



**CORPUS CHRISTI URBAN AIRSHED
OZONE ADVANCE REPORT**

May 2019 – December 2019

*Prepared by Coastal Bend Air Quality Partnership (formally Corpus Christi Air Quality Group)
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MAY 2019 – December 2019

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CORPUS CHRISTI URBAN AIRSHED OZONE ADVANCE REPORT

MAY 2019– DECEMBER 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 A) to the EPA initiating the Corpus Christi urban airshed'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 B). 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 C). 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 D). 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 E). In May of 2019, the Group submitted a report to the EPA on Year 5 activities that took place from May of 2018 – April of 2019 (Appendix F). 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 a report to conclude the 2019 reporting year and begin annual reporting on a calendar year basis effective January, 2020. This report presents activities that took place from May 2019 – December 2019 as well as “looking forward” commitments that will take place from January 2020 – December 2020; Year 6.

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. The Group is made up of volunteers and does not have funding or support staff. The Chair of the Group is funded by contributions from the Port of Corpus Christi, the City of Corpus Christi, the Metropolitan Planning Organization, the Regional Transportation Authority, and Nueces County. Participants in the Group include representatives from area municipal and county government, business and industry, local universities, public agencies, a regional planning organization, regional development corporations, the military, news media, and the general public. 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 urban airshed. 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. EPA Ozone Advance representatives are included in these Group communications and notifications.

During the period of May 2019 – December 2019, the Group met on May 22, October 29, and December 12. Included in this report (*Attachment 1*) is a communication list for the Group. Also

included in this report (*Attachment 2*) are notes from each meeting that include an attendee list, discussion points and next steps.

(*) At the December 12, 2019 meeting of the Group, it was decided to change the name of the Group to the Coastal Bend Air Quality Partnership (Partnership) to more accurately reflect the inclusion of both Nueces and San Patricio counties in the airshed as well as the partnership efforts of the participants.

Corpus Christi Urban Airshed 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 maintain and protect Nueces County and San Patricio County's attainment status of 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, must not exceed 70 ppb.

Corpus Christi Urban 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.

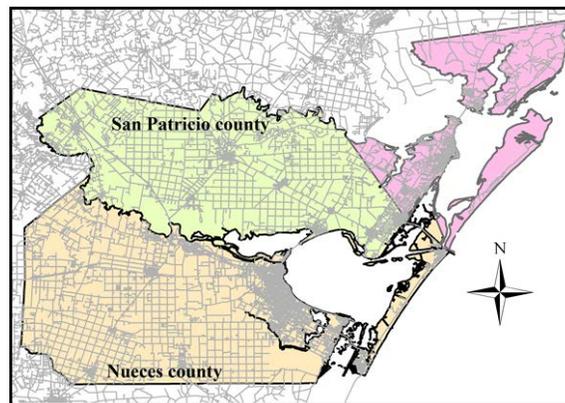


Figure 1: Map of Corpus Christi Urban Airshed

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 third busiest deep-water port with access to the Gulf of Mexico and the Gulf Intracoastal Waterway, 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.

Corpus Christi Urban 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. (Figure 2)

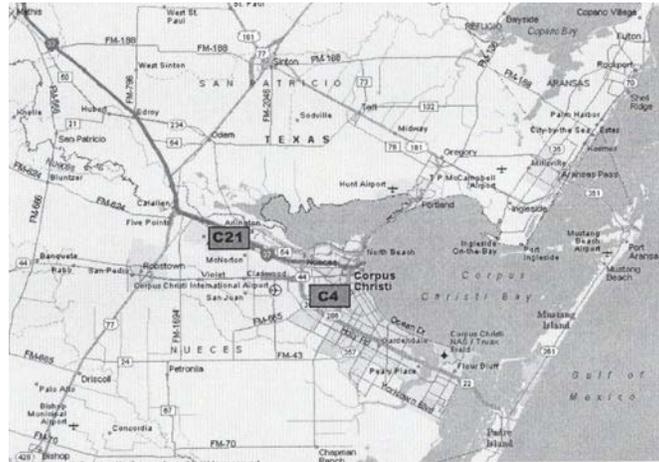


Figure 2: Map of TCEQ regulatory air monitor sites

Currently, the airshed is in attainment of NAAQS for ozone at a 3-year average value using data from years 2017, 2018, and 2019 of 61 ppb at CAMS 4 and 60 ppb at CAMS 21 as of year-end 2019. The air-shed has experienced an overall decreasing trend in ozone values. (Figure 3)

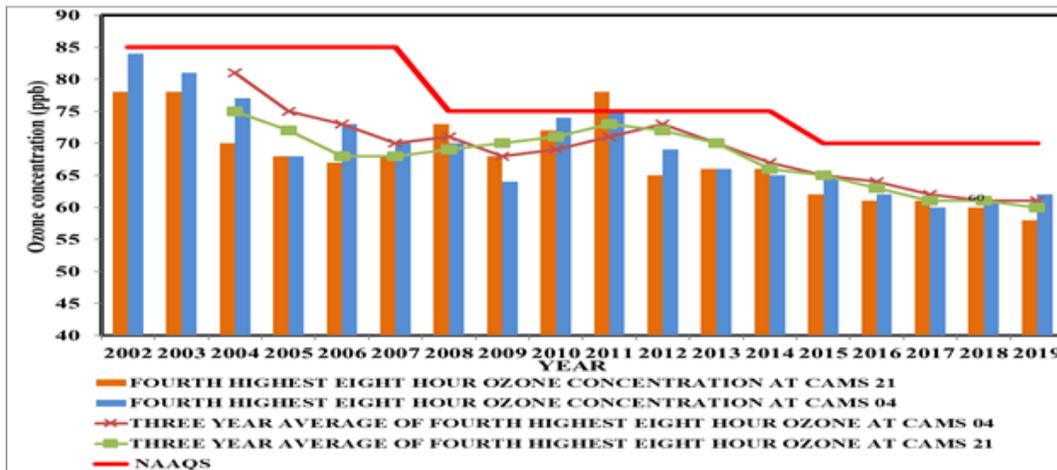


Figure 3: Corpus Christi Urban Airshed Ozone Design Trends at TCEQ regulatory monitors, CAMS 4 and CAMS 21

EMISSIONS REDUCTION ACTIVITIES PERFORMED

(May 2019– December 2019)

Air Quality Education Programs

Path Forward Air Quality Education

The Partnership 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. The Chair will continue to distribute the emissions reductions recommendations and checklist to all stakeholders. Industry will meet to consider funding air quality curricula.

Air Quality Education Accomplishments (May 2019 – December 2019)

The Partnership Facebook page (facebook.com/ccairquality) reached approximately 98 people during May 2019 – December 2019. During the same time period, the Partnership website (www.cctexas.com/planning-esi/environmental-strategic-initiatives-esi/cc-air-quality-group) experienced 267 hits and the Pollution Prevention Partnership Air Quality Website (outreach.tamucc.edu/p3/) enjoyed 3,114 hits.

In May of 2019, communications were sent to stakeholders that included instructions on how to register for elevated ozone alerts and forecasts via AirNow. Work with the local newspaper resulted in daily posting of AQI information. In October and November of 2019, emissions reduction checklists were provided to San Patricio and Corpus Christi Regional Economic Development Corporations. Numerous education efforts were also made by group stakeholder Pollution Prevention Partnership and are cited on page 9 and attachment 5 of this report.

Air Quality Briefing Accomplishments (May 2019 – December 2019)

Several briefings were provided to community groups and leaders about current air quality issues, the importance of attaining air quality standards, air quality challenges, and recommendations for emission reduction activities during May 2019 – December 2019. Groups and leaders that received briefings included the Nueces County Commissioners, San Patricio and Corpus Christi Regional Economic Development Corporations, United Chamber of Commerce representatives, an environmental panel, and the Corpus Christi Metropolitan Planning Organization.

Path Forward for Air Quality Education and Briefings for Year 6

The Partnership webpage and facebook page will continue in Year 6. Briefings and presentations about the importance of air quality and emission reduction recommendations will continue throughout the community in Year 6.

The Port of Corpus Christi has sponsored and commissioned a study to be performed by Dr. Jim Lee at Texas A&M University-Corpus Christi to identify the annual cost to the Corpus Christi urban airshed should the airshed be declared nonattainment. The study is anticipated to be in

presentation form by Summer of 2020 and will be utilized as an impressive tool in briefings and presentations to demonstrate the severe consequences of non-attainment and benefits of employing voluntary emission reduction activities.

The Port of Corpus Christi has also agreed to sponsor the graphics, production and printing of a distribution piece for regional economic development corporations to provide to business and industry operating in or seeking to operate in the airshed. The distribution piece will include a letter from the Partnership, a checklist of emission reduction requirements, and letters of support from airshed elected officials and leaders. The piece is anticipated to be available by Summer 2020.

Air Quality Curricula

Path Forward Air Quality Curricula

Area industry is considering funding for the continuation of an air quality curricula to be delivered to area 5th grade classes.

Air Quality Curricula Accomplishments (May 2019 – December 2019)

Air quality curricula was delivered in the Spring of 2019. There was no delivery of air quality curricula in the May 2019 – December 2019 time period.

Path Forward for Air Quality Curricula for Year 6

Industry will meet to discuss funding air quality curricula for Year 6.

Monitoring and Research

Path Forward for Monitoring and Research

Funding is depleted for monitoring and research and these activities have ceased. The path forward is to work with the Texas legislature and local stakeholders to reinstate funding to resume monitoring and research activities.

Accomplishments for Monitoring and Research (May 2019 – December 2019)

Stakeholder efforts to reinstate legislative funding for air monitoring and research was successful and funding to the area in the amount of \$281, 250 was approved by the legislature in May, 2019 for monitoring and/or emission inventory activities. During September through December 2019, telephone meetings took place between City of Corpus Christi representatives and TCEQ to prepare a work plan for the funding.

Path Forward for Monitoring and Research for Year 6

City of Corpus Christi representatives plan to have receipt of the funding approved by City Council, finalization and approval of a work plan, and selection of contractors to accomplish the work plan deliverables in Year 6.

Clean Fleet

Path Forward 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 2019 through the Pollution Prevention Partnership (P3). P3 will continue to host CleanFleet and AutoCheck events at least once per month testing for vehicle 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 (May 2019 – December 2019)

With supplemental funding from The Port of Corpus Christi, Texas A&M University-Corpus Christi administered the Pollution Prevention Partnership (P3), AutoCheck, and Clean Fleet program. In combination these programs implemented a multipoint strategy to reduce ozone through voluntary emissions testing of private and business vehicles, repair of private 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.

In May 2019, the Texas Commission on Environmental Quality, approved an amendment to the AutoCheck Supplemental Environmental Program (SEP) administered by P3. This allowed the program to expand its screening protocol to include many Diagnostic Troubleshooting Codes (DTC) provided by the Advanced Onboard Diagnostic System (OBD-II). By making repairs based on these “Check Engine Light” issues, AutoCheck can make more emission reduction and prevention repairs on vehicles that have a longer remaining lifespan, therefore increasing cumulative annual emissions reductions. The repairs made by the AutoCheck SEP are performed with penalty monies from a Texas Commission on Environmental Quality enforcement action.

P3 held 31 vehicle emissions testing events where 266 vehicles were tested for emissions and OBD-II codes. 27 Gas Cap and Evaporative Control System repairs were made, and 24 non-evaporative repairs were made resulting in an estimated 3,681 lbs. of hydrocarbon emissions and 1,974 pounds of carbon monoxide directly reduced annually. Preventive repairs contributed additional, but unquantifiable reductions. Detailed information on the events and pre and post emissions is provided in *Attachments 1 and 2*.

P3 provided ozone-reduction strategy, education, tools, and advocacy at 13 educational and policy meetings, interacting with 1,633 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 provided in *Attachment 3*.

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 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/>)

Path Forward for Clean Fleet for Year 6

P3 will continue to participate in the Coastal Bend Air Quality Partnership, and other policy related forums, and meetings. P3 will continue presenting Ozone reduction strategies and education at conferences, health fairs, meetings, and workshops. The emissions testing programs will be promoted at these venues and implemented on site when possible, funding contingent. P3 will add an electric lawn equipment section to the P3 web site.

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 partnerships and associated collateral material in person, on the web, and social media.

P3 will continue providing free voluntary emissions testing for private and public fleets, and will continue funding repairs for qualified private vehicles with pollution related mechanical issues as long as funding is available. The screening protocol will continue to use tailpipe gas analysis, gas cap pressure testing, and Advanced Onboard Diagnostic System (OBD-II) Diagnostic Troubleshooting Codes (DTC). AutoCheck will replace missing tire valve stem caps for all participants to reduce incidents of low tire pressure due to dirty air valves.

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 Use of IR Camera

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

Use of IR Camera Accomplishments (May 2019 – December 2019)

A table capturing the overall use of IR cameras in addition to other volunteer activities is included on page 16 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

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 (May 2019 – December 2019)

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.

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

Industry plans to consider the continuation of producing LRVP.

Production of LRVP Gasoline Accomplishments (May 2019 – October 2019)

The production of LRVP gasoline was continued. A table summarizing local participation in the production of LRVP gasoline in addition to other voluntary emission reduction activities can be found on page 16 of this report.

