CORPUS CHRISTI OZONE ADVANCE ANNUAL REPORT: MAY 2015 – APRIL 2016

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CORPUS CHRISTI OZONE ADVANCE PROGRAM

ANNUAL REPORT
MAY 2015 – APRIL 2016

INTRODUCTION

On December 15, 2012, the Corpus Christi Air Quality Group submitted a letter of intent to the U.S. EPA to participate in an Ozone Advance Program. In May 2014, the Corpus Christi Air Quality Group submitted a Path Forward Letter to the United States Environmental Protection Agency (EPA) initiating Corpus Christi's participation in an Ozone Advance Program with the U.S. EPA. In May of 2015, the Corpus Christi Air Quality Group submitted a report on Year 1 activities that took place from May 2014 – April 2015 of the Ozone Advance Program to the U.S. EPA.

The following is the annual report for the Corpus Christi Ozone Advance Year 2 activities that took place from May 2015 – April 2016.

Corpus Christi Air Quality Group Background

The Corpus Christi Air Quality Group was established in 1995 to address National Ambient Air Quality Standards (NAAQS) ozone attainment issues for the Corpus Christi Airshed. Participants in the Corpus Christi Air Quality Group include individuals from area municipal and county government, business and industry, local universities, public agencies, a regional planning organization, the military and the news media. The broad stakeholder representation within the Corpus Christi Air Quality Group works collaboratively to design and deliver effective strategies that are suitable for the Corpus Christi area. The group meets quarterly in public facilities such as Texas A&M University-Corpus Christi, City Hall, conference centers, etc. and all meetings are open to the public. Each member/stakeholder of the Corpus Christi Air Quality Group receives a meeting invitation and agenda.

The Corpus Christi Air Quality Group met on April 17, July 17 and October 20, of 2015, and January 29 and April 21, of 2016. Included in this report ***(Attachment A)*** is a communication list for the Corpus Christi Air Quality Group.

Corpus Christi Ozone Advance Goal

The goal of the Airshed participation in the Ozone Advance Program is to continue the area's successful record of maintaining healthy air quality and to encourage voluntary air emission reductions that keep Nueces County and San Patricio County in attainment with the current 8-hour ozone standard of 70 ppb.

Corpus Christi Airshed Definition

Corpus Christi Urban Airshed is made up of two adjoining counties in South Texas: Nueces County and San Patricio County. Nueces County and San Patricio County, ***(Figure 1)*** are defined by the EPA and the Texas Commission on Environmental Quality (TCEQ) as an urban airshed in which air emissions from sources in both counties interact to influence the level of ambient air pollution in the Corpus Christi community. Control of ambient air quality requires a strategy that considers sources of air emissions in both counties.

Figure 1: Map of Corpus Christi Urban Airshed and location of regulatory ozone monitors (CAMS 4 and CAMS 21)

The region is a large urbanized area with a number of industrial point sources of air emissions and a concentration of mobile sources. The two counties are home to the nation's fifth busiest deep-water port with access to the Gulf of Mexico and the Gulf Intracoastal Waterway, and are home to a large industrial and petrochemical complex, a major military base, oil and gas exploration activity, and a network of highways including an interstate highway system, railroads, and an airport that facilitate commerce and a thriving tourism industry. In addition, currently under construction is a large LNG facility (Cheniere), a stainless steel pipe manufacturing facility (TPCO), a plastics/resin production facility (M&G), and an iron processing facility (Voestalpine).

Applicable Standards

The current National Ambient Air Quality Standard (NAAQS) for ozone: the fourth highest daily maximum 8-hour average, averaged over the past three calendar years, may not exceed 70 ppb.

Airshed Ozone NAAQS Status and Trending

The TCEQ (TCEQ) operates two Continuous Air Monitoring Stations (CAMS) in Corpus Christi: TCEQ CAMS 4, located at the Corpus Christi State Supported Living Center at 902 Airport Road; and TCEQ CAMS 21, located in West Guth Park at 9866 La Branch Street ***(Figure 1)***. Ozone levels recorded at these two monitors are used to determine the attainment status of the area. Currently, the Airshed is in attainment of the NAAQS for ozone at a current design value of 65 ppb at CAMS 4 and 62 ppb at CAMS 21. The Airshed has experienced an overall decreasing trend in ozone values from 2002 through 2015 ***(Figure 2)***.

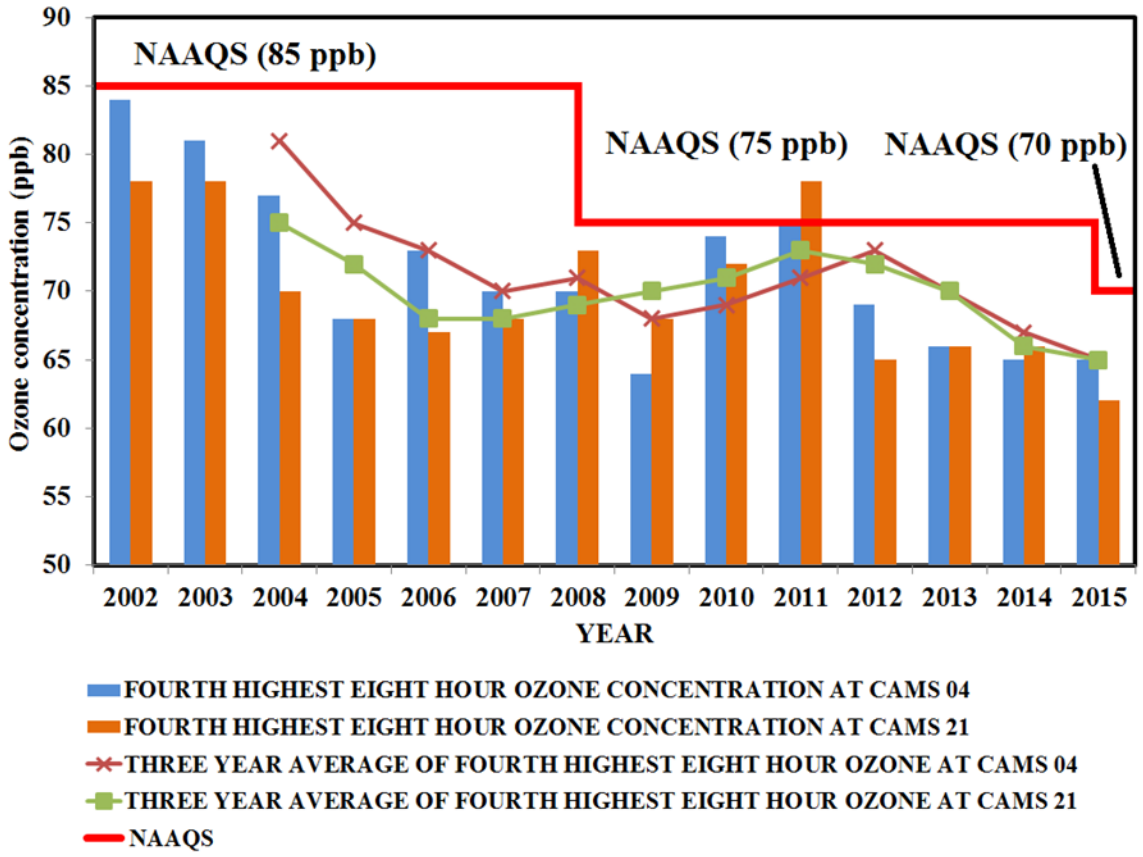

Figure 2: Corpus Christi Ozone Design Trends

Additional ozone monitors are positioned upwind for research purposes by Corpus Christi Air Quality Group participant and stakeholder Texas A&M University-Kingsville/University of Texas ***(Figure 3)***. The upwind air monitors, Aransas Pass (CAMS 659) and Odem (CAMS 686), have begun to reflect an overall decreasing trend in design values ***(Figure 4)***.

