

Hood County, Texas Second Annual Path Forward Report

Ozone Advance Program

6/10/2015

Hood County Clean Air Coalition

www.hoodcountycleanair.com

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1.0 Introduction

As part of participation in EPA's Ozone Advance Program, areas are asked to submit annual updates of measures and programs in their Path Forward Documents. These documents are intended to fully describe the measures and/or programs the area will implement and provide a schedule for the implementation of each one (EPA, 2012a). This document is the second annual update on the measures and programs discussed in the Path Forward for Hood County, Texas.

The programs and measures included in the Hood County Path Forward to aid in reduction of the formative emissions of ozone are focused on voluntary efforts for fuel and energy savings, locally enforced ordinances, and educational efforts. Hood County is ensuring 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.

2.0 Background

Hood County is located in North Texas and encompasses 425 square miles. It 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 2014 is estimated at 53,921 - a 5.4% increase over the 2010 Census. Granbury is the largest town in Hood County followed by the smaller communities of Tolar, Cresson, and Lipan. Currently estimates are that 23.6% 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, 2015). 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*

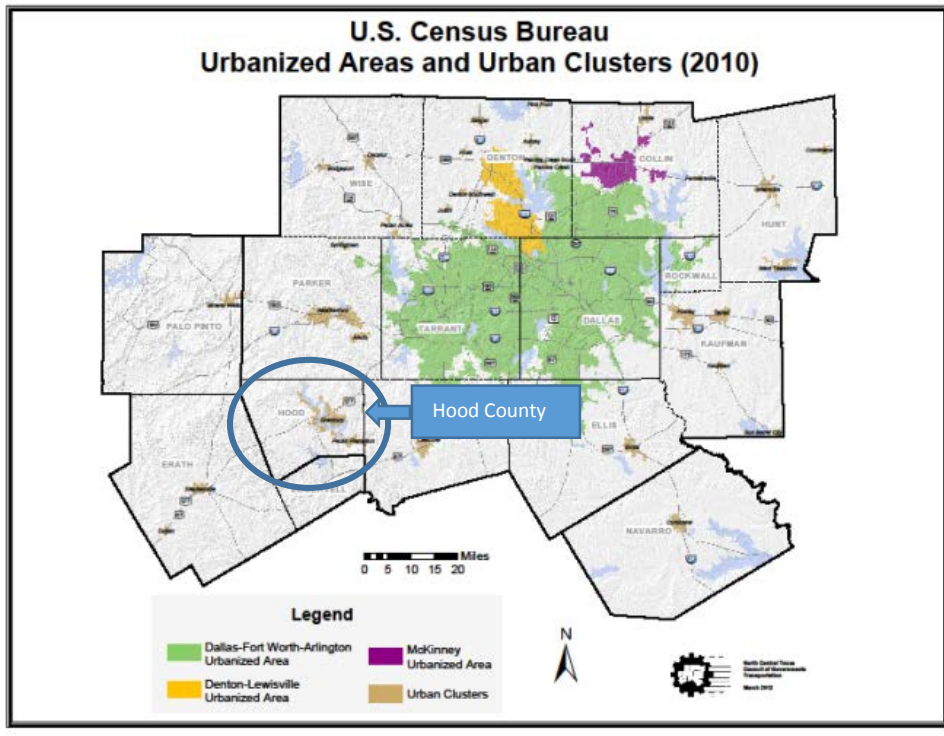
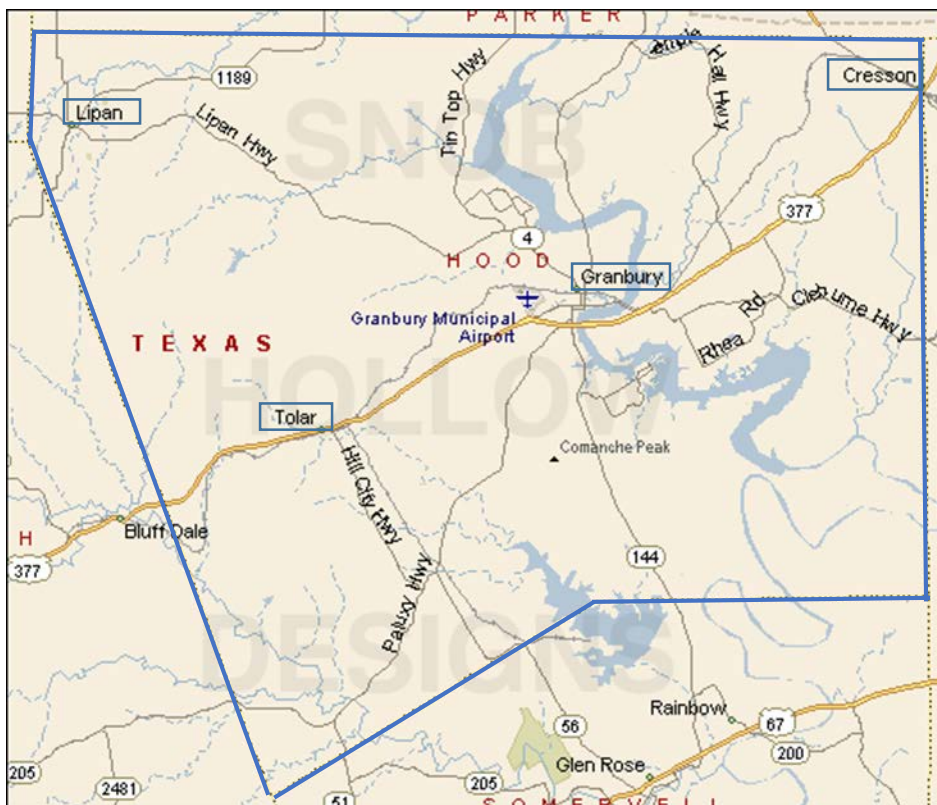


