

Electric Vehicles North Texas

GETTING READY **Austin Climate Protection** **Conference & Expo** **January 15, 2010**

North Central Texas Council of Governments
Jenny Danieau



GETTING READY

Overview

- North Texas Air Quality
- Benefits of Plug-Ins (Air Quality)
- North Texas Travel
- Getting Ready for Plug-Ins

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North Texas Air Quality



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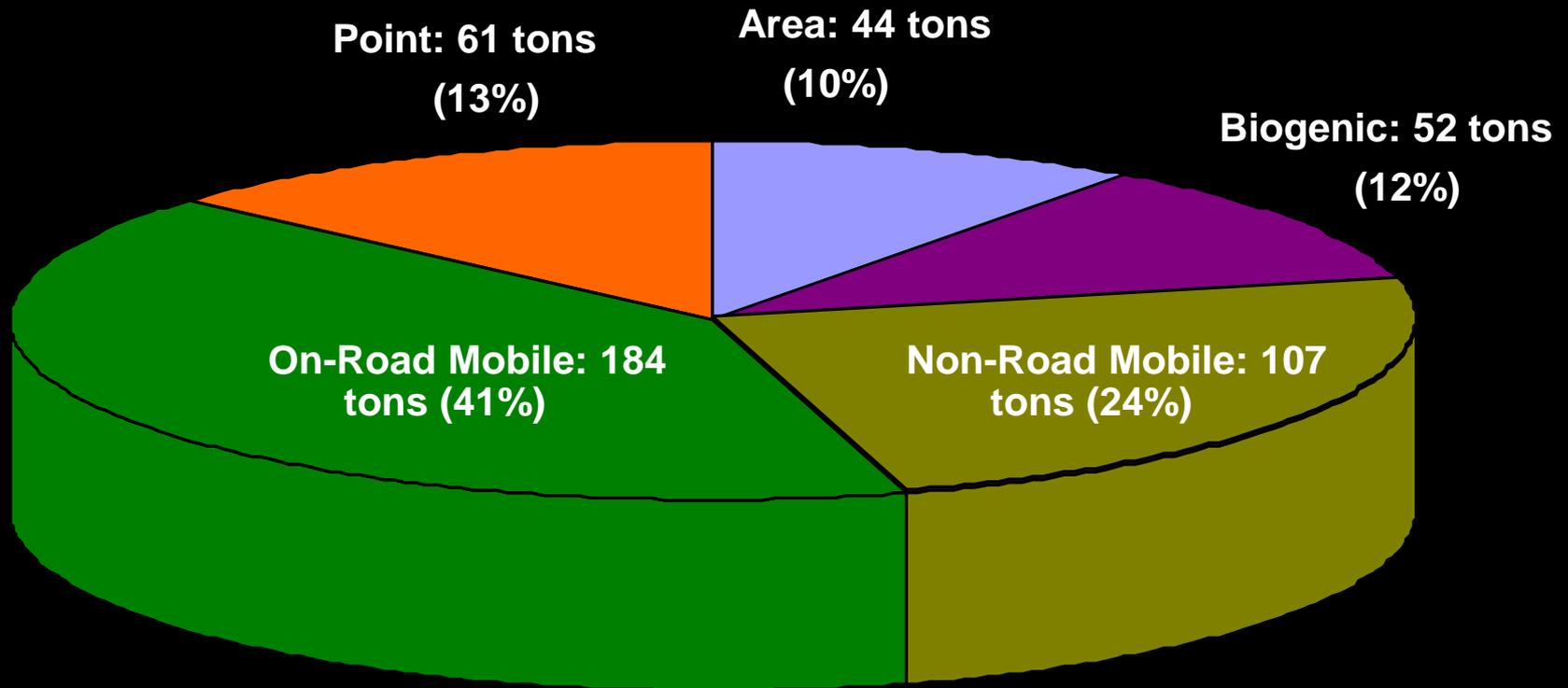
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Ground Level Ozone



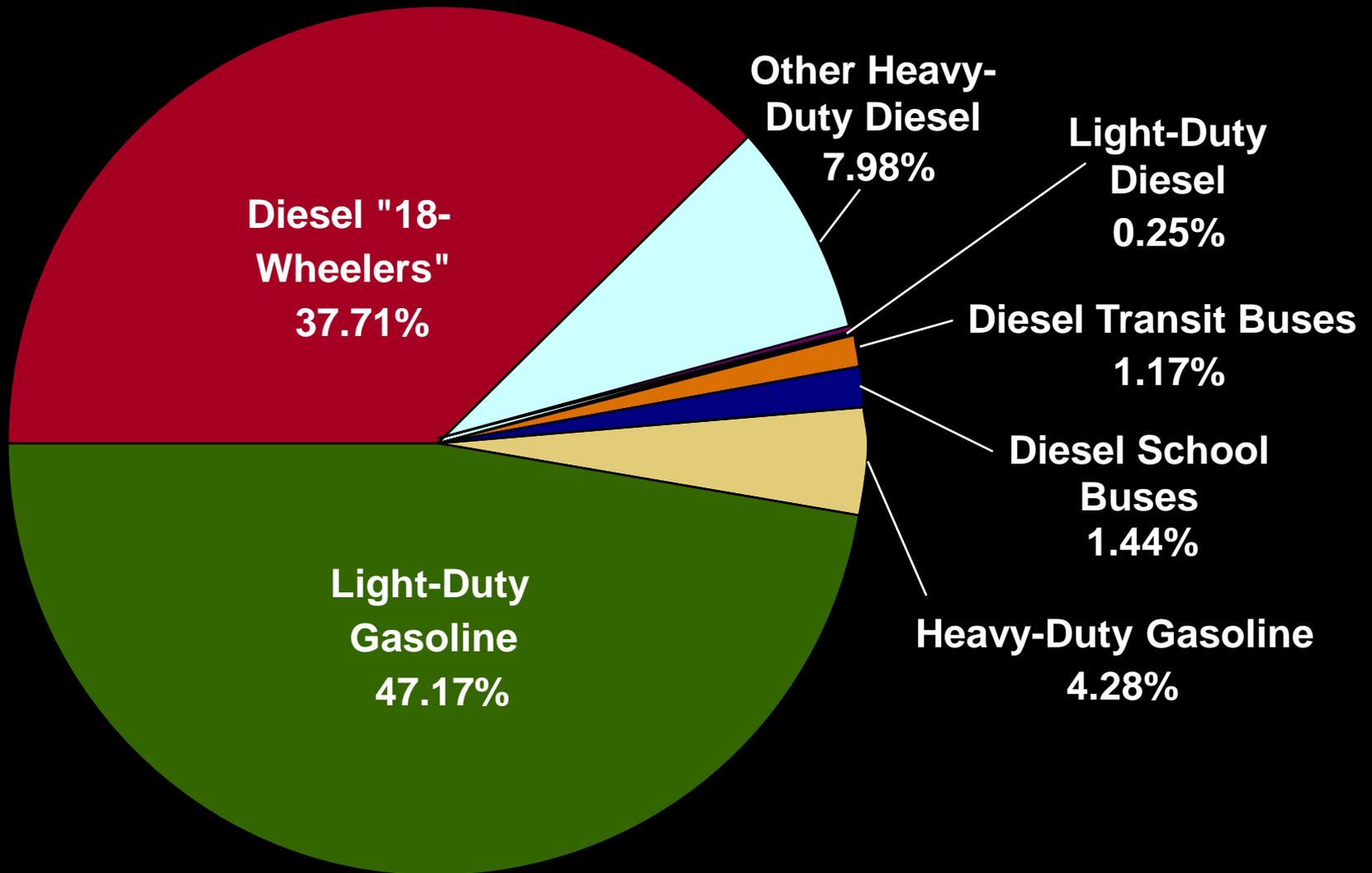
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2009 Nitrogen Oxides (NOx) Inventory



