

APPENDIX H

**LOCAL INITIATIVES SUBMITTED BY THE NORTH
CENTRAL TEXAS COUNCIL OF GOVERNMENTS**

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Appendix H: Local Initiatives Submitted by the North Central Texas Council of Governments

The North Central Texas Council of Governments (NCTCOG) has an assortment of locally implemented strategies in the Dallas-Fort Worth (DFW) area including projects, programs, partnerships, and policies. These programs are expected to be implemented in the ten-county nonattainment area by 2017. Due to the continued progress of these measures, additional air quality benefits will be gained and will further reduce precursors to ground-level ozone formation. The following is a summary of each strategy:

- Air Quality Public Education and Communication

As policies, projects, and programs are implemented to fulfill obligations required under the variety of air quality mandates such as the Federal Clean Air Act, National Ambient Air Quality Standards, State Implementation Plan, etc., communication efforts are strategically created and implemented to educate and inform the region on current air quality levels, associated impacts, funding opportunities, and new programs and/or policies. NCTCOG continues to promote air quality awareness throughout the North Texas region through campaigns such as Air North Texas. This campaign strives to create a unified message and brand related to air quality with regional partners; and to help guide direction, an Air Quality Public Relations Task Force was created in 2007. Also, the campaign strives to teach the general public about the health impacts of emissions and to encourage the use of voluntary measures that help reduce emissions such as, but not limited to, vehicle maintenance, combining errands, ridesharing, reducing idling, and by promoting existing NCTCOG emission reduction programs, like tryparkingit.com, AirCheckTexas Drive a Clean Machine, and Regional Smoking Vehicle Program (RSVP). Monthly emails, Clean Air Mails, which include sustainable clean air tips as well as air quality alerts, are sent to those participating in the campaign. Also, the campaign provides a Website with information on air quality programs and facts, as well as resources, and educational and advertising resources for partners. The campaign may also include community events around North Texas, radio and TV public service announcements, online and print advertising, social media, resources for children, and an awareness day on the first Friday of summer entitled Clean Air Action Day where North Texans are asked to do at least one new practice that can improve air quality such as taking transit or bringing their lunch to work. The goal is for residents to see how easy these lifestyle changes can be and incorporate them into their daily lives or, at the very least, during ozone season. Through Air North Texas and its partners, education to the business community on how to reduce their impact on air quality through their practices and operations continues to be provided.

Additionally, the program promotes the use of clean vehicle technologies and fuels, as well as idle reduction and fuel economy practices via the Dallas-Fort Worth Clean Cities (DFWCC) Coalition. DFWCC is a locally based, public/private partnership that seeks to advance energy security, protect environmental and public health, and stimulate economic development by promoting practices and decisions to reduce petroleum consumption and improve air quality, primarily in the transportation sector. DFWCC provides education and technical guidance on federal, state, and NCTCOG clean cities projects and programs through quarterly meetings; workshops/events; videos; development of educational pieces and awareness campaigns; outreach at community, environmental, and fleet geared events; monthly electronic newsletters, DFWCC Newsflash; emails; and the DFWCC Website at www.dfwcleancities.org.

- Bicycle/Pedestrian Projects

Projects to create and/or enhance bicycle/pedestrian pathways throughout the region extending and completing the region's roadway and passenger rail transit network to link individuals to alternative methods of transportation other than driving a vehicle. By doing so, the automobile emissions that would otherwise be released from the automobile are removed completely. In the North Central Texas region, the Veloweb and Community Paths are designed for use by bicyclists, pedestrians, and other non-motorized forms of active transportation. In addition to these, on-street bikeways also serve as another form of active transportation. Accounting existing and future projects, NCTCOG has identified 1,842 miles of Veloweb; 2,319 miles of community paths; and 2,656 miles of on-street projects serving the ten-county nonattainment area.

- Clean Construction Demonstration Project

NCTCOG has drafted a model Clean Construction Specification that can be used to establish emissions-based requirements for equipment in use on certain projects. The specification requires certain operational practices such as limits on idling, and also stipulates that equipment meet specific emissions standards. NCTCOG plans to engage local governments in incorporating the Clean Construction Specification on public-sector construction contracts to reduce emissions.

