

Attachment B
Fiscal Year 2011 Work Plan

City of Corpus Christi Fiscal Year 2011 Rider 8 Phase II Work Plan Effective Date through August 31, 2011

The City of Corpus Christi (hereby referred to as the "Performing Party") working in collaboration with the Texas Commission on Environmental Quality and subcontracting to the University of North Texas, and the Texas A&M University – Corpus Christi Pollution Prevention Partnership submits the following work plan.

Task 1: Update Conceptual Model through the 2010 Ozone Season

The Performing Party, subcontracting to the University of North Texas shall identify necessary and sufficient conditions for high or exceeding ozone measurements in their program area (defined as the immediate statistical area plus adjacent counties) of the ozone National Ambient Air Quality Standards (NAAQS). The Performing Party's analyses shall include any seasonal variations and use data through 2010 to the extent possible. In particular, the Performing Party's conceptual model will include the following analyses:

- Evaluate the wind speeds, directions and time of day associated with high ozone events to determine the local conditions and source alignments most frequently associated with high ozone events.
- Develop 24 hour back trajectories to determine source regions most (and least) likely to affect local area ozone.
- Conduct a weekday/weekend analysis to evaluate the potential effectiveness of reduced levels of local industrial and mobile source activity on their area;
- Evaluate the range and average background ozone concentrations associated with local wind directions;
- Investigate ozone and precursor trends and estimate the annual frequency of high ozone days at varying standard levels (above); and
- Address additional relevant questions listed in Section 11.1.1 of EPA's ozone modeling guidance document, *Guidance on the Use of Models and Other Analyses to Demonstrating Attainment of Air Quality goals for Ozone, PM2.5, and Regional Haze*.

Deliverable: The Performing Party shall deliver an updated Conceptual Model containing analysis of monitoring and other data through 2010. The conceptual model shall be delivered to the TCEQ in a Microsoft Office Word and Adobe Acrobat Reader (*.pdf) format. Accompanying data and other supporting material shall be provided in a mutually agreeable electronic format.

Deliverable Date: June 15, 2011

Cost: \$10,000.00

Task 2: Ambient Monitoring Projects

2.1 The Performing Party shall continue to collect and deliver any routine, hourly ambient monitoring data to the TCEQ in Austin (through the LEADS) collected in Phase I. In order to provide accurate, quality assured data for modeling efforts and to track movement of pollutants, the Performing Party shall operate the ambient air monitoring sites as listed in *Table 1: Ambient Air Monitoring Sites to be Operated by the Grant Recipient*. The geographical location of the monitoring sites is shown in Figure 1.

Table 1. Ambient Air Monitoring Sites to be Operated by the Grant Recipient

LOCATION (ADDRESS)	EQUIPMENT (INSTRUMENTS)	START DATE	END DATE
Holly Road site (CAMS 660) - Water pumping station operated by the City of Corpus Christi located in the growing suburbs of the south side of the City.	Teledyne API 400E ozone analyzer, F460 wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem.	Effective Date April 1, 2011	November 1, 2010 August 31, 2011
Aransas Pass site (CAMS 659) - Wastewater treatment plant operated by City of Aransas Pass and in cooperation with the San Patricio Water District. A coastal location to the NE of Corpus Christi.	Teledyne API 400E ozone analyzer, RM young wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem.	Effective Date April 1, 2011	November 1, 2010 August 31, 2011
Violet site (CAMS 664) - Pumping station located west of Corpus Christi. Rural location surrounded by	Teledyne API 400E ozone analyzer, RM young wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH)	Effective Date April 1, 2011	November 1, 2010 August 31, 2011

open field for several miles.	sensor, Zeno 3200 datalogger, and Enfora wireless modem.		
Odem site (CAMS 686) - Pumping station operated by San Patricio Water District. Rural location NW of Corpus Christi.	Teledyne API 400E ozone analyzer, F460 wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem.	Effective Date April 1, 2011	November 1, 2010 August 31, 2011

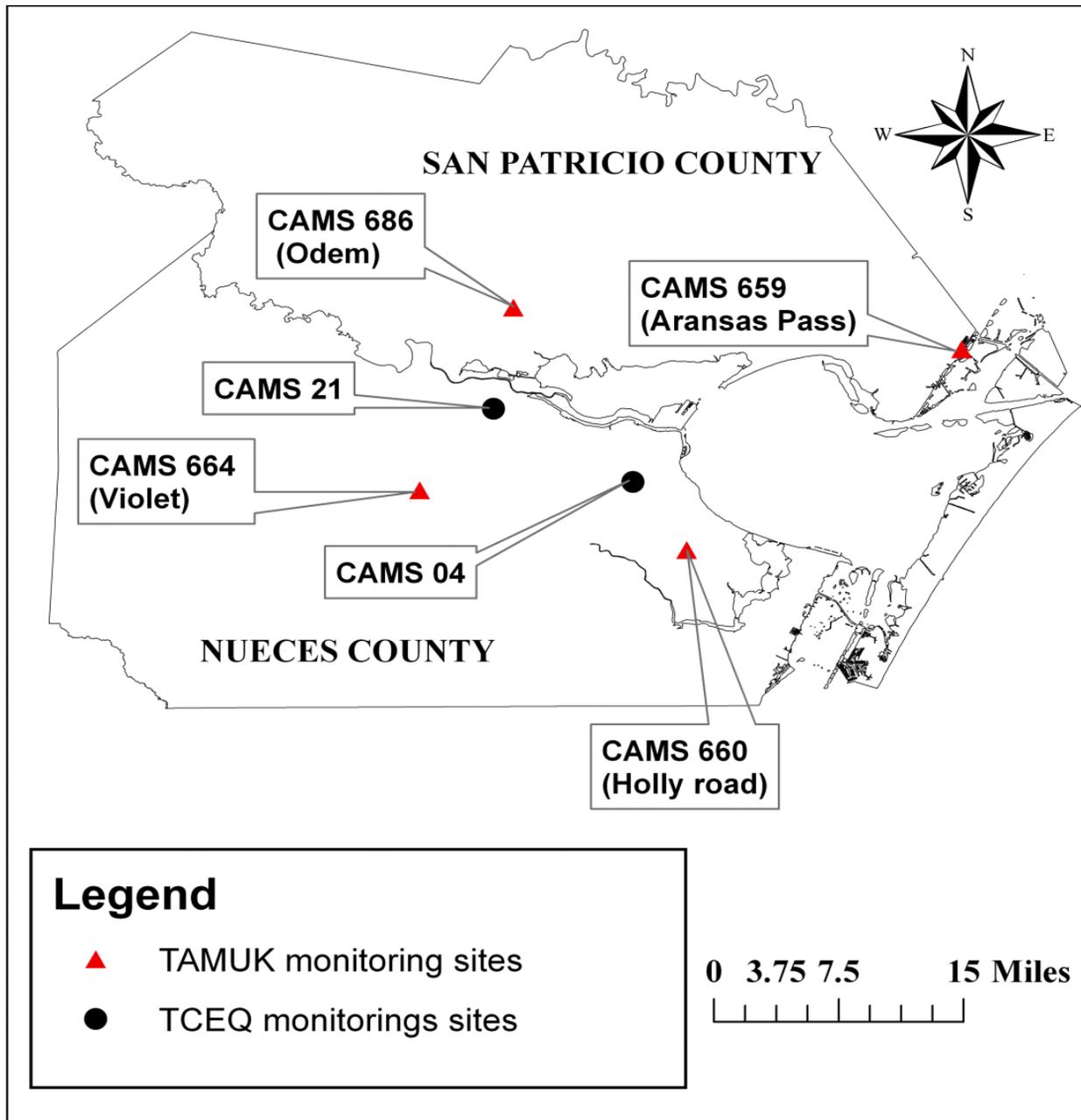


Figure 1. Air monitoring sites in the Corpus Christi Urban Airshed.

The data will be transferred regularly to the TCEQ's Leading Environmental Analysis and Display System (LEADS) data system as specified in Table 1. These monitor sites are described in the enhanced monitoring proposal delivered as a part of Rider8 FY2008-2009. The Performing Party shall operate four of these monitoring sites April 1 until October 31.

This contractor-owned transfer standard will be calibrated according to TCEQ specifications, policies and procedures in the TCEQ's NAMS/SLAMS Network

and U.S. Mexico Border Support Activities Quality Assurance Project Plan for Air Monitoring in Texas. These requirements are based on requirements found in the code of Federal Regulations (CFR) 40, Parts 50, 53, and 58. See URL <http://www.epa.gov/docs/epacr40/chapt-I.info/subch-C.htm>

Deliverable: Ambient monitoring data collected at monitoring sites described in the Phase II work plan delivered to TCEQ's LEADS.

Deliverable Date: Continuously between September 1, 2010, and November 1, 2010 and April 1, 2011, and August 31, 2011, or as soon as practical.

Cost: \$98,000.00

Task 3: Emissions Inventories Improvement

- 3.1 The Performing Party shall implement emissions inventory improvements for any non-road sources for which improvement plans were developed in the FY 2010 work plan (Task 3.2).