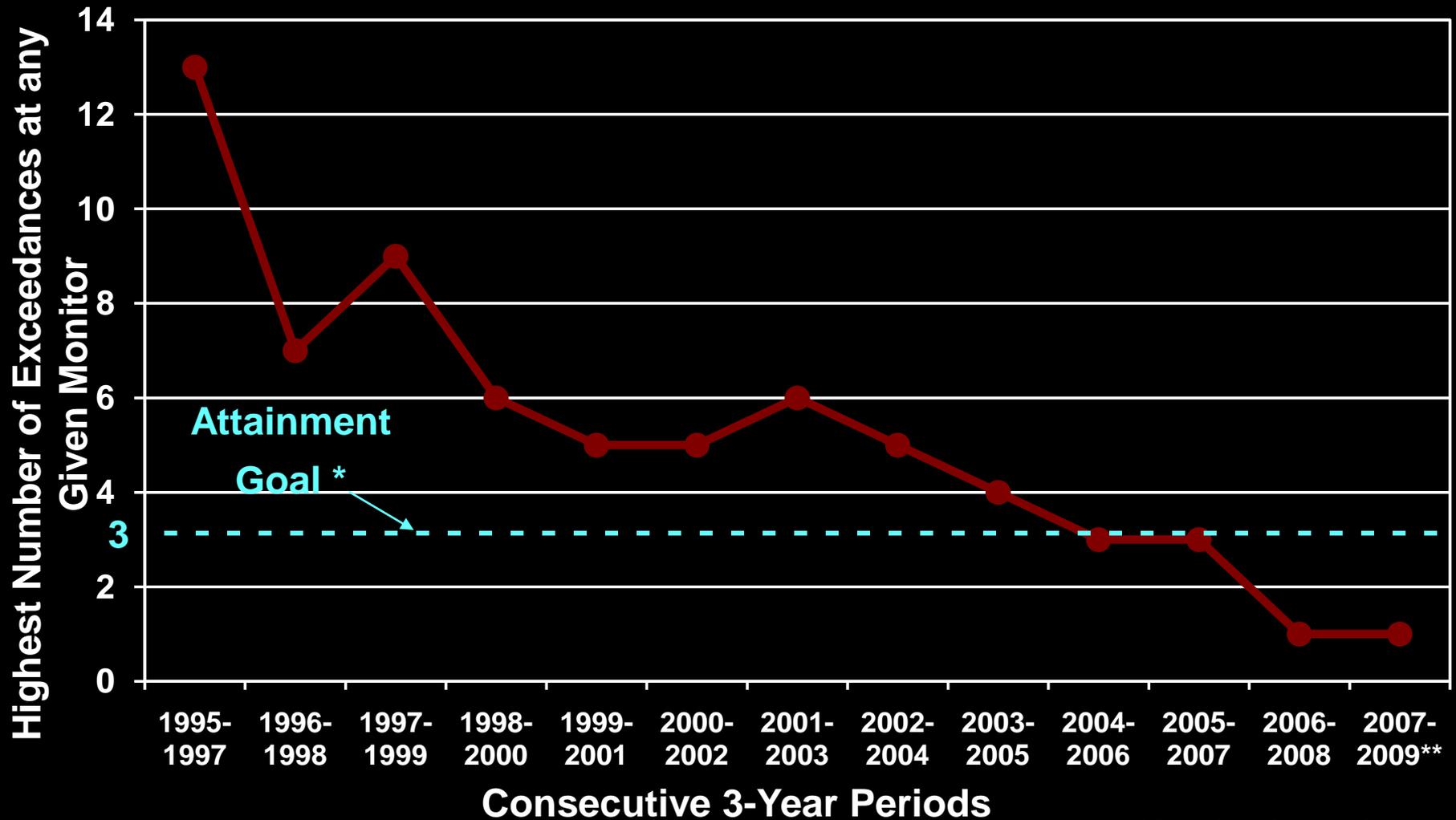
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2009 Nitrogen Oxides (NOx) Inventory



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1-Hour Ozone Historical Trends*



** Not a full year of data. Current as of August 2009

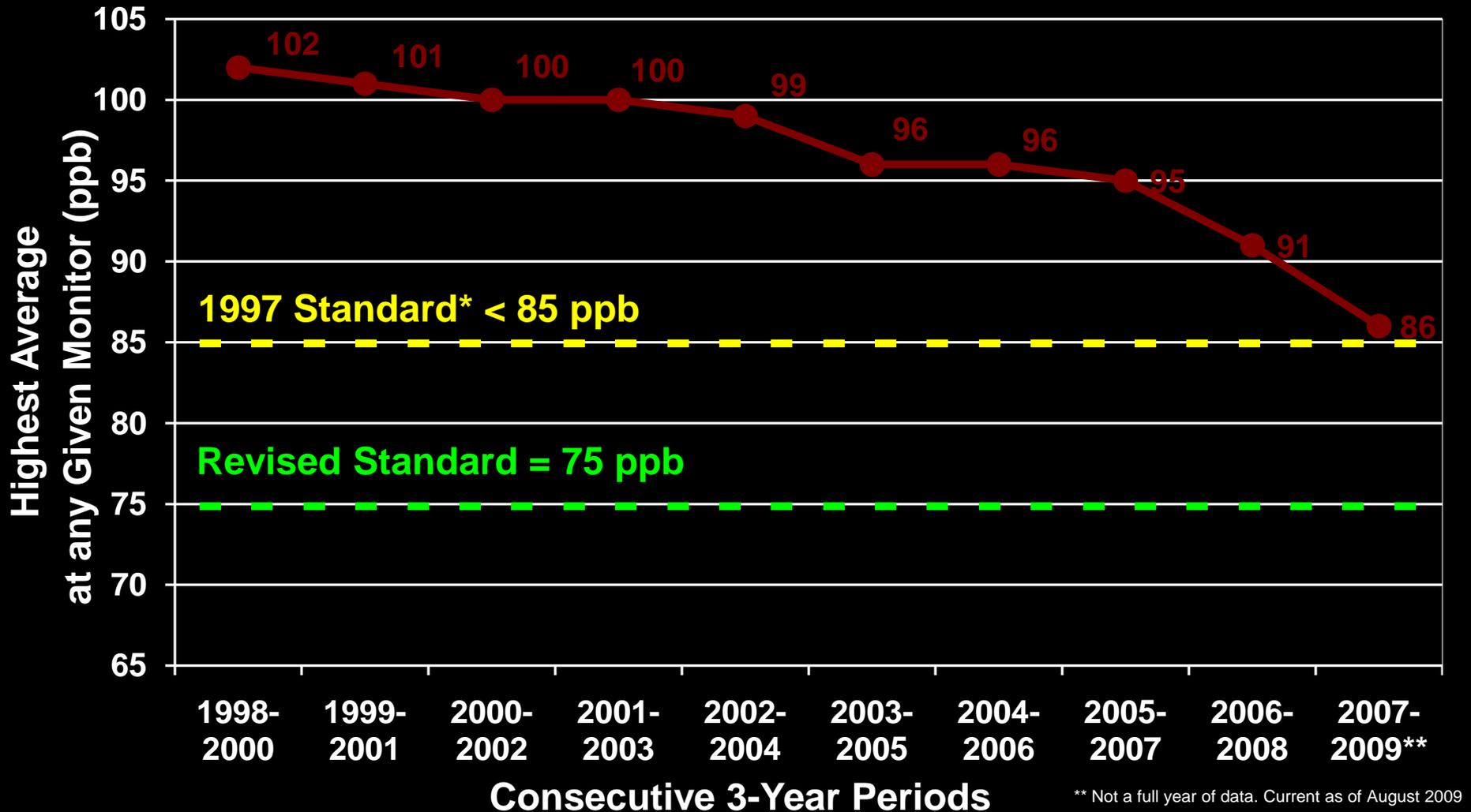


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* Attainment Goal - According to the US EPA National Ambient Air Quality Standards, attainment is reached when there are no more than 3 exceedances per monitor within a consecutive 3-year period. An exceedance occurs when the ozone concentration ≥ 125 parts per billion averaged over a one hour period.

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8-Hour Ozone Historical Trends*