Path Forward for Production of LRVP Gasoline for Year 6

Area gasoline producers will continue to consider the production of 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

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 (May 2019 – December 2019)

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.

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 are 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.

City of Corpus Christi Purchase of CNG Vehicles

City of Corpus Christi Purchase of CNG Vehicles Accomplishments (May 2019 – December 2019)

The City of Corpus Christi purchased six (*) CNG bi-fuel and dedicated vehicles.

Path Forward for City of Corpus Christi Purchase of CNG Vehicles for Year 6

The City of Corpus Christi plans to purchase twenty-two (22) CNG bi-fuel and dedicated vehicles in 2020 to replace aging fleet.

RTA Purchase of CNG Vehicles

RTA Purchase of CNG Vehicles Accomplishments (May 2019 – December 2019)

RTA did not purchase any new CNG or Electric vehicle from May 1, 2019 to the December 31, 2019. The details below update 1 vehicle that was purchased in Mid-2019, but was not put into service until late 2019.

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
	CCRTA Support	2019	Ford Fusion	5-DR	5	Support	N/A	No	Unleaded	2028	5/31/2019	0	9/17/2019

MPO Assistance with Mobility Planning

MPO Assistance with Mobility Planning Accomplishments (May 2019 – December 2019)

The MPO continued construction of Bond 2014 roadway projects resulting in the implementation of 1-way cycle tracks. Funding provided by MPO Transportation Alternatives Program completed local mass transit bicycle trip support hardware. A dedicated Web portal (www.CoastalBendInMotion.org) was maintained to disseminate the mobility plan and performance measurement data collected to track implementation. The MPO also maintained three primary tools for virtual data collection, all of which are functional and are yielding high volumes of quality data about stakeholder priorities for mobility including an 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, and an on-line survey about riding habits, needs and perceived obstacles to cycling as transportation,

Path Forward for Mobility Planning for Year 6

The Corpus Christi MPO plans to participate in the Partnership. The MPO plans to work with the Pollution Prevention Partnership, a community outreach program of Texas A&M University - Corpus Christi to make the public aware of regional air quality issues and will support the public outreach efforts for TCEQ and EPA reporting services.

Bike Share Program

The Bike Share Program in Corpus Christi was discontinued in November 2019 when private sector funding dissolved. From May 2019 – November 2019, there were 2,741 trips taken on through the Bike Share Program.

RTA Van Share and Community Shuttle Program

Path Forward for Van Share Program

The Chair will continue to promote the RTA Van Share program.

Van Share and Community Shuttle Accomplishments (May 2019 – December 2019)

The chart posted below reflects the Van Share program accomplishments for May 2019 – December 2019.

2019 Vanpool				
Field	Average Weekday Schedule	Average Saturday Schedule	Average Sunday Schedule	Annual Total
Vehicles in Operation	22	5	5	
TOTAL ACTUAL VEHICLE MILES	1,353	439	370	392,928
TOTAL ACTUAL VEHICLE HOURS	30	10	8	8,674
SERVICES CONSUMED				
Total Monthly Ridership Unlinked Passenger Trips (UPT):	219	67	38	62,327
SERVICES OPERATED (DAYS)	261	52	46	359
Field	Total Weekday Schedule	Total Saturday Schedule	Total Sunday Schedule	Annual Total
Days Operated				

During this same time, the RTA provided shuttle services to 18,912 riders over a total of 8,657 miles to numerous community events; removing thousands of vehicles from the road.

SPECIAL MOVEMENT EVENT	# Passenger Trips	Miles	Hours	Date	Days
May-19					
American GI Forum	59	93.0	10.25	5/1/2019	1
Buccaneer Headquarters	79	27.0	5.50	5/2/2019	1
2019 Buccaneer Parade	250	258.0	258.00	5/4/2019	1
TAMU-CC Shuttle	528	358.0	34.78	5/15,16,17/2019	3
Beach to Bay Marathon Race	7136	2,335.0	124.98	5/18/19	1

June-19					
City Evacuation Drill	16	33.0	16.88	6/21/2019	1
Summer Camp	288	1,849.0	46.22	6/5 to 6/26/2019	16
July-19					
Big Bang Celebration	1409	279.0	55.23	7/4/2019	1
September-19					
C.C. City Hall Officials to Exxon Refinery	7	54.0	5.00	9/12/2019	1
TAMU-CC Track & Field Events	61	75.0	3.73	9/21/2019	1
October-19					
JAZZ Festival	1157	2,248.0	146.55	10/18,19,20/2019	3
American Cancer Walk	1092	90.0	17.08	10/19/20	1
November-19					
Dia De Los Muertos	4468	226.0	74.20	11/2/2019	1
Movement of City Officials	35	42.0	3.83	11/7/2019	1
Staging of bus	0	15.0	2.00	11/7/2019	1
Run the Runway Race @ CC Airport	395	45.0	7.66	11/23/2019	1
Miller High-vs-Veterans Memorial High Football Shuttle	739	276.0	35.70	11/29/2019	1
December-19					
Veterans Memorial High-vs-San Antonio Football Shuttle	135	143.0	20.20	12/6/2019	1
2019 Feast of Sharing	947	65.0	5.00	12/14/19	1
2019 Wreaths for Veterans @ VA Cemetery Shuttle	111	146.0	20.68	12/14/2019	1

Green Building Initiatives

Corpus Christi home builders leads 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). From May 2019 – December 2019, approximately 70 certified Greenbuilt homes were built.

Port of Corpus Christi Emissions Inventory

In September 2019, an emissions inventory of Port of Corpus Christi activities was published and presented. The emissions inventory was performed in 2017 by Star Crest. The inventory reflected significant reductions in emissions from an emissions inventory performed in 2013.

Figure 4

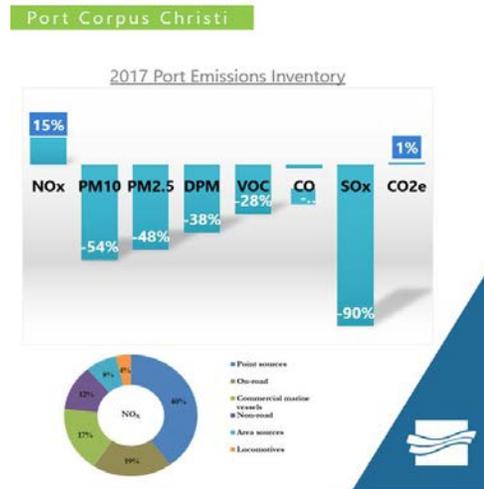


Figure 4

Much of the decrease in SOx emissions was the result of EPA MARCOM rules lowering the allowable level of sulfur in fuel utilized by any ship in US waters; however, the Port of Corpus Christi also has an anti-idle policy for all Port vehicles and equipment, purchases 100% green energy, purchased highest tier engines available on the market including 5 CNG vehicles and equipment, emissions tests their fleet, performs monitoring of pm at a bulk terminal, and installed a new more efficient crane at a dock. *Attachment 6.*

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 6 of this report.

	Cheniere (*)	Flint Hills Resources (*)	Valero Refining (*)	Citgo Refining (*)	Equistar Chemicals, LP (*)	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 delivery 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 (*)	Equistar Chemicals, LP (*)	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 (*)	Equistar Chemicals, LP (*)	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 6)

ATTACHMENT 1

**COASTAL BEND AIR QUALITY
PARTNERSHIP
COMMUNICATION LIST**

NAME	AFFILIATION
Kuruvilla John	University of North Texas
Dale Nelson	Media
Aron Baggett	Oxy
Curtis Taylor	Flint Hills Resources
Corpus Christi Caller Times	Media
Robert Gonzalez	Media
Dipak Desai	Nueces County
Leah Olivarri	Community Communications
Howard Fels	AEP
ABC News	Media
Bob Trebatoski	Equistar
Joe Almaraz	Valero Refining
Bob Paulison	Port Industries
Denise Rogers	Trafigura
Sharon Montez	Regional Transportation Authority
Glenda Swierc	ModaMidstream
Greg Bezdeck	Markwest
Sharon Lewis	City of Corpus Christi
Roger Tennapel	Flint Hills Resources
Ginny Cross	United Corpus Christi Chamber of Commerce
John LaRue	United Corpus Christi Chamber of Commerce
Nelda Olivo	Port of Corpus Christi
Sarah Garza	Port of Corpus Christi
Susan Clewis	Texas Commission on Environmental Quality
Christopher Amy	Texas Dept of Transportation
Dana Perez	Flint Hills Resources
Colleen Johnson	EarthCon Consultants
Mari Cuevas	Corpus Christi Community Council
Carrie Meyer	Corpus Christi resident
David Harvey	Equistar Chemicals. LP
Foster Edwards	San Patricio County Economic Development Corp
Kelly Ruble	Texas Commission on Environmental Quality
Danielle Converse	Port of Corpus Christi
Joseph Haug	Flint Hills Resources
Craig Eckberg	NRG
Bobby Zamora	Valero Refining
Iain Vasey	Corpus Christi Regional Economic Development Corp
Rose Collin	Port of Corpus Christi
Molly Edens	NuStar

Trent Thigpen	Pollution Prevention Partnership
Cindy Smith	Texas Commission on Environmental Quality
Sonny Lopez	Texas Commission on Environmental Quality
Scott Peters	Equistar Chemicals, LP
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
Rachel Zummo	Texas Rio Grande Legal Aid
Kevin Kenall	Citgo Refining
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	Texas Commission on Environmental Quality
Beth Becerra	Exxon Mobile
Colette Walls	Exxon Mobile
Min Zhong	Texas A&M Kingsville
Catherine Barnard	Environmental Consulting
Lauren Wenner	NRG
Al Hansborough	Trinity Consultants
Isabelle Palacios	Voestalpine
Yilin Xin	Trinity Consultants
Jeremy Landers	KIITV
Tim Acosta	Caller Times
Jessica Muennink	<u>Cheniere</u>
Carrie Paige	<u>Environmental Protection Agency</u>
Ruben Herrera	<u>Oxy</u>
Tammy Embrey	<u>City of Corpus Christi</u>
Daniel Carazales	<u>Metropolitan Planning Organization</u>
MPO	<u>Metropolitan Planning Organization</u>
Miyounq Squire	<u>Consultant</u>
Melissa Zamora	<u>Texas A&M University-Corpus Christi</u>
Adrianna Escamilla	<u>Port of Corpus Christi</u>
Ashleigh Holden	<u>Student</u>

Steve Coffman	<u>Chemours</u>
Jennifer Lira	<u>Citgo Refining</u>
Chris Cisneros	<u>Citgo Refining</u>
Robert MacDonald	<u>Metropolitan Planning Organization</u>
Andrew Frazone	<u>Oxy</u>
Matt Garcia	<u>Texas Oil and Gas</u>
Troy Penshorn	<u>Voestapline</u>
Dennis Taylor	<u>Voestalpine</u>
Randy Pitre	<u>EPA</u>
Cathy Skurow	<u>City of Portland</u>
Kirsten Crow	Caller Times
<u>Austin Taylor</u>	<u>Moda Midstream</u>
Randy wright	<u>City of Portland</u>
Brent Moore	<u>HDR</u>
Jane Gimler	<u>American Builders and Contractors</u>
Zulema Garcia	<u>Citgo Refining</u>
Rick Mendoza	<u>Citgo Refining</u>
Christina Bryant	<u>CCREDC</u>
Veronica Fuentes	<u>Citgo Refining</u>
Isabelle Rivero	<u>Exxonmobile</u>
Claire Lindsey	<u>FHR</u>
Aimee Almaraz	Valero

ATTACHMENT 2

COASTAL BEND AIR QUALITY PARTNERSHIP MEETING NOTES

Corpus Christi Air Quality Group Meeting
May 22, 2019

Present

Gretchen Arnold, Chair
Trent Thigpen, Pollution Prevention Partnership
Maria Sparks, Citgo
Christina Cisneros Guzman, Citgo
Milly Martin, NuStar
Andrew Franzone, OxyChem
Austin, Taylor, Moda Midstream
Ramona Joseferyk, Port of Corpus Christi
Colleen Johnson, EarthCon
Daniele Converse, Port of Corpus Christi
A J Hawsborough, Trinity
Bob Paulison, Port Industries
Roger TenNapel, FHR
Glenda Swierc, Moda Midstream
Aimee Almaraz, Valero
Joe Almaraz, Valero
Darcy Schroeder, Valero
Curtis Taylor, FHR
Rena Diguard, TCEQ
Susan Clewis, TCEQ
Melanie Edwards, TCEQ
Rick Mendoza, Citgo

(Port of Corpus Christi Authority; POCCA, Metropolitan Planning Organization; MPO, Texas Commission on Environmental Quality; TCEQ, Environmental Protection Agency; EPA.)

Discussion Points

- The 2019 status of ozone attainment was discussed.
 - In order for Corpus Christi to remain in attainment of NAAQS for ozone through the 2019 ozone season, the 4th high eight-hour average ozone reading at both CAMS 4 and CAMS 21 must be under 88 ppb.
 - Current 4th high ozone levels for 2019 as of 05/22/19 are 57 ppb at CAMS 4 and 51 ppb at CAMS 21.
- Gretchen brought the Group up to date on Ozone Advance reporting. All the data for the report has been collected and edits based on Group review has been inserted. The report is currently undergoing final formatting and is expected to be ready for submittal soon.

