CORPUS CHRISTI URBAN AIRSHED

ANNUAL OZONE ADVANCE REPORT

May 2018 – May 2019

Prepared by Corpus Christi Air Quality Group
gretchen.arnold@stx.rr.com

CORPUS CHRISTI OZONE ADVANCE ANNUAL REPORT: MAY 2018– APRIL 2019

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CORPUS CHRISTI OZONE ADVANCE PROGRAM

ANNUAL REPORT
MAY 2018 – APRIL 2019

INTRODUCTION

On December 15, 2012, the Corpus Christi Air Quality Group (Group) submitted a letter of intent to the Environmental Protection Agency (EPA) to participate in an Ozone Advance Program. In May 2014, the Group submitted a Path Forward Letter (Appendix 1) to the EPA initiating Corpus Christi's participation in an Ozone Advance Program with the EPA. This Path Forward Letter identified voluntary emission reduction activities that would be undertaken over a two-year period; scheduled for completion in May of 2016. In May of 2015, the Group submitted a report to the EPA on Year 1 Ozone Advance activities that took place from May 2014 – April 2015 (Appendix 2). In July of 2016, the Group submitted a report to the EPA on Year 2 Ozone Advance activities that took place from May 2015 – April 2016 (Appendix 3). In June of 2017, the Group submitted a report to the EPA on Year 3 activities that took place from May of 2016 – May of 2017 (Appendix 4). In May 2018, the Group submitted a report to the EPA on Year 4 Ozone Advance activities that took place from May of 2017 – April 2018 (Appendix 5). In addition to reporting on the Path Forward Letter committed voluntary emission reduction activities, each year's report included commitments that "look forward" to future years beyond the Path Forward committed activities and schedule.

The following is the annual report for the Corpus Christi Ozone Advance Year 5 activities. Year 5 activities include a continuation of the Path Forward Letter commitments as well as additional "looking forward" commitments that took place from May 2018– April 2019.

Corpus Christi Air Quality Group Background

The Group was established in 1995 to address National Ambient Air Quality Standards (NAAQS) ozone attainment issues for the Corpus Christi airshed. Participants in the Group include individuals from area municipal and county government, business and industry, local universities, public agencies, a regional planning organization, regional development corporations, the military and the news media. The broad stakeholder representation within the Group works collaboratively to design and deliver effective strategies to maintain NAAQS for ozone that are suitable for the Corpus Christi area. The Group is Chaired by Gretchen Arnold (gretchen.arnold@stx.rr.com) Group participants City of Corpus Christi, Nueces County, Regional Transportation Authority, Metropolitan Planning Organization and Port of Corpus Christi Authority provide funding annually to sponsor Chair functions of the Group. The group meets quarterly and all meetings are open to the public. Each participant of the Group receives a meeting invitation and

agenda, meeting notes that include meeting discussions and presentations, and group recommendations.

During the period of May 2018 – April 2019, the Group met on June 21st, and November 13th, 2018, and February 22 of 2019. Included in this report *(Attachment A)* is a communication list for the Group.

Corpus Christi Ozone Advance Goal

The goal of the Corpus Christi airshed participation in the Ozone Advance Program is to continue the area's successful history of maintaining healthy air quality and to encourage voluntary air emission reductions that keep Nueces County and San Patricio County in attainment with the NAAQS for ozone.

Applicable Standards

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

Corpus Christi Airshed Definition

The 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.

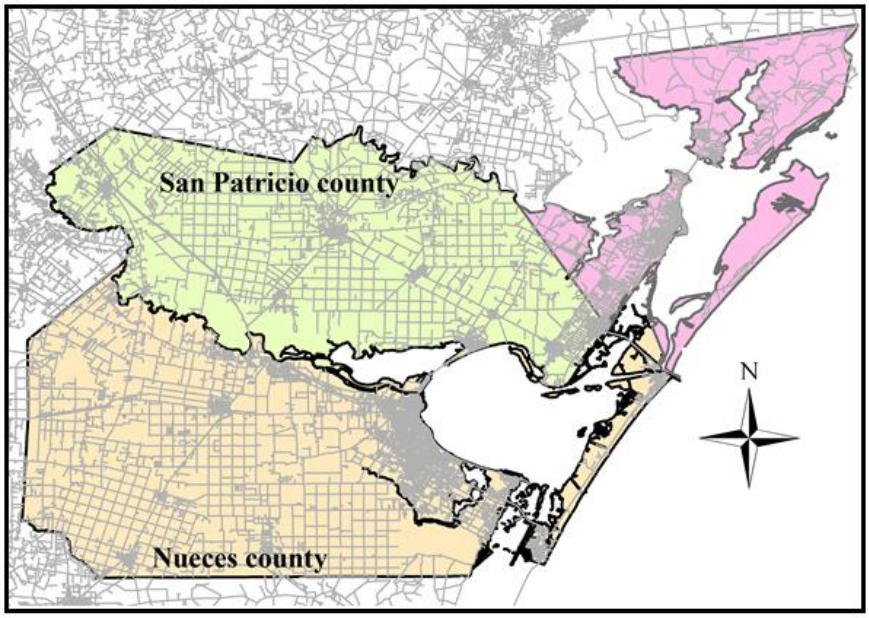


Figure 1: Map of Corpus Christi Urban Airshed

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 fourth busiest deep-water port with access to the Gulf of Mexico and the Gulf Intracoastal Waterway, and is home to a large and growing industrial, manufacturing, 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.

Airshed Ozone NAAQS Status and Trending

The TCEQ operates two Continuous Air Monitoring Stations (CAMS) in Corpus Christi: TCEQ CAMS 4, located at 902 Airport Road; and TCEQ CAMS 21, located at 9866 La Branch Street. TCEQ CAMS 4 and 21 are the regulatory monitors that determine Corpus Christi airshed's compliance with ozone NAAQS.

Additional ozone monitors for research purposes only are operated by Group participant and stakeholder Texas A&M University-Kingsville/University of North Texas (TAMUK/UNT) *(Figure 2)*

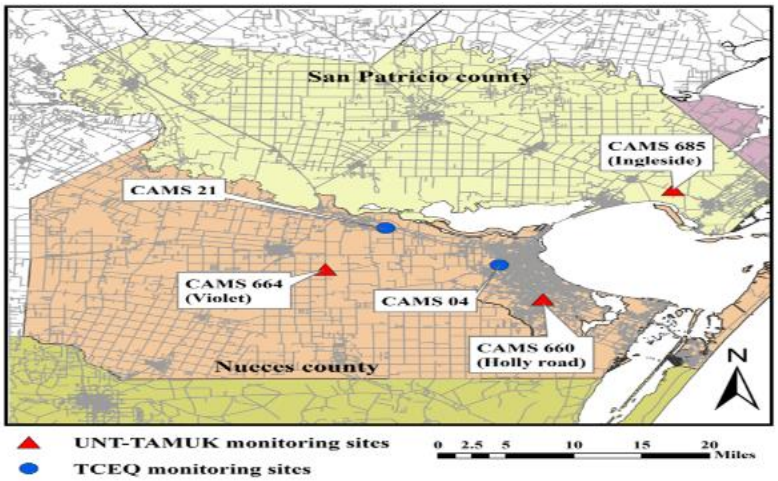


Figure 2: Map of TCEQ regulatory air monitor sites and TAMUK/UNT research monitor sites.

Currently, the airshed is in attainment of NAAQS for ozone at a 3-year average value using data from years 2016, 2017, and 2018 of 61 ppb at both CAMS 4 and CAMS 21 as of year-end 2018. The air-shed has experienced an overall decreasing trend in ozone values. *(Figure 3)*

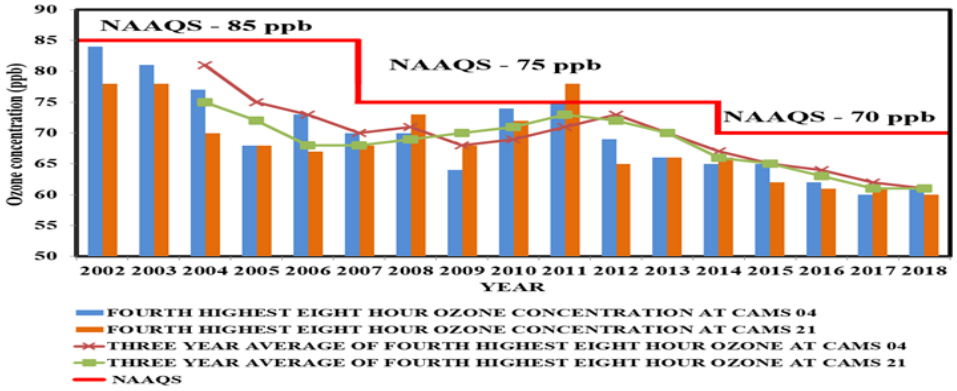


Figure 3: Corpus Christi Ozone Design Trends at TCEQ regulatory monitors, CAMS 4 and CAMS 21

PATH FORWARD COMMITTED EMISSIONS REDUCTION ACTIVITIES PERFORMED DURING YEAR 5 (May 2018– April 2019)

On June 12th, 2017, after the closure of the 85th Texas Legislative session, Governor Abbot vetoed funding for air quality programs that had passed both the House and the Senate. This veto stripped Corpus Christi of the only funding provided to the Corpus Christi urban air-shed for the committed activities of monitoring and modeling activities and vehicle emission testing events. Port Industries provided interim funding for Year 5 monitoring and modeling activities and the Port of Corpus Christi provided interim funding for Year 5 vehicle emission testing activities. Resolutions to reinstate legislative funding for these programs were passed by the City of Corpus Christi, Nueces County, San Patricio County, Metropolitan Planning Organization and the Port of Corpus Christi. The City of Corpus Christi Governmental Relations office in addition to other stakeholders have briefed legislators and lobbyists and provided testimony to current legislative committees to reinstate this critical funding in the current 86th Legislative session.

Air Quality Education Programs

Path Forward Air Quality Education for Year 5

The Chair will work with stakeholders to provide no-cost education opportunities and outlets for air quality and emission reduction recommendations. The Group will continue to host a Facebook site, a Website, and provide air quality public presentations to community groups, agencies, elected officials and business leaders. Presentations will also include promoting the use of EPA flags, brochures and other no cost distribution materials.

Air Quality Education Accomplishments

The Group Facebook (facebook.com/ccairquality) reached approximately 160 people during Year 5. The Group website (www.cctexas.com/planning-esi/environmental-strategic-initiatives-esi/cc-air-quality-group) experienced 605 hits. The Pollution Prevention Partnership Air Quality Website (outreach.tamucc.edu/p3/) enjoyed 293 hits during Year 5.

In June of 2018, communications were sent to the Group and stakeholders that included instructions on how to register for elevated ozone alerts and forecasts via AirNow. Media updates and briefings were provided that included a media briefing and subsequent coverage about the difference between measured specific pollutants and the AQI. Briefings and coverage also included information on local air quality and the impact the general public makes on local air quality. Newspaper and television coverage took place in May of 2018, September of 2018 and February of 2019. Coverage of a presentation to local elementary school children about air quality also took place in October of 2018. Work with the local newspaper resulted in daily posting of AQI information. Numerous

education efforts were also made by group stakeholder Pollution Prevention Partnership and are cited on page 11 and Attachment 4 of this report.

Briefing Accomplishments

The Chair provided several briefings to community groups and leaders about current air quality issues and challenges during Year 5. Groups and leaders that received briefings included the Nueces County Commissioners, San Patricio Chamber of Commerce representatives, Corpus Christi Chamber of Commerce representatives, City Unified Development Code representatives, neighborhood associations, and business associations. Information presented included the importance of remaining in attainment of ozone standards and the critical need for on-going emission reduction efforts and programs.

Air Quality Curricula

Path Forward Air Quality Curricula for Year 5

Area industry is considering funding the air quality curricula to continue in Year 5.

Air Quality Curricula Accomplishments

Industry funded the curricula for Year 5. Air quality curricula was delivered to a total of 555 5th grade students in 25 classes at 4 schools in Year 5. Pre and post testing of air quality knowledge was performed on the students prior to and after receiving the curricula. Testing results averaged 5 correct answers out a possible 10 prior to receiving the curricula and 8 correct answers after receiving the curricula.

Air Quality Curricula Path Forward for Year 6

Industry will fund the air quality curricula for Year 6.

Path Forward for Air Quality Education for Year 6

The Group will continue to host a Facebook site, a Website, and provide air quality public presentations and briefings to community groups, agencies, elected officials and business leaders. Presentations will also include promoting the use of EPA flags, brochures and other no cost distribution materials. No-cost air quality education via media briefings, promotion of air quality messages through social media, brochures and other educational material will continue through Year 6. The Chair will continue to distribute the emissions reductions recommendations and checklist to all stakeholders. Industry will meet to consider funding air quality curricula for Year 6.

Monitoring and Research

Path Forward for Monitoring and Research for Year 5

Funding from the 84th Legislative session has been depleted. Temporary interim funding to continue research and monitoring activities until legislative funding can be restored has been provided by Port Industries. This temporary funding will provide for continuous monitoring of ozone and meteorological conditions at the three research grade continuous

monitoring stations including Holly road CAMS 660 – Urban site, Violet CAMS 664 – downwind site, and Ingleside CAMS 685 into Year 5.

Monitoring Accomplishments

With the funding support provided by Port Industries, continuous monitoring of ozone and meteorological parameters was conducted at CAMS 660, CAMS 664, and CAMS 685 during 2018. Each of the sites were equipped with an ozone analyzer; weather sensors including RM Young wind sensor and coastal environmental temperature and humidity sensor; Zeno data logger and Enfora wireless modems. Continuous measurements of ozone, wind speed, wind direction, outdoor temperature, and relative humidity were recorded at each of the stations and using the TCEQ LEADS acquisition system data was made publicly available on TCEQ's website. Additional monitoring of nitrogen oxides was also conducted at CAMS 660 – Holly Road during April 1st, 2018 through October 31st, 2018. An overall decrease in the ozone design value trend was observed during 2007 through 2018 at both compliance grade and research grade monitoring stations. *Figure 4*

Research Accomplishments

The design value trend analysis performed using the ozone concentrations measured at compliance grade monitoring stations (CAMS 04 and CAMS 21) and research grade monitoring station (CAMS 660, CAMS 664, and CAMS 685) is shown below.

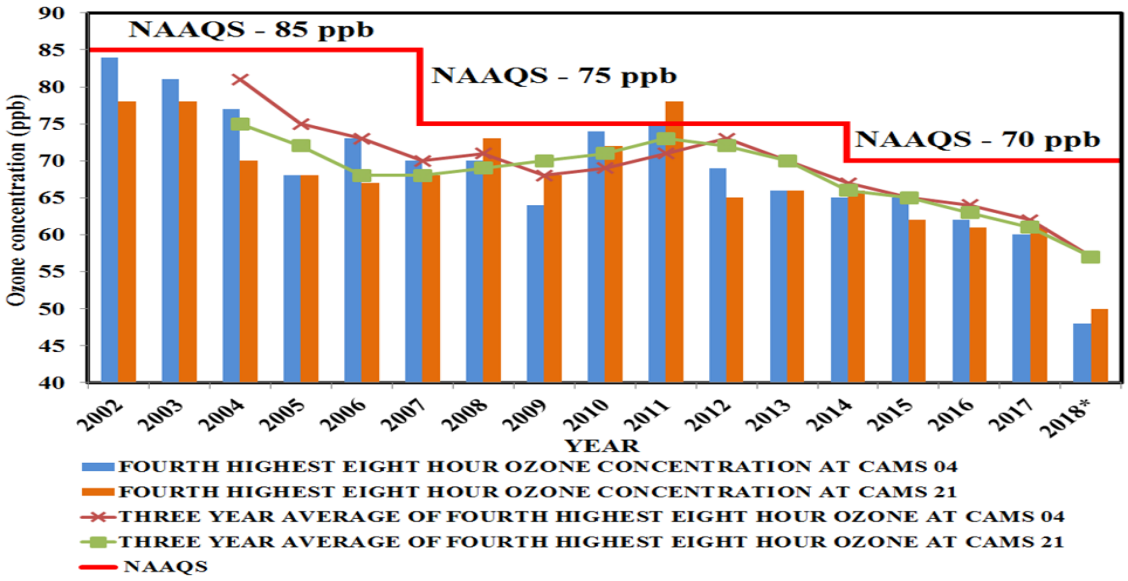


Figure 3.(repeated) Corpus Christi Ozone Design Trends at TCEQ Regulatory Monitors CAMS 4 and CAMS 21

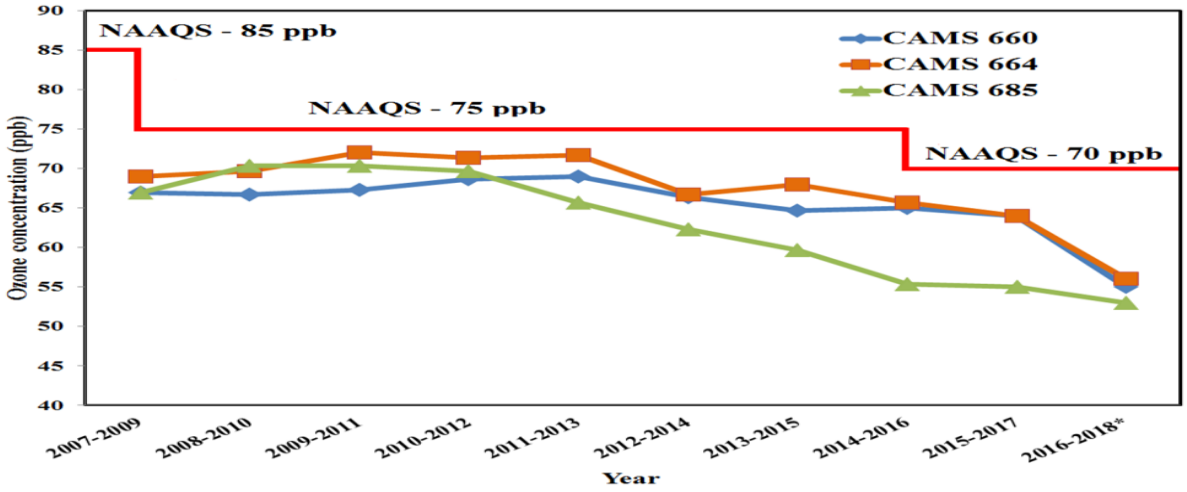


*Figure 4. Corpus Christi Ozone Design Trends at TAMUK/UNT Research Monitors CAMS 660, 664, 685 *Deactivated*

As demonstrated by the design value trends, a decreasing trend in ozone concentration has been noted at both TCEQ maintained compliance grade monitoring stations as well as research grade monitoring stations maintained and operated by UNT-TAMUK. At both CAMS 04 and CAMS 21 zero days with daily maximum eight-hour ozone concentration above 70 ppb were recorded. The downwind site in Violet – CAMS 664 and upwind site Ingleside – CAMS 685 also recorded zero days exceeding 70 ppb while urban site – Holly Road (CAMS 660) recorded two days. The two days included August 1st (74 ppb) and August 2nd (71 ppb). The highest daily maximum eight-hour ozone concentrations of 66 ppb were recorded on April 25th at CAMS 21 and August 2nd at CAMS 04. The downwind site – Violet (CAMS 664) recorded 65 ppb on August 1st and 68 ppb on August 2nd. The urban site – CAMS 660 recorded one day which was August 3rd (66 ppb) with daily maximum eight-hour ozone concentration ranging between 65 ppb and 70 ppb. Contrary to urban and downwind site, upwind site Ingleside recorded two days with daily maximum eight-hour ozone concentrations ranging between 65 ppb and 70 ppb during late April. The two days included April 27th and 28th with highest of 69 and 68 ppb, respectively. The dominant winds during 2018 were noted to be southeasterly with speeds varying from 2.0 – 4.0 m/s.

