

Hood County, Texas Path Forward

Ozone Advance Program

6/21/2013

Hood County Clean Air Coalition

www.granburyedc.com/cleanair

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1. Introduction

Ozone Advance is an expansion of the U.S. Environmental Protection Agency's (EPA's) cooperative efforts with states, tribes, and local governments to encourage actions that result in reduced ozone formative emissions to enable continued compliance in meeting the National Ambient Air Quality Standard (NAAQS) for ozone. This program targets areas that have ambient ozone levels close to the NAAQS and are at risk of violating the standard. It acts to assist in efforts to reduce air pollution, ensure continued healthy air quality levels, avoid NAAQS violations, and increase public awareness regarding ground level ozone as an air pollutant. As part of the Ozone Advance program a "path forward letter" is submitted to the EPA program contact that describes measures and/or programs that the area will implement to try to meet the program goals along with a schedule for implementation of each (EPA, 2012a).

Ozone is a gas formed when three atoms of oxygen combine. This action may occur in the upper atmosphere as well as at ground level. In the upper atmosphere, about 6-30 miles above the Earth's surface, ozone forms a protective layer that shields the Earth from ultraviolet rays from the sun. At ground level, ozone is a secondary pollutant meaning that it is not directly emitted into the air, but is formed by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight, thus NO_x and VOC are called "formative" emissions or "precursors" to ozone formation. Major sources of the emissions of either NO_x or VOC, or both, are industrial facilities, electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents. Exposure to certain levels of ozone can cause health problems including respiratory problems like coughs and respiratory irritation as well as aggravating asthma symptoms (TCEQ, 2013a).

Hood County is a small rural county southwest of Fort Worth with an economy based on retail, retirees, tourism, and very little industrial or manufacturing professions. On April 30, 2012, the EPA designated Hood County as attainment for the 2008 ozone NAAQS. Despite the designation, the ozone monitor in Hood County recorded violations of the ozone NAAQS in 2011 and 2012. Hood County has taken the initiative to address the air quality situation and as part of its efforts to improve air quality, Hood County is partnering with EPA through the Ozone Advance Program. This path forward letter serves as a guide for the plan Hood County has formulated to address compliance with current and future NAAQS.

The emphasis of the path forward for Hood County is on voluntary programs for fuel and energy savings along with locally enforced ordinances. Stakeholders involved in the plan, and

in the newly formed Hood County Clean Air Coalition, include local governments, local businesses, school districts, Lake Granbury Area Economic Development Corporation, Granbury Chamber of Commerce, North Texas Commission, Luminant Power, North Central Texas Council of Governments (NCTCOG), and the Texas Commission on Environmental Quality (TCEQ). A current list of individual members of the coalition and their affiliations are found in Appendix A. Through this path forward, Hood County will ensure actions are taken to improve air quality in the region, provide healthy air for its citizens, maintain healthy economic growth, and show leadership in environmental sustainability.

2. Background

2.1 Hood County

Hood County encompasses 425 square miles and is bordered by the counties of Erath, Somervell, Johnson, Parker, and Palo Pinto. The main trade center and county seat is the town of Granbury, Texas. Hood County's population for the 2010 Census was 51,182 including 7,978 in the town of Granbury. Granbury is the largest town in Hood County followed by the smaller communities of Tolar, Cresson, and Lipan. Currently over 21.3% of Hood County's population is aged 65 and older. From 2000 to 2010 more than 50% of the growth of the county was attributed to residents 55 and older (U.S. Census, 2010). Most of the residents who are not retired are employed within the county. Figure 1 indicates the geographic area of Hood County in the north Texas region including urbanized areas. Figure 2 is a map of the county including the county seat of Granbury and smaller communities of Tolar, Cresson, and Lipan.

Figure 1: Hood County location in north Texas region *Data source: NCTCOG, 2013a*