- Gretchen updated the Group on efforts to restore air program funding via Legislative Rider funding. Gretchen stated that Rider funding has been included in legislative funding language in the current session but it was unclear if the language has been finally passed. Gretchen stated that the language up for passage is different from past language and funding the Pollution Prevention Partnership under the current language was still unclear.
- Gretchen introduced a discussion to revise the name of the Corpus Christi Air Quality Group to more accurately reflect the make up and challenges of the air shed. Coastal Bend or South Coastal Bend Air Quality Group was suggested. Gretchen asked the Group to give the concept some thought and bring ideas to the next meeting.
- Dr. Laurie Haws with Tox Strategies provided a presentation on the new EPA Refinery Sector Rule (RSR). Dr. Hawes introduced herself to the group and stated that her PhD. was in toxicology and that she worked as a toxicologist for TCEQ for several years. Dr. Hawes explained that the RSR rule focuses on new requirements for refinery installed benzene monitors. She explained that benzene is very common and used to make, or is part of products such as gasoline, detergents, petrochemicals, pharmaceuticals, etc., and that it is also released from cigarette smoke. Examples of benzene exposure was provided and included pumping gasoline into a vehicle, parking garages, and gasoline containers stored in garages. She went on to present that benzene levels measured are measured in parts per billion and provided an example that a part per billion is like one teaspoon of water per 1 million gallons of water. A timeline for when the new RSR data was provided and included a Summer 2019 period for the EPA releasing of the new RSR data. Currently EPA is still processing the data and has not released it yet. Once released, the data will be available on a website and Dr. Hawes provided the website address to the group. The RSR network of monitors was described as a series of passive monitors that would take air samples over a 2-week period and average the sample readings. These averaged calculations would be used to develop an annual average; 26 consecutive values on a rolling 2-week basis. The annual average “action level” is 9 g/m³ (2.8 ppb). If a monitor’s annual average is greater than 9 g/m³ (2.8 ppb), a root cause analysis and implementation of corrective action to reduce fugitive emissions must take place. Dr. Hawes then presented the local existing air monitor network. She stated that Corpus Christi has one of the most dense monitoring networks in the country and that the current benzene monitors are not only located within the community, but are real-time monitors; a better indicator of public health. She performed an analysis of 13 of the existing monitors over a 10-year period (2007-2016). The analysis showed no exceedances of the 24-hr AMCV (100 ppb) and no exceedances of the annual average AMCV (1.4 ppb). Dr. Hawes concluded that Corpus Christi has an extensive benzene air monitoring network that has been operating since the 1990’s, that the monitors are generally located where people could potentially be exposed (e.g., schools, parks and neighborhoods), that community monitors

are much better indicators of benzene levels that the general public may be exposed to than the fence-line monitors, and that Corpus Christi community monitors demonstrate that over the last decade, measured benzene levels are not expected to cause adverse health effects.

- Next Steps
 - Submit Year 4 ozone advance report to U S EPA
 - Continue discussion and consideration of revising name of Group from Corpus Christi Air Quality Group to a name that more accurately reflects that broader airshed/emission region.

Corpus Christi Air Quality Group Meeting
October 29, 2019

Attendees

Name	Affiliation	Name	Affiliation
David Krebs	San Patricio Co. Judge	Kristen Crow	Caller-Times
David Cook	Mirage, CCREDC	Glenda Swierc	MIEC
Cathy Barnard	Retired	Jane Gimler	CCREDC
Wm. Goldston	CCREDC	Daniel Clark	CCREDC, SPEDC, Core
Jessica Muennick	Cheniere	Joe Miller	TAMUCC
Dewey Magee	Cape	Muyoung Squire	MSE
Austin Taylor	MIEC	Ian Vasey	CCREDC
Will Nichols	Core Engineering	Trent Thigpen	TAMUCC
Rob McDonald	MPO	Bob Paulison	Port Industries
Darcy Schroeder	Valero	Isabel Palacios	Voestalpine
Ginny Cross	United CC Chamber	John Larue	United CC Chamber
Sarah Garza	Port of Corpus Christi	Christine Bryer	CCRDC
Beth Becerra	Gulf Coast Ventures	Isabel Rivera	Gulf Coast Ventures
Matt Garcia	TXOGA	Colleen Johnson	EarthCon Consultants
Chris Hamilton	Stream Construction	Cathy Skurow	City of Portland
Rick Mendoza	Citgo	Zulema Garcia	Citgo
Sharon Bailey Murphey	City of Corpus Christi	Troy Peshorn	Voestalpine
Dennis Taylor	Voestalpine	Andrew Kiss	Port of Corpus Christi
Molly Martin	NuStar	Randy Wright	City of Portland
Leah Olivarri	Olivarri Assoc	Melissa Zamora	Individual
Roger TenNapel	Flint Hills	Brent Moore	HDR
Andrew Franzone	Oxy Chem	Christina Guzman	Citgo
Gretchen Arnold	Chair		

Meeting Notes

Ian Vasey opened the meeting with a thank you to Foster Edwards and the San Patricio Economic Development Corporation for sponsoring the lunch. Ian went on to share with the group that it is important to attain ozone standards and have a good understanding of what ozone attainment means for the region. The meeting was very well attended.

Since many of the attendees were participating in a Corpus Christi Air Quality Group meeting for the first time, individual introductions around the room were made.

The history of the Corpus Christi Air Quality Group was presented. Information included the beginning of the group in 1995 when the Corpus Christi urban airshed was close to violating ozone standards. A voluntary ad-hoc group was established to address the immediate issue and the group remains active today as a voluntary group that: through its broad range of participants, works to secure funding, provide research, and design and deliver programs and efforts to reduce ozone causing emissions.

The make-up of the Corpus Christi Urban Airshed as defined by the EPA and TCEQ was presented to the group. The TCEQ and EPA define the Corpus Christi Urban Airshed as being comprised of both Nueces and San Patricio counties since emissions from sources in both counties interact to influence the level of ozone in the airshed. The group was informed that if a Corpus Christi monitor slides into non-attainment of ozone standards, all of Nueces and San Patricio counties are designated as non-attainment. It was demonstrated later in the meeting that multi-county urban airsheds are common. The Austin airshed is comprised of 5 counties and the San Antonio airshed is comprised of 8 counties.

Information on how ozone attainment is determined and the status of ozone attainment for the Corpus Christi urban airshed was provided. The attainment status of an airshed is determined by taking the 3-year rolling average of the 4th highest level of ozone recorded at regulatory monitor at the end of each year. This 3-year rolling average of the 4th highest level of ozone at a regulatory monitor must not exceed 70 parts per billion (ppb). Should an area fall into nonattainment, it is typically a 23 year period of time before an attainment status can be realized again in the airshed. This 23-year period is comprised of a 3-year rolling average evaluation period followed by two 10-year maintenance periods.

In order for Corpus Christi to remain in attainment for ozone through the 2019 ozone season, the 4th high eight-hour average ozone reading at both regulatory monitor #4 and regulatory monitor #21 must be under 88 ppb. Current 4th high ozone levels for 2019 as of October 28, 2019 is 62 ppb at regulatory air monitor #4 and 58 ppb at regulatory air monitor #21.

Information was provided about the serious economic consequences of being designated as nonattainment for ozone. A study to identify the cost of nonattainment to the Austin area was provided to the group. The Austin study identified an annual cost of \$0.09 billion - \$1.4 billion per year for each year classified as non-attainment should the area be designated non-attainment for ozone. A study to identify the cost of nonattainment to the San Antonio area was provided. The San Antonio study identified an annual cost of \$117 million - \$1 billion per year for each year classified as nonattainment. It was explained that the cost of nonattainment incurred by an airshed is unique to each airshed depending on that airshed's major sources of ozone causing emissions. Sarah Garza with the Port of Corpus Christi was introduced.

Sarah shared with the group the results of a study the Port asked TriCord Consulting to prepare that would identify the permitting cost to do business in attainment Corpus Christi vs. nonattainment Corpus Christi. TriCord consulting reported that a minor source facility would incur a permitting cost in an attainment Corpus Christi of approximately \$20,000 - \$40,000 vs. \$100,000 - \$150,000 in nonattainment Corpus Christi. A major source facility would incur permitting costs of approximately \$100,000 - \$200,000 in an attainment Corpus Christi vs. \$250,000 – \$400,000 + the purchase of emissions offsets in a nonattainment Corpus Christi. Sarah also shared with the group that the Port has recently commissioned a study to be performed by Dr. Jim Lee at Texas A&M University-Corpus Christi to identify the annual cost to the Corpus Christi urban airshed should the airshed be declared nonattainment. A copy of Dr. Lee's workplan was provided to the group. Sarah stated the Port has sponsored the \$20,000 study and it is anticipated to be completed and presented in the Spring of 2020. The group was informed that small businesses such as gasoline stations, dry cleaners, auto paint and body shops, etc. also incur costs with additional permitting and regulatory requirements. These small businesses are heavily affected because they do not have the environmental staff or resources to keep up with and maintain the additional requirements.

A checklist of voluntary emission reduction activities and policies that small businesses and industry can commit to was provided to the group. The checklist included websites for resources to establish the various emission reduction programs or policies. It was suggested to the group that existing and prospective businesses that emit air emissions be required to commit to some of the programs or policies on the list in an effort to protect our airshed's attainment status.

The status of legislative funding provided to the airshed was presented to the group. Sharon Bailey-Murphey with the City of Corpus Christi stated that resolutions and letters of support to receive funding are being collected and submitted to TCEQ. Workplan discussions will then take place with TCEQ. Allowable activities that can be funded are modeling, monitoring and emissions inventories.

The floor was opened up for questions and discussion. Ian Vasey commented that potential businesses have shared with him that they would expect to pay \$150 million more if they were siting in a nonattainment community. Ian stressed the importance of due diligence by requiring voluntary emission reductions programs and not "killing the golden goose" that is our hard earned attainment status of ozone standards. Foster Edwards stated that he thinks most larger companies are tuned in to the importance of attainment and that the checklist distributed was a good manual for best practices to ask of businesses seeking to locate in our airshed. The group discussed that large business is only part of our airshed emissions. John LaRue and Gretchen shared that a local emission inventory identified on road vehicles and off road construction and recreation equipment created over 30% of our airshed ozone forming emissions.

Changing the name of the Corpus Christi Air Quality Group to a name that more accurately identifies the airshed of Nueces and San Patricio counties was discussed.

Concerns were raised about the regulatory and census impact of changing the name of the group. Gretchen explained that the airshed legal and regulatory definition is already set by the EPA and TCEQ as Nueces and San Patricio counties and that the name of the group is more informal. Various name options were suggested and were narrowed down to 3 options; Coastal Bend Air Quality Coalition, Corpus Christi Regional Air Quality Group, and Nueces Bay Air Quality Coalition. A show of hands indicated that Corpus Christi Regional Air Quality Group was favored but after the meeting several attendees expressed confusion and wanted to reconsider. Another vote with more information provided ahead of time will be taken at the next meeting.

Next Steps

Continue work with the United CC Chamber of Commerce and Regional Economic Development Corporations for voluntary emission reduction commitments.

Provide information and an opportunity to vote on new group name

Corpus Christi cost of nonattainment study

Corpus Christi Air Quality Group Meeting
December 12, 2019

Present

Gretchen Arnold, Chair
Trent Thigpen, Pollution Prevention Partnership
Maria Sparks, Citgo
Beatriz Rivera, POCCA
Brandon Howard, Voestalpine
Matt Garcia, TxOGA
Andrew Franzone, OxyChem
Errol Summerlin, CAPE
Lauren Williams, The Nature Conservancy
Sarah Garza, POCCA
Glenda Swierc, Moda Midstream
Sharon Bailey-Murphey
Ramona Joseferyk, Port of Corpus Christi
Colleen Johnson, EarthCon
Bob Paulison, Port Industries
Bobby Zamora, Valero
Darcy Schroeder, Valero
Andrew Kiss, POCCA
Amanda Grams, POCCA
Yvonne Dives-Gomez
Francisca Deter, Equistar Chemical, LP
Daniel Martinez, POCCA
Kristen Crow, Caller-Times
Troy Penschorn, Voestalpine
Carrie Paige; USEPA via phone
Randy Wright, City of Portland

(Port of Corpus Christi Authority; POCCA, Metropolitan Planning Organization; MPO, Flint Hills Resources; FHR, Texas Commission on Environmental Quality; TCEQ, Environmental Protection Agency; EPA.)

Discussion Points

- The 2019 ozone season and impact on ozone attainment for 2020 was discussed.
 - Ozone season 2019 concluded with a 4th high ozone average of 62 ppb at CAMS 4 and 58 ppb at CAMS 21.
 - The three-year rolling average for ozone at CAMS 4 at the end of 2019 was 61 ppb and the three-year rolling average for ozone at CAMS 21 at the end of 2019 was 60 ppb.