Additional monitoring of oxides of nitrogen was conducted at Holly Road – CAMS 660 during ozone season of 2018. The daily maximum one-hour concentrations of Nitric oxide concentrations ranged between 0.7 ppb to 4.4 ppb with an average of 1.6 ppb while NOx concentration ranged between 1.3 ppb to 8.3 ppb with an average of 3.8 ppb. The diurnal analysis of NO and NOx indicated elevated concentrations during 8:00 to 10:00 AM and midafternoon – 12:00 AM – 1:00 PM followed by late evenings – 4:00 PM – 6:00 PM. The exhibited diurnal trends of precursor concentrations can be attributed to traffic sources

that subsequently contributed to an increase in the ozone concentrations during mid-day and early evening hours.

Path Forward for Monitoring and Research for Year 6
Funding is depleted for monitoring and research and these activities have been ceased. Path forward for Year 6 is to work with the Texas legislature and local stakeholders to reinstate funding to resume monitoring and research activities.

Clean Fleet

Path Forward for Clean Fleet for Year 5

A co-branded partnership with the Port of Corpus Christi will provide funding for Clean Fleet and public outreach efforts through December 2018. P3 will continue to host CleanFleet and AutoCheck events at least once per month testing for emission problems. Repair subsidies will continue as long as funding is available. P3 will continue to promote SmartWay Partnerships between the freight industry and EPA.

Clean Fleet Accomplishments
Through funding assistance provided by the Port of Corpus Christi, the Pollution Prevention Partnership (P3) Clean Fleet program implemented a multipoint strategy to reduce ozone: Voluntary emissions testing of private and business vehicles, ozone action training and awareness, distributions of tire gauges and literature from local, state and federal air quality programs, and participation in policy planning meetings and forums. P3 also continuously researched potential future programs and air quality strategies such as an electric lawn equipment exchange and greenscaping.

P3 held 55 vehicle emissions testing events where 292 private vehicles and 122 fleet vehicles were tested for emissions. 10 repairs and gas cap replacements were funded resulting in an estimated 1,250 lbs. of hydrocarbon and 8,422 lbs. of carbon monoxide emissions reduced annually. 13 vehicles were referred to fleet managers for inspection and maintenance. A spreadsheet detailing emission test events is attached to this report (Attachment 2). A spreadsheet detailing pre and post emissions reductions calculations is attached to this report (Attachment 3).

P3 provided ozone-reduction strategy, education, tools, and advocacy at 21 educational and policy meetings, interacting with over 3,000 individuals. P3 exhibited and presented at fairs, conferences and workshops with themes of STEM, health, safety, environment, education and community planning. A summary of these events is attached to this report (Attachment 4).

P3 is an EPA SmartWay affiliate and a Texas Department of Transportation Drive Clean Across Texas affiliate. Promotional and educational material from these programs are

distributed to drivers directly, through our web site (http://outreach.tamucc.edu/p3/index.html) and periodically distributed through Community Outreach Facebook account (https://www.facebook.com/Community-Outreach-at-Texas-AM-University-Corpus-Christi-110752215660568/)

Service contracts with the Port of Corpus Christi were executed which provide funding for many of the emission reduction activities. P3 is also working with TCEQ to amend and expand emissions testing protocol to include OBD-II malfunction indicator lights. This change would allow more emissions reducing repairs to be completed on vehicles that have a longer remaining lifespan, therefore increasing cumulative annual emissions reductions.

Path Forward for Clean Fleet for Year 6

P3 will continue to participate in the Corpus Christi Air Quality Group, and other policy related forums, and meetings. Ozone reduction strategies and training will continue at conferences, health fairs and workshops. The emissions testing programs will be promoted at these venues and implemented on site when possible, funding contingent.

Clean Fleet and P3 will continue our current affiliations and partnerships with EPA SmartWay, Texas Department of Transportation Drive Clean Across Texas and The Port of Corpus Christi. P3 will promote these on the web and social media. P3 will continue providing free voluntary emissions testing for private and public fleets, funding contingent, and will continue funding repairs for private vehicle with pollution related mechanical issues as long as funding is available. P3 anticipates that the expanded OBD-II repair criteria will be implemented.

P3 will continue to look for funding sources that will allow them to expand existing services or begin new programs such as an electric lawn equipment subsidy for gasoline engine exchange.

Use of IR Cameras

Path Forward for IR Camera Commitment for Year 5

Industry plans to continue the use of IR cameras to detect fugitive emissions in Year 5.

Use of IR Camera Accomplishments

Several industry stakeholders continued to use IR cameras to detect fugitive emissions during Year 5. A table capturing the overall use of IR cameras in addition to other volunteer activities is included on page 17 of this report.

Path Forward for Use of IR Cameras for Year 6

Industry plans to continue the use of IR cameras to detect fugitive emissions.

Corpus Christi Army Depot (CCAD) Ozone Action Day Notifications

Path Forward for CCAD Notification for Year 5
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 Notifications and Accomplishments
Corpus Christi did not have an ozone action day during this reporting period. CCAD did have the notification system set up and prepared during the reporting period. CCAD partners with select DoD, NASA, and Army commands, and is currently supporting utilization of volatile cold solvents and lower VOC paints. Posted below is a chart reflecting the emissions reductions since 2014 as a result of these lower VOC initiatives.

	2018 Percent Changes in Emissions from 5 Years Ago (2014)
PM-10	-0.54
Nonmethane Organic Compounds	-0.26
Sulfur Dioxide	-0.41
Nitrogen Oxide	-0.35
Carbon Monoxide	-0.47
Total	-0.33

Path Forward for Ozone Notification for CCAD for Year 6
CCAD plans to continue to inform employees of ozone action days and emissions reduction recommendations, and employ pollution prevention initiatives for Year 6.

Production of Low Reid Vapor Pressure (LRVP) Gasoline

Path Forward for Production of LRVP Year 5
Industry plans to continue to produce LRVP in Year 5.

Production of LRVP Gasoline Accomplishments
Area industry stakeholders continued the production of LRVP gasoline during Year 5. A table summarizing local participation in the production of LRVP gasoline in addition to other voluntary emission reduction activities can be found on page 17 of this report.

Path Forward for Production of LRVP Gasoline for Year 6
Area gasoline producers will continue to produce LRVP gasoline during qualifying months in Year 6.

Operation of Public Use Compressed Natural Gas (CNG) Fueling Facilities

Path Forward for Public Use CNG Fueling Facilities for Year 5
The City is still considering building the additional CNG Stations. The City will partner with the Greater Houston Natural Gas Vehicle Alliance in promoting to the public and private fleets the use and benefits of natural gas vehicles. The City will sponsor CNG workshops with the Greater Houston NGV Alliance.

Public Use CNG Fueling Facilities Accomplishments

The City currently has one (1) CNG Station located on Ayers St. that is available for City and Public use and one (1) Station located on Civitan Dr. that serves as a backup.

The City purchased seven (6) CNG bi-fuel and dedicated vehicles in 2018.

Path Forward for Public Use CNG Fueling Facilities for Year 6

The City will partner with the Texas Natural Gas Vehicle (NGV) Alliance in promoting to the public and private fleets the use and benefits of natural gas vehicles. The City will sponsor CNG workshops with the Greater Houston NGV Alliance.

Electric Vehicle Infrastructure

There at 13 public charging facilities for electric vehicles in the airshed. Sites include La Palmera; a major shopping mall, a BMW dealership, 2 Nissan dealerships, and area hotels.

RTA Purchase of CNG Vehicles

RTA Purchase of CNG and Electric Vehicles Accomplishments

RTA did not purchase any new CNG or Electric vehicles during Year 5. The chart below updates 6 vehicles that were purchased in late 2017/early 2018, but were not put into service until 2018.

VEHICLE	Dept Assigned to	YEAR	MAKE/MODEL	SIZE	Seating Max	Fleet Type	Lift Equipped	3 Position Wheel Chair	Fuel Type	Eligible for Disposition	Purchase Date	Delivery Mileage	In Service Date
921	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	5/1/2017	2,265	3/7/2018
922	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	5/1/2017	2,020	4/5/2018
923	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	5/1/2017	2,050	3/27/2018
924	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	5/1/2017	2,157	7/10/208
925	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	5/1/2017	2,026	4/30/2018
926	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	5/1/2017	2,037	8/27/2018

MPO Assistance with Bicycle Mobility Planning

MPO Assistance with Bicycle Mobility Planning Accomplishments

Continued construction of Bond 2012 and 2014 roadway projects resulting in the implementation of 1-way cycle tracks, and multi-use sidepaths.

RTA installed bicycle trip support hardware purchased in Year 3 using Transportation Alternatives Program funds from the MPO.

Collected (in collaboration with regional partners) and maintained data on the performance metrics defined in the Bicycle Mobility Plan, including pre- and post-construction bicycle counts on corridors on which new bike infrastructure is to be installed to establish baseline bicycle demand and assess changes over time.

Maintained a dedicated Web portal (www.CoastalBendInMotion.org) to disseminate the plan and performance measurement data collected to track implementation.

Maintained 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

Promoted Strava 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

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.)

Path Forward for Bicycle Mobility Planning for Year 6

Foster the incorporation of Intelligent Transportation System technology in roadway infrastructure projects to promote efficiency in the regional transportation system and mitigate congestion and associated air quality impacts.

Assist the municipalities within the MPO with the build out of the regional Bicycle Mobility Plan as part of locally funded roadway work.

Assist City of Corpus Christi in implementation of Bike Boulevard designation using MPO Transportation Alternatives funds.

Assist City of Corpus Christi in continued development of Hector P. Garcia Park Hike and Bike Trail: Phase II using MPO Transportation Alternatives funds.

Collect (in collaboration with regional partners) performance metrics data defined in the Bicycle Mobility Plan, including pre- and post-construction bicycle counts on corridors on which new bike infrastructure is to be installed to establish baseline bicycle demand and assess changes over time.

Maintain dedicated Web portal (www.CoastalBendInMotion.org) to disseminate the plan and performance measurement data collected to track implementation.

Bike Share Program

In August 2016 the City of Corpus Christi, The Regional Transit Authority and the Downtown Management District partnered to develop and launch the Bike Corpus Christi Bike Share program. Seven bicycle stations providing a total of 44 bicycles were placed in strategic locations in uptown and downtown Corpus Christi. Printed materials including maps of bike station locations were widely distributed. During Year 5, there were 11,483 trips taken on the bicycles by 4,357 active members for a total of 41,977 miles.

RTA Van Share and Community Shuttle Program

Path Forward for Van Share Program for Year 5

The Chair will continue to promote the RTA Van Share program during Year 5

Van Share and Community Shuttle Accomplishments

The chart posted below reflects the Van Share program accomplishments for Year 5

2018 Vanpool				
Field	Average Weekday Schedule	Average Saturday Schedule	Average Sunday Schedule	Annual Total
Vehicles in Operation	10	3	1	N/A
TOTAL ACTUAL VEHICLE MILES	364	34	51	82,942
TOTAL ACTUAL VEHICLE HOURS	8	1	1	1,935
SERVICES CONSUMED				
Total Monthly Ridership Unlinked Passenger Trips (UPT):	16,002			
SERVICES OPERATED (DAYS)				
Field	Total Weekday Schedule	Total Saturday Schedule	Total Sunday Schedule	Annual Total
Days Operated	224	22	12	258

During Year 5, the RTA also provided shuttle services to 42,495 riders over a total of 6,537.02 miles to numerous community events; removing vehicles from the road.

2018 YEARLY MOVEMENTS						
Event	Year	**Total Pasngrs.**	**Total Miles**	**Total Hours**	Date	
MLK DAY	2018	145	64	5.85	1/15/2018	
Fiesta De La Flor	2018	12,686	912	149.57	4/13/18 & 4/14/18	

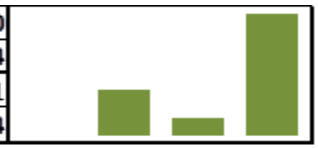
Port Aransas Sand Festival	2018	1630	707.02	73.5	4/27/18 to 4/29/18	
Buc Days:Carnival,Night Parade	2018	198	683	73	5/3/18 to 5/12/18	Includes both MV & RTA
Beach2Bay	2018	14,584	2,655	169.23	05/19/18	
July 4-Big Bank Celebration	2018	1514	268	54.71	7/4/2018	
JAZZ Festival	2018	2385	798	146.54	10/19/18 to 10/21/18	Includes both MV & RTA
American Cancer Walk	2018	1,110	146	24.73	10/20/2018	
MV-Dia De Los Muertos	2018	8,243	304	63	10/27/18	Includes both MV & RTA

Green Building Initiatives

Corpus Christi home builders led an initiative for "green" building titled "Coastal Bend GreenBuilt". The project includes a checklist and assigns a point value for each aspect of green initiatives built into a home. A copy of the checklist was provided in the Year 2 report (Appendix C). During Year 5, 170 certified Greenbuilt homes were built with another 106 homes to be certified in progress.

Posted below is a chart reflecting the break-out of the number of homes certified and in progress with the various GreenBuilt standard levels. Coastal Bend GreenBuilt averages approximately 10 GreenBuilt certifications a month.

Total Green	0
Total Silver	54
Total Gold	21
Total Platinum	144



Nueces County utilizes numerous energy efficient practices including chilled water HVAC systems retrofitted with energy savings controllers that provide adjustments to conserve energy. Attachment E.

Stakeholder Initiatives Summary

The following table is a summary of the frequently employed voluntary emission reduction initiatives undertaken by area stakeholders. Please note that the following table summarizes voluntary emission reduction activities undertaken by several industrial and agency stakeholders. Many respondents noted individual activities not captured in the table. Individual responses citing emission reduction activities can be found in Attachment E of this report.

	Cheniere (*)	Flint Hills Resources (*)	Valero Refining (*)	Citgo Refining	Lyondell/ Equistar (*)	NuStar Energy	Texas A&M Corpus Christi	Port of Corpus Christi (*)	Oxy/Chem (*)	Nueces County (*)	City of Corpus Christi
Register to receive ozone elevation notifications		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Communicate emission tips to employees and vendors		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Provide ozone education to personnel		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Promote car-pooling							✓	✓	✓	✓	
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	✓						✓	✓	✓	✓	✓

	Cheniere (*)	Flint Hills Resources (*)	Valero Refining (*)	Citgo Refining	Lyondell/ Equistar (*)	NuStar Energy	Texas A&M Corpus Christi	Port of Corpus Christi (*)	Oxy/Chem (*)	Nueces County (*)	City of Corpus Christi
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		✓ **	✓	✓							
Utilization of IR cameras for inspections		✓	✓	✓	✓						
Routine inspections for fugitive emissions	✓	✓	✓	✓	✓		✓		✓		
Low NOx burners	✓	✓	✓	✓	✓		✓		✓	✓	
Flue gas recirculation		✓							✓		
Vapor recovery		✓	✓	✓					✓		

	Cheniere (*)	Flint Hills Resources (*)	Valero Refining (*)	Citgo Refining	Lyondell/ Equistar (*)	NuStar Energy	Texas A&M Corpus Christi	Port of Corpus Christi (*)	Oxy/Chem (*)	Nueces County (*)	City of Corpus Christi
Low emitting tank roofs		✓	✓	✓	✓				✓		
Thermal Oxidizer		✓	✓	✓							
Fired source alarm controls				✓	✓						
Routine storage tank inspections		✓	✓	✓	✓		✓		✓		
Flare gas analyzer		✓	✓	✓	✓						
Energy reduction programs		✓	✓	✓	✓		✓	✓	✓	✓	
Enclosed materials storage and conveyors											

*Numerous additional voluntary emission reduction practices take place at these facilities and are described in their attached letters (Attachment 5)

* * Produces RVP but does not market it in Corpus Christ air shed.

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.

