

Influencing Travel Behavior, Sensitivity to Environmental Justice, and Use of Innovative Technology

An application for
The FHWA Value Pricing Program, Fiscal Years 2010 and 2011
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Submitted by:
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North Texas Tollway Authority
Dallas Area Rapid Transit
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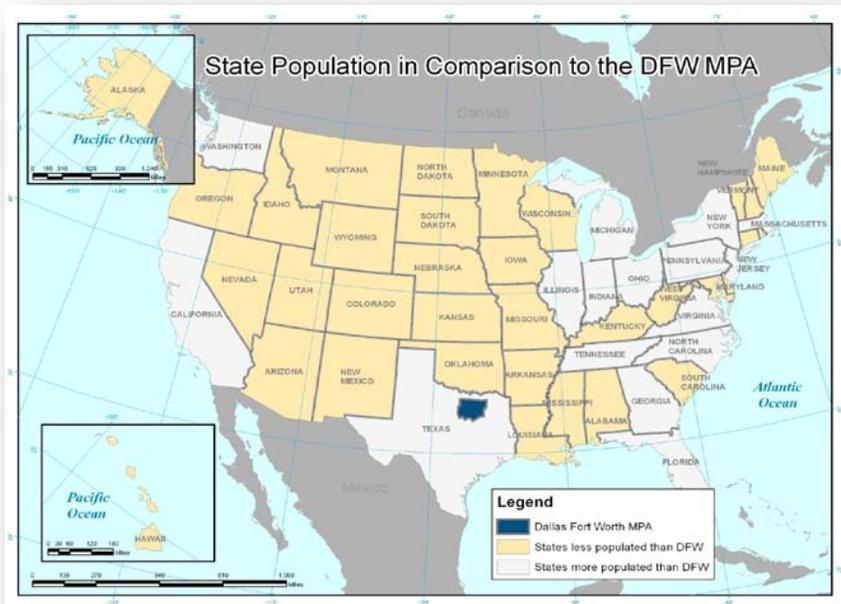
Introduction

The passage of the Transportation Equity Act for the 21st Century (TEA-21) has continued the “Congestion Pricing Pilot Program,” now titled the “Value Pricing Pilot Program” (VPPP), initiated as part of the Intermodal Surface Transportation Efficiency Act (ISTEA). Under TEA-21 Section 1216(a), the VPPP creates a means to develop cooperative agreements between the Federal Highway Administration (FHWA) and up to 15 state or local governments to establish, maintain, and monitor local pricing projects.

The North Central Texas Council of Governments (NCTCOG) serves as the federally designated Metropolitan Planning Organization (MPO), which supports the 12 Counties of Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise. The Dallas-Fort Worth (DFW) area is the fourth largest urbanized area in the United States. The Metropolitan Planning Area (MPA) encompasses more than 9,500 square miles of land and includes a population of nearly 6.2 million people. The DFW MPA is the second largest in the country in terms of land and the fourth largest in terms of population. There are over 3.4 million jobs within the 12-county area, which represents 34 percent of the state’s economy. DFW is the twelfth largest metropolitan economy in the world. **Figure 1** shows the MPA compared to other states in the United States.

Figure 1

NCTCOG, on behalf of the Regional Transportation Council (RTC)—the policy body for the MPO for the Dallas-Fort Worth Metropolitan Area—submits this application for the Value Pricing Pilot Program —“Influencing Travel Behavior, Sensitivity to Environmental Justice, And Use of Innovative Technology.” Mobility 2030: The Metropolitan Transportation Plan for the Dallas-Fort Worth Area, 2009 Amendment documents a multimodal approach for implementing transportation policy issues in the DFW area. The RTC supports a policy position that enhances the region’s transportation system through the MTP by maximizing high-occupancy vehicle (HOV) utilization offering managed facilities with pricing, and by considering the expanded use of toll roads.



This project will leverage previous efforts under the VPPP. Previous studies have allowed NCTCOG to determine the feasibility of congestion pricing on the IH 30/Tom Landry Highway Corridor. This project would use previous study efforts to implement a pilot project to determine which types of incentives and programs will affect the most travel behavior change.

The growing population and congestion associated with it has outpaced federal and State funding provided to expand and improve the transportation system. The MPO has adopted several innovative financing techniques in an effort to meet that demand. The DFW region is classified as a nonattainment area for air quality by the Environmental Protection Agency (EPA). NCTCOG sees value pricing as an effective method to reduce congestion and improve air quality. FHWA describes value pricing as using the market to reduce the waste associated with congestion by charging higher fees for peak-period usage. This technique can reduce congestion by affecting changes in travel behavior which in turn can improve the air quality for the region. By increasing the cost of utilizing managed lanes during peak hours, users are encouraged to alter commute times or choose different modes of travel.

Project Description and Goals

The goal of this project is to determine which incentives are the most effective to change travel behavior. The project seeks to test the effectiveness of several types of incentives to encourage drivers to seek alternatives to driving alone or outside the peak-periods. Examples of targeted travel behaviors are peak-period pricing, transit, park-and-ride lots, ridesharing, telecommuting, bicycling and varied work schedules. The IH 30/Tom Landry Highway will be the test corridor for this project.

A system that utilizes smart card technology would enable transportation providers in the region to monitor travel patterns and how incentives motivate users to change their travel behavior. This would be done through a back office accounting system tied to the use of the card that would track subscribers managed lane usage and credit incentives to eligible user accounts. Basic demographic data will be collected and used to establish user profiles and their travel choices. Subscribers will be awarded several types of incentives based on how they chose to use the managed lanes. The data collected will be made available to subscribers in order to help them make more educated choices when choosing how to use the transportation system. An interface will be established allowing subscribers to track how much they have spent on transportation costs and monitor the current cost of using the system, in order to make more informed decisions. An equity component will attempt to determine what, if any, impact managed lanes have on low-income populations. Based on initial survey and travel data, NCTCOG will determine if there is a need to provide low-income subscribers with tangible benefits to offset the cost of using the managed lanes and to what extent. Through this process different levels of incentives will be tested to determine which is the most effective in changing travel behavior.

The VPPP proposal from the DFW region is a collaborative effort between the City of Arlington, City of Dallas, City of Grand Prairie, Dallas Area Rapid Transit (DART), Fort Worth Transportation Authority (The T), NCTCOG, North Texas Tollway Authority (NTTA), and the Texas Department of Transportation (TxDOT). These agencies are responsible for delivering transportation infrastructure and services along the IH 30/Tom Landry Highway Corridor. **Table 1** shows the current responsibilities, infrastructure and services that each agency within the corridor provides and is expected to provide as part of this proposal.

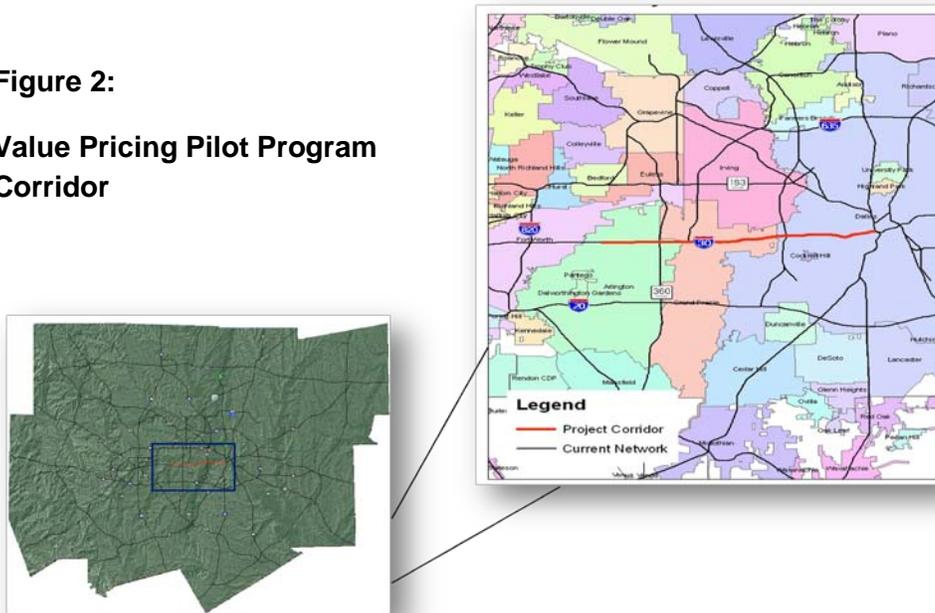
Table 1: Roles and Responsibilities for Project

| Transportation Responsibility | City of Arlington | City of Dallas | City of Grand Prairie | DART | NCTCOG | NTTA | The T | TxDOT |
|--|-------------------|----------------|-----------------------|------|--------|------|-------|-------|
| Police/Fire/Emergency Services | X | X | X | | | | | |
| Mobility Assistance Patrol | | | | | | X | | X |
| Traffic Signals | X | X | X | | | | | |
| ITS Devices | X | X | X | X | | X | X | X |
| Electronic Toll/Fare Collection/Accounting | | | | X | | X | X | |
| Transit (Bus/LRT/Train) | | | | X | | | X | |
| Parking Management/Park-and-Ride Lots | X | X | X | X | | X | X | |
| Rideshare (TryParkingIt.com) | | | | X | X | | X | |
| HOV/Managed Lane | | | | X | | | | X |
| Traveler Information | | | | | | | | X |
| Data Collection and Analysis | | | | | X | | | X |
| Grant/Contract Management | | | | | X | | | |
| Public Outreach | X | X | X | X | X | X | X | X |

Project Area

The IH 30/Tom Landry Highway Corridor is a major east/west facility connecting Dallas and Fort Worth. The corridor from Arlington (Collins Street) to the Dallas Central Business District (CBD) recently underwent improvement that added Managed Lanes. The IH 30/Tom Landry Highway is a six-lane facility that has two additional reversible Managed Lanes. The corridor traverses the Cities of Arlington, Grand Prairie and Dallas. Over the next several years exit and entry points as well as toll gantries will be added to convert the free Managed Lane to a priced facility. The improvements are expected to be complete by 2015. While the capacity improvements to the corridor will not be complete by the end of the grant period, basic technology will be in place to convert the corridor to a priced facility. **Figure 2** is an illustration of the project area.

Figure 2:
Value Pricing Pilot Program
Corridor



Land uses near and adjacent to the project in the City of Grand Prairie are predominantly residential, but include vacant land and scattered institutional (mostly schools), office, commercial, hotel, industrial, and utility uses. IH 30/Tom Landry Highway is situated adjacent to the Grand Prairie Entertainment District which includes Lone Star Park (a 315-acre Class 1 horse racing venue), Verizon Theatre (an indoor performance arena with a capacity of 6,400 seats), QuikTrip Park (a 5,400-seat outdoor stadium for the Grand Prairie AirHogs of the American Association of Independent Professional Baseball), and Ripley's Believe It Or Not Museum.

Within the limits of the City of Dallas, industrial uses and vacant land are prevalent west of Hampton Road, with some residential uses. This area includes one of the southwestern United States' most successful infill developments, Pinnacle Park, which includes 900 acres of retail, office, and industrial buildings, and an employment base exceeding 7,000 jobs since its groundbreaking in the year 2000. East of Hampton Road, land use is predominantly residential, but also consists of commercial, industrial, and parks and recreational uses. Vacant land is zoned primarily for light industrial uses. Zoning in developed areas generally reflects existing uses.

The IH 30 Managed Lanes are approximately 18 miles in length and provide direct access to the Arlington Entertainment District. This district includes several important regional destinations such as Six Flags Over

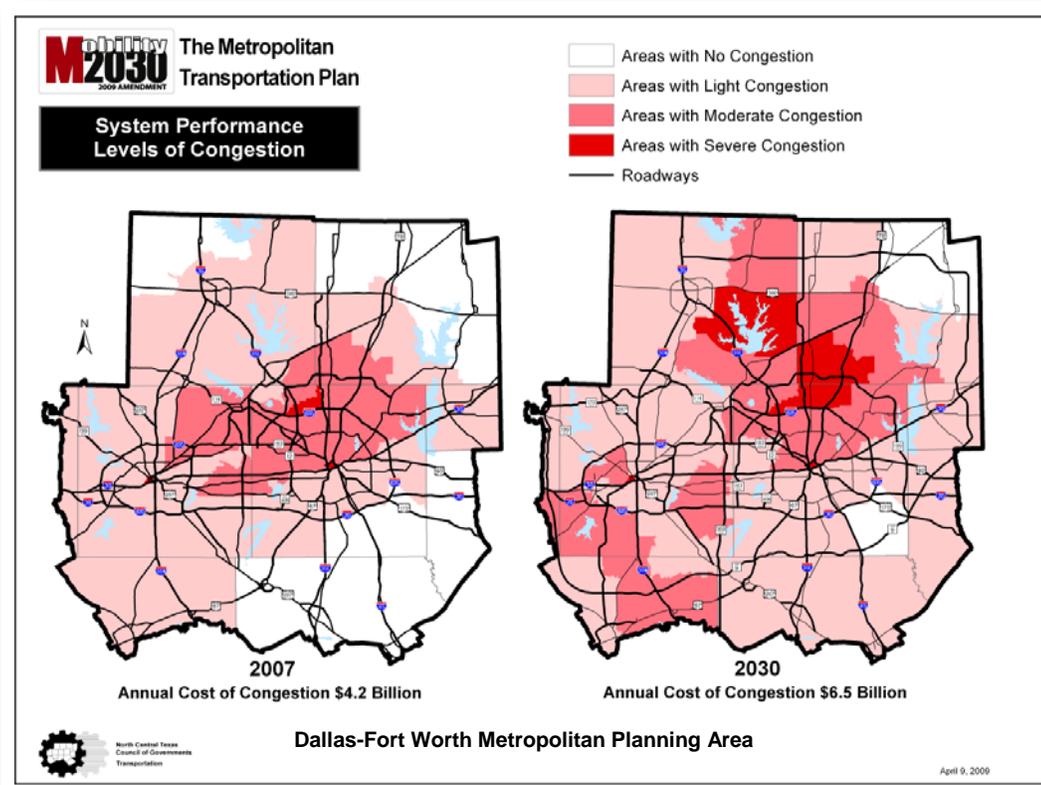
Texas, Six Flags Hurricane Harbor, the Arlington Convention Center, the Shops at Lincoln Square, the 49,000-seat Rangers Ballpark (home of Major League Baseball's Texas Rangers of the American League), and the 80,000-seat Cowboys Stadium (home of the National Football League's Dallas Cowboys). Numerous hotels, small retail outlets, office complexes, commercial and light industrial buildings also exist within the district.

State of Congestion

With the population increases the DFW region has seen and expects to see, our current transportation system is hard pressed to keep pace with demand. With funding for new transportation projects on the decline, DFW has had to drastically cut projects from the long-range plan and rely on priced facilities to add additional capacity. **Figure 3** is a map of recent and projected future congestion in the DFW region, for 2007 and 2030 respectively. As one can see, congestion in the region is expected to increase sharply.

While multiple regional programs are being implemented, congestion is still expected to increase exponentially over the next 20-30 years. Congestion-based pricing and allowing paid use of managed lanes by single occupant vehicles have achieved varying levels of success in other areas. This project will develop methodology, implement technology, perform an analysis, and evaluate and report on the resultant modifications to travel behavior based on strategies and incentives.

Figure 3



The IH 30 Managed Lanes Project creates a unique opportunity for the DFW region to implement an innovative and efficient means for addressing urban transportation needs, providing equitable respect to both cost and the environment. The project is anticipated to significantly relieve congestion, enhance mobility and regional air quality, and improve vehicle safety along the IH 30/Tom Landry Highway Corridor.

The IH 30 Managed Lanes Project is needed to facilitate traffic generated by rapid population and employment growth and special events in the Cities of Arlington, Dallas, and Grand Prairie. For the time period 1970 – 2000, the US Census Bureau calculated that the population of the City of Dallas increased 41 percent from 844,401 to 1,188,580; the population of the City of Grand Prairie increased 150 percent from 50,904 to 127,427; and the population of the City of Arlington increased by 269 percent from 90,229 to 332,969. For the time period 1990 – 2000, data from US Census Bureau indicates that employment in the City of Dallas increased 28 percent from 809,650 to 1,038,314 jobs. Employment in the City of Grand Prairie increased 60 percent from 51,800 to 82,664 jobs. Employment in the City of Arlington increased by 56 percent from 90,100 to 140,947 jobs.

Along with much of North Central Texas, strong growth in population and employment for the Cities of Arlington, Dallas and Grand Prairie is expected to continue well into the future. Regionally approved projections prepared by NCTCOG indicate that 2000 – 2030 population growth for the City of Dallas will be at 18 percent (1,188,580 to 1,404,847 persons), and at 81 percent (127,427 to 231,011 persons) for the City of Grand Prairie. The City of Arlington population growth is projected to be 31 percent (334,609 to 437,862) between 2000 and 2030. Projected employment growth for the same time period estimates a 34 percent increase (1,038,814 to 1,390,219 jobs) for the City of Dallas and a 52 percent increase (82,664 to 125,866 jobs) for the City of Grand Prairie. The projected employment growth for the City of Arlington for the same time period estimates a 40 percent increase (140,947 to 197,390 jobs).

This growth, combined with associated residential, commercial, and industrial activities along the IH 30/Tom Landry Highway Corridor, will result in significant increases in traffic. Results from NCTCOG's Dallas-Fort Worth Regional Travel Model (DFWRTM) indicate that average daily traffic (ADT) in the City of Dallas will increase from 174,150 vehicles per day (VPD) in 2009 to 204,970 VPD in 2030. ADT in the City of Grand Prairie will increase from 149,190 VPD in 2009 to 212,380 VPD in 2030. For the 8- to 10-lane freeway originally proposed for the IH 30/Tom Landry Highway Corridor in western Dallas County, these volumes would result in a failing level-of-service (LOS F).

Enhancing Mobility and Regional Air Quality: HOV/Managed Lanes are a vital component of this region's long-range transportation plan which will: 1) help address the area's current air quality nonattainment status; 2) reduce single-occupant vehicle travel by providing travel time and pricing incentives to high-occupancy vehicle and transit passengers; 3) make available high-speed reliable travel to all corridor users; 4) create opportunities to examine operation and pricing strategies for the region; and 5) create revenue generation to pay for ongoing corridor operation and maintenance needs. While this type of improvement does add capacity, it also promotes roadway use in a more efficient manner and is a more appropriate response to growing environmental and fiscal constraints in addressing transportation needs.

The IH 30/Tom Landry Highway Corridor is one of several DFW area corridors designated to include Managed Lanes. In 2006, the Texas Transportation Institute conducted a regional value pricing study that ranked the proposed HOV/Managed Lanes corridors in terms of priority for implementation, and the IH 30 Corridor was determined to be the highest-ranked corridor. In the following year, the IH 30 Managed Lane Corridor was granted designation as a Test Corridor for the VPPP instituted by the United States Department of Transportation (USDOT). A new park-and-ride facility on the south side of IH 30/Tom Landry Highway within TxDOT right-of-way, east of Belt Line Road in the City of Grand Prairie, as well as the current facility within the City of Arlington, will further encourage the use of the Managed Lanes through transit, vanpools, and/or carpools.

Impacts on Congestion and Behavioral Change

Through the use of smart card technology, the travel behavior of subscribers will be tracked by collecting the time and distance as well as the number of people in the vehicle when using the IH 30 Managed Lanes. Additionally, card subscribers will be able to view the total amount spent on transportation-related costs, allowing them to make a more educated decision on which mode of travel to use or when to use it. Another feature of this application is the use of a website or smart phone application that will allow subscribers to see the current cost of using the facility. This application will also allow users to see managed lane rates prior to leaving home or the office and lock in the rate if used within a specified timeframe. Benefits to the user would include the ability to lock in a rate ahead of time or alter travel decisions to change modes, adjust trip start time, or divert to an alternate route. The benefit to the transportation system operator would be advanced notice of managed lane usage. This will allow the subscribers to determine the most cost- and time-effective window for travel.

Congestion pricing uses the market to determine the cost of using the facility; as the demand goes up so does the price. This interface will allow subscribers to be better acquainted with how the pricing system on the facility works and make the choice of whether or not they want to purchase the product. Subscribers can use the system to understand how altering travel behaviors can impact their transportation cost in both time and money.

Livability, Sustainability, Equity, Congestion Reduction, Safety and State of Good Repair

The project will allow subscribers to streamline transportation costs and provide a means to make educated travel choices based on the best utility for the subscriber. As part of this program, ridesharing and other strategies that reduce single occupancy travel will be strongly encouraged. Managed lane users who choose these strategies will receive a reduced rate or additional incentives. Incentive types will be tested to develop the most effective method to prompt travel behavior changes from single occupancy travel. Decreasing the number of persons driving alone will reduce congestion, improve air quality and reduce fuel consumption. By reducing the number of vehicles on the road, the need for additional capacity will decrease which will in turn reduce the potential impacts to the natural environment.

While no revenue will be generated through the introduction of incentives for altering travel behavior, the project will encourage the use of alternative travel choices. This will bolster the desire for alternatives to driving alone or adjusting trip schedules and provide additional support for these transportation options.

A key component to this project is to test the effectiveness of reduced cost or increased incentives to disadvantaged groups. Several alternatives will be tested in order to assess which method provides the most benefit to those subscribers. Through partnerships with the region's transit agencies, disadvantaged populations can earn credits to spend on transit trips or other transportation-related expenses. Through the use of existing programs coupled with the new interface developed during this project, disadvantaged populations will have the ability to utilize the transportation system more effectively.

NCTCOG makes a concerted effort to gather the opinions of all residents of the region to provide an equitable transportation system. As part of that effort NCTCOG has initiated several university partnerships to research effective outreach methods for disadvantaged populations. For future implementation, data will be collected to determine which incentive methods were used the most through the control and test period. Additionally, using the basic information gathered during the registration process, NCTCOG may contact card subscribers via survey to determine preferences to incentive type.

The project is expected to attract vehicle travel to the managed lanes, affect the time of day traveled and increase alternative travel modes. These efforts will decrease the total number of vehicles in the main lanes of traffic allowing freight traffic to move more safely and efficiently throughout the region. The managed lanes will provide a more reliable, less congested commute. The proposed managed lane infrastructure is currently in place. Technology will be added to the existing IH 30 Managed Lanes to convert them to a priced facility. Capitalizing on existing infrastructure maximizes the use of the existing transportation system.

Reducing congestion on the corridor will increase the level of safety as vehicles are removed from the road. The IH 30/Tom Landry Highway Corridor is classified as a moderately congested corridor (see Figure 3). In the IH 30/Tom Landry Highway Corridor between Collins Street and Dallas CBD, 3,964 total crashes, including 28 fatalities, were recorded between 2006 and 2009. In addition, data gathered for the 2006 – 2009 time period indicates that three hazardous material spills occurred. **Table 2** and **Figure 4** detail the accident occurrences on the corridor from 2006 – 2009.

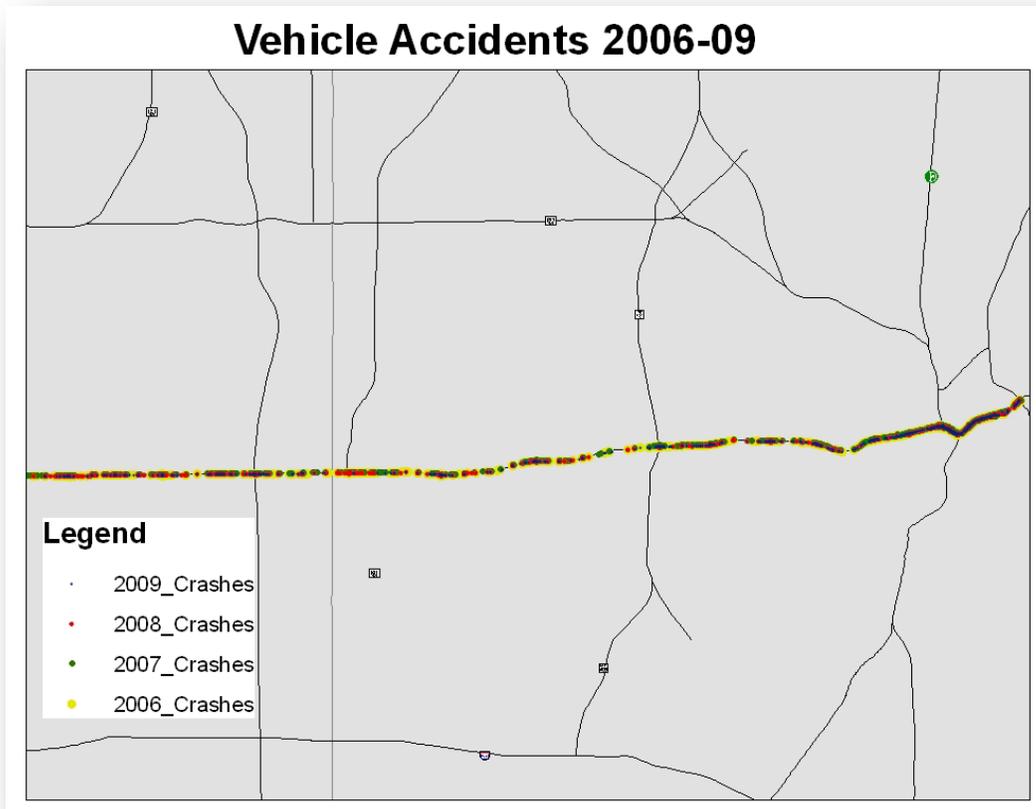
Table 2

| Safety Data Analysis (2006-2009) - IH 30 Corridor | | | | | | | |
|--|----------------------|-----------------------|---------------------------|------------------------|-----------------|--------------------|----------------|
| Year | Total Crashes | Crash Severity | | | | | |
| | | Incapacitating | Non-Incapacitating | Possible Injury | Fatality | Not Injured | Unknown |
| 2009 | 1,126 | 21 | 149 | 269 | 3 | 660 | 24 |
| 2008 | 678 | 15 | 91 | 182 | 5 | 369 | 16 |
| 2007 | 1,123 | 41 | 135 | 345 | 11 | 553 | 38 |
| 2006 | 1,037 | 35 | 126 | 338 | 9 | 494 | 35 |
| Total | 3,964 | 112 | 501 | 1,134 | 28 | 2,076 | 113 |

Notes:

1. Source: TxDOT's Crash Records Information System (CRIS) 2010 Generic Extract file - All TxDOT disclaimers apply to this information.
2. The data is composed of TxDOT Reportable Crashes. A reportable motor vehicle traffic crash is defined by TxDOT as: any crash involving a motor vehicle in transport that occurs or originates on a traffic way, results in injury to or death of any person, or damage to the property of any one person to the apparent extent of \$1,000. A trafficway is defined as any land way open to the public as a matter of right or custom for moving persons or property from one place to another.

Figure 4



Social Equity and Economic Impacts

The goal of value pricing is to provide the opportunity for users to save time and increase mobility by paying to use facilities. There has long been the question of how equity of this system will affect low-income persons who may not be able to pay for improved travel times. Due to limited resources, NCTCOG and regional partners have been developing a transportation network that relies more heavily on the use of priced facilities and efforts have been made to assess the possible effects on low-income populations.

NCTCOG has conducted extensive analysis on the regional impacts of priced facilities on Environmental Justice (EJ) populations, which have been documented in the Regional Priced Facility System Analysis. While negative impacts of using a toll system have not been identified on the current long-range transportation plan, NCTCOG is sensitive to the possible hardship priced facilities may have on individuals and continually seeks to evaluate the needs of those communities. In addition to the Regional Priced Facility System Analysis, NCTCOG has partnered with universities to develop outreach techniques to help gauge the possible impacts of priced facilities. This project would allow NCTCOG to use those previous studies and gather actual travel patterns to determine how these facilities impact all users as well as low-income populations.

As part of the back office system that will administer the project, basic information will be provided by the subscriber. If a subscriber wishes to provide income information and can demonstrate that they are part of a low-income population, a series of discounts or incentives will be provided. The incentives will be flexible and can be used to offset other transportation costs or selected living expenses.

These users will be surveyed to determine what impacts, if any, the managed lane had on their travel expenses. The collection of this data will be used to determine what incentives provide the best utility for these users. The results of this project will help NCTCOG better understand how programs and policies impact these communities and shape future programs that are tailored to those communities.

Figure 5 is a map showing the EJ populations around the corridor.

The map reflects a technique to identify EJ populations that indexes percent below poverty, percent minority, and population density of each block group to identify concentrations of protected populations.

The IH 30 Managed Lanes will provide connections to much needed resources such as employment, shopping, education, and recreation for the entire region.

Many of the households within five miles of the managed lanes are disadvantaged. In fact, an average of 17 percent of the households in the area fall below the poverty line; 12 percent are female-headed households. In addition, 29 percent of the population is Hispanic and 18 percent is African American. The percentage of disabled persons within five miles of the project, 7 percent, is equal to the regional average percentage of disabled persons. Based on these numbers, about 83 percent of the households within this corridor are disadvantaged.

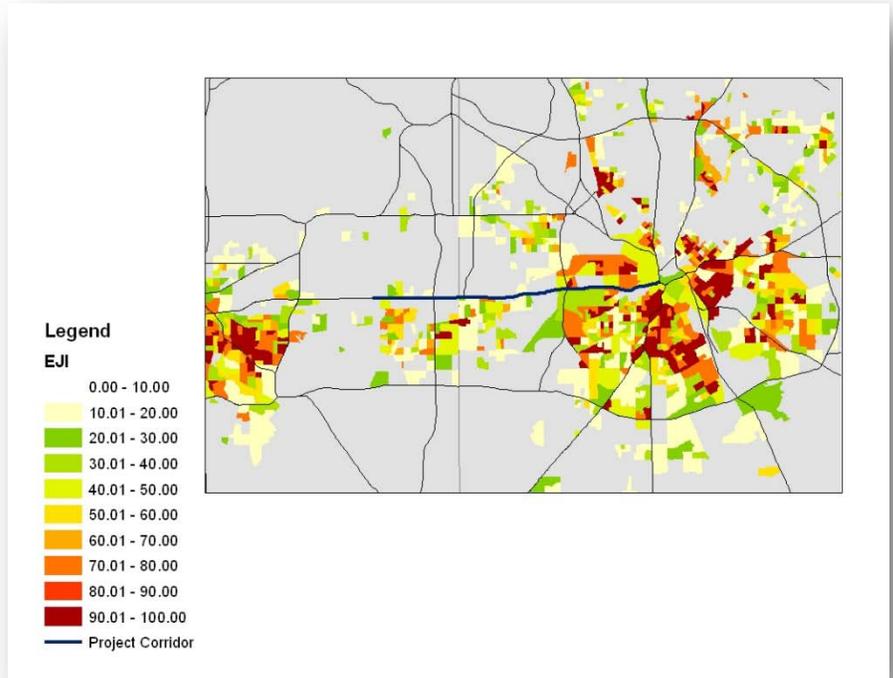
Despite the percentage of disadvantaged persons, the area around the IH 30/Tom Landry Highway Corridor shows promise. At present, there are 938 major employers, including manufacturing plants such as Krestmark Industries and Frito-Lay, Inc., and retail companies such as Wal-Mart and Home Depot. In fact, 69 major employers are located within one mile of the corridor, including AT&T and American Textile Company. The area also boasts 247 educational facilities including schools, libraries, and universities.

Managed lanes provide a connection between compatible uses such as residential, retail, and office. The IH 30 Managed Lanes will provide improved roadway access for a number of residential neighborhoods. The improved highway access will provide residents a shorter travel time to commercial and retail destinations in the region. It will simultaneously provide better access to the resources around the managed lanes.

There are 1,280 commercial establishments and 96 health facilities within five miles of the IH 30 Managed Lanes. These health facilities include clinics, hospitals, nursing homes, and mental health facilities. Providing better access to health facilities via the managed lane will reduce the time it takes for single occupancy and emergency vehicles to reach key medical facilities. Highway access is especially important in the area around the IH 30 Managed Lanes as there are 23 hospitals within five miles of the corridor.