- Clean Fleet Policy

NCTCOG finalized a model Clean Fleet Vehicle Policy in 2005 that included guidance and best practices for vehicle acquisitions, maintenance, and operations, and provided for an annual reporting element to monitor fleet activities. As of the end of 2013, 104 entities had adopted this policy across the region. Due to changes in vehicle technologies and a desire to capture more comprehensive air quality goals, NCTCOG staff revised the policy and received Regional Transportation Council (RTC) approval of the new version in December 2014. This updated policy continues to focus on activities that reduce emissions of ozone precursors, but specifically calls out volatile organic compounds (VOC) in addition to oxides of nitrogen (NO_x) emissions. Policy elements also include idle reduction measures and a commitment to partner with NCTCOG, DFW Clean Cities, and peer fleets to leverage resources. As of March 2016, 56 entities have adopted the revised policy. NCTCOG will continue to promote adoption of the updated policy across the region, as well as continue to include the policy as either an eligibility criterion or evaluation measure in various funding programs.

- Congestion Management Process

The Congestion Management Process (CMP) provides for the effective management of new and existing transportation facilities through development and implementation of operational and travel demand management strategies, and by providing information to decision makers on system performance and the effectiveness of implemented strategies. Although major capital investments are still needed to meet the growing travel demand, the CMP also develops lower cost strategies that complement capital investment recommendations. The result is more efficient and effective transportation systems, increased mobility, and a leveraging of resources.

- Engine Off North Texas

The Engine Off North Texas Program is designed to reduce emissions by reducing vehicle idling. Efforts focus on improving public awareness of idle-reduction technologies, regulatory options, and campaign strategies organizations can use to reduce idling from various vehicle types. As part of this program, NCTCOG promotes adoption of the State Idling Rule (TAC 114.512). To date, 30 entities (4 counties and 26 municipalities) have adopted Locally Enforced Idling Restrictions and signed a memorandum of agreement with the Texas Commission on Environmental Quality (TCEQ) to enforce this rule at the local level, covering over 50 percent of the region (by population). NCTCOG will continue to promote adoption, education, and enforcement of idling restrictions throughout the region, along with broader idle-reduction strategies.

- Electric Vehicles North Texas

The Electric Vehicles North Texas (EVNT) Program was originally created to coordinate a partnership and develop a plan to enhance the implementation of recharging infrastructure and purchase of vehicles. Stakeholders include a variety of interests, including utility companies, fleets, local businesses, plug-in electric vehicle (PEV) manufacturers, recharging infrastructure producers, and interest groups. Through the early work of this initiative, the DFW area was a target market for early deployment of electric vehicle supply equipment (EVSE) and now has a robust infrastructure of nearly 300 public-access recharging facilities. Approximately 2,700 EVs were registered in the DFW area as of March 2016, and the number of registered EVs is expected to continue to steadily climb. These vehicles achieve real-world emissions reductions as compared to the on-road emissions inventory because currently, all vehicles are modeled as either gasoline or diesel, based upon Texas Department of Motor Vehicle registration data. This means that the current on-road emissions inventory does not reflect the market penetration of zero-emission vehicles. Through EVNT, NCTCOG will continue to promote EVSE infrastructure and will pursue activities to increase the adoption of EVs, including development of consumer awareness materials and outreach, fostering of partnerships and education with vehicle dealers, promotion of workplace charging, and evaluation of infrastructure permitting processes.

- Freeway and Arterial Bottleneck Removal

Bottleneck removal strategies are low cost, quickly implementable solutions to improve locations of isolated congestion. These types of strategies include adding travel lanes, restriping merging or diverging areas, reducing lane or shoulder widths to add a travel and/or auxiliary lane, providing bypass routes, modifying weave patterns, metering or closing entrance ramps, improving traffic signal timing on arterials, and implementing high occupancy vehicle or managed lanes. Regional transportation providers coordinate with local governments in the identification and mitigation of bottlenecks. Corridor studies and sub-regional traffic management teams are forums to identify potential bottleneck locations and recommendations for improvements.