Figure 2. Map of Hood County, Texas *Data Source: County Maps of Texas, 2013*

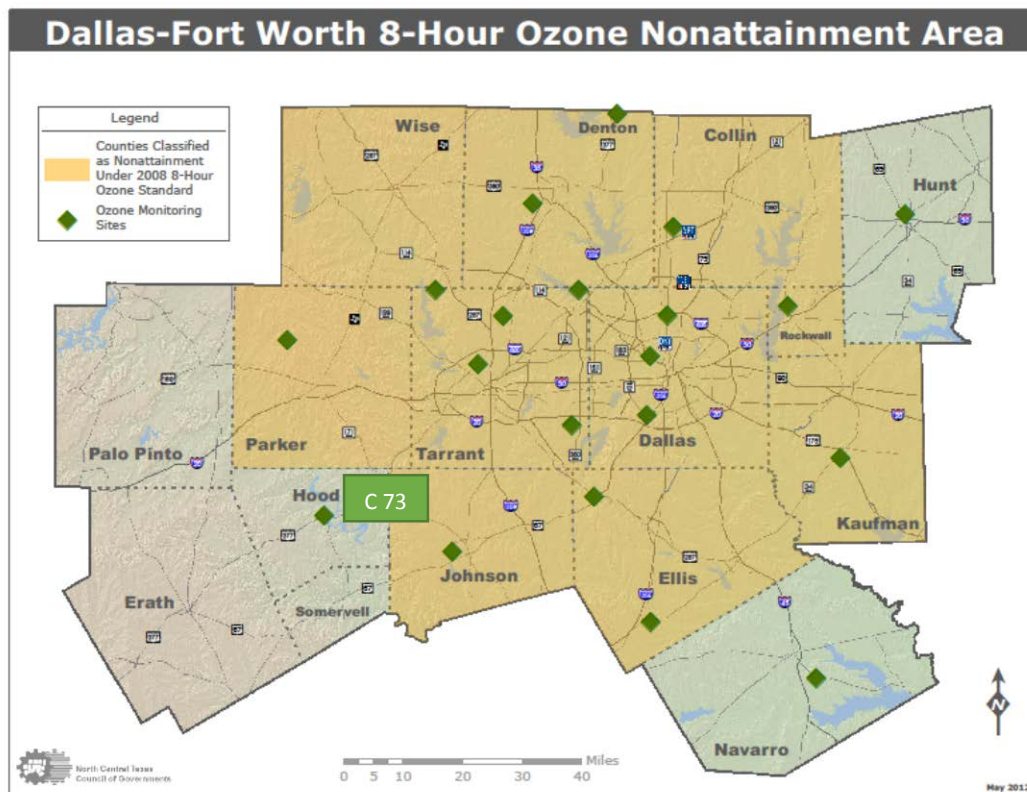


3.0 Current Ozone Data

3.1 Ozone Design Values

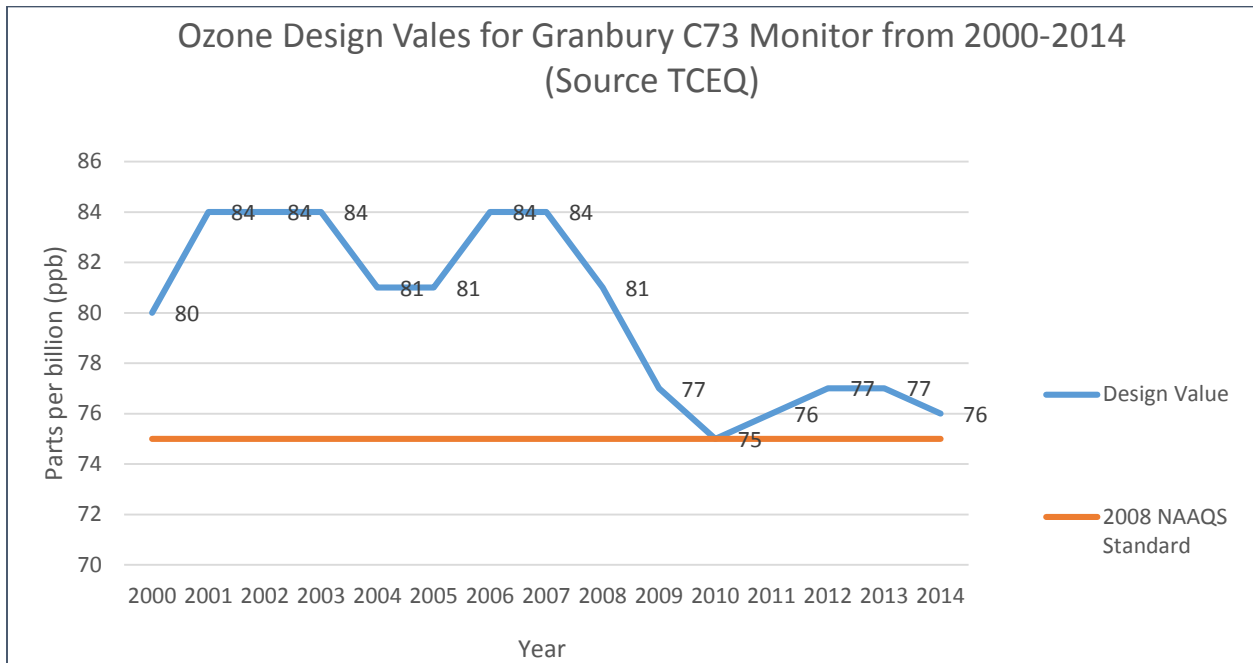
A statistic used to describe the air quality in a location with an air monitor is the Design Value (DV). The DV is used to designate nonattainment areas and measure progress towards meeting NAAQS. For ozone, the NAAQS is considered to be met when the annual fourth highest daily maximum 8 hour average concentration averaged over three years is 75 parts per billion (ppb) or less. In November 2014 EPA proposed a new standard in the range of 65-70 ppb which is due to be finalized by October 2015. The air quality monitor in Hood County, located in Granbury, is a regulatory monitor operated by the Texas Commission on Environmental Quality (TCEQ), and is identified as C73. Figure 3 is a map of regional air monitors with the location of monitor C73 identified. The gold area of the map represents the Dallas-Fort Worth ozone nonattainment area and green diamond shapes identify the location of ozone monitors.

Figure 3: Map of Regional Air Quality Monitors including Dallas-Fort Worth 8-Hour Ozone Nonattainment Area *Data Source: NCTCOG, 2013b*



The 2014 DV for the C73 monitor in Granbury dropped to 76 ppb after two years at 77 ppb (TCEQ, 2015b). While the value has dropped, it still exceeds the 2008 ozone NAAQS. Hood County remains committed to working diligently to ensure that it will achieve levels below the NAAQS for ozone. Figure 3 is a graph of Ozone Design Values for the monitor C73 from 2000-2014. This figure provides an indication of trends in ozone concentrations from 2000-2014. The DV had been on a general decline until the years 2011 and 2012. It is hoped that with further implementation of programs and measures described in the Path Forward and reductions in transported emissions, these values will continue to decline.

Figure 3. Ozone Design Values for C73 Monitor in Granbury from 2000-2014.