This project will also provide better access to preventative health facilities such as parks and recreation centers. There are 36 recreational facilities within five miles of the managed lanes. Much of the land around the IH 30 Managed Lanes is undeveloped. There are currently 3,906 acres of vacant land within one mile of the project. The managed lanes will have a dramatic impact on the development of the vacant parcels. Rather than traditional single land use developments, much of the future development will be mixed use. The City of Grand

Figure 5



Prairie Future Land Use Map indicates that the area's future land uses will include mixed use, high density residential, commercial retail, and light industrial. This means the demand for efficient highway access will be even higher. Traffic counts indicate there will be 212,380 daily vehicle trips in the project area by 2030. The managed lanes will help provide more efficient access to the projected high density residential mixed use developments.

Alternative Transportation

Travel Demand Management (TDM) is a strategy that addresses the demand side of travel behavior. TDM attempts to reduce the demand for drive-alone (also known as single-occupant vehicle or SOV) travel on roadways by offering alternatives to driving alone. Examples of these alternatives include transit (rail and bus), ridesharing (carpools and vanpools), and bicycling, which reduce the demand on the roadway supply (capacity). Fewer vehicles on the road, especially during peak travel periods, allow traffic to move more efficiently along a roadway. Aside from reducing SOV demand, higher occupancy travel modes, such as rail transit and managed lanes, are more efficient in the context of person-carrying capacity – one vehicle can transport more people without occupying the extra space for additional vehicles. The TDM strategies described and recommended are relatively low-cost, quick-implementation projects and programs that encourage alternate travel modes to driving alone.

Aside from the mobility benefits described earlier, TDM activities also address air quality concerns. By reducing the number of vehicles on the roads, and as commuters and travelers find other modes of travel, the number of cold-start emissions are reduced accordingly. Furthermore, overall emission levels are reduced because fewer vehicles are being driven. TDM programs that shift drive-alone travel from peak periods also serve to reduce the emission of air pollutants. This effect is especially important in the morning hours when the build-up of pollutants is at its most critical stage in the formation of ground-level ozone. In addition to mode shifts, other examples of TDM strategies that reduce the peak-period travel include flexible work hours (in which employees arrive at work during non-peak hours), compressed work weeks (in which employees work the same number of weekly hours over fewer days), and telecommuting (in which employees work from a home office or telework center).

TDM also has a role in sustainable development because TDM strategies support high occupancy modes, walking, and bicycling, which are all sustainable in nature. Park-and-ride lots, for instance, make the connection between different travel modes. In turn, sustainable land use development, which by design encourages alternative modes, enhances the involvement of the traveling public in TDM modes. Employers that locate their businesses in areas supported by transit and/or provide trip reduction strategies for their employees help promote the use of alternative transportation modes.

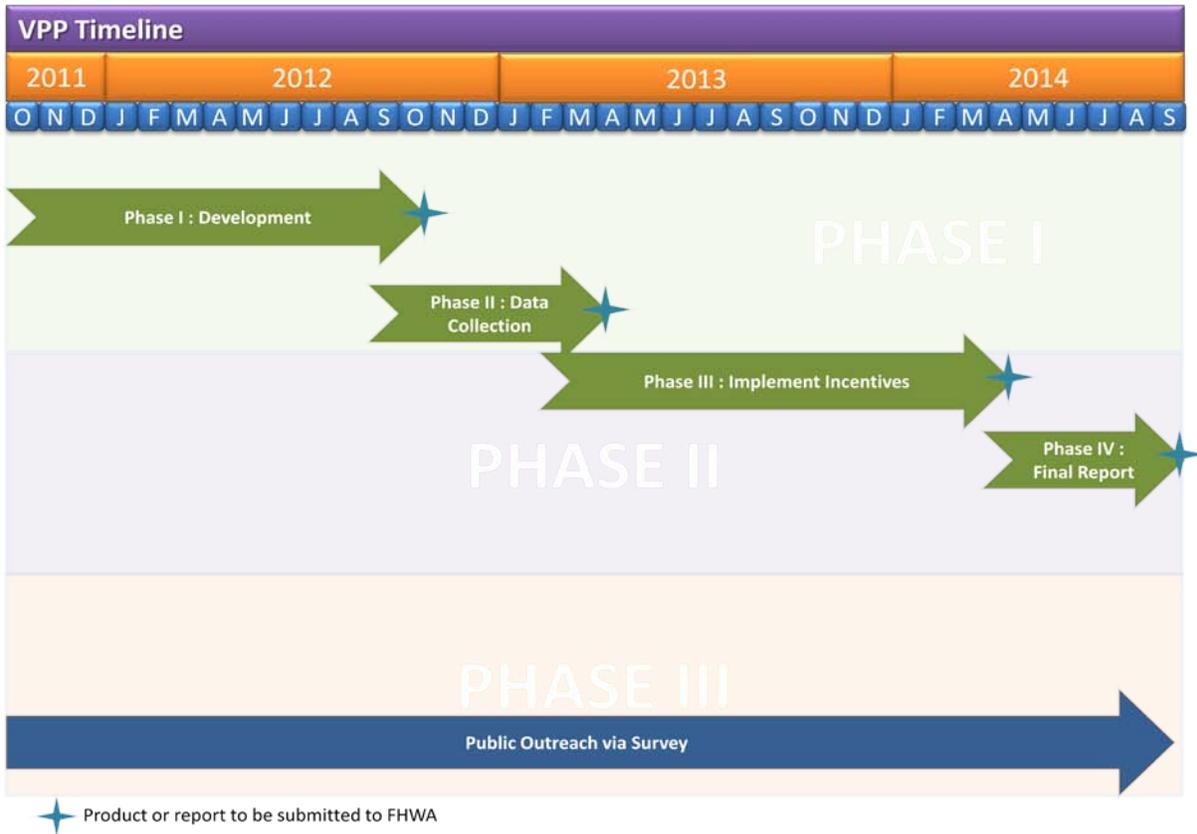
Through this project the region plans to utilize smart card technology to manage congestion in the IH 30/Tom Landry Highway Corridor through peak-period pricing in combination with other TDM strategies. The proposal contains components influencing travel behavior, being sensitive to environmental justice issues, and using innovative technology. The concept will be tested first in the IH 30/Tom Landry Highway Corridor from the City of Arlington to the City of Dallas, and lessons learned will be applied on a regional level as additional managed lane facilities are implemented. This concept will allow drivers to make more informed travel choices and recognize how altering travel behaviors can impact their transportation cost in both time and money. In return, the transportation partners will benefit from reductions in daily and accident-related congestion and vehicle emissions and improvements in safety.

Project Tasks and Timeline

The project is broken down into four main phases in **Table 3**.

Table 3

| Phase | Task | Comments |
|---------------------------------------|---|---|
| Phase I Development | | |
| Subtasks: | Procure Software and User Interface | During this task regional partners will procure a contractor/vendor and contract with a vendor that can develop the accounting software needed to track usage and develop a user interface (website). Additionally vendors will be sought that can provide the necessary technology (smart card). |
| | Acquire Appropriate Technology | Regional partners will work with vendor and partner agencies to ensure that adequate hardware is in place for the smart card technology to be effective. |
| | Coordinate Development of Software and User Interface | Regional partners will work with contractor to develop the necessary software to implement the project. Included will be the development of a website or smart phone application. |
| | Install Technology in Corridor | Regional partners will work with partner agencies to ensure appropriate infrastructure is in place to monitor usage and collect tolls. |
| Phase II Data Collection | | |
| Subtasks: | Identify Test Group | Regional partners will identify the test group that will be issued cards as part of this VPPP effort. |
| | Issue Smart Card | The test group will be issued the smart card and register with the system. |
| | Subscriber Survey | Regional partners will survey the test group for initial preferences and state travel behavior. |
| | Data Gathering | Regional partners will gather travel behavior data from smart card usage prior to the facility becoming priced. |
| | System Performance Baseline | TxDOT will collect baseline data that will allow regional partners to analyze before and after conditions to better understand system performance when determining the effectiveness of incentives. |
| | Data Analysis | Regional partners will analyze data collected to determine a base for analysis purposes. |
| | Development of Incentives | Regional partners will use data collected via surveys to develop a list of incentives to be tested. |
| | Report | Regional partners will prepare a report documenting findings. |
| Phase III Implement Incentives | | |
| Subtasks: | Deploy Incentives | Regional partners will deploy incentives developed in Phase I of the project. Several different incentives will be tested during this process. |
| | Subscriber Survey | Regional partners will survey subscribers to gauge perceived effectiveness of the incentives. |
| | Data Gathering | Regional partners will gather actual travel data to determine the effectiveness of incentives on affecting travel pattern behavior. |
| Phase IV Final Report | | |
| Subtasks: | Data Analysis | Regional partners will analyze data collected through the incentive process. |
| | Result Documentation | Regional partners will document results and recommend implementation actions. |



Monitoring Progress

| Outcome | Output | Performance Measure |
|--|---|--|
| 1. A software system that allows agencies to link innovative technology such as a smart card to an accounting system in order to track usage and provide incentives as well as allowing the subscribers to monitor transportation costs. | Accounting system and user interface (i.e. website and smart phone application) | Implementation of system that collects accurate data. The number of times subscribers access the interface to retrieve data and survey results by subscribers on ease of use. |
| 2. Develop a list of possible incentives that could change travel behavior based on survey responses. | Comprehensive list of incentives to test. | How feasible the incentives are to implement, and how effective the chosen incentives are in affecting travel behavior change seen through data collected via smart card technology. |
| 3. Apply the “Traffic Thermostat Framework” developed by TxDOT to establish a baseline for system performance. | System baseline to use as a control for testing travel behaviors. | Effectiveness of system on managing the transportation network to decrease congestion on the managed lane. |

Budget

| Task | Year 1 | Year 2 | Year 3 |
|-----------------------------|--------------|--------------|-----------------------|
| Development | | | |
| Personnel | \$11,100.00 | \$12,950.00 | \$9,250.00 |
| Fringe Benefit | \$6,246.00 | \$6,246.00 | \$4,872.00 |
| Contractual | \$200,000.00 | \$50,000.00 | \$40,000.00 |
| Other | \$7129.420 | \$4907.17 | \$3830.39 |
| Indirect | \$3,725.00 | \$3,725.00 | \$2,906.00 |
| Total | \$228,200.42 | \$77,828.17 | \$60,858.39 |
| Task Total | | | \$366,886.98 |
| Data Collection | | | |
| Personnel | \$57,461.00 | \$37,000.00 | \$18,500.00 |
| Fringe Benefit | \$29,276.00 | \$19,518.00 | \$9,368.00 |
| Contractual | \$0.00 | \$0.00 | \$0.00 |
| Other | \$19438.14 | \$12939.50 | \$6222.38 |
| Indirect | \$17,461.00 | \$11,641.00 | \$5,588.00 |
| Total | \$123,636.14 | \$81,098.50 | \$39,678.38 |
| Task Total | | | \$244,413.02 |
| Implement Incentives | | | |
| Personnel | \$0.00 | \$0.00 | \$0.00 |
| Fringe Benefit | \$0.00 | \$0.00 | \$0.00 |
| Contractual | \$75,000.00 | \$60,000.00 | \$50,000.00 |
| Other | \$1,125.00 | \$900.00 | \$738.49 |
| Indirect | \$0.00 | \$0.00 | \$0.00 |
| Total | \$76,125.00 | \$60,900.00 | \$50,750.00 |
| Task Total | | | \$187,763.49 |
| Final Report | | | |
| Personnel | \$0.00 | \$57,350.00 | \$24,790.00 |
| Fringe Benefit | \$0.00 | \$29,276.00 | \$23,421.00 |
| Contractual | \$0.00 | \$0.00 | \$0.00 |
| Other | \$0.00 | \$19,436.47 | \$15,233.04 |
| Indirect | \$0.00 | \$17,461.00 | \$13,969.00 |
| Total | \$0.00 | \$123,523.47 | \$77,413.04 |
| Task Total | | | \$200,936.51 |
| Grant Total | | | \$1,000,000.00 |

Financial Plan

The VPPP grant will fund the start up cost for developing and implementing the system needed for the project. Funds for incentives will be provided by any Regional Toll Revenues produced from the IH 30/Tom Landry Highway Corridor. NCTCOG is requesting \$1 million in total grant funds of which \$800,000 is provided by FHWA and \$200,000 provided through local funds from NCTCOG.

Public Involvement Efforts

NCTCOG uses several means of communicating with the public; quarterly public meetings, website, print and electronic newsletters, the media and social media sites such as Facebook and Twitter. NCTCOG uses these forums to gather public opinion on a wide variety of topics. NCTCOG has taken the use of managed lanes and toll facilities to the public on a number of occasions. Additionally, NCTCOG has worked with partner toll agencies on their outreach efforts.

Previous outreach efforts for this corridor have been conducted through previous planning efforts. The public consensus for the IH 30 Managed Lanes Project was achieved through the environmental documentation process that was completed in December 2006. While the process was led by the TxDOT Dallas District, cooperation and input was incorporated by NCTCOG, NTTA, DART, and the Cities of Dallas and Grand Prairie. The residents and neighborhood leaders in this project area have been very active in community development and revitalization, as demonstrated by the success of Pinnacle Park, made possible by the achievement to add an IH 30 traffic interchange at Cockrell Hill Road.

This project has and continues to have strong support from elected officials, the Cities of Arlington, Dallas and Grand Prairie, and the community at large. Implementation of the IH 30 Managed Lanes Project can serve the city and community redevelopment goals by opening up a new generation of development opportunities.

Outreach efforts will take place in all phases of the project. It is vital to the success of this project that a wide variety of the public participate. For that reason, NCTCOG will take efforts to reach all demographics when selecting the test group. Throughout the project NCTCOG will administer surveys to the test group to gather input on managed lanes and the smart card system.

Meeting Federal and State Guidelines

NCTCOG ensures that it will comply with all applicable Federal, State, and Local statutes and regulations in carrying out this project supported by FHWA. NCTCOG agrees that it is under a continuing obligation to comply with terms and conditions of the grant agreement issues for its project with FHWA. NCTCOG recognizes that Federal, State, and Local statutes may be modified from time to time and those modifications may affect project implementation. NCTCOG understands that Presidential Executive Orders and Federal directives, including Federal policies and program guidance may be issued concerning matters affecting this project.

Private Participation

Through this project NCTCOG will work with other regional partners to develop incentives and track usage. Additionally, NCTCOG will work with private businesses to purchase incentives at a discounted rate. An example of the type of partnership NCTCOG will seek is the purchase of airline frequent flier miles at a reduced rate to be awarded as a test incentive. NCTCOG will seek to purchase these types of services or products in bulk at a discounted rate in an effort to maximize the cost-effectiveness of the project.

Project Staff

Michael Morris P.E., Director of Transportation – Mr. Morris has been at NCTCOG since 1979 and Director of Transportation since 1990. He is responsible for coordinating plans, programs, and projects to improve mobility and reduce vehicle emissions. He is the Past Executive Committee Chair of the Transportation Research Board. Mr. Morris received a Masters in Civil Engineering from State University of New York at Buffalo in 1979 and is a registered Professional Engineer in the State of Texas. Mr. Morris would act in an advisory capacity on this project.

Dan Kessler, Assistant Director of Transportation – Mr. Kessler has been at NCTCOG since 1981 and Assistant Director since 1990. He oversees transportation planning, air quality planning and operations, travel forecasting, congestion management and other MPO activities. Mr. Kessler is currently the Executive Director of the Texas Association of Metropolitan Planning Organizations. Mr. Kessler received a Bachelor of Science in Community Development from Purdue University and a Masters Degree in Urban and Regional Planning from the University of Illinois. He will act in a supervisory capacity on this project.

Natalie Bettger, Senior Program Manager – Ms. Bettger has been at NCTCOG since 1999. She is responsible for the development of the congestion management process, intelligent transportation system, sustainable development, transportation safety, and transportation security. Ms. Bettger is the Section Representative of the Fort Worth Section of the Texas Institute of Transportation Engineers; additionally, she is the past President for the Intelligent Transportation Society of Texas. She received a Bachelor of Science in Geography from Northwest Missouri State University and a Masters in Planning from The University of Akron. Ms. Bettger will act as the primary project manager on this project.

Dan Lamers, P.E., Senior Program Manager – Mr. Lamers has been at NCTCOG since 1985. Mr. Lamers is responsible for the development of the long-range transportation plan, regional rail corridor studies, thoroughfare planning, and environmental coordination. Mr. Lamers is the past president of the Fort Worth Section of the Texas Institute of Transportation Engineers; additionally, he is an adjunct professor in the City and Regional Planning program in The University of Texas at Arlington. He received a Bachelor of Science in Civil Engineering from Virginia Tech and a Masters in Civil Engineering from The University of Texas at Arlington. Mr. Lamers will provide technical assistance on this project.

Sonya Jackson, Principal Transportation Planner – Ms. Jackson has been at NCTCOG since 2005. Ms. Jackson is responsible for the congestion management process program area which includes travel demand management, and transportation safety. Ms. Jackson serves on the Board of Directors of the Association for Commuter Transportation for Region 5, which includes the States of Texas, Oklahoma, Kansas and Arkansas. Ms. Jackson received a Bachelor of Science in Civil Engineering from Southern University and A&M College and a Master of Business Administration in Management from Amberton University. Ms. Jackson will act as primary staff on this project.

Marian Thompson, P.E., Transportation System Operations Supervisor – Ms. Thompson has been at NCTCOG since February, 2010. Ms. Thompson is involved in the development of intelligent transportation systems and transportation security, and manages projects to support these programs. Ms. Thompson is a member of Intelligent Transportation Society of Texas, the State Chapter of ITS America; additionally, she is a past Vice President for ITS Midwest, a four-state Chapter of ITS America. She received a Bachelor of Science in Civil Engineering from Texas A&M University, and has over 30 years engineering experience with three State Departments of Transportation and private firms. She will serve as primary staff on this project.

Ralph Zaragoza, Transportation Planner – Mr. Zaragoza has been at NCTCOG since 2008. Mr. Zaragoza serves as support staff for the congestion management process program area which includes travel demand management. He is responsible for the regional rideshare program for the Dallas - Fort Worth Region. Mr. Zaragoza is a member of the North Texas Clean Air Coalition, American Planning Association, and the Association for Commuter Transportation. He received a Bachelor of Science in Community and Regional Planning from Iowa State University. He will act as supporting staff for the project.

Elizabeth Beck-Johnson, Transportation Planner II – Ms. Beck-Johnson has been at NCTCOG since 2008 and is responsible for environmental justice compliance and analysis, and serves as staff support for compatible planning efforts around Naval Air Station Joint Reserve Base Fort Worth (NAS JRB). Ms. Beck-Johnson is a member of the American Planning Association and the Women's Transportation Seminar. Ms. Beck-Johnson received a Bachelor of Art in Sociology and is currently pursuing a Masters in City and Regional Planning from The University of Texas at Arlington. She will assist with the environmental justice implication of the project.

Suellen Chavet, J.D., Senior Grants and Contracts Coordinator – Ms. Chavet has been at NCTCOG since 2008 and is responsible for managing financial, contractual and regulatory elements of multiple transportation projects and programs. Ms. Chavet received a Bachelor of Art in Psychology from the University of Nebraska-Lincoln. She received a Juris Doctorate in Law from the University of Nebraska - College of Law.



FHWA Value Pricing Pilot Program Proposal

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

In Partnership With

**IVOX INC.,
DELPHI AUTOMOTIVE SYSTEMS, LLC,
AND
INFINITY PROPERTY AND CASUALTY CO.**

PROPOSAL IN RESPONSE TO THE

**Value Pricing Pilot Program Partnership
In-Line With the Requirements
Defined by the Solicitation FR2010-26298**

FOR THE

**U.S. Department of Transportation/
Federal Highway Administration**

Submitted on February 16, 2011

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1. LIST OF ACRONYMS

| | |
|-----------------------|--|
| ACRR | Aggregate Congestion Reduction Rate |
| ACSCQ | Aggregate Congestion Score Current Quarter |
| ACSPQ | Aggregate Congestion Score Previous Quarter |
| ADRR | Aggregate Driving Reduction Rate |
| ADSCQ | Aggregate Driver Score Current Quarter |
| ADSPQ | Aggregate Driver Score Previous Quarter |
| AESIR | Aggregate Environmental Sustainability Improvement Rate |
| ASIR | Aggregate Safety Improvement Rate |
| ANOVA | Analysis of Variance |
| ATPP | Aftermarket Telematics Pilot Program |
| CAAA | Clean Air Act Amendments |
| CO₂ | Carbon Dioxide |
| DATU | Delphi Aftermarket Telematics Unit |
| DFW | Dallas-Fort Worth |
| EG | Experiment Group |
| EPA | Environmental Protection Agency |
| FHWA | Federal Highway Administration |
| GHG | Greenhouse Gases |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| HMI | Human Machine Interface Technology |
| HW | Hardware |
| IEEE | Institute of Electrical and Electronics Engineers |
| MPO | Metropolitan Planning Organization |
| NAAQS | National Ambient Air Quality Standards |
| NO_x | Oxides of Nitrogen |
| IP | Intellectual Property |
| ITS | Intelligent Transportation Systems |
| NCTCOG | North Central Texas Council of Governments |
| OBDII | On-Board Diagnostic II |
| OEM | Original Equipment Manufacturer |
| PAYD | Pay-As-You-Drive Insurance |
| PDR | Prescriptive Driving Report |
| PSL | Posted Speed Limit |
| RF | Radio Frequency |
| RTC | Regional Transportation Council |
| SIM | Subscriber Identity Module |
| SIP | State Implementation Plan |
| TCEQ | Texas Commission on Environmental Quality (TCEQ) |
| TxDOT | Texas Department of Transportation |
| USB | Universal Serial Bus |



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| | |
|--------|--|
| US DOT | United States Department of Transportation |
| VOC | Volatile Organic Compounds |
| VPP | Value Pricing Pilot |
| VPPP | Value Pricing Pilot Program |



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2. REFERENCE DOCUMENTS

[1] Value Pricing Pilot (VPP) Program Solicitation FR2010-26298, Federal Register /Vol. 75, No. 201 /Tuesday, October 19, 2010 /Notices pp. 64397 – 64403

[2] Request for Value Pricing Pilot Program Partnership Proposals posted by the North Central Texas Council of Governments (NCTCOG) at <http://www.nctcog.org/trans/admin/rfp/index.asp>

[3] VPPP_Solicit_FR2010_26298_Delphi_Draft_Proposal _Rakouth_03_DEC10

[4] Response to Value Pricing Pilot Program PAYD Insurance Sketch Plan from FHWA's Allen Greenberg on December 16, 2010

[5] Document addressing FHWA's suggestions formulated in the document [4] above

[6] In-dash DriverScore, DriverScoregrn, and maps screenshots

[7] TxDOT Letter of Commitment

[8] IVOX Letter of Commitment

[9] Delphi Letter of Commitment

[10] Infinity Letter of Commitment



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3. EXECUTIVE SUMMARY

This proposal is written in response to the solicitation for proposals for Value Pricing Pilot (VPP) Program Participation, Fiscal Years 2010 and 2011 released by the Federal Highway Administration (FHWA) of the U.S. Department of Transportation (US DOT) under the reference FR2010-26298 in the Federal Register /Vol. 75, No. 201 /Tuesday, October 19, 2010 /Notices. [1]

A consortium led by the North Central Council of Governments (NCTCOG) and including IVOX, Incorporated (IVOX) as the primary partner along with two secondary partners that are Delphi Automotive Systems, LLC. (Delphi) and Infinity Property & Casualty Corporation (Infinity), is hereby providing a proposal aimed at facilitating the deployment of a Pay-As-You-Drive (PAYD) insurance pilot program in the North Central Texas region for the purpose of improving the driver's behavior resulting in measurable congestion and vehicle miles traveled (VMT) reduction along with other benefits such as equity, insurance premium reduction, livability, environmental sustainability, and safety. The primary geographic focus will be on the Dallas-Fort Worth (DFW) nine-county ozone nonattainment area (Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties).

The program goals are to observe, analyze and modify driver behavior to reduce congestion and VMT, improve driver safety, reduce accident severity and frequency, improve air quality, establish a system to incentives to induce changes in driver behavior, and create a structure for usage-based insurance to more accurately price personal and commercial automobile premiums. This proposal is a unique study of PAYD insurance as it combines incentivizing drivers to reduce VMT as well as avoid areas of congestion through real-time driver feedback. Previously studied PAYD insurance programs have collected data on driver behavior and studied the overall impact of incentivizing drivers to drive less. The end results were similar in that drivers varied their behavior through carpooling, using mass transit, telecommuting, trip-chaining, etc. However, what has not yet been studied is what changes in behavior a driver will make while on the road based upon real-time feedback. Upon being notified of a congested area, this study will evaluate whether the driver chooses to take an alternate route to bypass the congestion. An enhancement to the program would enable additional evaluation of whether the driver chooses to take an alternative mode of transportation. Real-time feedback will help the driver be more proactive and adjust behavior to maximize the benefits of insurance premium incentives.

The consortium will implement the Value Pricing Pilot Program (VPPP) by adding PAYD insurance features to an existing Aftermarket Telematics Pilot Program (ATPP). As a result, the VPPP will largely benefit from the ATPP initial investment and

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infrastructure along with the team experience. Thus, through the combined VPPP and ATPP, the consortium will collect data aimed at demonstrating that:

- (1) PAYD insurance translates into a percent driving reduction regardless of the traffic congestion;
- (2) PAYD insurance along with congestion-based applications (e.g. lower insurance premium applied to congestion-free itineraries or insurance premium proportional to time spent in congestion) will effectively reduce congestion.

The VPPP will be rolled out according to the following key stages determined by the consortium.

- **Stage 1 – Establishing Baseline:** This stage is a study aimed at establishing the baseline (i.e. it will describe the current driving situation before PAYD insurance). This stage will incorporate Phase 1 of the insurance value pricing structure.
- **Stage 2 – Testing Impacts of PAYD Insurance with Real-Time Driver Feedback:** This stage is the rollout of the technical operations of PAYD insurance. It is the cruise mode of VPPP for actual data capture, processing, and reporting. This stage will incorporate Phases 2 and 3 of the insurance value pricing structure.
- **Stage 3 – Optional Enhancements:** Upon completing Stages 1 and 2, additional features may be added for further program enhancement as described in section 8.8.

During this phase participation will be voluntary on the part of the consumer. As mentioned in the Stages 1 and 2, the insurance value pricing structure will be multi-phased as follows:

- **Phase 1 - Data Gathering and Participation Incentive:** The initial phase will involve data gathering to gain an understanding of customer acceptance of the concept. Consumers electing to participate will be given a policy level discount as an incentive.
- **Phase 2 - Basic Driver Behavior Incentives:** After gaining insight into the predictive power of certain driving behaviors, additional discounts will be introduced to further reward those driving behaviors that produce lower loss costs and reduce emissions.
- **Phase 3 - Advanced Driver Behavior Incentives:** As more experience is gained, a more complicated driving behavior scoring algorithm will be developed that will enable a more segmented approach to rating based on an individual vehicle usage patterns.



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For the purposes of this proposal, NCTCOG will be referred to as the requesting agency. The Texas Department of Transportation (TxDOT) will play an administrative role in this VPPP, and will serve as the pass-through agency for funding and contracting. TxDOT has already been assigned to 1 of the 15 VPP slots. Therefore, while NCTCOG is the leading agency, this proposal is being submitted with endorsement from TxDOT and in agreement that TxDOT will be the contracting entity with FHWA for the purposes of administering federal funds.

FHWA's solicitation calls for an optional draft submission on or before December 3, 2010. The consortium has provided FHWA with a sketch plan on December 3, 2010. [3] Subsequently, FHWA released fruitful comments on December 16, 2010. [4] These comments are factored in the build of the present proposal. Also, a separate document has been crafted to show how the consortium has addressed those comments.[5]

Accordingly, and with the exceptions specified where necessary, the requesting agency along with its partners will deliver the VPPP within the 2011 - 2013 timeframe with a target of 2,500 drivers participating in the program. With 32,766 hours for labor time (dispensed over the duration of the project) and \$1,090,500 U.S. for material cost (including development of original VPPP-specific applications), the requesting agency and its partners will be able to honor a cooperative agreement for a total budget of \$5,187,500 U.S. for a program length of three years. The related cost share breakdown is approximately 39.4 percent paid by the consortium and 60.6 percent paid by the FHWA.



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4. BACKGROUND INFORMATION

4.1 Applicant Consortium

The applicant consortium is led by the NCTCOG. Through a competitive request for proposals process, NCTCOG has partnered with IVOX, Delphi, and Infinity in submitting this proposal.^[2] IVOX will act as the primary partner along with Delphi and Infinity, each acting as secondary partners. IVOX is represented by Gregg Warren, its CEO and President. Delphi is represented by Dr. Heri Rakouth, Manager Technology Exploration, and Infinity is represented by Scott Pitrone, Senior Vice President of Product Management.

4.1.1 NCTCOG

NCTCOG is a voluntary association of, by, and for local governments, and was established to assist local governments in planning for common needs, cooperating for mutual benefit, and coordinating for sound regional development. NCTCOG's purpose is to strengthen both the individual and collective power of local governments and to help them recognize regional opportunities, eliminate unnecessary duplication, and make joint decisions.

NCTCOG serves the region of North Central Texas, which is centered around the two urban centers of Dallas and Fort Worth. NCTCOG has over 230 member governments including 16 counties, numerous cities, school districts, and special districts. Each member government appoints a NCTCOG voting representative from its governing body. These voting representatives make up the General Assembly, which annually elects the Executive Board. The Executive Board, composed of 13 locally elected officials, is the policy-making body for all activities undertaken by the Council of Governments, including program activities and decisions, regional plans, and fiscal and budgetary policies. The Board is supported by technical, study, and policy development committees and a professional staff headed by Mike Eastland, Executive Director.

As the metropolitan planning organization (MPO) for the DFW region, and due to being in a federally designated ozone nonattainment area, responsibilities of NCTCOG include coordinating regional transportation planning for the North Central Texas area in addition to air quality planning. NCTCOG participates in a cooperative, collaborative process with local, State, and federal agencies to work toward improving air quality across the region. This partnership includes close coordination with the Texas Commission on Environmental Quality (TCEQ) for development of the State Implementation Plan (SIP). The SIP is a regional air quality plan required by the Clean Air Act Amendments of 1990 that outlines how ozone concentrations will be reduced in the nonattainment area to a level that complies with the federal



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standard. The Regional Transportation Council (RTC) has taken a proactive role in assisting with development of SIP revisions for the DFW area that includes both NCTCOG staff assistance with air quality technical planning as well as implementation of control strategies at the local level that enhance federal and State efforts to improve air quality. Numerous other stakeholders throughout the region, including local governments and business coalitions, also support this process and facilitate local implementation of control strategies.

4.1.2 IVOX

IVOX is an information service company headquartered in Atlanta, Georgia. The company was founded in February 2004 to provide companies owning, operating, or insuring large fleets of commercial vehicles and insurance companies insuring personal vehicles a means to control costs by monitoring on a second-by-second basis how, when, and where vehicles are driven. IVOX provides summary information to its customers by analyzing this information which is obtained from utilizing Global Positioning System (GPS) or accelerometer enabled devices (a "Device" or "Devices") in their customers' vehicles. By using concise and highly predictive data tools that distill vast data points into usable decision tools, the customer is able to make informed risk management decisions. The algorithms used to analyze this data are proprietary and have been trademarked by the company under its patent pending DriverScore® and related applications.

In May 2007, the Georgia Research Alliance and the Technology Association of Georgia named IVOX the winner of their Technology Business Launch of the Year Contest.

4.1.3 Delphi

Delphi is a leading global supplier of electronics and technologies for automotive, commercial vehicle and other market segments. Operating major technical centers, manufacturing sites and customer support facilities in 30 countries, Delphi delivers real-world innovations that make products smarter and safer as well as more powerful and efficient.