- Grade Separation Projects

Idling time that would otherwise be created by intersection blockage is eliminated by separating a road or railroad track from a crossroad. With this elimination of idling, grade separations increase the efficiency of traffic flow, thereby improving travel time and minimizing delay. Thus, vehicle emissions and fuel consumption are reduced. Accounting existing and future projects, NCTCOG has

identified 98 locations in the ten-county nonattainment area. Since these projects are included in the DFW regional travel model, benefits from these projects are already accounted for in the on-road mobile source emission inventories.

- High-Emitting Vehicle Program

The High-Emitting Vehicle Program (HEVP) conducts regional programs in an effort to reduce emissions from on-road mobile sources. These initiatives focus on public awareness and enforcement of emissions standards. Identifying high-emitting vehicles and encouraging drivers to address emissions problems that may develop in the period between annual emissions inspections helps the highest polluting vehicles be repaired or replaced sooner. The following list outlines specific programs/projects under the HEVP umbrella program.

- Diesel Inspection and Maintenance (I/M) Pilot Program

In North Central Texas, approximately 41 percent of on-road emissions of NO_x are attributable to heavy-duty diesel vehicles, yet these vehicles are excluded from the state's I/M Program. To evaluate the feasibility of incorporating diesel vehicles into the I/M Program, NCTCOG partnered with the Texas Department of Transportation (TxDOT), Texas A&M Transportation Institute (TTI), the Texas Department of Public Safety (DPS), and the University of Denver to test a prototype of a new emissions testing technology called the Streamlined Heavy-Duty Emissions Determination (SHED).

In June 2012, a prototype of the SHED was constructed at the New Waverly Weigh Station along IH 45, and successfully deployed for the Pilot Program. Emissions data from nearly 1,500 heavy-duty diesel vehicles (HDDV) were collected during a two-week testing period. SHED data was validated by comparing readings to a control group of ten HDDVs for which emissions data was also evaluated utilizing a Portable Emissions Measurement System (PEMS). The data from the SHED compared favorably with the PEMS readings, clearly demonstrating that this technology is a viable option to be considered for emissions testing of HDDVs, and potentially other types of non-on board diagnostics compliant vehicles. Data suggested the presence of high-emitting vehicles. Additional studies aimed at identifying high-emitting diesel vehicles and the feasibility of repairing such vehicles are anticipated.

In July 2015, NCTCOG and TTI signed an agreement to conduct a second study further testing the On-Road Heavy-Duty Emissions Measurement System (OHMS), which was previously known as SHED. This study has two main objectives, the first of which is to refine the OHMS design and investigate other technologies that can be logically integrated with the OHMS setup for enhanced measurement capabilities. The second objective is to deploy the improved design at a selected location through a field test, where real-world data will be collected and final enhancements to the system can be identified. This study is expected to be fully completed in January 2017.

- North Texas Car Care Clinics

To aid motorists in understanding the basics of how to care for a car, in 2013, NCTCOG began partnering with automotive repair shops throughout the North Central Texas region to host free Car Care Clinics. NCTCOG is particularly focused on working with repair facilities to help

address check engine light issues and assist motorists in identifying the cause. Vehicles with check engine lights illuminated have malfunctioning emissions control systems, so targeting these vehicles for diagnosis and repair leads to greater air quality benefits for the region. As part of this effort, NCTCOG developed marketing and outreach materials for participating facilities and promoted the clinics through various outreach events and publications.

- o Regional Emissions Enforcement Program

The Regional Emissions Enforcement Program (REEP) was developed to help identify and remove high-emitting vehicles from roadways with counterfeit, expired, fictitious, fraudulent, improper, and stolen state inspection and registration certificates. REEP takes a four-pronged approach including: conducting covert operations on state vehicle emissions inspection stations to identify and prosecute inspectors performing improper inspections, finding and prosecuting dealers and manufacturers of fictitious or counterfeit vehicle inspection reports, investigating and pursuing civil litigation against car dealers selling improperly inspected vehicles, and on-road emissions enforcement of vehicles traveling in our region. Also as part of this collaborative effort, NCTCOG developed the NCTCOG Emissions Database (NED) in coordination with the Texas Commission on Environmental Quality (TCEQ) and the Texas DPS to allow law enforcement 24/7 access to emissions inspection data to aid in the enforcement of the State I/M Program. This program has been highly utilized and has become a valuable tool to law enforcement in their efforts to build a case against stations performing illegal activity related to vehicles emissions testing.