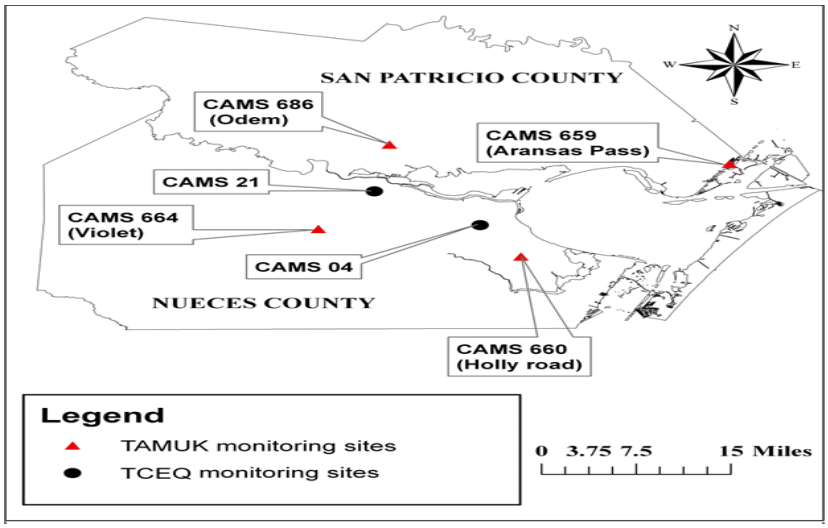

Figure 3: Map of Research Air Monitors Operated by TAMUK/UNT

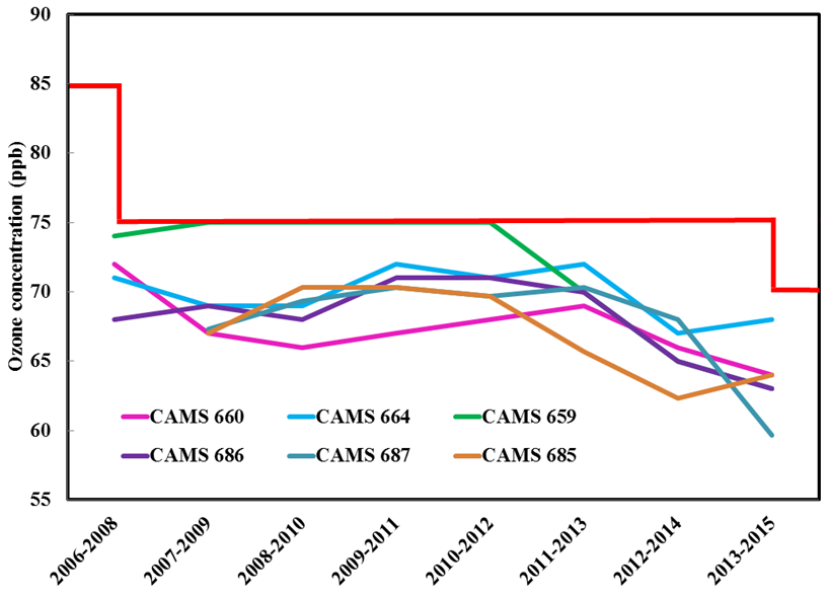

Figure 4: Ozone Trending at Upwind Monitors

PATH FORWARD COMMITTED EMISSIONS REDUCTION ACTIVITIES PERFORMED DURING MAY 2015 – APRIL 2016

Port of Corpus Christi and Construction Emissions Inventory

1. Path Forward Commitment

The Corpus Christi air-shed 2011 emissions inventory provided by TCEQ did not include port emissions or construction equipment. The Corpus Christi Air Quality Group requested a work-plan and quote from StarCrest LCC to provide an inventory and accurate analysis of these missing components in an effort to have a complete inventory and analysis of overall emissions contributions for our air-shed. The Port of Corpus Christi has committed to funding the Year 1 and 2 work plan for a total amount of $153,500 and StarCrest will perform those activities.

Status of Commitment for Year 1 and Year 2

The commitment is on track with the schedule stated in the Path Forward Plan for both Year 1 and Year 2, with the project being now complete. StarCrest commenced work on the port emissions inventory (including harbor craft and towboats, cargo handling equipment, heavy duty vehicles, ocean going vessels, and rail) and the construction equipment inventory for Nueces and San Patricio County in June 2014. This analysis will augment the existing mobile source inventory completed by the TCEQ that was completed for 2011, estimated up for 2013, in order to provide a full more current regional emission inventory. StarCrest provided the 2013 Air Emissions Inventory Report which included only the port emissions inventory. The construction equipment inventory effort failed after several attempts to get complete data. StarCrest was able to get data from the Texas Department of Transportation on construction equipment usage in the two counties but was not able to get construction equipment data for other construction activities from the local Associated Builders and Contractors or the Associated General Contractors for the timely completion of the 2013 Emissions Inventory Report.

Path Forward for Year 3

The Year 3 commitment was to utilize the emissions inventory data to identify additional emission reduction opportunities that will benefit our region. The 2013 Regional Emission Inventory Report is being evaluated by the Ozone Advance Working Group and the Port for additional voluntary opportunities to reduce emissions in our region. Additionally, outreach efforts to the two construction contracting company associations continue in the hopes that more accurate construction emission detail can be summarized in the next regional emission

inventory. The 2013 Air Emissions Inventory Summary presentation is included ***(Attachment B)*** in this report.

Establishment of Air Quality Position and Program

2. Path Forward Year 1 Commitment

The Corpus Christi Air Quality Group will work with stakeholders and potential sponsors to try to secure funding for a position that delivers a community-wide education campaign that strives to educate members of the community about the air quality impact of their choices and lower emission alternative choices that are available to them. An educated public is an important component of any community that strives to maintain healthy air quality.

Status of Commitment for Year 1

The development and submittal of a proposal to establish a full time air quality education position and program within the first year as stated in the Path Forward Plan is on track. A proposal in the amount of $100,000 per year was developed by the Pollution Prevention Partnership at Texas A&M University-Corpus Christi to fund an air quality public education program. The proposal included a full time position salary and benefits as well as a budget for billboards, bus benches, bus wraps, media buys and printed materials. The position would also work to establish relationships with schools to fly air quality flags and distribute any other EPA available material. The proposal was submitted to several representatives of various area businesses and industry as well as the Chamber of Commerce in search of sponsorship. To date, funding for such a program has not been offered or available. Establishing the position and program has not taken place.

Status of Pending Commitment from Year 1

Efforts to obtain funding for a position that delivers a community-wide education campaign in Year 2 were unsuccessful. The Chair of the Corpus Christi Air Quality Group performed several searches for grants available and studied numerous grant announcements in search of funding for an air quality education position or campaign. The only possible funding source found during these searches was Congestion Mitigation federal funding or CMAQ. A telephone call to a CMAQ funding representative confirmed that at present, CMAQ funding is currently available for areas in non-attainment of ozone standards only. Meetings during Year 2 with local entities discussing possible funding for the position were also unsuccessful.

Path Forward for Year 2

If funded in Year 1, a dedicated fulltime position will be secured and a community wide public education program for air quality will begin. This position will be

responsible for delivering a community-wide air quality education program that will take advantage of the many EPA resources already available such as Ozone Day school flags, brochures, website, social media messaging resources, posters, school curricula and more.

Status of Commitment for Year 2

Despite a concerted effort in Years 1 and 2 to identify funding for a dedicated fulltime position to deliver community-wide air quality education programs, the position was not funded in Year 1 or Year 2 and therefore not established.

The Corpus Christi Air Quality Group met their commitment in Year 1 and Year 2 to search out funding possibilities through stakeholders, potential sponsors, and grants to secure funding for a position that delivers a community-wide ozone education campaign.

Establishment of an Air Quality Position and Program Commitment Revision

There is no indication through the many Year 1 and Year 2 grant searches, studies of grant announcements and meetings with local stakeholders that funding for this full-time position and program will become available. There were however, opportunities for no-cost public education tools and outlets identified and offered during these meetings such as newsletters, Face Book, Twitter feeds and distribution pieces that could be made available to provide air quality community education.