As a worldwide partner to 25 of the largest vehicle manufacturers, Delphi has a long and successful history with advanced automotive technologies and specifically the benefits of more than 15 years of experience with telematics – including collecting data from vehicles, transmitting information to vehicles, and creating a flow of information. Because of this, Delphi aftermarket telematics has the ability to communicate with vehicles from these manufacturers.

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Delphi introduced the first On-Star Telematics with General Motors in 2005 (see Figure 1). Over the past five years Delphi has been involved in various Intelligent Transportation Systems projects in Asia (e.g. V2X Proof-Of-concept for the Land Transport Authority of Singapore), Europe (e.g. Pre-Drive C2X) and North America (e.g. VII-Consortium, 2008 World Congress Bus demonstration) in providing both the related hardware and software.

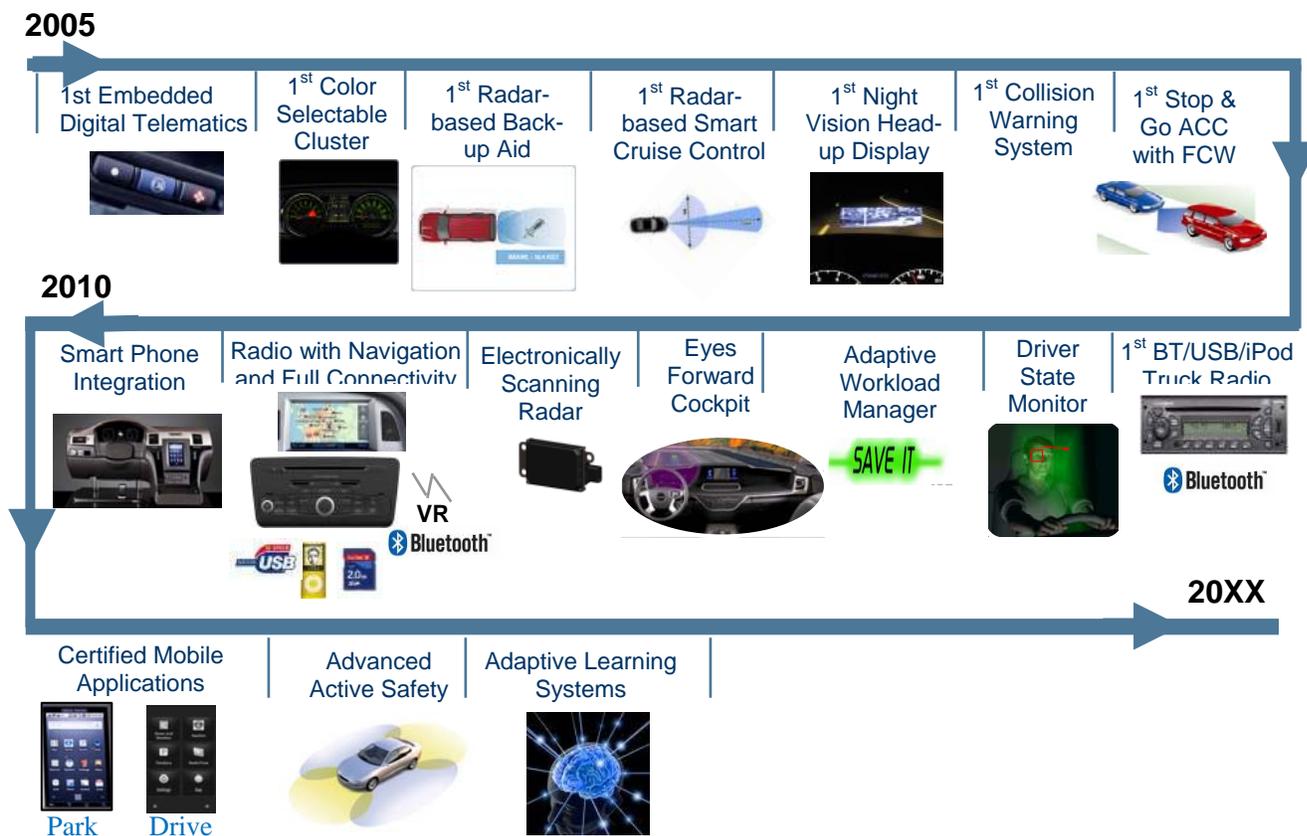


Figure 1 - Delphi's Tradition of Innovation in Telematics and Connectivity

4.1.4 Infinity

Infinity Property & Casualty Corporation (NASDAQ: IPCC) rates among the top 50 Property and Casualty Insurance companies in the nation. The long and successful history of providing quality auto insurance products dates back to 1950, with outstanding customer service provided by over 2,100 people across the country. Infinity provides auto insurance protection for those with a proven record of accident-free driving as well as those who have difficulty obtaining coverage due to a record of accidents or violations, their age, occupation or type of car they drive.



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Regardless of the reason one chooses Infinity, the corporation strives to offer excellent service. Infinity is customer-driven and committed to giving consumers affordable car insurance coverage.

Infinity makes it easy and convenient for customers to manage their Infinity policies online. Some of the services provided online include policy inquiry, payment processing, and claims inquiry. In addition, claims can be reported 24/7 by phone. Customers also benefit from automated policy and account information service that is available 24 hours a day Monday through Saturday.

Infinity has an A.M. Best Financial Strength Rating of A ("Excellent") and a Standard & Poor's Financial Rating of A ("Strong"). Both of these ratings are the independent opinions of the rating organizations on the insurance company's ability to pay its ongoing obligations to policyholders and its ability to pay under its insurance policies and contracts in accordance with their terms. Infinity also has a Moody's Insurance Financial Strength Rating of A2 ("Good") and a Fitch Insurer Financial Strength Rating of A ("Strong") as of November 2009.

Infinity is an organization that cares about people and the environment and is the first car insurance company to operate a Climate Neutral Fleet since replacing old company vehicles with a better, fuel-efficient Jeep Compass. In addition to these efforts, everyone at Infinity is encouraged to get involved in the "We Care" program by placing recycling bins throughout corporate offices.

In today's rapidly changing economic climate, Infinity likes to think of itself as both challenged and fortunate to be able to serve consumers in ways they have grown to trust in the past. The goal at Infinity Insurance Companies is to do just that: to deliver first-rate customer service through Infinity agencies and online policy purchases, to maintain strong financial ratings, and to look to the future with new and better ways to meet customer needs. After all, that's what "Infinity" means -- unlimited excellence.

4.2 Points of Contact

4.2.1 NCTCOG

Carrie Reese has been on staff in the Transportation Department of the NCTCOG since June 2000. She is currently the Program Manager of Air Quality Policy and Program Development. In this capacity, she works with NCTCOG staff, local governments, the TCEQ, and U.S. Environmental Protection Agency (EPA), among others, to identify and develop innovative transportation policies and programs to reduce emissions and improve air quality in the North Central Texas region, including a pilot program from 2005-2008 to study the regional effects of Pay-As-



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You-Drive Insurance. She received her BS in Bioenvironmental Sciences from Texas A&M University and her MS in Environmental Science and Engineering from the University of Texas at Arlington. Carrie will be overseeing NCTCOG’s portion of this grant program. Carrie can be reached at (817) 608-2353 or creese@nctcog.org.

Assisting Carrie, will be Amanda Brimmer, Senior Transportation Planner. She has been with NCTCOG since September 2004 and possesses a BS in Mechanical Engineering from Colorado State University and a ME in Civil Engineering, with an emphasis in air quality, from the University of Texas. Amanda is the main point of contact for NCTCOG with regard to this program and can be reached at (817) 608-2354 or abrimmer@nctcog.org.

4.2.2 IVOX

Gregg Warren is the founder of IVOX. He conceptualized IVOX from his years of experience consulting to the wireless and financial services arenas. Through his company, Warren Consulting Partners, Gregg has been able to assist start up companies define their strategies, obtain capital, assemble teams and construct reasonable exits. Clients have included a wireless services company, a financial services company and a medical devices firm. He has an undergraduate degree in accounting from Auburn University and a MBA from Mercer University. Gregg Warren can be reached at (404) 308-1381 and gwarren@IVOXdata.com.

4.2.3 Delphi

Table 1 provides the identification of the Delphi project team. The team members have been selected based on credentials and ITS-related experiences.

| Core Team Members | Project Role | Phone Number |
|--------------------------|---|---------------------|
| Rakouth, Heri | Principal Project Contact | (248) 813-2321 |
| Slesak, Chris | Project Manager | (248) 813-3250 |
| Jones, Jeffrey | Business Line & Government Contracts Manager | (248) 813-3173 |
| Johnson, Richard | Chief Engineer Operations Telematics, Service and Education | (248) 813-2552 |
| Krzyszewski, John T | Systems Engineer-Telematics | (248) 813-6072 |

Table 1 - Delphi Project Team Contact Information

Heri Rakouth holds MS and PhD degrees in Electrical Engineering, from the University of Pierre and Marie Curie (UPMC) of Paris (1979 and 1982) along with an



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MBA from Saginaw Valley State University (1999) and an MS in Manufacturing Management from Kettering University (2000).

Dr. Rakouth has over 30 years experience in both aerospace/defense telecommunications and automotive electronics industries. Since April 2007, Dr. Heri Rakouth holds the position of Manager, Technology Exploration at the Innovation and Technology Office (ITO) of Delphi Corp. Troy, Michigan. In this capacity, he coordinates technology innovation activities across three out of the five divisions of Delphi. He spearheaded cross-divisional efforts that have led to the build of the Telematics Business Development Team for the aftermarket and the launch of the V2X proof of concept project currently implemented for the Land Transport Authority of Singapore.

Dr. Rakouth is currently an adjunct professor at Oakland University teaching undergraduate and graduate classes in Power Electronics and Wireless Communications. Dr. Rakouth has published over twenty Institute of Electrical and Electronics Engineers (IEEE) or equivalent technical papers and tens of classified and non-classified reports. He holds two U.S. and two European patents.

4.2.4 Infinity

Scott Pitrone is the Senior Vice President of Product Management for Infinity Property & Casualty Corporation. Scott is in his 24th year in the auto insurance industry and has been with Infinity for 17 years. In his tenure with Infinity, Scott has held a variety of executive level positions and is currently a Senior Vice President responsible for the company's Product Management and Pricing functions. Prior to 2002, Scott held a variety of Sales, Product Management and Pricing roles in Infinity subsidiary groups in Cleveland, Ohio and Dallas, Texas. Scott started his insurance career with Progressive in Cleveland, Ohio.

Scott has a BA in Economics from The Ohio State University. Scott also attended graduate school at Cleveland State University. Scott Pitrone can be reached at (678) 627-6307 and Scott.pitrone@ipacc.com.

4.3 Statement of Implementation Project

Given the recognized benefits of the PAYD insurance concept along with the related experiences of the participants, this project is not a pre-implementation, instead it is a true implementation of a VPPP with quantifiable performance as further down described.



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5. INTRODUCTION

NCTCOG, IVOX, Delphi, and Infinity will work together as a consortium to facilitate the deployment of a PAYD insurance pilot program in the North Central Texas region for the purpose of improving the driver's behavior resulting in measurable congestion and VMT reduction along with other benefits such as equity, insurance premium reduction, livability, environmental sustainability, and safety. We are targeting about 2,500 drivers over the 2011-2013 time period. This project will be executed within the framework of the Value Pricing Pilot (VPP) Program Participation, Fiscal Years 2010 and 2011 whose solicitation was released by the FHWA of the US DOT under the reference FR2010-26298 in the Federal Register /Vol. 75, No. 201 /Tuesday, October 19, 2010 /Notices.[1]

This project will be an extension of an on-going ATPP in the State of Texas. This proposal will leverage knowledge and experience gained from previous work and will be able to leverage the direct experience gained from the team members while also leveraging the indirect experience of the overall team that goes back to over 200+ combined years of history.

The consortium will implement the VPPP by adding PAYD insurance features to an existing ATPP. As a result, the VPPP will largely benefit from the ATPP initial investment and infrastructure along with the team experience. Thus, through the combined VPPP and ATPP, the consortium will collect data aimed at demonstrating that:

- 1) PAYD insurance translates into a percent driving reduction regardless of the traffic congestion;
- 2) PAYD insurance along with congestion-based applications (e.g. lower insurance premium applied to congestion-free itineraries, or insurance premium proportional to time spent in congestion) will effectively reduce congestion.

PAYD insurance has the potential to benefit disadvantaged populations, including low income individuals. Many low income individuals are also low-mileage drivers, yet under the current pricing structure of insurance, it is often too expensive for these persons to obtain insurance coverage. By allowing low-mileage drivers to buy insurance on a per-mile basis, it may lead to more affordable insurance rates; thereby, reducing the number of uninsured drivers on the road. In addition, this program also addresses other FHWA concerns including decelerating the need for highway expansion through congestion mitigation.



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Infrastructure and capital costs associated with manufacturing, developing, and testing the device being used in this program is anticipated to be in the multi-million dollars, which is being used as leverage in this proposal.



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6. PROBLEMS BEING ADDRESSED

This proposal is aimed at addressing driving behavior issues that affect the dollar amount of insurance premium paid, the number of traffic accidents, the level of traffic congestion, the amount of VMT, and the level of emissions affecting the environment.

Under the framework of PAYD insurance, the VPPP will quantify the evolution of the related data at key points of the program (i.e. on a quarterly basis, from the beginning to the end the program).

6.1 Description of the Proposed Pricing Program and Its Goals

The proposed pricing program will deploy a PAYD insurance program across the region of North Central Texas in order to:

- (1) Improve driver's behavior through different incentives and tracking systems (see section 7),
- (2) Measure the impact of the driver's improved behavior by means of:
 - a. DriverScore (see section 7),
 - b. CongestionScore (see section 8.3.1),
 - c. DriverScoregrn (see section 8.5.1),
 - d. Aggregate Driving Reduction Rate (ADRR) % (see section 8.2.3),
 - e. Aggregate Congestion Reduction Rate (ACRR) % (see section 8.3.3),
 - f. Livability improvement through a correlation between the Aggregate Rate of Occurrence of Accident (AROA) % and the ADRR% and ACRR% (see section 8.4),
 - g. Aggregate Environmental Sustainability Improvement Rate (AESIR) % (see section 8.5.3),
 - h. Aggregate Safety Improvement Rate, (ASIR) % (see section 8.6).

6.2 Identification and Description of the Facilities, Systems, or Area that Will Be Covered

The primary geographic focus (see section 7.2) will be on the Dallas-Fort Worth (DFW) nine-county ozone nonattainment area (Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties).

6.3 Anticipated Effects of the Pricing Program on Reducing Congestion, Altering Travel Behavior, and Encouraging the Use of Other Transportation Modes

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We are anticipating that the deployed PAYD insurance program will demonstrate a reduction congestion by 10 percent to 20 percent among the drivers subscribing to the program. This reduction rate will be achieved by means of a system of incentives (e.g. insurance premium reduction) and tracking (e.g. DriverScore) that will help drivers adjust their driving schedules and itineraries (e.g. use of programs such as Probe Vehicle Data and Assisted Re-Routing) as well as using alternative transportation modes (e.g. use of smartphone-based application that delivers a certificate each time the driver uses mass transit).

6.4 Identification of How the Proposal Addresses Goals Related to Livability, Sustainability, Equity, Congestion & VMT Reduction, Safety, and State of Good Repair

(1) Livability

A reduction in VMT is expected to reduce the number of cars in the downtown areas; thereby, decreasing the need for additional parking space and allowing use of commercial buildings easily accessed through pedestrian and bicyclist paths as well as faster bus travel and better bus stop designs. In addition, efforts will be made to favor ridesharing programs through the build of car pooling parking areas.

(2) Sustainability

Reductions in traffic are expected to:

- Proportionally reduce greenhouse gas (GHG) emissions, such as carbon dioxide (CO₂), as well as ozone precursor emissions, nitrogen oxides (NO_x) and volatile organic compounds (VOCs), and other air pollutants,
- Proportionally reduce gas emissions (e.g. by 10 percent or more); thereby, improving energy efficiency and reducing dependence of fossil fuels by an equivalent rate,
- Proportionally water and noise pollution, and the related damage to ecosystems,
- Increase the self-funding of multimodal transportation system (the incentive and tracking systems will encourage drivers to shift from driving their own cars to using mass transit).

(3) Equity

- Through PAYD insurance, premiums will be based on DriverScore instead of credit score. This will allow low-income travelers or other transportation-disadvantaged groups to pay their insurance premiums

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in a fairer manner and potentially reducing the number of uninsured drivers. Thus, the incentive and associated tracking system will result both in saving on average for their travel and in a better travel experience (less stress on the road),

- The shift from personal vehicle use to a wider mass transit adoption will improve the profitability of the mass transit industry allowing their decision makers to plan for better travel experience (e.g. increasing the frequency of buses, increasing the number of weather-friendly bus stops).

(4) Congestion Reduction

Forecasted reductions in traffic will:

- Proportionally reduce traffic congestion and delay by the freight sector,
- Proportionally reduce traffic congestion and delay experienced by personal travelers. This will be quantified by CongestionScore (see section 8.3.1),
- Proportionally maximize economic return on existing investment by optimizing use of the existing transportation infrastructure (see the last bullet in section 6.5.(3) Equity),
- Provide signals for where new multimodal transportation capacity (including transit, bike, pedestrian, ridesharing, etc.) is really needed and provide revenues to pay for it, while at the same time reducing the need for highway expansion. This will be specifically addressed by highlighting the importation of location in Two-Factor Analysis of Variance as described in section 8.7.1.

(5) Safety

Safety will be measured by means of the Aggregate Safety Improvement Rate (ASIR) as defined in section 8.6. Direct safety benefits will be provided by:

- Shifts from driving alone to safer modes of travel (e.g. carpooling, bus, train),
- Reduced overall VMT and unsafe driving in particular, for example by rewarding drivers with reduced insurance premiums for cutting exposure to crashes and insurance claims,
- Reduced driving on higher-risk roadways.

Forecasted reductions in traffic will result in:

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- Reducing collisions, including secondary crashes as caused by stalled traffic. This will be specifically measured by the Aggregate Safety Improvement Rate ASIR% (see section 8.6)
- More road space available to provide safer pedestrian and bicycle accommodations as described in 6.5.(1).

(6) State of Good Repair

The PAYD insurance program will not generate revenues. Instead it will lead to significant savings that will enable the region to:

- Reduce highway expansion needs; thereby, making more existing revenues available to repair, reconstruct and rehabilitate the existing system,
- Repair, reconstruct, and rehabilitate the existing highway, transit, bikeway, and pedestrian systems.

6.5 Preliminary Estimates of the Social and Economic Effects of the Pricing Program, Including Potential Equity Impacts, and a Plan or Methodology for Further Refining Such Estimates

Assuming that the pricing program will result in 10 percent to 20 percent congestion reduction, we expect social and economic effects to be improved by at least 10 percent given that current PAYD insurance exhibits insurance premium reduction up to 60 percent (see section 7.3). In section 8 we present several statistical methods for further refining such estimates through aggregate analyses (see sections 8.2 through 8.6) by category (e.g. age group, gender group, income group, location, highway/road/street, vehicle type, event group) for factor pairing (see sections 8.7.1 and 8.7.2).

6.6 Role of Alternative Transportation Modes

In sections 7.4.3.5.2.2 and 8.8.2.3 we are introducing innovative methods to measure the shift from systematic personal vehicle use to modulated use of mass transit. More specifically, a Wi-Fi-based application with the mass transit industry (e.g. (1) the buses or trains could be equipped a system broadcasting the bus/train time-stamped identification through an on-board Wi-Fi system while the bus/train is in motion, (2) the driver participating in PAYD insurance would receive the information on his/her Smartphone and will transmit the information to the consortium server, (3) the server will store it as a proof that the driver participating in the PAYD insurance program has used the mass transit with time, location/direction data included).



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6.7 Description of the Tasks to be Carried Out in Each Phase of the Project

This is addressed in sections 7 and 8.

6.8 Detailed Project Timeline Broken Down by Tasks and Phases

This is addressed in section 9.

6.9 Itemized Budget Broken Down by Task and Funding Year

Table 4 in section 10 provides an itemized budget according to labor and material costs associated to each task/activity (applications development and data collection in section 7 and performance measurement in section 8) and funding year over the three-year program length.

6.10 Plans for Monitoring and Evaluating Implementation Projects, Including Plans for Data Collection and Analysis, Before and After Assessment, and Long-Term Monitoring and Documenting Project Effects

- Section 7.4.1 addresses data collection and analysis before the application of the PAYD insurance program,
- Section 7.4.3.4 addresses data collection and analysis during the program,
- Section 7.6 addresses long-term monitoring,
- Section 8 addresses the quantification and regular reporting of the project effects.

6.11 Detailed Finance and Revenue Plan

This is addressed in section 10.

6.12 Discussion of Previous Public Involvement, Including Public Meetings, in the Development of the Proposed Pricing Program

This is addressed in section 11.

6.13 Plans for Meeting all Federal, State, and Local Legal and Administrative Requirements for Project Implementation

This is addressed in section 12.



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6.14 Description of How, if at All, Any Private Entities are Involved in the Project, Either in Spending Grant Funds or in Cost Sharing or Debt Retirement Associated with Revenues

This is addressed in sections 13 and 14. The project will be funded through a cost share of approximately 39.4 percent paid by the consortium and 60.6 percent paid by FHWA.



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7. PROPOSED PRICING PROGRAM

7.1 Program Overview

The consortium will recruit drivers of personal automobiles in North Central Texas to have their driving patterns collected and analyzed to create a feedback and incentive program which will decrease miles driven, encourage the use of mass transit alternatives, incent safer driving, reduce accidents, reduce congestion and promote "greener" driving. The consortium is targeting 2,500 personal vehicles to be monitored with Delphi's self installed on-board diagnostic II (OBDII) driver dongle (see Figure 3), the data will be transmitted by AT&T's network to IVOX's servers for analysis and the creation of a personal DriverScore and supporting feedback reports for the driver. Incentive programs will be put in place in the form of social media "points" and a reduction on insurance premiums to encourage safer, greener and less driving.

Accordingly, and with the exceptions specified where necessary, the requesting agency along with its partners will deliver the VPPP within the 2011 - 2013 timeframe.

7.2 Identification and Description of the Facilities, Systems, or Area that Will Be Covered

The primary geographic focus (see Figure 2 below) will be on the DFW nine-county ozone nonattainment area (Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties).

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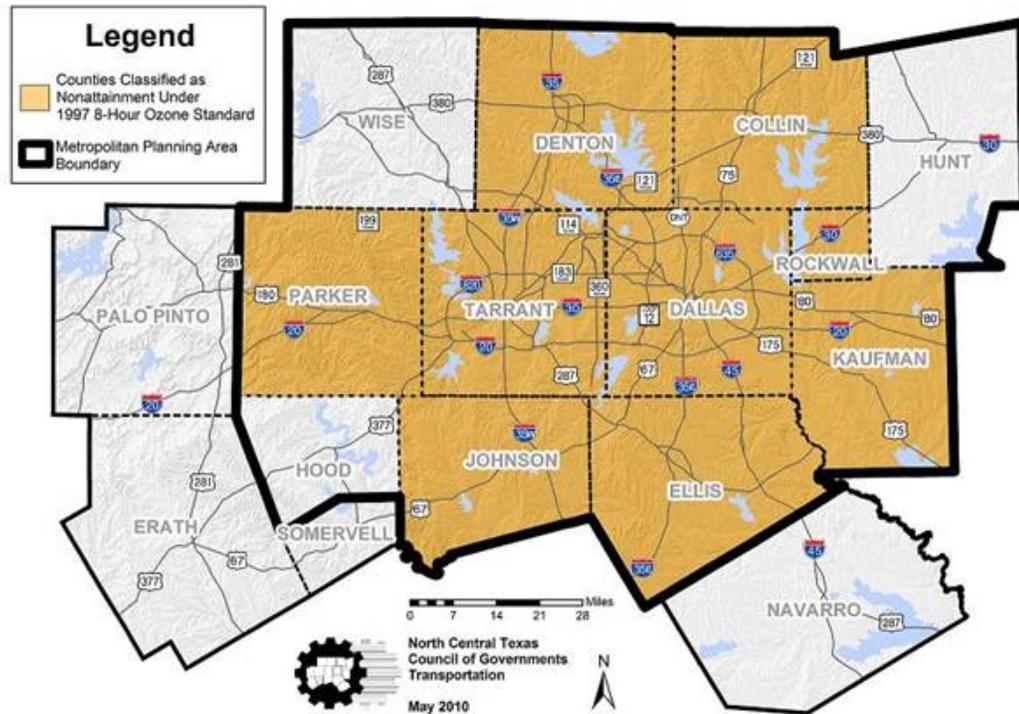


Figure 2 - NCTCOG Service Area Including DFW Nine-County Ozone Nonattainment Area

7.3 Program Goals

The program goals are to observe, analyze and modify driver behavior to reduce congestion and VMT, improve driver safety, reduce accident severity and frequency, improve air quality, establish a system to incentives to induce changes in driver behavior, create a structure for usage based insurance to more accurately price personal automobile premiums. Based on previous work, we anticipate pricing on insurance premiums to be reduced by up to 60 percent in some cases. In addition to the environmental and economic impact, the consortium anticipates that success in creating a commercially viable usage based insurance pricing program will lead to reductions in driving accidents throughout the state of Texas.

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7.4 Program Implementation

The VPPP will be rolled out according to the following key stages that may be run sequentially or in parallel as appropriately selected by the consortium.

The VPPP will be rolled out according to the following key stages determined by the consortium.

- **Stage 1 – Establishing Baseline:** This stage is a study aimed at establishing the baseline (i.e. it will describe the current driving situation before PAYD insurance). If season is recognized to be a significant factor in driving pattern, and if an experiment-based baseline is deemed necessary for the VPPP, then Stage 1 may take up to one year. This stage will incorporate Phase 1 of the insurance value pricing structure.
- **Stage 2 – Testing Impacts of PAYD Insurance with Real-Time Driver Feedback:** This stage is the rollout of the technical operations of PAYD insurance. It is the cruise mode of VPPP for actual data capture, processing, and reporting. For regular reporting, cyclical phenomena such as seasons and social practices (e.g. school schedules) will be incorporated and may require a minimum of four (4) consecutive quarters of data collection. This stage will incorporate Phases 2 and 3 of the insurance value pricing structure.
- **Stage 3 – Optional Enhancements:** Upon completing Stages 1 and 2, additional features may be added for further program enhancement as described in section 8.8.

7.4.1 Establishing The Baseline

The determination of the data pertaining to the overall driving level will be finalized with NCTCOG. For now, we are anticipating to collect the following data for drivers traveling a majority of the time with the DFW nine-county ozone nonattainment area as identified by NCTCOG in section 7.2.

7.4.1.1 Archive-Based Baseline

By default, we will rely on NCTCOG's archives for establishing the baseline in identifying the following data.

- Number of vehicles,
- Number of drivers,
- Number of miles driven,
- Number of hours driven,
- Number of accidents,
- Number of passengers/car,

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- Data comparing mass transit vs. passenger cars utilization,
- Emissions reductions including GHGs, such as CO₂, and ozone precursors, NO_x and VOCs.

7.4.1.2 Experiment-Based Baseline

If the consortium deems the available archive data insufficient to reliably describe the current driving status, then it may decide to establish a new baseline by supplementing, and/or updating, and/or replacing the existing data with two mutually exclusive experiment groups (EG).

- The first experiment group, referred to as EG1, will include drivers that will not subscribe to PAYD insurance at all over the length of the VPPP. The sample size will be 1,250 given that the sample equation (Eq. 8.1.1) is based on a 50 percent PAYD adoption rate (see section 8.1).
- The second experiment group, referred to as EG2, will include drivers that have volunteered to participate in a PAYD insurance program:
 - Staying with their current insurance policy (e.g. without PAYD insurance) during Stage 1 (see section 7.4)
 - Switching over to PAYD insurance in Stage 2. The sample size will be 1,250 as well.

Note: for tracking purposes, each participant from both EG1 and EG2 experiment groups will need one telematics unit. As a result, a total number of 2,500 telematics units is needed.

7.4.1.2.1 Scope of the Data Collection

The scope of the data collection will focus on the DFW nine-county ozone nonattainment area.

7.4.1.2.2 Influencing Factors

For the purposes of finer analyses and, if the relating information is available, we will factor in influencing factors such as:

- Local events,
- Season,
- School periods,
- Demography,
- Infrastructure equipment (e.g. traffic lights, cameras),
- Road status (e.g. potholes),
- Road construction.



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7.4.2 Recruiting the Pilot Program Participants

7.4.2.1 Public Information

Through public communications, the consortium will extensively advertize the VPPP in order to attract driver participants.

7.4.2.2 Incentives

The details of the incentive systems are defined in section 8.2.1. The following two systems are being proposed:

- A voluntary stewardship based incentive,
- An insurance premium based incentive.

7.4.3 Technical Operations

7.4.3.1 Overview

Based on its long history of supplying the global automobile market with world class vehicle electronics and parts, Delphi has developed an economical aftermarket, self-installed, driver dongle to analyze driving behavior. The dongle will sample GPS data at once a second and three axis accelerometer data once every tenth of a second. All data will be time stamped and sent via the AT&T network to IVOX's servers located in Atlanta, GA. Figure 3 provides an overview of the overall system operation.

IVOX has built a suite of data analytics to support a pricing platform for the insurance industry which use direct driving data to price insurance premiums. The service anticipates each driver to generate between 3-5MB of data/vehicle/month. The raw data will be compiled and then geo-located on a series of geographic information system (GIS) maps to conduct location based risk analysis of the actual driving behavior. The data is then run through a series of multi-variant analysis to create a DriverScore; a singular score that indicates a drivers risk for having an accident based on his/her actual driving behavior.

IVOX will deliver reports via the cloud so that drivers may access their information on a wide variety of devices including desktop and laptop computers, Smartphones and tablets. The "cloud" or "cloud computing" is a general term for anything that involves delivering hosted services over the Internet. The IVOX/Delphi system will be able to impact the following areas:

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- Insurance premiums,
- Driver safety,
- Congestion mitigation,
- VMT reduction,
- Emissions reductions including GHGs, such as CO₂, and ozone precursors, NO_x and VOCs.

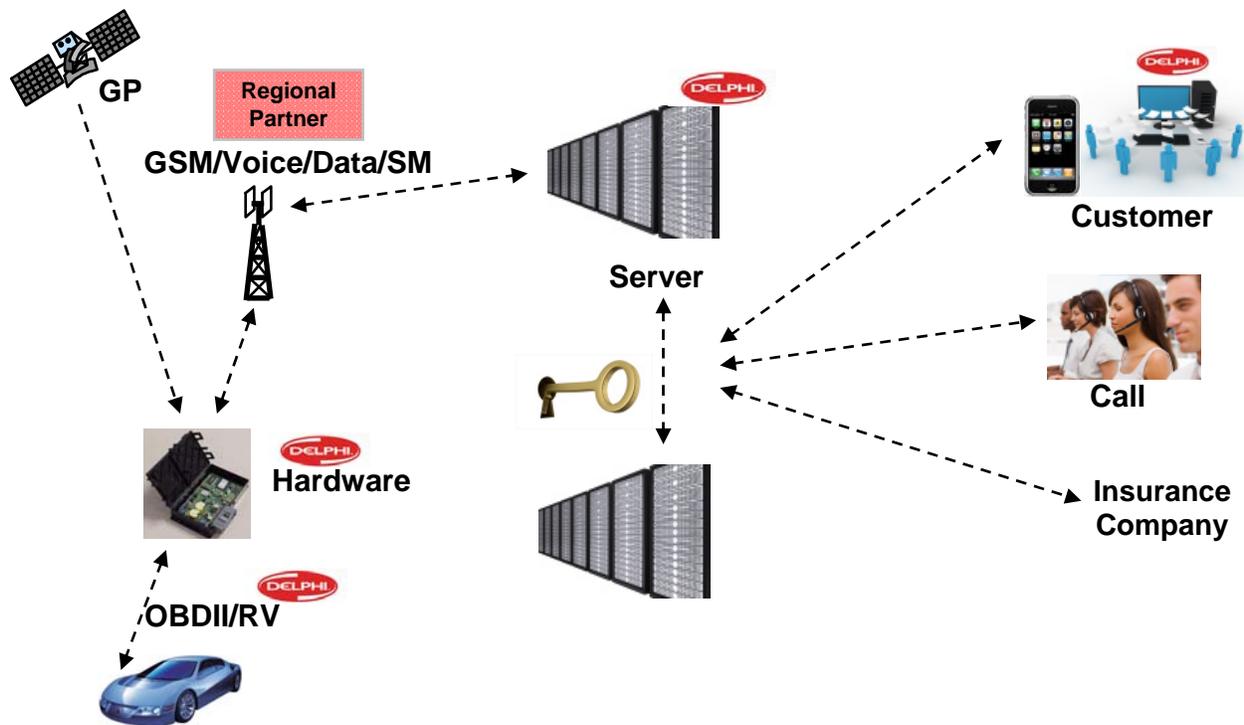


Figure 3 - Overall System Operation

Delphi will supply a device that fits into the palm of your hand, which will be able to tell things like driver ratings and vehicle congestion. The information will be routed via a cellular connection to a device gateway that is controlled by Delphi. This information will then be sent to Infinity and IVOX, who will be able to turn raw data into useful information. This information will be sent in real time, on a predefined basis, and/or via an alert based system depending on the data that is being collected.