As noted elsewhere, NCTCOG is planning to enhance Regional Emissions Enforcement Programs to include other enforcement-related projects including truck lane restrictions and idling restrictions.

- o Regional Smoking Vehicle Program

The North Central Texas Regional Smoking Vehicle Program (RSVP) is designed to encourage North Texans to voluntarily maintain and repair their vehicles and to promote public awareness regarding the harmful emissions and air pollution caused by smoking vehicles. By utilizing the existing AirCheckTexas Drive a Clean Machine Program infrastructure, the incorporation of RSVP encourages greater participation by providing local solutions to vehicle owners. Vehicles reported through this program are also logged in NED for law enforcement to cross-check when citing motorists for an emissions related offense.

- High Occupancy Vehicle/Managed Lanes

High occupancy vehicle (HOV) projects promote carpooling; thereby, removing single occupancy vehicles and associated emissions released from the vehicle tailpipe. The increase in flow of HOV lanes offers incentive for drivers to carpool. Accounting existing and future projects, NCTCOG has identified 375 total lane miles of either HOV or managed lane projects in the ten-county nonattainment area. Since these projects are included in the DFW regional travel model, benefits from these projects are already accounted for in the on-road mobile source emission inventories.

- Intelligent Transportation System

The Intelligent Transportation System (ITS) improves traffic speeds and reduces idling time through advanced traffic control systems and more efficient incident and corridor management. ITS also combines the strengths of regional transportation planning models and traffic simulation models with overall transportation management strategies. Examples of ITS projects include transportation management centers, dynamic message signs, vehicle detectors, integration of systems, and closed circuit television cameras. According to the Fort Worth Regional and Dallas Area Wide ITS Plans, transportation system capacity significantly increases by implementing these types of transportation management strategies, thereby enhancing the overall efficiency of the entire transportation system. In addition, benefits include fuel savings and air pollution reduction, safer streets and highways, and reductions in maintenance costs. Together with transit agencies, local governments, TxDOT, etc., the DFW metropolitan area is currently involved in the planning, programming, and implementation of ITS programs and projects. Using the National ITS Architecture as a model, the region has and continues to define a Regional ITS Architecture to guide future deployment and to build consensus for multi-agency systems integration. NCTCOG has identified 62 percent (Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise counties) and 88 percent (Collin, Dallas, Denton, and Tarrant counties) of ITS coverage within the region.

- Intersection Improvement Projects

Improvements to intersections including left and/or right turn lanes decrease the amount of time automobiles are left idling at intersections. This decrease in idling reduces fuel consumption and vehicle emissions. Accounting for existing and future projects, NCTCOG has identified 1,351 locations in the ten-county nonattainment area.

- North Texas Optimization of Airspace and Procedures in the Metroplex

The Next Generation Air Transportation System represents an important and long-term change in the management and operation of the national air transportation system. This is a comprehensive initiative that involves the development of new technologies such as satellite navigation and control of aircraft, advanced digital communications, and enhanced connectivity between all components of the national air transportation system. In order to continue to implement this concept, the Federal Aviation Administration is preparing an Environmental Assessment to document the potential environmental effects associated with the optimization of aircraft routes and the supporting airspace management structure serving aircraft operating in the North Texas Metroplex area. The objective of the North Texas Optimization of Airspace and Procedures in the Metroplex (OAPM) project in the North Texas Metroplex is to optimize aircraft arrival and departure procedures at 11 area airports, including the two largest commercial service airports, Dallas/Fort Worth International Airport and Dallas Love Field Airport. For purposes of the OAPM Program, a “metroplex” is a major metropolitan area with multiple airports where air traffic congestion, airport activity in close geographical proximity, and other limiting factors combine to reduce efficient aircraft movement. The project proposal includes changing aircraft flight paths and altitudes over some areas of the North Texas Metroplex, but it would not require ground disturbance of any kind such as construction, nor would it increase the overall number of aircraft operations within North Texas airspace. The Proposed Action, when compared to the No Action Alternative, would result in a decrease in emissions due to a reduction in fuel burn.