Project 1: Marine Diesel Engine Emissions (Ships & Barges)

The Performing Party shall implement emissions inventory improvements for anthropogenic marine emission sources for which improvement plans were developed in the FY 2010 work plan. The main aim of this project will be to update the marine diesel engine emissions from ocean-going vessels and barges in the Port of Corpus Christi. The emissions calculations will be primarily based on the vessel traffic data provided by the Port of Corpus Christi Authority (POCCA), ship information from Lloyd's Register of Ships at the Port of Corpus Christi, and methodologies adopted in a study conducted by Environ Corp. for EPA (USEPA, 2002). The emissions from barges traveling in the Intracoastal Waterway in the Airshed (ICWWA) will also be calculated using the methodology adopted by a study conducted by Eastern Research Group & Starcrest Consulting Group for HARC (Wells and Baker, 2003). The data used for emission calculations will be based on the 2008 activity of ships and barges that will be obtained from the Port of Corpus Christi.

Project 2: Pleasure Craft Emissions

The Performing Party shall implement emissions inventory improvements for pleasure craft emissions for which improvement plans were developed in the FY 2010 work plan. The 2008 pleasure craft emissions will be calculated by executing the EPA developed NONROAD2008a model. The boat usage activity and population in each county will be determined based on data obtained from Texas Parks and Wildlife (TP&W) for each county during 2008.

Project 3: Aircraft Emissions (Commercial & General Aviation)

The Performing Party shall implement emissions inventory improvements for commercial aircraft and general aviation emissions for which improvement plans were developed in the FY 2010 work plan. The Federal Aviation Authority (FAA) approved Emissions and Dispersion Modeling Systems (EDMS) model version 5.1.2 will be used for estimating the emissions from this source category. The activity information on annual landing and take-off (LTO), annual hours of ground support equipment (GSE), and stationary sources will be obtained from the Corpus Christi International Airport (CCIA) for emissions estimation using the EDMS model.

Project 4: Other Major Non-Road Sources

The Performing Party shall implement emissions inventory improvements for other major non-road emissions for which improvement plans were developed in the FY 2010 work plan. The 2008 non-road emissions from construction equipments, agriculture equipments, industrial equipments and locomotives will be estimated by executing the EPA developed NONROAD2008a model. The inputs on equipment population and activity for NONROAD2008a model will be obtained from the Texas NONROAD (TexN) model default estimates.

The Performing Party will also obtain the actual population and activity for the non-road sources from agencies including Texas Department of Transportation, Port of Corpus Christi, City of Corpus Christi, and Naval Air Station in Corpus Christi. Any differences between the actual and default (TexN model) population and activity will be updated and reported to TCEQ. The emissions will be recalculated based on the updated population and activity data.

Deliverable: The Performing Party shall prepare a report documenting the emissions inventory improvement projects and providing the information necessary to update TCEQ modeling files. The report will describe the steps taken, any significant deviations from the previously developed plan, and any background the Performing Party feels is relevant to the project. The Performing Party shall provide the report in Microsoft Office Word and Adobe Acrobat Reader (*.pdf) formats. Any supporting data or information shall be provided in like format or in a format agreed to by the TCEQ and the Performing Party.

Deliverable Date: July 1, 2011

Cost: \$28,500.00

3.2 The Performing Party shall review the Point, Area, and Non-Road portions of the 2008 National Emissions Inventories provided for each area by the TCEQ.

The Performing Party shall identify additional significant source categories not identified in FY 2010 that it believes to be under or over estimated, accompanied by high levels of uncertainty, or where the Performing Party believes it can provide additional or more detailed emissions inventory input at a sub-county level of analysis.

Deliverable: The inventory review shall be delivered to the TCEQ in a Microsoft Office Word and Adobe Acrobat Reader (*.pdf) format. Any supporting data or information shall be provided in like format or in a format agreed to by the TCEQ and the Performing Party.

Deliverable Date: July 15, 2011

Cost: \$15,000.00

3.3 The Performing Party shall work with the TCEQ to insert improved local non-road emissions inventory data (from Task 3.1 of this Work Plan) in to the 2008 baseline and future year emissions inventories for the selected photochemical modeling episode. The Performing Party shall thoroughly document their efforts.

Deliverable: The Performing Party shall assist the TCEQ staff in preparing improved local emissions inventory information for entry photochemical modeling emissions inventories.

Deliverable Date: August 1, 2011

Cost: \$28,500.00

Guidance Documents:

1. Documentation for Aircraft, Commercial Marine Vessel, Locomotive, and Other Non-Road Components of the National Emissions Inventory, Vol. I, E.H. Pechan & Associates for EPA, EPA Contract No. 68-D-02-063, September 2005.
2. Documentation for the Final 2002 Nonpoint Sector (Feb 06 Version) National Emission Inventory for Criteria and Hazardous Air Pollutants, E.H. Pechan & Associates for EPA, EPA Contract No. 68-D-02-063, July 2006.
3. Non-Road Assessment Tool and Estimator (NATE) User's Guide, Eastern Research Group for TNRCC, Work Order #34730-17, August 2001.
4. 2008 National Emissions Inventory, Emissions Inventory System Implementation Plan, EPA, December 2008.

5. NONROAD Model, Modeling and Inventories, <http://www.epa.gov/oms/nonrdmdl.htm> , US EPA, accessed November 5, 2009.
6. EGAS Version 5.0, Technology Transfer Network Economics & Cost Analysis Support, <http://www.epa.gov/ttnecas1/egas5.htm> , US EPA, accessed November 5, 2009.
7. Written Amendments, and other documents amending, modifying or supplementing the Contract Documents pursuant to the General Conditions.

Task 4: Air Quality Modeling Planning for FY2011

During the Phase II period (September 1, 2010 through August 31, 2011), the TCEQ and the Performing Party will be engaged in several photochemical modeling activities designed to advance the Texas State Implementation Plan (SIP). The goal of these Phase II activities is to prepare both a working June 2006 base case ozone episode and a 2008 baseline scenario of this base case.

Some of the steps involved in reaching this goal may include, but are not limited to:

Primarily Responsibility of the TCEQ:

1. Completing performance evaluations of the Weather Research and Forecasting (WRF) meteorological modeling;
2. Producing meteorological modeling optimized for inland and coastal areas;
3. Developing and/or modifying 2006 meteorological and emissions inputs for an alternative modeling domain;

Primary Responsibility of the Performing Party with Oversight of the TCEQ:

4. Developing a photochemical modeling protocol appropriate for submittal as part of a Texas SIP revision based on a revised eight-hour ozone standard;
5. Improving and upgrading modeling emissions inventories for the 2008 baseline scenario of this ozone episode;
6. Investigating model performance of the 2006 base case ozone episode;

Primary Responsibility of the Performing Party:

7. Investigating possible sources of ozone transported into a particular nonattainment area along with the formation of ozone within the area based on precursor emissions;
8. Investigating model sensitivity to broad changes in precursor emissions using tools such as Anthropogenic Precursor Culpability Assessment (APCA), Ozone Source Apportionment Technology (OSAT), or High-order Decoupled Direct Method (HDDM); and

9. Evaluation of potential local voluntary or mandatory control strategies.

During Phase II, the TCEQ will continually work to develop the overall photochemical modeling episode and periodically deliver updates to the Performing Party via internet, FTP site, or disk drive (for large files) provided by the Performing Party. Steps 1-3 will be the primary responsibility of the TCEQ while steps 7-9 will be the primary responsibility of the Performing Party within available resources. Steps 4, 5, and 6 will be primarily a Performing Party responsibility with significant oversight by staff at the TCEQ.

The Performing Party is encouraged to perform appropriate modeling sensitivities which may include APCA runs, OSAT runs, HDDM runs, or source category sensitivities which may provide the Rider 8 areas and the TCEQ with preliminary information regarding the more efficient control strategies to pursue. The use of "zero out" runs whereby anthropogenic precursor emissions are eliminated over large geographic areas is discouraged.

There are several guidelines that the Performing Party shall adhere to.

First, in applying the photochemical model, the Performing Party may not analyze or model control strategies unless they meet the following criteria:

1. The geographic applicability is limited to the Performing Party's program area; and
2. The control strategy is either voluntary or can be implemented under a political subdivision's existing legal authority.

Second, because the TCEQ's staff resources are limited, the Performing Party should expect that technical assistance will be limited to answering specific questions from experienced users of EPS3, CAMx, WRF, LINUX operations systems, and LINUX systems management. Staff from the TCEQ will not be available to provide comprehensive assistance to inexperienced users of EPS3, CAMx, WRF, and LINUX. Third, distribution of multiple and/or large size modeling files to the Performing Party shall require a hard drive shipped and provided at the Performing Party's expense and formatted for Linux operating systems. Fourth, the TCEQ will not reimburse the Performing Party for any use of photochemical modeling episodes developed for periods prior to 2005.