3.2 Number of Days that Ozone NAAQS were Exceeded

Historic data regarding number of days that the 75 ppb standard was exceeded from 2008-2014 are found in Table 1. This table also includes the four maximum values reported for these years. As it was in 2014, the first max was high, but the number of days that the Ozone NAAQS were exceeded continued to decline. The number of exceedance days in 2014 declined to two while three of the four high values also dropped from 2013.

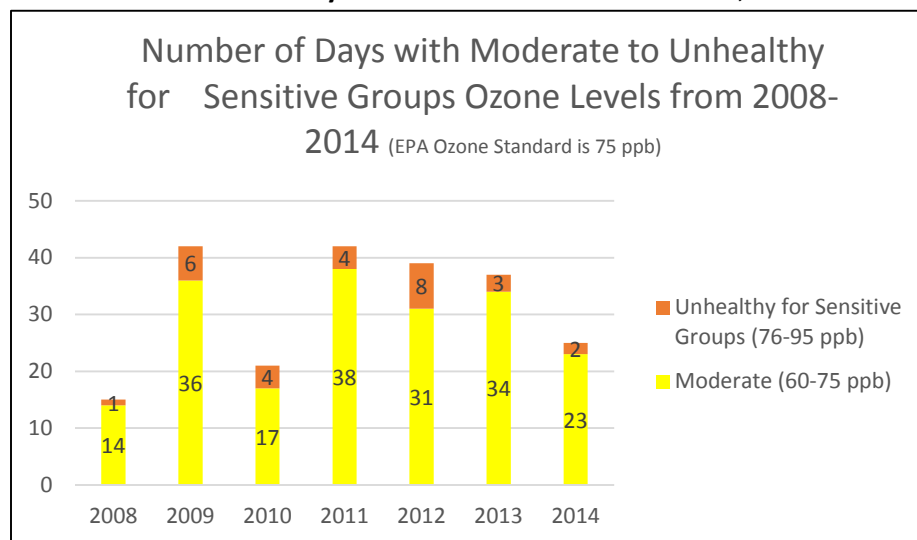
Table 1. Number of days that the NAAQS was Exceeded and Four Highest Maximum Values for 2008-2014 for Monitor C73.

Data Source: TCEQ, 2015

| Year | Number of Days | First Max | Second Max | Third Max | Fourth Max |
|------|----------------|-----------|------------|-----------|------------|
| 2014 | 2 | 91 | 87 | 74 | 73 |
| 2013 | 3 | 93 | 83 | 78 | 75 |
| 2012 | 8 | 82 | 80 | 80 | 80 |
| 2011 | 4 | 82 | 80 | 77 | 76 |
| 2010 | 4 | 80 | 80 | 79 | 77 |
| 2009 | 6 | 89 | 81 | 80 | 77 |
| 2008 | 1 | 78 | 75 | 73 | 73 |

The EPA Air Quality Index (AQI) is broken down into six categories. These categories are grouped by ozone levels and their associated air quality index values. The AQI will likely be adjusted when the proposed new standard is finalized. Currently the five categories and their associated indices are “good” (0-50), “moderate” (51-100), “unhealthy for sensitive groups” (101-150), “unhealthy” (151-200), “very unhealthy” (201-300), and “hazardous” (301-500). The “unhealthy for sensitive groups” category marks the first category with an ozone level above the NAAQS standard of 75 ppb (EPA Air Data, 2014). Figure 4 is a graphic representation for the number of days with “moderate” and “unhealthy for sensitive groups” ozone levels recorded at monitor C73. Figure 4 indicates a general decline in the overall number of days with moderate and unhealthy for sensitive groups ozone levels from 2009-2014.

Figure 4. Number of Days with Moderate and Unhealthy for Sensitive Groups Ozone Levels from 2009-2013 at the Granbury C73 monitor. Data Source: TCEQ, 2015c.



3.3 Emission Inventory Review

Through the Texas Commission on Environmental Quality (TCEQ) Rider 8 Grant for near nonattainment areas, several research projects were completed in 2015 including an Emission Inventory Review research project for Hood County. The Emission Inventory review was based on the 2012 TCEQ Emission Inventory, which is the most recent available inventory of anthropogenic and biogenic ozone precursors for Hood County. In the Path Forward, the emission inventory data was based on the 2008 NEI for Hood County and in the first annual report, the emission inventory data was based on the 2011 NEI for Hood County. The 2008 and 2011 NEI are annual inventories reported in tons per year (tpy) for emissions, while the 2012 TCEQ Emission Inventory was reported in tons per average ozone season day (tpd) (Grant et al., 2015). The annual emissions from the 2008 and 2011 NEI were converted to tons per day for comparison to the TCEQ data from the ENVIRON report.

From the 2012 emission inventory, total NO_x emissions were 11.4 tpd and VOC emissions were 78.3 tpd. For anthropogenic sources, NO_x emissions were 10.2 tpd and 9.9 tpd for VOC emissions. The emission inventory VOC/NO_x ratio for Hood County was calculated to be 23 ppbC/ppb. A VOC/NO_x ratio greater than 10 indicates that ozone formation is limited by the amount of NO_x available; therefore, Hood County is considered a NO_x limited regime and local control strategies should focus on reducing NO_x emissions (Grant et al., 2015). The 2012 NO_x emissions were comprised of 3.3 tpd for point sources, 2.9 tpd for oil and gas area sources and 0.1 tpd for non- oil and gas area sources, 2.7 tpd for on-road, 1.3 for non- road, and 1.2 tpd for biogenic sources. VOC emissions were 68.4 tpd for biogenic sources, 5.1 tpd from oil and gas area and 2.2 tpd non-oil and gas area sources, 1.0 tpd for point sources, 0.9 tpd from on-road, and 0.7 tpd for non-road sources (Grant et al., 2015).

Figures 5 and 6 compare the emissions inventories for NO_x and VOC emissions from the 2008 and 2011 NEI and the 2012 TCEQ emission inventories. 2008 and 2011 data indicated that the majority of anthropogenic NO_x and VOC emissions were from area sources. In the 2012 emission inventory, area emissions dropped below the point source emission category. The differences in emissions for area sources is due to 2012 emission inventory including data collected for the Barnett Shale survey studies that included detailed, area specific data while the NEI includes data from estimates of oil and gas emissions based on oil and gas activity and equipment configuration data by county (Grant et al., 2015). Figure 5 indicates an increase in emissions from 2011 to 2012 from point and non-road sources, but this is likely due to the difference in reporting as the 2012 inventory is reported in tons per average ozone season day while the 2011 is reported in tons per year. The difference in reporting may be due to differences in equipment activity source data and also seasonal usage profiles. The point

source category includes power plants that are used as peaking units – meaning they are more likely to be used during summer ozone season when demand for electricity is high. The non-road category includes pleasure craft that are more likely to be used during summer ozone season. On-road emissions indicate a reduction in emissions likely due to lower emissions in newer vehicles associated with normal fleet turnover (Grant et al., 2015).