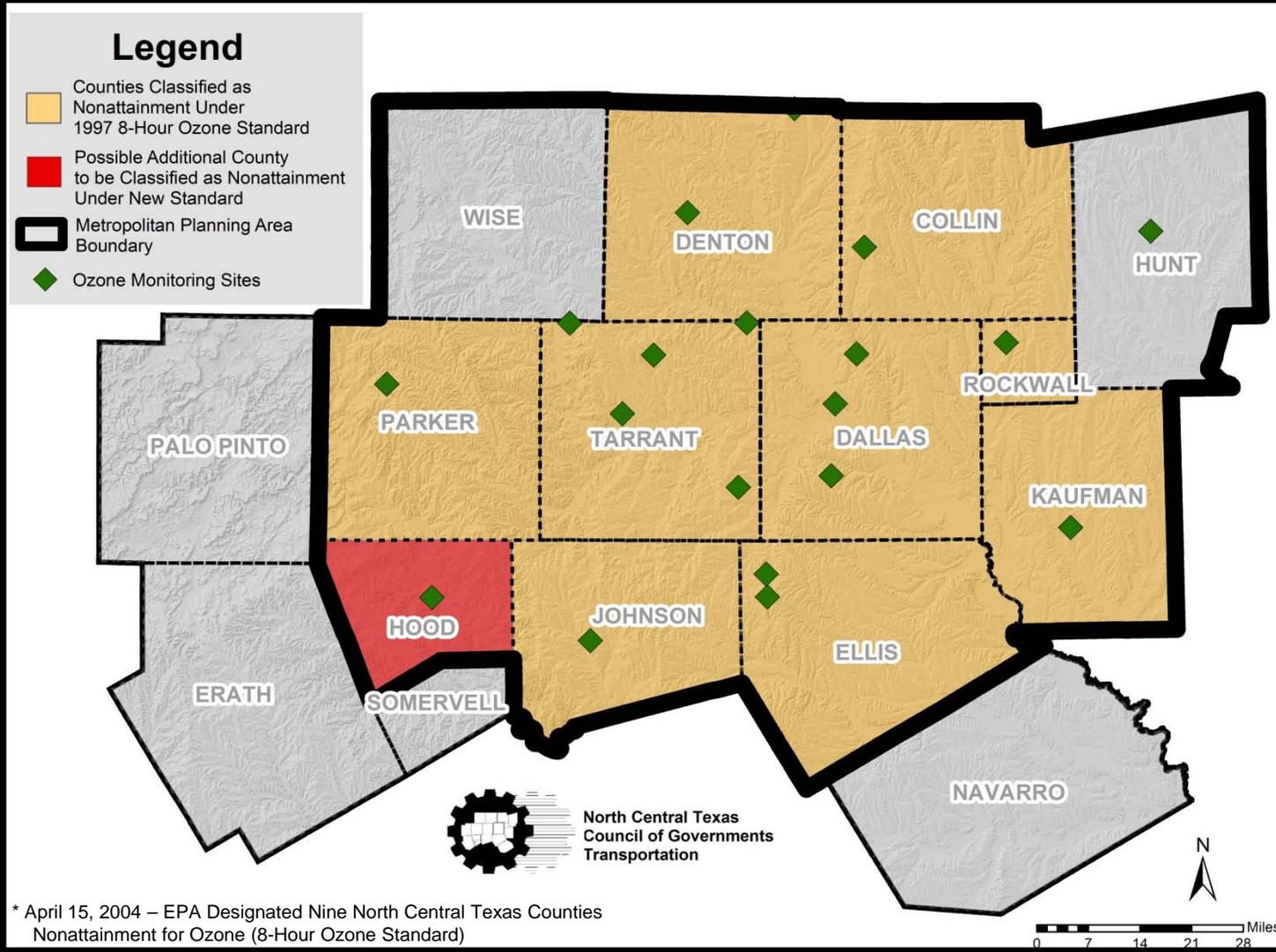


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* 2010 Attainment Goal - According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than 85 parts per billion (ppb).

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North Central Texas 8 Hour Ozone Nonattainment Area*



* April 15, 2004 – EPA Designated Nine North Central Texas Counties Nonattainment for Ozone (8-Hour Ozone Standard)



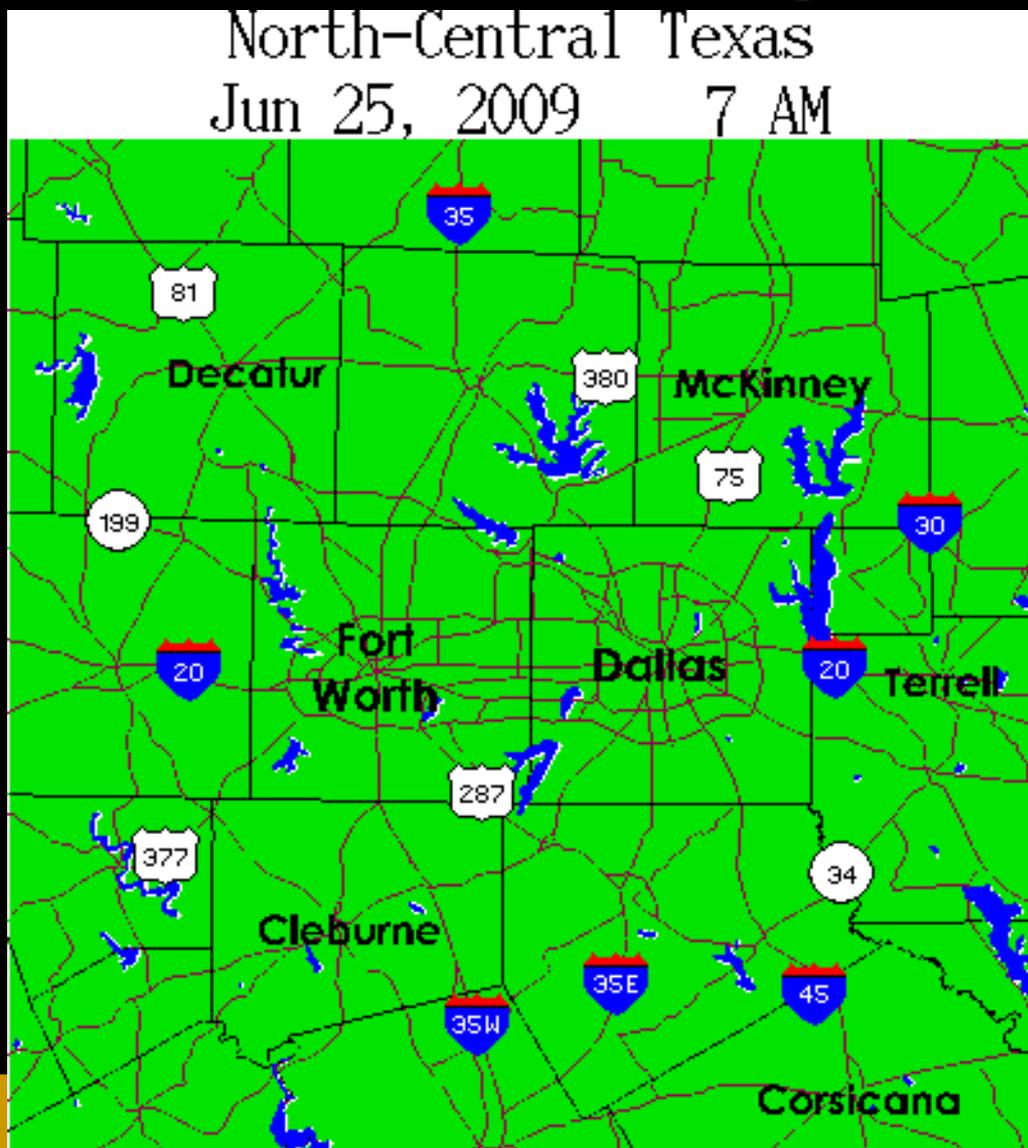
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Highest 2009 Ozone Season Day



* Air Quality Index colors represent the current 1997 8-hour ozone standard thresholds

Source: TCEQ www.tceq.state.tx.us/cgi-bin/compliance/monops/ozone_animation.pl



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Benefits of Plug-Ins (Air Quality)



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Why Electric Vehicles?

- **Reduction in Greenhouse Gas Emissions**
 - 25% in short term and up to 50% in long term¹
 - Projected to offer a 67% reduction in GHG emissions by 2030²
- **Reduction in Dependence on Petroleum**
 - Reduction of 85% in onboard fuel use compared to present-day technology by 2030²
- **Decrease in Ozone**
 - 61% of population will see decrease in ozone levels³

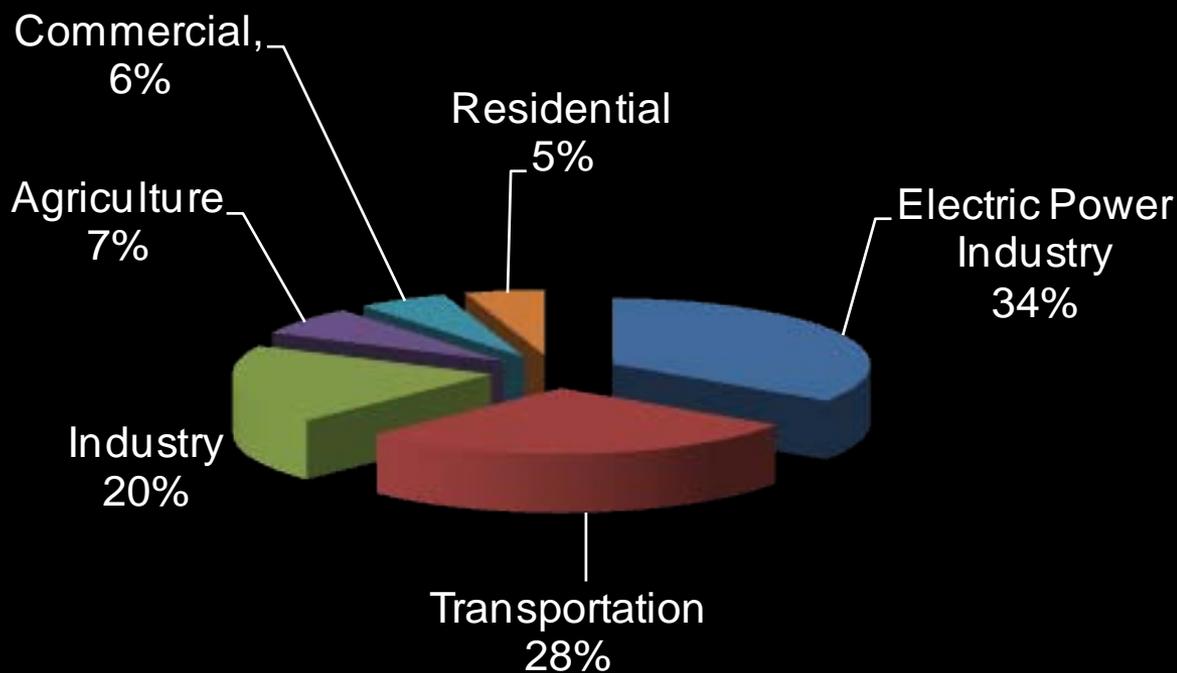


Sources:

