

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

**Regional Transportation Council  
Air Quality Subcommittee**

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North Central Texas Council of Governments**

# 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        |



# PAY-AS-YOU-DRIVE

## 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> |



# PAY-AS-YOU-DRIVE

## 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.

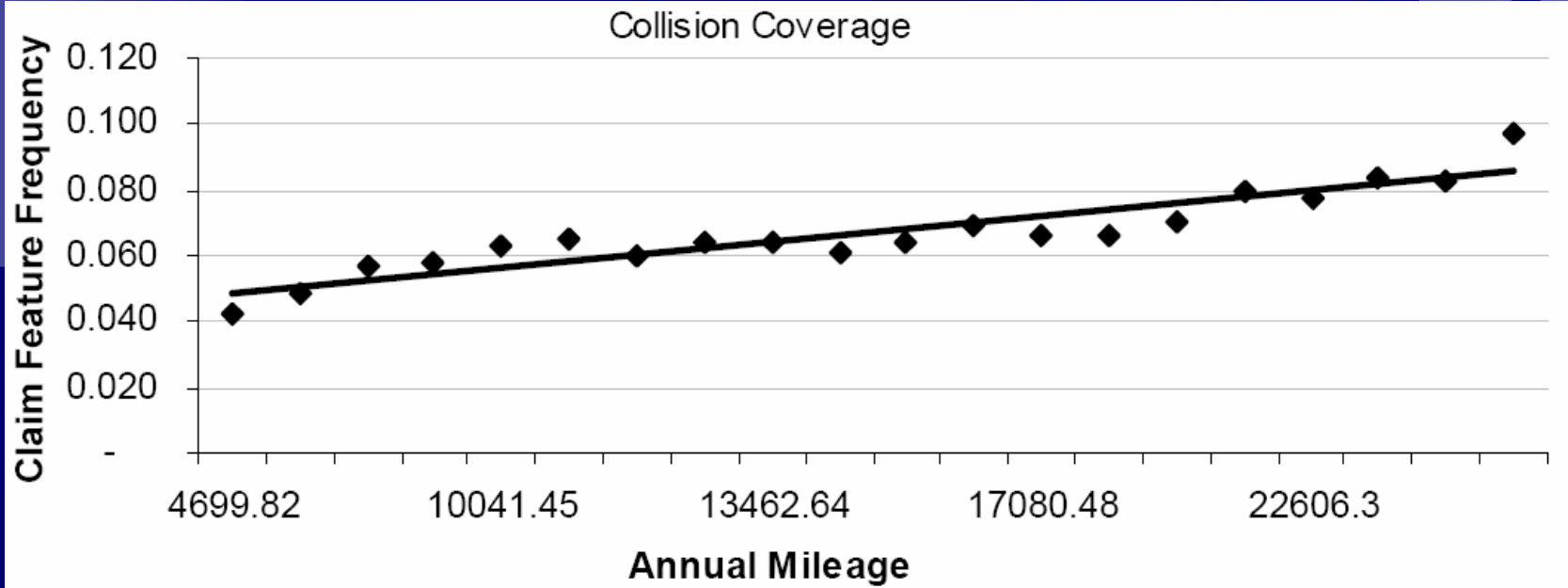


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## Phase 1 Results - Progressive's Analysis

**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



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## Phase 2 Requirements

### Participants:

**Progressive Customer at Start of Program**

**Reside in 9-County Ozone Nonattainment Area**

**Internet Access to Upload Data from Device (*TripSense*®)**

### Vehicle:

**Model Year = 1996 or Newer**

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



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

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## Phase 2 Methodology

Participants Separated Into Two Groups:

| <b>Group 1:<br/>(With Odometer Data)</b>                                    | <b>Group 2:<br/>(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<br>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><br>Penetration Rate in<br>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      |

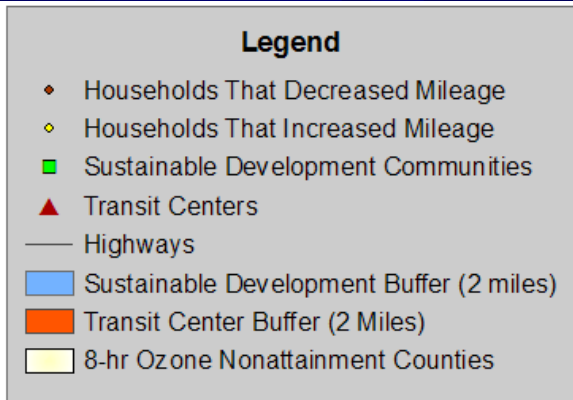
**Analysis did not show any correlation related to:  
Total Miles Reduced or Percent Miles Reduced**

