

BUDGET: Please summarize your budget request in the space provided. You should also provide a more detailed budget in your preproposal.	
Line Item	Requested Funds
Salaries and Benefits	N/A
Equipment	\$216,500.00
Other:	N/A
Total:	\$216,500.00
	\$11,000.00
Matching Funds	

Project Officer (Title, First, MI, Last, Suffix):		Todd V. Renshaw Chief of Police	
Phone—extension	972-292-6100	Fax	972-292-6071
Project Name		Hard NOX	
Location of Project		Counties of Collin and Denton, Frisco, Texas	
Project Start Date (MM/DD/YYYY)		10/01/09	
Project End Date (MM/DD/YYYY)		9/30/10	

Organization:	City of Frisco Police Department
Organization type:	Local Government/Law Enforcement
Organization Street Address:	7200 Stonebrook Parkway
City, State, Zip:	Frisco, Texas 75034

**Applicant Information Form**  
**Sue Pope North Texas Pollution Reduction Program**



**Downwinders**  
 reducing toxic air pollution in north texas  
*at risk*

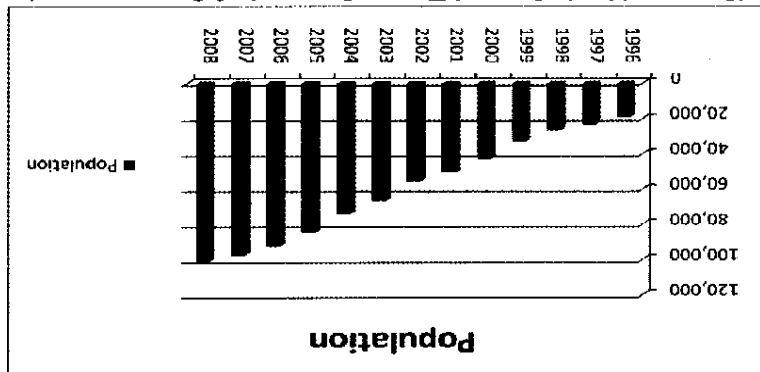
**Use this Page to Provide Us With Additional Information.**

Preproposals shall be no longer than five pages, and should include a description of the activities for which the applicant requests funding, the deliverables and environmental results, a detailed budget, and project timeline. Applicants should specifically address the two review criteria and identify the project activities that will address each of these criteria. All preproposals should also include the applicant information form (attached to this program announcement).

Please provide us with additional information regarding the project

**Achieving Key Reductions**

The City of Frisco is one of the fastest growing communities in Texas located within both Collin and Denton counties. Frisco shares both an urban and rural environment with two large epicenters, first is the retail district which includes the mall, convention center, minor league ballpark and hockey stadium, the second is the Downtown district which includes City Hall and the Pizza Hut Park (21,000 seat out-door stadium). The coming 2010 census will reveal that the population will have grown to well over 100,000 and quite diverse in its make-up. The City anticipates a build out of approximately 250,000 by 2030 within the 70 square mile city limits. The City is also a 501(c)(3) non-profit organization through the City of Frisco Charitable Foundation (EIN: 20-4669194).



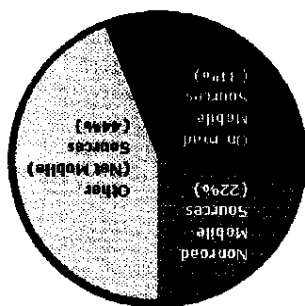
(Source: North Central Texas Council of Governments)

A population survey found that although Frisco has approximately 5,000 older residents (65 and over), Frisco is becoming a destination for older citizens because of our stable economy and low cost of living which attracts people on fixed-incomes and the retired. (Source: 2007 American Community Survey 1-Year Estimates, Frisco, Texas). According to the Frisco Independent School District current enrollment is 30,795 students, an increase of approximately 3500 students from last year. Projected enrollment for 2010-2011 is 44,000 and for 2015-2016 is 78,000. It is estimated that there are more children under the age of five currently living in Frisco than the entire number of current enrollees of the Frisco ISD. (Source: Frisco Independent School District)

The Frisco Police Department, like many law enforcement agencies, has had to make tough choices when it comes to purchasing vehicles for their use. Historically, it has always been a struggle for law enforcement agencies to weigh the benefits of fuel efficiency and environmentally friendly vehicles against the needs of the Department. By the very nature of the work, the typical police vehicle tends to be a large passenger car or SUV with a high horsepower engine. The police vehicle needs to be large enough to house the operator(s), prisoners, communications equipment, and all the utility items required for a first responder such as first aid kits, traffic cones, and officer safety equipment.