1. Stephan CH, Sullivan J. Environmental and energy implications of plug-in hybrid-electric vehicles
2. Kromer M. Electricity as a Low Carbon Fuel: A Comparison of Future Vehicles Technologies
3. Knipping E, Duvall M. Environmental Assessment of Plug-In Electric Hybrid Vehicles vol 2 United States Air

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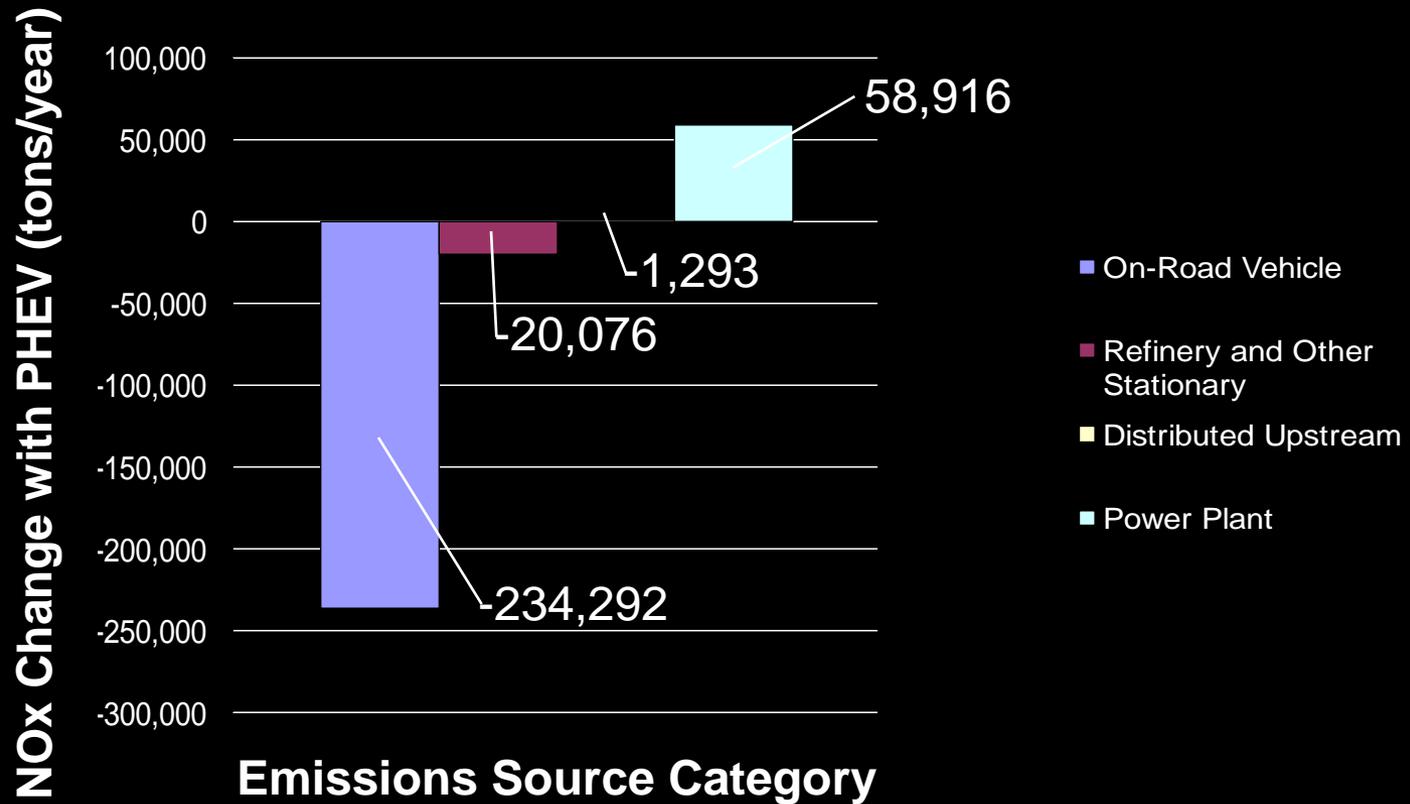
National CO₂ Emissions By Source



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Why Electric Vehicles?

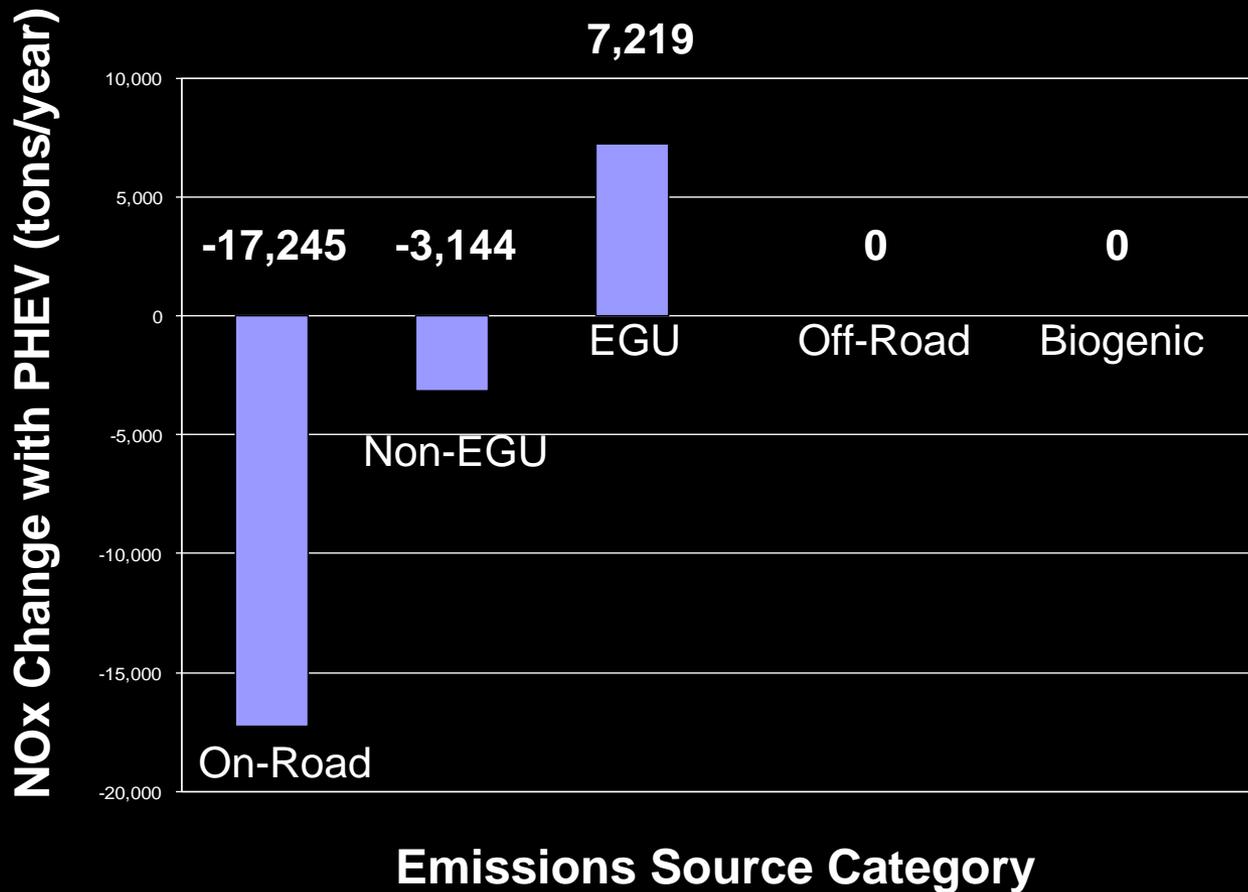
2030 National NOx Emissions Reductions from Base Case



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Why Electric Vehicles?