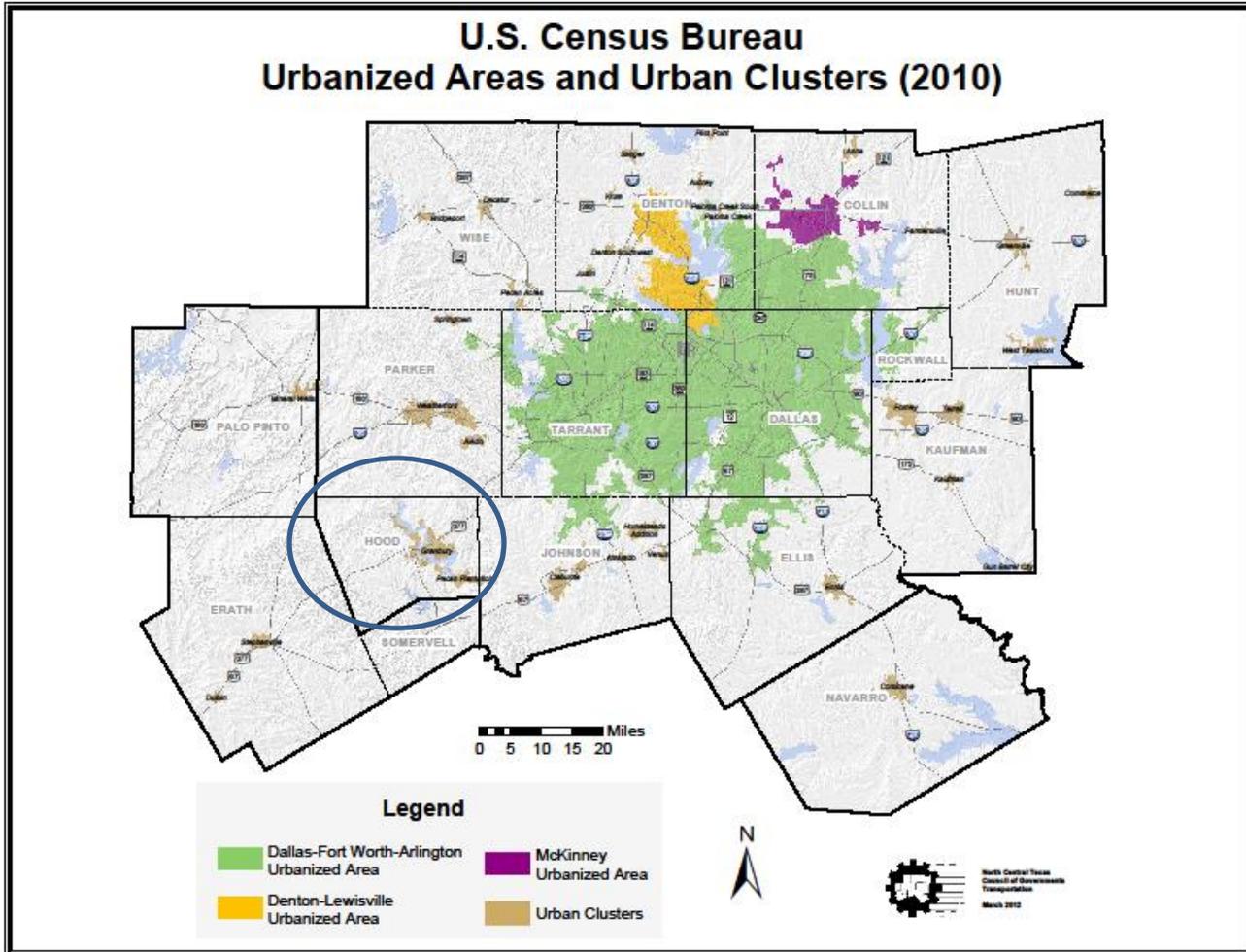
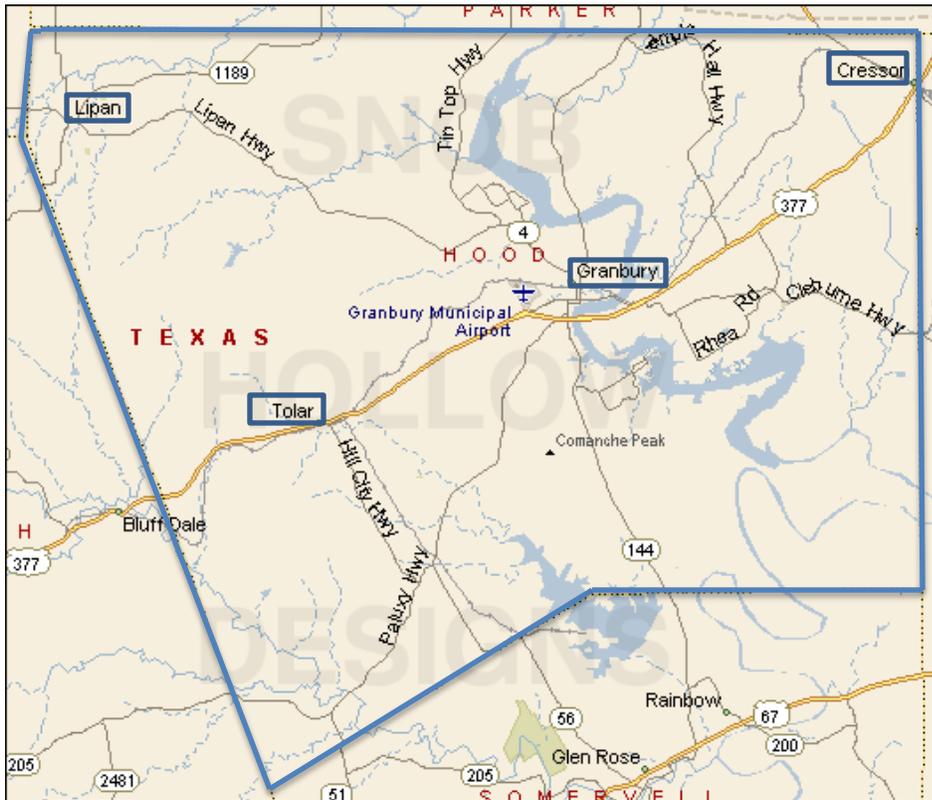