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7.4.3.2 On-Board Equipment

The technology being used is called the Delphi Aftermarket Telematics Unit (DATU) and is a small plug and play device (see Figure 4). It plugs into the OBDII port and thereby is always turned on. It has GPS, cellular connection, accelerometer, and other advanced features both on the hardware and backhaul services.

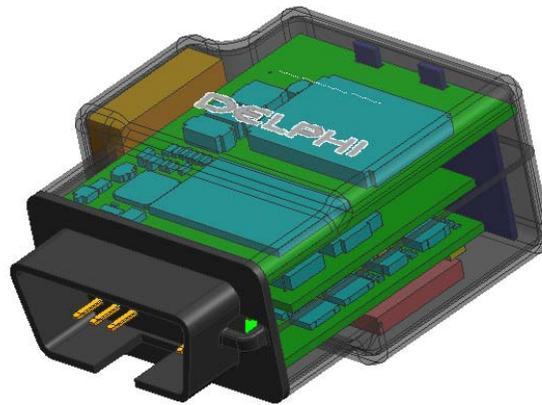


Figure 4 - Delphi Aftermarket Telematics Unit

7.4.3.3 Back-Haul Center

Back-Haul Center is a combination of three back-haul hosting servers that are made up of Delphi, IVOX, and Infinity that are all seamlessly integrated with each other. The back-haul center is also connected to a National IT system that communicates to a Call Center that supports members no matter where they are located or driving.

7.4.3.4 Congestion Solution Development Activities

The subsequent sections describe all activities relating to the development of solutions for reducing traffic congestion.



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7.4.3.4.1 Driver's Performance Monitoring

We will provide a suite of analytical tools which will provide insight into the driver's behavior. We will use the same aftermarket technology currently in our ATPP project as the foundation of the congestion management solution for conducting our analysis. As explained in the preceding sections, the main unit of the ATPP operation is the DATU.

We will collect second by second GPS and accelerometer data from the DATU. Every data element will be time-stamped and sent to our servers where the events will be layered on to a series of GIS data maps that will allow for the examination of driver behavior based on the following factors:

- Speed limits by GPS point,
- g force data by GPS point,
- Time and miles spent driven by road class,
- Time spent driving during peak congestion periods,
- Time and miles of risky driving during high congestion periods and location,
- Hours of day where riskiest driving is most prevalent,
- Monthly trend data of driver performance,
- Day of week analysis of driver performance,
- Discretionary idle time of driver.

7.4.3.4.2 Driver's Itinerary Monitoring

The DATU's GPS tracking feature will enable developing the driver's itinerary history. We will provide a "route risk" index which indicates the risk of the roads travelled by the driver. We will take accident data by road type and number of accidents and use traffic volume data to calculate the risk of roads. We will then provide of the number of miles and times the drivers are driving on through high risk locations.

We will also evaluate the time and miles that drivers spend on certain road types and when they drive.

7.4.3.4.3 Driver's Rating and Feedback

We will then rank drivers by:

- Peer group,
- Demography,
- Vehicle type,
- Locations driven,
- Number of trips per day,

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- Length/duration of trips per day,
- Miles and times driving in congested zones,
- Miles and time driven by road class.

Drivers will be given a singular score, called DriverScore, which will indicate the drivers' ability on how, when, and where. Also, we will:

- Correlate driver behavior data to claims data to uncover non-intuitive risk patterns,
- Provide detailed maps to give drivers feedback on speeding in high congestions areas, maps detailing aggressive driving in high congestion areas,
- Release individualized feedback to drivers to improve their driving relative to:
 - Safety,
 - Emissions reductions including GHGs, such as CO₂, and ozone precursors, NO_x and VOCs,
 - Congestion performance through the results of the analysis of their driving behavior in:
 - congestion time frames vs. uncongested time frames,
 - congestion locations vs. uncongested locations,
- Establish safe driving standards for teen drivers,
- Analyze and identify which alternative routes are preferred when there is a crash/accident,
- Evaluate driver performance based on number of trips per day, length of trips, amount of daily miles and time driven by driver,
- Test a series of reward structures in conjunction with social media communities that would provide incentives for drivers to drive safer, greener, car pool, adjust travel times, adjust routes driven.

7.4.3.4.4 Real Time Congestion Mitigation

7.4.3.4.4.1.1 Congestion Monitoring

We will evaluate average speed of traffic based on established posted speed limit to determine if congestion is occurring. We will set a threshold based on the amount of the average speed of the driver's falls below the posted limit. We will then also measure the average amount of time the driver spends in congestion, patterns of movement during congestion (i.e. weaving in and out of traffic to gain "position"), whether or not the driver seeks alternative routes and what routes are used.

7.4.3.4.4.1.2 Using the Local Traffic Management System

The DATU and its system will interface with existing traffic management companies to send out notices via the cloud email, speech-to-text text alerts, and automated

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call notification. The system could send out proactive alerts of congestion occurrences based on driving patterns prior to a driver's departure.

By default, the alerts/messages will be delivered to the driver's Smartphone that could have hands-free capability (e.g. message displayed to distraction-less in-dash display or released through speakers) according to different incentive levels to be defined by Infinity.

7.4.3.4.4.1.3 Using Probe Vehicle Data

System will conduct real time driver analysis to compare speeds driven by driver to posted speed limits (PSL). If speed is 85 percent lower than the PSL, we will conclude that congestion is occurring and will analyze the time and location of the events. The system could then look at our drivers by location to confirm congestion and then send out the proactive alerts to drivers who habitually travel the same road at that time to lessen the impact of the congestion.

By default, the alerts/messages will be delivered to the driver's Smartphone that could have hands-free capability (e.g. message displayed to distraction-less in-dash display or released through speakers) according to different incentive levels to be defined by Infinity.

Alternatively, we will adapt the results of the UC-Berkeley Mobile Millennium program for developing a Probe Vehicle Data application (see <http://traffic.berkeley.edu/>).

7.4.3.5 Congestion Mitigation

We will develop a cloud based application that will deliver the Route Risk (once it is established) to drivers to make decisions on their route and also give the most common alternatives based on the established driver patterns and also route risk index.

7.4.3.5.1 Assisted Re-Routing

We will develop a set of new Smartphone applications that would broadcast alternative directions to bypass congested area(s).

7.4.3.5.2 Pattern-Based Congestion Mitigation

We will develop a smart phone application that will alert drivers of the probability of congestion based on time of day and also location. Applications could also propose several alternative routes. We are also planning to develop a Route Risk Index

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which will evaluate the riskiness of the route normally traveled by the driver. We will need to coordinate with NCTCOG to get accident data based on incidence, time of day and date and then normalize the riskiness based on traffic flow data. The index will then give drivers feedback on the riskiest routes and allow for them to take alternative routes if necessary.

7.4.3.5.2.1 Trip Planning

Drivers will have alerts sent to them via email or text-to-speech text or utilize real-time maps to determine areas of high congested and plan efficient alternative routes based on time of departure, roads travelled, and the Route Risk Index.

7.4.3.5.2.2 Alternative Transportation Mode Certificate

- System will monitor vehicle usage to ascertain if it is parked at mass transit parking lot or at home,
- System will also evaluate number of miles driven reduced by a driver,
- Social media communities will be formed to provide individual as well group incentive programs (partner with coupon) for taking mass transit,
- As a future extension requiring additional funding, the consortium may develop an Wi-Fi-based application with the mass transit industry (e.g. (1) the buses or trains could be equipped a system broadcasting the bus/train time-stamped identification through an on-board Wi-Fi system while the bus/train is in motion, (2) the driver with PAYD insurance would receive the information on his/her Smartphone and will transmit the information to the consortium server, (3) the server will store it as a proof that the driver has used the mass transit with time, location/direction data included).

7.5 Long-Term Monitoring

For the purposes of long-run observations/analyses, the consortium will negotiate with FHWA for continuing the above listed monitoring along with the delivery of related performance quantifiers (see section 8) to report to FHWA biannually for a period of 10 years.

7.6 Value Pricing Aspects

The main focus of this proposal is to use PAYD insurance as an effective mean to reduce congestion and VMT, improve air quality and safety, and make insurance more affordable for low mileage drivers.

The consortium will work to determine the level of discount offered to the participants of the study. During this phase participation will be voluntary on the



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part of the consumer. The approach to introducing an insurance value pricing structure will be multi-phased as follows:

- **Phase 1 - Data Gathering and Participation Incentive:** The initial phase will involve data gathering to gain an understanding of customer acceptance of the concept and determine a baseline for driver behavior. Consumers electing to participate will be given a policy level discount as an incentive.
- **Phase 2 - Basic Driver Behavior Incentives:** After gaining insight into the predictive power of certain driving behaviors, additional discounts will be introduced to further reward those driving behaviors that produce lower loss costs and reduce emissions. For example, a vehicle that is driven in an environmentally favorable manner (i.e. low mileage, no hard accelerations or hard breaking, and within speed limit thresholds) may be entitled to an additional discount.
- **Phase 3 - Advanced Driver Behavior Incentives:** As more experience is gained, a more complicated driving behavior scoring algorithm will be developed that will enable a more segmented approach to rating based on an individual vehicles usage patterns.

This approach is subject to change as insight is gained during the pilot phase of the rollout. The consortium will also develop a social media based incentive program that will use a point-based reward system to add additional utility to the consumer experience and further reinforce safer driving.

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8. PROGRAM PERFORMANCE MEASUREMENT

The combined ATPP and VPPP projects rely on real-time communications and computer-intensive processing. This technology setup will be paired with the appropriate database system to facilitate statistical analyses for the purpose of pattern identification and traffic congestion modeling. The following sections describe the data being collected for enabling the mathematical processing and will ultimately ensure the delivery of quantitative performance statistics such as:

- ADRR (see section 8.2.3),
- ACRR (see section 8.3.3),
- AESIR (see section 8.5.3)
- ASIR (see section 8.6)

8.1 Statistical Assumptions and Pilot Program Sizing

The VPPP is aimed at providing NCTCOG with data enabling statistical conclusions with a reasonable confidence level for the purposes of policy making leading to measurable economic, social and environmental benefits.

In order to start the program, we are also assuming that 50 percent of the population of insurance policyholders will enroll in this PAYD insurance VPPP. This assumption allows us to determine the sample size using the formula the sample size for a proportion that is:

$$N = (z/E)^2\pi(1-\pi) \quad (\text{Eq. 8.1.1})$$

Let's target a ± 2 percent proportion error and a confidence level of 95 percent. The z-value for 95 percent confidence is $z = 1.960$. Using $E = 0.02$ and taking $\pi = 0.50$ according to the above assumed 50 percent enrollment rate, the required sample size is:

$$N = (z/E)^2\pi(1-\pi) = (1.960/0.02)^2(0.50)(1-0.50) = 2,401$$

As a result and with some rounding, we select the minimum sample size N_{\min} defined by the Eq. 8.1.2 below:

$$N_{\min} = 2,500 \quad (\text{Eq. 8.1.2})$$

As a result, the program budget is established according to a number of 2,500 drivers opting for PAYD insurance.



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8.2 Driving Reduction

Drivers will be given a DriverScore which will provide them with feedback on their driving patterns. The score will not only take into account miles driven but also the riskiness of the driving. Two classes of incentives will be provided.

8.2.1 Driving Reduction Incentive Systems

Two methods of driving reduction method will be applied. The first method will rely on the drivers' maturity to voluntarily react upon the DriverScore reports released to them. The second method involves monetary incentives.

8.2.1.1 Voluntary Stewardship Based Incentive

8.2.1.1.1 Individual initiative

Drivers will be provided incentives to not only drive fewer miles but also, more importantly, to drive safer and greener. By effectively enticing drivers for driving safer, the DriverScore system will help reduce the number of accidents and consequently it will lead to reducing the overall congestion level and frequency in the areas covered by the VPPP.

In addition to real-time feedback, and for those drivers who do not choose to utilize the Smartphone technology options, monthly reports will be given to drivers showing miles driven, the route of these miles, maps detailing aggressive driving, speeding, excessive idling by the driver, top ten improvement report and a customized prescriptive report which gives drivers suggestions for driving improvement based on where, when and how they drive. The DriverScore will be a measurement of how the drivers change their patterns over the course of the study.

8.2.1.1.2 Collective initiative

Through public communications, NCTCOG and the consortium may encourage people and local organizations/businesses to congregate for launching initiatives such as:

- DriverScore improvement through voluntary training through entities such as schools, colleges, or faith-based organizations,
- DriverScore-based coupons delivered by local businesses.

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8.2.1.2 Insurance Premium-Based Incentive

Infinity will provide incentives to drivers by offering a reduction on premiums based on improvements in the DriverScore. The structure of the insurance premiums and incentives will be developed by Infinity in collaboration with the consortium.

8.2.2 Driving Reduction Data Capture

The DriveScore analysis will involve the following base data:

- Second by second GPS data,
- Sub second three axis accelerometer data,
- Time of day.

Figure 5 below shows an example of the level of detail that we will be capturing.

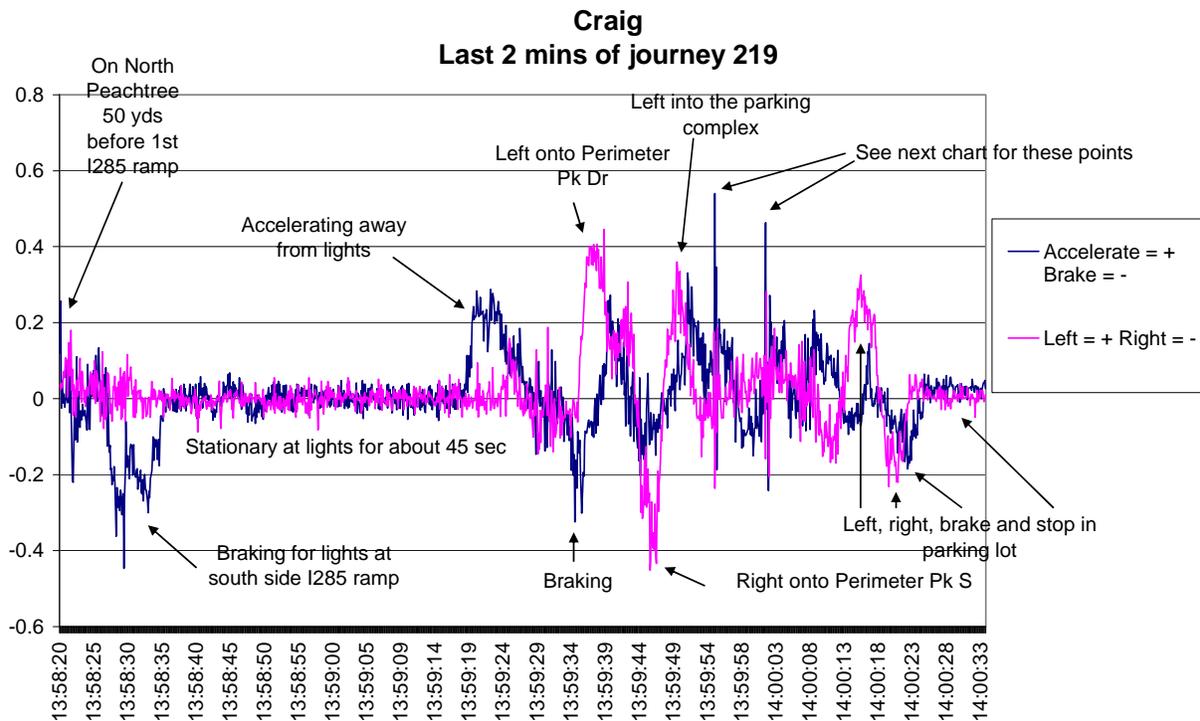


Figure 5 - DriveScore Base Data

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8.2.3 Driving Reduction Reporting to NCTCOG

The consortium will aggregate the DriveScore data according to categories to be agreed upon such as:

- Age group,
- Gender group,
- Income group,
- Location,
- Highway/Road/Street section,
- Vehicle type,
- Event group (e.g. football game, convention).

The ADRR will be measured through a differential calculation based on the parameter defined by the equation:

$$\text{ADRR \%} = [(\text{ADSCQ} - \text{ADSPQ})/\text{ADSPQ}] * 100 \% \quad (\text{Eq. 8.2.3})$$

Where,

- ADSCQ is the aggregate DriverScore for current quarter
- ADSPQ is the aggregate DriverScore for previous quarter

The aggregate data will be made available on a specific URL that will be either open for public access or with restrictions and will be renewed on a quarterly basis or according to a periodicity to be agreed upon with the NCTCOG. An automatic notification for update will be released to select agency officers as appropriate.

In addition to the aggregate data, NCTCOG and IVOX will set up an agreement for making specific vehicle by vehicle data available for some applications.

8.3 Congestion Reduction

DriverScore and the underlying reports detailing route risk index, speeding index (propensity for speeding relative the posted speed limit), and aggressive prescriptive driving report (PDR) will provide drivers with the feedback necessary to improve their respective driving. By default, the PDR will be emailed to the driver (see example in Table 2 below).

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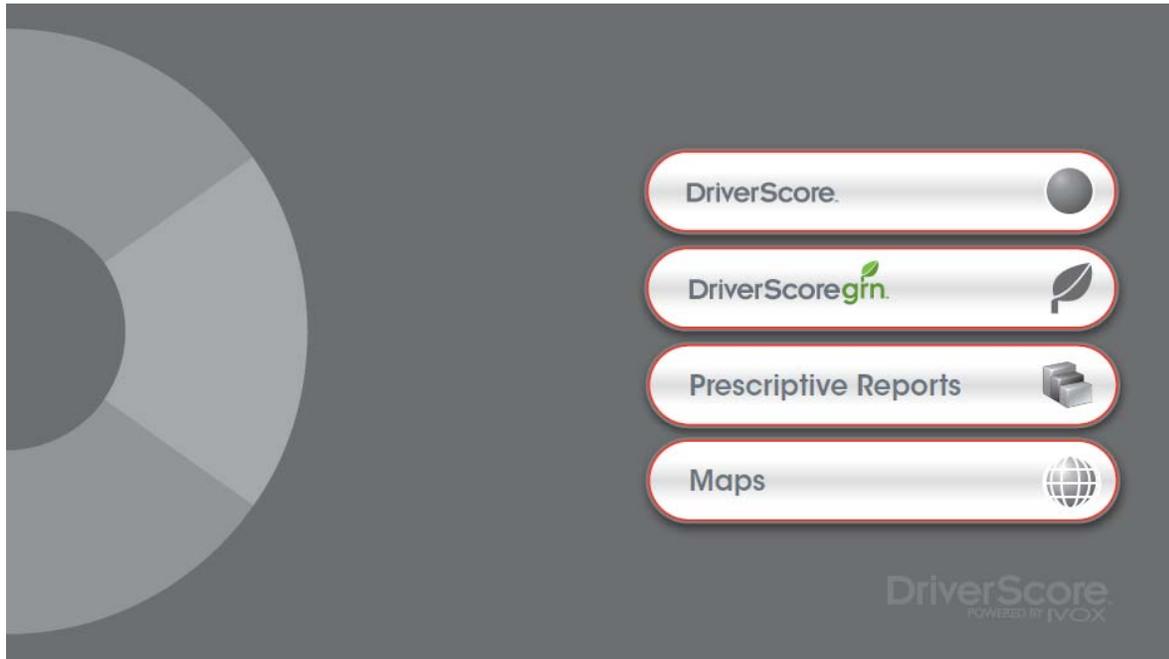


Figure 6.a - In-Dash DriverScore Menu

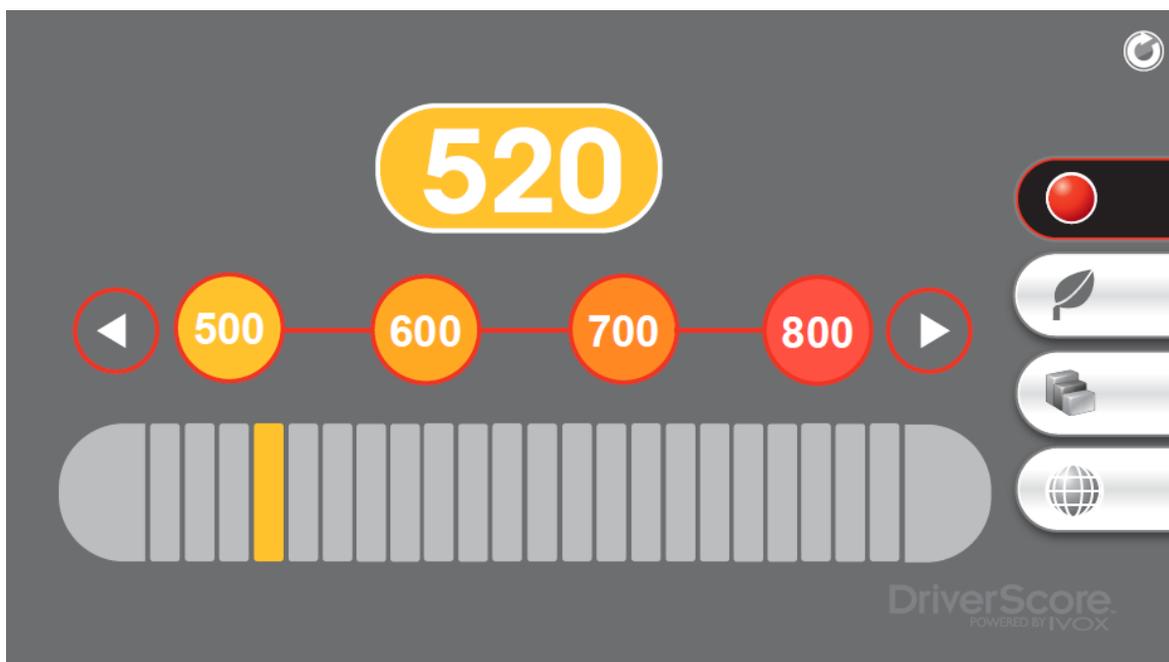


Figure 6.b -In-Dash DriverScore Screenshot

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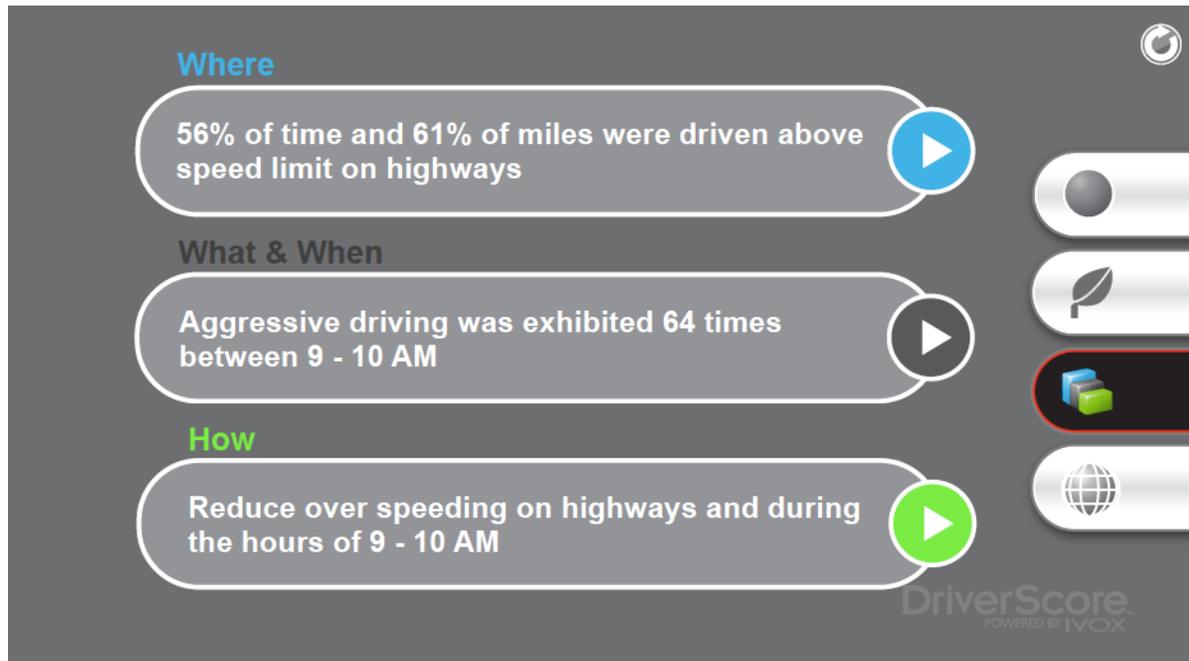


Figure 6.c - In-Dash Prescriptive Driving Report



Figure 6.d - In-Dash Itinerary Map

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8.3.1 Congestion Data Capture

Congestion data will be built from the average speed the drivers drive during congestion time frames and location. Each driver will be assigned a CongestionScore that summarizes his/her performance in terms of time spent in driving in specific areas during specific times and days to be agreed upon with NCTCOG.

8.3.2 Congestion Reduction Incentive Systems

The driving reduction incentive systems described in section 8.2.1 will be expanded to factor specific incentives for congestion reduction based on CongestionScore data.

8.3.3 Congestion Reduction Reporting to NCTCOG

The consortium will aggregate the CongestionScore data according to categories to be agreed upon such as:

- Age group,
- Gender group,
- Income group,
- Location,
- Highway/Road/Street section,
- Vehicle type,
- Event group (e.g. football game, convention).

The ACRR will be measured through a differential calculation based on the parameter defined by the equation:

$$\text{ACRR \%} = [(\text{ACSCQ} - \text{ACSPQ})/\text{ACSPQ}] * 100 \% \quad (\text{Eq. 8.3.3})$$

Where,

- ACSCQ is the aggregate CongestionScore for current quarter
- ACSPQ is the aggregate CongestionScore for previous quarter

The aggregate data will be made available at a specific URL that will be either open for public access or with restrictions and will be renewed on a quarterly basis or according to a periodicity to be agreed upon with the NCTCOG. An automatic notification for update will be released to select agency officers as appropriate.

In addition to the aggregate data, NCTCOG and IVOX will set up an agreement for making specific vehicle by vehicle data available for some applications.



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8.4 Livability

The livability will be measured by the above defined ACRR. In addition, if so desired by NCTCOG, we will establish a correlation between the AROA with both ADRR and ACRR. This would require NCTCOG to provide the consortium with accident data on a quarterly basis, say two weeks ahead of the release of the ACRR scores.

8.5 Environmental Sustainability

Ground-level ozone pollution is caused by a photochemical reaction of VOCs and NO_x , which are known as ozone precursors, in the presence of sunlight and heat. On April 15, 2004, the EPA designated nine North Central Texas counties, including Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties, as nonattainment under the 8-Hour Ozone National Ambient Air Quality Standard (NAAQS). Nonattainment status means that ground-level ozone concentrations in this area exceed the limit established by the EPA to ensure adequate protection of human health and the environment. Based on the magnitude of ozone pollution in these counties, the EPA has recently reclassified the DFW nonattainment area from "moderate" to "serious". The federally mandated deadline for a "serious" nonattainment area to demonstrate compliance with the NAAQS is June 15, 2013, as established in the 1990 Clean Air Act Amendments (CAAA).

In addition to the urgent need to meet the current ozone standard, the DFW area must comply with new and increasingly more stringent air quality standards. The CAAA require EPA to re-evaluate all criteria pollutants standards every five years. In 2010, EPA proposed to lower the ozone standard from 84 parts per billion (ppb) to between 60-70 ppb to ensure adequate protection human health, and create a new standard to protect sensitive ecosystems. A final rule is anticipated to be issued by July 2011, and will likely expand the number of counties included in the DFW nonattainment area.

In order to curb ozone pollution, reductions in emissions of NO_x and VOCs are necessary. The largest contributor of NO_x emissions, which is the primary precursor pollutant in DFW, is mobile sources which include on-road vehicles, such as cars, trucks, buses, and 18-wheelers, as well as non-road sources, such as construction equipment, locomotives, and aircraft. Thus, reducing emissions from passenger vehicles is of particular interest to the NCTCOG as it is one of the primary focus areas for regional control measures. In addition, reducing GHG emissions is also a goal of this program. Emissions reductions of NO_x , VOCs, and CO_2 resulting from this program will be quantified.

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8.5.1 Environmental Sustainability Data Capture

Environmental sustainability will be measured through fuel consumption data. We will develop a DriverScoregrn (see Figure 7, for an optional in-dash display) which will correlate driving behavior to fuel usage and engine load to determine how “green” a driver performs. We will then compare month to month score to calculate the reduction in the driver’s carbon footprint (CO₂ and other GHG emissions) as well as emissions of NO_x and VOCs to determine an improvement in their DriverScoregrn.

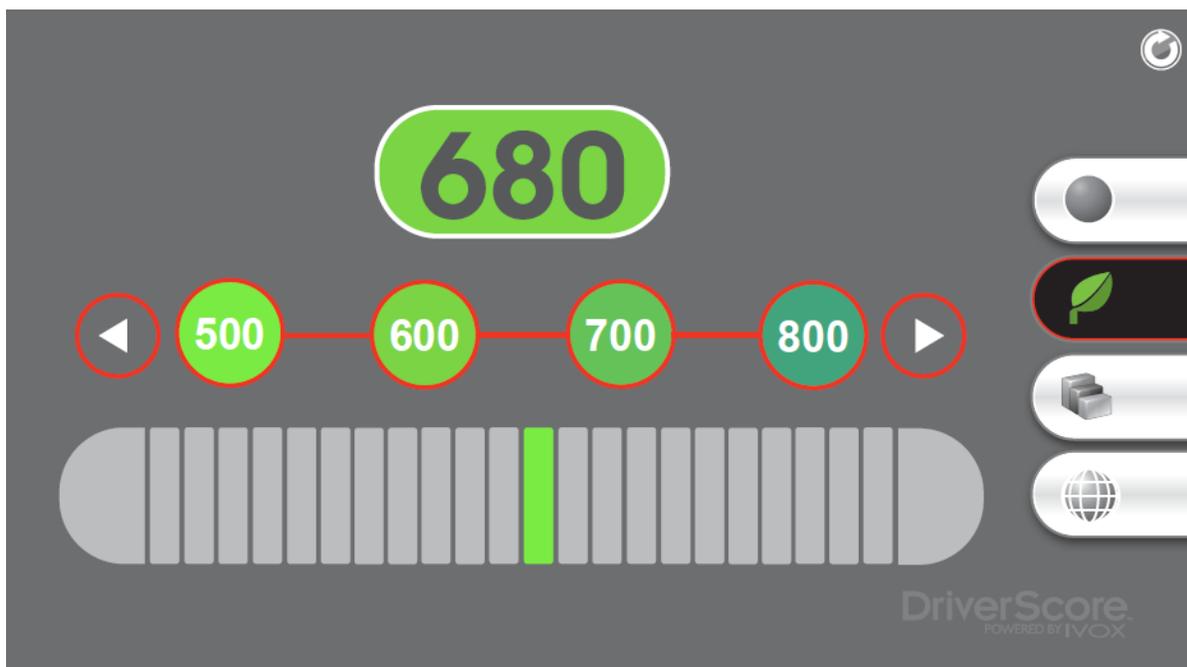


Figure 7 - DriverScoregrn through In-Dash Display

8.5.2 Environmental Sustainability Incentive Systems

The driving reduction incentive systems described in section 8.2.1 will be expanded to factor specific incentives for environmental sustainability improvement based on DriverScoregrn data.