ATTACHMENT 1

CORPUS CHRISTI AIR QUALITY GROUP COMMUNICATION LIST

CORPUS CHRISTI AIR QUALITY GROUP
COMMUNICATION LIST

Member	Affiliation
Kuruvilla John	University of North Texas
Steven Ashely	Port of Corpus Christi
Willian Terry	Corpus Christi Independent School Dist.
Clair Garza	Valero Refining
Dale Nelon	Media
Aron Baggett	Oxy
Curtis Taylor	Flint Hills Resources
Corpus Christi Caller Times	Media
Robert Gonzalez	Media
Richard Fenza	AirLiquide
Dipak Desai	Nueces County
Leah Olivarri	United Corpus Christi Chamber of Commerce
Howard Fels	AEP
Kelli Coates	Valero Refining
Richard Bullock	Coastal Bend Council of Govts.
ABC News	media
Glenn Sullivan	Nueces County
Dennis Payne	Valero Refining
Bob Trebatoski	Equistar
Joe Almarez	Valero Refining
Bob Paulison	Port Industries
Matt Pastl	Voestalpine
Denise Rogers	Trafigura
Sharon Montez	Regional Transportation Authority
Glenda Swierc	Oxy
Greg Bezdeck	Markwest
Ross Ybarra	NAS Corpus Christi
Sharon Lewis	City of Corpus Christi
Roger Tennapel	Flint Hills Resources
Ginny Cross	United Corpus Christi Chamber of Commerce
John LaRue	Port of Corpus Christi
Nelda Olivo	Port of Corpus Christi
Paul Carrangelo	Port of Corpus Christi
Nancy Hutton	AEP
Sarah Garza	Port of Corpus Christi
Susan Clewis	Texas Commission on Environmental Quality
Tom Tagliabue	City of Corpus Christi
Ralph Coker	United Corpus Christi Chamber of Commerce
C. Bowen	Markwest
Chris Burnett	NuStar

D. K. Bennett	Plains Pipeline
Christopher Amy	TxDOT
Jerry Batey	TxDOT
Dana Perez	Flint Hills Resources
Colleen Johnson	EarthCon Consultants
Mari Cuevas	Corpus Christi Community Council
Carrie Meyer	Corpus Christi resident
David Harvey	Lyondell
Foster Edwards	San Patricio County Economic Development Corp
Kelly Ruble	Texas Commission on Environmental Quality
James Haug	Port of Corpus Christi
Danielle Converse	Port of Corpus Christi
Jospeh Haug	Flint Hills Resources
Craig Eckberg	NRG
Chris Abshire	Valero Refining
Meagan Marguard	Valero Refining
Iain Vasey	Corpus Christi Regional Economic Development Corp
Gregg 'Robertson	First Rock
Rose Collin	Port of Corpus Christi
Molly Edens	NuStar
Trent Thigpen	Pollution Prevention Partnership
Cindy Smith	TCEQ
Sonny Lopez	TCEQ
James Haely	Port of Corpus Christi
Scott Peters	Lyondell
Matt Nerren	Corpus Christi Army Depot
Maria Garcia	Corpus Christi Army Depot
Alfredo Diaz	Flint Hills Resources
Bea Vasquez	Flint Hills Resources
Darcy Schroeder	Valero Refining
Rachedl Zummo	Texas Rio Grande Legal Aid
Kevin Kenall	Citgo Refining
Jessica Hernandez	San Patricio County
Errol Summerlin	San Patricio County Citizen
Rose Cornelius Crawford	Citizens Alliance
Shannon Parkham	Voestalpine
Sean Strawbridge	Port of Corpus Christi
Rev. Adam Carrington	Citizens Alliance
Snapper Armstrong	Stack Test
Gretchen Arnold	Chair
Bob Peneda	Magellan
Ramona Josefeczyk	Port of Corpus Christi
Beatriz Riverra	Port of Corpus Christi

Scot Dickson	TCEQ
Beth Becerra	Exxon Moble
Colette Walls	Exxon Moble
Min Zhong	Texas A&M Kingsville
Catherine Barnard	Environmental Consulting
Lauren Wenner	NRG
Al Hansborough	Trinity Consultants
isiabele palacious	Voestalpine
Yilin Xin	Trinity Consultants
Jeremy Landers	KIIITV
Tim Acosta	Caller Times
Jessica Muennink	Cheniere
Carrie Paige	EPA
Ruben Herrera	Oxy
Kenneth Boyce	EPA
Tammy Embrey	City of Corpus Christi
Daniel Carazales	MPO
MPO	MPO
Miyoung Squire	
Melissa Zamora	TAMUCC

ATTACHMENT 2

CLEAN FLEET EVENT SUMMARY

Event Report

From 4/1/2018
To 3/29/2019

Report Date 3/29/2019

Event Information				Vehicle Count			Voucher Issues		Fleet Issues			Vehicles	
Event Date	Event Name	Location	Time	Private	Fleet	Total	Gas Cap	Repairs	Gas Cap	Tailpipe	DTC	Dirty	Clean
4/3/2018	Tailpipe Tuesday	TAMU-CC Island Dr.	11:00 AM	3	0	3	1	0	0	0	0	1	2
4/10/2018	Tailpipe Tuesday	TAMU-CC Island Dr.	11:00 AM	0	0	0	0	0	0	0	0	0	0
4/7/2018	Earth Day Bay Day	Earth Day-Heritage Park	10:00 AM	10	0	10	1	0	0	0	0	1	9
4/17/2018	Tailpipe Tuesday	TAMU-CC Island Dr.	11:00 AM	3	0	3	0	0	0	0	0	0	3
4/24/2018	Tailpipe Tuesday	TAMU-CC Island Dr.	11:00 AM	3	0	3	0	0	0	0	0	0	3
5/11/2018	Autocheck	Bay Tree Apartments	11:30 AM	3	0	3	0	0	0	0	0	0	3
5/12/2018	Autocheck	Bay Tree Apartments	1:00 PM	7	0	7	0	0	0	0	0	0	7
5/25/2018	Autocheck	CC Trade Center	10:00 AM	6	0	6	0	0	0	0	0	0	6
5/26/2018	Autocheck	CC Trade Center	10:00 AM	3	0	3	0	1	0	0	0	1	2
5/29/2018	AutoCheck	La Palmera	10:00 AM	5	0	5	0	0	0	0	0	0	5
5/30/2018	AutoCheck	La Palmera	10:00 AM	2	0	2	1	0	0	0	0	1	1

Event Information				Vehicle Count			Voucher Issues		Fleet Issues			Vehicles	
Event Date	Event Name	Location	Time	Private	Fleet	Total	Gas Cap	Repairs	Gas Cap	Tailpipe	DTC	Dirty	Clean
5/31/2018	AutoCheck	La Palmera	10:00 AM	1	0	1	0	0	0	0	0	0	1
6/1/2018	AutoCheck	CC Trade Center	10:00 AM	3	0	3	0	0	0	0	0	0	3
6/5/2018	AutoCheck	La Palmera	10:00 AM	4	0	4	0	0	0	0	0	0	4
6/6/2018	AutoCheck	La Palmera	10:00 AM	3	0	3	0	0	0	0	0	0	3
6/16/2018	Juneteenth	Hillcrest Park	9:00 AM	12	0	12	0	1	0	0	0	1	11
7/14/2018	NCCAA Health Fair	Sunrise Mall	9:00 AM	6	0	6	1	0	0	0	0	1	5
7/24/2018	Autocheck	Garcia Center	8:00 AM	4	0	4	0	0	0	0	0	0	4
7/23/2018	Autocheck	Garcia Center	8:00 AM	9	0	9	0	0	0	0	0	0	9
7/28/2018	Autocheck	American Bank Center	10:00 AM	13	0	13	0	0	0	0	0	0	13
7/31/2018	Autocheck	Garcia Center	8:00 AM	3	0	3	0	0	0	0	0	0	3
8/4/2018	Girls Scout Autocheck	O'Reilly's	8:00 AM	4	0	4	0	0	0	0	0	0	4
8/11/2018	Heritage Park Lot	American Bank Center	9:00 AM	15	0	15	1	0	0	0	0	1	14
8/18/2018	LEAD FIRST	W.B. RAY HS	10:00 AM	13	0	13	1	0	0	0	0	1	12

Event Information				Vehicle Count			Voucher Issues		Fleet Issues			Vehicles	
Event Date	Event Name	Location	Time	Private	Fleet	Total	Gas Cap	Repairs	Gas Cap	Tailpipe	DTC	Dirty	Clean
8/24/2018	APISD Health Fair	Aransas Pass	12:00 PM	1	0	1	0	0	0	0	0	0	1
9/9/2018	Drive Electric Week	Del Mar Economic Dev. Center	10:00 AM	8	0	8	1	0	0	0	0	1	7
9/19/2018	Autocheck	TAMU-CC Island Dr.	10:30 AM	5	0	5	0	0	0	0	0	0	5
9/26/2018	Autocheck	TAMU-CC Island Dr.	10:30 AM	0	0	0	0	0	0	0	0	0	0
9/28/2018	Autocheck	Garcia Center	8:00 AM	4	0	4	0	0	0	0	0	0	4
10/3/2018	Autocheck	TAMU-CC Island Dr.	10:30 AM	0	0	0	0	0	0	0	0	0	0
10/10/2018	Autocheck	TAMU-CC Island Dr.	10:30 AM	0	0	0	0	0	0	0	0	0	0
10/24/2018	Autocheck	TAMU-CC Island Dr.	10:30 AM	2	0	2	0	0	0	0	0	0	2
10/26/2018	Autocheck	Garcia Center	8:00 AM	2	0	2	0	0	0	0	0	0	2
10/30/2018	Autocheck	Whataburger Field	8:00 AM	38	0	38	3	0	0	0	0	3	35
10/31/2018	Autocheck	TAMU-CC Island Dr.	10:30 AM	3	0	3	0	0	0	0	0	0	3

Event Information				Vehicle Count			Voucher Issues		Fleet Issues			Vehicles	
Event Date	Event Name	Location	Time	Private	Fleet	Total	Gas Cap	Repairs	Gas Cap	Tailpipe	DTC	Dirty	Clean
11/14/2018	Autocheck	TAMU-CC Island Dr.	10:30 AM	1	0	1	0	0	0	0	0	0	1
11/28/2018	Autocheck	Flint Hills	9:00 AM	9	0	9	0	2	0	0	0	2	7
11/29/2018	autocheck	Flint Hills	9:00 AM	9	0	9	1	0	0	0	0	1	8
11/30/2018	Autocheck	Garcia Center	8:00 AM	8	0	8	1	2	0	0	0	3	5
12/7/2018	Autocheck	Port of Corpus Christi	8:00 AM	0	67	67	0	0	0	0	0	0	67
12/6/2018	Port Diesel	Port of Corpus Christi	8:00 AM	0	38	38	0	0	0	0	0	0	38
1/16/2019	AutoCheck	TAMU-CC Island Dr.	10:00 AM	2	0	2	0	0	0	0	0	0	2
1/29/2019	Autocheck	CC Trade Center	10:00 AM	9	0	9	1	1	0	0	0	2	7
1/31/2019	Autocheck	CC Trade Center	12:00 PM	1	0	1	0	0	0	0	0	0	1
2/8/2019	Autocheck	Garcia Center	8:00 AM	14	0	14	0	0	0	0	0	0	14
2/21/2019	Autocheck	Garcia Center	11:30 AM	10	0	10	0	0	0	0	0	0	10
2/22/2019	Autocheck	Garcia Center	8:00 AM	4	0	4	0	0	0	0	0	0	4
2/27/2019	Autocheck	Garcia Center	1:30 AM	2	0	2	0	0	0	0	0	0	2

Event Information				Vehicle Count			Voucher Issues		Fleet Issues			Vehicles	
Event Date	Event Name	Location	Time	Private	Fleet	Total	Gas Cap	Repairs	Gas Cap	Tailpipe	DTC	Dirty	Clean
3/8/2019	Autocheck	Ingleside	11:00 AM	14	0	14	1	0	0	0	0	1	13
3/18/2019	Motormonday	TAMU-CC Island Dr.	11:00 AM	1	0	1	0	0	0	0	0	0	1
3/25/2019	AutoCheck	TAMU-CC Island Dr.	10:00 AM	6	0	6	0	0	0	0	0	0	6
3/27/2019	Autocheck	Garcia Center	1:00 AM	2	0	2	0	0	0	0	0	0	2
3/28/2019	Autocheck	Garcia Center	11:30 AM	2	0	2	0	0	0	0	0	0	2
3/25/2019	Motor Monday	TAMU-CC Island Dr.	11:00 AM	0	12	12	0	0	0	0	0	0	12
3/29/2019	Autocheck	TAMU-CC Island Dr.	10:00 AM	0	5	5	0	0	0	0	0	0	5

Event Information				Vehicle Count			Voucher Issues		Fleet Issues			Vehicles	
Event Date	Event Name	Location	Time	Private	Fleet	Total	Gas Cap	Repairs	Gas Cap	Tailpipe	DTC	Dirty	Clean

Totals	Total Vehicle Count			Total Voucher Issues		Total Fleet Issues		Vehicles	
Events	Private	Fleet	Total	Gas Caps	Repairs	Gas Caps	Repairs	"Dirty"	"Clean"
55	292	122	414	14	7	0	0	21	393

ATTACHMENT 3

CLEAN FLEET EMISSIONS REDUCTIONS DATA

AutoCheck Post Repair Emissions Report

From 4/1/2018
To 3/29/2019
Report Run: Friday, March 29, 2019

			Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr		
Voucher	Invoice Date		HC	NOx	CO	HC	NOx	CO	HC	NOx	CO
290	7/23/2018	Left/Single	1.22	0	4.05	0.29	0	3.81	28.78	0	7.48
		Right									

			Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr		
Voucher	Invoice Date		HC	NOx	CO	HC	NOx	CO	HC	NOx	CO
600	11/29/2018	Left/Single	9.31	0	123.47	1.03	0	0.23	255.7	0	3803.66
		Right									

			Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr		
Voucher	Invoice Date		HC	NOx	CO	HC	NOx	CO	HC	NOx	CO
608	1/3/2019	Left/Single	2.47	0.03	123.74	0.39	0.02	6.44	64.24	0.33	3620.4
		Right									

			Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr		
Voucher	Invoice Date		HC	NOx	CO	HC	NOx	CO	HC	NOx	CO
612	1/25/2019	Left/Single	2.82	0.03	33.19	0.63	0.03	10.63	67.57	0.09	696.42
		Right									

			Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr		
Voucher	Invoice Date		HC	NOx	CO	HC	NOx	CO	HC	NOx	CO
484	2/15/2019	Left/Single	3.35	0.08	9.66	0.65	0	0.15	83.38	2.59	293.53
		Right									

Repair Count	5

Voucher Redeemed Gas Caps

Invoice Date	VoucherID
6/1/2018	610
9/20/2018	419
11/1/2018	619
11/12/2018	508
2/8/2019	0502

Gas Cap Count	5
HC Reductions lbs/yr	750

Annual Reductions lbs/yr

	HC	NOx	CO
HC Includes Gas Caps	1249.67	3.01	8421.49

ATTACHMENT 4

POLLUTION PREVENTION PARTNERSHIP EDUCATION/OUTREACH SUMMARY

Meetings

Friday, March 29, 2019
8:42:47 AM

Date	Time	Location	Group or Event	Topic	Presentation	Attendance
4/7/2018	10:00:00 AM	HERITAGE PARK	EARTH DAY BAY DAY	Promoting awareness of air quality pollution in order to build a community network and making Autocheck more well known		276
4/18/2018	3:00:00 PM	Port Administration Building	Corpus Christi Air Quality Group	Ozone updates		23
6/15/2018	8:00:00 AM	Tamu-CC	Math and Science Educators Conference	Promoting environmental curricula to teach math and science. Offering AutoCheck and educational services to schools.		35
6/15/2018	11:30:00 AM	Del Mar College West Campus	Nueces County Community Action Agency Health Advisory board	Health fair planning AutoCheck promotion		45
6/20/2018	12:00:00 PM	Webinar	Talking Freight: Advancing Clean Air Projects at Ports and Goods Movement Facilities Through the CMAQ Program	Particpant		0
6/21/2018	3:30:00 PM	Port Administration	Corpus Christi Air Quality Group	Legislative update and TCEQ Air Quality Index		29
6/23/2018	9:00:00 AM	Hillcrest Park	Juneteenth Celebration -	Health effects of ozone. Ozone reduction strategies. Fuel efficiency and vehicle maintenance. AutoCheck promotion.	Oral to table visitors	15

Date	Time	Location	Group or Event	Topic	Presentation	Attendance
7/14/2018	9:00:00 AM	Sunrise Mall	Nueces County Community Action Agency Health Fair	Health effects of Ozone, emissions reduction strategies, AutoCheck promotion	Oral to individualts visiting table	102
7/28/2018	10:00:00 AM	American Bank Center	Operation Safe Return Health Fair CCPD	Face-to-face talks. Ozone health effects, prevention and AutoCheck promotion.		750
8/4/2018	8:00:00 AM	O'Reilly Auto Parts 5809 South Padre Island Drive 78412	Girl Scouts	Care Care Workshop. Ozone prevention,tire maintenance and inspection. Small group demonstrations and hands on practice.		60
8/11/2018	9:00:00 AM	American Bank Center	Nueces County Medical Society Health Fair	Health effects of ozone and air pollution. Ozone prevention and AutoCheck free emissions testing promotion.	Oral to individualts visiting table	168
8/18/2018	10:00:00 AM	Ray High School	LEAD First Health Fair	Ozone awareness and prevention. AutoCheck promotion.	Oral to individualts visiting table	1200
8/24/2018	12:00:00 PM	Charlie Marshall Elementary School	Aransas Pass ISD Health Fair	Health effects of ozone and air pollution. Ozone prevention and AutoCheck free emissions testing promotion.	Oral to individualts visiting table	45
10/19/2018	11:30:00 AM	Del Mar College-West Campus - Room 124A	Nueces County Community Action Agency-Head Start Health Advisory Meeting	AutoCheck Promotion, Ozone Season Awareness		30
11/15/2018	11:00:00 AM	Flint Hills	Employee Health and Safety Fair	Ozone Reduction, Autocheck promotion		95

Date	Time	Location	Group or Event	Topic	Presentation	Attendance
1/15/2019	10:00:00 AM	TAMU-CC Campus	KRIS TV Interview	Corpus Christi Air Quality, Ozone and Autocheck. Became a news media story that aired localy on KRIS and published on the web January 28. https://kristv.com/news/6-investigates/2019/01/28/6-investigates-our-air-quality-its-better-than-you-think/	Interview and Demonstration	1
2/22/2019	11:30:00 AM	Del Mar West Campus	Nueces County Community Action Agency Health Advisory Committee	Health event announcments and initiatives. I move I learn conference updates	Schedule Announcment	35
2/22/2019	3:00:00 AM	Port Administration	Corpus Christi Air Quality Group Meeting	EPA Advance Report criteria and actions. Air Quality programs funding in the State Legislature.		19
2/27/2019	10:00:00 AM	Moody High School	Girls In Engineering Math and Science Conference	Environmental engineering, Science Creativity, problem solving, career paths, Ozone, creativity.	Oral to groups visiting table	38
3/8/2019	11:00:00 AM	Ingleside	Gilbert J Mircovich Health & Wellness Fair	Ozone education, health effects, prevention and AutoCheck Promotion	Oral to individualts visiting table	102
3/28/2019	5:30:00 PM	Robstown, Texas	Texas A&M AgriLife Extension Texas A&M AgriLife Extension Service	Texas Community Futures Forum- identifying community needs and issues for strategic planning.	Participant	46

21	Meetings and Informational Events	Networking and Informational Contacts	3114

ATTACHMENT 5

EMISSION REDUCTION RESPONSE SHEETS AND LETTERS

OZONE ADVANCE

VOLUNTARY AIR EMISSION REDUCTION EXAMPLES

The Corpus Christi Urban Airshed through the Corpus Christi Air Quality Group participates in an Ozone Advance program with the U S EPA. The Ozone Advance program is a program whereby a community commits to performing voluntary (not mandated or required) emission reduction activities in an effort to remain in attainment of ozone standards. Each year, the Corpus Christi Air Quality Group submits a report to the U S EPA on past year voluntary initiatives that have been performed in an effort to reduce emissions.