Traditionally, for the Frisco Police Department, these have been full-size Ford Crown Victorias (1988-2005) and Chevrolet Tahoees (2003-current) with V-8 engines. The idea being that the Police should have the ability to keep up with or overtake any vehicle it needs to catch or pursue. Unfortunately, this comes at a high price both environmentally and financially. High fuel costs and the resultant dirty air they produce are of deep concern to us and our community.

**Nitrogen Oxides**



(Source: U.S. EPA website: <http://www.epa.gov/otaq/inventory/overview/pollutants/nox.htm>)

As we know, Nitrogen Oxides form when fuel burns at high temperatures, such as in motor vehicle engines. Mobile sources are responsible for more than half of all nitrogen oxide emissions in the United States. Both on-road and nonroad mobile sources are major nitrogen oxide polluters. In the on-road category, Diesel-powered vehicles are the highest source (42%) of Nitrogen Oxides (NOx) and gasoline engines contribute the next highest (33%).

Nitrogen oxides can travel long distances, causing a variety of health and environmental problems in locations far from their emissions source. These problems include ozone and smog, which are created in the atmosphere from nitrogen oxides, hydrocarbons, and sunlight. On smoggy days, you might notice difficulty breathing or trouble seeing objects in the distance. Nitrogen oxide emissions also contribute to the formation of particulate matter through chemical reactions in the atmosphere.

The City of Frisco has always been a strong advocate for recycling and clean air and has its own Environmental Services Department which provides not only refuse collection but recycling services and an education program for schools, businesses, public and private institutions in an effort to reduce waste and emissions. The City supports this effort by legislating building codes to make homes and businesses more energy efficient and laws to prevent or reduce solid and liquid waste as well as mandatory recycling measures to help keep our city and all of North Texas cleaner. The City already operates several Hybrid Electric Vehicles (HEV) in its general fleet to reduce emissions and demand for gasoline.

We are one of the 16 counties within the North Central Texas Counsel of Government (NCTCOG). NCTCOG works in cooperation with federal, State, and local partners to ensure all air quality requirements are met. This is done through the Dallas/Fort Worth Clean Cities Initiative. The U.S. Environmental Protection Agency (EPA) designated these counties in North Central Texas as nonattainment for the pollutant ozone in accordance with the National Ambient Air Quality Standards (NAAQS). NCTCOG has been tasked with implementing the State Implementation Program (SIP) in our region which promotes, among other things, the use of vehicles that are lower-emitting than the average vehicle on the road today.

Unfortunately, with the current state of Electric Vehicle (EV) and Hybrid Electric Vehicles (HEV) research and development, it is clear that the use of HEVs and EVs are not appropriate for use in a pursuit law enforcement vehicle. By the very nature of patrol work, they would rarely be used on purely electric power and most hybrid versions of typical larger cars and SUVs get only slightly better fuel economy (2 mpg on average) than the standard versions. They do not have the necessary rapid acceleration and they have not been tested in pursuit applications to take in consideration the extra weight as it applies to rollover resistance or the safety of a

battery equipped vehicle in high-speed collisions. However, for general purpose use by uniformed and civilian employees, most would agree that a hybrid or electric vehicle is ideal.

The Toyota Prius HEV we propose using would be used primarily by plain clothes police officers and civilian investigative staff and support personnel. Due to our location in North Texas, the vehicles must be capable of long range travel anywhere within the state. As we look further into the application of alternate fuel vehicles, due to the relatively short maximum range of most electric vehicles currently on the market, it's clear the Hybrid Electric Vehicle would fit our needs and still provide a significant reduction in emissions as well as significant fossil fuel reductions.

We currently have more general purpose vehicles in our inventory than in our marked patrol vehicle fleet. If we were to replace that portion of our fleet with fuel efficient hybrid vehicles, we could greatly reduce toxic emissions, dependence on fossil fuels, reduce costs, and set a very visible example to the community that we take their environmental concerns seriously.

We currently have 20 Crown Victoria sedan general purpose vehicles (1988-2005) used by investigative and support personnel. According to the California Air Resources Board (CARB), the 2001 Ford Crown Victoria displaced 0.2 grams per mile (g/mi) of NOX, 0.9 g/mi of CO and 1.0 g/mi of Hydrocarbons. A Toyota Prius displaces .003 g/ml of NOX, .04 g/ml of CO, and <.001 of Hydrocarbons.