8.5.3 Environmental Sustainability Reporting to NCTCOG

The consortium will aggregate the DriverScoregrn data according to categories to be agreed upon with NCTCOG such as:

- Age group,

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- Gender group,
- Income group,
- Location,
- Highway/Road/Street section,
- Vehicle type,
- Event group (e.g. football game, convention).

The AESIR will be measured through a differential calculation based on the parameter defined by the equation:

$$\text{AESIR \%} = [(\text{ADSGCQ} - \text{ADSGPQ})/\text{ADSGPQ}] * 100 \% \quad (\text{Eq. 8.5.3})$$

Where,

- ADSGCQ is the aggregate DriverScoregrn for current quarter
- ADSGPQ is the aggregate DriverScoregrn for previous quarter

The aggregate data will be made available at a specific URL that will be either open for public access or with restrictions and will be renewed on a quarterly basis or according to a periodicity to be agreed upon with the NCTCOG. An automatic notification for update will be released to select agency officers as appropriate.

In addition to the aggregate data, NCTCOG and IVOX will set up an agreement for making specific vehicle by vehicle data available for some applications.

8.6 Safety

Safety will be derived from the DriverScore data by geo-locating it and correlating it to driver's claims data thereby determining the level of risk each individual driver has of producing accident, thus as a byproduct congestion.

In addition, if so desired by NCTCOG, we will establish and report safety improvement data on periodic basis, say every quarter. Aggregate Safety Rate will be measured by establishing the complement to 100 percent of the ratio of the number of VPPP driver's claims (denoted as VPPP_Claims) to the total number of claims (denoted as Total_Claims) for each category of claim according to criteria to be agreed upon with NCTCOG. The applicable formula is:

$$\text{ASR \%} = [1 - (\text{VPPP_Claims})/(\text{Total_Claims})] * 100 \% \quad (\text{Eq. 8.6.1})$$

Also, the ASIR per quarter will be derived according to the formula:

$$\text{ASIR \%} = [(\text{ASRCQ} - \text{ASRPQ})/\text{ASRPQ}] * 100 \% \quad (\text{Eq. 8.6.2})$$

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The aggregate data will be made available at a specific URL that will be either open for public access or with restrictions and will be renewed on a quarterly basis or according to a periodicity to be agreed upon with the NCTCOG. An automatic notification for update will be released to select agency officers as appropriate.

In addition to the aggregate data, NCTCOG and IVOX will set up an agreement for making specific vehicle by vehicle data available for some applications.

8.7 Deriving Statistical Extrapolations

Based on the data selected and effectively collected over the agreed upon program period, the following statistical analyses will be used to derive some or all of the following conclusions.

8.7.1 Two-Sample Hypothesis Tests

A set of two-sample (sample 1: population of drivers without or before PAYD insurance enrollment; sample 2: with or after PAYD insurance enrollment) hypothesis tests will enable statistical extrapolations on:

- The percent of driving reduction with quantified mean and variance,
- The percent of reduction in number of accidents with quantified mean and variance,
- The percent of reduction in number of claims with quantified mean and variance,
- The percent of reduction in carbon footprint with quantified mean and variance,
- The percent reduction in NO_x emissions with quantified mean and variance.

8.7.2 Two-Factor ANOVA (Analysis Of Variance) With Replication

For example, this method will help determine the effectiveness of factor 1 (e.g. types of incentive used) as a function of factor 2 (e.g. income groups or areas covered by the VPPP) and the interaction in between both factors. The mean of each of the parameters defined in section 8.7.2 will be measured over four quarters as indicated in the Table 3 below. The table includes 4m (e.g. factor 1 is measured m income groups, and the mean is measured every quarter rows) and n columns (e.g. factor 2 describes n types of incentives).

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| | | Incentive 1 | Incentive 2 | Incentive n-1 | Incentive n |
|------------------|-----------|-------------|-------------|---------------|-------------|
| Income Group 1 | Quarter 1 | | | | |
| | Quarter 2 | | | | |
| | Quarter 3 | | | | |
| | Quarter 4 | | | | |
| Income Group 2 | Quarter 1 | | | | |
| | Quarter 2 | | | | |
| | Quarter 3 | | | | |
| | Quarter 4 | | | | |
| Income Group m-1 | Quarter 1 | | | | |
| | Quarter 2 | | | | |
| | Quarter 3 | | | | |
| | Quarter 4 | | | | |
| Income Group m | Quarter 1 | | | | |
| | Quarter 2 | | | | |
| | Quarter 3 | | | | |
| | Quarter 4 | | | | |

Table 3 - Two-Factor ANOVA Template Table for Mean = f(Incentive Type, Income Group, Incentive Type x Income Group)

8.7.3 Region-Wide Congestion Reduction Model

The two-factor ANOVA described in section 8.7.2 will be run over the appropriate combination of pair of factors where factor 1 is the type of incentive and factor 2 will be chosen from:

- Age group,
- Gender group,
- Income group,
- Location,
- Highway/Road/Street section,
- Vehicle type,
- Event group (e.g. football game, convention).

The combinational set will help build a region-wide congestion reduction model.

8.8 Additional Enhancements Including Promoting/Spreading Out Program-Generated Applications

Assuming that the consortium has selected part or all of the above defined data and they have collected them accordingly over a minimal period of one year or more (as



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agreed upon between the program participants), then based on the measured results (e.g. Yes, PAYD insurance significantly reduced congestion and/or reduced the overall carbon footprint (CO₂ and other GHG emissions) as well as emissions of NO_x and VOCs across the areas covered by the VPPP), the following program enhancements will be implemented by using the remaining budget, or through additional funding to be defined.

Through public communications, the consortium will leverage help from local organizations/businesses for accelerating a statewide dissemination of the applications generated by the VPPP as described in section 7.4.3.5 and as reminded below.

8.8.1 Probe Vehicle Data

System will conduct real time driver analysis to compare speeds driven by driver to posted speed limits (PSL). If the speed is 85 percent lower than the PSL, we will conclude that congestion is occurring and will analysis the time and location of the events. The system could then look at our drivers by location to confirm congestion and then send out the proactive alerts to drivers who habitually travel the same road at that time to lessen the impact of the congestion.

Alternatively, we will have the ability to adapt the results of the UC-Berkeley Mobile Millennium program for developing a Probe Vehicle Data application (see <http://traffic.berkeley.edu/>)

8.8.2 Assisted Re-Routing

This is a set of new Smartphone applications that would broadcast alternative directions to bypass congested areas.

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9. PROGRAM TIMELINE

- Final Selection by FHWA = day one
- Final Contract Negotiations and Clarification = one to two months
 1. Contract Finalization between FHWA and TxDOT
 2. Contract Finalization between TxDOT and NCTCOG
 3. Contract Finalization between NCTCOG and IVOX
 4. Contract Finalization between IVOX and Delphi; and between IVOX and Infinity
- Deployment = six to twelve months (lead time for raw material for hardware is five months)
 1. Ordering of raw material
 2. Build B2B and B2C customer facing web portal
 3. Link Delphi, IVOX, and Infinity's servers together for data sharing
 4. Identification of participants
 5. Build at manufacturing plant
 6. Ship inventory to Delphi-managed fulfillment center located in Texas for distribution
 7. Train local insurance agents on how to sell and common questions and answers
 8. Ship units from distribution to local Insurance Offices for distribution to end consumer/participants
- Pilot Testing = six to thirty months in the field (could pilot test between half a year to two and a half years depending on final amount awarded)
- Summary of Findings = six months after pilot testing is over
- Quarterly Reports = every quarter for duration of project period
- Biannual Reports = every two years for ten years



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10. FINANCE AND REVENUE PLAN

Table 4 below describes labor and material costs involved for each the operations/applications described in sections 7 and 8 over the three-year period for each of the consortium members along with the FHWA cost share.



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| SECTION | PROGRAM DELIVERABLES | FY2011 | FY2012 | FY2013 |
|-----------------|---|--------------------|-------------|-----------|
| MATERIAL | | | | |
| 7.4.3.3 | On-Board Equipment | | | |
| | 2,500 Units (\$150)+SIM Card(\$6)+Fulfillment Costs/Shipping(\$15.00) | \$427,500 | \$0 | \$0 |
| 7.4.3.3 | Back-Haul Center | | | |
| | Hosted Servers/Gateway \$12k/mo. with Uptime of 99.5% | \$144,000 | \$144,000 | \$0 |
| | Cellular Service for Data Communications (\$10/unit/mo.) | \$75,000 | \$300,000 | \$0 |
| LABOR | | | | |
| | Driver Score Core Database & Algorithm Development | \$675,000 | \$0 | \$0 |
| | SIM Device Management & Control Center (AT&T) | \$150,000 | \$0 | \$0 |
| | IT to IT Systems Integration | \$300,000 | \$0 | \$0 |
| | Program Management | | | |
| | IVOX | \$70,000 | \$70,000 | \$35,000 |
| | Delphi | \$70,000 | \$70,000 | \$35,000 |
| | Infinity | \$70,000 | \$70,000 | \$35,000 |
| | NCTCOG | \$30,000 | \$30,000 | \$15,000 |
| | Reporting, Data Quality | | | |
| | IVOX | \$60,000 | \$70,000 | \$30,000 |
| | Delphi | \$60,000 | \$70,000 | \$30,000 |
| | Infinity | \$60,000 | \$70,000 | \$30,000 |
| | NCTCOG | \$30,000 | \$30,000 | \$15,000 |
| | Features Menu | | | |
| 7.4.3.4.1 | Driver's performance monitoring | \$100,000 | \$120,000 | \$0 |
| 7.4.3.4.2 | Driver's itinerary monitoring | \$50,000 | \$30,000 | \$0 |
| 7.4.3.4.3 | Driver's rating and feedback | \$100,000 | \$120,000 | \$0 |
| 7.4.3.4.4 | Real Time Congestion Mitigation | | | |
| 7.4.3.4.4.1 | Congestion Monitoring | \$75,000 | \$75,000 | \$0 |
| 7.4.3.4.4.1.1 | Using the Local Traffic Management System | \$100,000 | \$70,000 | \$0 |
| 7.4.3.4.4.1.2 | Using Probe Vehicle Data | \$100,000 | \$100,000 | \$0 |
| 7.4.3.5 | Congestion Mitigation | | | |
| 7.4.3.5.1 | Assisted Re-routing | \$50,000 | \$40,000 | \$0 |
| 7.4.3.5.2 | Pattern-Based Congestion Mitigation | \$50,000 | \$50,000 | \$0 |
| 7.4.3.5.2.1 | Trip Planning | \$40,000 | \$35,000 | \$0 |
| 7.4.3.5.2.2 | Use of Alternative Transportation Modes | \$25,000 | \$25,000 | \$0 |
| | Data Analysis & Reporting | | | |
| 8.2 | Quarterly Driving Reduction Reporting | \$22,000 | \$22,000 | \$22,000 |
| 8.3 | Quarterly Congestion Reduction Reporting | \$22,000 | \$22,000 | \$22,000 |
| 8.4 | Quarterly Reporting on Correlation AROA, ADRR, and ACRR | \$22,000 | \$22,000 | \$22,000 |
| 8.5 | Quarterly Environmental Reporting | \$22,000 | \$22,000 | \$22,000 |
| 8.6 | Quarterly Reporting on Safety | \$22,000 | \$22,000 | \$22,000 |
| 8.7 | Statistical Extrapolations | \$44,000 | \$44,000 | \$44,000 |
| | Total Labor Cost by Year | \$2,419,000 | \$1,299,000 | \$379,000 |
| | Man Hours per Year | 19,352 | 10,392 | 3,032 |
| | Total Man Hours | 32,776 | | |
| | Total Cost by Year (Labor + Material) | \$3,065,500 | \$1,743,000 | \$379,000 |
| | Total Cost | \$5,187,500 | | |
| | FHWA Share By Year | \$1,631,850 | \$1,278,100 | \$234,500 |
| | FHWA Share | \$3,144,450 | | |
| | NCTCOG/IVOX/Delphi/Infinity Cost Share By Year | \$1,433,650 | \$464,900 | \$144,500 |
| | Total NCTCOG/IVOX/Delphi/Infinity Cost Share | \$2,043,050 | | |

Table 4 – Financial Spreadsheet



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11. PUBLIC EXPOSURE

NCTCOG has long advocated the concept of PAYD insurance as an air quality control strategy and supports the advancement of this type of pricing structure for automobile insurance in North Central Texas as a means for encouraging drivers to reduce their VMT, resulting in reduced pollution and minimized energy consumption. NCTCOG is committed to promoting this program through various avenues available including presenting the results of the pilot program at meetings of the North Texas Clean Air Steering Committee, RTC, RTC Sustainability and Environment Subcommittee, and Clean Cities Technical Coalition. NCTCOG staff is very active in transportation and air quality professional organizations, often presenting at meetings and national conferences. NCTCOG regularly sends press releases to over 200 media outlets, which often lead to radio and television interviews. NCTCOG will also publish findings in agency publications including *It's Your Region*, which is a newsletter distributed monthly to 4,000 North Central Texas Citizens, as well as *Mobility Matters*, which is mailed quarterly to approximately 8,000 subscribers with an additional 2,000 copies distributed at various public meetings. In addition, the consortium will seek opportunities to submit findings to various transportation, air quality, and insurance industry publications. Furthermore, findings will be published on the NCTCOG web page to reach our electronic audience. Lastly, the Texas Department of Insurance (TDI) and regional environmental groups have shown support for this concept through NCTCOG's previous initiatives related to mileage-based insurance and will assist the consortium in spreading the word about this program to various stakeholders and other interested parties.



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12. PLANS FOR MEETING ALL FEDERAL, STATE, AND LOCAL LEGAL AND ADMINISTRATIVE REQUIREMENTS.

From current and previous exposure to government contracts, the consortium has the personnel along with the skills and resources that enable its members to be capable of identifying and meeting all federal, State, and local, legal and administrative requirements.



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13. ROLES AND RESPONSIBILITIES OF THE PROJECT PARTICIPANTS

13.1 Roles and Responsibilities

13.1.1 Requesting Agency

The requesting agency NCTCOG leads the VPPP by finalizing all the conditions and scope of the projects (selecting project partners, applications, subject areas, duration, costs, project extension, operating funding adjustment on a need-be basis and regular reporting to TxDOT and FHWA).

13.1.2 Primary Partner

The primary partner is IVOX.

IVOX will be the primary contact with NCTCOG and will perform the program update/reporting on behalf of the consortium. IVOX will implement the following:

- Congestion solution development:
 - Design/adapt analytical tools for data collection/analysis leading to:
 - Driver's performance monitoring (DriverScore)
 - Driver's itinerary monitoring (accident/congestion risk assessment)
 - Real-time congestion mitigation through a suite of new smartphone applications for:
 - Connecting drivers with local traffic management system
 - Using posted speed limit or adapting UC-Berkeley Mobile Millennium Program for developing a probe vehicle data application (see <http://traffic.berkeley.edu/>)
 - Route risk awareness/assisted re-routing
 - Use of alternative transportation modes (monitoring vehicle usage)
- Delivery of the final report of the VPPP
- Development of a regional PAYD insurance congestion reduction model

13.1.3 Secondary Partners

Delphi and Infinity are the secondary partners with the following responsibilities.

13.1.3.1 Delphi

Delphi will provide the hardware (HW) and the infrastructure according to the following breakdown.



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- HW: DATU
 - Vehicle and driver's data acquisition/wireless transmission
 - Optional human machine interface (HMI) development
- Infrastructure: Server and call center

13.1.3.2 Infinity

Infinity will provide the following services:

- Lead/coordinate marketing for attracting driver participants
- Assist in developing and testing the incentive programs for improving driver behavior
- Develop financial incentives for active members
- Coordinate logistics for fulfillment of devices and communication to end consumer

13.2 Final Report

As specified in section 13.1.2, IVOX will lead the effort pertaining to the delivery of the VPPP Final Report at the end of its implementation. The final report will summarize the findings of the programs, including quantification of benefits and statistical analysis of driving behavior as well as projected long-term effects of this type of PAYD insurance program.



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14. FINANCIAL RIGHTS AND RESPONSIBILITIES OF THE PROJECT PARTICIPANTS

The financial rights and responsibilities will be finalized upon program award. However, the following schedule is under discussion.

Funding will flow from FHWA to TxDOT to NCTCOG. NCTCOG will contract directly with IVOX who will then subcontract with Delphi and Infinity.



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15. INTELLECTUAL PROPERTY PROTECTION

Intellectual Property (IP) means all rights in concepts, discoveries, developments, inventions, works of authorship including without limitation hardware, software, computer programs, and databases (including object code, micro code, source code and data structures), know-how, trade secrets, data, specifications, drawings, schematics, mask works or any other technical or proprietary information, whether it be patentable or un-patentable, patented or unpatented or pending, or copyrighted or un-copyrighted. Throughout this solicitation response, the term Intellectual Property may be represented by the acronym "IP" alone or in connection with another defined term.

The provisions contained in the solicitation, which this proposal is a response to, shall not constitute a waiver of any IP rights of the parties, nor a grant of a license under any IP rights. The consortium understands that FHWA reserves a royalty-free, nonexclusive and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use for Federal Government purposes:

- i. The copyright in any works developed under an Agreement with FHWA/TxDOT/NCTCOG, or under a subgrant or contract under such Agreement; and
- ii. Any rights of copyright to which TXDOT, NCTCOG, its subgrantee or contractor purchases ownership with Federal financial assistance provided by such Agreement.

The consortium also understands that rights to inventions made under an Agreement with FHWA/TxDOT/NCTCOG shall be determined in accordance with 37 C.F.R. Section 401.14, subject to the following modifications:

- i. The terms "to be performed by a small business firm or domestic nonprofit organization" shall be deleted from paragraph (g)(1) of the clause;
- ii. Paragraphs (g)(2) and (g)(3) of the clause shall be deleted; and
- iii. Paragraph (1) of the clause, entitled "Communications" shall read as follows:
"(1) communications. All notifications required by this clause shall be submitted to the FHWA Division office."



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16. INSURANCE COVERAGE AND LIABILITY

All parties who are involved in the project shall procure relevant insurance coverage which shall insure the relevant parties, and any of their officers, employees and agents for any losses or damages it or they may suffer as a result of their participation in the project. The consortium shall not be held liable for such losses or damages the parties involved in the project (including vehicle test drive) may suffer as a result of participation.

In no event will the consortium be liable to the FHWA, or any other parties for special, incidental, or consequential damages, including, but not limited to, loss of profits or loss of revenue, whether based on contract, tort (including strict liability or negligence), or otherwise, even if advised of the possibility of such damages.



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17. CONCLUSION

This proposal is a unique study of PAYD insurance as it combines incentivizing drivers to reduce VMT as well as avoid areas of congestion through real-time driver feedback. Previously studied PAYD insurance programs have collected data on driver behavior and studied the overall impact of incentivizing drivers to drive less. The end results were similar in that drivers varied their behavior through carpooling, using mass transit, telecommuting, trip-chaining, etc. However, what has not yet been studied is what changes in behavior a driver will make while on the road based upon real-time feedback. Upon being notified of a congested area, this study will evaluate whether the driver chooses to take an alternate route to bypass the congestion. An enhancement to the program would enable additional evaluation of whether the driver chooses to take an alternative mode of transportation.

The consortium looks forward to being among the organizations selected by FHWA for the Value Pricing Pilot Program Partnership. With a team endowed with a proven track record in PAYD insurance and other projects pertaining vehicle data capture and processing, the consortium is committed to a flawless execution.

FHWA will receive from the following deliverables from the consortium:

1. A fully integrated enterprise platform for delivering PAYD insurance that can be deployed throughout the State of Texas. This will include analysis of various PAYD pricing structures.
2. A plug and play OBDII telematics device that will measure second by second GPS and time of day data, and sub second accelerometer data driver behavior data. The device will also capture fault codes and other OBDII data.
3. A DriverScore that will analyze every second of the driver behavior data based on where, when, and how the vehicle is driven. This easy to understand singular score will provide a measure for how safe a driver drives based on these parameters.
4. Sub indices to communicate the driver's propensity for speeding relative the posted speed limit (speeding index), the level of aggressive driving (aggressive driving index), driver's risk level based on which hours of the day they drive (time of day index), a driver's level of discretionary idle time (traffic adjusted idle percentage) and a risk measurement measuring the risk of the route each driver takes (route risk index).
5. Ad hoc maps provided to drivers that will display severity and duration of speeding, severity of aggressive driving on an event basis.
6. A score which will display how "green a driver is operating his/her vehicle (DriverScoregrn).



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7. Congestion Index which will indicate which drivers are driving in areas based on miles and time driven.
8. Reports delivered via the cloud to Smartphone, desktop, laptop, or other devices.
9. A series of Smartphone apps may be developed which will give drivers information in easy to use laymen's terms.
10. All statistical analyses measuring the performance of the VPPP as detailed in section 8 of this proposal. The key deliverables are:
 - Quarterly Aggregate Driving Reduction Rate ADRR%,
 - Quarterly Aggregate Congestion Reduction Rate ACRR%,
 - Quarterly Correlation between AROA% vs. ADRR% and ACRR%,
 - Quarterly Aggregate Safety Improvement rate ASR%,
 - End of Program Cross-Factor Analysis,
 - End of Program Congestion Reduction Model.



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REFERENCE DOCUMENTS 1- 10



FHWA Value Pricing Pilot Program Proposal

Reference Document 1

Value Pricing Pilot (VPP) Program Solicitation FR2010-26298, Federal Register /Vol. 75, No. 201 /Tuesday, October 19, 2010 /Notices pp. 64397 – 64403.

Basis for Renewing Exemptions

Under 49 U.S.C. 31315(b)(1), an exemption may be granted for no longer than two years from its approval date and may be renewed upon application for additional two year periods. In accordance with 49 U.S.C. 31136(e) and 31315, each of the 17 applicants has satisfied the entry conditions for obtaining an exemption from the vision requirements (65 FR 33406; 65 FR 57234; 67 FR 57266; 69 FR 52741; 71 FR 53489; 73 FR 65009; 73 FR 63047; 71 FR 32183; 71 FR 41310; 73 FR 65009; 73 FR 61927; 73 FR 35194; 73 FR 63047; 73 FR 46973; 73 FR 54888; 73 FR 51689). Each of these 17 applicants has requested renewal of the exemption and has submitted evidence showing that the vision in the better eye continues to meet the standard specified at 49 CFR 391.41(b)(10) and that the vision impairment is stable. In addition, a review of each record of safety while driving with the respective vision deficiencies over the past two years indicates each applicant continues to meet the vision exemption standards. These factors provide an adequate basis for predicting each driver's ability to continue to drive safely in interstate commerce. Therefore, FMCSA concludes that extending the exemption for each renewal applicant for a period of two years is likely to achieve a level of safety equal to that existing without the exemption.

Request for Comments

FMCSA will review comments received at any time concerning a particular driver's safety record and determine if the continuation of the exemption is consistent with the requirements at 49 U.S.C. 31136(e) and 31315. However, FMCSA requests that interested parties with specific data concerning the safety records of these drivers submit comments by November 18, 2010.

FMCSA believes that the requirements for a renewal of an exemption under 49 U.S.C. 31136(e) and 31315 can be satisfied by initially granting the renewal and then requesting and evaluating, if needed, subsequent comments submitted by interested parties. As indicated above, the Agency previously published notices of final disposition announcing its decision to exempt these 17 individuals from the vision requirement in 49 CFR 391.41(b)(10). The final decision to grant an exemption to each of these individuals was made on the merits of each case and made only after careful consideration of the comments received to its notices of applications.

The notices of applications stated in detail the qualifications, experience, and medical condition of each applicant for an exemption from the vision requirements. That information is available by consulting the above cited **Federal Register** publications.

Interested parties or organizations possessing information that would otherwise show that any, or all, of these drivers are not currently achieving the statutory level of safety should immediately notify FMCSA. The Agency will evaluate any adverse evidence submitted and, if safety is being compromised or if continuation of the exemption would not be consistent with the goals and objectives of 49 U.S.C. 31136(e) and 31315, FMCSA will take immediate steps to revoke the exemption of a driver.

Issued on: October 13, 2010.

Larry W. Minor,

Associate Administrator for Policy and Program Development.

[FR Doc. 2010-26300 Filed 10-18-10; 8:45 am]

BILLING CODE 4910-EX-P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Value Pricing Pilot Program Participation, Fiscal Years 2010 and 2011

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice; solicitation for participation.

SUMMARY: This notice invites States, along with their local government partners and other public authorities, to apply to participate in the Value Pricing Pilot (VPP) program and presents guidelines for program applications for fiscal years (FY) 2010 and 2011. The notice seeks applications for a variety of types of transportation pricing studies and implementation projects.

DATES:

1. Applications for tolling authority only may be submitted at any time, however, it is recommended that applicants first submit an Expression of Interest, as detailed in the "Who is Eligible to Apply" section of this notice, to allow FHWA to guide applicants in determining whether the VPP program, or another program, is the preferable program under which to apply for such authority.

2. Formal grant applications, however, must be submitted no later than January 18, 2011, to be assured consideration.

3. For grant applications, applicants may also submit an optional "sketch" or draft proposal by December 3, 2010, which FHWA will review and provide feedback on for the applicant to use in its formal grant application. Sketch or draft proposals received after this date may still be reviewed by and commented upon by FHWA at its discretion.

4. For grant applications that had been submitted under the August 5, 2009, (74 FR 39138) solicitation that were not funded (for a list of projects funded from that solicitation, see: <http://www.fhwa.dot.gov/pressroom/fhwa1029.htm>), and where such applications would still be eligible for funding under the criteria provided by this notice, applicants may submit a letter to the Department by November 18, 2010, requesting comments on their previous applications.

Application Submission: Grant applications may be submitted through <http://www.grants.gov>. Applications for tolling authority only should be submitted through an expression of interest at the following Web site: http://ops.fhwa.dot.gov/tolling_pricing/participation.htm.

FOR FURTHER INFORMATION CONTACT: For questions about or to provide information to FHWA that responds to this notice, such as to submit a letter or sketch plan, or for general questions related to the VPP program, please contact Ms. Angela Jacobs, FHWA Office of Operations, at (202) 366-0076, angela.jacobs@dot.gov. For technical questions related to the development of pricing projects involving tolls, please also contact Ms. Angela Jacobs, or contact Mr. Patrick DeCorla-Souza, FHWA Office of Innovative Program Delivery, at (202) 366-4076, patrick.decorla-souza@dot.gov. For technical questions related to the development of pricing projects not involving tolls, please contact Mr. Allen Greenberg, FHWA Office of Operations, at (202) 366-2425, allen.greenberg@dot.gov. For legal questions, please contact Mr. Michael Harkins, FHWA Office of the Chief Counsel, at (202) 366-4928, michael.harkins@dot.gov.

SUPPLEMENTARY INFORMATION:

Electronic Access

An electronic copy of this document may be downloaded from the **Federal Register's** home page at: <http://www.archives.gov> and the Government Printing Office's database at: <http://www.access.gpo.gov/nara>.

Background

Section 1012(b) of the Intermodal Surface Transportation Efficiency Act (ISTEA) (Pub. L. 102–240; 105 Stat. 1914), as amended by section 1216(a) of the Transportation Equity Act (TEA–21) (Pub. L. 105–178; 112 Stat. 107), and section 1604(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU) (Pub. L. 109–59; 119 Stat. 1144), authorizes the Secretary of Transportation (the Secretary) to create a VPP program. Value pricing encompasses a variety of strategies to manage congestion on highways, including tolling of highway facilities through congestion pricing, as well as other strategies that do not involve tolls, such as mileage-based car insurance and parking pricing. The congestion pricing concept of charging variable fees based upon usage and assessing relatively higher prices for travel during peak periods is the same as that used in many other sectors of the economy to respond to peak-use demands. For example, airlines, hotels, and theaters often charge more at peak periods than at non-peak periods.

According to the statutory requirements of the VPP program, FHWA may enter into cooperative agreements with up to 15 State or local governments or other public authorities (henceforth referred to only as “States”) to establish, maintain, and monitor VPP programs, each including an unlimited number of projects. The FHWA invites interested States to apply to participate in the VPP program for funds remaining from FY 2010 and provided in FY 2011. While direct submissions by local governments and public authorities are allowable under SAFETEA–LU, FHWA strongly prefers applications to be submitted through State departments of transportation, since that would allow the potential for multiple VPP program projects within a State counting as only 1 of the 15 allowable partnerships.

To comply with the statutory cap on the number of partnering States and other public authorities in a manner that maximizes program participation, FHWA will only consider an “active” cooperative agreement sufficient to hold 1 of the 15 available VPP program slots, as also noted in both the September 16, 2008, and August 5, 2009, notices for VPP program participation (73 FR 53478 and 74 FR 39138, respectively). An agreement will be considered “active” by FHWA under either of the following two conditions: (1) During the period of time between when a cooperative funding agreement for a project or projects has been signed and when the

project or projects has or have been completed, and (2) if VPP program tolling authority has been granted and is still needed to toll a new or existing highway. Absent one or both of these conditions being met, an agreement will not be considered active for the purposes of the VPP program. If progress in moving forward to use its VPP program funding or tolling authority is unsatisfactory, FHWA may withdraw its approval for inactive agreements in favor of other applicants seeking to obtain VPP program funding or tolling authority.

Congress authorized \$12 million for FY 2010 to be made available to carry out the VPP program, and, as of the date of this notice, Congress has also authorized \$3 million for FY 2011 for this same purpose. Congress may subsequently choose to authorize additional funds beyond the \$3 million for FY 2011. Of the funds that Congress makes available for the VPP program in any fiscal year, at least 25 percent must, according to statute, be spent for projects that do not involve highway tolls. The FHWA most recently solicited for applications for what remained of FY 2009 funds and for FY 2010 funds in an August 5, 2009, **Federal Register** notice (74 FR 39138). On August 2, 2010, the FHWA announced the awarding of 10 grants totaling \$9,768,000, some of which came from FY 2009 funds and, after such funds were exhausted, the rest from FY 2010 funds. After these grants were awarded, and considering the new funds Congress has made available for FY 2011, at least \$10.5 million is being made available under this solicitation. If Congress does provide additional VPP program funds for FY 2011 beyond what it has already provided, it is FHWA’s intention to subsequently award these funds based upon responses to this solicitation, if merited by the applications that are received.

The Federal share payable under the VPP program is up to 80 percent of the cost of the project. Funds allocated by the Secretary to a State under this section shall remain available for obligation by the State for a period of 3 years after the last day of the fiscal year for which funds are authorized. If, on September 30 of any year, the amount of funds made available for the VPP program, but not allocated, exceeds \$8 million, the excess amount will, to comply with the statutory requirements of the VPP program, be apportioned to all States as Surface Transportation Program funds.

Funds available for the VPP program can be used to support pre-implementation study activities as well

as to pay for pricing-specific implementation costs of value pricing projects. Pursuant to section 1012(b)(2) of ISTEA, FHWA may not fund pre-implementation or implementation costs for more than 3 years. Also, section 1012(b)(6) of ISTEA provides that a State may permit vehicles with fewer than two occupants to operate in high occupancy vehicle (HOV) lanes if the vehicles are part of a local VPP program under this section. In addition to this authority under the VPP program, 23 U.S.C. 166 authorizes States to convert HOV lanes into high occupancy toll (HOT) lanes in which vehicles without the number of occupants required for HOV status are permitted to use an HOV lane if such vehicles are charged a toll. Since the authority to establish and operate a HOT lane (including HOT lanes on the Interstate System) is no longer experimental and has been mainstreamed in 23 U.S.C. 166, the provisions of 23 U.S.C. 166 will generally be used for HOT projects in order to more effectively allocate VPP funds and program slots.