2030 Regional NOx Emissions Changes From 2030 Base Case



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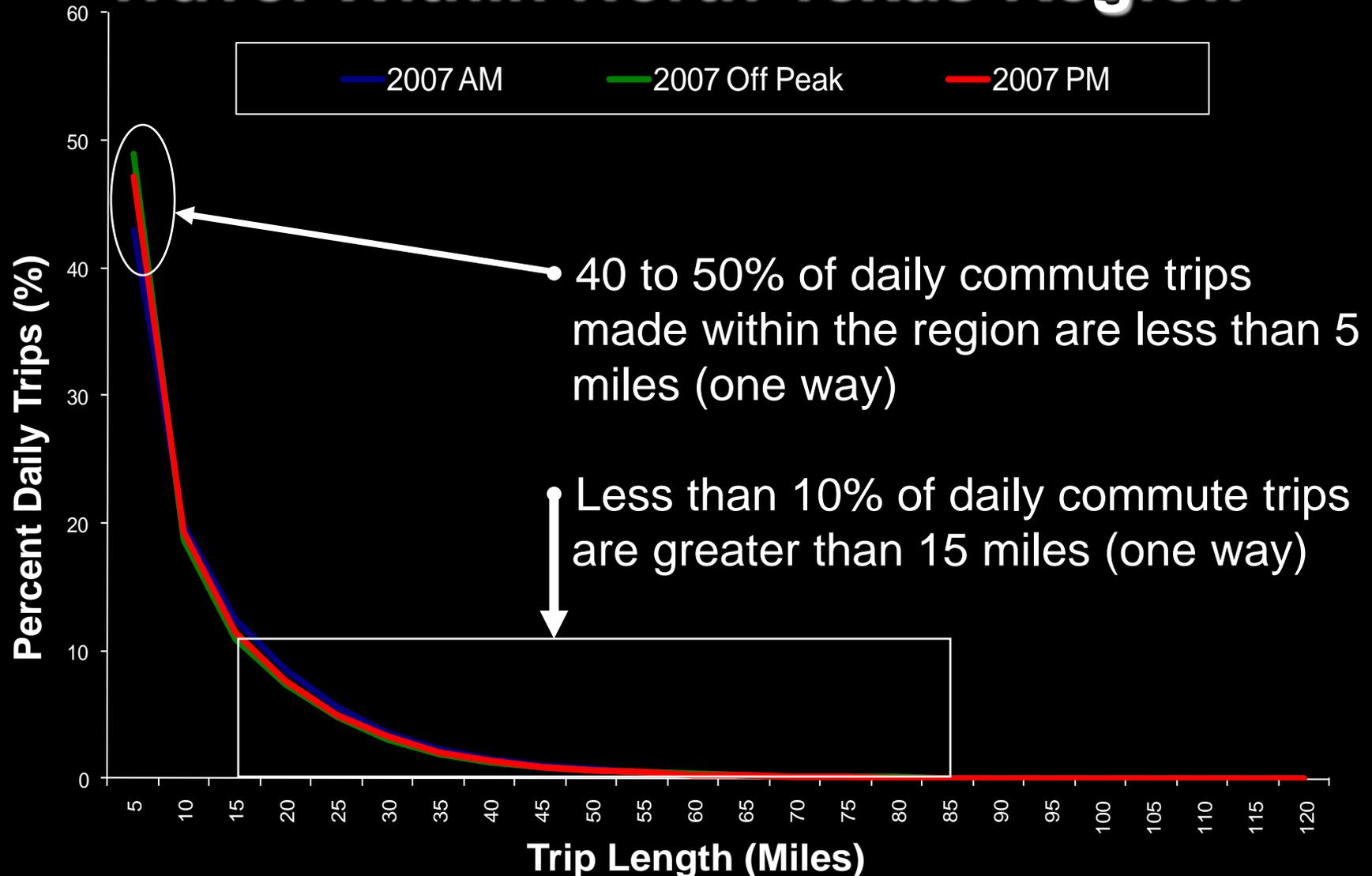
North Texas Travel



**Where are we going?
How far are we driving?**

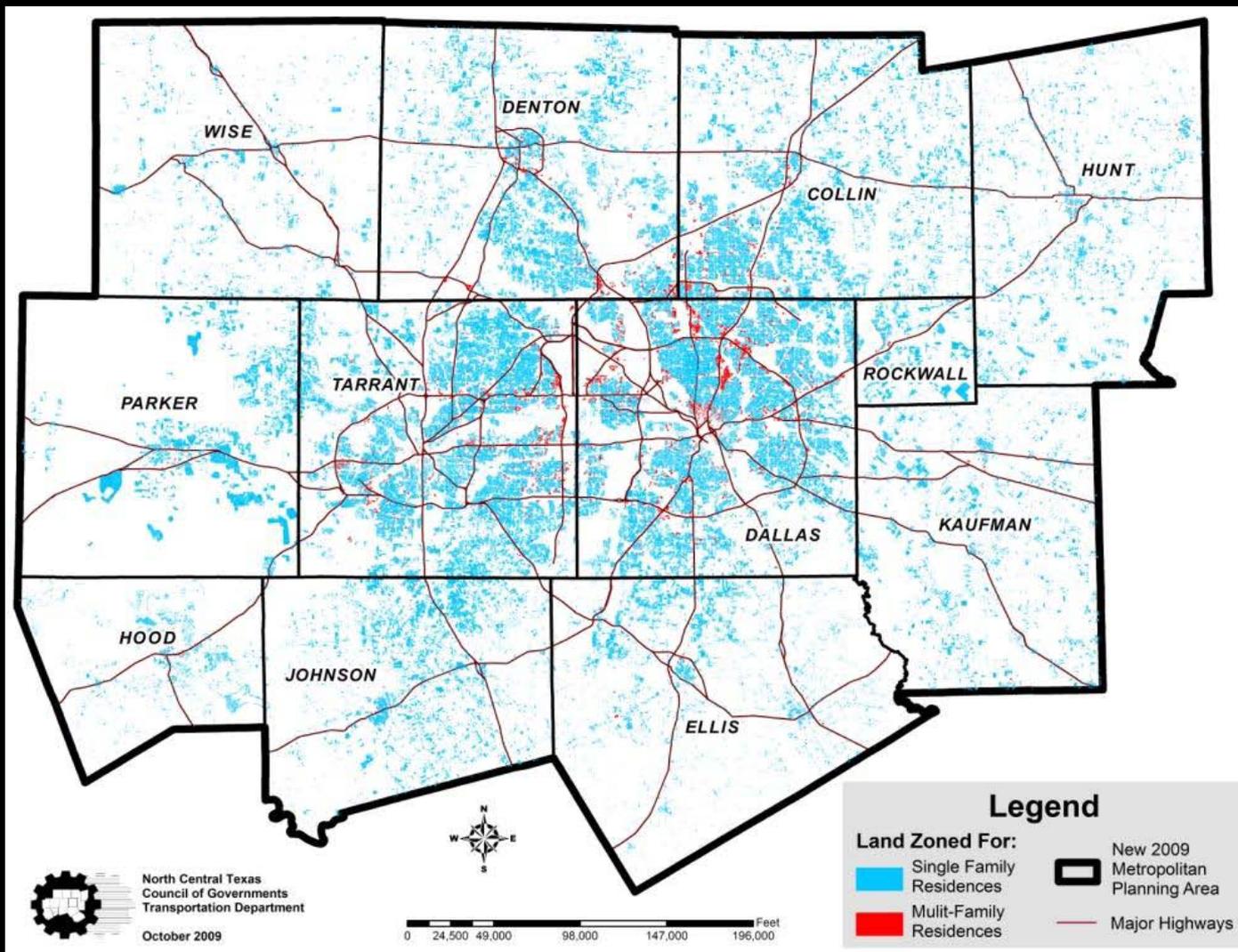
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Travel Within North Texas Region



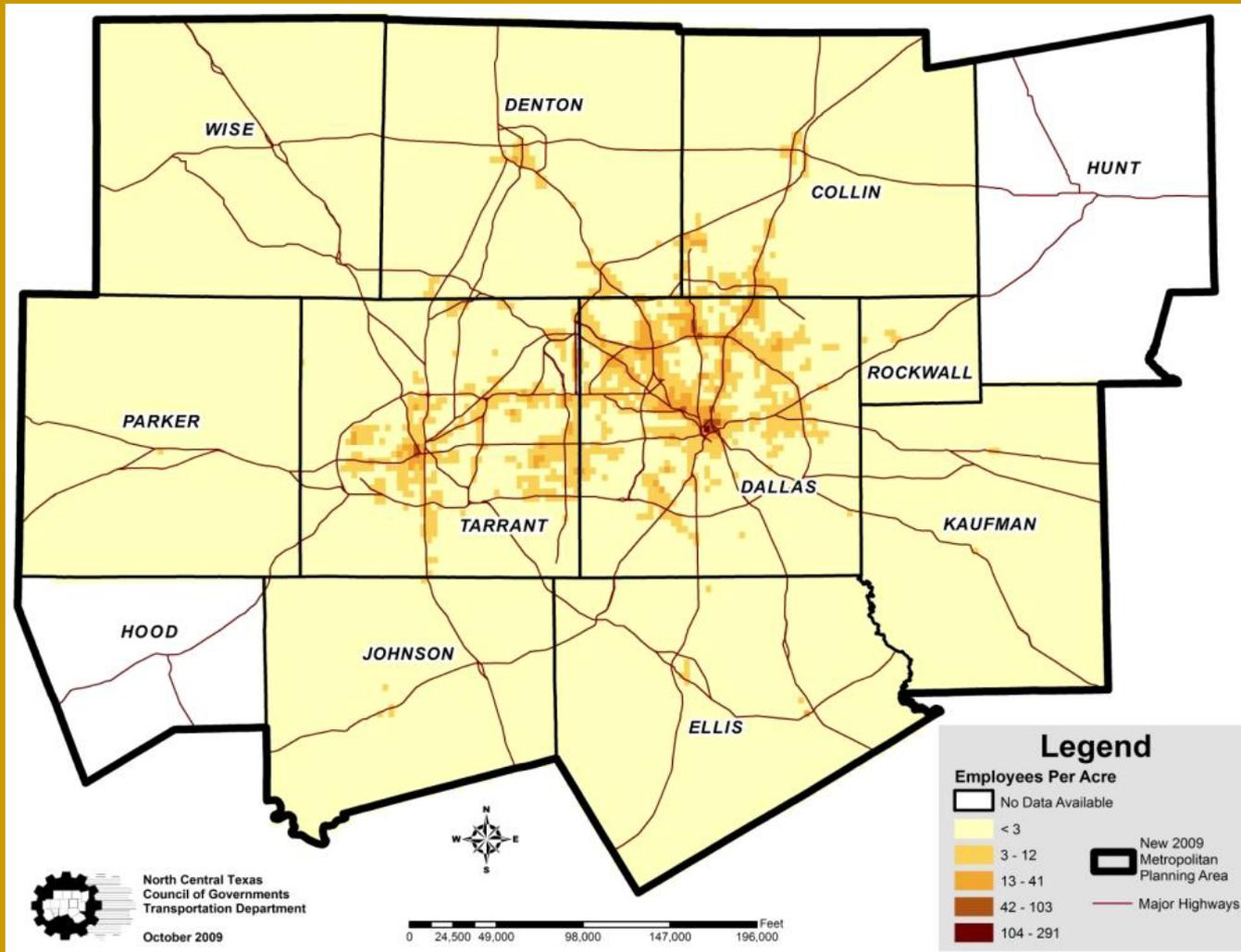
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Regional Residential Densities