This Path Forward Public Education commitment for Year 3 and beyond is revised to state: *The Corpus Christi Air Quality Group will work with stakeholders, community agencies and media to deliver community-wide messages and recommendations that strive to educate members of the community about the air quality impact of their choices and lower emission alternative choices that are available to them*.

Path Forward for Year 3

The Chair of the Corpus Christi Air Quality Group will meet again with local entities that offered no-cost public education opportunities and work to implement these opportunities. These opportunities include contributing to Corpus Christi Chamber of Commerce newsletters that go out to over 400 local businesses about emissions reductions, including air quality messages in the Local Emergency Planning Committee (LEPC) info-line, investigating air quality messages to be included in LEPC reverse alert telephone and text notifications on elevated ozone days, contributing to LEPC Twitter and Face Book postings, participation in Corpus Christi Regional Economic Development Corporation welcome packages distributed to new businesses, and providing ozone notification tools and prepared messages to local meteorologists and the local newspaper (Corpus Christi Caller-

Times). The Chair will also work with stakeholders to prepare an electronic presentation about air quality and emissions reduction recommendations that can be utilized by community, industry, local government and business speakers. In addition, the Chair will continually review the EPA website found at https://www.epa.gov/education for resources such as school flags, digital distribution pieces and more for community education opportunities.

Air Quality Curricula

3. Path Forward Commitment for Year 2

A Port Industry funded air quality curricula will be delivered to 5th grade classes.

Status of Commitment for Year 2

During Year 2, Port Industries funded the development of the curricula, the presenter, and learning prizes for students. In Year 2, the curricula was delivered to 7 classes in 2 elementary schools. A total of 175 students received the curricula. Students were pre tested on air quality and emission reduction recommendations before receiving the lessons and post tested after receiving the lessons. An improvement of over 50% in pre and post test scores was realized in most classes.

Path Forward for Year 3

The Port Industries has provided funding for the air quality curricula to continue into the Fall 2016 school session.

Monitoring

4. Path Forward Commitment

Through TCEQ funding provided by the 83rd Texas Legislature, the City of Corpus Christi has secured $596,195.00 in funding for a two-year work plan to implement numerous voluntary emissions reductions studies and programs.

A summarized scope of work follows:

Research, Modeling, Monitoring

Operate and maintain the three research grade monitoring stations within Nueces and San Patricio counties. These include:

- *an upwind site at the waste water treatment plant in Aransas Pass, TX (CAMS 659);*
- *a downwind site located at Violet Road, near Robstown, TX (CAMS 664);*

- *an urban site at the municipal water pumping station on Holly Road (CAMS 660), SH358 (South Padre Island Drive) in Corpus Christi.*

An additional research grade monitoring station, CAMS 686 (Odem, Texas) setup in the San Patricio county as an integral part of the Supplemental Environmental Project (SEP), will also be maintained for better spatial assessment of ozone levels within the Airshed.

Acquire data using an Enfora modem and provide the data to the public, stakeholders, and other researchers on TCEQ's website using the LEADS data acquisition system.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. The research grade monitoring stations have been operated through 2014 measuring continuous ozone measurements and meteorological parameters including resultant wind speed, resultant wind direction, outdoor temperature and relative humidity. The data has been published on TCEQ's website using the LEADS data acquisition system and is made available to stake holders, policy makers, researchers and community members. The web link to view and access the data is http://www.tceq.state.tx.us/cgi-bin/compliance/monops/daily_summary.pl. The data measured has been used to update the conceptual modeling report to assess the attainment status, identify episode days for further meteorological analysis and locate possible regional sources contributing to long-range transport. The conceptual modeling report will be submitted for review and approval by TCEQ.

Path Forward for Year 2

Continuous monitoring of ozone and prevailing meteorological conditions will be continued at the urban site – CAMS 660 and downwind site – CAMS 664 during April 1, 2015 through October 31, 2016. In consideration of industrial development in San Patricio county and monitor, the inbound air parcel transport, CAMS 685 – Ingleside monitoring site setup as an integral part of Supplemental Environmental Project (SEP) will be continued during April 1, 2015 through October 31, 2016.

Status of Commitment for Year 2

The commitment is on track with the schedule stated in the Path Forward Plan. Continuous monitoring of ozone and prevailing meteorological conditions including resultant wind speed, resultant wind direction, outdoor temperature and relative humidity was conducted during Year 2 at CAMS 659 – Aransas Pass (Upwind site); CAMS 660 – Holly road (Urban site); CAMS 664 – Violet (downwind site) and CAMS 686 – Odem.

During 2015, the downwind site – Violet (CAMS 664) recorded fourth highest daily maximum eight hour ozone concentration of 69 ppb while CAMS 659 and CAMS 660 recorded 60 ppb. Odem – CAMS 686 located in the San Patricio county recorded the lowest fourth highest daily maximum eight hour ozone concentrations of 59 ppb during 2015. On May 1, 2015 daily maximum eight hour ozone concentrations exceeding current NAAQS of 70 ppb were recorded at compliance grade monitoring stations CAMS 04 and CAMS 21 as well as research grade monitoring stations including CAMS 659, CAMS 660 and CAMS 664. The downwind site recorded two episode days during October, 2015. Additional data analysis is being performed to study the prevailing meteorological conditions as well as diurnal and seasonal trends.

5. Path Forward Commitment for Year 1

Conduct continuous monitoring of nitrogen oxides (NOx) concentration at an identified site during the 2014-2015 ozone season.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. Continuous monitoring of ozone precursor – nitrogen oxides (NOx) was conducted at CAMS 660 – Holly road site during ozone season of 2014. NOx concentrations ranging between 1.5 ppb to 14.5 ppb were measured during April 15th, 2014 through October 31st, 2014 while NO concentrations were observed to range between 1 ppb to 10 ppb.

Path Forward for Year 2

Continuous monitoring of oxides of nitrogen (NOx) will be conducted during ozone season of 2016 (April 1, 2015 through October 31, 2016) at CAMS 660, Holly road site. Detailed data analysis will be conducted to study the trends, identify episodes and characterize prevailing meteorological conditions.

Status of Commitment for Year 2

The commitment is on track with the Path Forward Plan. The continuous monitoring of oxides of nitrogen was conducted at CAMS 660 – Holly road site during April 1, 2015 through October 31, 2015. Daily maximum one hour NOx concentrations ranging between 1.2 ppb to 15.1 ppb were recorded during ozone season of 2015 while daily maximum one hour NO concentrations were observed to range between 0.7 ppb to 6.8 ppb. An was conducted to study the trends of NOx concentrations during ozone seasons of 2014 and 2015 along with identification of episode days with high ozone and NOx concentrations for further assessment of prevailing meteorological conditions and diurnal trends. During days with elevated NOx concentration dominant contribution from east, southeast and southwest wind sectors was noted along with significant contribution from the

North and Northwest sectors. The diurnal time series analysis conducted during the high NOx episode days indicated elevated concentrations during early morning, midafternoon and late evening is contributed primarily by local rush hour traffic.

6. Path Forward Commitment

Upgrade air monitoring equipment at the three UNT/TAMUK monitoring sites.

Status of Commitment for Year 1

The commitment is on track with the Path Forward Plan. Two new Teledyne-API 400E ozone analyzers and Teledyne – NOx analyzer have been acquired. RM Young wind sensors have been repaired and calibrated to acquire valid wind measurements.

7. Path Forward Commitment

Update the conceptual modeling report with the ozone concentrations as measured to identify and characterize the ozone episodes. The data will also be used to identify potential photochemical episodes for further analysis.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. A Quality Assurance Project Plan (QAPP) to update the existing conceptual modeling report developed for ozone season 2011 and 2012 has been developed and submitted to TCEQ's technical committee for review. Data analysis has been conducted to update the conceptual modeling report which upon approval of QAPP will be submitted to TCEQ for review and approval.