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

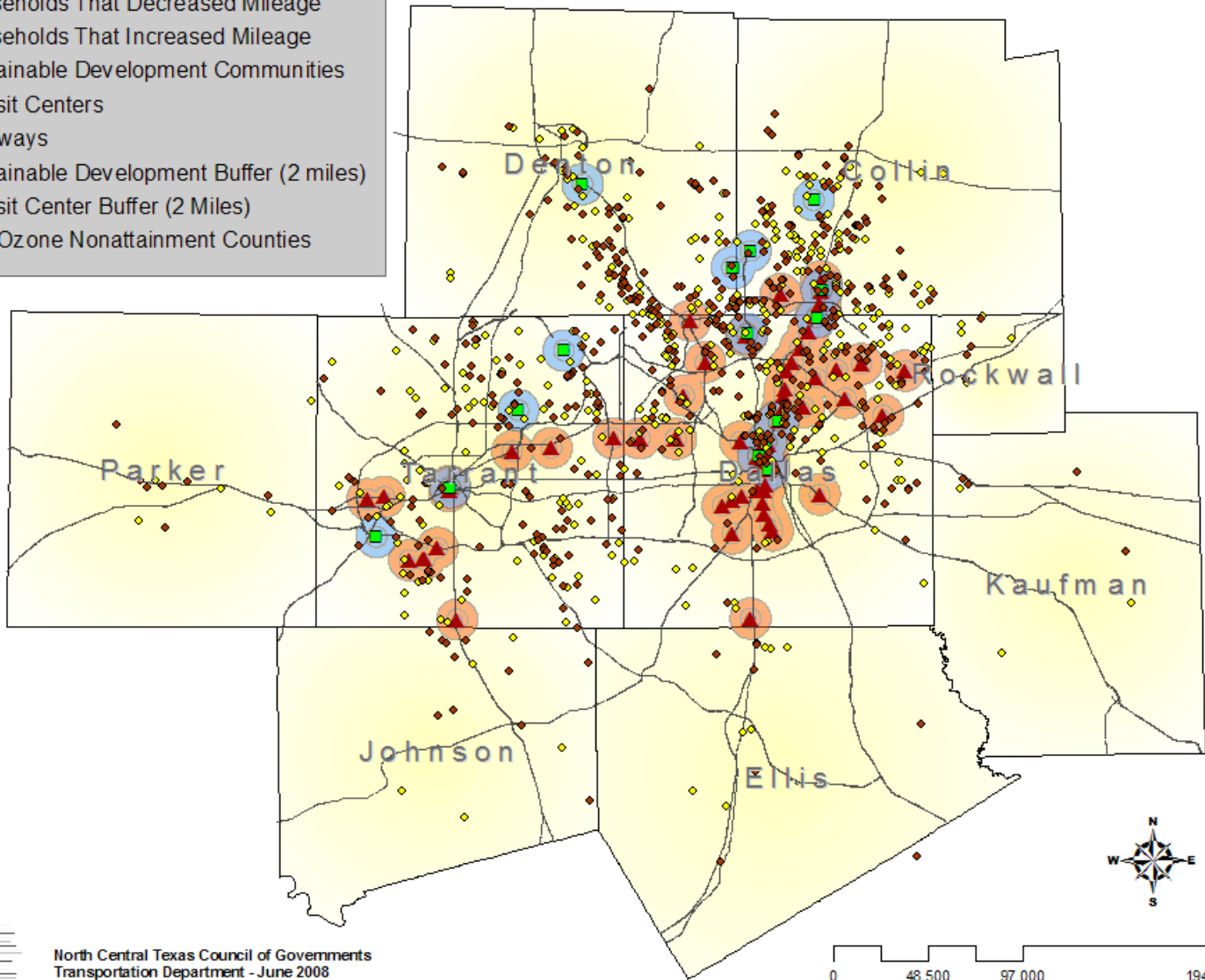


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## Phase 2 Results – NCTCOG's Analysis



### 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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