Figure 5. Summary of NOx Emission Sources (tpd) for Hood County

Data Source: 2008 NEI v. 2.0, 2011 NEI v1.0, 2012 TCEQ emission inventory (Grant et al., 2015)

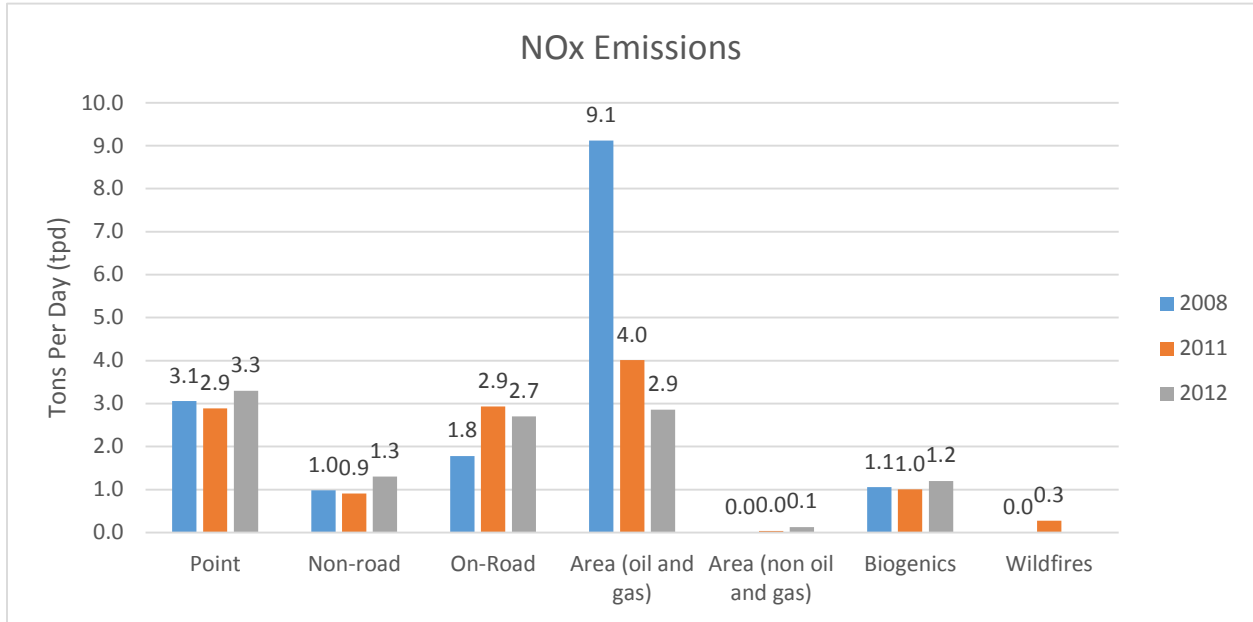
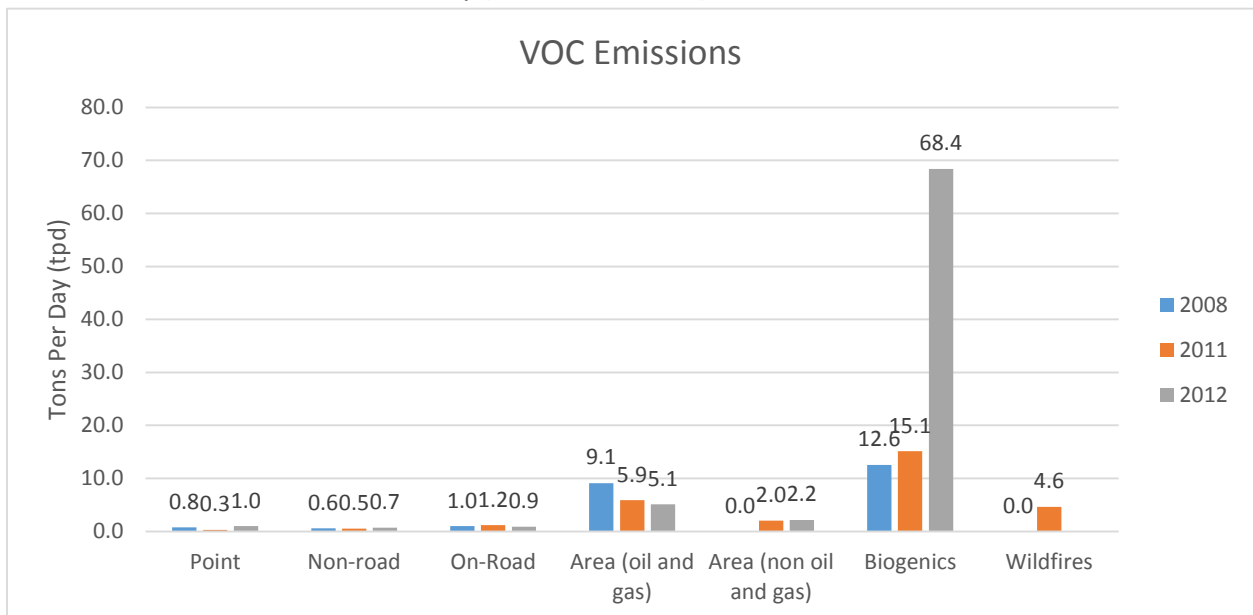


Figure 6. Summary of VOC Emission Sources (tpd) for Hood County Data Source: 2008 NEI v2.0, 2011 NEI v1.0, TCEQ Emission Inventory (Grant et al., 2015)