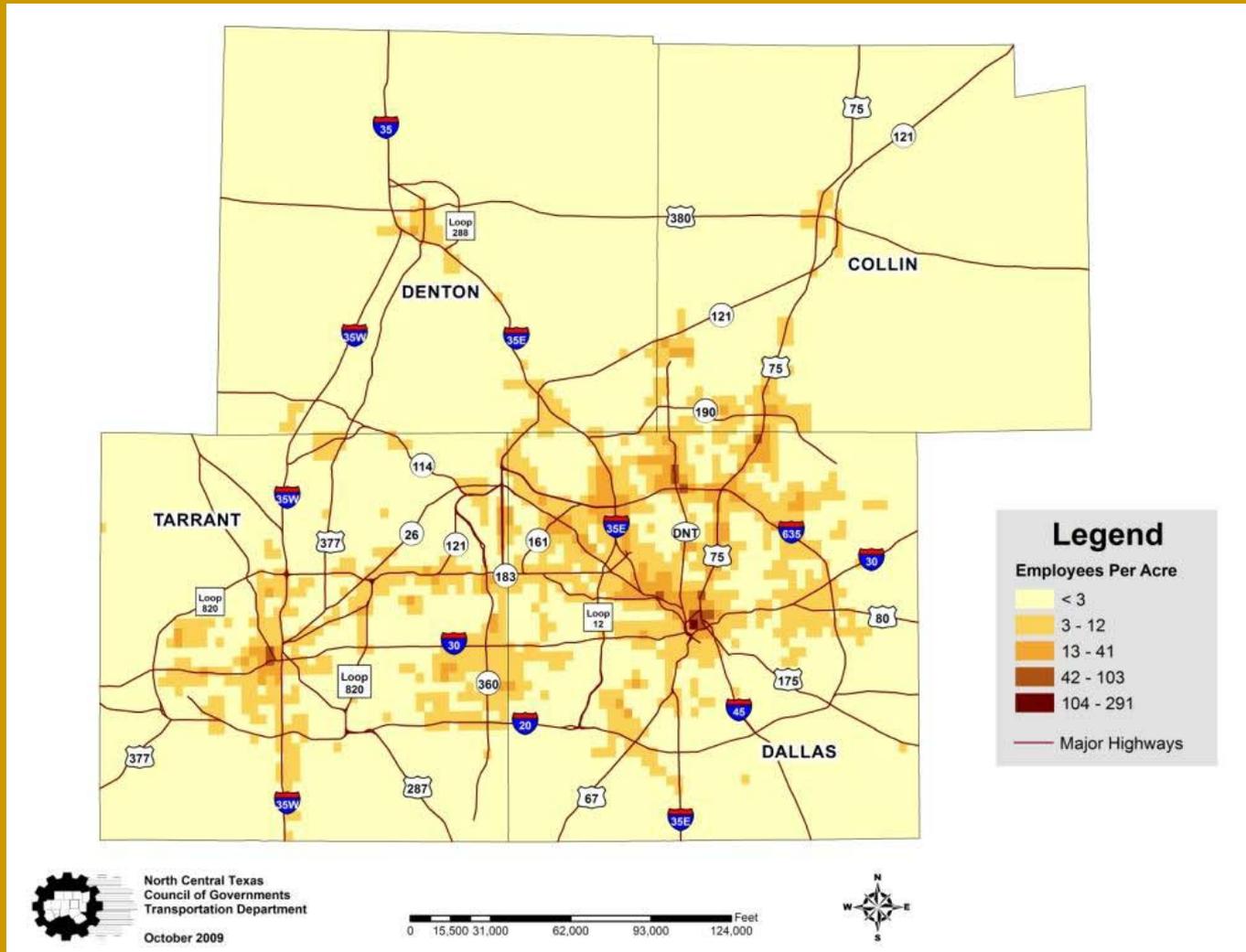
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Regional Employment Density



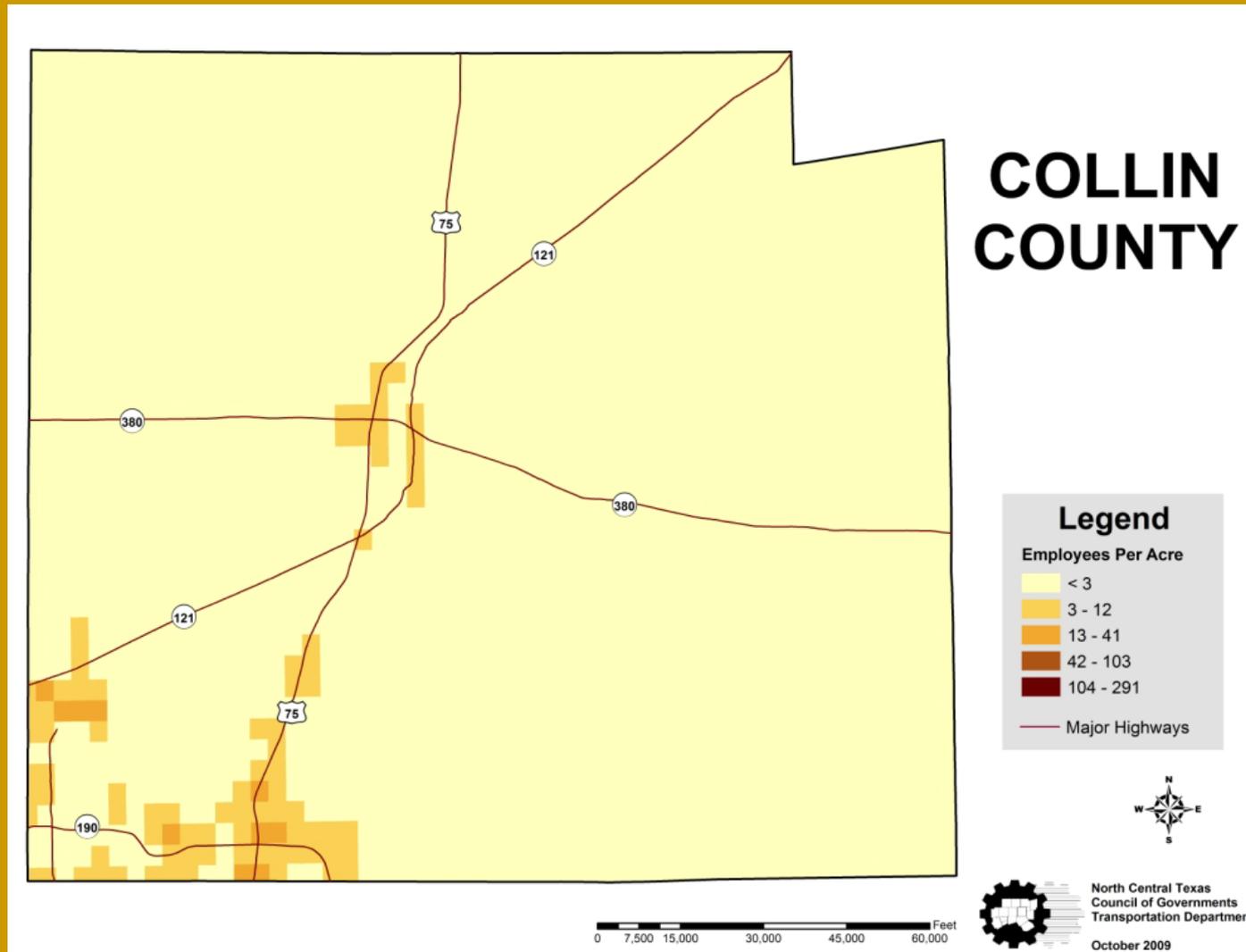
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Employment Density – Four Core Counties