Corpus Christi needs your help with submitting an impressive 2018/2019 report. We know we are all doing many great things voluntarily to reduce emissions. This is our time to shine instead of keeping our great efforts to ourselves! Cited efforts can be considered guidelines and do not need to be adopted policies.

Listed below are some examples of voluntary projects or initiatives that can reduce ozone precursors. These are just some examples of air emission reduction initiatives that can be cited in our annual update to the U S EPA for the Corpus Christi Ozone Advance Program. You may be doing much more! Please add to the list! This is just a start!

The 2018/2019 annual report will be submitted to the U S EPA in May, 2019. Please review the examples below, add your own additional projects. Send your material to Gretchen Arnold at gretchen.arnold@stx.rr.com by March 31, 2019 to have your efforts cited in the report.

Communications:

- Register with AirNow to receive email or text alerts for ozone action days. It is free and easy! http://www.enviroflash.info/signup.cfm
- Register with TCEQ to receive weekly ozone forecasts. Forecasts are provided via email, text or social media and can be easily forwarded throughout your workplace. You can register at this link: https://service.govdelivery.com/accounts/TXTCEQ/subscriber/new
- Communicate elevated ozone forecasts to employees, vendors and contractors and provide emission reduction recommendations in your notification.
    - Encourage employees to car pool, particularly on elevated ozone days – even if it's just for lunch.
    - Encourage employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days. Have a casual dress day for those that do.
    - Encourage employees to take advantage of the RTA van pool program
    - Encourage employees to telecommute, particularly on ozone action days
    - Encourage teleconferencing instead of driving to meetings
    - Provide preferred parking for employees that car pool
    - Provide flexible work schedules to remove vehicles from the road during congested times.
- Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Provide ozone education in your routine personnel health and safety training.

Operations

Contractors and Vendors

- ✓ Have an anti-idle policy for all contractor and delivery vehicles
- ✓ Postpone non-essential deliveries on elevated ozone days
- ✓ Require painters to use low VOC paints
- ✓ Require grounds crews to postpone operations on elevated ozone days

- ✓ Require vendors and contractors to use low VOC solvents
- ✓ Require vendors and contractors to use low VOC adhesives
- ✓ Require vendors and contractors to properly dispose of rags, buckets, drums, etc. that contain VOC chemicals
- ○ Require vendors and contractors to use scrubbers on VOC chemical extraction processes
- ○ Require vendors, employees, etc. to bus or bicycle or walk throughout property (removing driving personal vehicles)

Fleet

- ○ Include alternative fueled (propane, CNG) vehicles in your fleet
- ✓ Emissions test your fleet and keep fleet in well maintained state
- ○ Replace older units in fleet
- ○ Repower or replace older engines in fleet
- ✓ Have an anti-idle policy for your fleet
- ○ Install filter traps and DOCs on your diesel fleet
- ○ Perform diesel retrofits
- ✓ Use low sulfur diesel fuel for your diesel fleet

Operations

- ✓ Flare reduction program
- ○ Production of low sulfur diesel
- ○ Production of low reid vapor pressure gasoline
- ○ Utilization of IR cameras to detect and repair fugitive emissions
- ✓ Perform routine inspections for leaks and fugitive emissions

Equipment

- ✓ Installation of low NOx burners on boilers or heaters
- ○ Installation thermal oxidizers on storage tanks
- ○ Use of low NOx water heaters
- ○ Use of flue gas recirculation
- ○ Use of vapor recovery or incineration
- ○ Installation of scrubbers
- ○ Installation of additional seals and liners on storage tanks
- ✓ Continuous and routine inspection of storage tanks for fugitive emissions

Additional Efforts

- ✓ Employees are bused to facility to eliminate 3 mile drive for approximately 300 employees daily.
- ✓ Installation of low NOx burners on turbines
- ✓ Install carbon canister system on WW Tanks

Signature	Organization	Date
[signature]	CHENIERE	4/11/2019

OZONE ADVANCE

VOLUNTARY AIR EMISSION REDUCTION EXAMPLES

The Corpus Christi Urban Airshed through the Corpus Christi Air Quality Group participates in an Ozone Advance program with the U S EPA. The Ozone Advance program is a program whereby a community commits to performing voluntary (not mandated or required) emission reduction activities in an effort to remain in attainment of ozone standards. Each year, the Corpus Christi Air Quality Group submits a report to the U S EPA on past year voluntary initiatives that have been performed in an effort to reduce emissions.

Corpus Christi needs your help with submitting an impressive 2018/2019 report. We know we are all doing many great things voluntarily to reduce emissions. This is our time to shine instead of keeping our great efforts to ourselves! Cited efforts can be considered guidelines and do not need to be adopted policies.

Listed below are some examples of voluntary projects or initiatives that can reduce ozone precursors. These are just some examples of air emission reduction initiatives that can be cited in our annual update to the U S EPA for the Corpus Christi Ozone Advance Program. You may be doing much more! Please add to the list! This is just a start!

The 2018/2019 annual report will be submitted to the U S EPA in May, 2019. Please review the examples below, add your own additional projects. Send your material to Gretchen Arnold at gretchen.arnold@stx.rr.com by March 31, 2019 to have your efforts cited in the report.

Communications:

- ✓ Register with AirNow to receive email or text alerts for ozone action days. It is free and easy! http://www.enviroflash.info/signup.cfm
- ✓ Register with TCEQ to receive weekly ozone forecasts. Forecasts are provided via email, text or social media and can be easily forwarded throughout your workplace. You can register at this link: https://service.govdelivery.com/accounts/TXTCEQ/subscriber/new
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    - ✓ Provide flexible work schedules to remove vehicles from the road during congested times.
- ✓ Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- o Provide ozone education in your routine personnel health and safety training.

Operations

Contractors and Vendors

- o Have an anti-idle policy for all contractor and delivery vehicles
- o Postpone non-essential deliveries on elevated ozone days
- ✓ Require painters to use low VOC paints
- ✓ Require grounds crews to postpone operations on elevated ozone days

- ✓ Require vendors and contractors to use low VOC solvents
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- ○ Require vendors, employees, etc. to bus or bicycle or walk throughout property (removing driving personal vehicles)

Fleet

- ○ Include alternative fueled (propane, CNG) vehicles in your fleet
- ○ Emissions test your fleet and keep fleet in well maintained state
- ✓ Replace older units in fleet
- ✓ Repower or replace older engines in fleet
- ○ Have an anti-idle policy for your fleet
- ○ Install filter traps and DOCs on your diesel fleet
- ○ Perform diesel retrofits
- ✓ Use low sulfur diesel fuel for your diesel fleet

Operations

- ✓ Flare reduction program
- ✓ Production of low sulfur diesel
- ✓ Production of low reid vapor pressure gasoline
- ✓ Utilization of IR cameras to detect and repair fugitive emissions
- ✓ Perform routine inspections for leaks and fugitive emissions

Equipment

- ✓ Installation of low NOx burners on boilers or heaters
- ✓ Installation thermal oxidizers on storage tanks
- ○ Use of low NOx water heaters
- ✓ Use of flue gas recirculation
- ✓ Use of vapor recovery or incineration
- ✓ Installation of scrubbers
- ✓ Installation of additional seals and liners on storage tanks
- ✓ Continuous and routine inspection of storage tanks for fugitive emissions

Additional Efforts

- ✓ Utilize Flare Gas Analyzers

Dana Perez	Flint Hills Resources Corpus Christi, LLC	03/28/2019
Signature	Organization	Date

Valero

MEMBER CLEAN INDUSTRIES 2000

April 10, 2019

Ms. Gretchen Arnold
Director, Corpus Christi Air Quality Group

Subject: **Ozone Advance Agreement 2018 Annual Report**

Dear Ms. Arnold,

Valero Bill Greehey Refineries continue to support the Corpus Christi Air Quality Group (CCAQG) and its efforts to maintain compliance with the current Ozone NAAQS for the Corpus Christi urban airshed. As part of our commitment to the environment and our community, Valero has implemented and continues to implement measures to reduce emissions from our operations:

- Installation of a new state of the art boiler with SCR in Valero East Plant
- Voluntary installation of Flare Gas Recovery Units in support of a flare reduction program at the Valero West and East Plants
- Completed low NOx burner replacements on four (4) heaters and a boiler in the Valero West Plant
- Installation of ultra-low NOx burners and SCR unit on new crude unit heater in the Valero West Plant
- Operation of electric engines preferentially over internal combustion engines where practical
- Operation of a Thermal Oxidizer with Carbon Absorption back-up on select tanks, which is above and beyond what BACT requires
- Operation of a new state of the art boiler with SCR in the Valero West Plant
- Operation of Ultra Low Sulfur Diesel and a Gasoline De-sulfurization Units to produce fuel that supports new technology in vehicles that reduces NOx emissions
- Utilize IR camera to identify potential VOC leaks not routinely seen
- Produce gasoline during May through September that is lower in vapor pressure than required
- Registered with TCEQ to receive weekly ozone forecasts.
- Implement projects designed to further improve the reliability of both refineries

Environmental stewardship continues to be a core value at Valero, and we remain committed to doing our part to help keep the Corpus Christi urban airshed in compliance with the NAAQS. If we can provide additional information or assistance to the regional effort please let us know.

Sincerely,

Joe Almaraz
Director, Environmental / Safety Affairs
Valero Bill Greehey Refineries

OZONE ADVANCE
VOLUNTARY AIR EMISSION REDUCTION EXAMPLES

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Listed below are some examples of voluntary projects or initiatives that can reduce ozone precursors. These are just some examples of air emission reduction initiatives that can be cited in our annual update to the U S EPA for the Corpus Christi Ozone Advance Program. You may be doing much more! Please add to the list! This is just a start!

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- Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Provide ozone education in your routine personnel health and safety training.

Operations

Contractors and Vendors

- ✓ Have an anti-idle policy for all contractor and delivery vehicles
- Postpone non-essential deliveries on elevated ozone days
- Require painters to use low VOC paints
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Fleet

- Include alternative fueled (propane, CNG) vehicles in your fleet
- Emissions test your fleet and keep fleet in well maintained state
- Replace older units in fleet
- Repower or replace older engines in fleet
- Have an anti-idle policy for your fleet
- Install filter traps and DOCs on your diesel fleet
- Perform diesel retrofits
- Use low sulfur diesel fuel for your diesel fleet

Operations

- ✓ Flare reduction program
- ✓ Production of low sulfur diesel
- ✓ Production of low reid vapor pressure gasoline
- ✓ Utilization of IR cameras to detect and repair fugitive emissions.
- ✓ Perform routine inspections for leaks and fugitive emissions

Equipment

- ✓ Installation of low NOx burners on boilers or heaters
- ✓ Installation thermal oxidizers on storage tanks
- Use of low NOx water heaters
- Use of flue gas recirculation
- ✓ Use of vapor recovery or incineration
- ✓ Installation of scrubbers
- Installation of additional seals and liners on storage tanks
- ✓ Continuous and routine inspection of storage tanks for fugitive emissions

Additional Efforts

Signature Organization Date

OZONE ADVANCE

VOLUNTARY AIR EMISSION REDUCTION EXAMPLES

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- ✓ Provide ozone education in your routine personnel health and safety training.

Operations

Contractors and Vendors

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Fleet

- ○ Include alternative fueled (propane, CNG) vehicles in your fleet
- ○ Emissions test your fleet and keep fleet in well maintained state
- ✓ Replace older units in fleet
- ○ Repower or replace older engines in fleet
- ✓ Have an anti-idle policy for your fleet
- ○ Install filter traps and DOCs on your diesel fleet
- ○ Perform diesel retrofits
- ✓ Use low sulfur diesel fuel for your diesel fleet

Operations

- ✓ Flare reduction program
- ✓ Production of low sulfur diesel
- ✓ Production of low reid vapor pressure gasoline
- ✓ Utilization of IR cameras to detect and repair fugitive emissions
- ✓ Perform routine inspections for leaks and fugitive emissions

Equipment

- ✓ Installation of low NOx burners on boilers or heaters
- ✓ Installation thermal oxidizers on storage tanks
- ✓ Use of low NOx water heaters
- ✓ Use of flue gas recirculation
- ✓ Use of vapor recovery or incineration
- ✓ Installation of scrubbers
- ✓ Installation of additional seals and liners on storage tanks
- ✓ Continuous and routine inspection of storage tanks for fugitive emissions

Additional Efforts

Veronica Fuentes CITGO Refining and Chemicals, L.P. March 27, 2019

Signature Organization Date

Equistar Chemicals, LP
A LyondellBasell Company
P.O. Box 10940 (78460-0940)
1501 McKinzie Road
Corpus Christi, Texas 78410
Phone: 361.242.8000
Fax: 361.242.8030

EQUISTAR

March 25, 2019

Ms. Gretchen Arnold
Chair, Corpus Christi Air Quality Group
121 Atlantic St
Corpus Christi, Texas 78404

Re: **Equistar Chemicals, LP – Corpus Christi Complex**
Ozone Advance Program
Voluntary Air Emission Reduction Examples

Dear Ms. Arnold:

Equistar Chemicals, LP – Corpus Christi Complex (Equistar) continues to support the efforts of the Ozone Advance Program and the Coastal Bend Regional Air Quality Committee to maintain attainment with the 8-hour ozone standard for the Corpus Christi Urban Airshed. As part of our commitment, Equistar has implemented voluntary emission-reduction projects as described below.

Communications:

- Registered to receive ozone elevation notifications
- Communicate emission reduction recommendations to employees and vendors
- Provide ozone education to personnel
- Adjust delivery schedules if possible to reduce excess driving

Operations:

- Flare reduction/minimization program
- Utilization of IR cameras for inspections
- Routine inspections for leaks and fugitive emissions
- Use of Low NOx burners
- Use of CEMS analyzers to monitor NOx and CO emissions
- Use of low emitting tank roofs
- Regular tune-ups of boilers and process heaters
- Fired source alarm controls to optimize combustion and limit firing rate
- Flare gas analyzers
- Installation of scrubbers and carbon canisters on frac tanks and vacuum trucks
- Use of vapor recovery
- Identification and repair of steam leaks

Maintenance Activities:

- Delay painting and lawn mowing during ozone action days
- Avoid use of diesel air compressors when possible
- Replacement of diesel driven air compressor with electric motor driven air compressor

- Reduce the use of engine driven equipment as possible;
- Limit refueling of plant vehicles between 6:00 AM and 2:00 PM when possible
- Encourage carpooling to and inside the plant if possible

Office Energy Efficiency:

- Encourage employees to turn off lights in rooms that are not in use
- Set office equipment in low power mode when possible
- Set thermostats to a comfortable but efficient level
- Improve insulation for heated sources

Equistar remains committed to reducing environmental emissions and maintaining compliance with the eight-hour ozone standard. If you have any questions, please contact H. Scott Peters by phone at (361) 242- 5028 or by email at howard.peters@lyondellbasell.com.

Sincerely,

Alicia Matus

Alicia Matus
Site Manager

April 5, 2019

Ms. Gretchen Arnold
Chair, Corpus Christi Air Quality Committee
121 Atlantic Street
Corpus Christi, TX 78404

Re: Commitment to Air Quality Improvements
NuStar Logistics, L.P.- Central West South Region

Dear Ms. Arnold:

NuStar Logistics, L.P. is committed to supporting efforts to maintain and improve air quality in the Corpus Christi Urban Airshed. Commitment to achieving environmental excellence is a top priority at NuStar and is included in the first of our company's Guiding Principles.