Pursuant to section 1012(b)(7) of ISTEA, the potential financial effects of value pricing projects on low-income drivers shall be considered. Where such effects are expected to be both negative and significant, possible mitigation measures should be identified, such as providing new or expanded transit service as an integral part of the value pricing project, toll discounts or credits for low-income motorists who do not have viable transit options, or fare or toll credits earned by motorists by use of regular lanes which can be used to pay for tolls on priced lanes. Additional measures include methods to facilitate convenient cash payment by those who do not have bank accounts or credit cards, or who choose not to tie their toll accounts to their bank accounts or credit cards. Mitigation measures can be included as part of the value pricing project implementation costs.

Also, section 1012(b)(6) of ISTEA requires the Secretary to monitor the effect of value pricing programs for a period of at least 10 years and report to Congress every 2 years on the effects such programs are having on driver behavior, traffic volume, transit ridership, air quality, and availability of funds for transportation programs. Project partners will be expected to assist FHWA by providing data on their programs for use in these reports throughout the length of the monitoring and reporting period.

In addition to the VPP program, other authorities are available that permit States to use tolling to finance highway

construction and reconstruction, promote efficiency in the use of highways, and support congestion reduction. Expanded flexibility to toll is provided under the following programs: HOV-to-HOT Conversion Program (23 U.S.C. 166); Interstate System Reconstruction and Rehabilitation Pilot Program; Interstate System Construction Toll Pilot Program; Express Lanes Demonstration Program; and Section 129 toll agreements. For more information on these programs, please refer to the notice in the January 6, 2006, **Federal Register** entitled, "SAFETEA-LU; Opportunities for State and Other Qualifying Agencies to Gain Authority to Toll Facilities Constructed Using Federal Funds" (71 FR 965).

Applicable Terms

"Value pricing" and "congestion pricing" refer to direct and transparent charges for vehicle use and parking, as well as variable charges for road use, possibly fluctuating based upon location, time of day, severity of congestion, vehicle occupancy, or type of facility. By shifting some trips to off-peak periods, to mass transit or other higher-occupancy vehicles, to non-motorized modes, or to alternative routes away from priced facilities, or by encouraging consolidation of trips, congestion pricing promotes economic efficiency. It also helps achieve congestion reduction, reductions in greenhouse gas emissions, improved air quality, energy conservation, transit ridership, and revenue generation goals.

A "value pricing project" means any pre-implementation activities or implementation of congestion pricing concepts or techniques included under a State or local "value pricing pilot program." A State is considered to have a VPP program if it has one or more approved value pricing projects. While the distinction between "project" and "program" may appear to be merely a technical one, it is significant in that, as described in the "Background" section of this notice, the number of total VPP programs is statutorily limited to 15, while there is no limit to the number of VPP projects allowed under each VPP program.

A "value pricing program" means the combination of all value pricing projects within a State or local government or public authority. Any State or local government or public authority with a cooperative agreement for a value pricing program is deemed to have a value pricing program.

"Cooperative agreement" means the agreement signed between the FHWA and a public agency to establish and implement value pricing pilot projects.

"Toll agreement" means the agreement signed between the FHWA and a State and/or local government or public authority to provide for the statutorily authorized uses of toll revenues. At FHWA's discretion, the toll agreement may be subsumed within the cooperative agreement.

Program Objective

The overall objective of the VPP program is to support efforts by State and local governments or other public authorities to establish local VPP programs, to provide for the execution, monitoring, and evaluation of value pricing projects included in such programs, and to report on these effects. The effects of interest include impacts on congestion, travel behavior, traffic volumes, transit ridership, air quality, and funding for transportation improvements. The FHWA is seeking applications for funding and/or tolling authority to use congestion pricing to reduce congestion, improve system performance, and advance the Department's priorities of growing the economy, enhancing livability, and promoting environmental sustainability. All proposals should incorporate significant pricing mechanisms that are designed to substantially advance these objectives.

This notice seeks applications focused on less tested, innovative strategies that advance pricing in furtherance of FHWA's livability, sustainability, and other goals. An objective of this solicitation is to provide incentive grants to expand the number of metropolitan areas that are developing innovative approaches that advance congestion pricing.

Some non-toll pricing applications, such as carsharing, have already proven their success and are in wide use, and thus do not require VPP program funding for their success to be sustained. Deployment of other non-toll pricing strategies, such as pricing of parking meters to achieve a certain parking space utilization level, are much newer in the U.S., but the advancement of such strategies has already secured substantial funding under the VPP and other programs (e.g., in San Francisco), and thus other non-tolling strategies, discussed below, will instead receive priority consideration under this solicitation.

For both tolling and non-tolling projects, FHWA is interested in tests that advance the state of the practice in behavioral economics. Specifically, applications are sought that strive to improve the understanding of the ways that the structure, timing and salience of

pricing, and how payments themselves are handled, affect responses to pricing.

Types of Projects Being Sought That Do Not Involve Tolls

The FHWA is especially interested in grant applications for projects that do not involve highway tolls. As discussed earlier, SAFETEA-LU sets aside a minimum of 25 percent of VPP program funds for such projects and FHWA may choose to make available more of the VPP program funds for this purpose. The FHWA in particular seeks tests of non-toll pricing strategies that will substantially improve livability in an area and advance environmental sustainability in a major way, either directly through the benefits the project itself brings, or by demonstrating especially promising strategies such that their implementation will likely be replicated broadly.

Examples of strategies that FHWA believes would meet this test include: (1) Pay-per-mile or pay-per-minute car insurance, where insurance premiums are converted from an annual or bi-annual charging scheme to one that is instead based primarily on miles or minutes of driving (with rates that still reflect actuarial risks and the coverages that are selected); and (2) highly innovative parking pricing strategies, provided that the level and coverage of parking charges is sufficient to bring about substantial and measurable reductions in congestion. For pay-per-mile or pay-per-minute insurance, FHWA is especially interested in applications that cover areas not included in previous VPP program-funded projects, such as actuarial studies of the potential benefits of pay-as-you-drive pricing models, tests of previously untested pricing protocols, and explorations of pricing approaches that utilize both mileage or time in operation and other usage-based factors that would affect per-mile or per-minute claims' risks. For parking pricing, FHWA seeks applications for: (1) Citywide surcharges for entering or exiting parking facilities during or near peak travel periods; and (2) parking cash-out, where a city or State passes, and then requests financial support to implement, a local ordinance or State law requiring employers to offer cash to their employees in lieu of subsidized parking, or provides substantial incentives for employers to offer such cash-out options. As mentioned above, pricing of parking meters to influence parking space utilization levels has already received substantial funding and will receive lower priority in considering grant applications.

Applications are also encouraged that utilize appropriate technologies and provide sufficient participation incentives to deploy dynamic ridesharing (flexible, single-trip carpooling) with the necessary critical mass of users to succeed. To be considered eligible, dynamic ridesharing applications must be coupled with some transportation pricing, such as parking pricing or direct financial incentives for ridesharing, thereby expanding affordable transportation options while mitigating equity issues associated with pricing.

Pre-Implementation Studies

The intent of the pre-implementation study phase is to support efforts to identify and evaluate value pricing project alternatives, and to prepare the necessary groundwork for relatively near-term implementation. The FHWA will not fund purely academic studies of congestion pricing, or studies that involve major expansions of existing facilities, or areawide or regionwide planning studies covering many topics besides pricing and incorporating congestion pricing only as one of a number of options. Such studies may be funded with regular Federal-aid highway or transit planning funds. Applications for pre-implementation studies will be evaluated based on the likelihood that they will lead to relatively near-term implementation of congestion pricing conforming to the objectives described in the section on Program Objectives.

Project Costs Eligible for Grant Funding

The FHWA will provide up to the statutorily allowable 80 percent share of the estimated costs of an approved project. Funds available for the VPP program can be used to support pre-implementation study activities and also to pay for implementation costs of value pricing projects. Costs of planning for, setting up, managing, operating, monitoring, evaluating, and reporting on local congestion pricing pilot projects are eligible for reimbursement, but neither pre-implementation study costs nor implementation costs may be reimbursed for longer than 3 years. The 3-year funding limitation will begin on the date of the first disbursement of Federal funds for project activities. Examples of specific pre-implementation and implementation costs eligible for reimbursement include the following:

1. *Pre-Implementation Study Costs*—Covered activities include those for foundation building, such as public participation, consensus building and

marketing, modeling, and technology assessments.

2. *Implementation Costs*—Allowable costs for reimbursement under this area include those for setting up, managing, operating, evaluating, and reporting on a value pricing project, including:

a. Necessary salaries and expenses, or other administrative and operational costs, such as installation of equipment for operation of a pilot project, costs of monitoring and evaluating project operations, and costs of continuing public relations activities during the period of implementation;

b. Mitigation measures to deal with any potential adverse financial effects on low-income drivers, per section 1012(b)(7) of ISTEA as amended, including costs of providing transportation alternatives, such as new or expanded transit or ridesharing services provided as an integral part of the value pricing project. Funds are not available to replace existing sources of support for these services.

Project implementation costs can be supported until such time that sufficient revenues are being generated by the project to fund such activities without Federal support, but in no case for longer than 3 years. Each implementation project included in a VPP program will be considered separately for this purpose.

Funds may not be used to pay for activities conducted prior to approval for VPP program participation. Complementary actions, such as lane construction, the implementation of traffic control systems, or transit projects can be funded through other highway and transit programs under SAFETEA-LU and from new revenues raised as a result of a pilot. The VPP program applicants are encouraged to explore opportunities for combining VPP program funds with other funds. Federal funds may not, however, be used to match VPP program funds unless there is specific statutory authority to do so.

Eligible Uses of Toll Revenues

Section 1012(b)(2) of ISTEA as amended provides that toll revenues generated by any congestion pricing pilot project must be applied first to pay for pilot project operating costs. Any project revenues in excess of pilot project operating costs may, according to section 1012(b)(3) of ISTEA as amended, be used for any projects eligible under Title 23, U.S.C. A project's operating costs include, but are not limited to, any costs necessary for a project's execution; mitigation measures to deal with adverse financial effects on low-income drivers; the proper

maintenance of the facility; any construction (including reconstruction, rehabilitation, restoration, or resurfacing) of the facility; any debt service incurred in implementing the project; and a reasonable return on investment by any private entity financing the project. States are encouraged to consider using excess toll revenue for projects designed to provide benefits to those traveling in the corridor where the project is being implemented.

For VPP toll implementation projects, FHWA and the public authority (including the State transportation department) having jurisdiction over a facility must enter into a cooperative agreement concerning the use of toll revenue to be generated under a value pricing project. The cooperative agreement will provide that the public authority use the revenues in accordance with the applicable statutory requirements. The execution of a cooperative agreement is necessary to the establishment of an implementation project under the VPP program, and will facilitate oversight of a State's compliance with revenue use requirements of the VPP program. Additionally, the toll collection system must meet FHWA requirements for interoperability at 23 CFR part 950.

Who is eligible to apply?

Qualified applicants for either tolling authority or grants (or both) include State or local governments or public authorities, such as toll agencies. Although project agreements must be with the aforementioned public entities, and preferably with State departments of transportation in order to preserve participation slots, a VPP program partnership may also include private tolling authorities, for-profit companies, and non-profit organizations.

In many cases where only tolling authority is being sought, it may be preferable to secure such authority through a Federal program other than the VPP program even if such authority could also be granted through the VPP program. This issue was covered in detail in a January 6, 2006, **Federal Register** notice covering non-grant tolling programs, which remains in effect. That notice was entitled "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU); Opportunities for States and Other Qualifying Agencies to Gain Authority to Toll Facilities Constructed Using Federal Funds" (71 FR 965). The notice established a process whereby applicants seeking only tolling authority from FHWA (not grant funding) were requested to first

submit an Expression of Interest document to allow FHWA to guide applicants in determining whether the VPP program, or another program, is the preferable program under which to apply for such authority. The Expression of Interest is a document—in letter, memo, or report format—that provides the rationale for funding or tolling authority and information about the intended project. A complete Expression of Interest will enable the DOT Tolling and Pricing Team to provide the best assistance and identify the range of options possible to meet intended goals and timeframes. For details, please see: http://www.fhwa.dot.gov/ipd/revenue/road_pricing/tolling_pricing/index.htm.

The Value Pricing Pilot Program Applications

Formal grant applications shall be submitted through Grants.gov at <http://www.grants.gov> by close of business January 18, 2011. Projects requesting tolling authority only should submit an Expression of Interest to FHWA. For details, see: http://www.fhwa.dot.gov/ipd/revenue/road_pricing/tolling_pricing/index.htm.

No particular format is required for tolling authority applications or grant applications, although specific information is requested in Grants.gov. Applications should include the following background information: (a) The name, title, e-mail address, and phone number of the person who will act as the point of contact on behalf of the requesting agency, authority, or authorities; (b) A description of the agency, authority, or authorities requesting funding and/or tolling authority; (c) A statement as to whether only funding, both funding and tolling authority, or only tolling authority via the VPP program is being sought to support either pre-implementation or implementation activities as permitted; and (d) A description of the public agency or agencies that will be responsible for operating, maintaining, and enforcing the tolling program, if applicable.

The core of the application should include the following:

1. A description of the congestion problem being addressed (current and projected);
2. A description of the proposed pricing program and its goals;
3. An identification and description of the facilities, systems, or area that will be covered;
4. Anticipated effects of the pricing program on reducing congestion, altering travel behavior, and

encouraging the use of other transportation modes;

5. An identification of how the proposal addresses goals related to livability, sustainability, equity, congestion reduction, safety, and state of good repair as outlined in the Evaluation Criteria section below;

6. Preliminary estimates of the social and economic effects of the pricing program, including potential equity impacts, and a plan or methodology for further refining such estimates;

7. The role of alternative transportation modes in the project;

8. A description of the tasks to be carried out as part of each phase of the project;

9. A detailed project timeline broken down by tasks and phases;

10. An itemized budget broken down by task and funding year (*i.e.*, Year 1, Year 2, etc.), which is only required for grant applications;

11. Plans for monitoring and evaluating implementation projects, including plans for data collection and analysis, before and after assessment, and long-term monitoring and documenting of project effects;

12. A detailed finance and revenue plan, including (for implementation projects) a budget for capital and operating costs; a description of all funding sources, planned expenditures, and proposed uses of revenues; and a plan for projects to become financially self-sustaining (without Federal support) within 3 years of implementation, all of which is only required for grant applications;

13. A discussion of previous public involvement, including public meetings, in the development of the proposed pricing program; any expressions or declarations of support from State or local government officials or the public; future plans for involving key affected parties, coalition building, and media relations, and more broadly for ensuring adequate public involvement prior to implementation;

14. Plans for meeting all Federal, State, and local legal and administrative requirements for project implementation, including relevant Federal-aid planning and environmental requirements;

15. A description of how, if at all, any private entities are involved in the project, either in spending grant funds or in cost sharing or debt retirement associated with revenues; and

16. If tolling authority is sought, an explanation about how electronic toll collection project components will, if applicable, be compatible with other electronic toll collection systems in the region and allow motorists to pay toll

charges incurred on any regional facility through a single account.

If some of these items are not available or fully developed at the time a formal application for grant funding is submitted, applications will still be considered for funding support if they meet the interests of FHWA and if there is a strong indication that these items will be completed within a short time.

VPP Program Process

A. Requests for Funding

To ensure that all projects receive fair and equal consideration for the limited available funds, FHWA requires formal grant applications to be submitted to <http://www.grants.gov> by close of business January 18, 2011 to be assured consideration for available FY 2010 and FY 2011 funds. Applicants may also submit an optional “sketch” or draft proposal, in a format selected by the applicant, to angela.jacobs@dot.gov by December 3, 2010, which FHWA will review and provide feedback on for the applicant to use in its formal grant application. Sketch or draft proposals received after this date may still be reviewed by and formally commented upon by FHWA at its discretion. For applications that had been submitted under the August 5, 2009, (74 FR 39138) solicitation that were not funded (for a list of projects funded from that solicitation, see: <http://www.fhwa.dot.gov/pressroom/fhwa1029.htm>), and where such applications would still be eligible for funding under the criteria provided by this notice, applicants may submit a letter to angela.jacobs@dot.gov at FHWA by November 18, 2010, requesting comments on their previous applications.

B. Projects for Which No Funds Are Requested

Although most projects under the VPP program involve program funds, some projects do not, and instead only seek tolling authority under the program. In such cases, and especially where a State is not already part of the VPP program, FHWA recommends that the public authority investigate the other opportunities to gain authority to toll that are listed in the notice in the January 6, 2006, **Federal Register**, entitled “SAFETEA—LU; Opportunities for State and Other Qualifying Agencies to Gain Authority to Toll Facilities Constructed Using Federal Funds” (71 FR 965).

C. Proposal Evaluation Criteria

All proposals will be evaluated based on these core outcome measures, with

pre-implementation proposals evaluated based upon their projected effects on these measures if they are later to lead to implementation:

Livability

To what extent will the project directly enhance livability by:

- Improving neighborhood design and facilitating compact form (e.g., if parking pricing curtails demand, thus allowing alternative uses for land dedicated to surface parking).

To what extent will forecasted reductions in traffic make available:

- An opportunity for traffic calming and human-scale design enhancements.
- More road space to accommodate pedestrians and bicyclists by reducing the amount of road space needed to accommodate motor vehicles in motor vehicle travel lanes.

- Faster bus travel and better bus stop designs.

To what extent will revenue from pricing contribute to:

- Infrastructure costs for pedestrian and bicycle improvements.
- Transit infrastructure and operations.
- Ridesharing programs.

Sustainability

To what extent will forecasted reductions in traffic:

- Reduce greenhouse gas emissions, improve energy efficiency, and reduce dependence on fossil fuels.
- Reduce air, water, and noise pollution and damage to ecosystems.
- Support transit-oriented land development.

To what extent will revenue from pricing contribute to:

- Funding of a multimodal transportation system that meets the sustainability objectives listed immediately above.

Equity

To what extent will costs and benefits be distributed so that:

- Low-income travelers or other transportation disadvantaged groups pay less on average for their travel or have a better travel experience at the same cost.

To what extent will revenues be used to:

- Provide accommodations that are especially important to low-income travelers or other transportation disadvantaged groups.

To what extent are equity impacts mitigated so that:

- Concerns of low-income or other transportation disadvantaged groups are addressed.

Congestion Reduction

To what extent will forecasted reductions in traffic:

- Reduce traffic congestion and delay experienced by the freight sector.
- Reduce traffic congestion and delay experienced by personal travelers.
- Maximize economic return on existing investment by optimizing use of the existing transportation infrastructure.

To what extent will revenue from road pricing:

- Provide signals for where new multimodal transportation capacity (including transit, bike, pedestrian, ridesharing, etc.) is really needed and provide revenues to pay for it, while at the same time reducing the need for highway expansion.

Safety

To what extent will direct safety benefits be provided by:

- Shifts from driving alone to safer modes of travel.
- Reduced driving overall, and unsafe driving in particular, for example by rewarding drivers with reduced insurance premiums for cutting exposure to crashes and insurance claims.

To what extent will forecasted reductions in traffic:

- Reduce collisions, including secondary crashes caused by stalled traffic.
- Make more road space available to provide safer pedestrian and bicycle accommodations.

To what extent will revenue from pricing contribute to:

- Costs for roadway safety improvements.
- Costs for pedestrian and bicycle improvements.

State of Good Repair

To what extent will forecasted reductions in traffic:

- Reduce highway expansion needs thereby making more existing revenues available to repair, reconstruct and rehabilitate the existing system.

To what extent will revenue from pricing be used to:

- Repair, reconstruct, and rehabilitate the existing highway, transit, bikeway, and pedestrian systems.

In addition to these outcome-oriented goals, FHWA will also evaluate proposals based on the following criteria:

- (1) The degree to which new, innovative value pricing approaches are included;
- (2) The degree to which stakeholder groups, including (among others)

business groups, environmental groups, and advocates for social equity, are involved in and supportive of the project, and the project is likely to win broad public support;

(3) The degree to which the project is likely to lead to relatively near-term implementation; and

(4) The degree to which it is demonstrated that the project is testing especially promising strategies such that their implementation will likely then be replicated broadly.

Post-Selection Process

If a proposal is approved, a formal cooperative agreement will be prepared between the FHWA and the State. The cooperative agreement will include a refined scope of work developed from the original funding application and subsequent discussions with FHWA. Federal statutes will govern the cooperative agreement. Regulations cited in the agreement, and 49 CFR Part 18, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments, will also apply. Each value pricing project must have a separate cooperative agreement. Although in the past the FHWA has allowed some States to have a master cooperative agreement that is subsequently amended for each approved project, in the future the FHWA will execute a separate agreement for each project. For value pricing projects that involve only toll authority and that do not involve requests for Federal funds, a cooperative agreement must still be executed.

Where the implementation of tolling is part of the VPP project, Federal tolling authority is required. To secure such authority for a VPP project, a cooperative agreement will be executed, regardless of whether VPP program funding is being provided. The cooperative agreement must include all of the information normally required as part of a tolling agreement (stipulating the terms of the tolling, providing details on the dispensation of revenues, etc.). A separate tolling agreement will generally not be required unless the FHWA determines that a separate agreement is the most efficient mechanism in light of the particular circumstances of the project. As discussed previously, revenues must generally first be used to cover the project's operating costs, including debt service, provide reasonable return on private party investments, and be used for the costs necessary to properly operate and maintain the facility. Any remaining revenues may then be used

for other Title 23, U.S.C. eligible purposes.

Where tolling authority is secured through a VPP program cooperative agreement, such an agreement will be signed by the Executive Director of FHWA. If tolling authority is not required, the cooperative agreement will be signed by the FHWA Division Administrator of the State Division Office. All cooperative agreements will be administered jointly by FHWA's Office of Operations and FHWA's State Division Office.

Other Requirements

Prior to FHWA approval of pricing project implementation, congestion pricing programs must be shown to be consistent with Federal metropolitan and statewide planning requirements (23 U.S.C. 134 and 135; and, if applicable, 49 U.S.C. 5303 and 5304).

Implementation projects involving tolls outside metropolitan areas must be included in the approved statewide transportation improvement program and be selected in accordance with the requirements set forth in section 1204(f)(3) of TEA-21.

Implementation projects involving tolls in metropolitan areas must be: (a) Included in, or consistent with, the approved metropolitan transportation plan (if the area is in nonattainment for a transportation-related pollutant, the metropolitan plan must be in conformance with the State air quality implementation plan); (b) included in the approved metropolitan and statewide transportation improvement programs (if the metropolitan area is in a nonattainment area for a transportation related pollutant, the metropolitan transportation improvement program must be in conformance with the State air quality implementation plan); (c) selected in accordance with the requirements in section 1203(h)(5) or (i)(2) of TEA-21; and (d) consistent with any existing congestion management system in Transportation Management Areas, developed pursuant to 23 U.S.C. 134(i)(3).

Authority: 23 U.S.C. 315; sec. 1216(a), Pub. L. 105-178, 112 Stat. 107; Pub. L. 109-59; 117 Stat. 1144.

Issued on: October 12, 2010.

Victor M. Mendez,

Federal Highway Administrator.

[FR Doc. 2010-26298 Filed 10-18-10; 8:45 am]

BILLING CODE 4910-22-P

DEPARTMENT OF THE TREASURY

Submission for OMB Review; Comment Request

October 13, 2010.

The Department of the Treasury will submit the following public information collection requirements to OMB for review and clearance under the Paperwork Reduction Act of 1995, Public Law 104-13 on or after the date of publication of this notice. A copy of the submissions may be obtained by calling the Treasury Bureau Clearance Officer listed. Comments regarding these information collections should be addressed to the OMB reviewer listed and to the Treasury PRA Clearance Officer, Department of the Treasury, 1750 Pennsylvania Avenue, NW., Suite 11010, Washington, DC 20220.

Dates: Written comments should be received on or before November 18, 2010 to be assured of consideration.

Internal Revenue Service (IRS)

OMB Number: 1545-0112.

Type of Review: Extension without change to a currently approved collection.

Title: Form 1099-INT, Interest Income.

Form: 1099-INT.

Abstract: This form is used for reporting interest income paid, as required by sections 6049 and 6041 of the Internal Revenue Code. It is used to verify that payees are correctly reporting their income.

Respondents: Private Sector: Businesses or other for-profits.

Estimated Total Burden Hours: 63,677,672 hours.

OMB Number: 1545-0747.

Type of Review: Revision of a currently approved collection.

Title: IRA Contribution Information.

Form: 5498.

Abstract: Form-5498 is used by trustees and issuers to report contributions to, and the fair market value of, an individual retirement arrangement (IRA).

Respondents: Private Sector: Businesses or other for-profits.

Estimated Total Burden Hours: 47,109,000 hours.

Bureau Clearance Officer: R. Joseph Durbala, Internal Revenue Service, 1111 Constitution Avenue, NW., Room 6129, Washington, DC 20224; (202) 622-3634.

OMB Reviewer: Shagufta Ahmed, Office of Management and Budget, New

Executive Office Building, Room 10235, Washington, DC 20503; (202) 395-7873.

Dawn D. Wolfgang,

Treasury PRA Clearance Officer.

[FR Doc. 2010-26325 Filed 10-18-10; 8:45 am]

BILLING CODE 4830-01-P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Privacy Act of 1974, as Amended

AGENCY: Internal Revenue Service, Treasury.

ACTION: Notice of proposed alterations to three Privacy Act systems of records.

SUMMARY: In accordance with the requirements of the Privacy Act of 1974, as amended, the Department of the Treasury, Internal Revenue Service (IRS), gives notice of proposed alterations to three Privacy Act systems of records related to the functions of the Office of Professional Responsibility (OPR): Treasury/IRS 37.006, Correspondence, Miscellaneous Records, and Information Management Records; Treasury/IRS 37.007, Practitioner Disciplinary Records; and Treasury/IRS 37.009, Enrolled Agents and Resigned Enrolled Agents.

DATES: Comments must be received no later than November 18, 2010. The proposed altered systems will become effective November 29, 2010, unless the IRS receives comments which cause reconsideration of this action.

ADDRESSES: Comments should be sent to the Office of Governmental Liaison and Disclosure, Internal Revenue Service, 1111 Constitution Avenue, NW., Washington, DC 20224. Comments will be available for inspection and copying in the IRS Freedom of Information Reading Room (Room 1621) at the above address. The telephone number for the Reading Room is (202) 622-5164 (not a toll-free number).

FOR FURTHER INFORMATION CONTACT: Earl Prater, Senior Counsel, OPR, at (202) 622-8018 (not a toll-free number).

SUPPLEMENTARY INFORMATION: The regulations governing practice before the IRS, issued under the authority of 31 U.S.C. 330, are set out at 31 CFR part 10, and are published in pamphlet form as Treasury Department Circular No. 230 (Circular 230). As authorized by 31 CFR part 10, the Director, OPR, acts on applications for enrollment to practice before the IRS; makes inquiries with respect to matters under OPR's jurisdiction; institutes and provides for the conduct of disciplinary proceedings relating to practitioners (attorneys,



FHWA Value Pricing Pilot Program Proposal

Reference Document 2

Request for Value Pricing Pilot Program Partnership Proposals posted by NCTCOG.

Request for Value Pricing Pilot Program Partnership Proposals

The North Central Texas Council of Governments (NCTCOG) is requesting written proposals from potential partners to develop a final grant application(s) for submittal to the Federal Highway Administration (FHWA) Value Pricing Pilot Program (VPPP) via the Texas Department of Transportation. Partnering entities must have provided an initial draft proposal to FHWA by December 3, 2010. The written proposal submitted to NCTCOG should relate to implementation of automobile insurance pricing strategies in North Central Texas and be in accordance with FHWA VPPP requirements (Federal Register, Vol. 75, No.201, October 19, 2010). Submitted proposals should be considered near complete; however entities must be willing and able to incorporate NCTCOG interests into a final grant application prior to January 18, 2011. The FHWA VPPP local match requirement will be the sole responsibility of the partnering entity.

A written proposal in response to this request, along with a copy of the draft proposal submitted to FHWA, must be received no later than 5:00 p.m. Central Time on Monday, January 3, 2011, by Carrie Reese, Program Manager, North Central Texas Council of Governments, 616 Six Flags Drive, Arlington, TX, 76011. Please submit written questions to Carrie Reese at creese@nctcog.org by no later than December 29, 2010. Responses to written questions as well as additional information regarding this Request for Proposals and the FHWA VPPP can be found at <http://www.nctcog.org/trans/admin/rfp/>.

NCTCOG encourages participation by disadvantaged business enterprises and does not discriminate on the basis of age, race, color, religion, sex, national origin, or disability.



FHWA Value Pricing Pilot Program Proposal

Reference Document 3

VPPP_Solicit_FR2010_26298_Delphi_Draft_Proposal _Rakouth_03_DEC10.

Document Ref:
VPPP_Solicit_FR2010_26298_Delphi_Draft_Propo
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DELPHI AUTOMOTIVE SYSTEMS, LLC

DRAFT PROPOSAL

IN RESPONSE TO THE

Value Pricing Pilot (VPP) Program Solicitation FR2010-26298

FOR THE

**DEPARTMENT OF TRANSPORTATION
Federal Highway Administration (FHWA)**

Submitted on December 3rd, 2010
By Heri Rakouth, PhD-MBA

Authorized Offeror Signature



Dated: December, 3rd 2010 B

y: _____

Dr. Andrew Brown, Jr.
Executive Director and Chief Technologist
Delphi Automotive Systems, LLC

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- 10.3 Cost Worksheet - Travel**

This will include (for implementation projects: see section 4.3) a budget for capital and operating costs; a description of all funding sources, planned expenditures, and proposed uses of revenues; and a plan for projects to become financially self-sustaining (without Federal support) within 3 years of implementation, all of which is only required for grant applications;

11) PUBLIC EXPOSURE

A discussion of previous public involvement, including public meetings, in the development of the proposed pricing program; any expressions or declarations of support from State or local government officials or the public; future plans for involving key affected parties, coalition building, and media relations, and more broadly for ensuring adequate public involvement prior to implementation;

12) PLANS FOR MEETING ALL FEDERAL, STATE, AND LOCAL LEGAL AND ADMINISTRATIVE REQUIREMENTS

This will include relevant Federal-aid planning and environmental requirements.