- Park-and-Ride Projects

Park-and-ride facilities promote carpooling and vanpooling. With each occupied parking space at these locations, it can be assumed that the otherwise additional “running” emissions from each parked vehicle are eliminated. Park-and-ride lots that also serve as transit stations are not accounted for in this category as it is assumed the majority of these park and ride lots contain transit riders, which are then captured in Rail Transit Projects. NCTCOG has identified 30,135 parking spaces contained in park-and-ride projects that are complete and open to the public. Park-and-ride facilities that are part of existing transit stations are included in the DFW regional travel model, so benefits from these projects are already accounted for in the on-road mobile source emission inventories.

- Pay-As-You-Drive Automobile Insurance Pilot Program

Pay-As-You-Drive (PAYD) Insurance is a mileage-based vehicle insurance program. This program permits drivers to pay automobile premiums on a variable scale, dependent upon how much they drive each vehicle. Since the cost of coverage is directly tied to use of the vehicles, PAYD insurance is a strong incentive to drive less and, thereby, pollute less. This strategy compliments current RTC efforts not only to reduce vehicle miles traveled, but also to promote the concept of sustainable development throughout the region. NCTCOG will continue to promote mileage-based insurance throughout the region in an effort to increase the availability of PAYD to Texas drivers.

- Rail Transit Projects

Rail projects involve implementation of new or expanded transit services or facilities. The improvements may be accomplished for all transit modes such as buses, rail, and paratransit. The three main components of improved transit are: system/service expansion projects, system/service operational improvements, and inducements. By improving regional transit systems, an increase in opportunity is created for new passengers, as well as an increase in air quality benefits. Accounting for existing and future projects, NCTCOG has identified 293 miles of rail projects in the ten-county nonattainment area. Since these projects are included in the DFW regional travel model, benefits from these projects are already accounted for in the on-road mobile source emission inventories.

- Saving Money and Reducing Truck Emissions

The Saving Money and Reducing Truck Emissions (SMARTE) Program aims to improve industry awareness of freight traffic effects on air quality, promote the use of SmartWay®-verified technologies, and encourage industry-specific best practices in the freight industry. The initiative includes focus on idle reduction, emission reduction, and fuel saving strategies in the heavy-duty trucking industry. SMARTE Program representatives educate drivers and fleet managers through public interaction and engagement in the field to ensure a large audience is reached, with an emphasis on small fleets and owner-operators who typically lack staff needed to identify fuel-efficient and cost-saving techniques on their own. SMARTE representatives provide informational materials on a variety of NCTCOG initiatives suitable for the trucking industry, including DFWCC, the Clean Fleet Policy, the Environmental Protection Agency (EPA) SmartWay Transport

Partnership and SmartWay-verified technologies, and information on relevant funding opportunities to provide financial assistance with obtaining capital-intensive items.

- Short-Term Vehicle Demonstration Program

Research in the DFW region shows that short-term hire vehicles like rental cars have higher-than-average vehicle miles traveled per year, as do some automotive shop loaner cars and company lease vehicles. In addition to providing opportunities to efficiently address emissions, these vehicles provide opportunities for users to experience different types of vehicles in low-risk, extended trial situations. For these reasons, NCTCOG is looking to administer a Short-Term Vehicle Demonstration Program, possibly branded as “Green and Go”, to encourage and facilitate opportunities for short-term hire or loan of low-emission vehicles, including alternative fuel and advanced technology vehicles. An education and outreach component will communicate the benefits of loaning low-emission vehicles to tourists, travelers, regional residents, and businesses through participatory events, strategic message design disseminated through bought and earned media, and/or financial incentives.

- SmartWay Transport Partnership

The EPA SmartWay Transport Partnership (SmartWay), established in 2004, is a voluntary, public-private partnership with the ground freight industry designed to reduce emissions, reduce fuel consumption, and increase energy efficiency among the freight transportation sector. NCTCOG joined the SmartWay Transport Partnership as an Affiliate in 2006. In this role, NCTCOG has committed to outreach and education efforts related to the program in the DFW area. In addition, NCTCOG will pursue opportunities to implement projects that increase use of verified SmartWay technologies, including idle reduction and fuel saving activities. In 2009, NCTCOG received EPA National Clean Diesel Funding Assistance Program grant funds under the American Recovery and Reinvestment Act for a SmartWay Technology Upgrade Project. NCTCOG subgranted approximately \$1.4 million to six sector companies to purchase and install SmartWay technologies on Class 8 HDDVs, including APUs for 73 trucks, low rolling resistance tires for 77 tractors and 69 trailers, trailer side skirts for 185 trailers, and cetane enhancers for at least 100 trucks. NCTCOG will continue to pursue implementation of projects which address the goals of the SmartWay Transport Partnership.