3.4 Analysis of Ozone Transport

As part of the technical work that was done for Hood County, photochemical modeling of a June 2006 ozone episode was performed (Johnson et al., 2015). A source apportionment analysis was carried out to quantify the relative impacts of local Hood County emissions sources and transported ozone on high ozone days at the Granbury monitor. The photochemical modeling showed ozone due to transport is a dominant contributing factor to ozone in Hood County (Figure 7). Figure 8 provides a detailed source apportionment by region for the episode average contribution to daily maximum 8-hour ozone and indicates that, of all areas within Texas, the DFW region had the largest impact on ozone at the Granbury monitor. The modeling indicates that there are four other Texas regions that contribute more ozone to the Granbury (CAMS 73) monitor than local sources. These include HOTCOG (Waco area, abbreviated HTCG) contributing an average 4.7 ppb, the West Texas region contributing 3.7 ppb, HGB (Houston Galveston area) with 2.7 ppb, and Central Texas with 2.5 ppb. The HGBPA (HGB+BPA combined) and Northeast Texas regions (NETX+NNETX+SNTX combined) contribute 3.1 ppb and 2.5 ppb, respectively. Three other Texas regions contribute around 1-2 ppb each. These include Victoria/Corpus Christi, CAPCOG (Austin area), and AACOG (San Antonio area) (Parker, et al., 2015). While there have been reductions in Hood County emissions from 2006 to 2012 (Grant et al., 2015), ozone is still an issue due to transport. Because of the influence of ozone transport from areas outside Hood County, regional control measures will play a vital role in ozone reduction at the Granbury monitor C73.

Figure 7. Episode average contribution to daily maximum 8-hour ozone for the Granbury (CAMS 73) monitor from Hood County emissions sources (“local”) and all emissions sources outside of Hood County (“transport”) Data Source: Parker et al., 2015

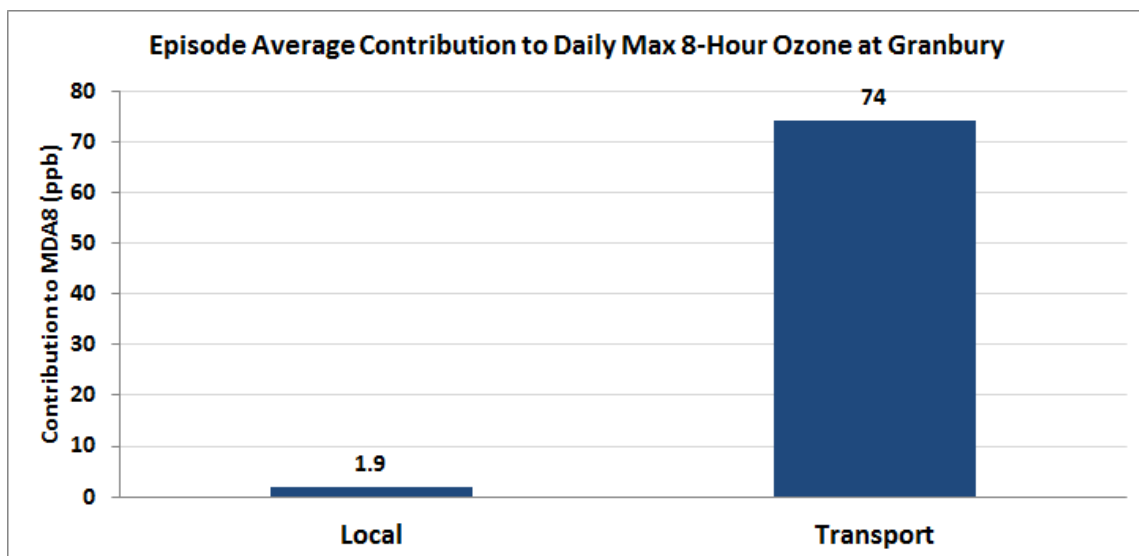
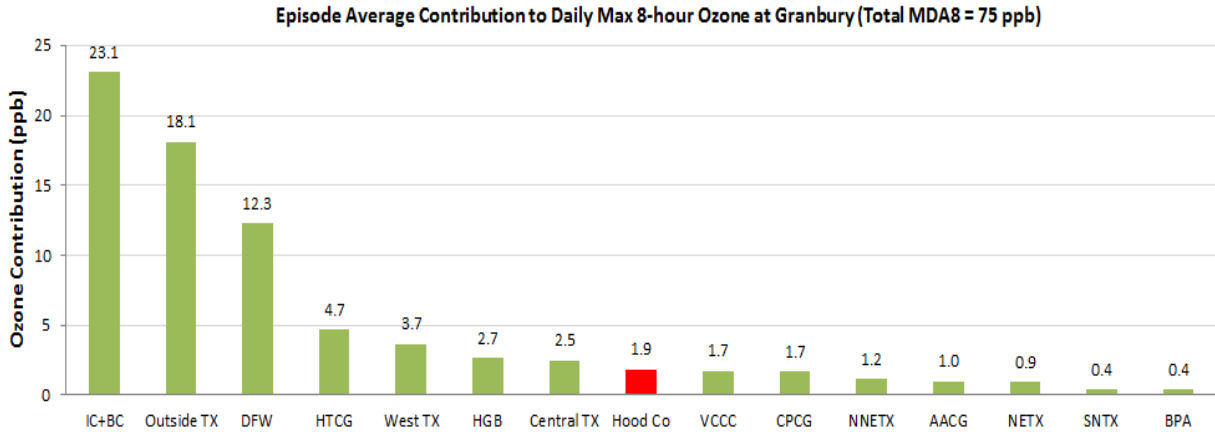


Figure 8. Granbury (CAM5 73) detailed source apportionment by region for the episode average contribution to daily maximum 8-hour ozone. Data Source: Parker et al., 2015



4. 2015 Status of Measures and Programs

Table 3. Status of Measures and Programs

| Project | Entity | Description | Proposed Schedule in Path Forward | Current Status |
|-----------------------|---|--|--|--|
| Stakeholder Group | Hood County Clean Air Coalition (HCCAC) | <ol style="list-style-type: none"> 1. Holding monthly meetings. 2. Researching and coordinating efforts to address air quality issues in Hood County | Current Strategy | Continuous |
| Informational website | Hood County Clean Air Coalition | <ol style="list-style-type: none"> 1. May 2012 website developed 2. June 2014 website expanded and new domain established: www.hoodcountycleanair.com 3. Website was updated and further expanded in February 2015. | Current Strategy | Continuous |
| Intern | HCCAC | Intern position replaced with an Air Quality Program Manager position in 2014. | Current Strategy | Continuous |
| Regional Partnerships | HCCAC | The North Central Texas Council of Governments and North Texas Commission continue to be valuable resources | Current Strategy | The Coalition participates in meetings/conference calls with NCTCOG including bimonthly conference calls for Air North Texas and quarterly DFW Clean Cities. The next conference call is in July and the next quarterly meeting will be in August. |