Status of Commitment for Year 2

The commitment is on track with the schedule stated in the Path Forward Plan. The Quality Assurance Project Plan (QAPP) was developed to update the conceptual modeling report through 2014. The QAPP has been submitted and approved by TCEQ's technical committee. Following the protocol of QAPP conceptual modeling report for the urban airshed has been updated through 2014. As shown by the data analysis in the conceptual modeling report ***(Attachment C)*** Corpus Christi is in attainment with the current Ozone NAAQS by a slight margin. The compliance grade TCEQ monitoring stations (CAMS 04 and CAMS 21) and research grade UNT-TAMUK maintained monitoring stations upwind site – CAMS 659 (Aransas Pass); urban site – CAMS 660 (Holly road site) and Odem site – CAMS 686 recorded one to three episode days with daily maximum eight hour ozone concentration exceeding NAAQS. The downwind site – CAMS 664 recorded up to 6 episode days exceeding current NAAQS of 70 ppb. Additional

analysis assessing the prevailing meteorological conditions during the identified episode days along with twenty-four hour backward trajectory analysis to locate the probable regional source contributors was performed.

Research

8. Path Forward Commitment

Update the attainment status of ozone National Ambient Air Quality Standards (NAAQS) and analyze the design value trends for the Airshed through the current ozone season. The ozone concentrations measured at the compliance grade monitoring stations maintained and operated by TCEQ (CAMS 04, CAMS 21) along with the research grade monitoring stations maintained and operated by UNT/TAMUK (CAMS 660, CAMS 664, CAMS 659, and CAMS 686) will be used to study the annual and seasonal trends of ozone exceedances along with the diurnal trends. The ozone concentrations will be further used to identify the episode days exceeding current NAAQS and to characterize the prevailing meteorological conditions. The analysis will be used to update the conceptual modeling report for the Airshed for further identification of photochemical modeling episodes.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. Ozone concentrations and meteorological conditions including resultant wind speed, resultant wind direction, outdoor temperature and relative humidity measured at compliance grade monitoring stations including 04 and 21 maintained and operated by TCEQ and research grade monitoring stations CAMS 660, CAMS 659, CAMS 664 and CAMS 686 maintained and operated by UNT-TAMUK to update the existing conceptual modeling report. Continued decrease in the ozone design values has been noted at both the compliance and research grade monitoring stations. During 2014, the fourth highest eight hour ozone concentrations of 62 ppb, 63 ppb, 66 ppb and 67 ppb were recorded at CAMS 686, CAMS 664, CAMS 660 and CAMS 659, respectively. Data from this activity is reflected in Figures 2, 3, and 4 of this report.

Additional analysis of exceedance days considering the current NAAQS of 75 ppb and proposed levels of 70 ppb, 65 ppb and 60 ppb measured at both compliance and research grade monitoring stations during 2014 was conducted to assess the temporal and spatial variations in ozone concentrations. During 2014 one day of exceedance as per the current NAAQS was recorded at CAMS 659 – upwind site and CAMS 660. Seasonal trend analysis of exceedance days demonstrated bimodal distribution with higher numbers during April through May and September through October.

Meteorological analysis of the identified episode days indicated dominant wind contribution from the north and northwest. Additional trajectory analysis was

conducted using the twenty-four hour backward trajectories generated using Hybrid Single-Particle Lagrangian Integrated Trajectory-Model (HYSPLIT) for the identified episode days. The trajectory analysis suggested an impact of regional transport from highly industrialized cities of Texas including Houston-Galveston, Beaumont and Dallas-Fort Worth along with surrounding states. Data has been submitted to TCEQ for review and approval.

Status of Commitment for Year 2

The commitment is on track with the schedule stated in the Path Forward Plan. Ozone concentrations and meteorological conditions including resultant wind speed, resultant wind direction, outdoor temperature and relative humidity measured at compliance grade monitoring stations including 04 and 21 maintained and operated by TCEQ and research grade monitoring stations CAMS 660, CAMS 659, CAMS 664 and CAMS 686 maintained and operated by UNT-TAMUK are being used to update the existing conceptual modeling report. The conceptual modeling report will be submitted to TCEQ's technical committee for review and approval. Continued decrease in the ozone design values has been noted at both the compliance and research grade monitoring stations. During 2015, the fourth highest eight hour ozone concentrations of 59 ppb, 69 ppb, 60 ppb and 60 ppb were recorded at CAMS 686, CAMS 664, CAMS 660 and CAMS 659, respectively. Data from this activity is reflected in Figures 2, 3 and 4 of this report.

Path Forward for Year 3 and 4

Through TCEQ funding, provided by the 84th Texas Legislature, the City of Corpus Christi has secured $405,243 in funding for a two-year work plan for Years 3 and 4 to:

- Continue the air monitoring, modeling and research described above
- Continue the Clean Fleet program discussed below

The work plan for this funding is attached to this report ***(Attachment D)***.

Clean Fleet

9. Path Forward Commitment

The Pollution Prevention Partnership will deliver the "Clean Fleet" vehicle emissions testing program and hold a minimum of one testing event each month. The program will include direct emissions testing from the tail pipe, possible repairs, post-repair direct emissions testing from the tail pipe, and an approximation of emissions reductions as a result of the repair. Certified garages will perform the repairs.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. The Pollution Prevention Partnership held 17 events testing public and fleet vehicles for emissions. A total of 489 vehicles were tested for emissions. Thirty-eight (38) vehicles were identified as polluting and 66 gas caps were identified as leaking and replaced. Approximate emissions reductions as a result of replacing the gas caps and emission reducing repairs is two (2) tons per year of NOx and four (4) tons per year of HC. (Approximation of emissions reductions based on CARB and California emissions studies on approximating emissions reductions as a result of repairing polluting vehicles.) http://www.valleycan.org/_pdfs/titu_-2007_ArvinFinalReportJuly10-2008.pdf. Attached are data sheets including pre repair and post repair emissions and emission reduction calculations. ***(Attachment E)***

The Pollution Prevention Partnership also made numerous presentations to local agencies and community groups encouraging emission reducing activities. Groups included the Breakfast Club, the USO, local television networks, Rotary, Chamber of Commerce, and more. The Pollution Prevention Partnership's website was used to announce vehicle emission events and other emission reduction information and received 48,709 hits and the social media page reached 552 people.

Status of Commitment for Year 2

The Clean Fleet commitment is on track for Year 2 of the Ozone Advance Path Forward. The Pollution Prevention Partnership and AutoCheck Program held 31 events since May 2015, testing public and fleet vehicles for emissions. A total of 470 vehicles were tested for emissions, 15 vehicles were identified as highly polluting and 40 gas caps were identified as leaking and needing replacement.

Approximate emissions reductions as a result of documented repairs and gas cap replacement is .01 tons per year of NOx and 1.2 tons per year of HC. Spreadsheets including pre and post repair emissions and emissions reductions calculations are attached to report ***(Attachment E)***.

The Pollution Prevention Partnership also made numerous presentations to local agencies and community groups encouraging emission reducing activities. Groups included Flint Hills Environmental, Health, Safety Fair, Corpus Christi Air Quality Group and the Moody High School AP Environmental Science Class.

Pollution Prevention Partnership also estimated the composition of the Nueces and San Patricio County Alternative Fuel light vehicle fleet and created models of emission reduction gains by various alternative fuel technology adoption

scenarios. The presentation was delivered to the air quality group and made available through the Pollution Prevention Partnership web site.

Four hundred twenty (420) presentations and documents about ozone reduction, alternative Fuels, and alternative transportation were downloaded onto the Pollution Prevention Partnership website and there were 5,281 other page hits. The Pollution Prevention Partnership website can be found at http://outreach.tamucc.edu/p3/.

