November 4, 2008

LOCALLY ENFORCED IDLING RESTRICTIONS

Idle Reduction Technology

On-Board Infrastructure

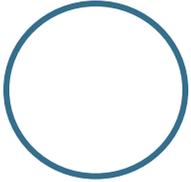
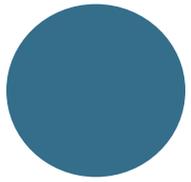
Auxiliary Power Units (APU)



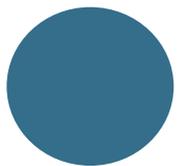
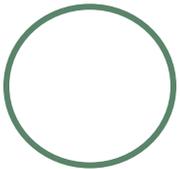
Photo courtesy of Next Generation Power

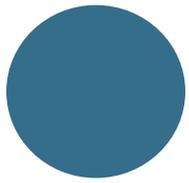


Self-contained full-function auxiliary power in a shock-resistant chassis-mount design.



Incentives & Funding Opportunities

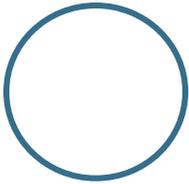




LOCALLY ENFORCED IDLING RESTRICTIONS

Driver Incentives

Education



Brochures and Driver Training

Pledges

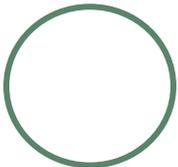


Ask Drivers to Take a Pledge to Minimize Idling

Incentives

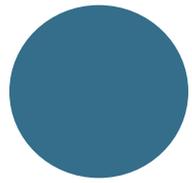
Since Eliminating Unnecessary Fuel Consumption Saves Money, This Savings Can Partially be used to Incentivize Drivers to Reducing Idling

EXAMPLE)



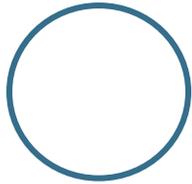
Monthly Incentive	Idling Threshold*	Fuel Savings Per Month @ \$3.00-\$4.00/Gal
\$10 gas/gift card	< 100 hours per month	\$180-\$240
\$20 gas/gift card	< 50 hours per month	\$330-\$440
\$50 gas/gift card	No idling per month	\$480-\$640

*Assumes baseline idling of 160 hours per month



LOCALLY ENFORCED IDLING RESTRICTIONS

Funding Opportunities



NCTCOG's Diesel Idling Reduction Program

On-Site and On-Board Idle Reduction Projects

Call for Projects Anticipated in November 2008

www.nctcog.org/DIRP



Texas Emissions Reduction Plan (TERP)

On-Site and On-Board Idle Reduction Infrastructure

www.TERPGrants.org

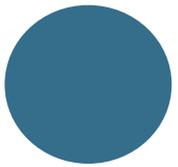
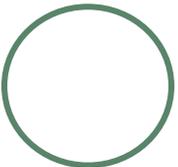
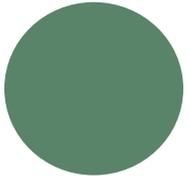
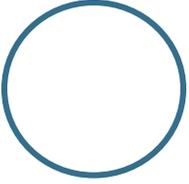
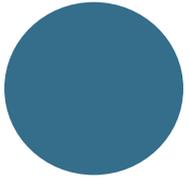


SmartWay Transport Partnership

Innovative Financing for Fuel-Efficient Technologies

www.epa.gov/smartway/





Resources

LOCALLY ENFORCED IDLING RESTRICTIONS

Resources

EPA SmartWay Savings Calculator

Designed to help truck owners compare the costs and estimate the fuel savings associated with various efficiency technologies.

www.epa.gov/smartway/transport/calculators

Calculator for single-owner (one truck):

RESULTS:

Equipment	Cost	% Fuel Savings	Annual Fuel Savings	Monthly Fuel Savings	Monthly Loan Payment	Net Monthly Savings
APU	\$8500	3%	\$3675	\$306	(\$164)	\$142

STEP 1: ENTER YOUR TRUCK AND LOAN INFORMATION.
Enter your basic vehicle and loan numbers here **OR** Click the "Load Typical Values" button below for help with typical long haul truck numbers.

Annual Fuel Use (Gallons)
 Cost of Fuel \$
 Annual Idling (Hours)
 Loan Period (Months)
 Loan Interest Rate %
 Yearly Fuel Cost \$ 140000
 Monthly Fuel Cost \$ 11667

STEP 2: SELECT TECHNOLOGIES OF YOUR TRUCK.
Check the technology box below to test various combinations of technologies for your truck. You can check as many items as you want.