Deliverable: The Performing Party shall document its photochemical modeling activities as part of its regular monthly progress report. The Performing Party shall include any important analyses and results from its inventory development and photochemical modeling work. The Performing Party shall provide the report in Microsoft Office Word and Adobe Acrobat Reader (*.pdf) formats. Any supporting data or information shall be provided upon request in like format or in a format agreed to by the TCEQ and the Performing Party. For emission inventory and/or modeling file improvements, the Performing

Party shall provide all "upstream" inputs in an appropriate electronic format so that suggested changes can be readily replicated and incorporated by the TCEQ staff.

Deliverable Date: August 31, 2011

Cost: \$79,000.00

Task 5: Planning and Outreach

- 5.1** The Performing Party, subcontracting with Texas A&M University, Pollution Prevention Partnership, shall establish stakeholder groups or committees that include local governments, businesses, citizens groups, and environmental groups. The purpose of these stakeholder groups shall be (to the extent the Performing Party determines appropriate) to foster community participation in local ozone reduction efforts, review technical work, serve as source of information of ideas in developing local ozone reduction efforts.

The Pollution Prevention Partnership will continue its work with advisory and stakeholder groups for the purpose of broad-based review, input and probable emissions reductions impact of local control efforts that seek to reduce ozone emissions. Key stakeholders have been and will continue to be identified and recruited to participate in Pollution Prevention Partnership groups that serve to identify, recommend and develop local control strategies that will be effective in reducing air pollution in the Corpus Christi airshed and strive for Corpus Christi to be recognized as "attainment" with the National Ambient Air Quality Standards (NAAQS) for ozone. Groups and committees will foster community participation in local air pollution reduction efforts, review technical work, participate in strategic planning, and be a source of information for ideas to develop local air pollution reduction program goals, objectives and deliverables.

The Pollution Prevention Partnership chairs and coordinates the Corpus Christi Air Quality Group. The Corpus Christi Air Quality Group is made up of a broad representation of the community including governmental officials, city staff, county staff, medical personnel, large and small business representation, large and small facility operators, military base representatives, TCEQ Region 14 and Small Business and Environmental Assistance Division (SBEA) representation, universities, TxDOT, Regional Transit Authority, and more. The Pollution Prevention Partnership recruits representatives to participate in the air quality group on an on-going basis. All Pollution Prevention Partnership activities are reviewed and discussed by the group including meaningful impact of proposed efforts, workplan development, program identification, development and delivery, partner development, message point and venue development, etc. The group provides input to the Pollution Prevention Partnership for program definition and delivery for the above described activities and also receives reports from

the Pollution Prevention Partnership regarding implementation status of each defined task. A copy of the contact list for the Corpus Christi Air Quality Group is attached (Attachment B To Work Plan).

In addition to the Corpus Christi Air Quality Group, the AutoCheck program also has an AutoCheck advisory Committee. This committee is made up of Port Industry representatives, City staff and TCEQ Region 14 and SBEA staff. Meetings are held on an as needed basis. Typical topics of meetings include resources for technical assistance for AutoCheck equipment, partner sites to host AutoCheck events, message points to promote events, proposed audiences for AutoCheck events, and communication tools to reach the suggested audience. A copy of the contact list for the AutoCheck Advisory Committee is attached (Attachment C To Work Plan).

The Pollution Prevention Partnership participates in monthly meetings of the Corpus Christi Chamber of Commerce Infrastructure Group. This group is made up of Port of Corpus Christi representatives, industry representatives, City staff, County staff, Chamber of Commerce representatives, TxDOT, TCEQ, and MPO representatives. Monthly meetings discuss regional infrastructure and transportation planning needs. Pollution Prevention Partnership participation in the meetings include air quality impact and air quality mitigation tools for each discussed transportation project or planned project. A copy of the contact list for the Chamber of Commerce Committee is attached (Attachment D To Work Plan).

The Pollution Prevention Partnership participates in monthly meetings of the City of Corpus Christi Bicycle and Pedestrian Transportation Advisory Committee. The group acts as an advisory to City staff including street maintenance, traffic engineering, city zoning, and planning to encourage and facilitate the use of alternate modes of transportation of bicycling and walking.

The Pollution Prevention Partnership makes presentations and seeks input each month to one or more community groups such as Rotary, Kiwanis, Corpus Christi Regional Economic Development Board, City of Corpus Christi City Council, Nueces County Commissioners, Corpus Christi Community Advisory Group, Long Term Health Group, elementary, middle and high school students, and more. Each presentation informs the audience about air quality status and trends, emission reduction recommendations, and access to emission reduction programs. The presentations also include input requests of the audience regarding understandability of information, do-ability of recommendations, and access to emission reduction tools.

Each advisory group will be notified of postings to the Pollution Prevention Partnership website of Pollution Prevention Partnership monthly activity reports.

Deliverable: A section of the monthly progress report to TCEQ that includes:

- List of meetings attended and stakeholders present
- Copies of meeting agendas
- Copies of presentations
- Overview of issues, plans and "next-steps" discussed at meetings and presentations
- Input received from group

Deliverable Date: The Performing Party shall document project activity on a monthly basis through the monthly progress reports required in Task 6 of this work plan. A final delivery of materials shall be provided no later than August 31, 2011.

Cost: \$10,000

5.2 The Performing Party shall maintain a public web site to facilitate public access to air quality information and the technical or outreach efforts undertaken by the Performing Party. The Performing party shall document traffic on its website by counting the number of times the web site is "hit" (viewed) each month.

Deliverable: The Performing Party shall produce and/or maintain a working web site open to the general public on the internet as well as information documenting web site traffic. The Pollution Prevention Partnership will provide for the public, a continuously maintained and updated website. The Pollution Prevention Partnership will design and develop the site, provide monthly maintenance, monthly posting and updating to the site, and monthly notifications to the community and advisory groups about website updates.

- A website located on the Texas A&M University Corpus Christi site of www.tamucc.edu
- Monthly design, activity tracker, updates and maintenance to site
- Daily posting to site of local ozone forecast

Website will contain:

- All monthly reports to TCEQ describing all monthly activities for all tasks
- Color copies of all printed brochures or advertisements, magazines or other publications loaded on site
- Copies of outreach/public awareness documents or presentations given to public, civic, or private organizations loaded on site;
- Information on Pollution Prevention Partnership programs and emission reduction recommendations for the general public loaded on site
- Information on AutoCheck events and participation opportunities loaded on site

Deliverable Date: Continuously with monthly web traffic updates

Cost: \$10,000

- 5.3** The Performing Party shall begin implementation of the Auto Check vehicle emissions reduction program. The AutoCheck implements emission reductions via outreach and public awareness, from a known source of ozone precursors in Corpus Christi - mobile sources. AutoCheck is a vehicle emissions sensing and reduction program that informs the community about the impact their vehicle has on air quality, informs motorists if their vehicles are polluting, and provides the tools and resources to reduce vehicle emissions.

Mobile source emissions from vehicles are a significant contributor to ozone precursors in Corpus Christi. In many cases, individuals do not know that their vehicles are polluting, and they perceive emission testing as onerous and inconvenient. AutoCheck eliminates these obstacles by providing the resources necessary to conveniently identify a motorist's emissions, inform them if their vehicle is polluting and assist them with repair services should their vehicle be identified as polluting. AutoCheck will be a continuous presence in the community through car care clinics, employer-employee events, health fairs, science fairs, community events and other public opportunities. Vehicle operators will be informed about the cost savings as well as the air quality impact associated with a well-maintained vehicle.

AutoCheck tests vehicle emissions for hydrocarbons, carbon monoxide, carbon dioxide, and nitrogen oxides. Emission testing is performed at various community events and all events are free and open to the public. As motorists enter an AutoCheck event, they receive information about the clean air benefit of a well maintained vehicle. Vehicles are screened for emissions via either a remote sensing system or tail-pipe probes. If a vehicle is initially tested as polluting, vehicle emissions are re-read, emission levels noted, and a voucher provided for emission causing diagnosis and repair. Polluting vehicles will be identified and serviced or repaired to "clean" standards by contracted garages utilizing LI mechanics. Once the vehicle is repaired, post repair emissions are documented and recorded onto the AutoCheck cumulative pre and post repair emissions database.

Deliverable:

- AutoCheck events as feasible based on repair expenses
- List of AutoCheck events, number of cars screened, number of passing vehicles and number of failing vehicles provided in monthly report
- Spread sheet reflecting pre and post repair emissions for each vehicle repaired provided in monthly report
- Itemized costs of repairs associated with each repaired vehicle provided in monthly report
- Cumulative emissions reductions per year provided in monthly report

Deliverable Date: The Performing Party shall document project activity on a monthly basis through the monthly progress reports required in Task 6 of this work plan. A final delivery of materials shall be provided no later than August 31, 2011.

Cost: \$155,000

5.4 The public outreach projects will implement programs that educate the community about air quality; including the impact individual choices have on air quality, recommendations for alternative choices that minimize air quality impact, and ozone action day messages. This task will be accomplished through a continuous community presence of the Pollution Prevention Partnership and its air quality messages via briefings of the media as well as coordination and participation in numerous interviews, community events, air quality curricula provided to area schools, presentations to community and civic groups, and other public presentation and outreach opportunities.