- Solar

Increased adoption of solar technologies, at both the rooftop and industrial scale, is a critical step towards reducing harmful emissions resulting from electric generating units (EGU). For North Central Texas in particular, solar is key to avoiding increases in EGU emissions in the face of a growing population. To increase solar deployment across Texas, NCTCOG is engaged in two grants to increase knowledge of and familiarity with solar options, dispel myths, and provide planning and governance resources to stakeholders ranging from residents to public officials to utilities.

The first solar project NCTCOG launched was called Solar Ready II (SRII), which was administered in partnership with the National Association of Regional Councils, the Mid-America Regional Council, Meister Consultants Group, Inc., and Council of State Governments. This project is part of the US Department of Energy SunShot Initiative Rooftop Solar Challenge. Through this effort, NCTCOG has conducted outreach to local governments across the region to complete

questionnaires about existing solar practices, select solar Best Management Practices (BMP), and commit to evaluating existing processes and implementing selected BMPs. Ultimately, the goal is to streamline local regulatory processes, increasing the magnitude and rate of solar installations. As of March 2016, this project has successfully encouraged participation from 33 local governments by developing a Regional Solar Permitting Checklist, an Expedited Permit Checklist, and model Pre-Qualified Electrical Plans, as well as building a solar information clearinghouse, and streamlining solar processes. Multiple trainings were held for inspectors, installers, and first responders, in an effort to improve understanding of solar technologies.

The success of the SRII initiative led to a grant award from the Texas State Energy Conservation Office (SECO) to expand the SRII model and make it available to the other regions throughout the state. Deliverables and resources associated with this grant are being developed in consultation with other Texas Councils of Governments, as well as North Central Texas area regional stakeholders, in order to ensure relevance and utility beyond the NCTCOG service area. The project will continue to focus on expanding access to solar energy. Major tasks underway include: 1) developing and distributing solar ordinance guidelines and an expedited permit checklist; 2) performing outreach to niche solar markets; 3) arranging solar training opportunities; 4) developing and distributing solar 101 toolkits; 5) completing solar applications cost-benefit analyses, and 6) completing a Go Solar Texas Website to serve as a solar information clearinghouse.

Stakeholders engaged in these initiatives have conducted region-specific research and estimated that total installed solar capacity in the ten-county DFW ozone nonattainment area was approximately 43,626 kW as of early 2016. As installed solar capacity continues to increase, additional emissions reductions will be gained through reduced demand on conventional electric generating units.

- Sustainable Development

The promotion of livable communities supporting sustainability and economic vitality has become the objective of the North Central Texas region because of the interconnections between land use, transportation, economy, environmental quality, and livability. Sustainable development is utilized as a tool to help meet the coordination between land use, transportation, and improvement of air quality. Numerous studies have shown a reduction in vehicle miles traveled (VMT) due to higher density, mixed use, infill, or transit-oriented development (TOD) connected by alternative modes of transportation and pedestrian improvements due to the reduction in need for automobile usage to access various uses. As a result, transportation strategies and projects must be responsive to regional trends in economic expansion, population growth, development, quality of life, public health, and the environment in order to provide mobility and prevent the continued decline of the region's air quality status. The RTC has adopted a variety of strategies and policies to ensure the development of transportation plans, programs, and projects which promote air quality improvements through sustainable development. These strategies are designed to 1) respond to local initiatives for town centers, mixed-use growth centers, transit-oriented developments, infill/brownfield developments and pedestrian-oriented projects; 2) complement rail investments with coordinated investments in park and ride, and bicycle and pedestrian facilities, and 3) reduce the growth in VMT per person. The shift toward alternative modes of transportation and lower VMT will lead to reduced transportation-related emissions and improved public health and quality of life.