| Project | Entity | Description | Proposed Schedule in Path Forward | Current Status |
|------------------------------|------------------------------------|--|---|--|
| Public Awareness Campaign | HCCAC | <p>The Coalition hosted a booth at the local Outlook Conference in October 2014.</p> <p>Three public service announcements began playing on a local radio station for the 2015 ozone season from March through August.</p> <p>Three public service announcements began playing on the local public television channel, Granbury TV, in March.</p> <p>The Coalition did an air quality presentation at the Granbury campus of Weatherford College.</p> <p>Prizes with air quality messages were provided to Emma Roberson Elementary for their Earth Day Museum in 2015.</p> <p>The Coalition hosted a booth at the Weatherford Campus of Weatherford College for the College's first Earth Day Event</p> | Increased participation in NCTCOG programs by June 2013 and increased public service announcements by August 2013 | Ongoing |
| Highway Improvement Projects | Texas Department of Transportation | <ol style="list-style-type: none"> 1. Loop 567 extension was completed in June 2013 2. Rail overpass project still in Project Development Process | <ol style="list-style-type: none"> 1. Scheduled for completion June 2013 2. Project Development Process | <ol style="list-style-type: none"> 1. Completed June 2013 2. Ongoing. Last public meeting was February 2014 which was included in the 2014 report. |

| Project | Entity | Description | Proposed Schedule in Path Forward | Current Status |
|---------------------------|---|--|---|--|
| Trip Reductions | 1. Hood County, City of Granbury, and numerous area employers 2. City of Granbury 3. City of Granbury | 1. Continued use of direct deposit by most of the large employers in the County. 2. Researching the possibility of converting the City's trolley, which had been decommissioned, to alternative fuel – propane. 3. Bike trail is currently undergoing expansion and efforts are being made to provide surrey bicycles to the bike rental program by the end of 2015. | Current Strategies | 1. Continuous 2. Ongoing 3. Complete by end of 2015. |
| Alternative Fuel Vehicles | HCCAC | 1. Plans are underway for the City / County and School District to have two available propane fueling stations for use. 2. Researching the possibility of conversion of the City's trolley, which had been decommissioned, to propane fuel. Also researching the possibility of conversions of light and medium duty vehicles and some lawn equipment to propane. | Research Conversion of city and county fleets | 1. Complete by end of 2015. 2. Ongoing |

| Project | Entity | Description | Proposed Schedule in Path Forward | Current Status |
|---------------------------|--|--|-----------------------------------|--|
| Idling Restrictions | <p>1. Hood County</p> <p>2. City of Granbury, Tolar, and Cresson and Hood County</p> | <p>1. Hood County passed a voluntary idling restriction resolution in April 2012. Anti-idling signs supporting this measure were installed at three County owned parking lots in 2015.</p> <p>2. The City of Granbury passed an Idling Restriction Ordinance in October 2013 and signed and sent a Memorandum of Agreement (MOA) for enforcement to the TCEQ. The City received the MOA from TCEQ in May 2014 and now has the authority to enforce the Ordinance. Anti-idling signs supporting the voluntary measure of the County resolution were installed at four City of Granbury owned parking lots, and one each in Cities of Tolar and Cresson, and will be installed in three County parking lots as well.</p> | | <p>1. The county does not have the authority to enforce this, but encourages voluntary actions with the Resolution. Signs provide educational outreach</p> <p>2. Ordinance enforcement is done by the Granbury Police Department for the Idling Restriction Ordinance. Anti-idling signs provide educational outreach.</p> |
| Travel Systems Management | HCCAC | Investigation of signal improvement or additional turn lanes | August 2013 | Ongoing – efforts to find information regarding travel systems management have not been successful to this point, but will continue to try to seek improvements |
| Review of Air Permits | HCCAC | Continuing to monitor air permits. Reviewed permits for possible expansion for power plants at Wolf Hollow and De Cordova. | Current Strategy | Continuous |

| Project | Entity | Description | Proposed Schedule in Path Forward | Current Status |
|---------------------------------------|---|--|---|---|
| Modeling Emission Sources | HCCAC | Technical work including a Conceptual Model, Emission Inventory Review, and Photochemical Modeling were completed in 2015. Additional research is planned for 2016. | Long term Strategy for future consideration | Completed some technical projects, additional projects planned |
| Review of Efforts at Eagle Ford Shale | HCCAC | | Long term Strategy for future consideration | |
| Improved Energy Efficiency | 1. United Cooperative Services 2. Tri County Cooperative and United Cooperative 3. Vista Sand | 1. United Cooperative Services, local utility, completed construction on LEED certified building which includes an energy management education center and a charging station for electric vehicles. 2. Tri County Cooperative and United Cooperative both offer free energy audits for customers 3. Upgraded dryer equipment for sand mining activities to energy star rated equipment that reduces emissions. | Long term Strategy for future consideration | 1. Construction completed 2. Ongoing 3. Completed |

4.2 Discussion of Programs and Measures Status

4.2.1 Outreach and Education

4.2.1.1 Stakeholder Group

One of the first steps in Hood County's air quality efforts was the formation of the stakeholder group – the Hood County Clean Air Coalition (HCCAC). The Coalition continues to meet monthly to discuss the status of current projects and to consider future activities that will address air quality issues in Hood County including technical projects, reviewing of new air permits, and education and outreach to citizens about air quality issues. A current list of members of the coalition and their affiliations are found in Appendix A. The stakeholder group is a continuous and ongoing measure to address ozone in Hood County.

4.2.1.2 Informational Website

The Coalition sponsors an informational website that was originally developed in May 2012. By the end of December 2014, a new expanded website was established with a new domain, www.hoodcountycleanair.com. The grant funding received through TCEQ allowed for additional upgrades to the website completed in February 2015. The current website includes the Ozone Advance Path Forward Document, quarterly newsletters produced by the Coalition, meeting agendas, and daily air quality information. It also has links to EPA, the Ozone Advance Program, and Air North Texas, one of the Coalition's regional partnerships. Additional links to other regional partners through the North Central Texas Council of Governments (NCTCOG) including Dallas Fort Worth (DFW) Clean Cities and Try Parking It were added with the website improvement. Links were also added for EPA's Enviroflash website, the City of Granbury, Granbury Chamber of Commerce, Hood County, and Take Care of Texas website for TCEQ. The website is a measure that aids with education and outreach for air quality issues in Hood County.