Path Forward for Year 3

A minimum of one Auto Check/Clean Fleet event will be held each month beginning in January 2016 to test an average of 20 vehicles per month for the period of January 2016 through December 2017. Pollution Prevention Partnership (P3) will make every effort to ensure that at least half of all vehicles tested are private, non-fleet vehicles. In the event that a scheduled event is cancelled, it will be rescheduled. If it is rescheduled to a different month, both it and the event scheduled for that month will be performed.

The Auto Check/Clean Fleet program will measure vehicle emissions from area public and private fleets for hydrocarbons and NO_X; coordinate emission reducing repairs for identified polluting fleet vehicles; re-test the emissions of each repaired vehicle; calculate and quantify emissions reductions as a result of repairs; and enter all information for all tested vehicles (“clean” and “dirty”) into an excel spreadsheet to be sent to the TCEQ with quarterly reports.

The Pollution Prevention Partnership will attend or facilitate meetings for/with local governments, businesses, citizens groups, industry groups and environmental groups to promote air pollution reduction strategies. A presentation about local air quality including emissions reduction strategies and community outreach programs (such as the Auto Check/Clean Fleet events) will be created to be given at these meetings where appropriate.

The Pollution Prevention Partnership will maintain a public website/web page to facilitate public access to air quality information and outreach programs and will report on the analytics of website/web page traffic. The website will include the following information:

- current air quality information for the Corpus Christi area
- copies of technical reports
- copies of presentations
- emissions, reduction strategies
- outreach event information

Use of IR Cameras

10. Path Forward Commitment

Several Port Industries will continue to utilize IR cameras to detect and prevent fugitive emissions beyond what is required in regulations for fugitive emissions.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. Several Port Industries continued to utilize IR cameras to detect and prevent fugitive emissions beyond what is required in regulations for fugitive emissions.

Status of Commitment for Year 2

The commitment is on track with the schedule stated in the Path Forward Plan. Several area industrial facilities utilized IR cameras to detect fugitive emissions in Year 2. A table summarizing area industry's use of IR cameras in addition to numerous other voluntary initiatives can be found on page 28 of this report and supporting documentation is attached ***(Attachment F)***.

CCAD Ozone Action Day Notifications

11. Path Forward Commitment

Corpus Christi Army Depot (CCAD) is one of the largest industrial employers in the airshed and is committed to preventing pollution by including emissions reductions in ozone precursors as part of its environmental strategy. CCAD is a stakeholder in the City's Air Quality Work Group and provides all employees with notifications when Ozone Action Days are declared and offers voluntary actions to take during and after work periods. CCAD runs a screensaver through its entire web base that informs all employees of Ozone Alert notifications and recommendations.

Status of Commitment for Year 1

There were no Ozone Action Days called in 2014, however the CCAD communication system was set up and ready to launch should an Ozone Action Day be called.

Status of Commitment for Year 2

There were no Ozone Action Days called in 2015, however the CCAD communication system was set up and ready to launch should an Ozone Action Day be called.

Path Forward for Year 3

CCAD will continue to provide all employees with notifications when Ozone Action Days are declared and offer voluntary actions to take during and after work periods. CCAD will continue to run a screensaver through its entire web base that informs all employees of Ozone Alert notifications and recommendations.

Announcements of Federal and State Funding Opportunities

12. Path Forward Commitment

All TCEQ Texas Emissions Reductions Program (TERP), Diesel Emissions Reductions *(DERA), and other TCEQ and EPA applications for funding opportunities will be communicated to the Corpus Christi Air Quality Group and their work places by the Group's Chair.*

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. Notification to the Corpus Christi Air Quality Group for DERA projects were submitted in May, August and September of 2014. A letter of support from the Corpus Christi Air Quality Group was provided in December, 2014 to the Port of Corpus Christi for a DERA project application. There were no TERP funds available for this reporting period. A Clean School Bus application notification was distributed to the Group in August.

Status of Commitment for Year 2

The commitment is on track with the Year 2 schedule stated in the Path Forward Plan. A notification was circulated to the Corpus Christi Air Quality Group about Federal funding opportunities for emissions reductions programs on May 2, 2015 and another notification was circulated on May 13, 2015, for TERP funding opportunities.

Path Forward for Year 3

All TCEQ Texas Emissions Reductions Program (TERP), DERA, and other TCEQ and EPA applications including the SmartWay program for funding opportunities will be communicated to the Corpus Christi Air Quality Group and their work places by the Group's Chair.

Production of Low Reid Vapor Pressure LRVP, RVP) Gasoline

13. Path Forward Commitment

Local refineries will continue to provide the Corpus Christi area with gasoline that

has a maximum vapor pressure of 7.8 psi during the months of May through September. In the month of October, 9 psi vapor pressure fuel will be provided; a reduction from the maximum of 11.5 psi currently allowed by Regulation in the month of October.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. Local refineries provided the Corpus Christi area with gasoline that had a maximum vapor pressure of 7.8 psi during the months of May through September and 9 psi in October of 2014.

Status of Commitment for Year 2

The commitment is on track with the schedule stated in the Path Forward Plan. Several area facilities produced LRVP gasoline in Year 2. A table summarizing area production of LRVP gasoline in addition to numerous other voluntary initiatives can be found Table 2 of this report and supporting documentation is attached in ***(Attachment F)***.

Operation of Public Use Compressed Natural Gas (CNG Fueling Facilities

14. Path Forward Commitment

The City of Corpus Christi will continue to operate two public use CNG fueling stations. The City of Corpus Christi plans to purchase 15 Original Equipment Manufacture bi-fuel CNG vehicles within the year.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. The City of Corpus Christi has three (3) CNG stations; one (1) for City use only and two (2) are available for public use. The City is currently in the bid process for the establishment of a forth CNG station which will be available to the public and expect to have that station in operation by 2nd quarter of 2016.

The City of Corpus Christi has purchased 70 CNG bi-fuel and dedicated vehicles in 2014 and plan to purchase a minimum of 50 bi-fuel or dedicated CNG vehicles in 2015.

Status of Commitment for Year 2

The commitment is on track with the schedule stated in the Path Forward Plan. The City of Corpus Christi is currently constructing a new public CNG station. This will give the Gas Department two CNG stations for City use only and two available for the public. Approximately 20-25 CNG vehicles were purchased in FY 15, with

orders currently being taken for FY16. City departments are encouraged to consider purchasing CNG vehicles as needed.

Path Forward for Year 3

CNG will continue to be considered for all new vehicle purchases at the City. The City is also considering building a CNG station in Flour Bluff.

USPS Installation of CNG Fueling Station and Purchase of CNG Vehicles

15. Path Forward Commitment

The US Postal Service will be installing another CNG fueling facility and will be purchasing 26 additional CNG vehicles.

Status of Commitment for Year 1

The US Postal Service plans to begin this project in 2015.

Status of Commitment for Year 2

Unfortunately the USPS has decided not to pursue the CNG facility at this time, and no additional CNG vehicles were purchased. No plans to install this station in 2016 have been identified.

Path Forward for Year 3

The City will continue to encourage its partners to consider CNG vehicles.

RTA Purchase of CNG Vehicles

16. Path Forward Commitment

The Regional Transportation Authority (CCRTA) will replace seven (7) gasoline fueled Paratransit vehicles with seven (7) CNG fueled vehicles and 24 diesel powered buses with 24 CNG buses by December 2018.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. The CCRTA replaced 23 diesel Paratransit vehicles and 20 diesel buses with CNG vehicles.

Status of Commitment for Year 2

The commitment is on track with the schedule stated in the Path Forward Plan. The CCRTA replaced 15 diesel fueled buses with 15 CNG buses in Year 2.

MPO Assistance with Bicycle Transportation Planning

17. Path Forward Commitment

The Corpus Christi Metropolitan Planning Organization (MPO) will assist other local government agencies in implementing the Regional Bicycle and Pedestrian Plan with the objective of improving facility accessibility to encourage the use of bicycling and walking as trip alternatives. The MPO will assist agencies, such as the City of Corpus Christi, to establish a database of accessible bike/pedestrian facilities, to coordinate MPO and City planning documents to be consistent between policies and practices, and to facilitate dialogue between the bicycle community and TxDOT, TAMUCC, and the City about the creation of new facilities, new policies, and the dissemination of public information.