NuStar will promote continued improvements in the air quality of the area by voluntarily committing to the following measures:

- Promote Ozone Action Day awareness by notifying South Texas employees of the Ozone Action Days and offer suggestions for minimizing mobile sources,
- When possible, schedule maintenance activities like mowing and painting around Ozone Action Days,
- Utilize low VOC solvents, paints, and adhesives when possible,
- Receive ozone alerts through AirNow and TCEQ,
- Participate in the Corpus Christi Air Quality Group, and
- Support local environmental awareness events such as Earth Day Bay Day.

If you have any questions, please contact me at (361) 249-9402 or by email at wes.gore@nustarenergy.com.

Sincerely,

Wes Gore

Wes Gore
VP and GM of NuStar Energy Central West South Region

CORPUS CHRISTI OZONE SEASON AIR EMISSION REDUCTION PROJECTS

May 2018 – April 2019

Communications:

- ✓ Register with AirNow to receive email or text alerts for ozone action days. It is free and easy! http://www.enviroflash.info/signup.cfm
- ✓ Register with TCEQ to receive weekly ozone forecasts. Forecasts are provided via email, text or social media and can be easily forwarded throughout your workplace. You can register at this link: https://service.govdelivery.com/accounts/TXTCEQ/subscriber/new
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  - ✓ Encourage employees to car pool, particularly on elevated ozone days – even if it's just for lunch.
  - ✓ Encourage employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days. Have a casual dress day for those that do.
  - ✓ Encourage employees to take advantage of the RTA van pool program
  - ✓ Encourage employees to telecommute, particularly on ozone action days
  - ✓ Encourage teleconferencing instead of driving to meetings
  - o Provide preferred parking for employees that car pool
  - o Provide flexible work schedules to remove vehicles from the road during congested times.
- ✓ Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- ✓ Provide ozone education in your routine personnel health and safety training.

Operations

Contractors and Vendors

- ✓ Have an anti-idle policy for all contractor and delivery vehicles
- o Postpone non-essential deliveries on elevated ozone days
- ✓ Require painters to use low VOC paints
- ✓ Require grounds crews to postpone operations on elevated ozone days
- ✓ Require vendors and contractors to use low VOC solvents
- ✓ Require vendors and contractors to use low VOC adhesives
- ✓ Require vendors and contractors to properly dispose of rags, buckets, drums, etc. that contain VOC chemicals
- o Require vendors and contractors to use scrubbers on VOC chemical extraction processes
- o Require vendors, employees, etc. to bus or bicycle or walk throughout property (removing driving personal vehicles)

Fleet

- o Include alternative fueled (propane, CNG) vehicles in your fleet
- ✓ Emissions test your fleet and keep fleet in well maintained state
- ✓ Replace older units in fleet
- o Repower or replace older engines in fleet
- ✓ Have an anti-idle policy for your fleet
- o Install filter traps and DOCs on your diesel fleet
- o Perform diesel retrofits
- ✓ Use low sulfur diesel fuel for your diesel fleet

Operations

- ○ Flare reduction program
- ○ Production of low sulfur diesel
- ○ Production of low reid vapor pressure gasoline
- ○ Utilization of IR cameras to detect and repair fugitive emissions
- ✓ Perform routine inspections for leaks and fugitive emissions

Equipment

- ✓ Installation of low NOx burners on boilers or heaters
- ✓ Installation thermal oxidizers on storage tanks
- ✓ Use of low NOx water heaters
- ○ Use of flue gas recirculation
- ○ Use of vapor recovery or incineration
- ✓ Installation of scrubbers
- ○ Installation of additional seals and liners on storage tanks
- ✓ Continuous and routine inspection of storage tanks for fugitive emissions

Additional Efforts

Organization: Texas A&M University Corpus Christi

Address: 6300 Ocean Dr., Corpus Christi, TX 78412

OZONE ADVANCE

VOLUNTARY AIR EMISSION REDUCTION ACTIONS BY PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY

The Port of Corpus Christi Authority (Port) participates in the Ozone Advance program with the U.S. EPA through the Corpus Christi Air Quality Group. The Port has implemented policies, procedures, and communications to assist in maintaining air quality in the Coastal Bend Region of Texas. Listed below are some of the voluntary activities undertaken by the Port to reduce ozone precursors.

Communications:

- ✓ Registered with AirNow to receive email or text alerts for ozone action days. http://www.enviroflash.info/signup.cfm
- ✓ Registered with TCEQ to receive weekly ozone forecasts. https://service.govdelivery.com/accounts/TXTCEQ/subscriber/new
- ✓ Communicate elevated ozone forecasts to employees, vendors and contractors and provide emission reduction recommendations in notifications.
  - ✓ Encourage employees to car pool, particularly on elevated ozone days – even if it's just for lunch.
- ✓ Host one Public AutoCheck event per year, providing an opportunity for employees to have their vehicles emission tested with AutoCheck.

Contractors and Vendors

- ✓ Require painters to use low VOC paints
- ✓ Require grounds crews to postpone operations on elevated ozone days
- ✓ Require vendors and contractors to use low VOC solvents
- ✓ Require vendors and contractors to use low VOC adhesives
- ✓ Require vendors and contractors to properly dispose of rags, buckets, drums, etc. that contain VOC chemicals

Fleet

- ✓ Include alternative fueled (CNG) vehicles in our fleet
- ✓ Emissions test fleet annually and keep fleet in well maintained state
- ✓ Replace older units in fleet
- ✓ Repower or replace older engines in fleet
- ✓ Have an anti-idle policy for your fleet
- ✓ Use low sulfur diesel fuel for your diesel fleet

Additional Efforts

- ✓ Encourage employees to turn off lights in rooms that are not in use
- ✓ Repair poor seals around windows
- ✓ Purchase 100% renewable energy
- ✓ LED lighting retrofit at event center

Signature	Organization	Date
	Port of Corpus Christi Authority	March 21, 2019

OZONE ADVANCE

VOLUNTARY AIR EMISSION REDUCTION EXAMPLES

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    - o Encourage employees to telecommute, particularly on ozone action days
    - ✓ Encourage teleconferencing instead of driving to meetings
    - o Provide preferred parking for employees that car pool
    - ✓ Provide flexible work schedules to remove vehicles from the road during congested times.
    - o Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
    - ✓ Provide ozone education in your routine personnel health and safety training.

Contractors and Vendors

- o Have an anti-idle policy for all contractor and delivery vehicles
- o Postpone non-essential deliveries on elevated ozone days
- ✓ Require painters to use low VOC paints
- ✓ Require grounds crews to postpone operations on elevated ozone days
- ✓ Require vendors and contractors to use low VOC solvents

- ✓ Require vendors and contractors to use low VOC adhesives
- ✓ Require vendors and contractors to properly dispose of rags, buckets, drums, etc. that contain VOC chemicals
- ✓ Require vendors and contractors to use scrubbers on VOC chemical extraction processes
- ○ Require vendors, employees, etc. to bus or bicycle or walk throughout property (removing driving personal vehicles)

Fleet

- ○ Include alternative fueled (propane, CNG) vehicles in your fleet
- ✓ Emissions test your fleet and keep fleet in well maintained state
- ✓ Replace older units in fleet
- ✓ Repower or replace older engines in fleet
- ✓ Have an anti-idle policy for your fleet
- ✓ Install filter traps and DOCs on your diesel fleet
- ○ Perform diesel retrofits
- ✓ Use low sulfur diesel fuel for your diesel fleet
- ✓ Use electric carts (versus gas-powered) for in-plant transportation

Operations

- ✓ Flare reduction program
- ○ Production of low sulfur diesel (not applicable)
- ○ Production of low reid vapor pressure gasoline (not applicable)
- ○ Utilization of IR cameras to detect and repair fugitive emissions
- ✓ Perform routine inspections for leaks and fugitive emissions

Equipment

- ✓ Installation of low NOx burners on boilers or heaters
- ✓ Installation thermal oxidizers on storage tanks
- ○ Use of low NOx water heaters
- ✓ Use of flue gas recirculation
- ✓ Use of vapor recovery or incineration
- ✓ Installation of scrubbers
- ✓ Installation of additional seals and liners on storage tanks
- ✓ Continuous and routine inspection of storage tanks for fugitive emissions

Additional Efforts

- ✓ Utilize Flare Gas Analyzers
- ✓ Encourage employees to turn off lights in rooms that are not in use.
- ✓ Set thermostats to a comfortable but efficient level

Aron Baggett	Occidental Chemical Corporation – Ingleside Facility	03/27/2019
Signature	Organization	Date

County of Nueces

Department of Public Works

County Roads and Bridges
Engineering Services
Facilities Management
Environmental Enforcement
9*1*1 Addressing Program

Juan A.Pimentel, P.E.

Director of Public Works
Nueces County Engineer

March 22, 2019

Gretchen Arnold
Chair, Corpus Christi Air Quality Group
121 Atlantic St.
Corpus Christi, TX. 78404

Re: Nueces County Public Works Ozone Emissions Reduction Voluntary Measures-May 1, 2018-March 21, 2019

Dear Ms. Arnold:

Nueces County Department of Public Works (DPW) undertakes voluntary measures to reduce ozone and ozone precursor pollutant emissions using practicable measures. Ozone (NOx and VOCs) reduction measures are for activities and operations conducted between May 1, 2018-March 21, 2019. DPW maintains a fleet of vehicles and equipment for routine maintenance of roads and bridges in the un-incorporated areas of Nueces County.

The DPW also maintains 50 buildings that consume utilities (electricity, natural gas and water) for domestic consumption, and heating ventilation and air conditioning (HVAC) systems such as direct expansion, chilled water, rooftop and split systems. Our biggest buildings with chilled water HVAC systems are retrofitted with sequentially programmed (in effect a system that self modulates operations and sequences through Artificial Intelligence Controllers, fed continuous data to make continuous instantaneous decisions including corrections and over-rides) to conserve energy, and significantly reduce energy consumption and extend equipment life. This results in reduction of fossil fuel consumption and ozone emissions at the source of power generation.

Communications & Training:

My senior staff and I track of media broadcasts, bulletins and advisories for elevated ozone, which in turn are communicated to field supervisors and foremen. All employees, vendors and contractors are encouraged to voluntarily conduct activities that result in ozone and ozone precursor emissions reductions, without compromising safety, work output, quality or schedules, so we perform our work in compliance of State Regulations and mandatory Texas Jail Standards (we maintain and operate Jails and Courts).

(i). Employees are encouraged to car pool, particularly on elevated ozone days – even for lunch.
(ii). Employees are encouraged to use alternative modes of transportation (bus, bike, walk), on ozone days.
(iii). Exempt employees have liberty to dress casual.
(iv). Employees are encouraged to take advantage of the RTA van pool program as far as practicable.
(v). Pool cars are provided designated parking spots.
(vi). Informal ozone education is imparted during dialogue between supervisors and employees.

Contractors and Vendors

(i). Recommend minimal idling of vehicles by contractor and delivery vehicles.
(ii). Prioritize and schedule deliveries by reducing non-essential deliveries on elevated ozone days.
(iii). Recommend painters to use low VOC paints as practicable.
(iv). Require grounds crews to minimize operations on elevated ozone days.
(v). Recommend vendors and contractors to use low VOC solvents.
(vi). Recommend vendors and contractors to use low VOC adhesives.
(vii). Require vendors/contractors to properly dispose of rags, buckets, drums, etc. that contain VOC chemicals

Fleet

(i). We have alternate fueled (propane, CNG) vehicles in our fleet.
(ii). Periodically we emissions test our fleet to ensure it is well maintained.
(iii). Programmed and scheduled replacement of older units in fleet.
(iv). Replace or rehabilitate older engines in fleet.
(v). Recommend minimum idling of all fleet vehicles, with due consideration for public and employee safety.
(vi). Perform diesel retrofits upon need.
(vii). Our underground storage tanks have low sulfur diesel for our fleet and off road equipment.

Equipment

(i). All boilers operate on natural gas fuel with low NOx burners.
(ii). Boilers/heaters undergo scheduled maintenance to keep them well tuned which reduces ozone emissions.
(iii). All of the HVAC chilled water systems (chillers, condensers, evaporators, cooling towers, AHUs, VAVs et al) located at the Courthouse-Jail, Juvenile Detention, and McKinzie Annex have been retrofitted with Energy Savings Controls like VFDs, Network Engines, Field Controllers, wireless transmitters on VAVs and AHUs, gauges, sensors, capacitor banks, water conservation measures, solar water heaters, solar photovoltaic electricity arrays, a wind turbine and a solar array at Central garage, to conserve energy which ultimately augments reduction of ozone related emissions from the point source (Electricity Generation Power Station). This was done under the State of Texas State Energy Conservation Office (SECO) recommended engineered equipment utility cost reduction measures (UCRMs), at a cost of about $ 18 million. Energy efficiency has resulted in significant energy savings and emissions reductions especially of ozone associated contaminants.
(iv) Last year (2018-2019) we retrofitted 7 additional buildings with remote controls for operational optimization, energy savings, enhanced performance and remote modulation to save time and money, eliminating technicians' on-site commutes to trouble shoot malfunctions, by evaluating systems and malfunctions via a graphics interface on our PCs (web-based system trademarked Niagara).
(v). All of the HVAC and other equipment is maintained under a rigorous scheduled maintenance program.
(vi). All lights in office areas are automatically turned on and off using infra-red and photoelectric sensors.
(vii). Engineering measurement of our energy savings program shows about 25 % reduction in actual consumption for water, gas and electricity, proportionally reducing emissions from the Power Generation point source (consuming fossil fuels from reduced demand, thereby accomplishing our main objective of reducing zone and ozone precursor emissions by reducing.

If you have any questions, contact me or Dipak V. Desai, P.E., Principal Engineer.

Sincerely,

Juan A. Pimentel, P.E.
Director of Public Works

Cc: Barbara Canales, County Judge

901 Leopard Street, Suite 103 Corpus Christi, Texas 78401-3602 Telephone (361) 888-0490 FAX (361) 888-0485

OZONE ADVANCE

VOLUNTARY AIR EMISSION REDUCTION EXAMPLES

The Corpus Christi Urban Airshed through the Corpus Christi Air Quality Group participates in an Ozone Advance program with the U S EPA. The Ozone Advance program is a program whereby a community commits to performing voluntary (not mandated or required) emission reduction activities in an effort to remain in attainment of ozone standards. Each year, the Corpus Christi Air Quality Group submits a report to the U S EPA on past year voluntary initiatives that have been performed in an effort to reduce emissions.

Corpus Christi needs your help with submitting an impressive 2018/2019 report. We know we are all doing many great things voluntarily to reduce emissions. This is our time to shine instead of keeping our great efforts to ourselves! Cited efforts can be considered guidelines and do not need to be adopted policies.

Listed below are some examples of voluntary projects or initiatives that can reduce ozone precursors. These are just some examples of air emission reduction initiatives that can be cited in our annual update to the U S EPA for the Corpus Christi Ozone Advance Program. You may be doing much more! Please add to the list! This is just a start!

The 2018/2019 annual report will be submitted to the U S EPA in May, 2019. Please review the examples below, add your own additional projects. Send your material to Gretchen Arnold at gretchen.arnold@stx.rr.com by March 31, 2019 to have your efforts cited in the report.

Communications:

- Register with AirNow to receive email or text alerts for ozone action days. It is free and easy! http://www.enviroflash.info/signup.cfm
- Register with TCEQ to receive weekly ozone forecasts. Forecasts are provided via email, text or social media and can be easily forwarded throughout your workplace. You can register at this link: https://service.govdelivery.com/accounts/TXTCEQ/subscriber/new
- Communicate elevated ozone forecasts to employees, vendors and contractors and provide emission reduction recommendations in your notification.
    - Encourage employees to car pool, particularly on elevated ozone days – even if it's just for lunch.
    - Encourage employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days. Have a casual dress day for those that do.
    - Encourage employees to take advantage of the RTA van pool program
    - Encourage employees to telecommute, particularly on ozone action days
    - Encourage teleconferencing instead of driving to meetings
    - Provide preferred parking for employees that car pool
    - Provide flexible work schedules to remove vehicles from the road during congested times.
- Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Provide ozone education in your routine personnel health and safety training.

Operations

Contractors and Vendors

- Have an anti-idle policy for all contractor and delivery vehicles
- Postpone non-essential deliveries on elevated ozone days
- Require painters to use low VOC paints
- Require grounds crews to postpone operations on elevated ozone days

- Require vendors and contractors to use low VOC solvents
- Require vendors and contractors to use low VOC adhesives
- Require vendors and contractors to properly dispose of rags, buckets, drums, etc. that contain VOC chemicals
- Require vendors and contractors to use scrubbers on VOC chemical extraction processes
- Require vendors, employees, etc. to bus or bicycle or walk throughout property (removing driving personal vehicles)

Fleet

- Include alternative fueled (propane, CNG) vehicles in your fleet
- Emissions test your fleet and keep fleet in well maintained state
- Replace older units in fleet
- Repower or replace older engines in fleet
- Have an anti-idle policy for your fleet
- Install filter traps and DOCs on your diesel fleet
- Perform diesel retrofits
- Use low sulfur diesel fuel for your diesel fleet

Operations

- Flare reduction program
- Production of low sulfur diesel
- Production of low reid vapor pressure gasoline
- Utilization of IR cameras to detect and repair fugitive emissions
- Perform routine inspections for leaks and fugitive emissions

Equipment

- Installation of low NOx burners on boilers or heaters
- Installation thermal oxidizers on storage tanks
- Use of low NOx water heaters
- Use of flue gas recirculation
- Use of vapor recovery or incineration
- Installation of scrubbers
- Installation of additional seals and liners on storage tanks
- Continuous and routine inspection of storage tanks for fugitive emissions

Additional Efforts

Sharon Bailey Lewis City of Corpus Christi — 4/2/2019

Signature — Organization — Date

APPENDIX A
PATH FORWARD LETTER

APPENDIX A
PATH FORWARD COMMITMENTS

Port of Corpus Christi and Construction Emissions Inventory

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 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.