4.2.1.3 Intern position

The Coalition initially created an intern position to help with maintenance of the group. This position transitioned into a full time Air Quality Program Manager position to manage the various measures and programs being implemented. This position began in 2014 and is also funded through the Rider 8 Grant from TCEQ.

4.2.1.4 Regional Partnerships

The Coalition continues to benefit from the valuable resources available through regional partnerships with the NCTCOG and the North Texas Commission (NTC). In June of 2013, Hood County joined the Department of Energy's Clean Cities Program through the DFW Clean Cities. Hood County partnered with DFW Clean Cities, the Texas Railroad Commission, and ATMOS Energy to provide an educational Forum Event for area fleets (Hood County Natural Gas Forum) in February 2014. Efforts are made to participate in the quarterly meetings of the DFW Clean Cities. The Air Quality Program Manager participated in the last conference call for DFW Clean Cities in March 2015. Transportation staff from the Granbury ISD participated in the Alternative Clean Transportation Expo sponsored by DFW Clean Cities in May 2015. The Try Parking It program seeks to reduce the number of commuter trips through alternative transportation including carpool and vanpool options (Try Parking It, 2014). A link to this program was added to the HCCAC website in 2015.

4.2.1.5 Public Awareness Campaign

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 HCCAC. In 2013, the HCCAC participated in one Homeowner's Association meeting along with a representative from Air North Texas. In October 2014, the Hood County Clean Air Coalition hosted a booth at the Economic Outlook Conference providing outreach and educational materials provided by partners like Air North Texas and DFW Clean Cities.

In an ongoing effort to help fund air quality projects, information is sent out regarding new regional air quality funding opportunities to Coalition members and are often included in the Granbury Chamber of Commerce weekly newsletter and posted to the City's social media sites. The Coalition continued in 2015 with the partnership with a local elementary school, Emma Roberson Elementary, by helping with judging their Earth Day Museum and providing air quality related prizes including an activity book produced by Air North Texas. Public Service Announcements (PSAs), again funded through the TCEQ Rider 8 Grant, began playing at the beginning of the 2015 ozone season on local radio and TV. The three radio PSAs, which began in March, are scheduled to play at least three times each Saturday through the beginning of August. The scripts for the PSAs came from material produced by Air North Texas and the Federal Highway Administration's "it all adds up" campaign for air quality. Three TV PSAs began running on the public television station, Granbury TV, in late February 2015. These PSAs run several times each day and come from material produced by Air North Texas.

Additionally in 2015, a presentation was made to the Granbury campus of Weatherford College and the Coalition hosted a booth at the Weatherford College Earth Day Event at the Weatherford campus. The education and public awareness campaigns are ongoing and continuous. Education and awareness campaigns have potential to reduce both NOx and VOC (EPA, 2012b).

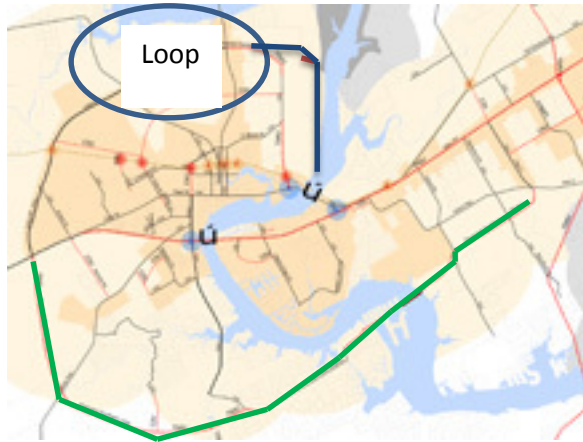
4.2.2 Transportation

4.2.2.1 Highway Improvements

Measures included in the Path Forward addressing highway improvements included the extension of Loop 567 to avoid congestion in the downtown Granbury area. The Loop connected Highway 51 to Pearl Street, bypassing the town square and improving traffic flow in the area. The extension was completed in June 2013 and it has improved traffic flow around the town square especially during high traffic times like early morning and late afternoon. Long term plans include a possible extension to the southern section of Loop 567.

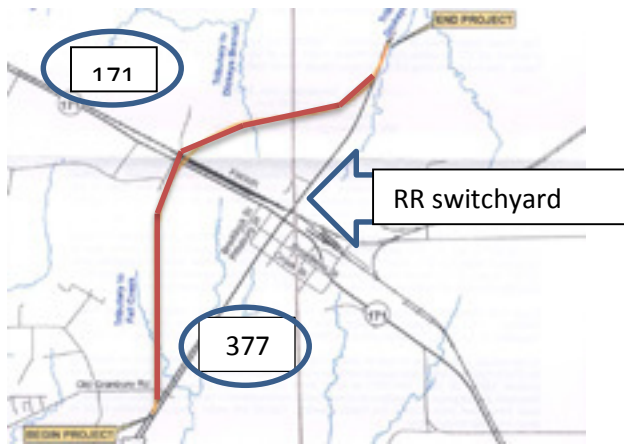
The second highway improvement project discussed in the Path Forward was an overpass over the railroad switchyard and State Highway 171 in Cresson, Texas. The overpass will improve mobility on Highway 377 which has had issues of traffic flow in the area partially due to the rail traffic. Highway 377 is the main route from Granbury to the Dallas-Fort Worth area and is used extensively. This project is still in the Project Development Process with the Texas Department of Transportation (TxDOT). In February 2014, TxDOT held an informational meeting to provide an update for the overpass plans. Construction is estimated to cost \$38.8 million and current funding is \$10.75 million. TxDOT will continue to work with Counties to identify full funding. It is estimated that construction could potentially begin in 2016 and construction would take approximately 2 years. An environmental document has been completed for the project in accordance with the National Environmental Policy Act. As of this report, there have been no additional public meetings. Figure 7 is an illustration of the two highway improvement projects. These types of travel efficiencies can reduce NOx emissions by 2-5% (EPA, 2012b).

Figure 7. Highway Improvements a.) Granbury Loop 567 extension b.) Cresson project



a.) Current Loop 567 Extension ———

Possible future expansion Loop 567 ———



b.) Cresson Overpass Project ———

4.2.2.2 Trip Reductions

There were several programs already in place that reduce trips in Hood County. Several of the main employers use direct deposit including those listed in Table 4.

Construction on the expansion of the Moments in Time Hike and Bike Trail began in 2015. 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. The expansion will add 0.2 miles including a bridge. A map of the trail is found in Figure 8. Efforts are being made to include information about the trail on the NCTCOG bike web page for additional advertising.