Figure 2. Map of Hood County, Texas *Data Source: County Maps of Texas, 2013*



2.2 Ozone Data

2.2.1 Ozone Values

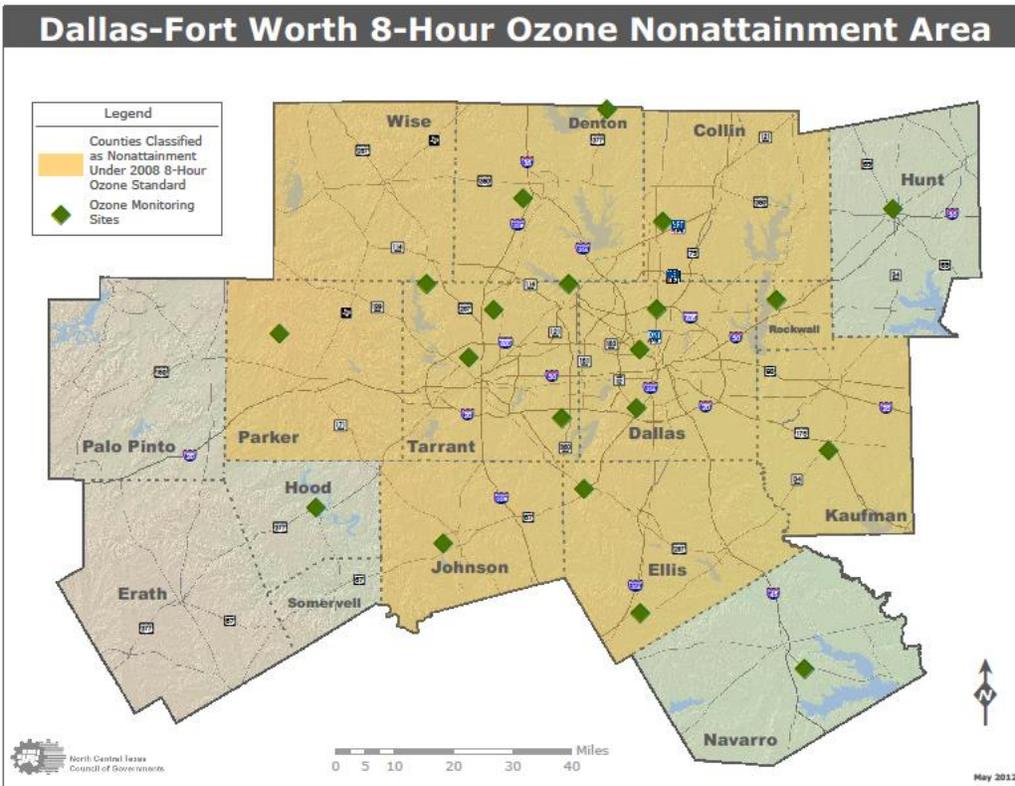
A statistic used to describe the air quality status of a location related to the NAAQS is the Design Value (DV) for a monitor. The DV is used to designate nonattainment areas and measure progress towards meeting NAAQS. For ozone, the NAAQS is considered to be met when the annual fourth highest daily maximum 8 hour average concentration averaged over three years is 75 ppb or less. There is one air quality monitor in Hood County located in Granbury, Texas. It is a regulatory monitor operated by TCEQ and is identified as C73. Figure 3 is a map of regional air monitors. The gold area of the map represents the regional nonattainment area and green diamond shapes identify the location of air quality monitors.

For 2008-2010, Hood County's DV for 8 hour ozone was at the NAAQS threshold of 75 ppb. For 2009-2011, the DV increased to 76 ppb and the DV for 2010-2012 is 77 ppb. While working to

understand why the readings for the county are this high, Hood County is committed to working diligently to ensure that it will achieve levels below the NAAQS for ozone.

Figure 3: Map of Regional Air Quality Monitors including Dallas-Fort Worth 8-Hour Ozone Nonattainment Area

Data Source: NCTCOG



TCEQ listed Hood County with fourth highest concentration at 80 ppb and a 2012 DV of 77 ppb (TCEQ, 2013c). Historic data regarding number of days that the 75 ppb standard was exceeded from 2008-2011 is found in Table 1. This table also includes the four maximum values reported for these years.

Table 1. Number of Days that NAAQS was exceeded and four highest maximum values for 2008-2011.