Deliverable:

- Table listing each task below, along with its associated quantity per year. This should show the number of tasks accomplished to date, and the number remaining per the work plan...
- 1 community-wide clean air event
- 6 formal media briefings about individual contributions to air quality and emission reduction strategies
- 1 meteorologist briefing about individual contributions to air quality and emission reduction strategies
- 6 business leader briefings about individual and business contributions to air quality and emission reduction strategies
- Clean Air curricula delivered to K-12 teachers
- 1 clean air science fair at area high school
- 6 presentations to local business and civic groups about individual contributions to air quality and emission reduction strategies
- A minimum of 6 television, and 6 newspaper stories about individual contributions to air quality
- Ozone action day messages on overhead highway signs for each called Ozone Action Day
- Ozone action day messages on television stations and newspaper for each called Ozone Action Day
- Copies of public presentations, audience presented to, number of people in audience and content of presentation provided in monthly report

Deliverable Date: The Performing Party shall document project activity on a monthly basis through the monthly progress reports required in Task 6 of this work plan. A final delivery of materials shall be provided no later than August 31, 2011.

Cost - \$25,000

Task 6: Administration Activities

The Performing Party shall perform all support necessary to ensure that all grant requirements are met and that the Work is completed in a timely manner with sufficient quality. This may include, but is not limited to providing general supervision for grant activities, administering sub-contracts, submitting reports and invoices, facilitating and/or attending meetings for stakeholder groups or other planning entities. The Performing Party shall summarize its activities in a monthly progress report described below.

Deliverable: The progress report and monthly invoices shall document, in sufficient technical detail and by task, the accomplishments, expenditures, and milestones achieved during the prior thirty (30) days in monthly progress reports. Specifically, the monthly progress report shall:

1. Summarize all activities performed by the Performing Party with respect to each task and subtask of this work plan for the previous month;
2. Establish performance goals for each task and subtask for the month in which the report is delivered;
3. Compare accomplishments on every task and subtask to performance goals established the previous month;
4. Summarize reasons why performance goals were not met; and
5. Provide a preliminary estimate of costs by task and subtask for the reporting period.

Deliverable Date: The Performing Party shall submit, via electronic mail, a monthly progress report of its activities no later than the 10th day of each month or the next business day if the 10th of the month falls on a weekend or holiday. Monthly invoices should be submitted to the TCEQ monthly or as soon as practical.

Cost: \$57,329.26

FY 2011 Summary of Deliverables

In the event of a conflict between the deliverables or due dates shown in this table and the deliverables or due dates described above, the deliverables and due dates in the table prevail, except that if a deliverable is described above but is not shown on this table, it shall nevertheless be due as described above.

Deliverable	Deliverable Date
Task 1: The Performing Party shall deliver an updated Conceptual Model containing analysis of monitoring and other data through 2010.	June 15, 2011
Task 2.1: Ambient monitoring data collected at monitoring sites described in the Fiscal Year (FY) 2010 work plan delivered to TCEQ's LEADS.	Continuously between effective date and November 1, 2010 and April 15, 2011, and August 31, 2011 contingent on funding availability, or as soon as practical.
Task 2.2: New monitoring equipment deployed at the TCEQ's direction in time to monitor ozone, ozone precursors, or meteorology on a continuous basis for the 2011 ozone season.	April 1, 2011 through August 31, 2011
Task 2.X:	
Task 3.1: The Performing Party shall prepare a report documenting the emissions inventory improvement projects and providing the information necessary to update TCEQ modeling files.	July 1, 2011
Task 3.2: The second inventory review shall be delivered to the TCEQ in a Microsoft Office Word and Adobe Acrobat Reader (*.pdf) format. Any supporting data or information shall be provided in like format or in a format agreed to by the TCEQ and the Performing Party.	July 15, 2011
Task 3.3: The Performing Party shall assist the TCEQ staff in preparing improved local emissions inventory information for entry photochemical modeling emissions inventories.	August 1, 2011

Deliverable	Deliverable Date
<p>Task 4: The Performing Party shall document its photochemical modeling activities as part of its regular monthly progress report. The Performing Party shall include any important analyses and results from its inventory development and photochemical modeling work. The Performing Party shall provide the report in Microsoft Office Word and Adobe Acrobat Reader (*.pdf) formats. Any supporting data or information shall be provided upon request in like format or in a format agreed to by the TCEQ and the Performing Party. For emission inventory and/or modeling file improvements, the Performing Party shall provide all "upstream" inputs in an appropriate electronic format so that suggested changes can be readily replicated and incorporated by the TCEQ staff.</p>	<p>August 31, 2011</p>
<p>Task 5.1: The Performing Party shall document its activities (including how many stakeholders attend meetings) and meetings with meeting summaries and in the monthly progress reports.</p>	<p>Monthly</p>
<p>Task 5.2: The Performing Party shall produce and/or maintain a working web site open to the general public on the internet as well as information documenting web site traffic.</p>	<p>Continuously. Documentation of web site traffic shall be entered into the Performing Party's monthly progress report.</p>
<p>Task 5.3: The Performing Party shall begin implementation of outreach or public awareness projects</p>	<p>Monthly events and reports</p> <p>Regularly planned activities and monthly reports</p>
<p>Task 5.4: The Performing Party shall begin implementation of outreach or public awareness projects</p>	

Deliverable	Deliverable Date
<p>Task 6: The progress report and monthly invoices shall document, in sufficient technical detail and by task, the accomplishments, expenditures, and milestones achieved during the prior thirty (30) days in monthly progress reports.</p>	<p>The Performing Party shall submit, via electronic mail, a monthly progress report of its activities no later than the 10th day of each month or the next business day if the 10th of the month falls on a weekend or holiday. Monthly invoices should be submitted to the TCEQ monthly or as soon as practical.</p>
<p>Annual Cost Allocation Plan Documentation Section 12.8.1</p>	<p>The Performing Party shall annually provide to the TCEQ, copies of its current cost allocation plans for indirect, allocated central service, and billed central service costs within thirty (30) days of that plan being approved by its cognizant agency or state coordinating agency.</p>
<p>Section 12.8.2: <i>Indirect and Allocated Central Service Costs Recovery Report for the Year Ending August 31</i></p>	<p>October 31 of each year the grant is in force.</p>

Attachment A To Work Plan
Task 2.2 Enhanced Monitoring Proposal
University of North Texas, Denton and Texas A&M University – Kingsville
Through the City of Corpus Christi
Date: 06/24/2010

Overview

Texas A&M University – Kingsville (TAMUK) has been an active participant in air quality assessment and planning activities in close partnership with the city of Corpus Christi and Texas Commission on Environmental Quality (TCEQ). In addition to the two compliance grade monitoring stations TAMUK operates six additional research grade monitoring sites within Nueces, San Patricio and Aransas Pass counties. Along with ambient monitoring TAMUK has been actively involved in development of emissions inventory, photochemical modeling of ozone episodes and evaluation of emission reductions obtained by the voluntary control measures of the O3 Flex agreement.

Existing Monitoring Network

TAMUK has setup three additional research grade monitoring sites as an integral part of Rider 13 (2001 – 2002). These include (1) an upwind site at the waste water treatment plant in Aransas Pass (CAMS 659), (2) a downwind site located at Violet road, near Robstown (CAMS 664), and (3) an urban site at the municipal water pumping station on Holly Road (CAMS 660), south of South Padre Island Drive (SPID). For better assessment of air quality in San Patricio county and regional transport of air pollution and spatial trends, three additional research grade monitoring stations were setup by TAMUK as a part of the Supplemental Environmental Project (SEP). These include: (1) Ingleside site (CAMS 685) - located at water pumping station on highway 361 in between Sherwin Alumina plant and DuPont/Oxychemical PVC production plant, Ingleside, (2) Odem site (CAMS 686) - located in the water pumping station of San Patricio county, operated by San Patricio municipal water district in rural location NW of Corpus Christi, (3) Taft site (CAMS 687) - located at water pumping station in San Patricio county operated by San Patricio municipal water district. The geographical location of the monitoring sites is shown in Figure 1. Each of these sites is equipped with ozone analyzer, weather sensors for continuous measurement of ozone concentrations and meteorological parameters. The five minute averages thus measured are transferred and made available on TCEQ's website using the Leading Environmental Analysis and Display System (LEADS). Detailed information including the location and equipment setup at each monitoring site are shown below in Table 1.

Additional monitoring of ozone precursors including oxides of nitrogen (NOx) was conducted at CAMS 660 and CAMS 685 during the ozone season (April through October). The data is downloaded every month and the analysis conducted is provided as a part of monthly reports.