- In order for the Corpus Christi urban airshed to remain in attainment of ozone standards at the end of year 2020, CAMS 4 must experience a 4th high ozone level of less than 87 ppb and CAMS 21 must experience a 4th high ozone level of less than 91 ppb in 2020.
- Gretchen provided an update on work with area Economic Development Corporations (EDCs). Both the Corpus Christi and the San Patricio EDCs have reviewed and provided input on a welcome letter and emission reduction checklist that they have agreed to provide to clients. The welcome letter and checklist stress the importance of above and beyond emission reduction requirements to operate in our airshed. Gretchen is compiling a manual for the EDCs to distribute that will include the welcome letter, checklist, and letters of support from Mayor McComb, a group letter including all San Patricio county mayors being coordinated by Cathy Skurow, and letters from Judges Canales and Krebs. It is anticipated that the manual will be ready for distribution in March, 2020.
- Sharon Bailey- Murphey provided an update to the group on the status of legislative funding approved for the airshed and administered through TCEQ. Sharon stated that the airshed was approved to receive \$281,000; a reduction from past legislative session approvals of approximately \$500,000. She anticipates the contract to receive funds through TCEQ to be completed by the end of December, 2019 and a workplan generated about 30 days after the contract completion. Allowable activities to be funded are emissions inventories (there is still some discussion taking place on what qualifies as an emissions inventory), research monitoring, and modeling. Sarah with the Port of Corpus Christi stated that the Port has committed to funding the Pollution Prevention Partnership AutoCheck program for 2020 and will be working to encourage other sites to host AutoCheck events.
- Sarah Garza provided an update to the group on the status of a study being performed by Dr. Jim Lee at Texas A&M University-Corpus Christi, to determine the cost of nonattainment of ozone standards to the Corpus Christi airshed. Dr. Lee has done preliminary work on researching the study. He is on holiday and will be back on the project in mid-January. A review of the study may be available for the April 2020 meeting agenda.
- Sarah Garza presented the results of a Port of Corpus Christi emissions inventory. The inventory was of Port specific activities, not port industry or tenant activities. Source categories inventoried included ocean-going vessels, harbor craft, cargo handling equipment, rail locomotives, and heavy duty vehicles. The airshed of Nueces and San Patricio counties were included in the inventory. The emissions inventory compared Port emissions from a 2013 inventory to 2017 emissions. The comparison showed a 54% reduction in PM10, a 48% reduction in PM 2.5, a 15% increase in NOx, 38% decrease in DPM, a 28% decrease in VOCs, a 2% decrease in CO, and a 90% decrease in

SOx. Sarah explained that the significant decrease in SOx was due to a new national requirement that ocean-going vessels operating within varying distances of the United States, must use low sulfur fuel. During the same time period: 2013-2017, tonnage through the Port increased 15% in short tons and 19% in barrels. A comparison to other Ports was also provided. A chart was provided that compared NOx and SOx percent contribution by source from the 2013 to 2017 inventory. The presentation can be found at <https://portofcc.com/about/port/environmental-planning-compliance/>

- A change of name for the Corpus Christi Air Quality Group was discussed. Past meetings had suggested a name that more accurately reflects the airshed of Nueces and San Patricio counties take place. Three options were presented for a vote:
 - Nueces Bay Air Quality Coalition
 - Nueces and San Patricio County Air Quality Group
 - Coastal Bend Air Quality Group

The group discussed the options and agreed that the name Coastal Bend Air Quality Partnership was to be the new name of the Group.

- Next Steps
 - Begin process to submit/collect ozone advance input for 2019/2020 activities. It was recommended that the checklist to provide in the report be modified to report past as well as future commitment activities to reduce emissions.
 - Complete and distribute EDC manual for emission reductions recommendations to be submitted to clients.
 - The April 2020 meeting will include a presentation of all air monitors in the airshed including industrial monitors installed by Exxon Mobile and Cheniere.

**ATTACHMENT 3
CLEAN FLEET EVENT SUMMARY**



Event Report

From 5/1/2019

To 12/31/2019

Report Date 3/3/2020

Event Information				Vehicle Count			Voucher Issues			Fleet Issues			Vehicles	
Date	Event	Location	Time	Private	Fleet	Total	EVAP	Tailpipe	DTC	EVAP	Tailpipe	DTC	Dirty	Clean
5/14/2019	Autocheck	La Palmera	9:00 AM	9	0	9	0	0	2	0	0	0	2	7
5/16/2019	Autocheck	La Palmera	9:00 AM	2	0	2	0	0	0	0	0	0	0	2
5/21/2019	Autocheck	La Palmera	9:00 AM	8	0	8	0	0	1	0	0	0	1	7
5/23/2019	Autocheck	La Palmera	9:00 AM	4	0	4	0	0	0	0	0	0	0	4
5/28/2019	Autocheck	La Palmera	9:00 AM	7	0	7	0	0	1	0	0	0	1	6
5/30/2019	Autocheck	La Palmera	9:00 AM	7	0	7	1	0	0	0	0	0	1	6
6/11/2019	Autocheck	Tamucc	9:40 AM	1	0	1	0	0	1	0	0	0	1	0
6/14/2019	Autocheck	Garcia Center	7:30 AM	13	0	13	2	0	2	0	0	0	4	9
6/18/2019	Autocheck	TAMU-CC Island Dr.	9:00 AM	4	0	4	0	0	0	0	0	0	0	4
6/28/2019	Autocheck	Garcia Center	3:30 PM	10	0	10	2	0	4	0	0	0	6	4
7/13/2019	Autocheck	American Bank Center	9:00 AM	8	0	8	0	0	1	0	0	0	1	7

Event Information				Vehicle Count			Voucher Issues			Fleet Issues			Vehicles	
Date	Event	Location	Time	Private	Fleet	Total	EVAP	Tailpipe	DTC	EVAP	Tailpipe	DTC	Dirty	Clean
7/20/2019	FUMC Autocheck	FUMC Health Fair Portland	9:00 AM	20	0	20	1	0	4	0	0	0	4	16
7/27/2019	Autocheck	American Bank Center	10:00 AM	21	0	21	3	0	2	0	0	0	5	16
8/17/2019	Autocheck	Moody High School	10:00 AM	18	0	18	7	0	8	0	0	0	11	7
8/26/2019	Autocheck	TAMU-CC Island Dr.	10:00 AM	2	0	2	0	0	0	0	0	0	0	2
8/29/2019	Autocheck	Garcia Center	1:00 PM	5	0	5	0	0	0	0	0	0	0	5
9/9/2019	Autocheck	TAMU-CC Island Dr.	10:00 AM	3	0	3	0	0	1	0	0	0	1	2
9/16/2019	Autocheck	Del Mar West Campus	1:00 PM	2	0	2	0	0	0	0	0	0	0	2
9/16/2019	Motor Monday	TAMU-CC Island Dr.	10:00 AM	1	0	1	0	0	0	0	0	0	0	1
9/23/2019	Autocheck	TAMU-CC Island Dr.	10:00 AM	3	0	3	1	0	1	0	0	0	2	1
9/26/2019	Autocheck	Garcia Center	1:00 PM	8	0	8	1	0	4	0	0	0	4	4
9/30/2019	AUTOCHECK	TAMU-CC Island Dr.	10:00 AM	3	0	3	1	0	2	0	0	0	2	1
10/4/2019	Autocheck	Whataburger Field	11:00 AM	60	1	61	17	0	21	0	0	0	27	34

Event Information				Vehicle Count			Voucher Issues			Fleet Issues			Vehicles	
Date	Event	Location	Time	Private	Fleet	Total	EVAP	Tailpipe	DTC	EVAP	Tailpipe	DTC	Dirty	Clean

Totals
Events
31

Total Vehicle Count			Total Voucher Issues			Total Fleet Issues		Vehicles	
Private	Fleet	Total	EVAP	Tailpipe	DTC	EVAP	Repairs	"Dirty"	"Clean"
265	1	266	41	0	56	0	0	79	187

ATTACHMENT 4

**CLEAN FLEET EMISSIONS REDUCTIONS
DATA**

Post Repair Emissions Summary Report

From

To

Report Run:

Tuesday, January 21, 2020

Invoice Date	V#		Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr			Repairs	DTC	EVAP	Pipe
			HC	NOx	CO	HC	NOx	CO	HC	NOx	CO				
<input type="text" value="6/21/2019"/>	<input type="text" value="640"/>	Left	<input type="text" value="0.35"/>	<input type="text" value="0"/>	<input type="text" value="3.38"/>	<input type="text" value="0.74"/>	<input type="text" value="0"/>	<input type="text" value="0.17"/>	<input type="text" value="-12.3"/>	<input type="text" value="0"/>	<input type="text" value="99.18"/>	<input type="text" value="Catalytic Converter Replaced, Mass Air Flow Sensor"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right	<input type="text"/>												
<input type="text" value="6/21/2019"/>	<input type="text" value="645"/>	Left	<input type="text" value="0.44"/>	<input type="text" value="0.02"/>	<input type="text" value="8.78"/>	<input type="text" value="0.97"/>	<input type="text" value="0"/>	<input type="text" value="0.22"/>	<input type="text" value="-16.4"/>	<input type="text" value="0.74"/>	<input type="text" value="264.2"/>	<input type="text" value="Idle Air Control Valve, MAF or MAP Sensor Replaced, Spark Plugs Replaced"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right	<input type="text"/>												
<input type="text" value="7/2/2019"/>	<input type="text" value="639"/>	Left	<input type="text" value="0.07"/>	<input type="text" value="0.3"/>	<input type="text" value="86"/>	<input type="text" value="0.3"/>	<input type="text" value="0"/>	<input type="text" value="49.3"/>	<input type="text" value="-7.15"/>	<input type="text" value="9.38"/>	<input type="text" value="1132.64"/>	<input type="text" value="MAF or MAP Sensor Replaced, Spark Plugs Replaced"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right	<input type="text"/>												
<input type="text" value="7/17/2019"/>	<input type="text" value="649"/>	Left	<input type="text" value="0.77"/>	<input type="text" value="0.04"/>	<input type="text" value="6.33"/>	<input type="text" value="0"/>	<input type="text" value="0.03"/>	<input type="text" value="0"/>	<input type="text" value="23.74"/>	<input type="text" value="0.5"/>	<input type="text" value="195.24"/>	<input type="text" value="IgnitionCoil, Spark Plugs Replaced"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right	<input type="text"/>												
<input type="text" value="7/26/2019"/>	<input type="text" value="654"/>	Left	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0.76"/>	<input type="text" value="0"/>	<input type="text" value="0.17"/>	<input type="text" value="-23.5"/>	<input type="text" value="0"/>	<input type="text" value="-5.33"/>	<input type="text" value="Timing or Camshaft Position"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right	<input type="text"/>												

Invoice Date	V#		Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr			Repairs	DTC	EVAP	Pipe
			HC	NOx	CO	HC	NOx	CO	HC	NOx	CO				
7/31/2019	652	Left	0.13	0	0							Catalytic Converter Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
8/1/2019	653	Left	0.06	0.03	0.62							Evap System repair, Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Right													
8/21/2019	657	Left	0	0	0	0.67	0	0.15	-20.8	0.15	-4.72	Catalytic Converter Replaced, Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
9/5/2019	660	Left	0.15	0	0.3	0	0	0	4.73	0	9.12	Injector Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
9/9/2019	664	Left	0.63	0.03	0	1.09	0	0.25	-14.4	0.89	-7.67	EGR Valve Repaired, Exhaust Leak Repaired	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
9/11/2019	667	Left	0.2	0.01	26.67	0	0	0	6.09	0.21	823.29	Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													

Invoice Date	V#		Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr			Repairs	DTC	EVAP	Pipe
			HC	NOx	CO	HC	NOx	CO	HC	NOx	CO				
9/19/2019	671	Left	0.06	0.11	5.93	0.01	0	0	1.49	3.27	183.14	Evap System repair, Spark Plugs Replaced, Valve Cover Gasket Set	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Right													
9/23/2019	668	Left	0	0	0	0	0	0	0	0	0	IgnitionCoil, Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
10/8/2019	691	Left	0	0	0	2.54	0.02	2.34	-78.3	-0.35	-72.26	Gas Cap Replaced, O2 Sensor Replaced	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Right													
10/10/2019	679	Left	0.16	0	0	0.56	0	1.24	-12.4	0	-38.35	EGR Valve Repaired, O2 Sensor Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
10/10/2019	690	Left	0.69	0.08	6.7	1.45	0.05	1.34	-23.2	0.91	165.47	Catalytic Converter Replaced, Spark Plug Wires Replaced, Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
10/9/2019	692	Left	0	0.84	0	0	1.28	0	-0.12	-13.6	0	Air Intake Sensor Replace, MAF or MAP Sensor Replaced, Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													

Invoice Date	V#		Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr			Repairs	DTC	EVAP	Pipe
			HC	NOx	CO	HC	NOx	CO	HC	NOx	CO				
10/15/2019	681	Left	0	0.13	0.52	0	0.06	0.93	0	1.97	-12.47	Distributor Cap & Rotor Replaced, O2 Sensor Replaced, Spark Plug Wires Replaced, Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
10/18/2019	702	Left	0	0.05	0	2.89	0.15	12.6	-89.1	-3.09	-388.74	Distributor Cap & Rotor Replaced, Fuel Filter, Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
10/23/2019	686	Left	0	0	0	0	0	1.86	0	0	-57.55	O2 Sensor Replaced, Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
11/20/2019	709	Left	0	0	0	1.11	0	0	-34.3	0	0	Ignition Coil Replaced, O2 Sensor Replaced, Spark Plugs Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													
10/28/2019	678	Left	0	0.03	0	2.43	0.12	11.1	-75.1	-2.78	-342.46	Catalytic Converter Replaced, Fuel Evaporative Canistr Replace	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Right													
12/19/2019	703	Left	0	0.09	0	0	0.01	0	0	2.4	0	Canister Purge Solenoid, O2 Sensor Replaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Right													