NCTCOG's Sustainable Development Funding Program was created by the RTC to encourage public/private partnerships positively addressing existing transportation system capacity, rail access, air quality concerns, and/or mixed land uses. By allocating transportation funds to land use projects promoting alternative transportation modes or reduced automobile use, NCTCOG and its regional partners are working to address escalating air quality, congestion, and quality of life issues. Three Calls for Projects were conducted in 2001, 2005-2006, and 2009-2010, and \$157.5 million was programmed by the RTC, which includes \$126 million of direct funds plus matching funds of \$31.5 million from local governments to 100 projects. The funded sustainable development projects include infrastructure, landbanking, and planning projects. The TOD Implementation Group funded under the 2005-2006 Sustainable Development Call for Projects is continuing to offer NCTCOG planning assistance to 52 projects that focus on transit-oriented development. NCTCOG staff worked with local governments and Independent School Districts (ISD) to promote efficient school siting and multimodal transportation connections around school locations. As pilot projects, staff coordinated with the City of McKinney and McKinney ISD to develop a white paper addressing school siting. NCTCOG staff provided technical assistance to the City of Denton and funded sidewalks connecting to school locations in Denton ISD. Staff will continue to coordinate and fund school siting and transportation projects in partnership with other local governments and ISDs in the region. Staff provided technical assistance to local governments related to corridor planning projects. Technical assistance was provided for a preliminary review of existing land uses, bike and pedestrian facilities, and a traffic flow analysis for the SH 26 corridor. Meetings were held with the City of Colleyville and TxDOT staff to present the results of the assessment and to coordinate next steps to promote context sensitive design and bike and pedestrian friendly development near the Colleyville Town Center. Staff will continue to provide technical assistance to local governments on other land use-transportation projects in the region.

- Technology Improvements

NCTCOG continues to offer programs providing financial assistance for projects that reduce emissions from on-road vehicles and non-road equipment through purchase, replacement, repower, or conversion activities. Programs and projects are widely varied, including both public and private fleets, different target fleet sectors (such as school buses, regulated fleets such as taxicabs, freight vehicles, etc.) and a range of vehicle/equipment/technology types, including light- and heavy-duty vehicles, non-road construction equipment, locomotives, on-board and on-site idle reduction technologies, and alternative fuel conversions and refueling infrastructure. NCTCOG will continue to seek opportunities to provide financial assistance for projects that achieve NO_x emissions reductions. The following list outlines specific programs/projects funded to date and anticipated results by 2017.

- American Recovery and Reinvestment Act On-Road Heavy-Duty Diesel Replacement and Repower Project (\$2,144,765)

This project, which was funded by EPA dollars, facilitated replacement of 101 heavy-duty diesel vehicles.

- Clean Construction Equipment Upgrade Project (\$1,235,483)

Construction equipment projects were the focus of two funding programs: the Heavy-Duty Vehicle and Equipment Grant Program and North Central Texas Clean Construction Equipment 2011 Call for Projects. Between these two programs, EPA funding was used to facilitate 20 construction equipment replacement activities.

- Clean Fleets North Texas: Recovery Act Project (\$2,397,907)

Through this project, State Energy Conservation Office funds were used to facilitate 142 alternative fuel or advanced technology vehicle activities, many of which yield NO_x reductions. Completed activities included upgrade of ten alternative refueling stations (one biodiesel, one electric vehicle recharging, and eight propane facilities), purchase of 15 compressed natural gas (CNG) vehicles, purchase of 15 hybrid-electric vehicles, lease of four plug-in hybrid-electric vehicles (PHEVs), and conversion of 98 vehicles to alternative fuels (55 propane, 40 CNG, and three PHEV conversions).

- Clean School Bus Program and Call for Projects (\$3,300,000)

To date, over \$2.3 million has been awarded through Call for Projects through the North Central Texas Clean School Bus Program to replace and repower 76 older, high-emitting school buses with cleaner technology. A majority of funds comes from federal funding sources, with a small percent of funds coming in the form of Supplemental Environmental Project Program fines and local contributions. Eligible entities include schools, school districts, and school bus operators that travel within the 16-county NCTCOG service area. An additional \$1 million is anticipated to be awarded by 2017 to implement similar projects.