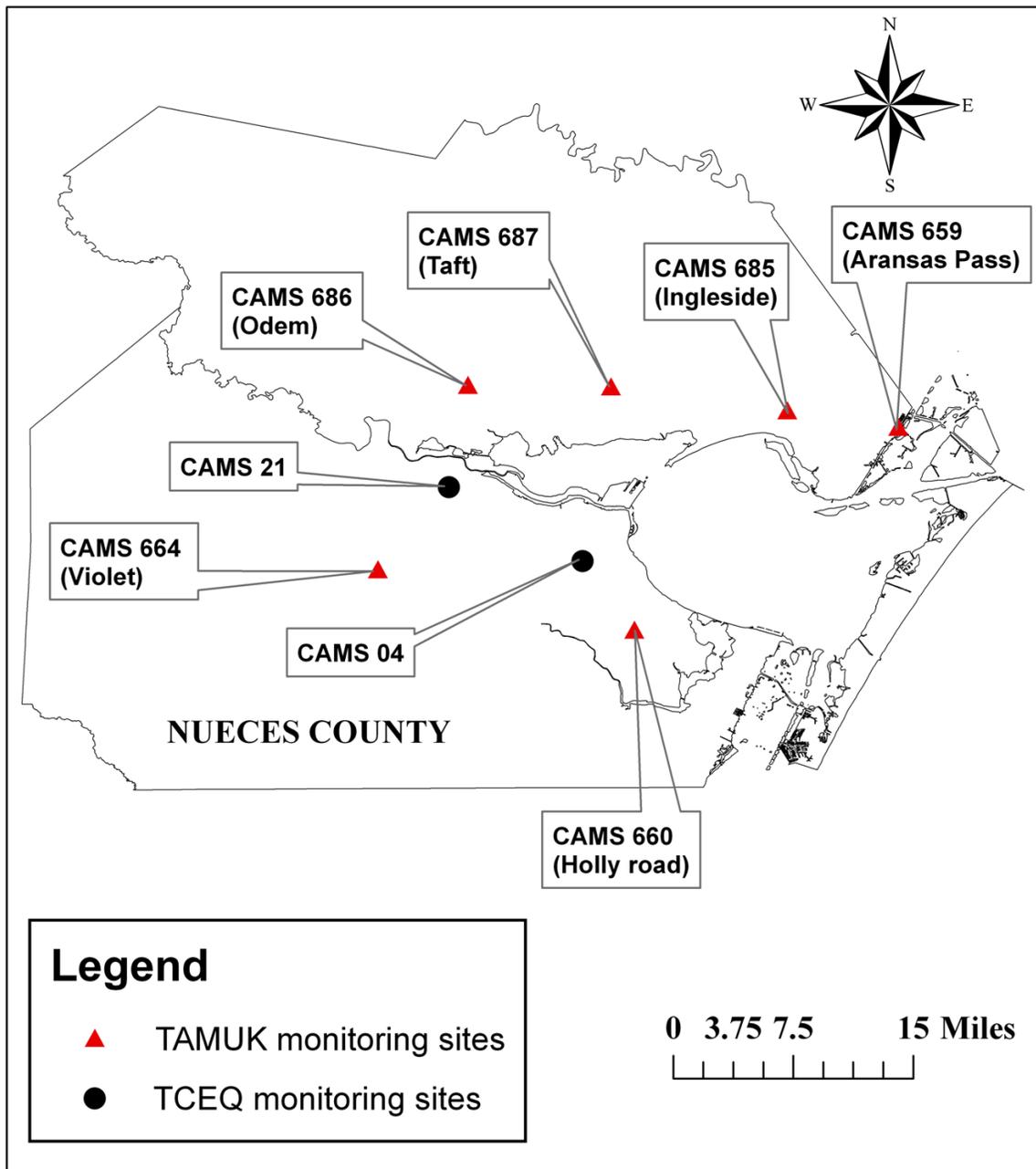


Figure 2. Map showing the location of existing monitoring sites in the Corpus Christi urban airshed.

Table 1: Ambient monitoring sites operated under RIDER 8 (FY08-09) by the Grant Recipient.

LOCATION (ADDRESS)	EQUIPMENT (INSTRUMENTS)	STATUS
Holly Road site (CAMS 660) - Water pumping station operated by the City of Corpus Christi located in the growing suburbs of the south side of the City.	Teledyne API 400E ozone analyzer, F460 wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 data logger, and Enfora wireless modem. Thermo 42C/Ecotech 9841 NOx analyzer	Ongoing
Aransas Pass site (CAMS 659) - Wastewater treatment plant operated by City of Aransas Pass and in cooperation with the San Patricio Water District. A coastal location to the NE of Corpus Christi.	Teledyne API 400E ozone analyzer, RM young wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem.	Ongoing
Violet site (CAMS 664) - Pumping station located west of Corpus Christi. Rural location surrounded by open field for several miles.	Teledyne API 400E ozone analyzer, RM young wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem.	Ongoing
Odem site (CAMS 686) - Pumping station operated by San Patricio Water District. Rural location NW of Corpus Christi.	Teledyne API 400E ozone analyzer, F460 wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem.	Ongoing
Ingleside site (CAMS 685) -Pumping station located in between Portland and Aransas Pass off Hwy 361. In between Sherwin Alumina plant and DuPont/Oxychem production facilities.	Teledyne API 400E ozone analyzer, RM young wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem. Thermo 42C/Ecotech 9841 NOx analyzer	Ongoing
Taft site (CAMS 687) - Pumping station operated by San Patricio Water District. North of	Teledyne API 400E ozone analyzer, RM young wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH)	Ongoing

Corpus Christi.	sensor, Zeno 3200 datalogger, and Enfora wireless modem.	
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Data analysis was performed using the eight hour ozone concentrations measured during 2008 and 2009 at the six research grade monitoring sites to study the spatial variations in the ozone concentrations. Trend analysis performed using the ozone concentrations measured at Aransas Pass (CAMS 659), Ingleside (CAMS 685), Odem (CAMS 686) and Taft (CAMS 687) showed concentrations with minimal variations between the monitors. Thus, additional analysis was performed to identify the correlation coefficient between the eight hour ozone concentrations measured at Aransas Pass (CAMS 659) and Ingleside (CAMS 685), Odem (CAMS 686) and Taft (CAMS 687). The results of the correlation analysis are shown using scatter plots in Figures 3 and 4. As seen in Figure 3 the correlation coefficient between CAMS 659 and CAMS 685 was 0.94 indicating strong correlation or duplication of ozone concentrations within the region. Figure 4 shows a similar level of correlation ($\rho^2 = 0.90$) between the ozone concentrations measured at CAMS 686 and CAMS 687 indicating a duplication of information at these sites. Thus, the ozone concentrations measured at CAMS 685 and CAMS 687 were considered redundant.

