



# **PAY-AS-YOU-DRIVE (PAYD) PILOT PROGRAM**

**Regional Energy Efficiency and  
Emissions Reduction  
Initiatives Roundtable (RERI)**

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# PAY-AS-YOU-DRIVE

## Introduction

### North Central Texas Air Quality Control Strategies Transportation Measures

STRATEGY	RTC FUNDS
LED Traffic Signals	\$ 400,000
<b>Pay-As-You-Drive Pilot Program</b>	<b>\$1,500,000</b>
Employer Trip Reduction	\$1,000,000
Parking Cash-Out	\$ 250,000
Clean Fleet Vehicles	\$ 250,000
Diesel Freight Vehicle Idling	\$1,600,000
	<hr/>
	\$5,000,000



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## Timeline

<b>Fall 2004</b>	<b>Research On PAYD Programs Begins</b>
<b>January 2005</b>	<b>Phase 1 Commences</b>
<b>December 2005</b>	<b>Phase 1 Concludes: Analysis Published</b>
<b>January 2006</b>	<b>Phase 2 Commences</b>
<b>March 2006</b>	<b>Participant Section</b>
<b>April 2006</b>	<b>Pre-Pilot Survey Conducted</b>
<b>May 2006</b>	<b>Data Collection Begins</b>
<b>April 2007</b>	<b>Mid-Course Report Published</b>
<b>June 2007</b>	<b>Data Collection Ends</b>
<b>July 2007</b>	<b>Post-Pilot Survey Conducted</b>
<b>August 2008</b>	<b>Phase 2 Concludes: Final Report Published</b>



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## Phase 1 Overview

### Goals:

Evaluate existing data sources to determine relationship between mileage driven and risk incurred.

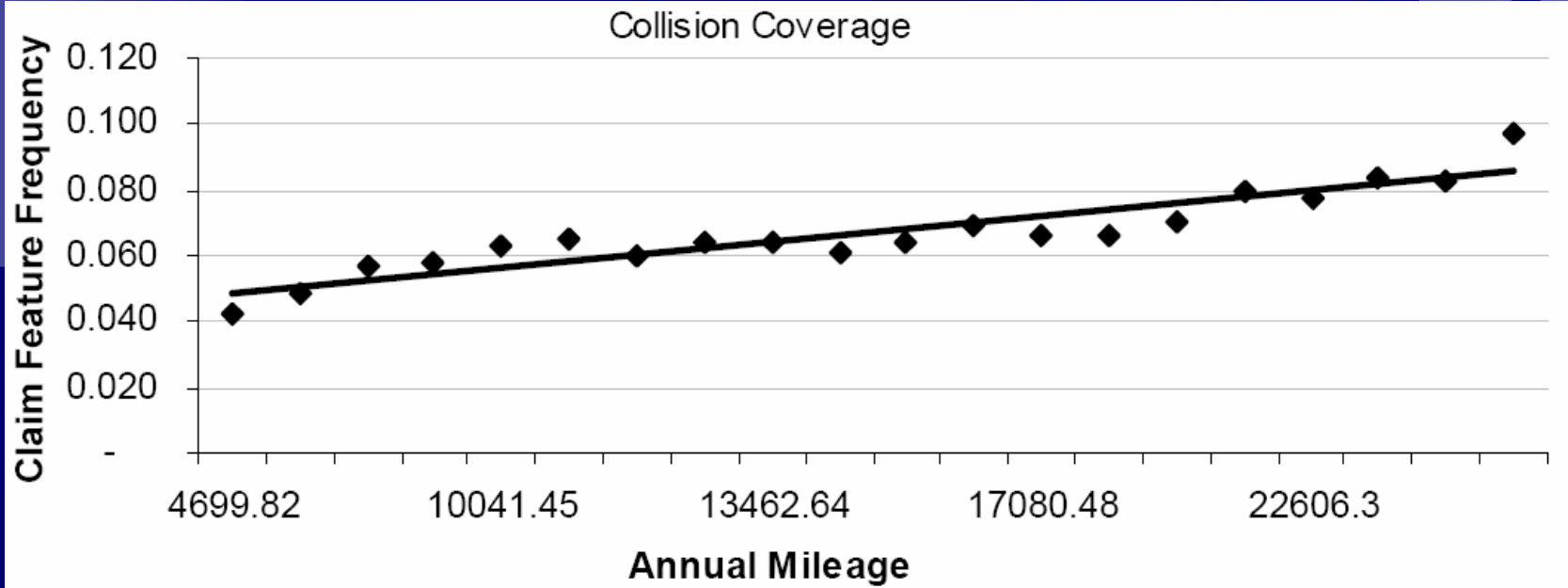
Test insurance industry theory that lower mileage translates into lower risk and; therefore, reduced claim costs.