Status of Commitment for Year 1

The commitment has exceeded its tasks and activities as stated in the Path Forward Plan. In February of 2015, the Corpus Christi Metropolitan Planning Organization (MPO) undertook a replacement of the 2005 Regional Bicycle and Pedestrian Plan. The new Strategic Plan for Active Mobility will be completed in two phases: Phase I Bicycle Mobility and Phase II Pedestrian Mobility. Phase I will address prescriptively:

- Where (on which corridors/segments) in the urbanized area of Nueces and San Patricio counties should bike facilities be installed to create a cohesive bicycle mobility network that connects key destinations, functionally expands the reach of the transit network, and accommodates a diversity of riders

- What type of facilities (e.g. on-street bike lanes, separate cycle tracks, etc.) should be installed on which segments

- How, i.e. to what standards, should those facilities be designed (and maintained). Phase I will also include recommendations and best practices related to:

    - Planning of ancillary and end-of-trip facilities (e.g. racks, public repair stations, lockers, bike share infrastructure, wayfinding)

    - Education, enforcement and encouragement programs for promoting safe biking culture and awareness

- Policy and code reform program (i.e. roadway maintenance, safe passage)

- Development of performance measures to track progress against regional bicycle mobility and safety goals and objectives

As part of this effort, the MPO has accomplished the following during the reporting period:

- Presented the scope of the planning effort to regional decision makers in multiple venues:

    - City of Corpus Christi City Manager and Senior Leadership (3/2/15)

    - Corpus Christi City Council (3/10/15)

    - City of Portland City Manager and Director of Engineering (3/19/15)

    - Corpus Christi Chamber of Commerce Infrastructure Committee (4/10/15)

    - Coastal Bend Bays Foundation (4/13/15)

    - Mayor's Fitness Council (scheduled 6/11/15)

- Created a multi-faceted Stakeholder Engagement Plan that details strategies for engaging plan users (i.e. municipalities and other entities that will support the construction of facilities specified in the plan) as well as a diversity of facility users (e.g. students, commuters, casual recreational riders)

- Established a Steering Committee comprising delegates from 22 entities that are considered plan entities. The first meeting of this body was held on April 15, 2015.

- Established dedicated Web portal (www.CoastalBendInMotion.org) to facilitate stakeholder engagement in the planning process

- Established three primary tools for virtual data collection, all of which are functional and are yielding high volumes of quality data about stakeholder priorities:

    - On-line mapping tool to capture where users ride or where they would like to ride if the conditions for cycling improved

- Downloadable SmartPhone application that allows users to log real-time data about their rides

- On-line survey about riding habits, needs and perceived obstacles to cycling as transportation

- Leveraged financial contribution from the Corpus Christi Regional Transportation Authority to support consultant to provide technical assistance in implementing direct (in-person) stakeholder engagement

- Leveraged financial contribution from City of Corpus Christi to support consultant in providing technical assistance to the MPO with demand modeling and bike facility selections

- Created geo-spatial (Geographic Information Systems) database with individual data layers for variables that will inform bike facility network development (e.g. origin/destination data at the Traffic Analysis Zone (TAZ) level, location of key people generators, including employment centers, shopping hubs, health care facilities, groceries and markets, transit stops, academic institutions, etc.)

Status of Commitment for Year 2

The commitment continues to exceed its tasks and activities as stated in the Path Forward Plan.

The Bicycle Mobility Plan was completed in December of 2015 and delivered to the City of Corpus Christi and the City of Portland in February of 2016. This new plan prescribes:

- Where (i.e. on which corridors/segments), in the urbanized area of Nueces and San Patricio counties, should bike facilities be installed to create a cohesive bicycle mobility network that connects key destinations, to functionally expand the reach of the transit network and to accommodate a diversity of riders

- What type of infrastructure (i.e. on-street bike lanes, separate cycle tracks, etc.) should be installed on each segment of the 290 mile network to uphold the level of safety to which the community aspires

- How (i.e. to what national standards) should those bicycle facilities be designed and maintained

The plan also includes over 60 best practice recommendations related to:

- Priorities for trip support facilities (i.e. racks, public repair stations, lockers,

bike share infrastructure, wayfinding), education and encouragement programs for promoting safe biking culture and awareness

- Policy and code reform programs (i.e. roadway maintenance, safe passage)

- Program evaluation to track progress against regional bicycle mobility and safety goals and objectives

For each strategy, the plan included a suggested lead entity, potential partners, and relative priority and cost.

The 10-month planning effort that yielded the Bicycle Mobility Plan included extensive, multi-pronged stakeholder engagement:

- 4 meetings of Project Steering Committee (20+ member body representing municipalities and other entities that will ultimately help implement the plan)

- Project website: www.CoastalBendInMotion.org that includes tools for virtual engagement

- 205 **MAP IT** routes by 84 discrete users

- 300+ discrete users logged routes via **TRACK IT** smartphone app

- 220 on-line **ANSWER IT** survey responses

- 12+ presentations by MPO Director or staff

- 15 public events attended by consulting team

- 46 key interviews conducted

- 900+ leaflets/posters distributed

- 5 focus groups conducted (industry, business owners, design engineers, Regional Transportation Authority operators and Corpus Christi Police Department)

Information gathered revealed that on average, most individual residences in the metropolitan area of Nueces and San Patricio counties are within a two to five minute bike ride (on a neighborhood street) from some segment of the network, and the network delivers riders within ¼ mile of:

- 158 of 178 (89%) early education and daycare centers, grade schools (public and private) and higher education campuses

- 122 of 143 (85%) parks over two acres in size
- 104 of 130 (80%) groceries, meat and fish markets, bakeries and corner markets
- 541 of 657 (82%) low income housing units (Section 8 or Housing Tax Credit properties)
- 1088 of 1319 (83%) transit stops and stations
- 186 of 242 (77%) pools, senior centers, recreation centers, movie theaters, community pools, fitness centers, museums and hotels

On the basis of feedback gathered from the community through interviews, focus groups, and on-line tools, the planning team prioritized a low-stress rider experience and maximal separation between cyclists and cars by using off-road trail segments on storm water easements wherever possible. Where the bike network corresponds to the street network, the planning team prioritized neighborhood streets with low traffic volumes and speeds. Where the network falls on busier roads, the Plan prescribes alternatives to the standard on-street bike lane, such as separated multi-use paths or protected cycle tracks.

The following table summarizes the Plan's infrastructure type and network distances.

Table 1 – Plan Infrastructure and Network Miles

Infrastructure Type	Network Miles	Percent of Network
*Low Cost/Rapid Implementation** *No major capital investment required other than paint and signage		
Bicycle Boulevard	64	22
Buffered Bike Lane	6	2
Strategic Capital Investments		
Multi-use Sidepaths	9	3
1-way Cycle Tracks	145	50
Off-road Multi-use Trails (on storm water and old railroad easements)	66	23
	290	

The Plan can be viewed at http://online.fliphtml5.com/dnvt/ldqv/.

Maps included in the Plan can be viewed at https://ccmpo.maps.arcgis.com/apps-/webappviewer/index.html?id=fd393dbf23c645f89180a818476354a7.

Path Forward for Year 3:

Strategic Plan for Active Mobility

- Construction of Bond 2012 and 2014 roadway projects (currently in design) will yield the implementation of separated cycling infrastructure (one-way protected cycle tracks adjacent to the sidewalk on both sides of the street) on nearly 10 miles of roadway.

- Phase II of the MPO's Strategic Plan for Active Mobility: a Pedestrian Plan will be initiated in Spring 2016, with a target completion date of December, 2016.