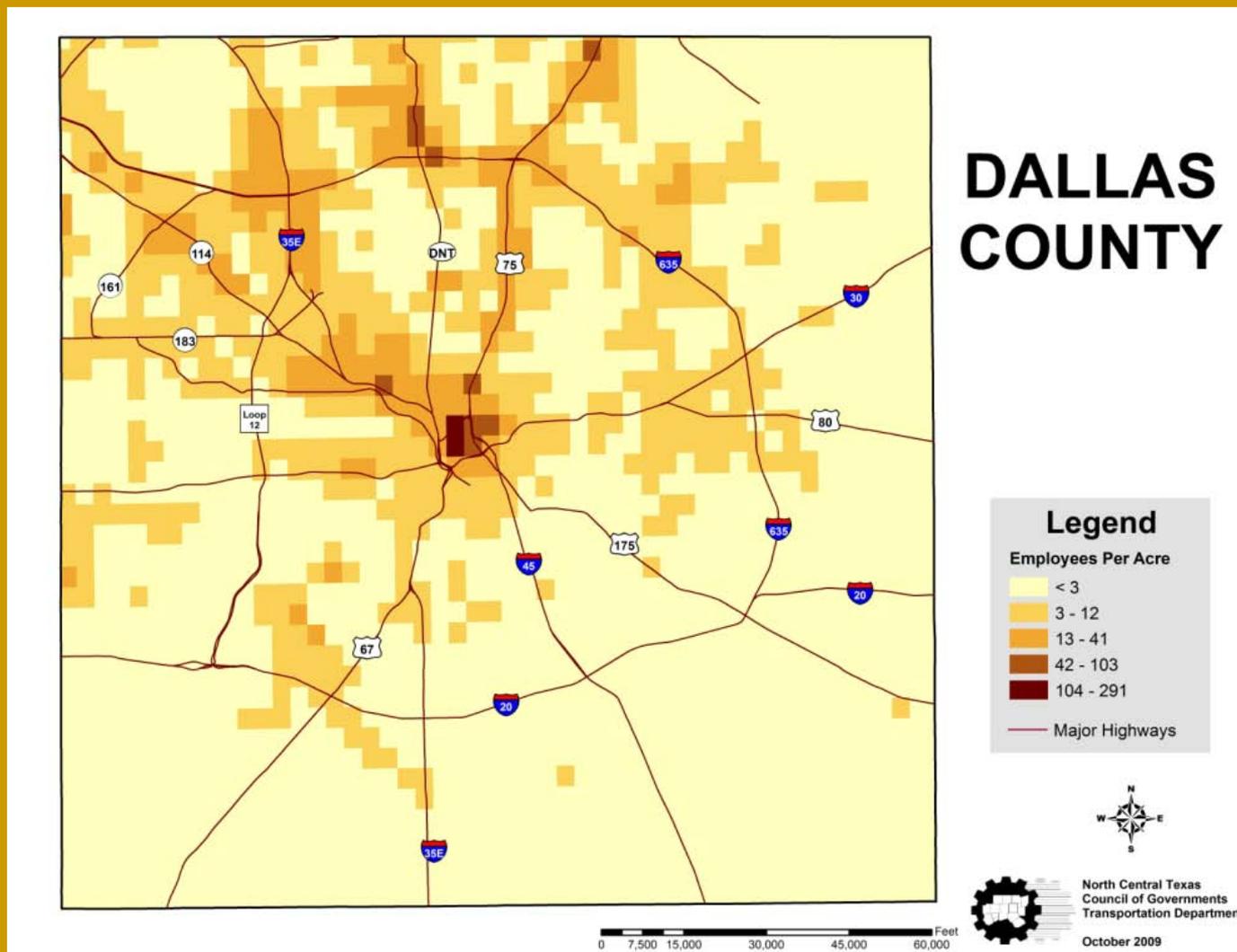
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Employment Density – Collin County



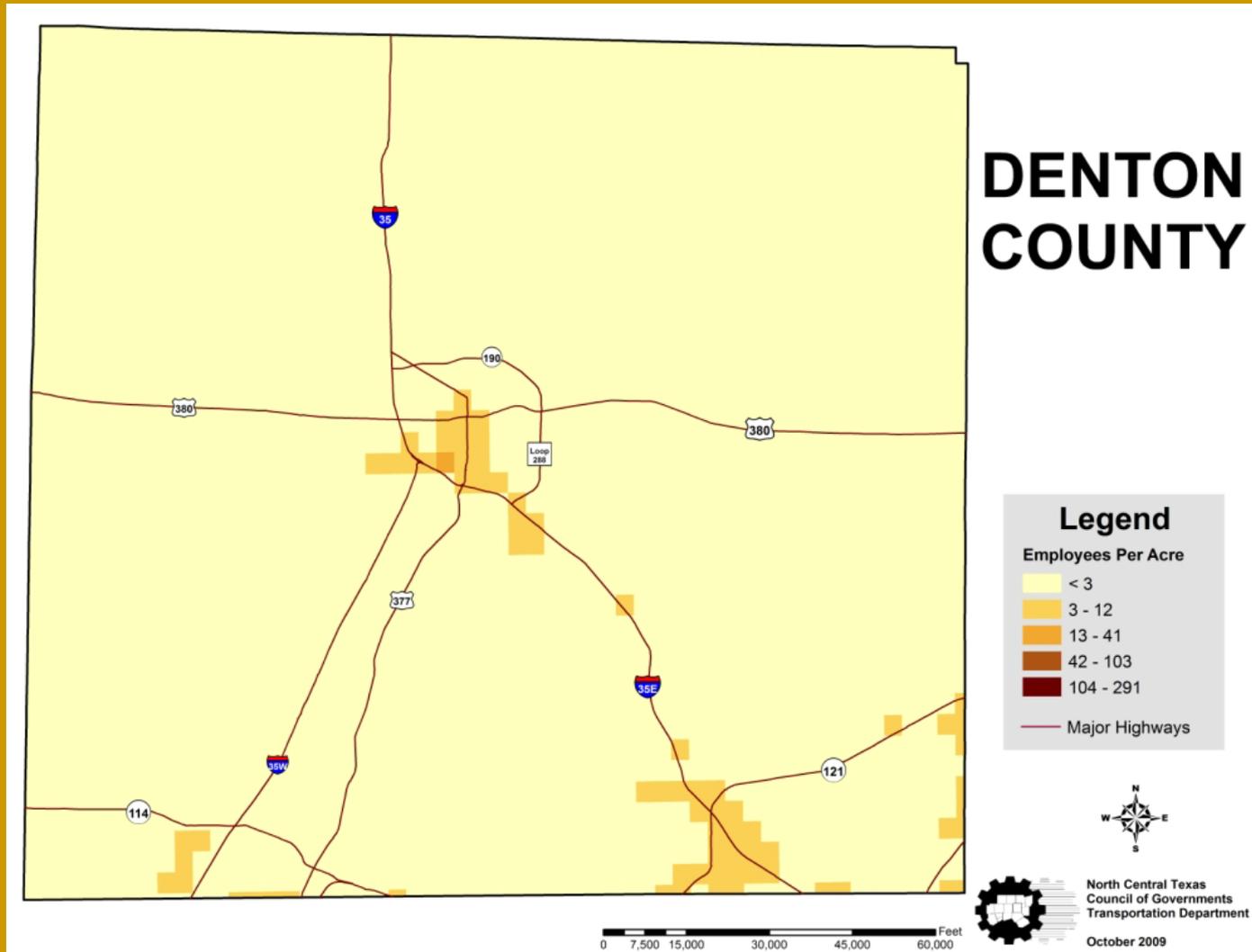
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Employment Density – Dallas County