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## Phase 1 Results - Progressive's Analysis

**Risk**

**Fewer Miles Driven Equates To Fewer Insurance Claims**



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## Phase 2 Overview

### Goals:

**Expand upon and validate results from Phase 1.**

**Measure consumer response to a reduced premium incentive based on reduced mileage.**

**Determine if PAYD will induce regional drivers to reduce annual mileage and what air quality benefits may it have.**





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## Phase 2 Overview

NCTCOG partnered with Progressive to implement a mileage-based insurance pilot program. Both entities performed complementary data analysis on driver behavior related to PAYD.

### Progressive Analyzed:

Interest in PAYD

Miles Reduced

Customer Perception

Incentive Amount

Time of Day

### NCTCOG Analyzed:

Regional Participation

Emission Reductions

Spatial Analysis

# PAY-AS-YOU-DRIVE

## Phase 2 Requirements

Participants were Progressive Customers at Start of Program

Participants Resided Within 9-County 8-Hour Ozone Nonattainment Area

Vehicle Model Year was 1996 or Newer

*TripSense*® was Plugged in to the On-Board Diagnostic (OBD) Port 95% of the Time

Participants Had Internet Access to Upload Data from *TripSense*® Device



Photo source: [www.atomerochbitar.se](http://www.atomerochbitar.se)



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## Phase 2 Methodology

Participants Separated Into Two Groups:

<b>Group 1: (With Odometer Data)</b>	<b>Group 2: (Without Odometer Data)</b>
<b>Eligible for Mileage-Based Incentive in Both Data-Collection Periods</b>	<b>Eligible for Mileage-Based Incentive in Second Data-Collection Period Only</b>
<b>93 Participants</b>	<b>2921 Participants</b>





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## Phase 2 Results - Progressive's Analysis

<b>Level of Interest</b>	High - 3,014 Texas Drivers Enrolled in the Program in 10 Days
<b>Miles Reduced</b>	PAYD Program Decreased Participant Miles Driven by An Average of 5%, or 560 Miles Per Year
<b>Incentive</b>	Average Financial Incentive for Reducing Mileage Was \$88 Per Period <ul style="list-style-type: none"><li>• \$50 for Participation</li><li>• + \$25 Per 5% Reduction in Miles</li></ul>
<b>Time of Day</b>	Positive Effect on Reducing Mileage During Commute and Mid-Day Hours No Effect on Late Night Miles Driven

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## Phase 2 Results – NCTCOG’s Analysis

### Participation:

County	Participating Households (HH)	Total HH in County (2005)	% of Total HH
Dallas	821	813,635	0.10%
Tarrant	472	579,127	0.08%
Collin	300	234,109	0.13%
Denton	300	190,618	0.16%
Johnson	47	46,204	0.10%
Ellis	35	43,605	0.08%
Rockwall	24	14,530	0.17%
Parker	22	34,565	0.06%
Kaufman	19	27,756	0.07%
<b>TOTAL</b>	<b>2040</b>	<b>1,984,149</b>	<b>0.10%</b>



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## Phase 2 Results – NCTCOG’s Analysis

### Emissions:

#### Emission Reductions (tpd)

	Pilot Program	With a <b>10%</b> Penetration Rate in North Texas
<i># of Vehicles</i>	<b>1,173</b>	<b>400,332</b>
<b>NO<sub>x</sub></b>	<b>0.0013</b>	<b>0.43</b>
<b>VOC</b>	<b>0.0015</b>	<b>0.50</b>
<b>CO</b>	<b>0.0160</b>	<b>5.40</b>
<b>CO<sub>2</sub></b>	<b>1.1900</b>	<b>399</b>
<b>CH<sub>4</sub></b>	<b>0.0001</b>	<b>0.04</b>
<b>PM<sub>2.5</sub></b>	<b>0.0001</b>	<b>0.02</b>

NO<sub>x</sub> = Nitrogen Oxides; VOC = Volatile Organic Compounds; CH<sub>4</sub> = Methane  
 CO = Carbon Monoxide; CO<sub>2</sub> = Carbon Dioxide; PM<sub>2.5</sub> = Fine Particulate Matter  
 tpd = tons per day; # of Vehicles = number of vehicles which sufficient data at the end of the program.



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## Phase 2 Results – NCTCOG’s Analysis

### Spatial Analysis:

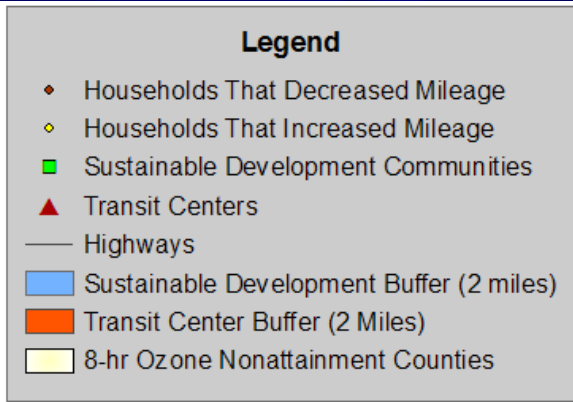
<u>Category</u>	<u>Total Miles Traveled</u>		
Land Use Zoning	Residential Zones	< (slight)	Non-Residential Zones
Population Density	Dense Areas	< (strong)	Sparse Areas
Proximity to Sustainable Development Communities	Near SDCs	< (strong)	Not Near SDCs
Proximity to Transit Service	Near Transit	< (strong)	Not Near Transit