Technology	Cost
<input type="checkbox"/> Bunk Heater (Heater)	\$1500
<input checked="" type="checkbox"/> Auxiliary Power Unit (APU)	\$8500
<input type="checkbox"/> Aluminum Wheel Sets for Single Wide Tires (Tires)	\$5600
<input type="checkbox"/> Trailer Aerodynamics (Aero)	\$2400
<input type="checkbox"/> Automatic Tire Inflation (ATI)	\$900
<input type="checkbox"/> Oxidation Catalyst (DOC)	\$1200

LOCALLY ENFORCED IDLING RESTRICTIONS

Resources

EPA Interactive Map

Features data including:

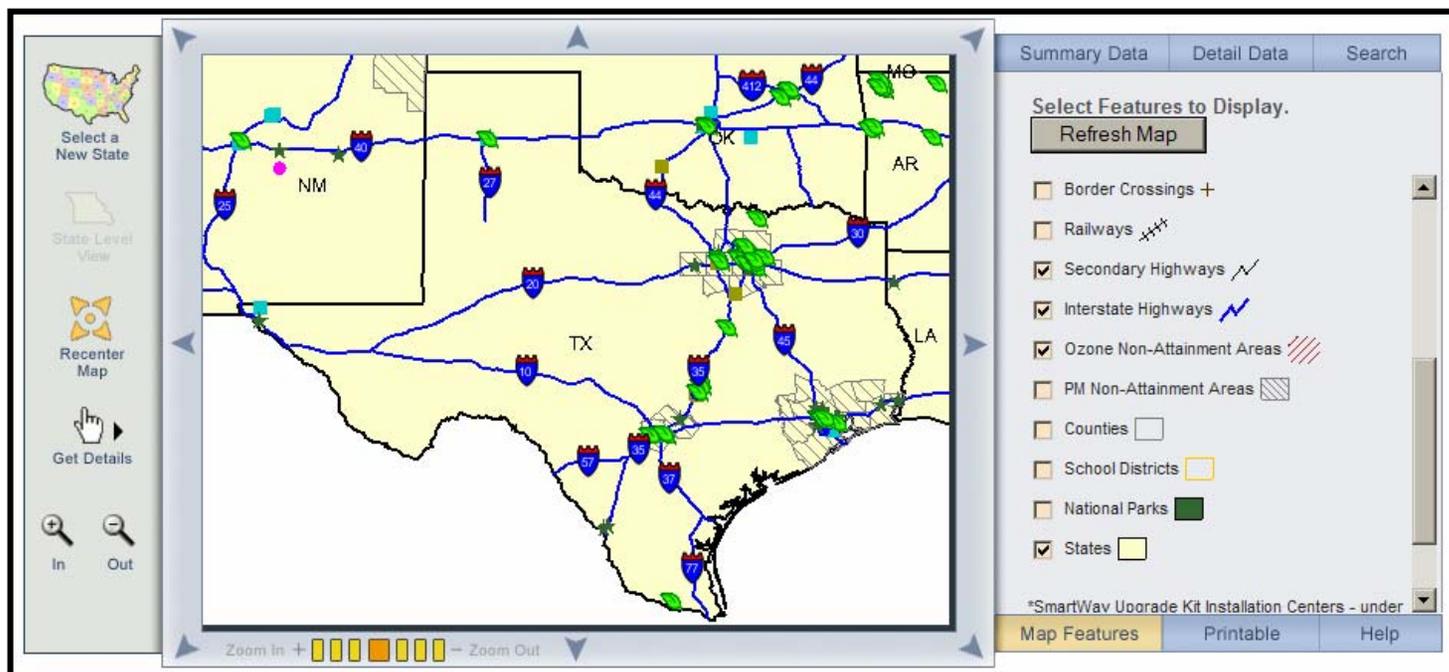
National Clean Diesel Campaign Retrofit Projects

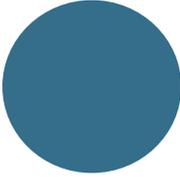
SmartWay Partners

Ethanol (E85) and Biodiesel Fueling Stations

Ozone and PM Nonattainment Areas

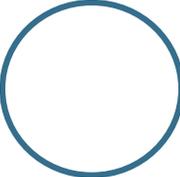
epamap10.epa.gov/website/irim_us_map.asp





LOCALLY ENFORCED IDLING RESTRICTIONS

Resources



Stop The Soot

**New Jersey Department of Environmental
Protection's Diesel Risk Reduction Program**

www.StopTheSoot.org



Engine Off – Central Texas

Sponsored by Capital Area COG

www.EngineOff.org

National Idle Reduction Network News



**Sponsored by the Department of Energy to
Bring Together Companies, Manufacturers,
and Government Agencies to Solve Vehicle Idling**



[www1.eere.energy.gov/vehiclesandfuels/resources/
fcvt_national_idling.html](http://www1.eere.energy.gov/vehiclesandfuels/resources/fcvt_national_idling.html)



LOCALLY ENFORCED IDLING RESTRICTIONS

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Senior Transportation Planner

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(817) 608-2354

www.nctcog.org/IdlingRule

www.EngineOffNorthTexas.org

[coming soon]