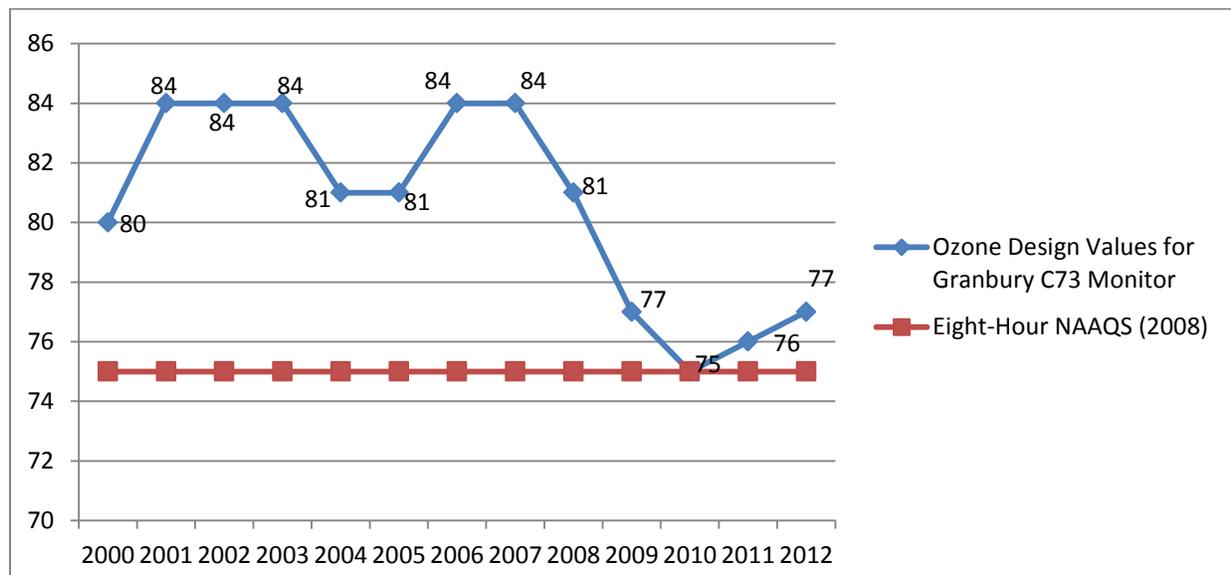
Data Source: EPA Air Data

Year	Number of Days	First Max	Second Max	Third Max	Fourth Max
2011	4	82	80	77	76
2010	4	80	80	79	77
2009	6	89	81	80	77
2008	1	78	75	73	73

Figure 3 indicates Ozone DV for the Granbury C73 Monitor as an indication of trends in emissions and ozone concentrations from 2000-2012. DV values have been on a generally decline until the years 2011 and 2012. With the implementation of new initiatives, these values should return to a downward trend.

Figure 3: Ozone DV for Granbury C73 Monitor from 2000-2012

Data Source: NCTCOG



2.2.2 Emission Inventories

Emission inventory data is based on the 2008 National Emissions Inventory (NEI) for Hood County. The emissions inventory is classified by emission sources. These classifications include area, non-road, on-road, and point sources. Area sources are generally reported by categories

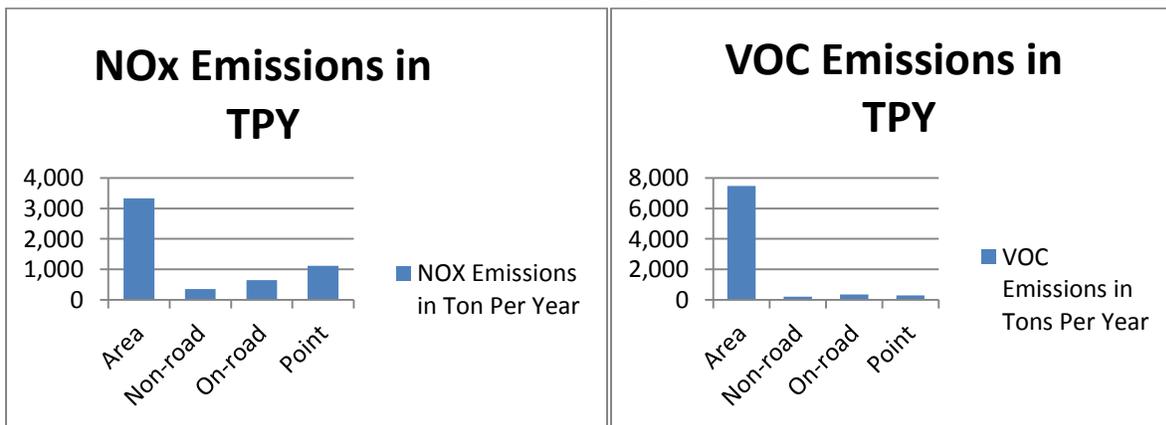
such as solvent use, agriculture such as from feed lots and crop burning, waste management such as from landfills, and product storage and transport as associated with gasoline. Non-road mobile sources include internal combustion engines that are not associated with highway vehicles such as aircraft, locomotives, recreational marine, and lawn and garden equipment. On-road mobile sources include light and heavy duty vehicles, motorcycles, and light and heavy duty diesel vehicles. Point source emissions are those emitted by individual “point” sources such as chemical plants, refineries, electric utility plants, and industrial sites (TCEQ, 2013d). Figure 4 represents the emissions inventories for a.) NOx and b.) VOC and indicates that the majority of NOx and VOC emissions were from area sources. Area sources were responsible for 3,328 tons per year (tpy) of NOx emissions and 7,482 tpy of VOC emissions. Non-road sources generated 359 tpy of NOx emissions and 209 tpy year VOC emissions. On-road sources generated 651 tpy NOx emissions and 364 tpy per year VOC emissions. Point sources were responsible for 1,116 tpy NOx emissions and 287 tpy VOC emissions in Hood County.