**Analysis did not show any correlation related to:  
 Total Miles Reduced or Percent Miles Reduced**

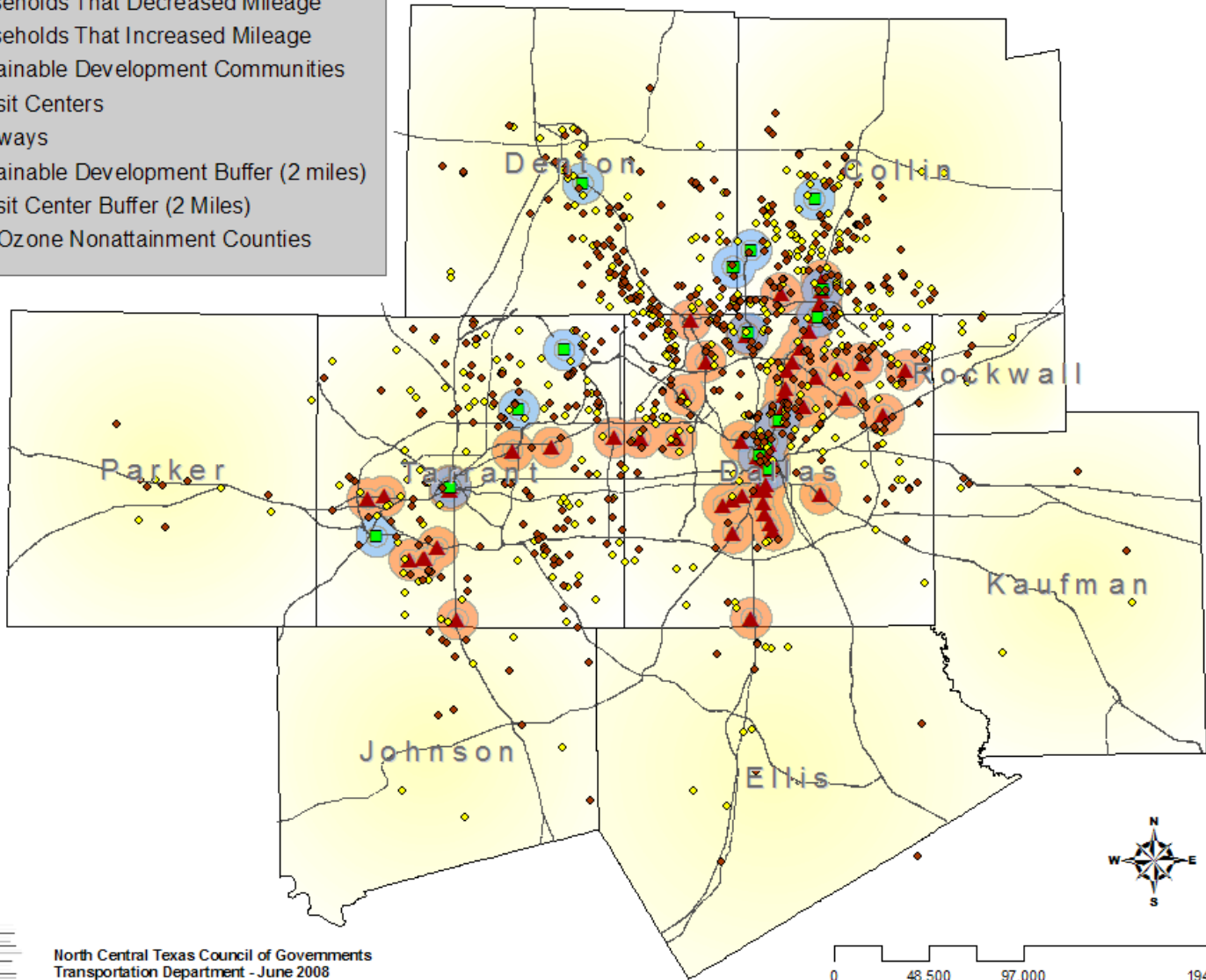
(slight), (strong) = strength of statistical correlation

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## Phase 2 Results – NCTCOG's Analysis



### Transit Services and Sustainable Development



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## Possible Next Steps

### **Schedule Meeting(s) With:**

- Texas Department of Insurance
- Major Insurance Carriers
- Federal Highway Administration
- Environmental Interest Groups
- Leading Researchers
- Technology Vendors
- Other Interested Parties

**Discuss Results** of NCTCOG's Report

**Understand Obstacles** Insurance Companies Face in Offering Mileage-Based Insurance in North Texas

**Outline Solutions** to Expedite PAYD Insurance in the Region





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