Establishment of Air Quality Position and Program

The Group will work with stakeholders and potential sponsors 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 in a community that strives to maintain healthy air quality.

Air Quality Curricula

An area Industry funded air quality curricula will be delivered to 5th grade classes.

Research, Modeling and 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.

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

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.

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.

AutoCheck/Clean Fleet Vehicle Emissions Testing and Repair

The Pollution Prevention Partnership (P3) provides information, education and awareness campaigns, research and participation in and promotion of ozone reduction strategies among citizens and organizations, and administration of the AutoCheck Supplemental Environmental Program (SEP). The AutoCheck SEP provides emissions data and direct reduction of emissions by screening and repair of highly polluting vehicles.

The "Clean Fleet" vehicle emissions testing program will 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.

Use of IR Cameras

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

CCAD Announcement of Ozone Action Days

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.

Production of LRVP Gasoline

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.

Operation of Public Use Compressed Natural Gas (CNG) Fueling Facilities

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.

USPS Installation of CNG Fueling Facilities

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

RTA Purchase of CNG Vehicles

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.

Bicycle Transportation Planning

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, Texas A&M University-Corpus Christi (TAMUCC), and the City about the creation of new facilities, new policies, and the dissemination of public information.

Corpus Christi Air Quality Group Education Efforts

The Group represents a broad array of agency, industry, university, and media associations. The Chair of the 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.

Announcement of Emission Reduction Funding Opportunities

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 Group and their work places by the Group's Chair.

Van Share Program Promotion

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

This appendix reflects the major highlights of the Path Forward Commitments to EPA. To view the complete Path Forward letter including details, charts and attachments, please visit https://www.epa.gov/advance/texas-corpus-christi

APPENDIX B
ANNUAL REPORT FOR YEAR 1 ACTIVITIES
May 2014 – May 2015

APPENDIX B
ANNUAL REPORT FOR YEAR 1
(May 2014 – May 2015)

Status of Port of Corpus Christi Emissions Inventory Commitment for Year 1 and Year 2 (May 2014 – May 2016)

The commitment for Year 1 and Year 2 is 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 a partial construction equipment emission 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 Commitments for Year 2/3

A Future Path would be to utilize the emissions inventory data to identify additional emission reduction opportunities that will benefit 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.

Status of Establishing Air Quality Position and Program Commitment for Year 1

The commitment of efforts to fund an education position has been met and within the schedule stated in the Path Forward Plan. During May 2014-May 2015, 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, (May 2015) funding for such a program has not been offered or available. Establishing the position and program has not taken place.

Status for Air Quality Curricula Delivery for Year 1

An air quality curricula was provided to 5th grade students at four area schools. The curricula was delivered by an industry funded consultant. Twenty-two (22) classes received the curricula for a total of five-hundred fifty-one (551) students. Curricula included how ozone is formed, ozone producing activities and ozone emission reduction recommendations. Tests were submitted to students prior to and after receiving the curricula. Post curricula tests improved to seven out of

ten possible correct answers from a pre-test average of 4 out of 10 possible correct answers. The curricula printing, class room prizes and instructor/consultant time was sponsored by Citgo, Flint Hills and Valero Refining.

Status of Research, Modeling and Monitoring Commitment for Year 1

The commitment has been met and within 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 Monitoring 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 NOx Monitoring Commitment for Year 1

The commitment has been met and within 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 15, 2014 through October 31, 2014 while NOx concentrations were observed to range between 1 ppb to 10 ppb.

Path Forward for NOx Monitoring

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 to Upgrade Monitors for Year 1

The commitment has been completed within the schedule stated in 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.

Status of Commitment to Update Model for Year 1

The commitment has been met and within 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 Updating Ozone Attainment Status Commitment for Year 1

The commitment has been met and within 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 were measured at compliance grade monitoring stations including CAMS 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 AutoCheck/Clean Fleet Vehicle Emissions Testing and Repair Commitment for Year 1

The commitment has been met and within the stated schedule. 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. 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 use of IR Camera Commitment for Year 1

The commitment has been met and within 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 CCAD Notification on Ozone Action Days Commitment for Year 1

Ozone forecasts are made daily by TCEQ meteorologists during the ozone-forecast season; April 1 – October 31. The forecast predicts whether ozone levels in the area are expected to reach or exceed the ozone standards. The EPA sets levels to notify the public about local air quality, and recommend steps people can take to avoid exposure to air pollutants. TCEQ meteorologists use a set of criteria from historic meteorological data, ozone measurements, and ozone-prediction models to make these predictions. When they forecast an Ozone Action Day, TCEQ meteorologists contact the National Weather Service, which then broadcasts the information across its "weather wire." The TCEQ also provides a service to email anyone about an upcoming ozone action day. The forecasts are made, in most cases, by 2 p.m. local time and are valid for the next day. There were no Ozone Action Days during Year 1 (May 2014-May 2015), however the CCAD communication system was set up and ready to launch should an Ozone Action Day be called.

Status of Production of LRVP Commitment for Year 1

The commitment has been met and within 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 Operation of Public Use CNG Fueling Facilities Commitment for Year 1

The commitment has been met and within 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 expects to have that station in operation by 2nd quarter of 2016. The City of Corpus Christi has exceeded the 15 unit commitment and purchased 70 CNG bi-fuel and dedicated vehicles in 2014. There are plans to purchase a minimum of 50 bi-fuel or dedicated CNG vehicles in 2015.

Status of USPS Installation of CNG Fueling Facility for Year 1

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

Status of RTA Commitment to Purchase CNG Vehicles for Year 1

The commitment has been met and ahead of the schedule stated in the Path Forward Plan. The CCRTA replaced 23 diesel Paratransit vehicles and 20 diesel buses with CNG vehicles.

Status of Bicycle Transportation Planning Commitment for Year 1

The commitment has exceeded its tasks and activities as stated in the Path Forward Plan and ahead of schedule. 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, way finding.)
- 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 Education Efforts Commitment for Year 1

The commitment has been met and within the schedule stated in the Path Forward. In July of 2014 and May 2015, the Chair sent electronic communications to the over 100 participants in the Group 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.

Status of Announcing Emission Reduction Funding Opportunities Commitment for Year 1

The commitment has been met within the schedule stated in the Path Forward Plan. Notification to the Group for DERA projects were submitted in May, August, and September of 2014. A letter of support from the 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 Van Share Promotion Commitment for Year 1

The commitment has been met and within the schedule stated in the Path Forward. The Regional Transportation Authority(RTA) was an invited speaker at the July, 2014 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 Group members that provided the RTA presentation, contact information for the representative and encouragement to schedule a workplace appointment for the representative. 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. This appendix reflects the major highlights of the Year 1 Ozone

Advance Report submitted to EPA. To view the complete Year 1 Annual Report including details, charts and attachments, please visit https://www.epa.gov/advance/texas-corpus-christi

APPENDIX C
ANNUAL REPORT FOR YEAR 2 ACTIVITIES
May 2015 – May 2016

APPENDIX C
ANNUAL REPORT FOR YEAR 2
(May 2015 – May 2016)

Status of Establishing Air Quality Position and Program Commitment for Year 2

Numerous efforts to meet the commitment and obtain funding for a position that delivers a community-wide education campaign in Year 2 were unsuccessful. The Chair of the 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.

This commitment has not been met. 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 Group met their commitment in Year 1 and Year 2 commitment 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. 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.

Education Path Forward for Year 3

The Chair of the 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.

Status of Air Quality Curricula for Year 2

The commitment has been met and within the committed schedule. During Year 2, area industry (Citgo, Flint Hills Resources, Valero) 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.

Air Quality Curricula Path Forward for Year 3

Area industry (Citgo, Flint Hills Resources, Valero) has provided funding for the air quality curricula to continue into the Fall 2016 school session.

Status of Research, Modeling and Monitoring Commitment for Year 2

The commitment has been completed and within 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.

Status of NOx Monitoring Commitment for Year 2

The commitment has been completed and within the schedule stated in 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 NOx concentrations were observed to range between 0.7 ppb to 6.8 ppb. An episode day 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.

Status of Commitment to Upgrade Model for Year 2

The commitment has been completed and within 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, a conceptual modeling report for the urban airshed has been updated through 2014. As shown by the data analysis in the conceptual modeling report. 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.

Status of Updating Ozone Attainment Status Commitment for Year 2

The commitment to update ozone attainment status has been completed within 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 CAMS 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.

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 (May 2016-May 2018) to continue air monitoring, research, and the Clean Fleet program. Funding was insufficient to provide modeling activities.

Status of AutoCheck/Clean Fleet Vehicle Emissions Testing and Repair Commitment for Year 2

The Clean Fleet commitment was met and within the stated schedule for Year 2. 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 0.01 tons per year of NOx and 1.2 tons per year of HC. The Pollution Prevention Partnership also made numerous presentations to local agencies and community groups about ozone, health, and encouraging emission reducing activities. Groups included Flint Hills Environmental, Health, Safety Fair, 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 Clean Fleet 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 NOX; 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

Status of use of IR Camera Commitment for Year 2

The commitment has been met and within the schedule stated in the Path Forward Plan. Several area industrial facilities utilized IR cameras to detect fugitive emissions in Year 2.

Status of CCAD Notification on Ozone Action Days Commitment for Year 2

There were no Ozone Action Days during Year 2, however the CCAD communication system was set up and ready to launch should an Ozone Action Day occur.

Status of Production of LRVP Commitment for Year 2

The commitment has been met and within the schedule stated in the Path Forward Plan. Several area facilities produced LRVP gasoline in Year 2.

Status of Operation of Public Use CNG Fueling Facilities Commitment for Year 2

The commitment has been completed and ahead of 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 CNG Fueling 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.

Status of USPS Installation of CNG Fueling Facility for Year 2

The commitment has not been met. 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 CNG for Year 3

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

Status of RTA Commitment to Purchase CNG Vehicles for Year 2

The commitment has been met and ahead of the schedule stated in the Path Forward Plan. The CCRTA replaced 15 diesel-fueled buses with 15 CNG buses in Year 2.

Status of Bicycle Transportation Planning 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 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 Bicycle/Mobility Planning for Year 3
Strategic Plan for Active Mobility

- Final design and initiation of construction of Bond 2012 and 2014 roadway projects will yield the implementation of separated cycling infrastructure (one-way protected cycle tracks adjacent to the sidewalk on both sides of the street) on around a dozen miles of roadway.
- Planning for implementation of various bicycle and pedestrian projects funded through the MPO's Transportation Alternatives program.
- Creation of various working products related to pedestrian mobility as preliminary steps in subsequent phases of the Strategic Plan for Active Mobility.

Status of Education Efforts Commitment for Year 2
The commitment has been met and within the schedule stated in the Path Forward Plan. In September 2015, communications were sent to the 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 Group communications.

Path Forward for Education Efforts for Year 3
The Chair of the 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.

Status of Announcing Emission Reduction Funding Opportunities Commitment for Year 2
The commitment has been met within the schedule stated in the Path Forward Plan. A notification was circulated to the 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.

Status of Van Share Promotion Commitment for Year 2
The commitment has been met and within the schedule stated in the Path Forward Plan. An e-mail was sent to the over one hundred (100) 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.

This appendix reflects the major highlights of the Year 2 Ozone Advance Report submitted to EPA. To view the complete Year 2 Annual Report including details, charts and attachments, please visit https://www.epa.gov/advance/texas-corpus-christi

APPENDIX D
ANNUAL REPORT FOR YEAR 3 ACTIVITIES
May 2016 – May 2017

APPENDIX D
ANNUAL REPORT FOR YEAR 3
(May 2016 – May - 2017)

Status of Establishing Air Quality Position and Program Commitment for Year 3

This commitment has been met and within the committed schedule. During May 2016-May 2017, the Chair continued work with stakeholders to provide no cost opportunities to educate the public about Corpus Christi air quality. The Pollution Prevention Partnership at Texas A&M University-Corpus Christi developed a website that provides air monitor links, daily updated air quality information, emission reduction recommendations, elevated ozone day health tips, and more. The site is continuously updated and can be found at http://outreach.tamucc.edu/p3. The Port of Corpus Christi provided staff time and expertise to establish a Facebook site as well as twitter feeds for the Group programs and messaging. The Facebook site can be found at https://www.facebook.com/ccairquality/ . The Corpus Christi Chamber of Commerce provided air quality messages to over 400 members and distributed an emissions reductions list to its members. The Corpus Christi Regional Economic Development Corporation and the San Patricio Economic Development Corporation both began providing a document to newly sited businesses in the area that encourages the business to attend Group meetings and provides emissions reductions information. The Local Emergency Planning Committee (LEPC) committed to providing information on their info-line, and provides reverse alert telephone calls and text messages on ozone action days. The Corpus Christi newspaper (Corpus Christi Caller Times) included daily air quality information on their weather page and the Chair provided air quality information to the local television meteorologists.

Education Path Forward for Year 4

The Chair will continue to work with stakeholders to provide no-cost education opportunities and outlets. The Facebook site, webpage, twitter communications, welcome packages and newsletter contents and distributions will be updated. The Chair will continue to 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 and share those opportunities with stakeholders. The Chair will continue to distribute the emissions reductions recommendations and checklist to all stakeholders.

Status of Air Quality Curricula for Year 3

The air quality curricula commitment was met and within the committed schedule. The curricula was delivered to 23 5th grade classes at 4 elementary schools. A total of 569 students received the curricula. Students were tested on air quality and emission reduction recommendations knowledge prior to and after receiving the lessons. Prior to receiving the lessons, students tested correctly an average of 5 questions out of a possible 10. After receiving the lessons, students tested correctly an average of 9 questions out of a possible 10.

Path Forward Air Quality Curricula for Year 4

Area industry is considering funding the air quality curricula to continue in Year 4.

Status of Research, Modeling and Monitoring Commitment for Year 3

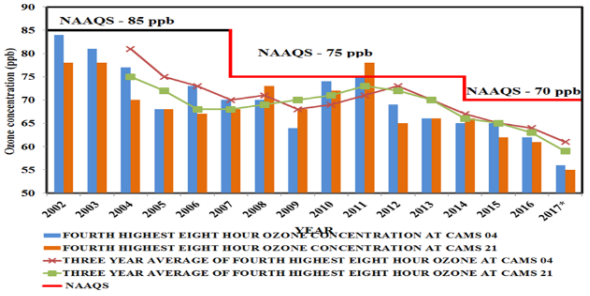
With budget constraints in funding provided by the 84th Texas Legislature, the below research grade monitoring stations were deactivated on May 31, 2016.

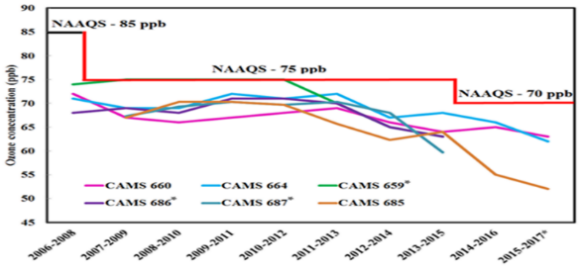
- Upwind site in Aransas Pass County – CAMS 659
- Odem monitoring site in San Patricio County – CAMS 686

A quality assurance project plan (QAPP) for maintenance and operation of three research grade monitoring stations including (1) Urban site – CAMS 660, (2) Downwind site – CAMS 664, and (3) Ingleside site – CAMS 685 as shown below was submitted and approved by TCEQ on May 16, 2016. The monitoring commitment for Year 3 was met and will continue beyond the stated schedule. Each of the research monitoring stations (CAMS 660, 664, and 665) was equipped with an ozone analyzer; weather sensors including RM Young wind sensor and coastal environmental temperature and humidity sensor; zeno data logger and Enfora wireless modems. Continuous measurements of ozone, wind speed, wind direction, outdoor temperature, and relative humidity were recorded at each of these stations and using the TCEQ LEADS acquisition system data was made publicly available on TCEQ's website. Additional continuous monitoring of oxides of nitrogen (NOx) was performed during this time at Holly Road monitor (CAMS 660).

Status of Research; Updating Ozone Attainment Status Commitment for Year 3

The commitment to update the ozone attainment status has been met and beyond the stated schedule. The design value trend of ozone concentrations measured at TCEQ maintained compliance grade monitoring stations and TAMUK/UNT maintained research grade monitoring stations are shown in below figures.





As demonstrated by the design value trends, a decreasing trend in ozone concentration has been noted at both TCEQ maintained compliance grade monitoring stations as well as research grade monitoring stations maintained and operated by TAMUK/UNT. During May 16, 2016 through April 7, 2017 highest daily maximum eight hour ozone concentrations of 64 ppb and 61 ppb were measured at CAMS 04 (February 22, 2017) and CAMS 21 (October 11, 2016) on February 22, 2016 and October 11, 2017, respectively. The research grade monitoring stations also measured highest daily maximum eight hour ozone concentrations of 73 ppb at Urban site - Holly road –

CAMS 660 (September 29, 2016), 70 ppb at downwind site – Violet – CAMS 664 (October 11, 2016) and 55 ppb at Ingleside site – CAMS 685 (September 2, 2016). Additional monitoring of oxides of nitrogen was conducted at Holly road – CAMS 660 during ozone season of 2016. With QAPP approved by TCEQ on May 16, 2016 measurements of oxides of nitrogen was conducted from June 1, 2016. Measurements were not acquired during June 28 through July 13, 2016 due to failure of the reaction chamber. The analyzer was sent to the technician for replacement of reaction chamber and calibration. The analyzer was setup at Holly road on July 13, 2016 for continuous measurement of ozone precursor. Highest maximum NO and NOx concentrations were measured in October 2016 (3.29 ppb of NO – October 26, 2016 and 8.81 ppb of NOx – October 22, 2016).