- Diesel Idling Reduction Program (\$1,508,190)

Through the Diesel Idling Reduction Program, NCTCOG works to provide opportunities for investment in technological solutions to address idling. Funds have been awarded using both EPA and Congestion Mitigation and Air Quality Improvement Program funding sources and, to date, have aided completion of both on-board and on-site idle reduction activities. As of March 2015, EPA-verified electrified parking space technology is installed at 140 parking spaces at four truck stops and one trucking terminal, remote power pole power is provided for five emergency response vehicles, two hybrid trucks are deployed to reduce idling through use of battery power during power take-off operation, and 147 auxiliary power units (APU) are installed on heavy-duty diesel trucks. Electrified parking spaces will be installed at another 80 parking spaces at four trucking terminals by the end of 2016.

- North Central Texas Alternative Fuel and Advanced Technology Investments Project (\$12,548,772)

Funds received from the Department of Energy (DOE) were awarded to partner entities for implementation of alternative fuel and advanced technology vehicle or infrastructure activities, including biodiesel, ethanol, CNG (stations and vehicles), electricity (recharging sites, electric vehicles, neighborhood electric vehicles, hybrid electric vehicles, and a PHEV).

In total, 290 vehicles and 11 refueling stations were deployed across 17 fleets, including cities, ISDs, a major commercial airport, private sector fleets, and a faith-based nonprofit.

- Traffic Signal Improvements

The DFW Metropolitan Area is involved in the planning, programming, and implementation of traffic signal improvement programs and projects. Arterial congestion accounts for 35 percent of the total congestion in the region, in turn adding emissions due to inefficient traffic patterns and unnecessary idling. Traffic signal improvements such as signal retiming and signal coordination can enhance traffic flow and help decrease vehicular emissions. Emphasis of the traffic signal improvement program in the North Central Texas region is placed upon major arterial corridors, where synchronizing a succession of traffic signals to operate as a continuous system has a great impact on a large volume of traffic. These improvements result in a more consistent travel speed and reduced delay, which decreases vehicular emissions due to minimizing frequent starts, stops, and unnecessary idling. Inventorying existing and future projects, NCTCOG has identified, through the Regional Traffic Signal Retiming Program, 1,793 locations with the potential for traffic signal improvements in the ten-county nonattainment area. Additionally, NCTCOG will pursue funding sources and opportunities for other signal improvements.

- Transportation Safety Program

The Transportation Safety Program focuses on improving traffic safety throughout the region by supporting planning efforts to develop safety policies, programs, and projects. NCTCOG provides freeway incident management training to support the region's Mobility Assistance Patrols. This program, which increases safety, simultaneously reduces non-recurrent congestion due to accidents. Complementing the freeway incident management training, NCTCOG also offers Photogrammetry Training to assist with the accident reconstruction and forensic measurements. NCTCOG is currently working to implement the Dallas-Fort Worth Regional Safety Information System to help identify motor vehicle crash "hot spots".

- Truck Lane Restriction Program

A pilot study to improve operational efficiency and highway safety was conducted to study the effects of restricting trucks with three or more axles from using the left lane on controlled access, state-system facilities with three or more lanes in each direction. Truck lane restrictions were implemented on segments of IH 20 and IH 30 in the DFW region from August 2005 through January 2006. Results showed truck lane restrictions effectively controlled trucks from using the left lane, slightly reduced truck speeds, increased safety by reducing truck versus car conflicts, thus reducing ozone precursor emissions.

In 2012, TxDOT requested all eligible corridors without truck lane restrictions within the state have the restrictions implemented where appropriate and feasible. Within the region, this included additional sections of IH 20, IH 30, IH 45, IH 820, as well as new corridors, including portions of IH 35E, IH 35W, IH 635, US Highway 75, US Highway 175, SH 114, SH 121, SH 360, and Loop 12. Once the full implementation of these additional corridors is complete, there will be a total of 513 miles of truck lane restrictions within the region. While the number of remaining eligible corridors is small, additional restrictions will be implemented along these corridors in the future.

- Vanpool Projects

Vanpool projects include a group of six to 15 commuters who travel to and from the same area, have similar work hours, share the costs of operating the van, and usually meet at a centralized location such as a park-and-ride lot. By consolidating travelers into one vehicle, these projects reduce air pollution, reduce traffic congestion, and help conserve fuel. Including existing and future projects, NCTCOG identified 385 vanpools serving the ten-county nonattainment area.