Corpus Christi Air Quality Group Education Efforts

18. Path Forward Commitment

The Corpus Christi Air Quality Group represents a broad array of agency, industry, university and media associations. The Chair of the Corpus Christi Air Quality Group will communicate, promote and encourage all participants and their workplaces to take advantage of the many EPA education and outreach resources for air quality, including Enviroflash, AirNow, social media messaging, brochures, posters, anti-idling program templates and more.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. In July of 2014 and May, 2015, the Chair sent electronic communications to the over 100 participants in the Corpus Christi Air Quality Group ***(Attachment A)*** that provided instructions on how to register for AirNow alerts and forecasts. Also included in the communication were numerous prepared scripts for emission reduction recommendations that could be easily forwarded or mass emailed should an AirNow alert be received. Examples of workplace polices to implement during elevated ozone days was also included in the May 2015 distribution. Attached are sample scripts and emissions reduction recommendations. ***(Attachment C)***

Status of Commitment Year 2

The commitment is on track with the schedule stated in the Path Forward Plan. In September 2015, communications were sent to the Corpus Christi Air Quality Group that included instructions on how to register for AirNow alerts and forecasts. Also included in the communication were numerous prepared scripts for emission reduction recommendations that could be easily forwarded or mass emailed. Incoming new industry representatives were added to the Corpus Christi

communication list and included in all Corpus Christi Air Quality Group communications.

Path Forward for Year 3

The Chair of the Corpus Christi Air Quality Group will continue to communicate, promote, and encourage all participants and their workplaces to take advantage of the many EPA education and outreach resources for air quality, including Enviroflash, AirNow, social media messaging, brochures, posters, anti-idling program templates, and more. All TCEQ Texas Emissions Reductions Program (TERP), DERA, and other TCEQ and EPA applications including SmartWay program funding opportunities will be communicated to the Corpus Christi Air Quality Group and their work places by the Group's Chair.

Promotion of Van Share Program

19. Path Forward Commitment

The Chair of the Corpus Christi Air Quality Group will partner with a Regional Transportation Authority representative to promote the Van Share program and will arrange for presentations at major local employers.

Status of Commitment for Year 1

The commitment is on track with the schedule stated in the Path Forward Plan. The Regional Transportation Authority(RTA) was an invited speaker at the July, 2014 Corpus Christi Air Quality Group meeting where over 15 industrial and major employers were represented. The RTA representative provided Van Pool registration information for work-sites. An e-mail was sent to the over 100 Corpus Christi Air Quality Group members that provided the RTA presentation, contact information for the representative and encouragement to schedule a workplace appointment for the representative ***(Attachment A)***. In November, 2014, the RTA representative was included in a presentation to the San Patricio County Regional Development Corporation regarding the air quality impact of numerous industrial facilities seeking to locate to the area and traffic management plan encouragement for the several hundred workers that will be commuting to the facilities.

Status of Commitment for Year 2

An e-mail was sent to the over one hundred (100) Corpus Christi Air Quality Group members in September, 2015, that provided the RTA presentation, contact information for the representative and encouragement to schedule a workplace appointment for the representative. In Year 2, two (2) companies utilized vanpools with a total of two (2) vanpools at Port Royal Condominiums and four (4) vanpools at TPCO; a pipe manufacturing facility under construction.

ADDITIONAL EMISSIONS REDUCTION ACTIVITIES ACCOMPLISHED MAY 2015 – APRIL 2016

Shuttles for Community Events

During Year 2, the Regional Transportation Authority provided shuttle service to numerous community events, thereby removing vehicles from the road and reducing idling and congestion. Events with shuttle service provided include:

- Beach to Bay – May 16, 2015
- July 4th Celebration – July 4, 2015
- Jazz Fest – October 16 – 18, 2015
- Fiesta de Los Muertos - October 31, 2015
- Feast of Sharing – December 24, 2015
- Buc Days – April 21 – May 1, 2016

Regional Parkway Mobility Corridor

Multiple regional partners, including the MPO, City of Corpus Christi, and Nueces County, initiated the Regional Parkway Planning and Environmental Linkages (PEL) study for two of seven segments of the Regional Parkway Mobility Corridor. This PEL is a follow up to a 2012 Feasibility Study that indicated that a regional parkway route was merited and feasible if constructed in segments of independent utility. The PEL study, approved by the MPO Transportation Policy Committee on April 4, 2014, will serve as an interim step to a full National Environmental Policy Act review of the potential project, which would reduce vehicle miles traveled and congestion—and thus fuel consumption and emissions—by providing an alternative to heavily travelled SH 358 (South Padre Island Drive). After extensive stakeholder engagement the Regional Parkway PEL will be completed late summer 2016.

Padre Island Access and Mobility Study

The City of Corpus Christi, the MPO, and other regional partners began implementing the Padre Island Access and Mobility Study—which will identify mobility and access management issues along 11 miles of State Highway 361and develop applicable transportation management strategies to mitigate those issues. The recommended strategies will be implementable over a range of time scales and are intended to help address mobility challenges in the face of projected growth and land use changes as well as environmental change.

Travel Demand Model

The City of Corpus Christi, the Corpus Christi Regional Transportation Authority, the MPO and other regional partners began implementing the Strategic Integration Feasibility

Study, which will integrate transit and land use data into the regional Travel Demand Model (TDM) that is maintained by the MPO. This expansion of the scope of the TDM will enhance the accuracy and efficacy of growth and travel demand projections, allowing for more informed prioritization and planning of transportation infrastructure projects and seeking to reduce congestion.

Electric Vehicle Infrastructure

La Palmera, a major shopping mall in Corpus Christi, has free electric vehicle parking and charging stalls.

Mobility CC

The City of Corpus Christi continued their implementation of Mobility CC, a guide for multimodal transportation. The Mobility CC document can be found at http://www.cctexas.com/Assets/Departments/PlanningEnvironmentalServices/Files/MobilityCC.pdf. During Year 2, a Mobility CC Project Checklist was developed. The checklist must be completed by the Project Manager of any city street project to confirm that Mobility CC recommendations for accommodating alternative transportation modes and efficient land use are being considered and applied. A copy of the checklist is attached to this report ***(Attachment G)***.

Looking ahead to Year 3, the city will continue to require all project managers to complete a Mobility CC checklist and include Mobility CC guidelines in future planning efforts such as a regional travel demand model and updates to traffic impact analysis and access management guidelines as part of the Unified Development Code.

Community Group Collaboration

The Chair of the Corpus Christi Air Quality Group is a member of and actively participates in monthly meetings of several community groups that address air quality issues and air quality planning. The Chair's active and routine participation ensures that air quality issues are discussed and worked with in the community on a regular basis. These community groups/monthly meetings include the City of Corpus Christi Transportation Commission and its Bicycle and Pedestrian Advisory Committee and Mobility CC Committee, the Long Term Health Group, the Regional Health Awareness Board, the Chamber of Commerce Infrastructure Group, quarterly Texas Clean Air Working Group meetings, quarterly Corpus Christi Air Monitor Network meetings, and participation in EPA Ozone Advance Webinars.

Briefings

The Chair also conducted several briefings to community groups and leaders regarding current air quality issues and challenges. Briefings were provided to the Corpus Christi Caller Times newspaper, the Local Emergency Planning Committee, the Port Industries Technical Committee, The Chamber of Commerce Board, Nueces County Commissioners and Corpus Christi City Council.

Coastal Bend GreenBuilt

Corpus Christi home builders led an initiative for “green” building entitled Coastal Bend GreenBuilt. The project includes a checklist and assigns a point value for each aspect of green initiatives built into a home. To date, one thousand, five hundred, sixty-one (1,561) homes have been built to be certified as GreenBuilt in the Corpus Christi area with another 123 currently under construction. Local homebuilding GreenBuilt leader Braselton Homes has built 948 certified GreenBuilt homes with 62 under construction. The Coastal Bend GreenBuilt checklist, point system and 3rd party verifier form is attached in this report **(*Attachment H)***.