Looking Ahead; Updating Ozone Attainment Status for Year 4

Continuous monitoring of ozone and meteorological parameters will be conducted at urban site – CAMS 660; downwind site – CAMS 664 and Ingleside site – CAMS 685. The data will be made available to local stakeholders, policy makers, local communities and other researchers through TCEQ's website. Additional monitoring of oxides of nitrogen also will be conducted during the ozone season (April 1 through October 31) at urban site – CAMS 660.

Status of AutoCheck/Clean Fleet Vehicle Emissions Testing and Repair Commitment for Year 3

The Clean Fleet commitment exceeded commitments and beyond the stated schedule. The Pollution Prevention Partnership (P3) became an EPA SmartWay® Affiliate in November 2016. SmartWay Partnerships between carriers, shippers, and logistics companies have been promoted in several venues: Group, Nueces County Community Action Agency-Health Advisory Meeting, CC Regional Transportation Authority-Policy Meeting and Texas-Freight Advisory Committee Regional Workshop. SmartWay information and links have been included on the P3 Website. SmartWay partners track and improve fuel efficiency, reducing emissions including NOx, a precursor of ground-level ozone. P3 CleanFleet and AutoCheck programs held 70 events from May 2016 to March 30, 2017, testing 630 public and fleet vehicles for emissions. Fifty (50) vehicles were identified as highly polluting and 31 gas caps were identified as leaking and needing replacement. Approximate emissions reductions as a result of documented repairs with post-test and gas cap replacement is 0.15 tons per year of NOx and 7.07 tons per year of HC. P3 also presented at or attended 18 meetings and health fairs at local agencies and community events to educate and encourage emission-reducing activities. Over 3,700 people were addressed. Some of the groups addressed were Nueces County Safe Communities Coalition, Nueces County Community Action Agency-Health Advisory Meeting, LEAD First Foundation and Superior Health Plan health fair, Solomon Coles school, Head Start, Girls in Engineering Math and Science Conference and three Head Start parent groups. The web content for P3 was expanded to include a SmartWay page. Four hundred sixty-five (465) presentations and documents about ozone reduction, alternative fuels, and alternative transportation were downloaded from the P3 website and there were 6,791 other page hits. The P3 website can be found at http://outreach.tamucc.edu/p3/.

Path Forward for Clean Fleet for Year 4

P3 will continue to promote SmartWay Partnerships between the freight industry and EPA. In addition to addressing groups, P3 will contact specific shippers and carriers to promote the business benefits of fuel efficiency and emissions reduction.

Ozone awareness and reduction strategies, education, and outreach will continue through presentations and facilitation of meetings for/with local governments, businesses, citizens groups, industry groups, and environmental groups to promote ozone and precursor reduction strategies.

P3 will continue to host CleanFleet and AutoCheck events at least once per month testing for emission problems. Repair subsidies will continue as long as funding is available.

Educational materials in presentations, print and online will be expanded to include greenscaping practices that reduce lawn maintenance requirements. Less lawn maintenance reduces ozone precursors and acute exposure of operators to toxic emissions.

P3 will plan and begin implementation of a media campaign coinciding with the 2017 Ozone season (April-October). Press releases, social media, and free PSA spots will be used when possible. Pending budget approval, paid outdoor and radio advertising could be used. Gas stations will be asked to participate in the media campaign to promote ozone actions.

P3 will implement one Lawn Equipment Exchange Program in which the public will trade-in working gasoline powered equipment for discounts on electric equipment. Trade-in equipment will be drained of fluids and recycled.

An SEP proposal to TCEQ is pending approval. The proposal, if approved, will expand the AutoCheck emissions screening and repair protocol to include some Standard On Board Diagnostic (OBD-II) Diagnostic Troubleshooting Codes (DTC). This expansion would allow repairs of malfunctioning systems not currently identified for repair by tailpipe screening alone. Further reduction in NOx and HC can be achieved by repairing OBD-II identified malfunctions such as the evaporative control system, mass airflow sensors, emission gas recirculation (EGR) valves, misfires, and lean conditions.

Status of use of IR Camera Commitment for Year 3

The commitment has been met and beyond the stated schedule in the Path Forward Plan. Industry continued the use of IR cameras to detect fugitive emissions in Year 3.

Path Forward for IR Camera Commitment for Year 4

Industry plans to continue the use of IR cameras to detect fugitive emissions in Year 4.

Status of CCAD Notification on Ozone Action Days Commitment for Year 3

There were no called Ozone Action Days during Year 3, however the CCAD communication system was set up for an Ozone Action Day.

Path Forward for CCAD Notification for Year 4
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.

Status of Production of LRVP Commitment for Year 3
The commitment has been met and gone beyond the schedule stated in the Path Forward Plan. Several area facilities continued to produce LRVP gasoline in Year 3.

Path Forward for LRVP Year 4
Industry plans to continue to produce LRVP in Year 4.

Status of Operation of Public Use CNG Fueling Facilities Commitment for Year 3
The commitment is completed and beyond the schedule stated in the Path Forward Plan. The City continues to consider replacing gasoline fueled vehicles with CNG equivalents. The City purchased twenty (20) CNG bi-fuel and dedicated vehicles in 2016.

Path Forward for CNG Year 4 (May 2017-May 2018)
The City is considering building additional CNG stations in Flour Bluff and Annaville, which are areas within the city's limits.

Status of USPS Installation of CNG Fueling Facility for Year 3
Due to funding issues, the project has been postponed.

Looking Forward to CNG for Year 4
The city will continue to encourage its partners to consider CNG vehicles.

Status of RTA Commitment to Purchase CNG Vehicles for Year 3
The commitment has been exceeded and ahead of the schedule stated in the Path Forward Plan. During Year 3, the CCRTA purchased 11 CNG buses (35') and 7 CNG Cut-away buses (around 22' - 24'- mostly used in the paratransit division). The CCRTA also purchased 13 electric relief vehicles (Ford Escorts).

Status of Bicycle Transportation Planning Commitment for Year 3
The Bicycle and Mobility Planning Commitment continues to exceed commitments and scheduling stated in the Path Forward Plan.

- Strategic Plan for Active Mobility, Phase I – Bicycle Mobility was adopted by the City of Corpus Christi in May 2016.
- Program (TAP) funds for implementation of bicycle and pedestrian projects in FY2017 and FY2018 as summarized in the following table.

	AGENCY	PROJECT NAME	TOTAL PROJECT COST
FY 2017	City of Corpus Christi	Region-wide Bike Boulevard Wayfinding Initiative	$522,500
	City of Portland	Portland Bicycle Lanes	$359,878
FY 2018	City of Corpus Christi	Safe Shelter and Crossing Program	$168,520
	City of Portland	Memorial Parkway Hike & Bike Phase 1	$342,106

- City of Corpus Christi funded the development of roadway standard design details to facilitate consistent and effective implementation of bicycle mobility infrastructure in various roadway projects.
- Design completed for approximately 12 miles of 1-way, protected cycle tracks as part of Bond 2012 and Bond 2014 projects.
- City of Corpus Christi initiated a collaborative Branding and Design Study to define wayfinding and signage standards for the Bicycle Mobility Network (as in-kind match for an MPO Transportation Alternatives Program grant to fund the implementation of approximately 30 miles of bicycle boulevards).
- The City of Corpus Christi completed a 1.25 mile section of the Schannen Ditch offroad multi-use path (supported in part with Transportation Alternatives Program funds from the MPO).
- Corpus Christi RTA used MPO Transportation Alternative Program funds to purchase the following for installation at RTA transit stops within the MPO Boundary:
    - 1,000 bicycle racks (varying capacities)
    - 15 bicycle lockers
    - 150 free standing public air pumps
    - 65 freestanding public "FixIt" stations
- MPO staff, with guidance from Strategic Plan for Active Mobility steering Committee, produced multiple pedestrian mobility planning working products and provided technical assistance with the planning of pedestrian elements in City of Corpus Christi roadway projects

<u>Path Forward for Bicycle and Mobility Planning for Year 4</u>
Strategic Plan for Active Mobility:

- Construction of Bond 2012 and 2014 roadway projects, including around 12 miles of protected 1-way cycle track, will continue.

- City of Corpus Christi will complete the collaborative Branding and Design Study to define wayfinding and signage standards for the Bicycle Mobility Network.

- City of Corpus Christi will use Transportation Alternatives Program funds from the MPO to implement around 30 miles of Bicycle Boulevards

- City of Corpus Christi will use Transportation Alternatives Program funds from the MPO to begin installation of a HAWK pedestrian crossing at Cole Part, a key Bayfront destination.

- City of Portland will use Transportation Alternatives Program funds from the MPO to begin installation of around three miles of Buffered Bicycle Lanes.

- City of Portland will use Transportation Alternatives Program funds from the MPO to begin construction of Phase I of the Memorial Parkway offroad multi-use path.

- RTA will install bicycle trip support hardware purchased in Year 3 using Transportation Alternatives Program funds from the MPO.

Status of Education Efforts Commitment for Year 3

The commitment has been met and beyond the schedule stated in the Path Forward Plan. SmartWay, AirNow, Enviroflash, anti-idling and other initiatives were included in an emissions recommendation list that was distributed to the Group and other stakeholders in July and October, 2016 and January and April 2017.

Path Forward for Education Efforts for Year 4

The Chair 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.

Status of Announcing Emission Reduction Funding Opportunities Commitment for Year 3

The commitment has been met and went beyond the schedule stated in the Path Forward Plan. TCEQ Texas Emissions Reductions Program (TERP), DERA, and other TCEQ and EPA applications including the SmartWay program for funding opportunities were communicated to the Group in July 2016, October 2016, January 2017 and Aril 2017 of Year 3. A special presentation by Trent Thigpen (P3 Project Manager) was made at the October 28, 2016 Group meeting encouraging members to become SmartWay members. SmartWay and other initiatives are also included in the emissions recommendation list that is distributed to the Group and other stakeholders.

Path Forward for Announcing Funding Opportunities for Year 4

The Chair will go beyond the schedule stated in the Path Forward Plan and continue to inform the Group and other stakeholders of emission reduction funding opportunities.

Status of Van Share Promotion Commitment for Year 3

The commitment was exceeded and beyond the schedule stated in the Path Forward Plan. Registering with the RTA Van Pool program including contact information was included in an emissions reductions summary and checklist that was distributed to the Group in addition to other stakeholders April, July and October of 2016 and in January and April 2017 during Year 3.

The RTA Van Pool Program had a total of 14,157 riders making 4,376 trips for a total of 201,430 miles in 8 vehicles, thereby removing thousands of vehicles from the road during Year 3. The following table provide a complete detail of the van-share trips.

This appendix reflects the major highlights of the Year 3 Ozone Advance Report submitted to EPA. To view the complete Year 3 Annual Report including details, charts and attachments, please visit https://www.epa.gov/advance/texas-corpus-christi

APPENDIX E

ANNUAL REPORT FOR YEAR 4 ACTIVITIES

May 2017 – May 2018

APPENDIX E
ANNUAL REPORT FOR YEAR 4
(May 2017 – May 2018)

Status of Establishing Air Quality Position and Program Commitment for Year 4

The Group Facebook (www.facebook @ccairquality) enjoyed 49 likes and 52 followers during Year 4. Average visits to the page were between 4 and11 daily. The website (www.cctexas.com/planning-esi/environmental-strategic-initiatives-esi/cc-air-quality-group) has enjoyed 78 hits. The Pollution Prevention Partnership Air Quality Website (outreach.tamucc.edu/p3/) enjoyed 10,883 hits during Year 4

Path Forward for Air Quality Education Efforts for Year 5

The Group will continue to host a Facebook site, a Website, and provide air quality public presentations to community groups, agencies, elected officials and business leaders. Presentations will also include promoting the use of EPA flags, brochures and other no cost distribution materials.

Status of Air Quality Curricula for Year 4

Industry continued to fund the air quality curricula. The curricula was delivered to a total of 593 5th grade students in 26 classes at 4 schools. Pre and post testing of air quality knowledge was performed on the students prior to and after receiving the curricula. Testing results averaged 5 correct answers out a possible 10 prior to receiving the curricula and 8 correct answers after receiving the curricula.

Path Forward for Air Quality Curricula for Year 5

Industry will meet to consider funding air quality curricula for Year 5.

Status of Research, Modeling and Monitoring Commitment for Year 4

Each of the research monitoring stations (660, 664, and 685) was equipped with an ozone analyzer; weather sensors including RM Young wind sensor and coastal environmental temperature and humidity sensor; zeno data logger and Enfora wireless modems. Continuous measurements of ozone, wind speed, wind direction, outdoor temperature and relative humidity were recorded at each of the stations and using the TCEQ LEADS acquisition system data was made publicly available on TCEQ's website. Additional monitoring of nitrogen oxides was also conducted at CAMS 660 – Holly road during May 1st, 2017 through October 31st, 2017.

Research Accomplishments for Year 4

As demonstrated by the design value trends, a decreasing trend in ozone concentration has been noted at both TCEQ maintained compliance grade monitoring stations (Figure 3) as well as research grade monitoring stations maintained and operated by UNT-TAMUK (Figure 4). During August 25th through September 12th,2017 continuous monitoring of ozone, meteorological conditions and nitrogen oxides at research monitors 660, 664, and 685 was discontinued due to hurricane Harvey.

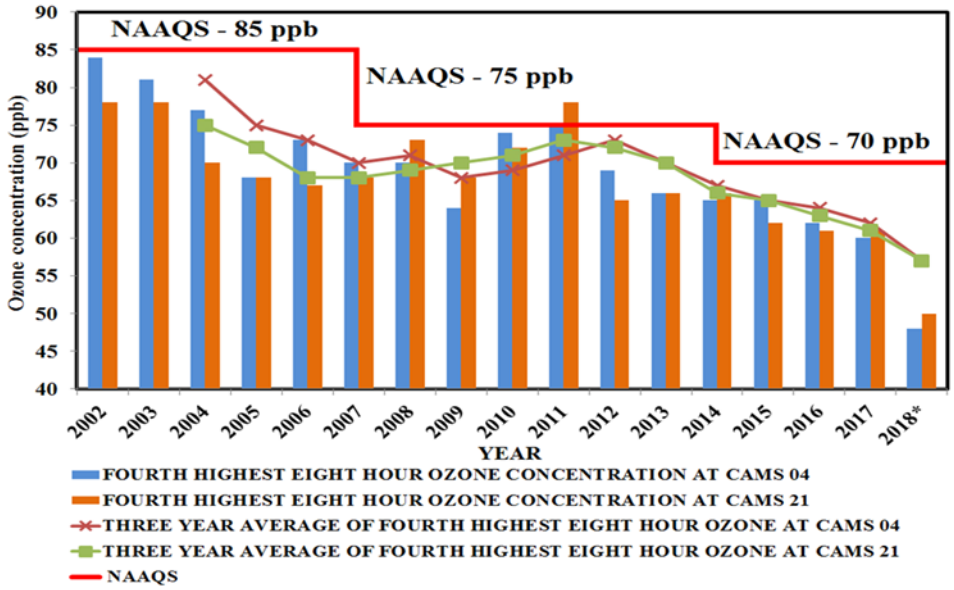


Figure 3. Corpus Christi Ozone Design Trends at TCEQ Regulatory Monitors CAMS 4 and CAMS 21

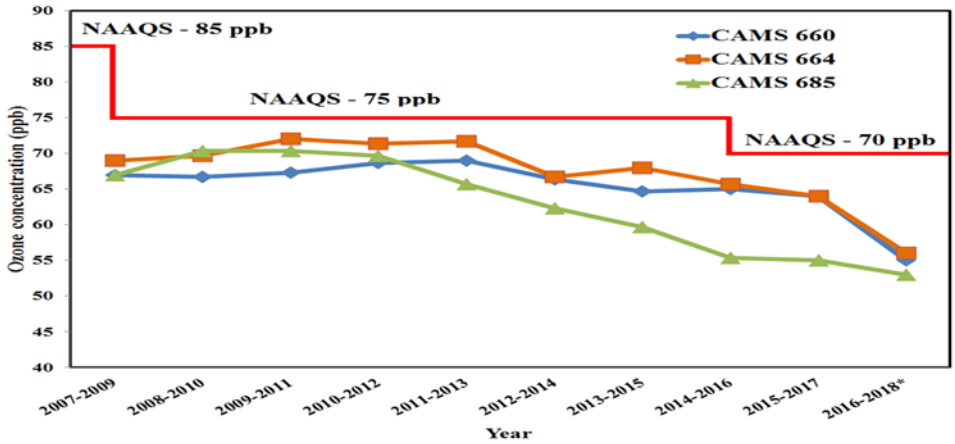


Figure 4. Corpus Christi Ozone Design Trends at TAMUK/UNT Research Monitors CAMS 660, 664, 685
*Deactivated

Daily maximum eight-hour ozone concentrations of 64 ppb were measured at the compliance grade monitoring stations CAMS 04 and CAMS 21 on September 12th, 2017. The research grade monitoring station in urban airshed – CAMS 660 recorded highest daily maximum eight-hour ozone concentrations of 67 ppb on May 24th, 2017 while downwind site – CAMS 664 recorded 68 ppb on October 18th, 2017 and Ingleside – CAMS 685 recorded 65 ppb on May 6th, 2017.

Additional monitoring of oxides of nitrogen was conducted at Holly road – CAMS 660 during ozone season of 2017. Nitric oxide concentrations ranging between 0.78 ppb to 6.61 ppb were measured during April 1st, 2017 through October 31st. 2017 while NOx concentrations recorded ranged between 1.20 ppb to 9.26 ppb. On May 6th, 2017 highest daily maximum concentrations of NO and NOx were measured at CAMS 660. The diurnal analysis of NO and NOx indicated elevated concentrations during 8:00 to 10:00 AM and midafternoon – 12:00 AM – 1:00 PM followed by late evenings – 4:00 PM – 6:00 PM. The exhibited diurnal trends of precursor concentrations can be attributed to traffic sources that subsequently contributed to an increase in the ozone concentrations during mid-day and early evening hours.