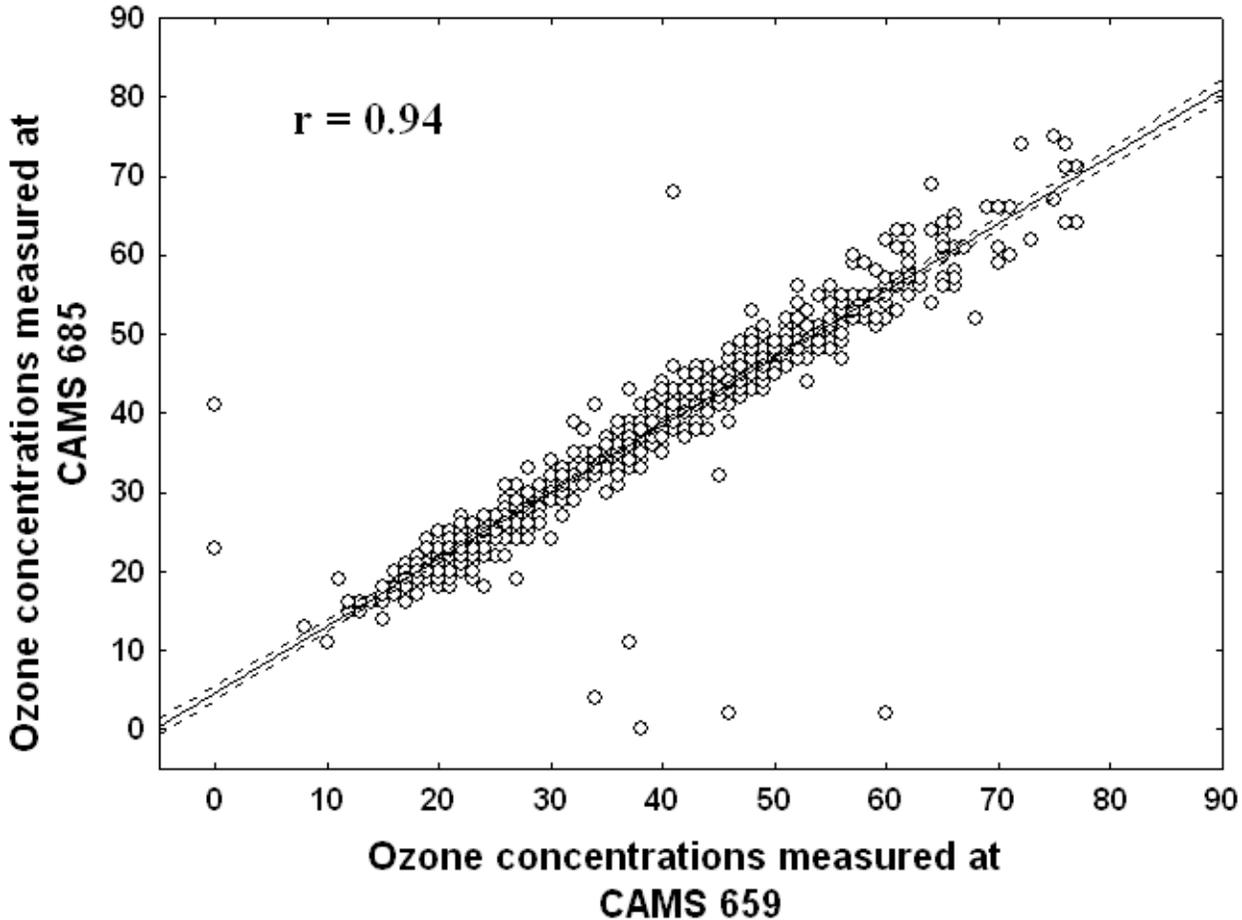


Figure 3. Scatter plot of eight hour ozone concentrations measured at Aransas Pass (CAMS 659) and Ingleside (CAMS 685).

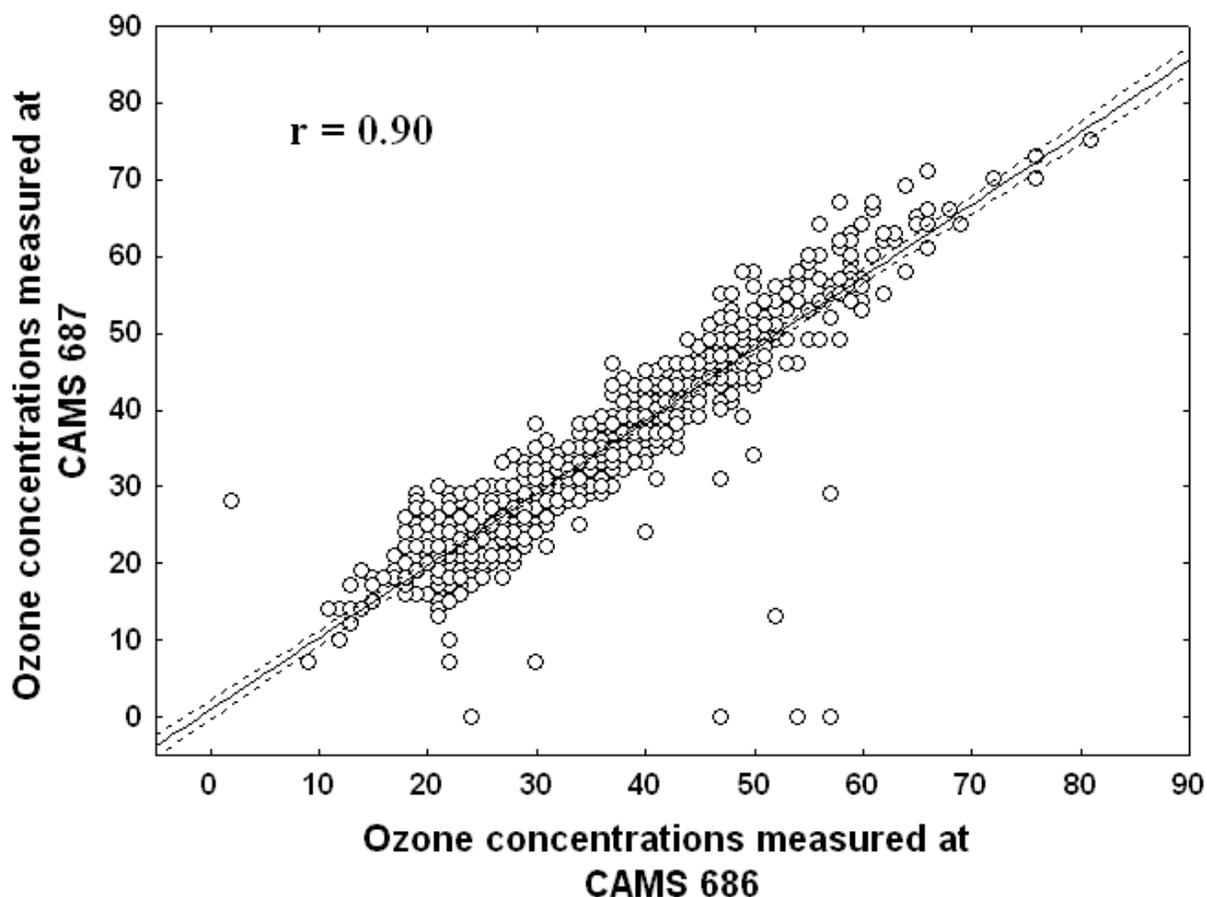


Figure 4. Scatter plot of eight hour ozone concentrations measured at Odem (CAMS 686) and Taft (CAMS 687).

Ambient monitoring proposal for 2011

A strong correlation was observed in the ozone concentrations measured at (a) CAMS 659 and CAMS 685, (b) CAMS 686 and CAMS 687 indicating duplication of data. The Aransas Pass (CAMS 659) monitoring site is located upwind of Nueces County and thus is a good representative upwind monitoring site for the measurement of transported ozone levels associated with northerly and northeasterly winds. Both the compliance grade monitoring stations maintained by TCEQ and research grade monitoring sites including CAMS 660 and CAMS 664 are located in Nueces County. Hence the monitoring site in Odem (CAMS 686) would be a good representative rural downwind site for the measurement of ozone levels in San Patricio county and it would serve as a downwind site to evaluate the impact of Corpus Christi urban and industrial emissions under typical southeasterly winds (the dominant wind direction in this region). Thus under RIDER 8_ FY2011, monitoring sites located at Ingleside (CAMS 685) and Taft (CAMS 687) will be decommissioned effective October 15, 2010. The geographical location of the monitoring sites proposed for 2011 are shown in Figure 5 and the detailed

information on their location, equipment used, anticipated start and end dates are shown in Table 2.

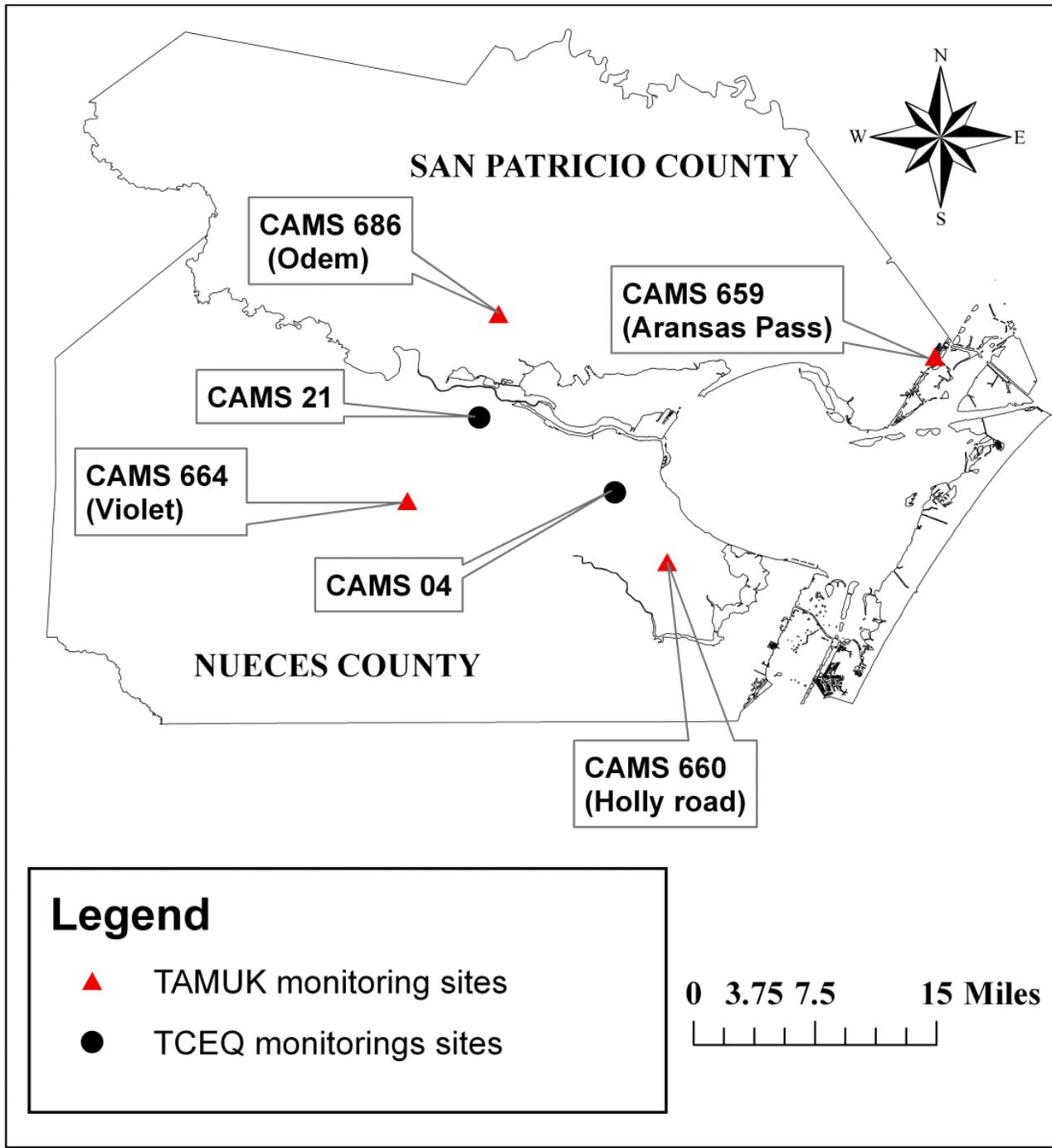


Figure 5. Proposed monitoring sites in the Corpus Christi Urban Airshed for Fiscal Year 2011.