Figure 4: Summary of a.) NOx and b.) VOC Emission Sources in tons per year for Hood County

Data Source: 2008 NEI v2.0

a.) NOx

b.) VOC



These sources combined generated 5,455 tons of NOx emissions for 2008 and 8,343 tons of VOC emissions for 2008. Source emissions are listed by sector in Table 2.

Table 2. Emission Sources by Sector for Hood County (Data Source: 2008 NEI v2.0)

Sectors	Description	2008 VOC	2008 NOx
Fuel Comb	Industrial boilers, ICE-Nat Gas	31	343
Fuel Comb	Industrial boilers, ICE-Nat Gas	0	7
Fuel Comb	Residential - Nat Gas	0	3
Fuel Comb	Electric Generation - Nat Gas	14	748
Fuel Comb	Comm/Institutional - Nat Gas	0	4
Fuel Comb	Comm/Institutional - Nat Gas	1	9
Fuel Comb	Industrial boilers, ICE-Oil	0	1
Fuel Comb	Comm/Institutional - Other		0
Fuel Comb	Comm/Institutional - Other	0	0
Mobile	On road Diesel Heavy Duty Trucks	14	296
Mobile	On road Diesel Light Duty Vehicles	2	2
Mobile	Non-road Equipment- Gasoline	177	20
Mobile	Locomotives	0	0
Mobile	On-road Gasoline Heavy Duty Vehicles	3	12
Mobile	Non-road Equipment- Other	2	9
Mobile	Non-road Equipment - Diesel	30	330
Mobile	On -road Gasoline Light Duty Vehicles	346	341
Mobile	Aircraft	29	2
Industrial Processes	Oil and gas production	162	19
Industrial Processes	Oil and gas production	6959	3309
Industrial Processes	Storage and transfer	42	
Industrial Processes	Storage and transfer	2	
Industrial Processes	Petroleum Refineries	1	
Solvent	Dry Cleaning	24	
Solvent	Graphic Arts	14	
Solvent	Industrial Surface Coating and Solvent use	45	
Solvent	Non industrial Surface Coating	69	
Solvent	Degreasing	15	
	Gas Stations	350	
	Bulk Gasoline Terminals	8	
	Misc. Non-Industrial NEC	0	0
	Waste Disposal	2	
	Totals	8,343	5,455

Figure 4 above indicated the emissions from various sources in the County. Modeling could show how controlling emissions from these sources might or might not impact air quality in Hood County. Modeling has not been done for Hood County due to lack of funding. In the current absence of modeling information, the Hood County Clean Air Coalition is moving forward in addressing the area's air quality concerns by implementing programs and measures to reduce ozone precursor emissions from some of these sources.

3. Description of Measures and Programs

Hood County efforts to meet the program goals of the Ozone Advance Program include reducing ozone formative emissions through these current efforts which are further described in section 3.1 that follows:

- Formation of stakeholder coalition with public and private stakeholders, known as the Hood County Clean Air Coalition and associated informative and educational website. Appendix A contains a list of stakeholders.
- Regional partnerships with North Texas Commission and NCTCOG
- Highway improvements including the Loop 567 extension and overpass at the railroad switchyard in Cresson, Texas
- Encouraging trip reductions
- Review of air permits received by TCEQ for Hood County

Hood County is researching additional actions that would further contribute to efforts to reduce ozone formative emissions including the following efforts that are described in section 3.2 that follows:

- Participating in NCTCOG Air North Texas Program
- Participating in Department of Energy Clean Cities Programs
- Review of resolutions and ordinances for idling restrictions
- Review of feasibility of vanpool or carpool programs such as Try Parking It
- Investigate travel systems management through signal improvement and turn lanes
- Public awareness campaigns
- Pursuing addition of Hood County to Texas Rider 8 Program

Long term future efforts that Hood County will consider to additionally contribute to ozone emission reduction efforts include the following efforts that are described in section 3.3 that follows:

- Seek funding through grant application and private capital for improved energy efficiency
- Investigate modeling emission sources including point, on-road, non-road, and area sources
- Review of efforts at Eagle Ford Shale oil and gas development

3.1 Current Strategies

3.1.1 Hood County Clean Air Coalition

The strategy to move forward with reduced ozone formative emissions includes steps already taken including formation of the Hood County Clean Air Coalition. The coalition is a voluntary stakeholder effort with representatives from the city and county governments, gas industry, electric generation industry, school districts, home owners' associations, local citizens, and regional partners including the NCTCOG and the North Texas Commission. A list of current stakeholders is found in Appendix A. The coalition will aid in gathering information relating to air quality issues in Hood County and coordinating efforts to address those issues (Hood County Clean Air Coalition, 2012). In May 2012, a website was developed which serves educational and informative roles and provides information about ozone action notification, education for youth, and public awareness. The website address is www.granburyedc.com/cleanair. An intern was hired in February 2013 to coordinate the efforts of the group.