## Gas Mileage Impact Calculator

TOYOTA PRIUS 1.5L 4, auto CVT \$2.50/gallon 15000/year PZEV / Bin 3	FORD CROWN VICTORIA 4.6L 8, auto \$2.50/gallon 15000/year Bin 4	Estimated Annual Driving
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Emissions		
Gas Consumption	911 gallons	322 gallons
Gas Cost	\$2,276.79	\$804.69
Fuel Economy	16 mpg	47 mpg
Carbon Dioxide (greenhouse gas)		
Carbon Dioxide (greenhouse gas)	17,304 pounds	6,116 pounds
Carbon Monoxide (poisonous gas)		
Carbon Monoxide (poisonous gas)	235 pounds	169 pounds
Nitrogen Oxide (lung irritant and smog)		
Nitrogen Oxide (lung irritant and smog)	9 pounds	7 pounds
Particulate Matter (soot)		
Particulate Matter (soot)	255 grams	255 grams
Hydrocarbons (smog)		
Hydrocarbons (smog)	7 pounds	8 pounds

(Source: HybridCars website: <http://www.hybridcars.com/calculator/>)

We propose to replace the 10 oldest and dirtiest Crown Victorias in our fleet. If each vehicle is driven approximately 15,000 miles a year, individually the Ford Crown Victorias will not only contribute 9 pounds of NOX into the atmosphere each year, but over 17,500 lbs of other polluting gases while the Toyota Prius would only contribute 7 pounds of NOX and only a little less than 6,300 lbs. of pollutants into our atmosphere. If we continue using all 10 Crown Victorias, they will have contributed approximately 175,550 lbs or 88 tons of pollutants into the atmosphere compared to the Prius' 63,000 lbs or 31 tons of pollutants, a 64% reduction. A 22% reduction just in overall NOX emissions and a 2/3rds reduction in overall fuel consumption.

**Public Impact**

The purchase and operation of these HEVs would have a significant impact on our Department and our community. Cleaning up our environment is not only important in maintaining an exceptional quality of life for our current residents but for future generations of residents and visitors alike. We must make changes and improvements now to keep our city viable and to attract new residents, businesses, and to maintain our standing as a major tourist and entertainment destination. We can only do so if we make substantial infrastructure investments to reduce our dependence on foreign oil and mobile source air toxics to improve the health of our citizens and especially our youth. This award would help jump-start that effort.

Once these vehicles enter the fleet, we would also partner with our Environmental Services Department to make our vehicles available for any educational or display purposes. We hold two city-wide safety fairs each year as well as smaller outreach venues conducted through our Community Services Division. We will make the vehicles available for display to help educate and extol the benefits of using alternative fuel vehicles in our region.

If awarded this grant, the City of Frisco and the Frisco Police Department seek to do our share of reducing our NOx footprint by hundreds of pounds over the grant period and thousands of pounds over the life of the vehicles as well as other toxic air substances such as Volatile Organic Compounds (VOC), Carbon Monoxide (CO), Carbon Dioxide (CO<sub>2</sub>), Fine Particulate Matter (PM<sub>2.5</sub>), and known carcinogens such as Benzene.

**PROJECT OUTLINE**

Title	New/Existing Position (N or E)	Name	<u>EQUIPMENT PROJECTS: Who is project manager, role in purchase and implementation? What are qualifications of those using the equipment?</u>
Chief of Police	E	Todd V. Renshaw	Project Manager, bid, purchase vehicles, implement and monitor program, assure city procurement policies will be following in purchasing the equipment.
Services Bureau Commander	E	Greg Ward	Oversee program, monitor and assess vehicle effectiveness, report to Project Manager
Vehicle Operators	E	Licensed Police Officers and civilian staff	Operation of new vehicles. Each assigned operator will complete a survey on vehicle performance quarterly and submit to Services Bureau Commander for review.

**BUDGET OUTLINE**

During the grant period, the vehicles will be under manufacturer warranty for all mechanical and electrical repairs for up to 5 years and 60,000 miles. During the grant period, the City of Frisco will conduct routine maintenance and supply fuel and oil for the vehicles. At the end of the grant period, the vehicles will remain in the City's fleet and continue to operate with the Frisco Police Department. The operation of these vehicles will be sustained through the regular budget process for the life of the vehicles.

**BUDGET SUMMARY**

Line Item	Requested Funds	Matching Funds
Toyota Prius 4 dr HEV sedan	\$216,500.00	\$11,000.00 average per year for 10 vehicles In-kind fuel and maintenance
	(10 @ \$21,650.00 ea)	

Upon the awarding of this grant, the Chief of Police (Project Manager), or his designee will place the vehicles out to bid and purchase them within the first 30 days of the award. Within the first 60 days, a vendor will be identified and a purchase will be made. Within the first 90 days, the vehicles will be placed into service. Performance surveys will be conducted quarterly. At the end of the grant period, the Services Bureau Commander will submit a final report to the Chief of Police who will make recommendations and implement any changes or modifications that are needed.