13) FINANCIAL RIGHTS AND RESPONSIBILITIES OF THE PROJECT PARTICIPANTS

A description of how, if at all, any private entities are involved in the project, either in spending grant funds or in cost sharing or debt retirement associated with revenues

14) INTELLECTUAL PROPERTY RIGHTS
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1) LIST OF ACRONYMS

| | |
|--------------|--|
| ABS | Acrylonitrile Butadiene Styrene (plastic) |
| AC | Access Categories |
| AIFS | Arbitration inter-frame space |
| API | Application Programming Interface |
| ASN | Abstract Syntax Notation (ASN.1) |
| BER | Basic Encoding Rules |
| BSM | Basic Safety Message |
| BSS | Basic Service Set |
| CAMP | Crash Avoidance Metrics Partnership |
| CAN | Controller Area Network |
| CCH | Control Channel |
| CF | Compact Flash |
| CPU | Central Processing Unit |
| C2X | V2I and V2V capable |
| DER | Distinguished Encoding Rules (ASN.1) |
| DDR | Double Data Rata (memory) |
| DSRC | Dedicated Short Range Communications |
| EDCA | Enhanced Distributed Channel Access |
| ESD | Electro-Static Discharge |
| FCC | Federal Communications Commission |
| GPS | Global Positioning System |
| GUI | Graphical User Interface |
| HMI | Human Machine Interface |
| HW | Hardware |
| NHTSA | National Highway Traffic Safety Administration |
| IEEE | Institute of Electrical and Electronics Engineers |
| ISM | Industrial, Scientific and Medical (band) |
| ITS | Intelligent Transportation Systems |
| LLCF | Lower Level CAN Framework |
| MAC | Media Access Control |
| MB | Mega Byte |
| MIB | Management Information Base |
| MIPS | Million Instruction per Second |
| MPDU | Message Protocol Data Unit |
| OBE | On Board Equipment |

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| | |
|--------------|---|
| OBU | On Board Unit |
| OEM | Original Equipment Manufacturer |
| OFDM | Orthogonal Frequency Division Multiplexing |
| OSGi | Open Services Gateway initiative |
| OTA | Over the Air |
| PC | Personal Computer |
| PHY | PHysical laYer |
| POC | Proof of Concept |
| PSID | Provider Service Identifier |
| PSU | Power Supply Unit |
| RF | Radio Frequency |
| RFQ | Request-for-Quotation |
| RSSI | Received Signal Strength Indication |
| RS232 | Recommended Standard 232 |
| RTCM | Radio Technical Commission for Maritime services |
| SAE | Society of Automotive Engineers |
| SATA | Serial Advanced Technology Attachment |
| SCH | Service Channel |
| SDRAM | Synchronous dynamic random access memory |
| SSH | Secure SHell (remote login) |
| SW1 | Software Delivery 1 (Work Package 2.1) |
| SW2 | Software Delivery 2 (Work Package 2.2) |
| SW3 | Software Delivery 3 (Work Package 4) |
| TCP | Transmission Control Protocol |
| UNII | Unlicensed National Information Infrastructure |
| USB | Universal Serial Bus |
| USDOT | United States Department of Transportation |
| UDP | User Datagram Protocol |
| VGA | Video Graphic Array |
| VII | Vehicle Infrastructure Integration |
| VIIC | Vehicle Infrastructure Integration Consortium |
| VSC | Vehicle Safety Communications |
| VSC2 | Vehicle Safety Communications 2 (Consortium) |
| VSC3 | Vehicle Safety Communications 3 (Consortium) |
| VSC-A | Vehicle Safety Communications – Applications |
| V2I | Vehicle-to-Infrastructure |

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| | |
|-------------------|---|
| V-V or V2V | Vehicle-to-Vehicle |
| V2X | V2I and V2V capable |
| WAVE | Wireless Access in Vehicular Environments |
| WBSS | WAVE (mode) Basic Service Set |
| WEP | Wired Equivalent Privacy |
| WiFi | Wireless Fidelity |
| WinSCP | Windows SecureCoPy |
| WP | Work Package |
| WPA | WiFi Protected Access |
| WSM | Wave Short Message |
| WSMP | Wave Short Message Protocol |
| XML | eXtensible Markup Language |
| BSM | Basic Safety Message |
| CAMP | Crash Avoidance Metrics Partnership |
| CAN | Controller Area Network |
| DSRC | Dedicated Short Range Communications |
| GPS | Global Positioning System |
| HW | Hardware |
| NHTSA | National Highway Traffic Safety Administration |
| OBE | On Board Equipment |
| OEM | Original Equipment Manufacturer |
| OTA | Over the Air |
| RFQ | Request-for-Quotation |
| USDOT | United States Department of Transportation |
| UDP | User Datagram Protocol |
| VSC | Vehicle Safety Communications |
| VSC2 | Vehicle Safety Communications 2 (Consortium) |
| VSC3 | Vehicle Safety Communications 3 (Consortium) |
| VSC-A | Vehicle Safety Communications – Applications |
| V2I | Vehicle-to-Infrastructure |
| V-V or V2V | Vehicle-to-Vehicle |
| V2X | V2I and V2V capable |
| WP | Work Package |

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Product Service & Solution

Draft Proposal to the FHWA Value Pricing Pilot Solicitation FR2010-26298

2) REFERENCE DOCUMENTS

[1] Value Pricing Pilot (VPP) Program Solicitation FR2010-26298, Federal Register /Vol. 75, No. 201 /Tuesday, October 19, 2010 /Notices pp. 64397 - 64403

[2] Delphi press release http://delphi.com/news/pressReleases/pr_2010_11_02_010/

[3] Copy of emails exchanged with the North Central Texas Council of Governments

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Draft Proposal to the FHWA Value Pricing Pilot Solicitation FR2010-26298

3) EXECUTIVE SUMMARY

Under the leadership of¹, _____, [3] hereafter referred to as the requesting agency, a consortium of partners – hereafter referred to as the consortium - including Delphi, a leading automobile insurance provider, Ivox, and ..., is proposing to facilitate the deployment of a PAYD (Pay As You Drive) pilot program in the State/city of _____ for the purpose of improving the driver’s behavior resulting in measurable congestion reduction along with other benefits such as equity, insurance premium reduction, livability, environmental sustainability, and safety. We are targeting up to 30,000 drivers over the 2011-2013 time period. This project will be executed within the framework of the Value Pricing Pilot (VPP) Program Participation, Fiscal Years 2010 and 2011 whose solicitation was released by the Federal Highway Administration (FHWA) of the U.S. DEPARTMENT OF TRANSPORTATION under the reference FR2010-26298 in the Federal Register /Vol. 75, No. 201 /Tuesday, October 19, 2010 /Notices.[1]

The consortium is currently rolling out an aftermarket telematics pilot program (ATPP) in the State of Texas. The consortium will implement the subject DOT/FHWA Value Pricing Pilot Program (VPPP) by adding PAYD features to our existing ATPP. As a result, the VPPP will largely benefit from the ATPP initial investment and infrastructure along with the team experience. Thus, through the combined VPPP and ATPP, the consortium will collect data aimed at demonstrating that:

- (1) PAYD translates into a percent driving reduction regardless of the traffic congestion,
- (2) PAYD along with congestion-based applications (e.g. lower insurance premium applied to congestion-free itineraries, or insurance premium proportional to time spent in congestions) will effectively reduce congestion (Note: these applications may require more resources and will be decided as a function of what is available).
- (3) Statistical extrapolations from the pilot program(s) data will enable shaping a city-wide/state-wide congestion reduction model.

Accordingly and with the exceptions specified where necessary, the requesting agency along with its partners will deliver the VPP within the 2011 - 2013 timeframe. With 11,000 to 33,000 hours for labor time (dispensed over the duration of the project) and \$ 4,254,000 US

¹ The consortium is currently in discussions with the North Central Texas Council of Governments (NCTCOG) that is potentially interested to lead this project as the requesting agency.

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to \$ 12,174,000 for material cost (including development of original VPPP-specific applications), the requesting agency and its partners will be able to honor a cooperative agreement for a total budget range of \$ \$ 4,955,250 to \$ 14,277,750 US for a program length ranging from 1 to 3 years. The related breakdown is approximately 20% paid by the requesting agency and its partners and 80% paid by FHWA.

4) BACKGROUND INFORMATION

(a) The name, title, e-mail address, and phone number of the person who will act as the point of contact on behalf of the requesting agency, authority, or authorities;

(b) A description of the agency, authority, or authorities requesting funding and/or tolling authority;

(c) A statement as to whether only funding, both funding and tolling authority, or only tolling authority via the VPP program is being sought to support either pre-implementation or implementation activities as permitted; and

(d) A description of the public agency or agencies that will be responsible for operating, maintaining, and enforcing the tolling program, if applicable.

4.1 Applicant Consortium

4.1.1 Requesting Agency

4.1.2 Delphi

Delphi is a leading global supplier of electronics and technologies for automotive, commercial vehicle and other market segments. Operating major technical centers, manufacturing sites and customer support facilities in 30 countries, Delphi delivers real-world innovations that make products smarter and safer as well as more powerful and efficient.

As a worldwide partner to 25 of the largest vehicle manufacturers, Delphi has a long and successful history with advanced automotive technologies and specifically the benefits of more than 15 years with telematics – including collecting data from vehicles, transmitting information to vehicles, and creating a flow of information. Because of this, Delphi aftermarket telematics has the ability to communicate with vehicles from these manufacturers.

Delphi introduced the first On-Star Telematics with General Motors in 2005 (see Figure 1)

Over the past five years Delphi has been involved in various Intelligent Transportation projects in Asia (e.g. V2X Proof-Of-concept for the Land Transport Authority of Singapore), Europe (e.g. Pre-Drive C2X) and North America (e.g. VII-Consortium, 2008 World Congress Bus demonstration) in providing both the related hardware and software.

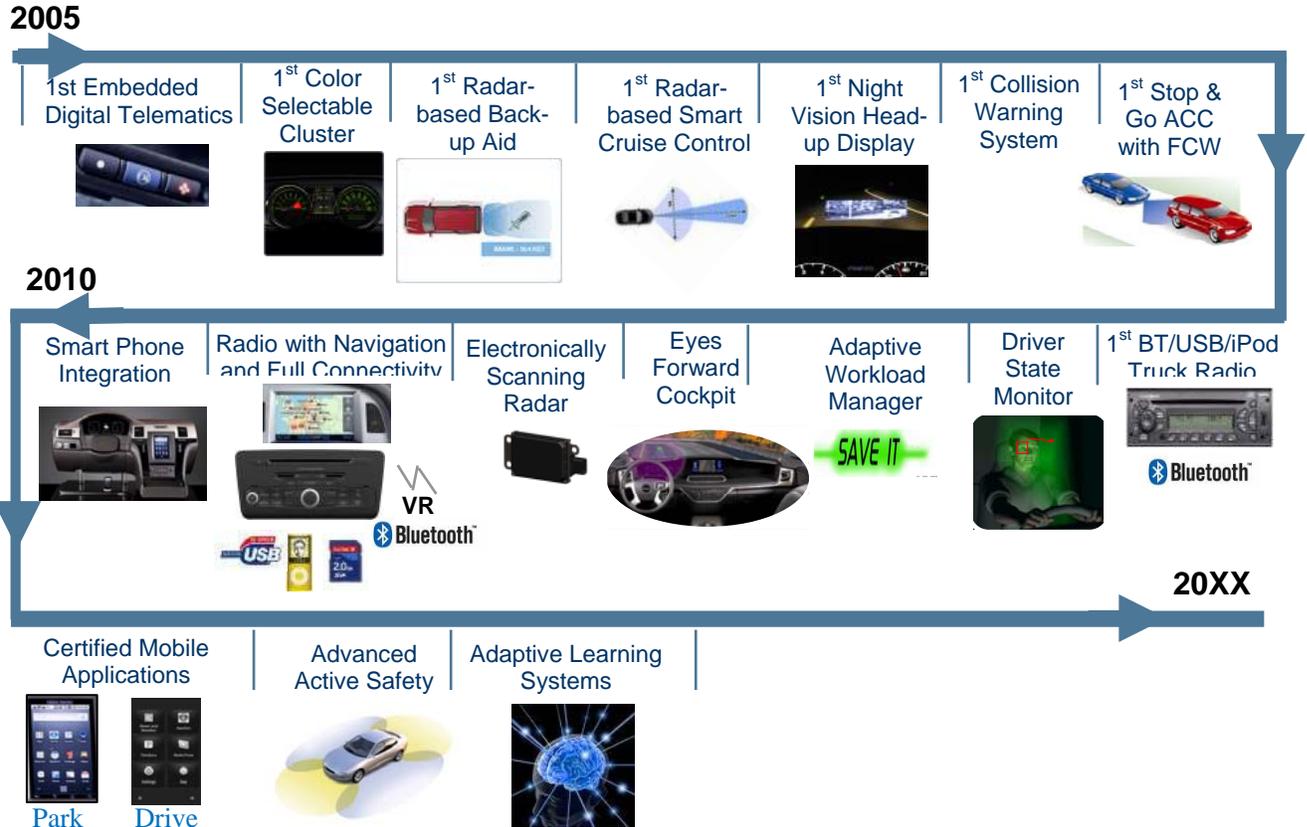


Figure 1. Delphi's tradition of innovation in Telematics and Connectivity

4.1.3 XXX

4.1.4 Ivox

IVOX is an information services company headquartered in Atlanta, Georgia. The Company was founded in February 2004 to provide companies owning, operating, or insuring large fleets of commercial vehicles and insurance companies insuring personal vehicles a means to control costs by monitoring on a second-by-second basis how, when, and where vehicles are driven. IVOX provides summary information to its customers by analyzing this information which is obtained from utilizing Global Positioning System ("GPS") or accelerometer enabled devices (a "Device" or "Devices") in their customers' vehicles. By using concise and highly predictive data tools that distill vast data points into usable decision tools, the customer is able to make informed risk management decisions. The algorithms used to analyze this data are proprietary and have been trademarked by the Company under its patent pending DriverScore® and related applications.

In May 2007, the Georgia Research Alliance and the Technology Association of Georgia named IVOX the winner of their Technology Business Launch of the Year Contest.

4.1.5 Others

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4.2 Points of Contact

4.2.1 Requesting Agency

4.2.2 Delphi

The following table provides the identification of the Delphi project team. The team members have been selected based on credentials and ITS-related experiences.

| Core Team Members | Project Role | Phone Number |
|--------------------------|---|---------------------|
| Rakouth, Heri | Principal Project Contact | +1 (248) 813 2321 |
| Slesak, Chris | Project Manager | +1 (248) 813 3250 |
| Jones, Jeffrey | Business Line & Government Contracts Manager | +1 (248) 813 3173 |
| Johnson, Richard | Chief Engineer Operations Telematics, Service and Education | +1 (248) 813 2552 |
| Krzyszewski, John T | Systems Engineer-Telematics | +1 (248) 813 6072 |

Heri Rakouth holds MS and PhD degrees in Electrical Engineering, from the University of Pierre and Marie Curie (UPMC) of Paris (1979 and 1982) along with an MBA from Saginaw Valley State University (1999) and an MS in Manufacturing Management from Kettering University (2000).

Dr. Rakouth has over 30 years experience in both aerospace/defense telecommunications and automotive electronics industries.

Since April 2007, Dr. Heri Rakouth holds the position of Manager, Technology Exploration at the Innovation and Technology Office (ITO) of Delphi Corp. Troy, Michigan. In this capacity, he coordinates technology innovation activities across 3 out the 5 divisions of Delphi. He spearheaded cross-divisional efforts that have led to the build of the telematics business development team for the aftermarket and the launch of the V2X proof of concept project currently implemented for the Land Transport Authority of Singapore.

Dr. Rakouth is currently an adjunct professor at Oakland University teaching undergraduate and graduate classes in Power Electronics and Wireless Communications. Dr. Rakouth has published over twenty IEEE or equivalent technical papers and tens of classified and non-classified reports. He holds two U.S. and two European patents.

4.2.3 XXX

4.2.4 Ivox

Gregg Warren is the founder of IVOX. He conceptualized IVOX from his years of experience consulting to the wireless and financial services arenas. Through his company, Warren Consulting Partners, Gregg has been able to assist start up companies define their strategies, obtain capital, assemble teams and construct reasonable exits. Clients have included a wireless services company, a financial services company and a medical devices firm. He has an undergraduate degree in accounting from Auburn University and a MBA from Mercer University.

Gregg Warren can be reached at 404-308-1381 and gwarren@ivoxdata.com

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4.2.5 Others

4.3 Statement of Implementation Project

Given the recognized benefits of the PAYD concept (*quote references here*) along with the related experiences of the participants, this project is a not a pre-implementation, instead it is a true implementation of a VPP program with quantifiable performance as further down described.

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5) INTRODUCTION

Delphi and IVOX has partnered with a premier Insurance & Membership company with a Brand and Reputation known to almost everybody. This company symbolizes trust and has been in existence for over 100+ years. This company has been investigating the potential benefits of leveraging Telematics Technology to the end consumer for many years and will be significantly investing multi-millions of dollars into the area of Telematics with regard to Insurance and other features that add value to the member and society at large. Delphi, IVOX, and the above mentioned insurance company will work together as a consortium to facilitate the deployment of a PAYD (Pay As You Drive) pilot program in the State/city of _____ for the purpose of improving the driver's behavior resulting in measurable congestion reduction along with other benefits such as equity, insurance premium reduction, livability, environmental sustainability, and safety. We are targeting up to 30,000 drivers over the 2011-2013 time period. This project will be executed within the framework of the Value Pricing Pilot (VPP) Program Participation, Fiscal Years 2010 and 2011 whose solicitation was released by the Federal Highway Administration (FHWA) of the U.S. DEPARTMENT OF TRANSPORTATION under the reference FR2010-26298 in the Federal Register /Vol. 75, No. 201 /Tuesday, October 19, 2010 /Notices.[1]

This project will be an extension of an on-going called aftermarket telematics pilot program (ATPP) in the State of Texas. It has been in pilot/test mode for particular features for the past nine months with a production plan in place for 2011. This proposal will leverage knowledge and experience gained from previous work and will be able to leverage the direct experience gained from the team members while also leveraging the indirect experience of the overall team that goes back to over 200+ combined years of history.

Infrastructure and Capital Costs associated with Manufacturing, Developing and Testing a device will exceed the multi-million dollars. This investment will be leveraged in this proposal.

The consortium will implement the subject DOT/FHWA Value Pricing Pilot Program (VPPP) by adding PAYD features to our existing ATPP. As a result, the VPPP will largely benefit from the ATPP initial investment and infrastructure along with the team experience. Thus, through the combined VPPP and ATPP, the consortium will collect data aimed at demonstrating that:

- (1) PAYD translates into a percent driving reduction regardless of the traffic congestion,
- (2) PAYD along with congestion-based applications (e.g. lower insurance premium applied to congestion-free itineraries, or insurance premium proportional to time spent in congestions) will effectively reduce congestion (Note: these applications may require more resources and will be decided as a function of what is available).
- (3) Statistical extrapolations from the pilot program(s) data will enable shaping a city-wide/state-wide congestion reduction model.

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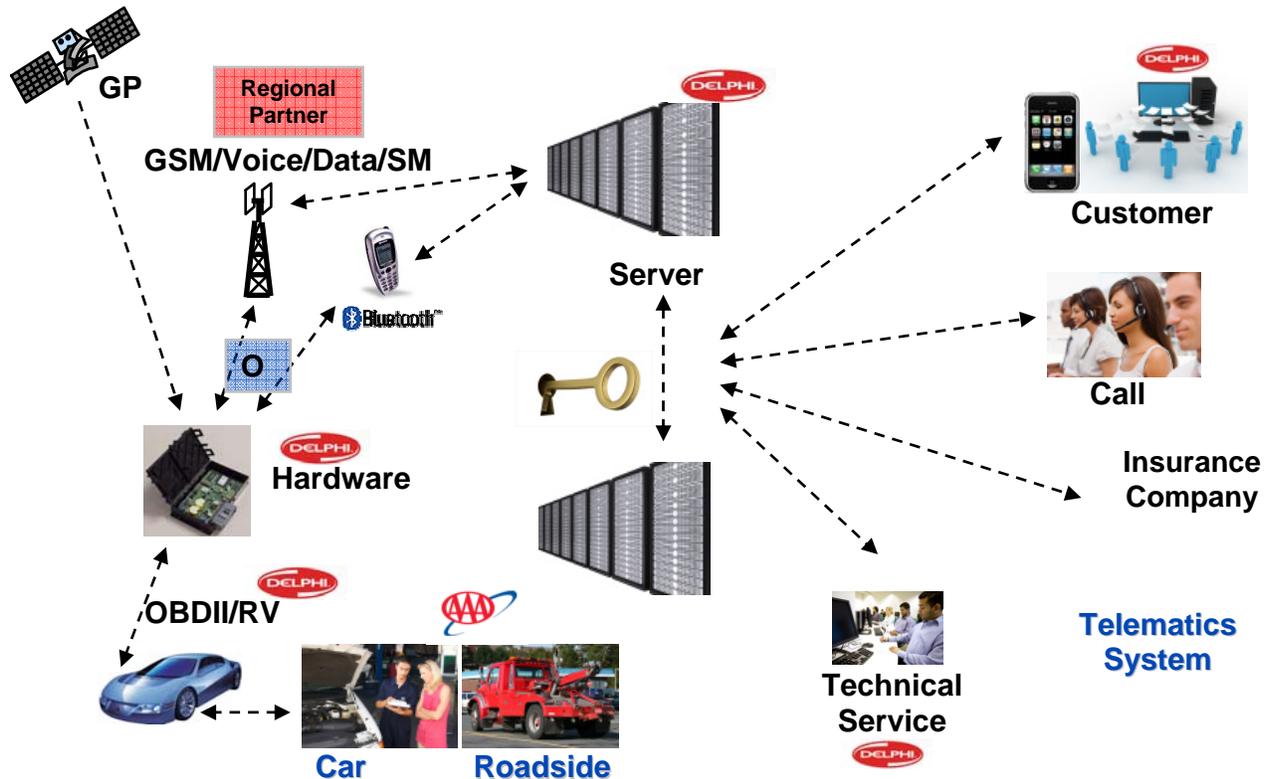
6) PROBLEMS BEING ADDRESSED

This proposal is aimed at to address traffic congestion problems.

7) DESCRIPTION OF THE PROPOSED PRICING PROGRAM AND ITS GOALS

7.4.3. Technical Operations

Figure 2 provides an overview of the Delphi Aftermarket Telematics System (DATS)



7.4.3.1 Overview

Delphi will supply a device that fits into the palm of your hand. The information gets routed via a cellular connection to a device gateway that is controlled by Delphi. This information is then sent to our Insurance partner and IVOX and they are able to turn this raw data into useful information. This information can tell things like driver ratings, vehicle congestion, vehicle related to toll booths and can be sent in real time or on a predefined basis or via an alert based system or all three depending on data that is being collected.

7.4.3.2 On-board Equipment

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It is a small plug and play device. It is always on. It has GPS, Cellular connection, accelerometer and other advanced features both on the hardware and backhaul services. This is the Delphi Aftermarket Telematics Unit (DATU).

7.4.3.3 Back-haul Center

Back-haul Center is a combination of three back-haul hosting servers that are made up of Delphi, IVOX and our Insurance Partner that are all seamlessly integrated with each other. The back-haul center is also connected to a National IT system that communicates to a Call Center that supports members no matter where they are located or driving.

7.4.3.4 Congestion Solution Development Activities

7.4.3.4.1 Driver's performance monitoring

We will provide a suite of analytical tools which will provide insight into the driver's behaviour. We will use the same aftermarket technology currently in our ATPP project as the foundation of the congestion management solution for conducting our analysis. As explained in the preceding sections, the main unit of the ATPP operation is the Delphi Aftermarket Telematics Unit (DATU).

We will collect second by second GPS and accelerometer data from the DATU. Every data element will be time-stamped and sent to our servers where the events will be layered on to a series of GIS data maps that will allow for the examination of driver behaviour based on the following factors:

- Speed limits by GPS point,
- g force data by GPS point,
- Time and miles spent driven by road class,
- Time spent driving during peak congestion periods,
- Time and miles of risky driving during high congestion periods and location,
- Hours of day where riskiest driving is most prevalent,
- Monthly trend data of driver performance,
- Day of week analysis of driver performance,
- Discretionary idle time of driver,

7.4.3.4.2 Driver's itinerary monitoring

The DATU's GPS tracking feature will enable developing the driver's itinerary history. We can provide a "route risk " index which indicates the risk of the roads travelled by the driver. We will take accident data by road type and number of accidents and use traffic volume data to

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calculate the risk of roads. We will then provide of the number of miles and times the drivers are driving on through high risk locations.

We can also evaluate the time and miles that drivers spend on certain road types and when they drive.

7.4.3.4.3 Driver's rating and feedback

We will then rank drivers by:

- Peer group,
- Demography,
- Vehicle type,
- Locations driven,
- Number of trips per day,
- Length/duration of trips per day,
- Miles and times driving in congested zones,
- Miles and time driven by road class.

Drivers will be given a singular score, called DriverScore, which will indicate the drivers ability on HOW, WHEN AND WHERE

Also, we will:

- Correlate driver behaviour data to claims data to uncover non intuitive risk patterns,
- Provide detailed maps to give drivers feedback on speeding in high congestions areas, maps detailing aggressive driving in high congestion areas,
- Release individualized feedback to drivers to improve their driving relative to:
 - safety and carbon output,
 - congestion performance through the results of the analysis of their driving behaviour in:
 - congestion time frames vs. uncongested time frames,
 - congestion locations vs. uncongested locations
- Establish safe driving standards for teen drivers,
- Analyze and identify which alternative routes are preferred when there is a crash/accident.
- Evaluate driver performance based on number of trips per day, length of trips, amount of daily miles and time driven by driver.
- Test a series of reward structures in conjunction with social media communities that would provide incentives for drivers to drive safer, greener, car pool, adjust travel times, adjust routes driven.

7.4.3.4.4 Real Time Congestion Mitigation

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7.4.3.4.4.1 Congestion Monitoring**7.4.3.4.4.1.1 Using the Local Traffic Management System**

The DATU and its system can interface with existing traffic management companies to send out notices via the cloud email, speech-to-text text alerts, automated call notification to phone. System could send out proactive alerts of congestion occurrences based on driving patterns prior to a drivers departure.

7.4.3.4.4.1.2 Using Probe Vehicle Data

System can conduct real time driver analysis to compare speeds driven by driver to posted speed limits. If speed is 85% lower than the PSL, we will conclude that congestion is occurring and can analysis the time and location of the events. System could then look at our drivers by location to confirm congestion and then send out the proactive alerts to drivers who habitually travel the same road at that time to lessen the impact of the

7.4.3.5 Congestion Mitigation**7.4.3.5.1 Assisted Re-routing**

We are planning on developing a set of new smartphone applications that would broadcast alternative directions to turn around congested area.

7.4.3.5.2 Pattern-based Congestion Mitigation**7.4.3.5.2.1 Trip Planning**

Drivers can have proactive alerts sent to them via email, text-to -speech text, look at maps for congested areas, plan efficient alternative routes based on time of departure and roads travelled

7.4.3.5.2.2 Use of alternative transportation modes

- System can monitor vehicle usage to ascertain if it is parked at mass transit parking lot, home.
- System can also evaluate number of miles driven by driver has been reduced by a driver.
- Social media communities can be formed to provide individual as well group incentive programs(partner with coupon) for taking mass transit

8) PROGRAM PERFORMANCE MEASUREMENT

The combined ATPP & VPPP projects rely on real-time communications and computer-intensive processing. This technology setup can be paired with the appropriate database system to facilitate statistical analyses for the purpose of pattern identification and traffic congestion modeling. The following sections describe the data being collected for enabling the statistical processing.

- 8.1 Driving Reduction**
- 8.2 Congestion Reduction**
- 8.3 Livability**
- 8.4 Environmental Sustainability**
- 8.5 Safety**
- 8.6 Additional Enhancements (additional funding may be required)**
 - 8.6.1 Deriving Statistical Extrapolations
 - 8.6.2 City-wide/state-wide congestion reduction model
 - 8.6.3 Promoting/Spreading Out Program-generated applications
 - 8.6.3.1 Probe Vehicle Data
 - 8.6.3.2 Assisted Re-Routing
 - 8.6.3.3 Alternative Transportation Mode Certificate

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9) PROGRAM TIMELINE

- Award of Contract = deployment 6 to 12 months
- Pilot Testing = 12 to 36 months
- Summary of Findings = 6 months
- Quarterly Reports

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10) FINANCE AND REVENUE PLAN

The following is the current estimate of the project is given on the basis of a 12-month deployment.

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| Number of Devices | Per Unit Cost | Delphi/Insurance/VOX | Cost to DOT | Total Cost of Program (12 months) |
|---|--|----------------------|---------------------------------------|---|
| 10,000 | \$156 | 20% | \$159.20 | \$1,560,000 |
| 20,000 | \$156 | 20% | \$144.00 | \$3,120,000 |
| 30,000 | \$156 | 20% | \$136.00 | \$4,680,000 |
| Airtime per Device (Cellular Service M2M data costs) | | | | |
| Devices | Per Month Cost per unit | Delphi/Insurance/VOX | Cost to DOT per unit per month | Total Cost of Program for Data/Air |
| 10,000 | \$10.00 | 20% | \$8.00 | \$1,200,000.00 |
| 20,000 | \$10.00 | 20% | \$8.00 | \$2,400,000.00 |
| 30,000 | \$10.00 | 20% | \$8.00 | \$3,600,000.00 |
| Hosting/Back End/Servers Costs | | | | |
| Devices | Per Month Cost (SLA >99.95 uptime) | Delphi/Insurance/VOX | Cost to DOT per month | Total Cost of Program for 12 months |
| 10,000 | \$12,000.00 | 20% | \$9,600.00 | \$144,000.00 |
| 20,000 | \$12,000.00 | 20% | \$9,600.00 | \$144,000.00 |
| 30,000 | \$12,000.00 | 20% | \$9,600.00 | \$144,000.00 |
| Program Management | | | Per year cost | Amount Absorbed by Delphi/Insurance/VOX |
| Insurance program manager/financial tracker | | | \$150,000 | 20% |
| Delphi program manager/financial tracker | | | \$150,000 | 20% |
| Engineering Man Hours | | | | |
| Depends on Features Requested or Agreed Upon with DOT | | | | |
| Hours | Total Hours | Hourly Rate | Amount Absorbed by Delphi & Insurance | DOT Hourly Rate for Engineering (average) |
| Low Estimate Labor | 11,000 | \$125 | 30% | \$87.50 |
| High Estimate Labor | 33,000 | \$125 | 30% | \$87.50 |
| Consortium Labor Cost (High) | | | | \$412,500.0 |
| Consortium Labor Cost (Low) | | | | \$1,237,500.0 |
| Total Labor Cost (Consortium + DOT) (Low) | | | | \$701,250.0 |
| Total Labor Cost (Consortium + DOT) (High) | | | | \$2,103,750.0 |
| Total Material Cost (Low) = E2+E8+E14+D19 | | | | \$3,054,000.00 |
| Total Material Cost (High) = E4+E10+E16+D20 | | | | \$8,574,000.00 |
| Total Budget (Low) | Total Labor (Low) + Total Material (Low) | | \$1,200,000.00 | \$4,955,250.00 |
| Total Budget (High) | Total Labor (High) + Total Material (High) | | \$3,600,000.00 | \$14,277,750.00 |

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FHWA Value Pricing Pilot Program Proposal

Reference Document 4

Response to Value Pricing Pilot Program PAYD Insurance Sketch Plan from FHWA's Allen Greenberg on December 16, 2010.

Rakouth, Heri

From: Allen.Greenberg@dot.gov
Sent: Thursday, December 16, 2010 5:38 PM
To: Rakouth, Heri; gwarren@ivoxdata.com; Slesak, Chris; creese@nctcog.org; ABrimmer@nctcog.org; Brown Jr., Andrew; Jones, Jeffrey P
Cc: Wayne.Berman@dot.gov; Angela.Jacobs@dot.gov; Robert.Arnold@dot.gov; Patrick.DeCorla-Souza@dot.gov
Subject: Response to Value Pricing Pilot Program PAYD Insurance Sketch Plan

Mr. Heri Rakouth

Delphi Automotive Systems, LLC

[Reference: SPR-11-06]

Via e-mail: heri.rakouth@delphi.com; <mailto:heri.rakouth@delphi.com;>
gwarren@ivoxdata.com; Chris.Slesak@delphi.com; creese@nctcog.org; ABrimmer@nctcog.org;
andrew.brown.jr@delphi.com; jeffrey.p.jones@delphi.com

Dear Mr. Rakouth:

Thank you for submitting a sketch plan to the Federal Highway Administration (FHWA) in response to a request for proposals to participate in the Value Pricing Pilot (VPP) program. Please accept this e-mail communication from the VPP program team as FHWA's response to your submission.

Below are comments specific to both the type of project you are contemplating and the information that you provided about your project. We are pleased that you are considering applying to the VPP program for funding-with a public sector partner, as you note-and request that you carefully consider our comments. Based on the large number of sketch plans that have been received and on the number of anticipated final submissions, we expect a good deal of competition for the available VPP program funds.