3.1.2 Regional Partners

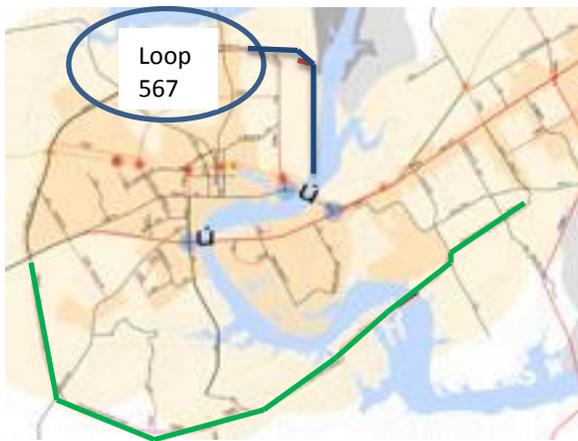
Hood County partnered with regional entities to address the problem of air quality through the North Texas Commission and the NCTCOG. The North Texas Commission is a public-private organization that plays important roles in advocacy for leadership in North Texas and environmental issues as well as regional marketing and collaboration (North Texas Commission, 2013). The NCTCOG also serves as a valuable resource for Hood County, providing information on the various programs that will aid the county in its endeavors to improve air quality.

3.1.3 Highway Improvements

Highway improvement projects in Hood County will help alleviate congestion issues that will reduce emissions and improve air quality. The Loop 567 extension is expected to be completed by June 2013. It will connect Highway 51 to Pearl Street bypassing the town square and improving traffic flow in the area. Long term plans include a possible extension to the southern section of Loop 567. An additional effort will bring improvements to U.S. Highway 377 at the intersection with State Highway 171 at Cresson. The project will include an overpass over the

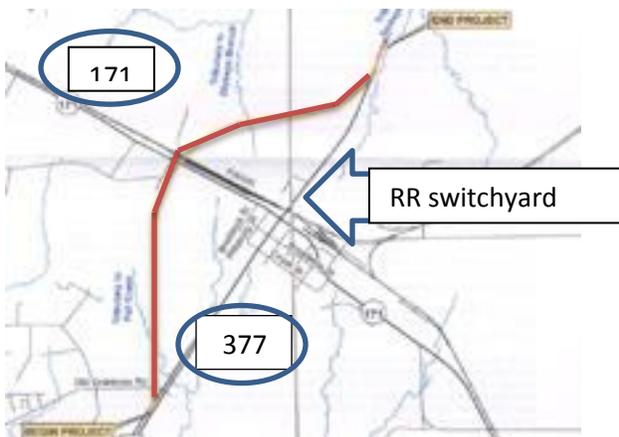
SH 171 and the railroad. It will greatly improve mobility along Highway 377 as it addresses issues of traffic flow at the railroad switchyard (Texas DOT, 2013). This portion of Highway 377 is the most direct route from Granbury to the Dallas – Fort Worth area and is used extensively. Figure 5 provides illustrations of both projects. Both projects can be viewed in greater detail at www.granburyledc.com/maps.php. Location of Granbury and Cresson are found in the map of Hood County in Figure 2. These types of travel efficiencies can reduce NOx emissions by 2-5% (EPA, 2012b).

Figure 5. Highway Improvements a.) Granbury Loop 567 extension b.) Cresson project



a.) Current Loop 567 Extension 

Possible future expansion Loop 567 



b.) Cresson Overpass Project 

3.1.4 Trip Reductions

Hood County has trip reduction efforts already in place. Several of the main employers for the county use direct deposit including Granbury ISD, the City of Granbury, Hood County, Wal-Mart, H.E.B., Kroger, Brookshire's, Lowes, and Home Depot. The City of Granbury also operates a Trolley and the local retirement centers including The Estates, Charterhouse at Lake Pointe, Waterview, Quail Park, Gardens of De Cordova, Arbor House, The Oaks of Granbury, Quail Park Assisted Living, The Courtyard at Lake Granbury, and Harbor Lakes Nursing and Rehab Center operate busses for their residents' local transportation needs. Additionally, the City of Granbury has a hike/bike trail that runs through the majority of the city and there is discussion of extending it in the future. The Moments-In-Time Hike and Bike Trail was built in 2006 and is an eight foot wide concrete trail that runs 2.17 miles from the airport to north of the downtown square. A map of the trail is found in Figure 6. Granbury also has a city ordinance allowing the use of golf carts for transportation in certain portions of the city. All of these trip reduction efforts result in reduction of emissions.