Invoice Date	V#		Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr			Repairs	DTC	EVAP	Pipe
			HC	NOx	CO	HC	NOx	CO	HC	NOx	CO				
11/8/2019	670	Left	1.12	0	12.27	1.02	0	11.24	2.88	0	31.55	Evaporator Purge Valve, Fuel Evaportive Canistr Replace, Gas Cap Replaced	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Right													

Invoice Date	V#	Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr			Repairs	DTC	EVAP	Pipe
		HC	NOx	CO	HC	NOx	CO	HC	NOx	CO				

Repair Count

EVAP Repairs (Includes Gas Caps)	
Invoice Date	VoucherID
5/21/2019	602
5/23/2019	644
6/20/2019	643
7/9/2019	641
7/15/2019	642
8/1/2019	653
8/1/2019	655
9/3/2019	665
9/12/2019	666
9/19/2019	671
10/8/2019	621
10/8/2019	672
10/8/2019	691
10/10/2019	705
10/15/2019	680
10/15/2019	688
10/17/2019	677
10/18/2019	675

HC includes Gas Caps + Other EVAP Repairs

Annual Reductions lbs/yr		
HC	NOx	CO
3681.94	0.59	1974.27

Non-EVAP Repairs:
24

Invoice Date	V#	Pre-Repair g/mi			Post-Repair g/mi			Annual Reductions lbs/yr			Repairs	DTC	EVAP	Pipe
		HC	NOx	CO	HC	NOx	CO	HC	NOx	CO				
10/22/2019		673												
10/24/2019		685												
10/28/2019		678												
10/28/2019		710												
11/6/2019		650												
11/8/2019		670												
11/22/2019		695												
11/22/2019		699												
12/13/2019		630												

Gas Cap and EVAP Repairs	27
HC Reductions lbs/yr	4050

ATTACHMENT 5

POLLUTION PREVENTION PARTNERSHIP EDUCATION/OUTREACH SUMMARY



Meetings

Tuesday, January 21, 2020

1:58:27 PM

Date	Time	Location	Group or Event	Topic	Presentation	-Attendance
5/7/2019	10:30:00 AM	Fire Department Headquarters Building	LEPC	Community Air Quality Activities Pollution Prevention Partnership (P3): AutoCheck - CleanFleet - SmartWay	LEPC Community Air Quality Action Pollution Prevention Partnership.pptx	42
5/22/2019	3:00:00 PM	Corpus Christi Development Services and Fire Department Headquarters Building	Corpus Christi Air Quality Group	2019 status of ozone attainment. Efforts to restore air program funding via Legislative Rider funding. •Dr. Laurie Haws with Tox Strategies provided a presentation on the new EPA Refinery Sector Rule (RSR)		22
7/13/2019	9:00:00 AM	American Bank Center	Nueces County Medical Society Health Fair	Ozone season education. Ozone prevention, car maintenance, fuel efficiency and AutoCheck promotion. One on one conversations		162
7/20/2019	9:00:00 AM	FUMC Portland	First United Methodist Church Community Health Fair	Ozone season education. Ozone prevention, car maintenance, fuel efficiency and AutoCheck promotion. One on one conversations		61
7/26/2019	11:30:00 AM	Del Mar College West Campus	Nueces County Community Action Health Advisory	AutoCheck networking and promotion. Announcement finding new venues.		36
7/27/2019	10:00:00 AM	American Bank Center	CCPolice Department Operation Safe Return Health Fair	Ozone Prevention and AutoCheck Promotion		406

Date	Time	Location	Group or Event	Topic	Presentation	-Attendance
8/17/2019	10:00:00 AM	Moody HS	L.E.A.D. First Health Fair	Ozone education and AutoCheck promotion for emissions testing and repair program.		650
9/25/2019	3:00:00 PM	TAMU-CC	Environmental Council	Ozone Actions	2019-09 TAMUCC environmental Council.pptx	32
10/16/2019	1:00:00 PM	Webinar	SmartWay National Affiliate Discussion	SmartWay Team and our Regional Representatives about the actions you take to raise awareness on freight sustainability.		0
10/29/2019	11:30:00 AM	North Shore Country Club Portland	CC Air quality group	Local status of ozone attainment □What is local - airshed Importance of ozone attainment, Cost of non-attainment studies, Voluntary measures and commitments to reduce emissions		45
10/31/2019	11:00:00 AM	Flint Hills Training Center	Flint Hills Employee Health and Safety Fair	Ozone reduction strategies and AutoCheck Promotion	One-on-One Discussions	117
11/2/2019	12:00:00 PM	American Collision	Scouts Merit Badge Workshop	Tire Care and Maintenance	Tire Care and Maintenance	35
12/12/2019	3:00:00 PM	Port Administration	CC Air Quality Group	The 2019 ozone season impact. status of a study being performed by Dr. Jim Lee at Texas A&M University-Corpus Christi, update to the group on the status of legislative funding. Update on work with area Economic Development Corporations (EDCs)		25

13 Meetings and Informational Events

Networking and Informational Contacts

1633

ATTACHMENT 6

**EMISSION REDUCTION RESPONSE SHEETS
AND LETTERS**



Corpus Christi Liquefaction, LLC
622 Hwy 35
Gregory, TX 78359
phone: 361.977.1000

March 30, 2020

Ms. Gretchen Arnold
Director, Coastal Bend Air Quality Partnership

**RE: Commitment to Air Quality Improvements
Corpus Christi Liquefaction**

Dear Ms. Arnold:

Corpus Christi Liquefaction, LLC (CCL) is committed to supporting the efforts to maintain and improve air quality in the Corpus Christi Urban Airshed and surrounding communities. CCL will promote the following voluntary reductions to support continued air quality improvements in the region:

Staying Informed and Communicating

- Register with AirNow to receive email or text alerts for ozone action days.
- Register with TCEQ to receive weekly ozone forecasts.

Vehicle and Equipment Emissions

- Provide resources for CCL employees to teleconference.
- Provide park and ride or shuttle service for CCL employees.
- Use low sulfur diesel fuel for our diesel fleet and all diesel operated equipment.

Operations

- When possible, ground crew activities will be postponed on elevated ozone days.
- When possible, postpone surface coating operations and any non-essential activity that emits VOCs or NOx on elevated ozone days.
- Recommend the use of low VOC paints, solvents and adhesives.
- Require vendors and contractors to properly dispose of items containing VOC chemicals.
- Recommend vendors and contractors to use scrubbers on VOC chemical extraction processes.
- Utilization of IR cameras to detect and repair fugitive emissions and preform inspections.

In addition, the following air emission reduction commitments are planned for 2020:

- CCCL Site-wide communication will be sent to all CCL Employees to remind them of emissions reduction policies, recommendations and local ozone action days.

If you have any questions regarding this information, please contact Jessica Muennink, Environment Supervisor, at (361) 977-1342 or jessica.muennink@cheniere.com.

Sincerely,

Ari Aziz

Vice President and General Manager

VOLUNTARY AIR EMISSION REDUCTION PERFORMED May 2019-December 2019

Staying Informed and Communicating

- Register with AirNow to receive email or text alerts for ozone action days.
<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 remind them of your emission reduction policies and recommendations.
- Other _____

Vehicle and Equipment Emissions

- Require that all on and off road construction equipment used during the facility construction process be equipped with pollution prevention devices, practice anti idling, and utilize low sulfur diesel
- Provide resources and offer incentives for your employees to carpool, particularly on elevated ozone days – even if it's just for lunch.
- Provide resources and offer incentives for your employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days.
- Provide resources for your employees to telecommute, particularly on elevated ozone days.
- Provide resources for your employees to teleconference.
- Provide flexible work schedules to remove vehicles from the road during congested times.
 - Information including templates and tools to provide employee commute resources can be found at <https://www.bestworkplaces.org/>
- Provide park and ride or shuttle service for your employees.
- Participate in the RTA van pool program.
 - Local van pool, shuttle and park and ride opportunities can be found at <https://www.ccrta.org/rider-info/programs/>
- Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Have your fleet emissions tested via AutoCheck and perform necessary repairs to minimize fleet emissions.
- Have an anti-idle policy for all construction, contractor, delivery and freight vehicles.
- Have an anti-idle policy for your fleet.
 - Information including templates and tools to establish an anti-idle policy can be found at <https://cleancities.energy.gov/technical-assistance/idlebox/>
- Use alternative fueled vehicles and equipment.
- Repower or replace older engines in your fleet.
- Install filter traps and DOCs on your diesel fleet.
- Perform diesel retrofits.
- Use low sulfur diesel fuel for your diesel fleet.
- Other _____

Operations.

- Postpone non-essential deliveries on elevated ozone days.
- Postpone ground crew activities on elevated ozone days.
- Postpone surface coating operations on elevated ozone days.
- Postpone any non-essential activity that emits VOCs or NOx on elevated ozone days.
- Require vendors to use low VOC paints, solvents and 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.
- Implement a flare reduction program.
- Utilization of IR cameras to detect and repair fugitive emissions.
- Perform routine inspections for leaks and fugitive emissions.
- 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 additional seals and liners on storage tanks.
- Other _____

**ADDITIONAL VOLUNTARY AIR EMISSION REDUCTION COMMITMENTS PLANNED FOR
2020**

- During the 2020 Ozone Season, Communication will be sent to all CCL Employees to remind them of emissions reduction policies and recommendations
- All local Ozone Action Days and will be communicated to CCL employees.

Corpus Christi Liquefaction

3/30/2020

Signature

Organization

Date

VOLUNTARY AIR EMISSION REDUCTION PERFORMED May 2019-December 2019

Staying Informed and Communicating

- ✓ Register with AirNow to receive email or text alerts for ozone action days.
<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 remind them of your emission reduction policies and recommendations.

Vehicle and Equipment Emissions

- Require that all on and off road construction equipment used during the facility construction process be equipped with pollution prevention devices, practice anti idling, and utilize low sulfur diesel
- Provide resources and offer incentives for your employees to carpool, particularly on elevated ozone days – even if it's just for lunch.
- Provide resources and offer incentives for your employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days.
- Provide resources for your employees to telecommute, particularly on elevated ozone days.
- ✓ Provide resources for your employees to teleconference.
- ✓ Provide flexible work schedules to remove vehicles from the road during congested times.
 - Information including templates and tools to provide employee commute resources can be found at <https://www.bestworkplaces.org/>
- Provide park and ride or shuttle service for your employees.
- Participate in the RTA van pool program.
 - Local van pool, shuttle and park and ride opportunities can be found at <https://www.ccrta.org/rider-info/programs/>
- ✓ Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Have your fleet emissions tested via AutoCheck and perform necessary repairs to minimize fleet emissions.
- Have an anti-idle policy for all construction, contractor, delivery and freight vehicles.
- Have an anti-idle policy for your fleet.
 - Information including templates and tools to establish an anti-idle policy can be found at <https://cleancities.energy.gov/technical-assistance/idlebox/>
- Use alternative fueled vehicles and equipment.
- ✓ Repower or replace older engines in your fleet.
- Install filter traps and DOCs on your diesel fleet.
- Perform diesel retrofits.
- ✓ Use low sulfur diesel fuel for your diesel fleet.
- Installation of scrubbers
- ✓ Use of an onsite fuel pump.

Operations.

- Postpone non-essential deliveries on elevated ozone days.
- ✓ Postpone ground crew activities on elevated ozone days.
- Postpone surface coating operations on elevated ozone days.
- Postpone any non-essential activity that emits VOCs or NOx on elevated ozone days.
- ✓ Require vendors to use low VOC paints, solvents and 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.
- ✓ Implement a flare reduction program.
- ✓ Utilization of IR cameras to detect and repair fugitive emissions.
- ✓ Perform routine inspections for leaks and fugitive emissions.
- ✓ 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 additional seals and liners on storage tanks.
- ✓ Use of Flare Gas Analyzers
- ✓ Production of low sulfur diesel
- ✓ Production of low Reid vapor pressure gasoline

**ADDITIONAL VOLUNTARY AIR EMISSION REDUCTION COMMITMENTS PLANNED FOR
2020**

- ✓ Offer onsite dining
- ✓ Practice anti-idling procedures across the fleet

Dana Perez

Flint Hills Resources Corpus Christi, LLC

03/19/2020

Signature

Organization

Date



April 3, 2020

Ms. Gretchen Arnold
Director, Corpus Christi Air Quality Group

Subject: Ozone Advance Agreement 2019 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:

- Voluntary installation of Flare Gas Recovery Units in support of a flare reduction program at the Valero West and East Plants.
- 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 Ultra Low Sulfur Diesel and a Gasoline De-sulfurization Units to produce fuel that supports new technology in vehicles that reduces NOx emissions
- Utilization of IR camera to identify potential VOC leaks not routinely seen
- Production of gasoline during May through September that is lower in vapor pressure than required
- Registered with TCEQ to receive weekly ozone forecasts.
- Implementation of 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,

A handwritten signature in blue ink, appearing to read 'Joe Almaraz', is written over the typed name and title.