Path Forward for Monitoring and Research for Year 5

Funding from the 84th Legislative session has been depleted. Temporary interim funding to continue research and monitoring activities until legislative funding can be restored has been provided by Port Industries. This temporary funding will provide for continuous monitoring of ozone and meteorological conditions at the three research grade continuous monitoring stations including Holly road CAMS 660 – Urban site, Violet CAMS 664 – downwind site, and Ingleside CAMS 685 into Year 5.

Status of AutoCheck/Clean Fleet Vehicle Emissions Testing and Repair Commitment for Year 4

The Rider funding contingent electric mower exchange and the media campaign planned for Year 4 could not be launched due to Rider funding to all near-non-attainment areas in Texas being vetoed by Governor Abbot after the closing of the 85th legislative session in June of 2017. The SEP proposal for advanced OBD diagnostics with AutoCheck events is still pending approval by TCEQ.

Ozone awareness and reduction strategies, education, and outreach was provided during Year 4 through presentations and participation in meetings for/with local governments, businesses, citizens groups, industry groups, and environmental groups to promote ozone and precursor reduction strategies. The SmartWay Partnership was included in audience appropriate presentations. (Attachment 4). Through a renewed partnership with The TxDOT, material from the 2018 Drive Clean Texas Campaign, promotional items including tire gages are being distributed to drivers. The digital media campaign anticipated in May will be launched on campus, social media, and press releases and PSA's where approved by the TAMU-CC marketing department.

P3 Clean Fleet held a total of 57 vehicle emission testing events in Year 4. The emission testing events were held throughout the community at sites such as local high schools, a university campus, the Port of Corpus Christi, a local market/trade center, shopping malls, and health fairs. (Attachment 2)

A total of 229 privately owned vehicles and 138 fleet vehicles were tested for emissions for a total of 367 vehicles tested for emissions in Year 4. Of the 367 vehicles tested, 330 tested as clean and 37 tested as dirty. There were 15 vehicles repaired to clean standards and nine gas caps detected as leaking and replaced. Total approximated emissions reductions as a result of the P3 Clean Fleet Year 4 activities is 2,774.03 pounds per year of hydrocarbons, and 16,204 pounds per year of carbon dioxide. Spreadsheets including pre and post repair emissions tests and reduction calculations are attached to this report (Attachment 3).

In addition to holding emission testing events, P3 made numerous emission reduction presentations throughout Year 4 reaching over 3,000 people. Presentations were made at local churches, student engineering classes, groups of employees, health associations and more. A summary of these events is attached to this report

Path Forward for Year 5 for Clean Fleet

A co-branded partnership with the Port of Corpus Christi will provide funding for Clean Fleet and public outreach efforts through December 2018.

P3 will continue to host CleanFleet and AutoCheck events at least once per month testing for emission problems. Repair subsidies will continue as long as funding is available.

P3 will continue to promote SmartWay Partnerships between the freight industry and EPA

Status of use of IR Camera Commitment for Year 4

Several industry stakeholders continued to use IR cameras to detect fugitive emissions during Year 4.

Path Forward for Use of IR Cameras for Year 5

Industry plans to continue the use of IR cameras to detect fugitive emissions.

Status of CCAD Notification on Ozone Action Days Commitment for Year 4

Corpus Christi experienced one ozone action day (September 12, 2017). CCAD provided notifications and recommendations for the day. In addition to providing an ozone action day notification during Year 4. CCAD implemented energy saving actions such as converting their entire production facility to LED lighting. CCAD also replaced large air chillers with higher energy efficient units that contain non ODS. In teaming with select DoD, NASA, and Army commands, CCAD is currently supporting research for less volatile cold solvents. Most of the cold solvent currently utilized at CCAD is Mil Prf 680 Type II which has a low vapor pressure, and a vapor density which is approximately six times denser than air. When the new Aircraft Corrosion Control (painting) Facility is operational in early 2019, CCAD will be utilizing the best available control technology (BACT) with active carbon filtration. This action is expected to reduce the depot's VOC emissions. CCAD is also a participant in an Army research project that is researching environmental friendly alternatives to the toxic metals used in chrome plating processes.

Path Forward for Ozone Notification for CCAD for Year 5

CCAD plans to continue to inform employees of ozone action days and emissions reduction recommendations for Year 5.

Status of Production of LRVP Commitment for Year 4

Several industry stakeholders continued the production of LRVP gasoline during Year 4.

Path Forward for Production of LRVP Gasoline for Year 5

Area gasoline producers will continue to produce LRVP gasoline during qualifying months in Year 5.

Status of Operation of Public Use CNG Fueling Facilities Commitment for Year 4

The City currently has one (1) CNG Station that is available for City and Public use and one (1) Station that serves as a backup. The CNG Station located at City Hall has been removed from service and is currently being dismantled. The CNG Station located at the Gas Department is no longer operational and plans are to remove the equipment. The CNG Station at Civitan Dr. is currently used as a backup fueling station. The fourth CNG station located at Ayers St is used by the City and is available for public use.

Path Forward for Public Use CNG Fueling Facilities for Year 5

The City is still considering building the additional CNG Stations. The City will partner with the Greater Houston Natural Gas Vehicle Alliance in promoting to the public and private fleets the use and benefits of natural gas vehicles. The City will sponsor CNG workshops with the Greater Houston NGV Alliance.

Status of RTA Commitment to Purchase CNG Vehicles for Year 4

RTA purchased 13 CNG fueled buses, 7 CNG fueled vans and 11 electric powered sedans in Year 4. Posted below if a detailed chart of the vehicles purchased.

CNG Buses & Electric Support Vehicles Purchased between May 1, 2017 - Present

VEHICLE	Dept. the Vehicle is assigned to	YEAR	MAKE/MODEL	SIZE	Seating Maximum	Fleet Type	Lift Equipped	3 Position Wheel chair	Fuel Type	Eligible for Disposition	Purchase Date	Delivery Mileage	In Service Date
916	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,077	08/27/17
917	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,042	08/27/17
918	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,018	08/27/17
919	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,206	10/04/17
920	Vehicle Maintenance	2017	GILLIG/ Low Floor	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,204	11/16/17
921	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Serv	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17		
922	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Serv	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,020	
923	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Serv	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,050	
924	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Serv	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,157	
925	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Serv	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,026	
926	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Serv	35'	32	Fixed	Ramp	Yes	CNG	2029	05/01/17		
3013	MV Transit	2017	ARBOC/SOM-Spirit of Mobility	26'	13+2 WC	Paratransit	Ramp	Yes	CNG	2022	1/1/2018		01/15/18
3014	MV Transit	2017	ARBOC/SOM-Spirit of Mobility	26'	13+2 WC	Paratransit	Ramp	Yes	CNG	2022	1/1/2018		01/15/18
3015	MV Transit	2017	ARBOC/SOM-Spirit of Mobility	26'	13+2 WC	Paratransit	Ramp	Yes	CNG	2022	1/1/2018		01/15/18
3016	MV Transit	2017	ARBOC/SOM-Spirit of Mobility	26'	13+2 WC	Paratransit	Ramp	Yes	CNG	2022	1/1/2018		01/15/18
3017	MV Transit	2017	ARBOC/SOM-Spirit of Mobility	26'	13+2 WC	Paratransit	Ramp	Yes	CNG	2022	1/1/2018		01/15/18
3018	MV Transit	2017	ARBOC/SOM-Spirit of Mobility	26'	13+2 WC	Paratransit	Ramp	Yes	CNG	2022	1/1/2018		01/15/18
3019	MV Transit	2017	ARBOC/SOM-Spirit of Mobility	26'	13+2 WC	Paratransit	Ramp	Yes	CNG	2022	1/1/2018		01/15/18
INVENTORY OF ELECTRIC SERVICE VEHICLES													
3157	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	6/8/2017		10/16/17
3158	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	6/8/2017		10/25/17
3159	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	6/8/2017		10/16/17
3160	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	6/29/2017		10/16/17
3161	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	6/29/2017		10/16/17
3162	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	6/30/2017		10/25/17
3163	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	7/1/2017		10/25/17
3164	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	7/2/2017		10/25/17
3165	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	7/7/2017		11/27/17
3166	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	7/7/2017		11/27/17
3167	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	7/31/2017		11/13/17
3168	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2021	8/1/2017		11/13/17
3169	MV - Rta Relief Vehicles	2016	Ford Focus Electric	5-DR	5	Sedan	No	No	Electric	2020	6/22/2017		11/28/17

Status of Bicycle Transportation Planning Commitment for Year 4

Construction of Bond 2012 and 2014 roadway projects, including around approximately 7 miles of protected 1-way cycle track, continues

City of Corpus Christi completed the collaborative Branding and Design Study to define wayfinding and signage standards for the Bicycle Mobility Network

City of Corpus Christi initiated project to designate approximately 30 miles of Bicycle Boulevards using Transportation Alternatives Program funds from the MPO

City of Corpus Christi initiated installation of a HAWK pedestrian crossing at Cole Part, a key Bayfront destination using Transportation Alternatives Program funds from the MPO

City of Portland initiated installation of approximately three miles of Buffered Bicycle Lanes using Transportation Alternatives Program funds from the MPO

City of Portland began construction of Phase I of the Memorial Parkway off-road multi-use path using Transportation Alternatives Program funds

RTA installed bicycle trip support hardware purchased in Year 3 using Transportation Alternatives Program funds from the MPO

In addition to the above committed activities, the MPO also performed the following activities during Year 4:

- Presented regional Bicycle Mobility Plan as a national case study through various organizations, including the American Planning Association, Transportation for America, and the Federal Highways Administration.
- Collected (in collaboration with regional partners) and maintained data on the performance metrics defined in the Bicycle Mobility Plan, including pre- and post-construction bicycle counts on corridors on which new bike infrastructure is to be installed to establish baseline bicycle demand and assess changes over time
- Maintained a dedicated Web portal (www.CoastalBendInMotion.org) to disseminate the plan and performance measurement data collected to track implementation
- Maintained 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 M

- Maintained a 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.)
- Held a Call for Projects for the Transportation Alternatives Set-Aside Program and ultimately awarded an $1.1M to the City of Corpus Christi for the Hector P. Garcia Park Hike and Bike Trail: Phase II (FY2019) and the Schanen Ditch Hike and Bike Trail: Phase IV (FY2020)
- Participated in TX Innovation Alliance, a statewide consortium working to develop technological strategies to address mobility challenges

Path Forward for Bicycle and Mobility Planning for Year 5

Foster the incorporation of Intelligent Transportation System technology in roadway infrastructure projects to promote efficiency in the regional transportation system and mitigate congestion and associated air quality impacts

Assist the municipalities within the MPO with the build out of the regional Bicycle Mobility Plan as part of locally funded roadway work

Assist City of Corpus Christi in implementation of Bike Boulevard designation using MPO Transportation Alternatives funds

Assist City of Corpus Christi in initiation of Hector P. Garcia Park Hike and Bike Trail: Phase II using MPO Transportation Alternatives funds

Collect (in collaboration with regional partners) performance metrics data defined in the Bicycle Mobility Plan, including pre- and post-construction bicycle counts on corridors on which new bike infrastructure is to be installed to establish baseline bicycle demand and assess changes over time

Maintain a dedicated Web portal (www.CoastalBendInMotion.org) to disseminate the plan and performance measurement data collected to track implementation

Status of Education Efforts Commitment for Year 4

In July and October 2017 communications were sent to the Group that included instructions on how to register for elevated ozone alerts and forecasts via AirNow. Included in the communications were numerous prepared scripts for emission reduction recommendations that could be easily forwarded, or mass emailed. Newly sited or planned to site industry representatives were added to the Corpus Christi communication list and included in all Group communications. Several media updates and briefings were provided during Year 4. The results of the updates and briefings included daily AQI information reported in the local newspaper, television and newspaper recommendations on an ozone action day in September 2017, and several newspaper

articles and editorials highlighting the air quality benefit of participating in emission reduction activities.

Path Forward for Education Efforts for Year 5

No-cost air quality education via media briefings, promotion of air quality messages through social media, promotion of EPA flags, brochures and other educational material will continue through Year 5. The Group Facebook site and web site will continue to be maintained and updated. The Chair will continue to distribute the emissions reductions recommendations and checklist to all stakeholders.

Status of Announcing Emission Reduction Funding Opportunities Commitment for Year 4

Funding announcements were sent to qualifying stakeholders during Year 4. Announcements included training and funding opportunities for Ozone Advance communities, and EPA and TCEQ grant calls. Announcements were sent in September and November of 2017 and February of 2018.

Path Forward for Announcing Funding Opportunities for Year 5

The Chair will continue to inform stakeholders and appropriate audiences of funding opportunities for emission reduction planning and programs during Year 5.

Status of Van Share Promotion Commitment for Year 4

The chart posted below reflects the Van Share program accomplishments for Year 4.

2017 Van Pool Information

	Average Weekday Service	Average Saturday Service	Average Sunday Service	Annual Total
Vehicles In Operation	5	5	5	
Total Vehicle Miles	244	250	262	75,406
Total Vehicle Hours	11	12	13	3,457
Total Monthly Ridership Unlinked Passenger Trips				9,802
Days Operated	228	40	39	307

During Year 4, the RTA also provided shuttle services to 32,389 riders over a total of 7,060 miles to numerous community events; removing vehicles from the road. A break-out of shuttle services provided is provided below:

MARTIN LUTHER KING MARCH/PARADE

	Date	TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses
MLK Parade	01/15/18	145	64.00	5.85	2
MLK Parade	01/16/17	274	66.0	8.14	2
	Totals	**419**	**130**	**13.99**	**4**

Fiesta de la Flor

DATE		TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses
GRAND TOTAL		**11,889**	**1,153.0**	**171.40**	**21**
3/24/17	RTA	3,504	414.0	51.16	8
3/25/17	RTA	8,139	547.0	84.79	11
	RTA TOTALS	**11,643**	**961.0**	**135.95**	**19**
3/24/17	MV	37	51.0	6.73	1
3/25/17	MV	209	141.0	28.72	1
	MV TOTALS	**246**	**192.0**	**35.45**	**2**

2017 Air Show

Date		TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses
04/05/17	RTA	398	484.0	32.11	4
04/06/17	RTA	258	420.0	21.45	4
		656	**904**	**54**	**8**

BEACH2BAY

Event	Year	TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses
05/20/17	**RTA**	**10,860**	**2,958.0**	**183.08**	**22**

Mayor's 4th of July Big Bang Celebration

		TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses
RTA-Big Bang Celebration	7/4/2017	1,487	214.0	51.67	?
RTA-July 4 Dignitaries	7/4/2017	66	48.0	15.50	
RTA-Parade July 4th	7/4/2017	37	19.0	3.83	
		1,590	**281.0**	**71.00**	

Buc Days Event

	DATES	TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses
RTA-Buc Parade Drop Off	5/6/17	37	26.0	5.17	
RTA-Buccaneer Parade	5/6/17	2	14.0	9.00	
RTA-Buc Commission	4/17/2017	25	40.0	3.75	
		64	**80.0**	**17.92**	

Leadership Corpus Christi

Leadership Corpus Christi	Date	TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses
	9-Jan	35	34	4.16	2
	12-Jan	61		3.67	
	Totals	**96**	**34**	**7.83**	**2**

Dia De Los Muertos

	Date	TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses
RTA-Dia De Los Muertos	10/28/2017	2,483	231.0	49.37	
MV-Dia De Los Muertos	10/28/2017	117	56.0	10.90	
		2,600	**287**	**60.27**	

2017 JAZZ FESTIVAL

	Date	TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses
Jazz Fest	10/20/17	692	278.0	45.28	5
Jazz Fest	10/21/17	2,495	588.0	108.45	
Jazz Fest	10/22/17	654	204.0	39.78	4
Jazz Fest	10/20/17	168	56.0	8.33	
Jazz Fest	10/21/17	447	78.0	12.98	1
Jazz Fest	10/22/17	5	29.0	4.40	1
		4,461	**1,233.0**	**219.22**	**11.00**

Bike Share Program

In August 2016 the City of Corpus Christi, The Regional Transit Authority and the Downtown Management District partnered to develop and launch the Bike Corpus Christi Bike Share program. Seven bicycle stations providing a total of 44 bicycles were placed in strategic locations in uptown and downtown Corpus Christi. Printed materials including maps of bike station locations were widely distributed. During Year 4, there were 13,465 trips taken on the bicycles by 8,241 active members for a total of 71,768 miles.

Electric Vehicle Infrastructure

Public charging facilities for electric vehicles grew to a total of 14 during Year 4. Sites include La Palmera, a major shopping mall, a BMW dealership, 2 Nissan dealerships, and in Corpus Christi, has free electric vehicle parking and charging stalls. Charging stations are also available at the local Nissan dealership, the local BMW dealership, and 5 area hotels.

Briefings

The Chair provided over a dozen briefings to community groups and leaders about current air quality issues and challenges during Year 4. Groups and leaders that received briefings included the MPO Planning Committee, Nueces County Commissioners, San Patricio County Commissioners, Port of Corpus Christi Commissioners, Port Industry managers, local business owners, and Corpus Christi Chamber of Commerce. Information presented included the importance of remaining in attainment of ozone standards, the critical need for emission reduction programs and program funding challenges.

This appendix reflects the major highlights of the Year 4 Ozone Advance Report submitted to EPA. To view the complete Year 4 Annual Report including details, charts and attachments, please visit https://www.epa.gov/advance/texas-corpus-christi