Figure 6. Map of Moments-In-Time Hike and Bike Trail



Existing trail —

Future trail expansion —

3.1.5 Review of air permits

Hood County will review any air permit received by the TCEQ for new construction or modification of existing industrial sources in Hood County to identify possible air quality

impacts. Efforts can then be taken to identify reduction strategies to offset any increase in emissions.

3.2 Strategies under Consideration for 2013-2014

3.2.1 Air North Texas

Hood County is considering participation in the various programs sponsored by the NCTCOG, including the Air North Texas Campaign. This is an educational program to encourage public participation and support air quality improvement strategies. Air North Texas provides strategies that can be implemented by businesses and individuals to reduce air pollution (Air North Texas, 2013). Strategies that Hood County could implement as part of the program include the following:

- Work with schools and local employers to discourage driving to lunch
- Communicate air pollution action days to the public using local media
- Encourage conservation efforts for electricity and water

Local media can be used to increase public awareness including public service announcements using local television stations, radio, and the Hood County Clean Air Coalition website. Energy Conservation Audits will be encouraged for both commercial and residential dwellings. Currently, one of the local electric cooperatives, United Cooperative, offers free energy conservation audits for members.

Timeframe for this action: It is expected that Hood County will participate in the Air North Texas Program by June 2013.

3.2.2 Clean Cities

Hood County is considering participation in the Department of Energy's Clean Cities Program also promoted through the NCTCOG. The Dallas-Fort Worth Clean Cities Coalition seeks to improve air quality and create energy diversity through several objectives including facilitating development of alternative fuel vehicles, support installation of alternate fuel refueling infrastructure throughout the DFW Metroplex, increase the use of fuel blends, accelerate sales of hybrid electric vehicles, promote informed consumer choice on fuel economy, and encouraging the use of idle reduction technologies for heavy-duty trucks and other vehicles. Through these efforts, air quality will be improved, greenhouse gas emissions will be reduced, energy security will be enhanced, and energy related jobs will be created (Dallas-Fort Worth

Clean Cities Coalition, 2013). Efforts in Hood County, as part of the DFW Clean Cities Coalition, that correlate with these objectives include the introduction of idling restrictions and long term goals of conversion of city and county diesel fleets to natural gas. The conversion of fleets would require seeking funding through grant application and private capital for a CNG fueling station. The fueling station would enable the county, city, and school districts to make changes to the alternative fuel of CNG for their fleets. An alternative fuel program for on road heavy duty vehicles would produce a control efficiency of up to 60% for NOx and up to 13% for VOC (EPA, 2012b). These actions will result in significant reductions of NOx.

Timeframe for this action: Hood County will research seeking state and federal funding to convert city and county diesel fleets to natural gas in 2013-2014.

3.2.3 Idling Restrictions

The city of Granbury in Hood County will consider adoption of the State idling rule and entering into a Memorandum of Agreement (MOA) with TCEQ. The MOA must be signed between the two to enforce the rule. Hood County has already taken initial steps by passing a resolution supporting voluntary idling reduction. Enforcement of the idling restrictions and education are crucial to this action.

Timeframe for this action: Hood County currently has a resolution supporting voluntary idling restrictions and the city of Granbury is considering additional idling restrictions.

3.2.4 Try Parking It

Another program sponsored through the NCTCOG is the Try Parking It Program. This program is part of the Employer Trip Reduction Program which seeks to reduce the number of commuter trips to work. This program encourages use of carpool and vanpool options (Try Parking It, 2013). Hood County can encourage commuters to use this program to reduce the number of single occupancy vehicles on the highway.

Timeframe for this action: Hood County will post the Try Parking It link on the Hood County Clean Air Coalition website by August 2013.

3.2.5 Travel Systems Management

Travel Systems Management is another measure Hood County will investigate for improving air quality. Through the addition of turn lanes and signal improvement in the city of Granbury, emissions will be reduced. The reduced vehicle idling time that will result from the use of turn lanes and signal improvement will reduce vehicle emissions.

Timeframe for this action: Investigation of the possibility of signal improvement and addition of turn lanes will begin by August 2013.

3.2.6 Public Awareness Campaigns

Increased public awareness of the issue of clean air in the region is an important step. Hood County has already begun the process of increasing public awareness of the importance of taking steps to reduce emissions through the website created for the Hood County Clean Air Coalition. In the coming months, through the resources of the NCTCOG's Programs such as Air North Texas, there will be an increase in public awareness campaigns for the Hood County area. This effort will also be accomplished through additions of educational links to the Hood County Clean Air Coalition website and public service announcements in the local newspaper and radio. Education and awareness campaigns have potential to reduce both NO_x and VOC (EPA, 2012b).

Timeframe for this action: Increased participation in NCTCOG programs like Air North Texas will occur by June 2013 and increased public service announcements by August 2013.