Joe Almaraz
Director, Environmental, Health & Safety
Valero Bill Greehey Refineries

VOLUNTARY AIR EMISSION REDUCTION PERFORMED
May 2019-December 2019

Staying Informed and Communicating

- Register with AirNow to receive email or text alerts for ozone action days.
<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 remind them of your emission reduction policies and recommendations.
- Other _____

Vehicle and Equipment Emissions

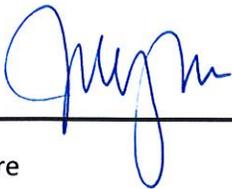
- Require that all on and off road construction equipment used during the facility construction process be equipped with pollution prevention devices, practice anti idling, and utilize low sulfur diesel
- Provide resources and offer incentives for your employees to carpool, particularly on elevated ozone days – even if it's just for lunch.
- Provide resources and offer incentives for your employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days.
- Provide resources for your employees to telecommute, particularly on elevated ozone days.
- Provide resources for your employees to teleconference.
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 - Local van pool, shuttle and park and ride opportunities can be found at <https://www.ccrta.org/rider-info/programs/>
- Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Have your fleet emissions tested via AutoCheck and perform necessary repairs to minimize fleet emissions.
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- Have an anti-idle policy for your fleet.
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- Use alternative fueled vehicles and equipment.
- Repower or replace older engines in your fleet.
- Install filter traps and DOCs on your diesel fleet.
- Perform diesel retrofits.
- Use low sulfur diesel fuel for your diesel fleet.
- Other _____

Operations.

- Postpone non-essential deliveries on elevated ozone days.
- Postpone ground crew activities on elevated ozone days.
- Postpone surface coating operations on elevated ozone days.
- Postpone any non-essential activity that emits VOCs or NOx on elevated ozone days.
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- 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.
- Implement a flare reduction program.
- Utilization of IR cameras to detect and repair fugitive emissions.
- Perform routine inspections for leaks and fugitive emissions.
- 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 additional seals and liners on storage tanks.
- Other _____

**ADDITIONAL VOLUNTARY AIR EMISSION REDUCTION COMMITMENTS PLANNED FOR
2020**

- _____
- _____
- _____
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4-3-2020

Signature

Organization

Date

VOLUNTARY AIR EMISSION REDUCTION PERFORMED May 2019-December 2019

Staying Informed and Communicating

- ✓ Register with AirNow to receive email or text alerts for ozone action days.
<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 remind them of your emission reduction policies and recommendations.
- ✓ Other: Provide ozone education in routine personnel health and safety training

Vehicle and Equipment Emissions

- Require that all on and off road construction equipment used during the facility construction process be equipped with pollution prevention devices, practice anti idling, and utilize low sulfur diesel
- Provide resources and offer incentives for your employees to carpool, particularly on elevated ozone days – even if it's just for lunch.
- Provide resources and offer incentives for your employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days.
- Provide resources for your employees to telecommute, particularly on elevated ozone days.
- ✓ Provide resources for your employees to teleconference.
- ✓ Provide flexible work schedules to remove vehicles from the road during congested times.
 - Information including templates and tools to provide employee commute resources can be found at <https://www.bestworkplaces.org/>
- Provide park and ride or shuttle service for your employees.
- Participate in the RTA van pool program.
 - Local van pool, shuttle and park and ride opportunities can be found at <https://www.ccrta.org/rider-info/programs/>
- ✓ Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Have your fleet emissions tested via AutoCheck and perform necessary repairs to minimize fleet emissions.
- ✓ Have an anti-idle policy for all construction, contractor, delivery and freight vehicles.
- ✓ Have an anti-idle policy for your fleet.
 - Information including templates and tools to establish an anti-idle policy can be found at <https://cleancities.energy.gov/technical-assistance/idlebox/>
- ✓ Use alternative fueled vehicles and equipment.
- Repower or replace older engines in your fleet.
- Install filter traps and DOCs on your diesel fleet.
- Perform diesel retrofits.
- ✓ Use low sulfur diesel fuel for your diesel fleet.
- Other _____

Operations

- ✓ Postpone non-essential deliveries on elevated ozone days.
- ✓ Postpone ground crew activities on elevated ozone days.
- ✓ Postpone surface coating operations on elevated ozone days.
- ✓ Postpone any non-essential activity that emits VOCs or NOx on elevated ozone days.
- ✓ Require vendors to use low VOC paints, solvents and 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.
- ✓ Implement a flare reduction program.
- ✓ Utilization of IR cameras to detect and repair fugitive emissions.
- ✓ Perform routine inspections for leaks and fugitive emissions.
- ✓ Installation of low NOx burners on boilers or heaters.
- ✓ Installation thermal oxidizers on storage tanks (**during maintenance activities**).
- ✓ Use of low NOx water heaters.
- ✓ Use of flue gas recirculation.
- ✓ Use of vapor recovery or incineration.
- ✓ Installation of additional seals and liners on storage tanks.
- ✓ Other: proactive inspection of storage tanks for fugitive emissions

ADDITIONAL VOLUNTARY AIR EMISSION REDUCTION COMMITMENTS PLANNED FOR 2020

- ✓ Benzene Reduction Program – connect additional storage tanks to vapor control system

- ✓ Replace burners on three boilers with new Ultra Low NOx burners

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- _____

Veronica Fuentes

CITGO Refining and Chemicals Company, L.P. (Corpus Christi Refinery)

March 2, 2020

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

March 26, 2020

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:

- Remove BDU flare from service
- 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 in the Olefins Unit
- Identification and repair of steam leaks

Maintenance Activities:

- Delay painting and lawn mowing during ozone action days
- Replace a diesel air compressor with an electric driven compressor
- 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
Site Manager



March 19, 2020

Ms. Gretchen Arnold
Chair, Coastal Bend Air Quality Partnership
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 and,
- Continued participation in the Coastal Bend Air Quality Partnership.

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

Sincerely,

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

VOLUNTARY AIR EMISSION REDUCTION PERFORMED

May 2019-December 2019

Staying Informed and Communicating

- ✓ Register with AirNow to receive email or text alerts for ozone action days.
<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 remind them of your emission reduction policies and recommendations.

Vehicle and Equipment Emissions

- ✓ Require that all on and off road construction equipment used during the facility construction process be equipped with pollution prevention devices, practice anti idling, and utilize low sulfur diesel
- ✓ Provide resources and offer incentives for your employees to carpool, particularly on elevated ozone days – even if it's just for lunch.
- ✓ Provide resources and offer incentives for your employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days.
- ✓ Provide resources for your employees to telecommute, particularly on elevated ozone days.
- ✓ Provide resources for your employees to teleconference.
- Provide flexible work schedules to remove vehicles from the road during congested times.
 - Information including templates and tools to provide employee commute resources can be found at <https://www.bestworkplaces.org/>
- ✓ Provide park and ride or shuttle service for your employees.
- ✓ Participate in the RTA van pool program.
- ✓ Local van pool, shuttle and park and ride opportunities can be found at <https://www.ccrt.org/rider-info/programs/>
- ✓ Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- ✓ Have your fleet emissions tested via AutoCheck and perform necessary repairs to minimize fleet emissions.
- ✓ Have an anti-idle policy for all construction, contractor, delivery and freight vehicles.
- ✓ Have an anti-idle policy for your fleet.
 - Information including templates and tools to establish an anti-idle policy can be found at <https://cleancities.energy.gov/technical-assistance/idlebox/>
- ✓ Use alternative fueled vehicles and equipment.
- ✓ Repower or replace older engines in your fleet.
- Install filter traps and DOCs on your diesel fleet.
- Perform diesel retrofits.
- ✓ Use low sulfur diesel fuel for your diesel fleet.

Operations.

- ✓ Postpone non-essential deliveries on elevated ozone days.
- ✓ Postpone ground crew activities on elevated ozone days.
- ✓ Postpone surface coating operations on elevated ozone days.
- ✓ Postpone any non-essential activity that emits VOCs or NOx on elevated ozone days.
- ✓ Require vendors to use low VOC paints, solvents and 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.
- Implement a flare reduction program.
- Utilization of IR cameras to detect and repair fugitive emissions.
- ✓ Perform routine inspections for leaks and fugitive emissions.
- ✓ 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 additional seals and liners on storage tanks.
- ✓ Other _____



Texas A&M University – Corpus Christi

3/3/2020

Signature

Organization

Date



PORTCORPUSCHRISTI

VOLUNTARY AIR EMISSION REDUCTION PERFORMED

Port of Corpus Christi

May 2019-December 2019

Staying Informed and Communicating

- ✓ Register with AirNow to receive email or text alerts for ozone action days.
<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 remind them of your emission reduction policies and recommendations.
- ✓ Provide ozone education and emissions reduction tips in your routine employee training.
- ✓ Have emission reduction tips and recommendations posted in your workplace lobby.
- ✓ Encourage employees to car pool, particularly on elevated ozone days.
- ✓ Host one Public AutoCheck event per year, providing an opportunity for employees to have their vehicle's emissions tested.
- ✓ Encourage employees to turn off lights in rooms that are not in use.
- ✓ Port Emission Inventory performed for calendar years 2005, 2008, 2013, and 2017.
 - 2017 year Emission Inventory Report completed September, 2019.
 - 2017 Emission Inventory Report presented at the public Port Commission Meeting on November 12, 2019 and with the Corpus Christi Air Quality Group on December 12, 2019.

Vehicle and Equipment Emissions

- ✓ Require that all on and off-road construction equipment used during the facility construction process be equipped with pollution prevention devices, practice anti idling, and utilize low sulfur diesel.
- ✓ Have your fleet emissions tested via AutoCheck and perform necessary repairs to minimize fleet emissions.
- ✓ Anti-idling policy in effect for fleet. Idling is limited to 5 minutes or less. This is verified through vehicle camera reports.
- ✓ Use alternative fueled vehicles (propane, CNG) and equipment.
- ✓ Repower or replace older engines in your fleet.
- ✓ Use low sulfur diesel fuel for your diesel fleet.
- ✓ In 2019, developed and implemented a Clean Fleet Program. Full turnover of the fleet expected by 2025.
- ✓ Purchase only highest tier engines available in the market for equipment.

Operations

- ✓ Postpone ground crew activities on elevated ozone days.
- ✓ Require vendors to use low VOC paints, solvents and adhesives.
- ✓ Require vendors and contractors to properly dispose of rags, buckets, drums, etc. that contain VOC chemicals.
- ✓ Purchase 100% green energy credits for all electricity consumed by Port operations.
- ✓ Repair poor seals around windows.
- ✓ Air monitoring program in place at the Bulk Terminal.

Other

- ✓ Full funding of the Pollution Prevention Partnership (P3) for 2019 activities.
- ✓ Partial funding of the Coastal Bend Air Quality Partnership in 2019.

ADDITIONAL VOLUNTARY AIR EMISSION REDUCTION COMMITMENTS PLANNED FOR
2020

- ✓ Continued implementation of Clean Fleet Program.
- ✓ Continued operation of air monitoring at Bulk Terminal.
- ✓ Continued funding of P3 and the Coastal Bend Air Quality Partnership for 2020 calendar year.
- ✓ Development of the Clean Equipment Program.
- ✓ Construction of a new, energy efficient, office building.
- ✓ Installation of a new, more efficient, electric crane at the Bulk Terminal.



Port of Corpus Christi Authority

03/18/2020

Signature

Organization

Date

VOLUNTARY AIR EMISSION REDUCTION PERFORMED

May 2019-December 2019

Staying Informed and Communicating

- ✓ Register with AirNow to receive email or text alerts for ozone action days.
<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 remind them of your emission reduction policies and recommendations.
- ✓ Provide ozone education in your routine personnel health and safety training.

Vehicle and Equipment Emissions

- Require that all on and off road construction equipment used during the facility construction process be equipped with pollution prevention devices, practice anti idling, and utilize low sulfur diesel
- Provide resources and offer incentives for your employees to carpool, particularly on elevated ozone days – even if it's just for lunch.
- Provide resources and offer incentives for your employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days.
- ✓ Provide resources for your employees to telecommute, particularly on elevated ozone days.
- ✓ Provide resources for your employees to teleconference.
- ✓ Provide flexible work schedules to remove vehicles from the road during congested times.
 - Information including templates and tools to provide employee commute resources can be found at <https://www.bestworkplaces.org/>
- Provide park and ride or shuttle service for your employees.
- Participate in the RTA van pool program.
 - Local van pool, shuttle and park and ride opportunities can be found at <https://www.ccrta.org/rider-info/programs/>
- Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Have your fleet emissions tested via AutoCheck and perform necessary repairs to minimize fleet emissions.
- ✓ Have an anti-idle policy for all construction, contractor, delivery and freight vehicles.
- ✓ Have an anti-idle policy for your fleet.
 - Information including templates and tools to establish an anti-idle policy can be found at <https://cleancities.energy.gov/technical-assistance/idlebox/>
- Use alternative fueled vehicles and equipment.
- ✓ Repower or replace older engines in your fleet.
- ✓ Install filter traps and DOCs on your diesel fleet.
- ✓ Perform diesel retrofits.
- ✓ Use low sulfur diesel fuel for your diesel fleet.