The purpose of this letter is to guide you in producing the best application possible, as it relates to both meeting your goals and the goals of the VPP program. These or any other comments from FHWA, however, should not be construed as a guarantee that funding will be provided even if your final application is fully responsive to the Federal Register Notice and the specific suggestions for improvements that are provided here.

It is important to refer back to the October 19, 2010 VPP program Federal Register Notice for a detailed list of items to be covered in your final proposal. Among aspects of the notice that are important to address, please explain in quantitative terms if possible the extent of the potential impact of your proposed project on FHWA's evaluation criteria itemized in the

solicitation. Also, please provide a detailed, itemized budget with your proposal that, to the extent feasible, is broken down by task and funding year (e.g., Year 1, Year 2, etc.) to facilitate flexibility in potentially providing partial funding instead of rejecting a proposal entirely simply due to insufficient VPP program funds. The proposal must be submitted through <http://www.grants.gov> <<http://www.grants.gov/>> by an eligible applicant, most preferably the state Department of Transportation, by January 18, 2011 in order to be considered for VPP program funds. Grants.gov requires registration, so it would be unwise to wait until the last minute to attempt to submit the application. Please do not hesitate to contact me at (202) 366-2425 or Allen.Greenberg@dot.gov with any questions about this communication or the application process more generally.

Comments on the Sketch Plan

As noted in the Federal Register Notice, FHWA is interested in converting insurance premiums from an annual or bi-annual charging scheme to one that is instead based primarily on miles or minutes of driving, which is consistent with the sketch plan you submitted. Your sketch plan provides especially thoughtful treatment of technology, data collection, safety enhancement, and customer communication issues.

The sketch plan mentions the participation of "a premier insurance and membership company," but the lack of disclosure as to what company that is, and more importantly, the lack of a written commitment on the part of such company to participate in the pilot as outlined in the proposal, would be unacceptable in the final submission. Further, the technology and related device communications envisioned for this pilot would be expensive, but very capable, and FHWA would only want to consider providing support for this expensive technology solution if the types of complex pricing that it would enable are offered by the insurance partner as part of the pilot.

The sketch plan pledges to "test a series of reward structures...that would provide incentives for drivers to drive safer, greener, carpool, adjust travel times, [and] adjust routes driven." This is all very consistent with the objectives of the VPP program (most especially incentives to adjust travel times away from peak periods) and the nature of the proposed tests should be elaborated upon in as specific terms as possible in the final submission.

No budget seems to be included for the all-important reporting and evaluation. An evaluation plan and budget should be included in the final submission, and the evaluator(s) should be identified. It is critical that before-after pricing data be collected to make an evaluation of the effects of pricing feasible. Various system capabilities are cited (e.g., "System can...evaluate number of miles...reduced by a driver") without including a commitment and plan to ensure these capabilities are deployed as part of the pilot evaluation.

Regarding the budget that has been presented, if the only practical choice provided to FHWA is to fund this project at \$5 million (or more) or not to fund it at all, it is extremely likely that the latter will be chosen. We urge you to take a very hard look at your budget to determine if other options (e.g., a 5,000 and 2,500 unit pilot) might also be presented. The proposal would also benefit if a greater financial contribution on the part of the participating companies were to be offered.

We look forward to reviewing your final proposal for VPP program funds if submitted by January 18, 2011 and compliant with all the requirements of the October 19, 2010 Federal Register Notice. While not required, we would very much welcome your preparation of a separate document, to be included with your final proposal submission, outlining how you addressed each of the suggestions that were provided to you in this correspondence.

Sincerely,

Allen Greenberg

U.S. Department of Transportation
Federal Highway Administration
Congestion Management and Pricing Team
1200 New Jersey Ave., SE
Mail Stop E-84-402
Washington, DC 20590
(202) 366-2425 (ph); (202) 366-3225 (fax)



FHWA Value Pricing Pilot Program Proposal

Reference Document 5

Document addressing FHWA's suggestions formulated in Reference Document [4] above.



FHWA Value Pricing Pilot Program Proposal

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

In Partnership With

**IVOX INC., DELPHI AUTOMOTIVE SYSTEMS, LLC,
AND (INSURANCE COMPANY)**

RESPONSE TO THE

**The December 16, 2010 Suggestions Formulated by FHWA's
Allen Greenberg**

**Regarding the Value Pricing Pilot Program PAYD Insurance
Sketch Plan submitted on December 3, 2010**

In-line with the VPPP requirements

Defined by the Solicitation FR2010-26298

Submitted on January 31, 2011



FHWA Value Pricing Pilot Program Proposal

The responses are in blue after each comment below.

Mr. Heri Rakouth

Delphi Automotive Systems, LLC

[Reference: SPR-11-06]

Via e-mail: heri.rakouth@delphi.com; <<mailto:heri.rakouth@delphi.com>>
gwarren@ivoxdata.com; Chris.Slesak@delphi.com; creese@nctcog.org; ABrimmer@nctcog.org;
andrew.brown.jr@delphi.com; jeffrey.p.jones@delphi.com

Dear Mr. Rakouth:

Thank you for submitting a sketch plan to the Federal Highway Administration (FHWA) in response to a request for proposals to participate in the Value Pricing Pilot (VPP) program. Please accept this e-mail communication from the VPP program team as FHWA's response to your submission.

Below are comments specific to both the type of project you are contemplating and the information that you provided about your project. We are pleased that you are considering applying to the VPP program for funding-with a public sector partner, as you note-and request that you carefully consider our comments. Based on the large number of sketch plans that have been received and on the number of anticipated final submissions, we expect a good deal of competition for the available VPP program funds.

The purpose of this letter is to guide you in producing the best application possible, as it relates to both meeting your goals and the goals of the VPP program. These or any other comments from FHWA, however, should not be construed as a guarantee that funding will be provided even if your final application is fully responsive to the Federal Register Notice and the specific suggestions for improvements that are provided here.



FHWA Value Pricing Pilot Program Proposal

It is important to refer back to the October 19, 2010 VPP program Federal Register Notice for a detailed list of items to be covered in your final proposal. Among aspects of the notice that are important to address, please explain in quantitative terms if possible the extent of the potential impact of your proposed project on FHWA's evaluation criteria itemized in the solicitation. Also, please provide a detailed, itemized budget with your proposal that, to the extent feasible, is broken down by task and funding year (e.g., Year 1, Year 2, etc.) to facilitate flexibility in potentially providing partial funding instead of rejecting a proposal entirely simply due to insufficient VPP program funds. The proposal must be submitted through <http://www.grants.gov> <<http://www.grants.gov/>> by an eligible applicant, most preferably the state Department of Transportation, by January 18, 2011 in order to be considered for VPP program funds. Grants.gov requires registration, so it would be unwise to wait until the last minute to attempt to submit the application. Please do not hesitate to contact me at (202) 366-2425 or Allen.Greenberg@dot.gov with any questions about this communication or the application process more generally.

Response

- The section 6 of the proposal (see pages 18 through 22) is titled "CORE OF THE APPLICATION" refers back to the first 15 applicable requirements listed on page 64401 of the referenced Federal Register / Vol. 75, No 201 /Tuesday, October 19, 2010/Notices pp. 64397-64403.
- Section 6 is aimed at reminding each core requirement in succinctly explaining how it will be addressed and in pointing to the relevant sections of the proposal for detailed explanations.

Comments on the Sketch Plan

As noted in the Federal Register Notice, FHWA is interested in converting insurance premiums from an annual or bi-annual charging scheme to one that is instead based primarily on miles or minutes of driving, which is consistent with the sketch plan you submitted. Your sketch plan provides especially thoughtful treatment of technology, data collection, safety enhancement, and customer communication issues.

The sketch plan mentions the participation of "a premier insurance and membership company," but the lack of disclosure as to what company that is, and more importantly, the lack of a written commitment on the part of such company to participate in the pilot as outlined in the proposal, would be unacceptable in the final submission. Further, the technology and related device communications envisioned for this pilot would be expensive, but very capable, and FHWA would only want to consider providing support for this expensive technology solution if the types of complex pricing that it would enable are offered by the insurance partner as part of the pilot.



IVOX

DELPHI

FHWA Value Pricing Pilot Program Proposal

Response

Given the status of our current discussions, most likely Insurance Company will be embodied by Nationwide. If indeed Nationwide confirms its intent to join the consortium, then a copy of their commitment letter will be attached to the FHWA submission by February 1st, 2011.

The sketch plan pledges to "test a series of reward structures...that would provide incentives for drivers to drive safer, greener, carpool, adjust travel times, [and] adjust routes driven." This is all very consistent with the objectives of the VPP program (most especially incentives to adjust travel times away from peak periods) and the nature of the proposed tests should be elaborated upon in as specific terms as possible in the final submission.

Response

Sections 7 and 8 provide in-depth coverage of the tests. Basically, the proposed pricing program will deploy a PAYD across the region of North Central Texas in order to:

- (1) Improve driver's behavior through different incentives and tracking systems (see section 7)
- (2) Measure the impact of the driver's improved behavior by means of:
 - a. DriverScore (see section 7),
 - b. CongestionScore (see section 8.3.1),
 - c. DriverScoregrn (see section 8.5.1),
 - d. Aggregate Driving Reduction Rate ADRR% (see section 8.2.3),
 - e. Aggregate Congestion Reduction Rate ACRR% (see section 8.3.3),
 - f. Livability improvement through a correlation between the Aggregate Rate of Occurrence of Accident (AROA) and the Aggregate Driving Reduction Rate (ADRR) and Aggregate Congestion Reduction Rate (ACRR) (see section 8.4)
 - g. Aggregate Environmental Sustainability Improvement Rate AESIR% (see section 8.5.3)
 - h. Aggregate Safety Improvement Rate ASIR% (see section 8.6)
- (3) Build a region-wide congestion reduction model (see section 8.7.2)
- (4) Promote program-generated applications such as:
 - a. Probe Vehicle Data (see section 8.7.3.1)
 - b. Assisted Re-Routing (see section 8.7.3.2)
 - c. Alternative Transportation Mode (see section 8.7.3.3)



FHWA Value Pricing Pilot Program Proposal

No budget seems to be included for the all-important reporting and evaluation. An evaluation plan and budget should be included in the final submission, and the evaluator(s) should be identified. It is critical that before-after pricing data be collected to make an evaluation of the effects of pricing feasible. Various system capabilities are cited (e.g., "System can...evaluate number of miles...reduced by a driver") without including a commitment and plan to ensure these capabilities are deployed as part of the pilot evaluation.

Response

- The Table 4 in section 10 of the proposal provides an itemized budget according to labor and material associated to each task/activity (applications development and data collection in section 7 + performance measurement in section 8) and funding year over the 3-year program length.
- Section 7.4.1. addresses data collection and analysis before the application of the PAYD program,
- Section 7.4.3.4. addresses data collection and analysis during the program,
- Section 7.6 addresses long-term monitoring,
- The whole section 8 addresses the qualification and regular reporting of the project effects.

Regarding the budget that has been presented, if the only practical choice provided to FHWA is to fund this project at \$5 million (or more) or not to fund it at all, it is extremely likely that the latter will be chosen. We urge you to take a very hard look at your budget to determine if other options (e.g., a 5,000 and 2,500 unit pilot) might also be presented. The proposal would also benefit if a greater financial contribution on the part of the participating companies were to be offered.

Response

- Section 8.1. "Statistical Assumptions and Pilot Program Sizing" has been devised to calculate the minimal sample size ensuring a 95% confidence level for the Value Pricing Pilot Program. We have determined $N_{min} = 2,500$. As a result, the whole project has been budgeted for 2,500 unit pilots.
- The program totals:
 - 29,160 hours for labor time (dispensed over the duration of the project) and
 - \$1,090,500.00 U.S. for material cost (including development of original VPPP-specific applications)
- The requesting agency (NCTCOG) and its partners (IVOX-Delphi-Insurance Company) will be able to honor a cooperative agreement for a total budget of \$4,960,500.00 U.S. for a program length of 3 years.
- The related cost share breakdown is approximately 37.65% paid by the consortium and 62.35% paid by FHWA.



FHWA Value Pricing Pilot Program Proposal

We look forward to reviewing your final proposal for VPP program funds if submitted by January 18, 2011 and compliant with all the requirements of the October 19, 2010 Federal Register Notice. While not required, we would very much welcome your preparation of a separate document, to be included with your final proposal submission, outlining how you addressed each of the suggestions that were provided to you in this correspondence.

Sincerely,

Allen Greenberg

U.S. Department of Transportation
Federal Highway Administration
Congestion Management and Pricing Team
1200 New Jersey Ave., SE
Mail Stop E-84-402
Washington, DC 20590
(202) 366-2425 (ph); (202) 366-3225 (fax)



FHWA Value Pricing Pilot Program Proposal

Reference Document 6

In-dash DriverScore, DriverScoregrn, and maps screenshots.

DriverScore™

POWERED BY **IVOX**

QNX smartcar gui





DriverScore™



DriverScoregrn™



Prescriptive Reports



Maps





DriverScore™



DriverScoregrn™



Prescriptive Reports



Maps





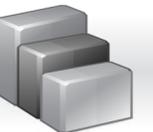
DriverScore™



DriverScoregrn™



Prescriptive Reports



Maps





DriverScore™



DriverScoregrn™



Prescriptive Reports



Maps





DriverScore™



DriverScoregrn™



Prescriptive Reports



Maps





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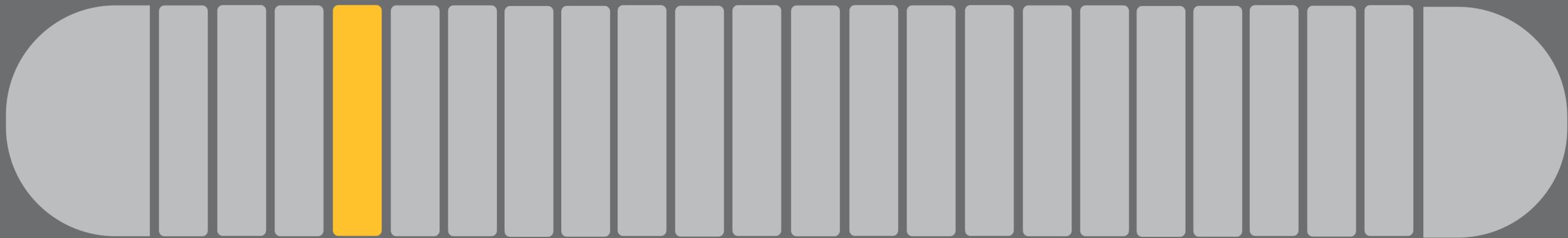
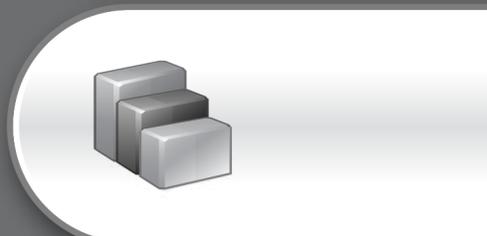
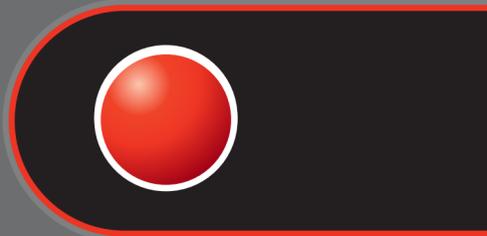


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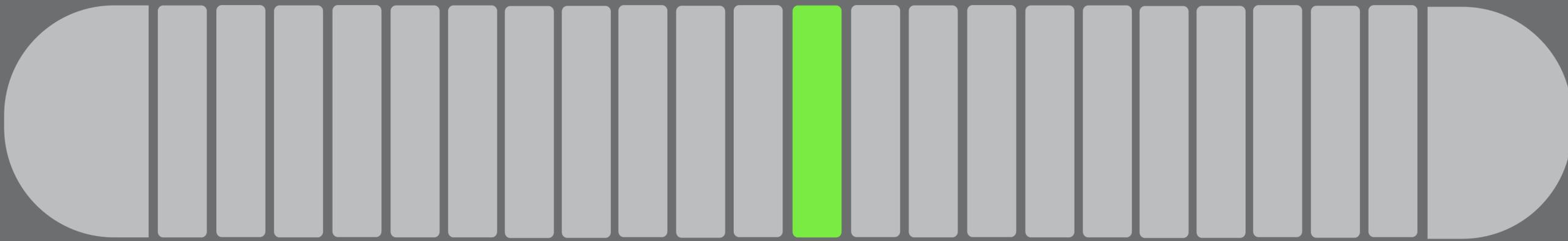
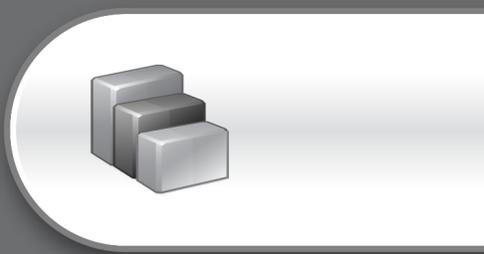
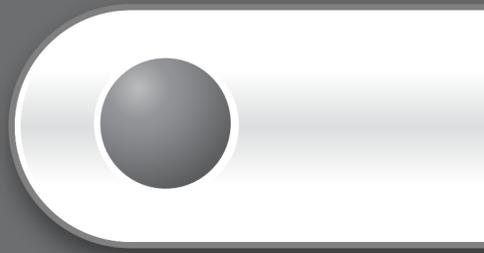


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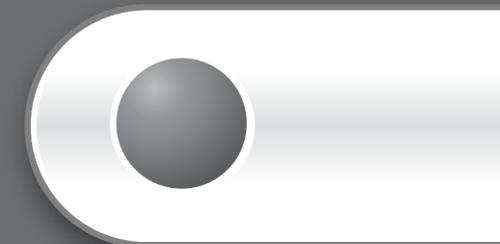
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Where

56% of time and 61% of miles were driven above speed limit on highways



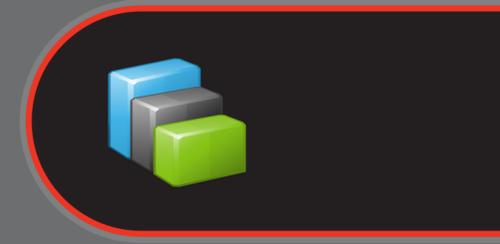
What & When

Aggressive driving was exhibited 64 times between 9 - 10 AM



How

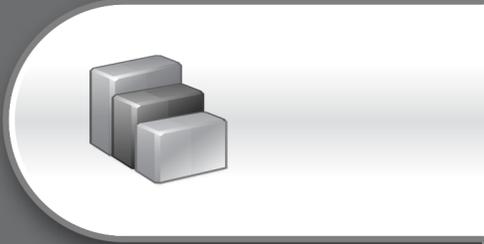
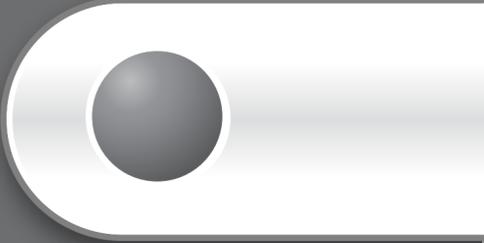
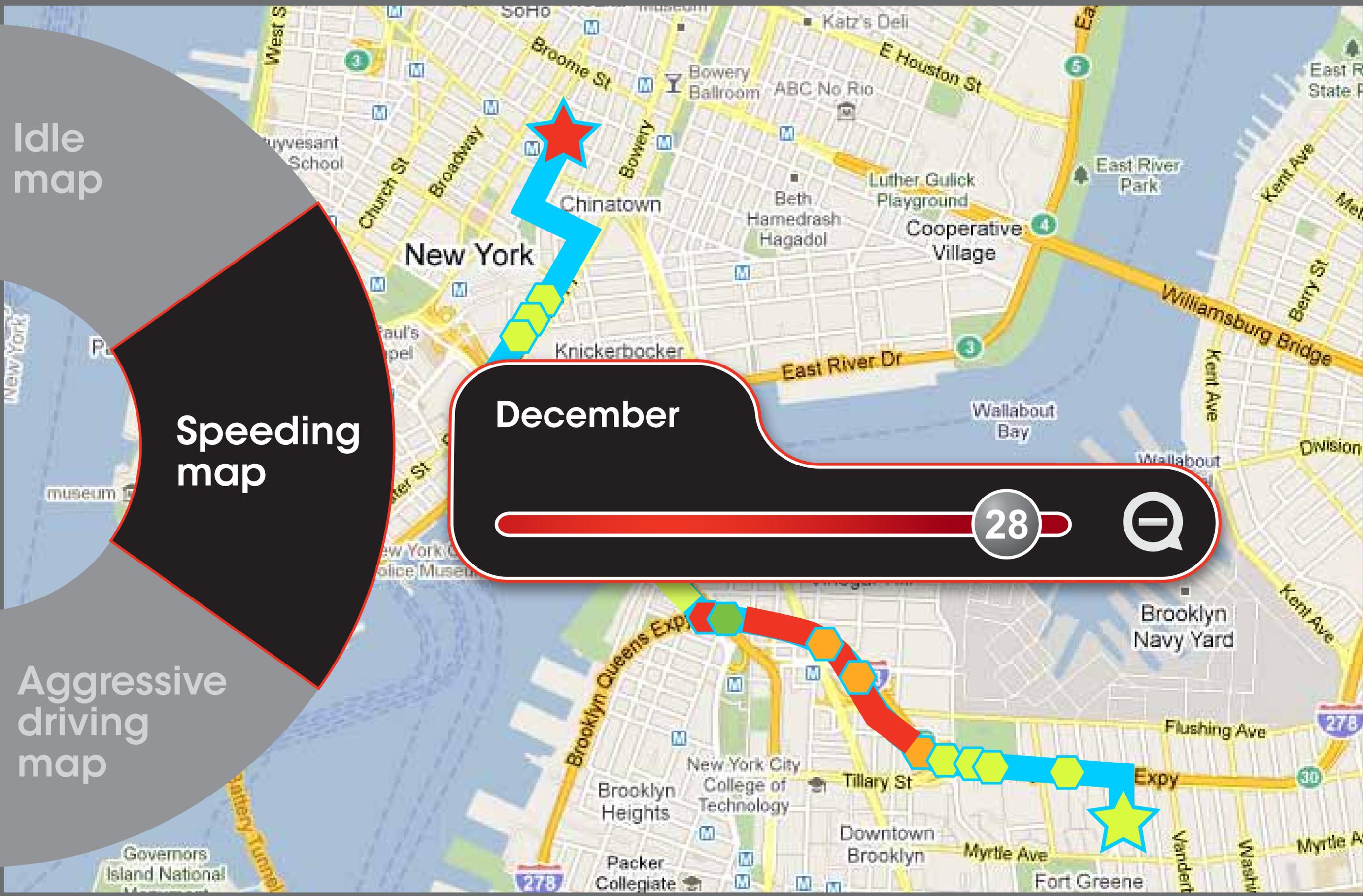
Reduce over speeding on highways and during the hours of 9 - 10 AM

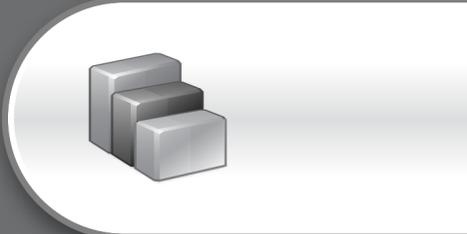
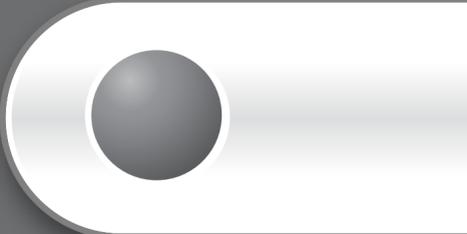
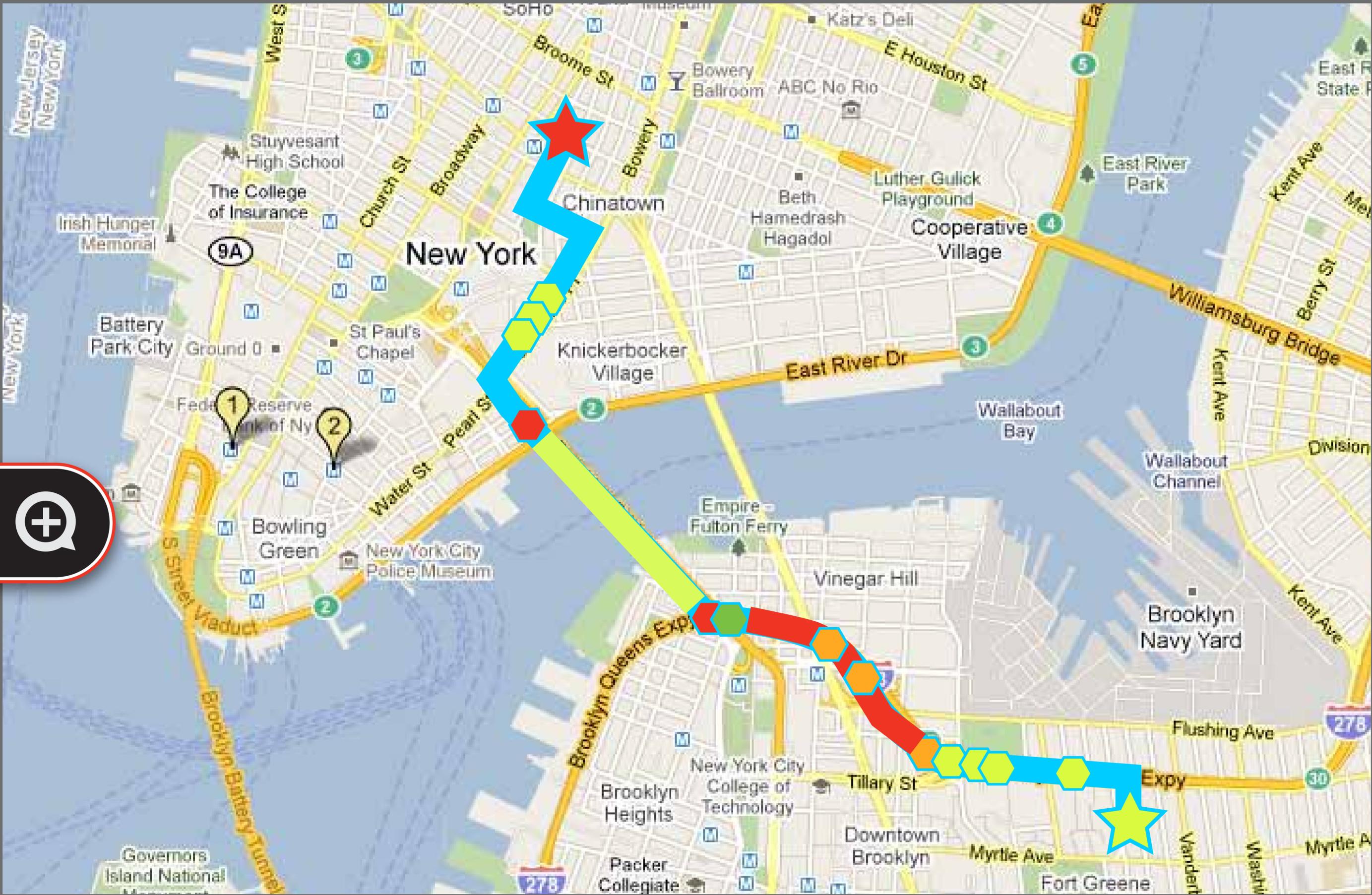


Idle map

Speeding map

Aggressive driving map







FHWA Value Pricing Pilot Program Proposal

Reference Document 7

TxDOT Letter of Commitment



Texas Department of Transportation

P.O. BOX 133067 • DALLAS, TEXAS 75313-3067 • (214) 320-6100
January 26, 2011

Mr. Victor M. Mendez
Administrator
Federal Highway Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Value Pricing Pilot (VPP) Program, Fiscal Years 2010 and 2011
Pay-As-You-Drive (PAYD) Insurance

Dear Mr. Mendez:

The Texas Department of Transportation (TxDOT) is aware of, and endorses, the enclosed application submitted by the North Central Texas Council of Governments (NCTCOG) in response to the Federal Highway Administration (FHWA) request for applications under the Value Pricing Pilot (VPP) Program Participation, Fiscal Years 2010 and 2011, advertised in the Federal Register Notice dated October 19, 2010.

Texas previously secured its slot as one of only fifteen states eligible for participation in the VPP Program; this proposed project will be one of the past, present and future VPP Program projects in Texas. We also acknowledge that the submitted application is a joint effort between NCTCOG, IVOX, Inc., and Delphi Automotive Systems, LLC.; and that TxDOT will act as the state agency for federal funding to pass through to NCTCOG.

It is our understanding that the proposed project is a unique study of Pay-As-You-Drive (PAYD) insurance in the Dallas-Fort Worth (DFW) ozone non-attainment area. It will combine incentivizing drivers to reduce vehicle miles traveled (VMT), as well as avoid areas of congestion through real-time driver feedback. This will be done through on-board data collection technology developed by IVOX and Delphi. Real-time feedback will help drivers be more proactive and adjust their behavior to maximize the benefits of mileage-based insurance premium incentives, as well as reduce congestion, improve driver safety, and reduce accident severity and frequency.

Although the proposal is being submitted by NCTCOG, we are in agreement that this proposed project is regional in scope and we are committed to working with NCTCOG to ensure successful implementation of the project, if selected.

Thank you in advance for your consideration of this project.

Sincerely,

William L. Hale, P.E.
Dallas District Engineer

THE TEXAS PLAN

REDUCE CONGESTION • ENHANCE SAFETY • EXPAND ECONOMIC OPPORTUNITY • IMPROVE AIR QUALITY
PRESERVE THE VALUE OF TRANSPORTATION ASSETS

An Equal Opportunity Employer



FHWA Value Pricing Pilot Program Proposal

Reference Document 8

IVOX Letter of Commitment



Ms. Amanda Brimmer

Senior Transportation Planner

NCTCOG

PO BOX 5888

Arlington, TX 76005

Dear Amanda

This letter will act as a notification of our commitment to support the grant application for Value Pricing Pilot Program Partnership defined by solicitation FR2010-26298.

We look forward to working with your team.

Best Regards,

Gregg Warren



FHWA Value Pricing Pilot Program Proposal

Reference Document 9

Delphi Letter of Commitment

DELPHI

Ms. Amanda Brimmer
Senior Transportation Planner
NCTCOG
PO BOX 5888
Arlington, TX 76005

February 16, 2011

Subject:

Value Pricing Pilot Program Participation FR2010-26298
Delphi's Letter of Support

This letter is written to notify you that Delphi Automotive Systems LLC (here below referred to as Delphi) is committed to supporting the North Central Texas Council of Governments (NCTCOG) for the implementation of the Value Pricing Pilot Program Participation defined by the Federal Highway Administration solicitation FR2010-26298.

Delphi's participation is defined under the terms of the attached proposal.

We hope that the decision makers will support the attached proposal, thereby enabling the State of Texas measure the benefits of the Pay As You Drive (PAYD) technology provided by Delphi, IVOX and Infinity Insurance Companies. Through its experience along with innovative features and specific business practices, the consortium is uniquely positioned for delivering tangible improvement in the fields of environmental sustainability, distributed equity, congestion reduction, and safety.

Sincerely,



Heri Rakouth, PhD-MBA
Manager, Technology Exploration
ITO (Innovation and Technology Office)



FHWA Value Pricing Pilot Program Proposal

Reference Document 10

Infinity Letter of Commitment



February 11, 2011

Mr. Gregg Warren
IVOX, Inc.
4333 Dunwoody Park, Suite 1210
Atlanta, GA 30338

R: FHWA Grant Proposal

Dear Mr. Warren:

Please include Infinity Insurance Company as your partner in the application for the FHWA Proposal. We look forward to working with you and the other partners on this project.

Sincerely,

A handwritten signature in black ink that reads 'James R. Gober'.

James R. Gober, CPCU
CEO and President
Infinity Property & Casualty Corporation