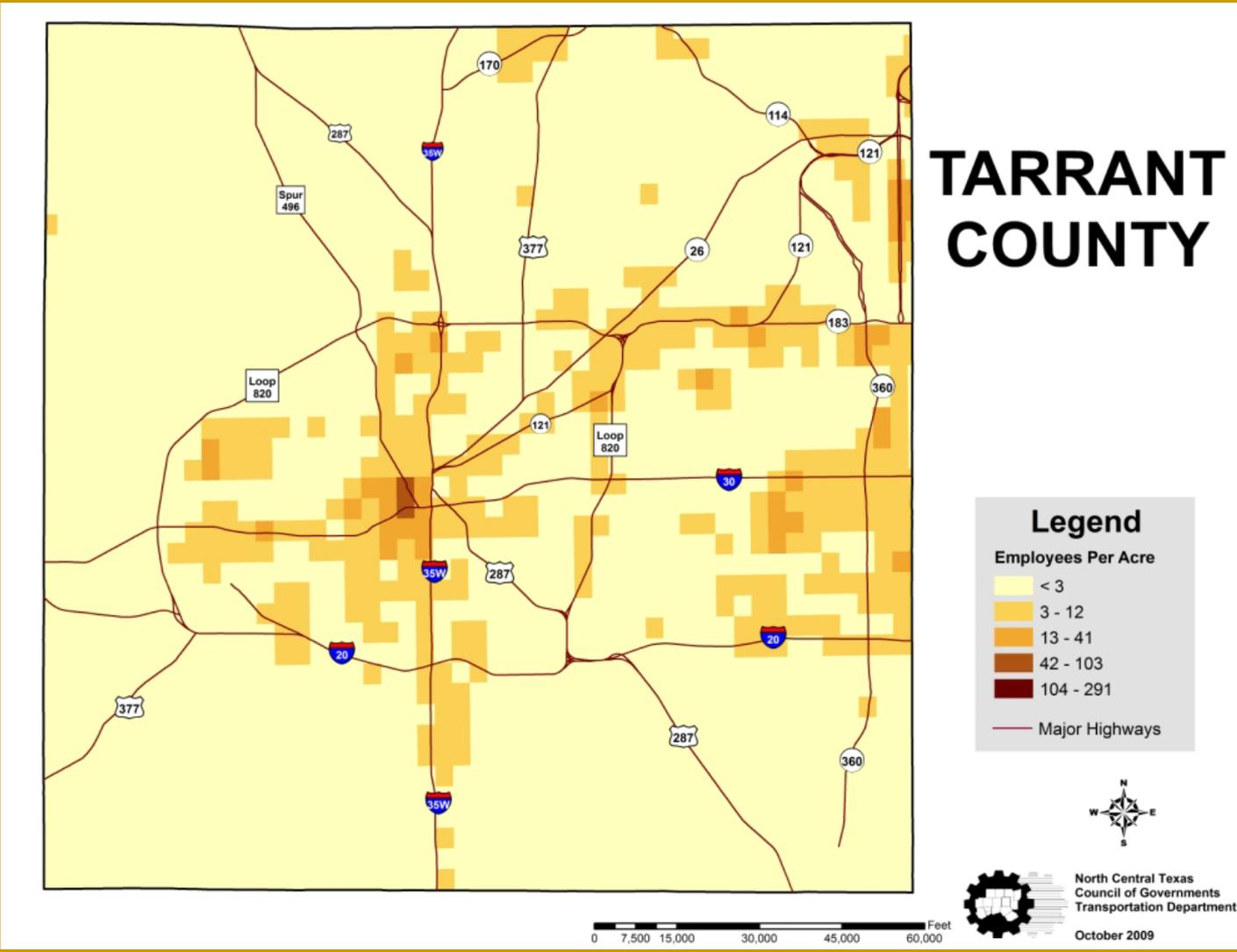
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Employment Density – Denton County



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Employment Density – Tarrant County



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Getting Ready for Plug-Ins



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Possible Implementation Complications

- Showing of support for vehicles
- Managing regional project
- Bringing down upfront costs
- Minimizing consumer hesitation
- Streamlining permitting and building codes
- Decreasing grid load
- Funding infrastructure

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Implementation Strategies

Showing of support for vehicles

- Commit corporate/city/private fleets to purchase certain number of vehicles**
- Identify funding assistance for vehicle purchases**

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Implementation Strategies

Managing regional project

- Create collaborative stakeholder group to help align regulatory, commercial, and community interests**
- Develop regional plan**
- Designate one authority to lead/coordinate group to keep movement forward**

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Implementation Strategies

Bringing down upfront costs

- **Work with banks and dealers to offer low-interest loans for plug-ins**
- **Bundle all key incentives at vehicle point of purchase (home charger vouchers, rebates, etc.)**
- **Continue funding research (fleets)**

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Implementation Strategies

Minimizing consumer hesitation

- **Incentives to driving vehicles**
- **Key points of recharging infrastructure for range anxiety**
- **Education and outreach**
- **Reduce electricity rates for recharging**

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Implementation Strategies

Streamlining permitting and building codes

- **Fast-track permitting**
- **Implement new and reconstruction/renovation building codes to support the operation of plug-ins**

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Implementation Strategies

Decreasing grid load

- Tie provisions of free home and public charge spots (as well as free or cheaper electricity for charging) to utility override power or no charge times
- Incentivize nighttime charging
- Break out plug-in electricity costs on utility bills to reinforce cost saving

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Implementation Strategies

Funding infrastructure

- **Promote local employer/retailer provision of some charge stations**
- **Place charge spots in high-traffic zones and parking areas, either with public or private funding**
- **Provide affordable and available Level 2 home-charger/driveway circuit installation**

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How Do We Get Ready?

Form Coalition

Create Plan

Work in Progress Outline

Goals/Milestones for Next 5 Years

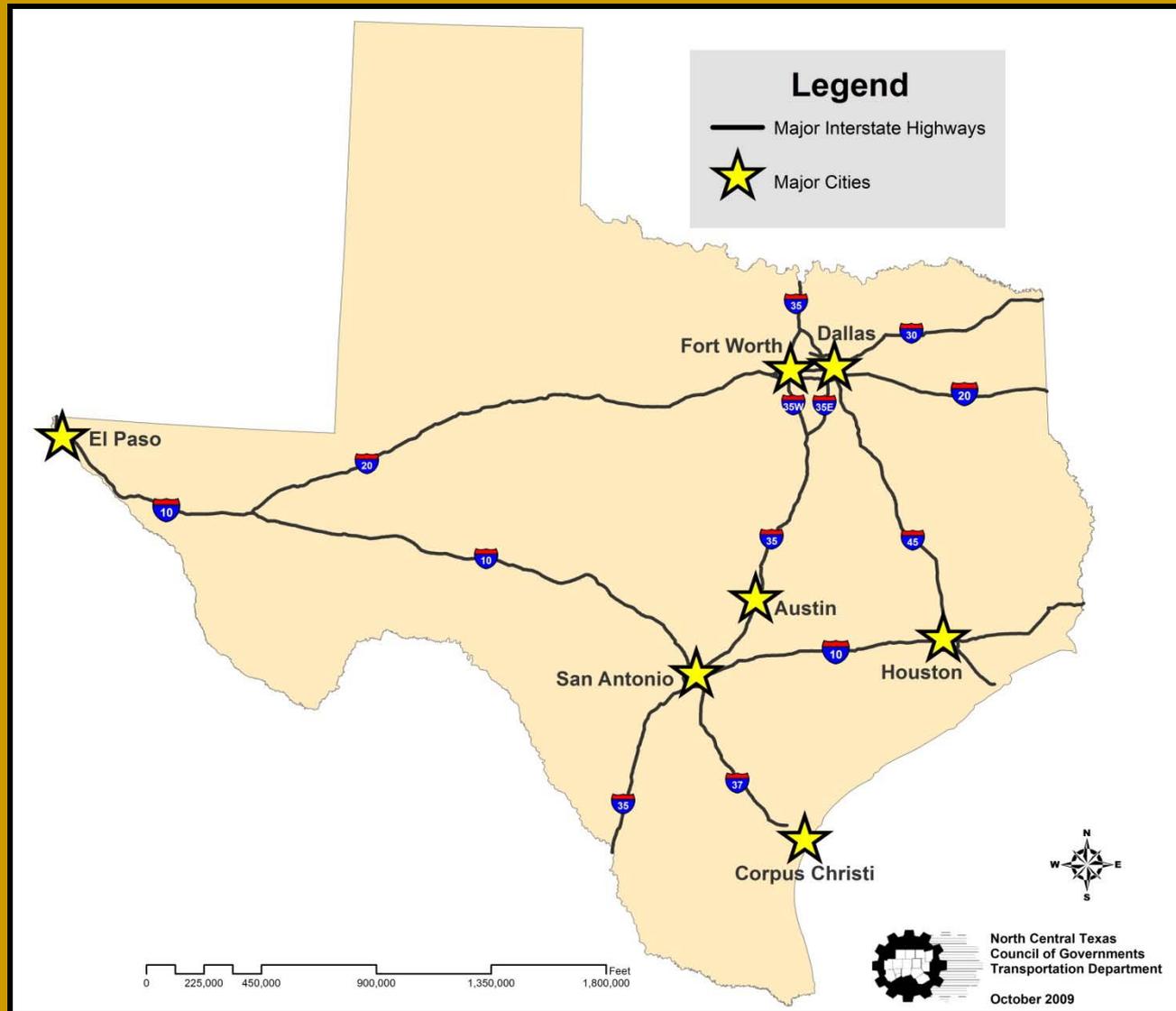
Working Groups

Form Statewide Electrification Initiative



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Travel Between Texas Regions



Electric Vehicles North Texas

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