Operations.

- Postpone non-essential deliveries on elevated ozone days.
- ✓ Postpone ground crew activities on elevated ozone days.
- ✓ Postpone surface coating operations on elevated ozone days.
- ✓ Postpone any non-essential activity that emits VOCs or NOx on elevated ozone days.

- ✓ Require painters, contractors, and vendors to use low VOC paints, solvents and 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.
- ✓ Implement a flare reduction program.
 - Utilization of IR cameras to detect and repair fugitive emissions.
- ✓ Perform routine inspections for leaks and fugitive emissions.
- ✓ 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 additional seals and liners on storage tanks.
- ✓ Installation of scrubbers
- ✓ Continuous and routine inspection of storage tanks for fugitive emissions
- ✓ Utilize Flare gas Analyzers

**ADDITIONAL VOLUNTARY AIR EMISSION REDUCTION COMMITMENTS PLANNED FOR
2020**

- ✓ Support Corporate Sustainable Development Goals and Objectives.
- ✓ Energy Use - Encourage employees to turn off lights in rooms and computers that are not in use.
- ✓ Energy Use - Set thermostats to a comfortable but efficient level

Aron Baggett – Manager Environmental

Occidental Chemical Corporation – Ingleside Facility

03/24/2020

Signature

Organization

Date

County of Nueces

Juan A. Pimentel, P.E.

Department of Public Works

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



Director of Public Works
Nueces County Engineer

April 1, 2020

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

Re: Nueces County Public Works Voluntary Air Emissions Reduction Measures-May 1, 2019-December 31, 2019

Dear Ms. Arnold:

My apologies for the delay in submitting the Nueces County Department of Public Works (DPW) voluntary measures summary outlining our efforts to reduce our carbon footprint and emissions reduction; we have had a small turnover in our senior staff due to retirement and internal reorganization. We recognize that all of us working together towards a common goal is the most productive way to reduce airborne emissions in the countywide urban and suburban airshed.

Nueces County is dedicated to proactively contribute to the total effort of the Ozone Taskforce to voluntarily reduce ozone and ozone precursor pollutant emissions using practicable measures. This summary is for Ozone (NOx and VOCs) reduction measures from May 1, 2019 thru' December 31, 2019 and the report is tailored to your response request format.

The DPW maintains a fleet of vehicles and equipment for routine maintenance of roads and bridges in the unincorporated areas of Nueces County using petroleum road base materials, fuels, lubricants and additives for road repair. We also provide civil construction and general MEP (Mechanical, Electrical and Plumbing) repair, modulation, maintenance services and technical assistance to over 50 County buildings which 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 evaluating trends to make corrections and over-rides) to conserve energy, and extend equipment life, with the ultimate target of reducing our carbon (fossil fuel dependent) footprint. Using first hand developed equipment history, we estimate the useful effective life of major equipment (such as Courthouse Chillers) is

near terminus, after which we design and fund replacement of obsolete and relatively inefficient equipment and their in-train devices to improve efficiency and significantly reduce the consumption of utilities that get power from a Power Plant that relies on fossil fuels. This assures quantifiable reduction of fossil fuel consumption and ozone emissions at the source of power generation.

The following are our measures:

Staying Informed, Communicating and & Training:

County Director of Commissioners Court and Public Information Officer Mr. Tyner Little is:

- Registering with AirNow to receive email or text alerts for ozone action days
<http://www.enviroflash.info/signup.cfm>
- Registering with TCEQ (We are using the link:
<https://service.govdelivery.com/accounts/TXTCEQ/subscriber/new>
to receive weekly ozone forecasts that are provided via email, text or social media and which will be forwarded to the DPW Construction Engineer Mr. Perez, P.E. and immediately disseminated throughout our workplace by him and our head foreman Mr. Jerry Garcia under my direct oversight.

Our senior staff and I track local media broadcasts, bulletins and advisories for elevated ozone alerts, which in turn are communicated to the head foreman for dissemination down the chain of command to field workers and technicians that everyone is notified.

Employees and Appropriate Training:

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 work is performed in compliance of State Regulations and mandatory Texas Jail Standards (we maintain and operate Jails and Courts).

1. Employees are encouraged to carpool, particularly on elevated ozone days, even for lunch.
2. Employees are encouraged to use alternative modes of transportation (bus, bike, walk), on ozone days.
3. Exempt employees have liberty to dress comfort casual.
4. Employees are encouraged to take advantage of the RTA van-pool program if practicable.
5. **Pool cars are provided designated parking spots.**
6. Informal ozone education/training is imparted during dialogue between supervisors and employees.

Contractors and Vendors

1. Recommend minimal idling of vehicles by contractor and delivery vehicles.
2. Prioritize and schedule deliveries by reducing non-essential deliveries on elevated ozone days.
3. Recommend painters to use low VOC paints as practicable.

4. Require grounds crews to minimize operations on elevated ozone days.
5. Recommend vendors and contractors to use low VOC solvents.
6. Recommend vendors and contractors to use low VOC adhesives.
7. Require vendors/contractors to properly dispose of rags, buckets, drums, etc. that contain VOC chemicals

Fleet Vehicles

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

Mechanical Electrical and Other Non-Fleet Equipment

1. All boilers operate on natural gas fuel with low NOx burners.
2. Boilers/heaters undergo scheduled maintenance to keep them well tuned which reduces ozone emissions.
3. 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 devices and sensors, solar water heater, 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 quantifiable energy savings with emissions reductions of ozone precursors.
4. About a year and half back, 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) online.
5. All of the HVAC and other equipment is maintained under a rigorous scheduled maintenance program.
6. The 2 Courthouse Chillers (875 tons/hr of cooling capacity) are scheduled to be replaced.

Our engineers have tested and determined the Chillers are at their life cycle terminus and must be replaced. The County Judge and Commissioners have approved the budget changes to fund the replacement which will result in significant energy consumption reductions which will have the end effect of reducing our airborne ozone precursor emissions at the power generation sources which is in our airshed and thus help maintain Nueces County's status as "Attainment" for all EPA designated criteria pollutants. This is a significant economic advantage Nueces County has over most other major Port and Petrochemical producers in the United States.

7. Electric lights have been replaced with low power consuming ones, in about 60 % of our offices. These are automatically turned on and off using infra-red and photoelectric sensors based upon occupancy.
8. 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, thereby accomplishing our main objective of ultimately reducing zone and ozone precursor emissions. We estimate we will have even more energy consumption savings after the 2 existing CH chillers are replaced with newer more efficient models and significant upgrade repairs and modifications are made to our 3 cooling towers to significantly improve heat exchange efficiency in the open loop system (condensers).

Vehicle and Equipment Emissions

The following are general emissions reduction measures:

1. Our on and off-road construction equipment used during construction and repair is equipped with pollution prevention devices; we do not allow idling and utilize low sulfur diesel.
2. We encourage employees to carpool, particularly on elevated ozone days; including lunch.
3. We encourage employees to use alternative modes of transportation during ozone alert days.
4. Provide resources to employees to telecommute, particularly on elevated ozone days.
5. Provide resources for employees to teleconferencing.
6. Provide flexible work schedules to reduce on-road vehicles during congested times. Our ability is limited because we have strict timelines for road repair and public and employee safety mandate.
7. Provide park and ride car-pool service to employees during ozone alerts and on-site for work.
8. Encourage employees to join the RTA van pool program (<https://www.ccrt.org/rider-info/programs/>)
9. Advise employees to have their personal vehicles emission tested with Auto Check (361-825-3070).
10. Our fleet emissions are tested and necessary repairs made to minimize fleet emissions.
11. We have an anti-idle requirement for all construction, contractor, delivery and freight vehicles.
12. Use alternative fueled vehicles/equipment as appropriate without compromising work quality or safety.
13. We replace older vehicles under a formal program for older/high mileage fleet vehicles.
14. Our fleet vehicles are equipped with filter traps and DOCs if they are fueled with diesel.
15. All our fleet vehicles use low sulfur diesel fuel.

Operations.

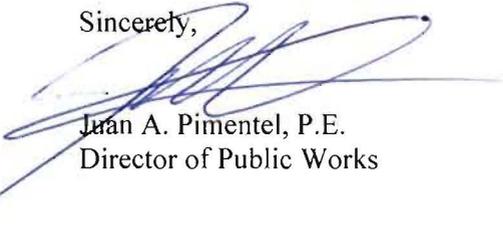
The following measures are automatically incorporated in our activities and operations as long as safety and work quality are not compromised.

1. As feasible we postpone non-essential deliveries on elevated ozone days.
2. As feasible, we postpone ground crew activities on elevated ozone days.
3. If possible, we postpone surface coating operations on elevated ozone days.

4. Postpone non-essential activities that emit VOCs or NOx on elevated ozone days.
5. Require vendors to use low VOC paints, solvents and adhesives.
6. Require vendors/contractors to properly dispose of VOC containing wastes (rags, buckets, drums, etc.).
7. We do not require vendors and contractors to use scrubbers on VOC chemical extraction processes.
8. We do not have chemical processing units so a flare reduction program is irrelevant in our operations.
9. We use a FLIR camera to detect and repair failures, leaks and electrical shorts.
10. We perform routine inspections for leaks and fugitive emissions.
11. All of our boilers are equipped with low NOx burners.
12. Our storage tanks are for diesel, gasoline and asphalt, so we do not require thermal oxidizers.
13. We use low NOx water heaters.
14. We do not need flue gas recirculation because we don't have refining, distillation or cracking units.
15. We do not need secondary vapor recovery or incineration for our fuel dispensing activities.
16. Proper seals and liners are installed on our fuel storage tanks.

If you have any questions, please contact me.

Sincerely,



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

CC: Honorable Barbara Canales, County Judge

VOLUNTARY AIR EMISSION REDUCTION PERFORMED May 2019-December 2019

Staying Informed and Communicating

- Register with AirNow to receive email or text alerts for ozone action days.
<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 remind them of your emission reduction policies and recommendations.
- Other _____

Vehicle and Equipment Emissions

- Require that all on and off road construction equipment used during the facility construction process be equipped with pollution prevention devices, practice anti idling, and utilize low sulfur diesel
- Provide resources and offer incentives for your employees to carpool, particularly on elevated ozone days – even if it's just for lunch.
- Provide resources and offer incentives for your employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days.
- Provide resources for your employees to telecommute, particularly on elevated ozone days.
- Provide resources for your employees to teleconference.
- Provide flexible work schedules to remove vehicles from the road during congested times.
 - Information including templates and tools to provide employee commute resources can be found at <https://www.bestworkplaces.org/>
- Provide park and ride or shuttle service for your employees.
- Participate in the RTA van pool program.
 - Local van pool, shuttle and park and ride opportunities can be found at <https://www.ccrta.org/rider-info/programs/>
- Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Have your fleet emissions tested via AutoCheck and perform necessary repairs to minimize fleet emissions.
- Have an anti-idle policy for all construction, contractor, delivery and freight vehicles.
- Have an anti-idle policy for your fleet.
 - Information including templates and tools to establish an anti-idle policy can be found at <https://cleancities.energy.gov/technical-assistance/idlebox/>
- Use alternative fueled vehicles and equipment.
- Repower or replace older engines in your fleet.
- Install filter traps and DOCs on your diesel fleet.
- Perform diesel retrofits.
- Use low sulfur diesel fuel for your diesel fleet.
- Other _____

ANTICIPATED VOLUNTARY AIR EMISSION REDUCTION TO BE PERFORMED IN 2020

Staying Informed and Communicating

- ✓ Register with AirNow to receive email or text alerts for ozone action days.
<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 remind them of your emission reduction policies and recommendations.
- Other _____

Vehicle and Equipment Emissions

- Require that all on and off road construction equipment used during the facility construction process be equipped with pollution prevention devices, practice anti idling, and utilize low sulfur diesel
- ✓ Provide resources and offer incentives for your employees to carpool, particularly on elevated ozone days – even if it's just for lunch.
- ✓ Provide resources and offer incentives for your employees to use alternative modes of transportation (bus, bike, walk), particularly on elevated ozone days.
- ✓ Provide resources for your employees to telecommute, particularly on elevated ozone days.
- ✓ Provide resources for your employees to teleconference.
- ✓ Provide flexible work schedules to remove vehicles from the road during congested times.
 - Information including templates and tools to provide employee commute resources can be found at <https://www.bestworkplaces.org/>
- Provide park and ride or shuttle service for your employees.
- Participate in the RTA van pool program.
 - Local van pool, shuttle and park and ride opportunities can be found at <https://www.ccrta.org/rider-info/programs/>
- ✓ Provide an opportunity for your employees to have their vehicles emission tested with AutoCheck. Call 825-3070.
- Have your fleet emissions tested via AutoCheck and perform necessary repairs to minimize fleet emissions.
- Have an anti-idle policy for all construction, contractor, delivery and freight vehicles.
- Have an anti-idle policy for your fleet.
 - Information including templates and tools to establish an anti-idle policy can be found at <https://cleancities.energy.gov/technical-assistance/idlebox/>
- Use alternative fueled vehicles and equipment.
- Repower or replace older engines in your fleet.
- Install filter traps and DOCs on your diesel fleet.
- Perform diesel retrofits.
- Use low sulfur diesel fuel for your diesel fleet.
- Other _____

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 (HYSPPLIT) 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 NO_x 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 fourth 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

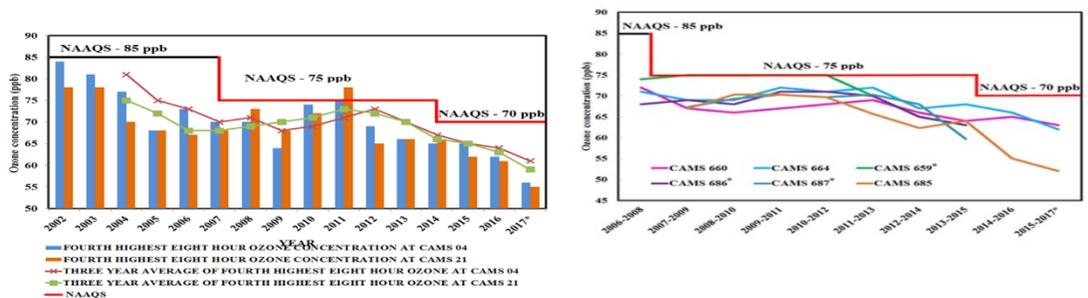
With budget constraints in funding provided by the 84th Texas Legislature, the below research grade monitoring stations were deactivated on May 31, 2016.