Additionally, through the TCEQ Rider 8 Grant, there are plans to add three surrey bicycles to the City of Granbury bike rental program. The surrey bicycles can carry two adults and two small children.

Table 4. Hood County Employers Using Direct Deposit *Data Source: Lake Granbury Area EDC, 2014*

| Employer | Number of Employees |
|------------------|---------------------|
| Granbury ISD | 1000 |
| City of Granbury | 170 |
| Hood County | 355 |
| Wal-Mart | 417 |
| H.E.B. | 200 |
| Kroger | 100 |
| Lowe's | 150 |
| Home Depot | 115 |
| T.E.A.S. | 135 |

Figure 8. Map of Moments-In-Time Hike and Bike Trail



Existing trail —

Trail expansion —

In the last update, information was included that the City of Granbury retired its trolley that was in operation for over ten years and was considering alternatives, such as tram and van service to transport tourists and visitors to the historic district (Hood County News, 2013). There are now plans to research the possibility of converting the trolley to propane alternative fuel and bring it back into service. Through the TCEQ Rider 8 Grant, the City will have access to a propane fueling station. The addition of clean alternative fuel public transportation will result in fewer NOx emissions. 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 continue to operate busses for their residents' local transportation needs as well. The combination of reduction in trips and use of active transportation will result in emission reductions.

4.2.2.3 Alternative Fuel Vehicles

The HCCAC has partnered with different groups for two events to promote compressed natural gas and propane vehicles. The first event was held in February 2014 in partnership with DFW Clean Cities, the Texas Railroad Commission, and Atmos Energy. The event was held in Granbury and various fleet managers in the area were invited to learn about the benefits of alternative fuel vehicles. The second event was held in April 2014 in Cresson. The Cresson event included representatives from the Texas Railroad Commission and alternative fuel infrastructure companies. Area oil and gas service companies were invited to learn about compressed natural gas fuel. Plans are to research conversion of the trolley as well as other light to medium duty vehicles and some lawn equipment to propane. The City of Granbury, Hood County, and Granbury ISD are considering the possibilities of alternative fuel vehicles. 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 could result in significant reductions of NOx emissions.

4.2.2.4 Idling Reductions

In October 2013, the City of Granbury signed and sent a Memorandum of Agreement (MOA) to the Texas Commission on Environmental Quality (TCEQ) and adopted an Idling Restriction Ordinance. The City received the MOA signed by TCEQ in May 2014 and now has the authority to enforce the Ordinance. Hood County passed a voluntary idling restriction resolution in 2012. Enforcement of the Ordinance within city limits and education of the voluntary Resolution will help with emission reductions. Anti-idling signs supporting the voluntary measure of the County resolution were installed at four City of Granbury owned parking lots, one each in Cities of Tolar and Cresson, and will be installed in three County parking lots as well. Elimination of

long duration idling can result in NO_x reduction of 10-33% and VOC reductions of 21-60% (EPA, 2012b).

4.2.2.5 Travel Systems Management

Investigation into travel systems management is ongoing. Through the addition of turn lanes and signal improvement in the City of Granbury, emissions will be reduced.

4.2.3 Review of Air Permits

The Hood County Clean Air Coalition will continue to review any air permit received by 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. Two such air permits were reviewed in late December 2014 and January 2015. One permit was for an expansion scheduled at the Wolf Hollow Power Plant and the other was for a possible expansion at De Cordova Power Plant. Information from these permits were included in the technical work completed in 2015 through the Rider 8 Grant from TCEQ. These efforts will be continuous.

4.2.4 Modeling Emission Sources

Technical work including a Conceptual Model, Emission Inventory Review, and Photochemical Modeling was completed in the spring of 2015. The Conceptual Model and Photochemical Modeling reports used ozone modeling of the June 2006 episode. The Conceptual Model is a report that assembles and documents what factors contribute to high ozone in an area. It includes air quality data, emissions and meteorological data, and photochemical ozone modeling. The June 2006 ozone modeling associated with the Conceptual Model report indicated that the episode average contribution to the daily maximum 8 hour average ozone at the Granbury monitor by Hood County was 1.9 ppb while transport contributions were an estimated 74 ppb. In the modeling, days with ozone readings greater than 75 ppb at the Granbury monitor (C73) were most often associated with near-surface winds from either the east/northeast or east/southeast. The modeling also showed that, of all areas within Texas (including Hood County), the DFW area had the largest impact on ozone levels at the Granbury monitor (C73) (Parker et al., 2015). This information indicates that regional efforts to reduce emissions are very important to reducing ozone in Hood County.

4.2.5 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 continues to have 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. Oil and gas related companies have been included in the alternative fuel vehicle and infrastructure meetings. Ongoing efforts may result in increased involvement of representatives of oil and gas companies active in Hood County in the clean air effort.

4.2.6 Improved Energy Efficiency

Hood County continues to 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. United Cooperative Services, a local utility, began construction on a LEED certified building addition which will include an energy management education center and a charging station for electric vehicles. The addition was completed in March 2015. The Tri County Cooperative and United Cooperative continue to offer free energy audits for customers. Vista Sand, an industrial sand provider near Granbury, recently upgraded their dryer equipment to energy star rated equipment that reduces emissions. Improved energy efficiency for public and private entities will result in emission reductions for the region.

5.0 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 joined the Advance Program in April 2012 and commits to continuing to follow the general schedule:

June 2015 Submit second annual report on status of local air quality, measures and programs in place and lessons learned, re-evaluate and revise path forward as necessary.

Summer 2015 Action on measures/programs:

- 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

June 2016 Submit 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 continues to be committed to the Ozone Advance Program as part of its efforts to improve air quality in the region. Through the formation of the HCCAC, the county has brought

together many groups of stakeholders to coordinate efforts to address the issues. The coalition represents that these stakeholders continue to support taking action to support clean air efforts including participation in the Ozone Advance Program.

Dave Porcher, Chairman of Hood County Clean Air Coalition

Michelle McKenzie, Air Quality Program Manager
Hood County Clean Air Coalition

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Appendix A

Hood County Clean Air Coalition Members

| Name | Affiliation |
|------------------------------|--|
| Board Members | |
| Dave Porcher (Chairman) | Dave Porcher Mowing Service |
| Darrell Cockerham | 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, City of Granbury |
| Terry Johnson | Mayor, City of Tolar |
| Joe Drew | Vista Sand |
| Members | |
| 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 |
| 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 |
| Chris Coffman | Granbury City Manager |
| Michelle McKenzie | Air Quality Program Manager, Hood County Clean Air Coalition |