3.2.7 Texas Rider 8 Program

Hood County was also successful in coordinating with state representatives in adding Hood County to the Texas Rider 8 State and Local Air Quality Planning Program to support local air quality planning efforts toward attaining and maintaining the Federal Ozone NAAQS. The state legislature allocates funds through this program to reduce ozone precursor emissions in specific ozone attainment areas, termed "near attainment" areas. Funds may be used for activities including identifying, inventorying, monitoring, and modeling pollution levels and identification, quantification and implementation of appropriate pollution-reduction controls. TCEQ is to make efforts to fund projects that will be most beneficial to the State Implementation Plan (TCEQ, 2013b). The effort to include Hood County in the Texas Rider 8 Program passed the full Committee vote at the end of May 2013.

Timeframe for this action: Decisions on projects that may be funded by the Texas Rider 8 Program should be made by the end of July 2013.

3.3 Long Term Strategies for Future Consideration

Future efforts that Hood County will consider if funds become available are increased efforts of energy efficiency, modeling of emission sources including point, non-road, on-road, and area sources, and review of policies used in the Eagle Ford oil and gas development in South Texas.

3.3.1 Improved Energy Efficiency

Hood County will seek funding through grant application and private capital for improved energy efficiency. These funds would allow for improved energy efficiency for local school districts, City of Granbury, and Hood County offices. Improved energy efficiency for these entities will result in emission reductions for the region.

3.3.2 Modeling Emission Sources

Additional funding sources through the Texas Rider 8 Program and grant opportunities would allow Hood County to engage in modeling the impacts of local emission sources. The emissions inventories have identified the main sources of emissions. Modeling will help determine how these sources impact the area and what type of controls or measures would effectively reduce emissions and improve air quality for the region.

3.3.3 Review of Efforts at Eagle Ford Shale

In the Eagle Ford Shale oil and gas development in South Texas, local stakeholders have been successful in encouraging local oil and gas development companies to be part of efforts to reduce emissions in the region. Hood County plans to investigate what efforts were initiated to encourage oil and gas representatives to be part of that effort to improve air quality in that region. These efforts may result in increased involvement of oil and gas representatives, active in Hood County, in the clean air effort.

4. Implementation Schedule

As part of the Ozone Advance Program, it is recommended that an area commit to a five year term, with an option to renew at the end of the term. Hood County will commit to the five year term with a general schedule for programs as follows.

April 4, 2012 Hood County submits sign-up letter for Ozone Advance

Fall 2012 Formation of Hood County Clean Air Coalition

Spring 2013 Hood County decides on measures/programs to implement

June 2013 Submission of Final Path Forward to EPA

Summer 2013 Action on measures/programs:

- Air North Texas
- Idling Restrictions
- Try Parking It

- Travel Systems Management – subject to approval
- Public Awareness Campaigns
- Texas Rider 8 Program – subject to approval by State Appropriations Committee

2013-2014 Clean Cities activities

Review preliminary air monitoring results and re-evaluate path forward

Research and develop new and/or revise existing measures/programs as appropriate

Research and evaluate any funding opportunities against program goals

April/May 2014 Submit first annual report on status of local air quality, measures and programs in place and lessons learned, Re-evaluate and revise path forward as necessary.

Hood County is committing to the Ozone Advance Program as part of its efforts to improve air quality in the region. Through the formation of the Hood County Clean Air Coalition, the county has brought together many groups of stakeholders to coordinate in efforts to address the problem. This coalition represents that these stakeholders support taking action including participation in the Ozone Advance Program.

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APPENDIX A

Hood County Clean Air Coalition Members

Name	Affiliation
Board Members	
Darrell Cockerham (Chairman)	Hood County Judge
Mark Clark	Luminant Environmental Manager
John Campbell	Owner Diamond C
Bob Cornett	Mayor, City of Cresson
Mark Franco	Total Equipment and Services
Nin Hulett	Mayor Pro Tem, City of Granbury
Terry Johnson	Mayor, City of Tolar
Dave Porcher	
Members	
Evan Autry	State Representative Keffer
Tony Allen	Councilman for City of Granbury
Barry Beadle	President of Total Equipment and Services
Steve Berry	Commissioner of Hood County
Brian Boerner	Chesapeake Energy
Jan Caldwell	Luminant Community Relations
Robert Kent	Director of Environmental Programs, NTC
Chris Klaus	Senior Program Manager, NCTCOG
Dr. James Largent	Superintendent, Granbury ISD
Mauri Montgomery	United Cooperative, Director of Community Relations
Lee Overstreet	Winston Properties
Randy Pearson	Central Texas Title
Tori Regas	State Representative Keffer
Mike Scott	Granbury Chamber of Commerce
David Southern	Southern Concepts
Dr. Allison Stamatis	Weatherford College
Congressman Charlie Stenholm	Retired
Shannon Stevenson	Program Manager, Air Quality Planning and Operations, NCTCOG
Wayne McKethan	Granbury City Manager
Marie Ferguson	Coordinator, Lake Granbury Area EDC
Michelle McKenzie	Intern, Hood County Clean Air Coalition