- 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 Annville, 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:
 - o 1,000 bicycle racks (varying capacities)
 - o 15 bicycle lockers
 - o 150 free standing public air pumps
 - o 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

Path Forward for Bicycle and Mobility Planning for Year 4

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-corporis-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.com/ccairquality) enjoyed 49 likes and 52 followers during Year 4. Average visits to the page were between 4 and 11 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 of 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; zero 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).

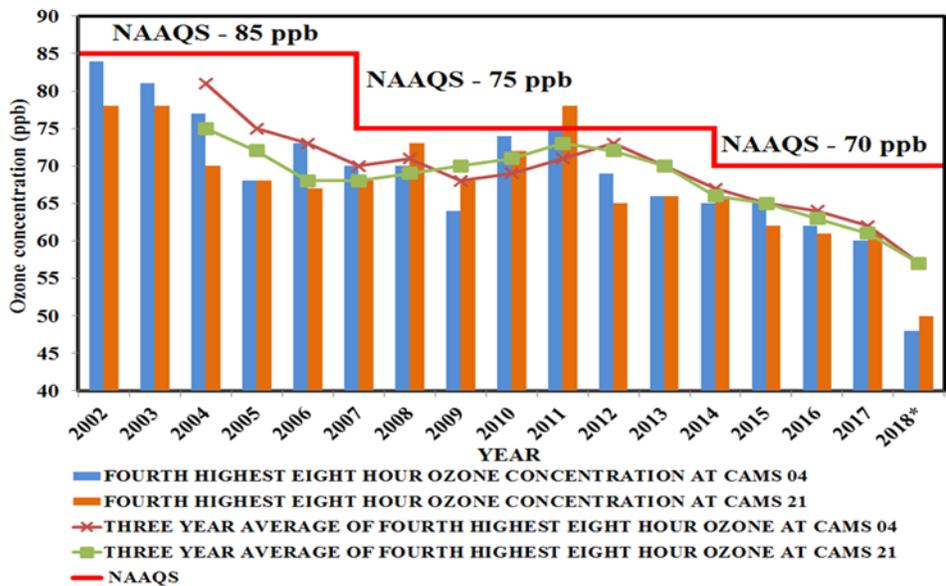


Figure 3. Corpus Christi Ozone Design Trends at TCEQ Regulatory Monitors CAMS 4 and CAMS 21

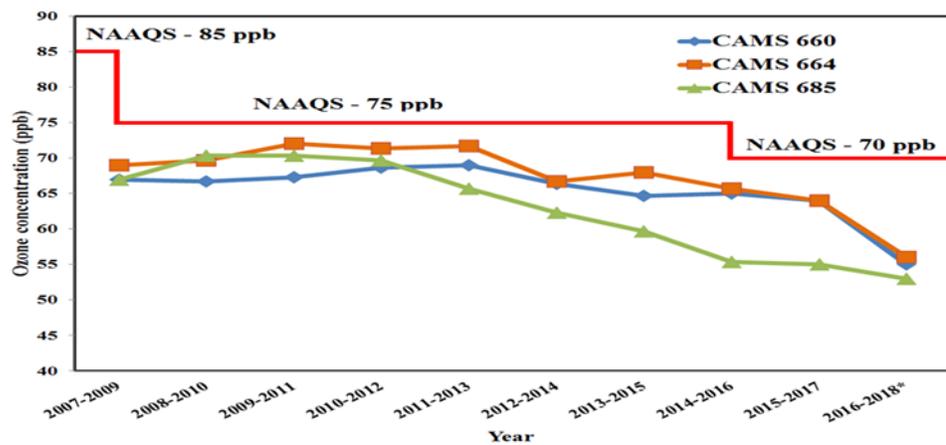


Figure 4. Corpus Christi Ozone Design Trends at TAMUK/UNT Research Monitors CAMS 660, 664, 685
*Deactivated

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 NO_x 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 is a detailed chart of the vehicles purchased.

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						
	Date	TOTAL RIDERS	TOTAL MILES	TOTAL HOURS	No. of Buses	
Leadership Corpus Christi	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-corporis-christi>

APPENDIX F
ANNUAL REPORT FOR YEAR 5 ACTIVITIES
May 2018 – APRIL 2019

APPENDIX F

ANNUAL REPORT FOR YEAR 5 (May 2018 – April 2019)

Status of Establishing Air Quality Position and Program Commitment for Year 5

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.

Path Forward for Air Quality Education Efforts for Year 6

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 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.

Path Forward for Air Quality Curricula for Year 6

Industry will meet to consider funding air quality curricula for Year 6.

Status of Research, Modeling and Monitoring Commitment 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.

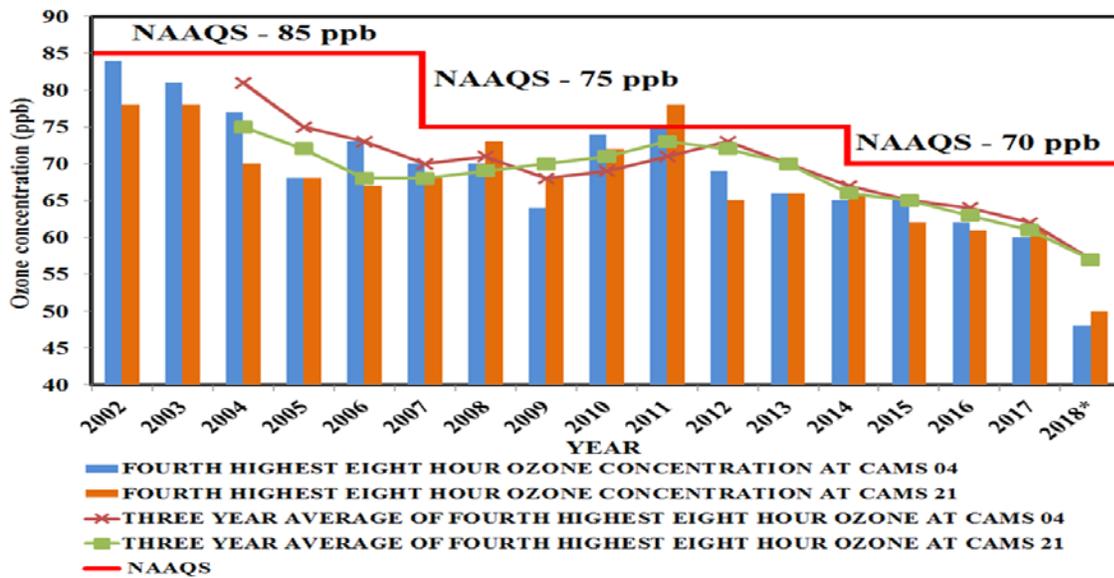
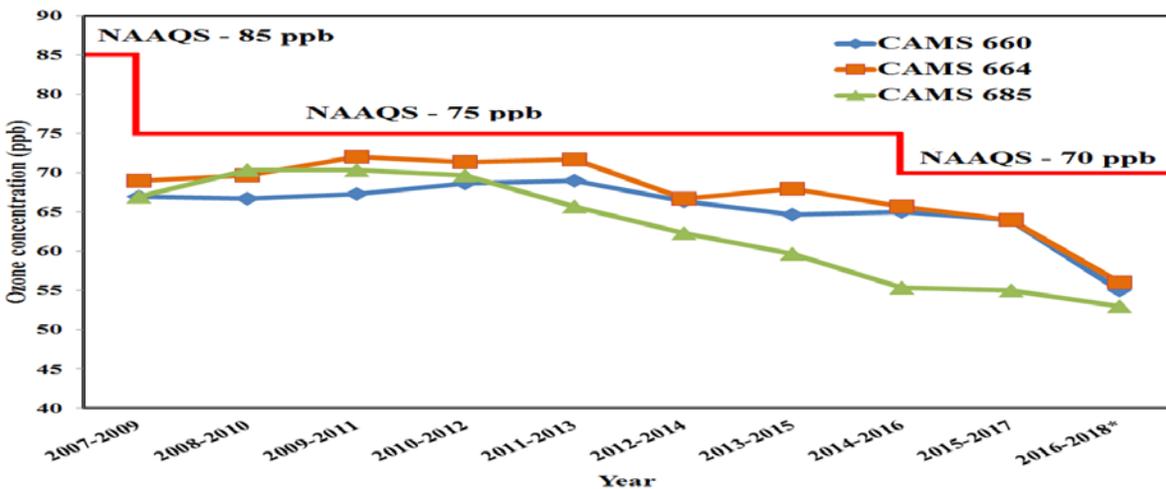


Figure 3.(repeated) Corpus Christi Ozone Design Trends at TCEQ Regulatory Monitors CAMS 4 and CAMS 21



*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 NO_x concentration ranged between 1.3 ppb to 8.3 ppb with an average of 3.8 ppb. The diurnal analysis of NO and NO_x 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.

Status of AutoCheck/Clean Fleet Vehicle Emissions Testing and Repair Commitment for Year 5

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 green scaping.

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.

Status of use of IR Camera Commitment for Year 5

Several industry stakeholders continued to use IR cameras to detect fugitive emissions during Year 5.

Path Forward for Use of IR Cameras for Year 6

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

Status of CCAD Notification on Ozone Action Days Commitment for Year 5

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.

Status of Production of LRVP Commitment for Year 5

Several industry stakeholders continued the production of LRVP gasoline during Year 5.

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.

Status of Operation of Public Use CNG Fueling Facilities Commitment for Year 5

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.

Status of RTA Commitment to Purchase CNG Vehicles for Year 5

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.

VEH ICL E	Dept Assig ned to	Y EA R	MAKE/ MODE L	SI ZE	Sea ting Ma x	Fle et Typ e	Lift Equi pped	3 Positi on Whe el Chair	Fu el Ty pe	Eligibl e for Dispo sition	Purc hase Date	Deli very Mile age	In Servi ce 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

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 Service	35	32	Fixed	Ramp	Yes	CNG	2029	05/01/17		
922	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Service	35	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,020	
923	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Service	35	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,050	
924	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Service	35	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,157	
925	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Service	35	32	Fixed	Ramp	Yes	CNG	2029	05/01/17	2,026	
926	Vehicle Maintenance	2017	GILLIG/ Low Floor - Not in Service	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 5

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 side paths.
- 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:
 - o On-line mapping tool to capture where users ride or where they would like to ride if the conditions for cycling improved
 - o Promoted Strava smartphone application that allows users to log real-time data about their rides
 - o On-line survey about riding habits, needs and perceived obstacles to cycling as transportation
 - o 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.

Status of Van Share Promotion Commitment for Year 5

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

2018 Vanpool

Field	Average Weekda	Average Saturda	Average Sunday	Annual Total
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	y Schedul e	y Schedul e	Schedul e	
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 Weekda y Schedul e	Total Saturda y Schedul e	Total Sunday Schedul e	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	Yea r	Total Pasngr s.	Total Miles	Total Hour s	Date
MLK DAY	201 8	145	64	5.85	1/15/2018
Fiesta De La Flor	201 8	12,686	912	149.57	4/13/18 & 4/14/18
Port Aransas Sand Festival	201 8	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

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.

Electric Vehicle Infrastructure

Public charging facilities for electric vehicles grew to a total of 18 during Year 5. Sites include La Palmera, a major shopping mall, a BMW dealership, 2 Nissan dealerships, 2 Ford dealerships, Cinnamon Shores condominiums, and Fairfield Inn.

This appendix reflects the major highlights of the Year 5 Ozone Advance Report submitted to EPA. To view the complete Year 5 Annual Report including details, charts and attachments, please visit <https://www.epa.gov/advance/texas-corporis-christi>