Table 2. Ambient Monitoring Sites to be Operated under RIDER 8_FY2011 by the Grant Recipient.

LOCATION (ADDRESS)	EQUIPMENT (INSTRUMENTS)	START DATE	END DATE
Holly Road site (CAMS 660) - Water pumping station operated by the City of Corpus Christi located in the growing suburbs of the south side of the City.	Teledyne API 400E ozone analyzer, F460 wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem.	September 1, 2010	November 1, 2010
		April 1, 2011	August 31, 2011
Aransas Pass site (CAMS 659) - Wastewater treatment plant operated by City of Aransas Pass and in cooperation with the San Patricio Water District. A coastal location to the NE of Corpus Christi.	Teledyne API 400E ozone analyzer, RM young wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem.	September 1, 2010	November 1, 2010
		April 1, 2011	August 31, 2011
Violet site (CAMS 664) - Pumping station located west of Corpus Christi. Rural location surrounded by open field for several miles.	Teledyne API 400E ozone analyzer, RM young wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora wireless modem.	September 1, 2010	November 1, 2010
		April 1, 2011	August 31, 2011
Odem site (CAMS 686) - Pumping station operated by San Patricio Water District. Rural location NW of Corpus Christi.	Teledyne API 400E ozone analyzer, F460 wind sensors, Coastal environmental Atmospheric Temperature/Relative Humidity (AT/RH) sensor, Zeno 3200 datalogger, and Enfora	September 1, 2010	November 1, 2010
		April 1, 2011	August 31, 2011

	wireless modem.		
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Corpus Christi Air Quality Committee

Revised 8/12/08, 12:45 PM (RKG)					
<u>Last Name</u>	<u>First Name</u>	<u>Phone Number</u>	<u>Fax Number</u>	<u>E-Mail Address</u>	<u>Affiliation</u>
Allen	Ray	885-6202	883-7801	rallen@cbdep.org	CBDEP
Allen	Bob	813-4451	993-6986	jboballen@sbqglobal.net	Consultant
Almaraz	Joe			joelmaraz@valero.com	Valero
Andrade	Nicholas	939-5015	939-5080	nandrade@topazpowergroup.com	Topaz Power Group
Arnold	Gretchen	825-3070	825-2384	gretchen.arnold@tamucc.edu	Texas A&M-Corpus Christi
Ashley	Steven	808-2376	808-2374	Stevensson@pocca.com	Port of Corpus Christi, Transportation Mgr.
Babin	A. Fred	885-6171		fred@pocca.com	Port of Corpus Christi, Transportation Mgr.
Baggett	Aron	776-6395	776-6240	aron_baggett@oxy.com	Oxychem Ingleside
Bigelow	Eric	844-5344		ebigelow@citgo.com	
Ballou	Tom	777-2352	777-2684	tballou@shenwinalumina.com	Sherwin Alumina
Barker	Jene	808-2379	808-2407	jbarker@dot.state.tx.us	TxDOT
Barnard	Cathy	584-8524	584-2157	cbbarnard@ddcpmidstream.com	DCP Midstream
Barnard	Ron	826-4063	561-1504	rvcrew@aol.com	City of Corpus Christi
Beemar	Jean	512-416-3171	512-416-2319	jbeemar0@dot.state.tx.us	TxDot Environmental Affairs Div.
Bennett	Barry	289-4928	289-4907	Barry.Bennett@valero.com	Valero
Bentley	Ben	775-4382	775-4433	ben.bentley@kos.kiewit.com	Kiewit Offshore Services, Ltd.
Bezdek	Greg	289-4903	289-4977	gbezdek@markwest.com	MarkWest Javelina
Billiot	Eugene	825-2680		ebilliot@falcon.tamucc.edu	TAMUCC
Blanchard	Patrick	713-830-8717		patrickb@calpine.com	Calpine
Biaschke	Bob	776-6720	776-6660	robert.e.biaschke@usa.dupont.com	Dupont
Bowman	James	885-6202		jamesbo@cctexas.com	City of Corpus Christi
Brown	Dr. Ron		881-5161	Rbrown@even.tamuk.edu	TAMUK
Brubeck	Greg	885-6138		greg@pocca.com	Port of Corpus Christi Authority
Brunson	Leigh Ann		883-5749	LBRUNSON@tcea.state.tx.us	TCEQ
Bullcock	Richard	883-5743	814-2080	richard@CBCOC98.org	CBCOG
Bushell	Gary	814-2008	242-8743	gebushell@aol.com	Consultant
Buxkamper	Tammy	242-8597		tammy.buxkamper@ftr.com	Flint Hills Resources
Chapa	Able	888-0820		abel.chapa@co.nueces.tx.us	Nueces County
Cain	Mike	242-8270	242-8051	john.cain@equistarchem.com	Lyondell
Callhoun	Dennis	844-4810	844-4853	Dcalhou@citgo.com	Citgo Refining & Chemicals, LP
Carangelo	Paul	885-6037		paul@pocca.com	Port of Corpus Christi Authority
Cardenas	Charlie	826-3552		CharlieC@cctexas.com	City Traffic Engineering
Castro	Bob	361-455-1256		bcastro@even.tamuk.edu	TAMUK
Cheeseman	Mark			mcheeseman@citgo.com	Citgo
Clark	Craig			cclark3@dot.state.tx.us	TCEQ
Clewis	Susan	825-3100		sclewis@tcea.state.tx.us	Chamber of Commerce
Coker	Ralph	949-1056		RCOKER1@stx.r.com	Air Liquide Large Industries US, LP
Collins	Travis	289-7180	289-7169	travis.collins@airliquide.com	OxyChem
Crawford	David	776-6310	776-6208	David_A_Crawford@oxy.com	
Cuevas	Mari			MarM@cctexas.com	