Stakeholder Initiatives Summary

The following table, Table 2, is a summary of the frequently employed voluntary emission reduction initiatives undertaken by area stakeholders. Supporting letters and surveys documenting these initiatives in addition to numerous additional site specific initiatives are attached in this report ***(Attachment F)***.

The Corpus Christi area has a long history of successful voluntary initiatives that continue to keep our area in attainment of ozone standards, and we look forward to continued successful efforts and remaining in attainment of NAAQS for ozone.

Table 2 – Summary of Stakeholder Initiatives

	Kiewit	Flint Hills Resources	Valero Refining	Citgo Refining	Lyondell/ Equistar	NuStar Energy	Texas A&M Corpus Christi	Port of Corpus Christi	Oxy/Chem	Nueces County	TPCO Under construction	Voelstal-pine Under construction	City of Corpus Christi	M & G Under construction
Register to receive ozone elevation notifications	✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	
Communicate emission reduction recommendations to employees and vendors		✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	
Provide ozone education to personnel		✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	
Anti idle policy	✓						✓	✓		✓			✓	
Postpone deliveries and activities					✓			✓	✓				✓	
Require low VOC materials	✓			✓			✓	✓	✓	✓				
Require scrubbers				✓								✓		
Recommend alternative or mass transit in fence-line		✓	✓	✓					✓		✓			✓
Alternative fuel fleet			✓				✓	✓		✓			✓	
Emissions test fleet							✓	✓		✓			✓	
Replace older fleet	✓						✓	✓	✓	✓			✓	
Repower or replace older engines								✓	✓	✓				
Filter traps and DOCs on diesel fleet														
Use low sulfur diesel							✓	✓		✓				
Flare reduction		✓	✓	✓	✓									
Produce low sulfur diesel			✓	✓										
Produce low RVP gasoline		✓	✓	✓										

Table 2 – Summary of Stakeholder Initiatives
(continued)

	Kiewit	Flint Hills Resources	Valero Refining	Citgo Refining	Lyondell/ Equistar	NuStar Energy	Texas A&M Corpus Christi	Port of Corpus Christi	Oxy/Chem	Nueces County	TPCO Under construction	Voelstal-pine Under construction	City of Corpus Christi	M & G Under construction
Utilization of IR cameras for inspections		✓	✓	✓	✓									
Routine inspections for fugitive emissions	✓	✓	✓	✓	✓		✓	✓	✓					
Low NOx burners	✓	✓	✓	✓	✓		✓		✓	✓		✓		
Flue gas recirculation		✓										✓		
Vapor recovery		✓	✓		✓				✓					
Low emitting tank roofs		✓												
Thermal Oxidizer			✓						✓					
Fired source alarm controls			✓											
Flare gas analyzer			✓											
Energy reduction programs							✓	✓		✓			✓	
Enclosed materials storage and conveyors								✓				✓		
Support planning activities that seek to remove the need to drive vehicles													✓	

ATTACHMENT A

CORPUS CHRISTI AIR QUALITY GROUP

CORPUS CHRISTI AIR QUALITY GROUP
MEMBER LIST

NAME	AFFILIATION
Annette Medlin	Corpus Christi Chamber of Commerce
Annette Medlin	Corpus Christi Chamber of Commerce
Annette Mouttet	Nueces County
Aron Baggett	OxyChem
Art Barrera	Naval Air Station
Bill Vessey	Television Meteorologist
Bob Paulison	Port Industries
Brigida Gonzales	MPO
Brittany Massengill	Kiewit
C Bowen	MarkWest
Carol Nash	Corpus Christi Army Depot
Carrie Meyer	Community
Catherine Barnard	Oxy
Chelsea Swatsell	Naval Air Station
Chestin Bilbo	Pollution Prevention Partnership
Chris Abshire	Valero Refining
Chris Burnett	NuStar
Christopher Amy	TxDOT
Cindy Smith	TCEQ
Claire Meurer	Valero Refining
Colleen Johnson	RPS
Craig Eckberg	NRG
Curtis Taylor	Flint Hills Resources
D K Bennett	Plains Area Pipeline
Dale Nelson	Television meteorologist
Dana Perez	Flint Hills Resources
Danielle Converse	Port of Corpus Christi
Darcy Schroeder	Flint Hills Resources
Darrell Jonas	Air Liquide
David Harvey	Lyondell
Denise Rogers	Trafigura
Dennis Payne	Valero Refining
Dilip Shaw	Naval Air Station Corpus Christi
Dipak Desai	Nueces County
Dr. Kuruvilla John	University of North Texas
Foster Edwards	San Patricio Regional Economic Development Corp
Fred Nardini	San Patricio County Commissioner
Glen Sullivan	Nueces County
Glenda Swierc	Trinity Consultants
Greg Bezdeck	MarkWest
Gregg Robertson	First Rock
Howard Fels	AEP
Howard Peters	Lyondell Citgo Refining
Lian Vasey	Corpus Christi Economic Development Corp
James Hoey	Port of Corpus Christi
Jeff Pollack	MPO
Jeff Turner	Susser/Sunoco
Jerry Batey	TXDOT

CORPUS CHRISTI AIR QUALITY GROUP
MEMBER LIST

NAME	AFFILIATION
Joe Almarez	Valero Refining
John Buckner	Coastal Bend Council of Governments
John LaRue	Port of Corpus Christi
Joseph Haug	Flint Hills Resources
K M Ruggard	Plains Area Pipeline
Kelli Coates	Valero Refining
Kelly Ruble	TCEQ
Kevin McGee	Citgo Refining
Larry Elizondo	Citgo Refining
Leah Olivarri	Public Consultant
Lisa Hinojosa	Citgo Refining
Maricella Cuevas	Corpus Christi Community Advisory Council
Mark Evans	OxyChem
Meagan Marquard	Valero Refining
Metro Desk	Corpus Christi Caller Times
Molly Edens	NuStar
Nancy Hutton	AEP
Nelda Olivio	Port of Corpus Christi
Nick Andrade	Topaz Power Group
Patrick P	Calpine
Paul Carrangelo	Port of Corpus Christi
Paulette Fonten	Citgo Refining
Rafael DeCastro	NuStar
Ralph Coker	Chamber of Commerce, Business Consultant
Ray Allen	Coastal Bend Bays and Estuaries Program
Richard Fenza	Air Liquide
Robert Gonzalez	NBC affiliate
Robert Trebatoski	Lyondel/Equistar
Roger Tennapel	Flint Hills Resources
Rommell Daclan	Naval Air Station
Rosie Collin	Port of Corpus Christi
Ross Ybarra	Naval Air Station
Sarah Garza	Port of Corpus Christi
Saritha Karnae	Texas A&M University-Kingsville
Shannon Parkham	Sherwin Alumina
Sharon Bailey Lewis	City of Corpus Christi
Sharon Montez	Regional Transportation Authority
Sonny Lopez	TCEQ
Steven Coffman	DuPont
Susan Clewis	TCEQ
Tamra Buxkamper	Koch Pipeline
Tom Ballou	Sherwin Alumina
Tom Tagliabue	City of Corpus Christi
Trent Thigpen	Pollution Prevention Partnership
W K Terry	Corpus Christi Ind. School District
Yvonne Jimenez	Celanese
Annette Mouttet	Nueces County

ATTACHMENT B

2013 AIR EMISSIONS INVENTORY REPORT

ATTACHMENT C

CONCEPTUAL MODEL REPORT

ATTACHMENT D

TCEQ FUNDED WORK PLAN FOR YEARS 3 AND 4

ATTACHMENT E

CLEAN FLEET EMISSIONS REDUCTIONS DATA

ATTACHMENT F

STAKEHOLDER EMISSSIONS REDUCTIONS STATEMENTS

ATTACHMENT G

MOBILITY CC PROJECT CHECKLIST

ATTACHMENT H

COASTAL BEND GREENBUILT CHECKLIST