Corpus Christi Air Quality Committee

<u>Last Name</u>	<u>First Name</u>	<u>Phone Number</u>	<u>Fax Number</u>	<u>E-Mail Address</u>	<u>Affiliation</u>
Croston	Cheryl	825-2551		safe_communities@tamucc.edu	
Cushing	Eliza	961-6926	862-7110	eliza.cushing@us.army.mil	CCAD
Curlee	Tom	885-6206	289-1351	tcurllee@pocca.com	Port Industries
De Castro	Rafael	289-6762 x1328		rcastro@trigeant.com	Trigeant, Ltd.
Desai	Depak	888-0386		dipak.desai@co.nueces.tx.us	Nueces County
Dear	David	844-5711	844-4350	ddear@citgo.com	Citgo
Duda	Bradford	361 584-6966	361 584-6168	brad.duda@bishophfacility.com	Cleanse (Ticona Polymers, Inc.)
Duhart	Gwen	643-1460		GWEN4791@hotmail.com	San Patricio County
Eddins	Gary	939-5014	939-5080	geddins@topazpowergroup.com	Topaz Power Group
Eiland	Ed	825-2197	825-2384	Edward.Eiland@tamucc.edu	TAMUCC
Evans	Mark	776-6169	776-6150	Mark_Evans@Oxy.com	OxyChem
Faughn	Ken	387-3933	387-7280	radc@gte.net	Robstown Area Econ. Dev. Comm.
Fels	Howard	815-3357	939-5080	hfels@aol.com	Topaz Power Group
Foster	Brian	512-239-1930	512-239-1500	BRFOSTER@TCEQ.STATE.TX.US	TCEQ-Austin
Gara	Rudy			rudygara@ccetexas.com	
Garcia	Diane	289-2712	289-3057	dgarcia@ccrta.org	RTA
Garcia	Jessie			Jgarcia@citgo.com	Citgo
Garza	Frances			fgarza@dot.state.tx.us	TxDOT
Gonzalez	Brigida	884-0687		brigidagonzalez@swbell.net	MPO
Garza	Sarah	885-6163	881-5163	sarah@pocca.com	Port of Corpus Christi Authority
Gustafson	Polly	961-6928		polly.gustafson@us.army.mil	CCAD
Gibbs	Fred	852-2200		frederick.gibbs@holfcat.com	Holt Cat
Harbison	Lee	776-4542	776-4297	lee.harbison@navy.mil	Naval Station Ingleside
Hawley	Judy			jhawley@aacisd.com	
Helfrich	Paul	776-4242		Paul.Helfrich@navy.mil	Naval Station Ingleside
Hennings	Bill	853-5875	855-6244	hennings@stx.r.com	Consultant
Higgins	Laura	979-845-8109	979-845-7575	Lhiggins@tamucc.edu	Texas Transportation Institute
Hutton	Nancy	881-5475	881-5837	nmhutton@aep.com	Environmental Services, CPL
John	Kuruville	593-2096	593-2290	kuruville.john@unt.edu	Texas A&M University - Kingsville
Johnson	Mike			mjohnson@nueces.esc2.net	Nueces County
Johnson	Colleen	880-7737	886-1462	colleen.johnson@elementis-na.com	Elementis Chromium, LP
Jonas	Darrell	776-2508 x22	776-2669	darrell.jonas@airliquide.com	Air Liquide America Corporation
Kennebeck	David		3111	dkennebeck@tceq.state.tx.us	TCEQ
Kamae	Saritha	361-228-3884	593-2069	kask000@tamuk.edu	TAMUK
Keel	Kelly	512-239-3607	512-239-4808	kkeel@tceq.state.tx.us	TCEQ-Austin
Kiggins	Jon	289-3321	289-3126	Jon.KIGGANS@valero.com	Valero
Lewis	Sharon	826-4006		sharonl@ccetexas.com	City of Corpus Christi
LaRue	John	885-6189	882-7110	john@pocca.com	Port of Corpus Christi Authority, Exec. Director
Lopez	Elaine	242-8251	242-8051	elaine.lopez@equistarchem.com	Basell Industries
Maldonado	Michael	776-6160	776-6240	michael_maldonado@oxy.com	OxyChem

Corpus Christi Air Quality Committee

<u>Last Name</u>	<u>First Name</u>	<u>Phone Number</u>	<u>Fax Number</u>	<u>E-Mail Address</u>	<u>Affiliation</u>
Marek	Don	593-4802	593-2069	Dmarek@even.tamuk.edu	TAMUK
Martinez	Al	593-3074	593-2069	amartinez@invkn00.tamuk.edu	TAMUK
McDaniel	Tim	776-6600	776-6660	Timothy_McDaniel@usa.dupont.com	Dupont
Meurer	Claire	289-8406	289-3126	claire.meurer@valero.com	Valero
Montez	Sharon	289-2712 (438)	289-2652	smontez@ccrta.org	CC RTA
Milan	Denise			mland@caller.com	Corpus Christi Caller Times
Motes				jmotes@ccad.army.mil	CCAD
Mouttet	Annette	888-0490		annette.mouttet@co.nueces.tx.us	Nueces County
Mower	Rowland			rcmower@coredc.com	C.C. Region Economic Dev. Corp.
Murphy	Shannon			shannonm@ctexas.com	
Nardini	Fred			fnardini@charterinternet.com	San Patricio County
Needham	Jim	825-2708	825-2384	jneedham@tamucc.edu	Texas A&M University - C. C.
Nelson	Dale			dnelson@kristv.com	KRIS TV
Niskala	Tom	884-0687	884-8529	tomniskala@swbell.net	MPO
Olivarez	Ana	241-3607		oliv58ago@aol.com	LEPC Volunteer
Olivarri	Leah			leah@olivarri.com	
Olivo	Nelda	885-6113		nelda@pocca.com	
O'Neil	Wes	903-1103	903-1105	john.oneill@magellanlp.com	Port of Corpus Christi, Dir. Government Affairs
Patrick	Pat	713-805-8455	713-690-9490	ppatrick@aces-llc.com	Magellan LP
Patrick	Andy	299-1353		Andy.Patrick@noaa.gov	ACES
Payne	Bob			bobp@ccctexas.com	National Weather Service
Payne	Dennis	289-3375	289-3533	dennis.payne@valero.com	City of Corpus Christi
Perla	Eliza	884-0687	884-8529	elizapena@swbell.net	Valero
Perez	Mary	808-2300	808-2375	mperez@dot.state.tx.us	CCMPO
Perez	Dana	880-7739		dana.perez@elementis-na.com	TxDot
Philips	Gary	844-5726	844-5108	gphilli@citgo.com	Elementis Chromium, LP
Ragsdale	Kenny	880-7779	880-7741	Kenny.Ragsdale@elementis-na.com	Citgo
Ramirez	David	593-2096	593-2069	dramirez@eng.tamuk.edu	Elementis Chromium, LP
Ransom	Carol			CRANSOM@tceq.state.tx.us	TAMUK
Renz	Ron	289-3375	289-1351	rrenz@trigeant.com	TCEQ
Rice	Ronn	547-2274			Trigeant, Ltd.
Richard	Daquiri			drichard@beautifycc.org	RJR BioEnergy, Inc.
Riojas	Lillian			Lillian.Riojas@valero.com	
Roberts	Bill	888-0513	888-0584	bill.roberts@co.nueces.tx.us	Lyondell
Russell	Ron	361-758-5311		ron.russell@degussa.com	Nueces County
Russell	Thomas	777-2326	777-2666	trussell@shervinalumina.com	Degussa
Salazar	Gina	808-2262	808-2407	gsalaza@dot.state.tx.us	Sherwin Alumina
Shaw	Dilip	961-2170		dilip.shaw@navy.mil	TxDOT
Sides	Mike			msides@citgo.com	NAS Corpus Christi
Sullivan	Glen	888-0490	888-0485	glen.sullivan@co.nueces.tx.us	Citgo

Corpus Christi Air Quality Committee

<u>Last Name</u>	<u>First Name</u>	<u>Phone Number</u>	<u>Fax Number</u>	<u>E-Mail Address</u>	<u>Affiliation</u>
Sumner	Peggy	826-1868		peggys@cctexas.com	
Sutton	Ray			wsutton@dot.state.tx.us	TxDOT
Swierc	Glenda	825-3421	825-3437	gswierc@tceq.state.tx.us	TCEQ Small Business Assist.
TenNapel	Roger	242-5336	242-8676	Roger.TenNapel@fhr.com	Flint Hills Resources
Terry	Buster	549-8023		wkterry@ccisd.us	CCISD
colpitt	stacy	903-1103	903-1105	Stacy.Colpitt@magellanlp.com	Magellan LP
Taylor	Curtis			Curtis.Taylor@fhr.com	FHR
Taylor	Bruce	694-5445		bruce.taylor@dchstx.org	
Torres	Rosario	825-3119	825-3101	rotorres@tceq.state.tx.us	TCEQ
Trebatoski	Bob			Robert.Trebatoski@Equistar.com	Equistar Chemicals
Trevino	Leo	885-6244	883-7801	lirevino@cbbep.org	CBBEP
Trevino	Eddie	852-4986		eduar463@aol.com	AARC/TSRC
Turner	Jeff	852-2266	851-9514	jturner@susser.com	APT Environmental
Tuttle	Rich	242-8572		rich.tuttle@fhr.com	Flint Hills Resources
White	Rich	584-6231	584-6208	rich.white@celanese.com	Celanese
Williams	Anne	851-4041		awilliams.sea@gmail.com	
Ybarra	Ross			ross.ybarra@navy.mil	
Zhu	Yifang	593-3898		yzhu@even.tamuk.edu	TAMUK

Attachment C To Work Plan
AutoCheck Advisory Committee

Name	Affiliation
Bill Hennings	Past Chair – Corpus Christi Air Quality Group
James Needham	Dean, Community Outreach
Sarah Garza	Port of Corpus Christi - Environmental
Roger Tennapple	Flint Hills Resources
Jesse Garcia	Citgo Refining
David Kennebeck	TCEQ
Peggy Sumner	City of Corpus Christi

Attachment D To Work Plan

Chamber of Commerce Infrastructure Group

Name	Affiliation
Ralph Coker	Chamber of Commerce
Tom Curlee	Port Industries of Corpus Christi
Tom Niskala	MPO
Russel Lenz	TxDOT
Judy Hawley	Port of Corpus Christi
Terry Simpson	San Patricio County Judge
Loyd Neal	Nueces County Judge
Glenn Sullivan	Nueces County Engineering
Peggy Sumner	City of Corpus Christi
Gretchen Arnold	Pollution Prevention Partnership
Terry Arnold	Mayflower Transfer
Leah Olivarri	Transportation Planning
John Michael	Engineering/Transportation Planning
Rudy Garza	City of Corpus Christi
Nelda Martinez	Corpus Christi City Council member
Joe Adame	Mayor, City of Corpus Christi
Glenda Swierc	TCEQ Region 14
Foster Edwards	Chamber of Commerce