

Implementation of the North Texas Regional Environmental Management System Partnership

Project Description and Case Study

Prepared by the University of Texas-Arlington
Center for Environmental Excellence

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Executive Summary

This project summary and case study documents the process of forming and the results of a regional partnership to promote Environmental Management Systems (EMS) in North Texas. The study includes specific discussions of methods for promoting a partnership among multiple state, local, federal and private entities. It also includes resources that can be used in the development of an EMS partnership program. The purpose of the case study is to help promote regional EMS partnerships. It is intended to serve as a “how-to kit” based on practical experiences from participating organizations.

PROJECT DESCRIPTION

The Texas Commission on Environmental Quality (TCEQ), working under a cooperative agreement with the U.S. Environmental Protection Agency (EPA), helped form a partnership to promote the use of environmental management systems (EMS) to address regional environmental issues in North Texas. The regional partnership approach was based on the Virginia Regional Environmental Management System (VREMS) model. More information on this program is available at: <http://www.vrems.org/> The North Texas Regional Environmental Management Partnership (NTREMS) was formed to:

- identify high priority environmental issues in the region,
- develop projects to reduce environmental impacts, and
- document environmental impacts and benefits.

The partnership seeks to improve environmental quality through the implementation of performance-based Environmental Management Systems (EMS). Some members to date have so far documented the following outcomes:

- conserved 68,242,829 BTU of energy
- reduced fuel usage by 9,095 gallons
 - savings from fuel reductions are estimated to be greater than \$27,000¹
- Conserved 278,900,000 gallons of water

Most of the partnership participants are located in the Dallas-Fort Worth Metropolitan Statistical Area. The Texas Commission on Environmental Quality's (TCEQ) Small Business and Environmental Assistance Division (SBEA) coordinated the efforts under a two-year pollution prevention cooperative agreement awarded by the Environmental Protection Agency (EPA), Region 6 for the period September 1, 2007 through August 31, 2009.

Participants in the initial partnership included recruits from twelve local governments participating in a coached EMS training project for local governments. The TCEQ and EPA recruited additional participants from the membership of existing state and federal voluntary environmental leadership programs in the region. Additional partners represented local, county, state, regional governments, and federal agencies; non-government organizations, and the private sector businesses and industry. The TCEQ conducted coached EMS training with the assistance of an EMS training contractor. The initial trainings consisted of obtaining buy-in of executive level managers by providing basic EMS information with a focus on the benefits of implementation. As the project progressed, the training focus shifted towards detailed assessments of environmental issues and solutions. In addition, local government representatives began to assume leadership roles. As the partners began to improve environmental performance,

¹ Based on a conservative fuel cost of \$3.00/gallon

document benefits, and increase communication the number of participants in the partnership began to increase. There are now over 100 participants in the partnership representing government, consultants, industry/manufacturing, and . The partnership was able to secure funding through EPA Region 6 to help establish the NTREMS Website (www.ntrems.org). The website is an important result of the project. It continues to provide members a platform to communicate, to post events, meeting announcements and agendas; to report measurable results, and to post helpful resources. Organizations from other regions have also participated in the partnership. Some of these organizations have plans underway to form a regional EMS partnership in other areas in Texas

The following case study content is based on information collected during interviews with partners in the program at the federal, state and local level.

A. Coached EMS Process

At the heart of the NTREMS success story is the coached EMS process. This process was developed over time by the partnership under the leadership of TCEQ's Clean Texas voluntary environmental leadership program. Clean Texas members at the Silver, Gold, and Platinum are required to have an approved EMS. The regional partnership was part of a strategy for TCEQ to increase membership in Clean Texas. To help facilitate the success of the project, the TCEQ contracted with Culture Technologies, Inc. to provide training sessions and technical assistance to local governments and other entities to develop and implement EMSs through the end of August 2008. The TCEQ contracted with the University of Texas at Arlington to provide assistance to the NTREMS participants to help measure and document successes and benefits of their EMS from September 1, 2008 through August 31, 2009.

B. Performance-Based EMS

The project promoted the use performance-based Environmental Management Systems. EMS's are documented systems for addressing an organization's environmental issues. EMS's are frequently implemented following the model of the International Standards Organization (ISO) 14001. However, one criticism to developing and implementing these systems is that they tend to add extra paperwork and cost to the system.

Performance-based EMSs focus on an organization's environmental performance. Environmental issues are seen as symptoms of a breakdown in an environmental management system. Performance-based EMSs rely on observation and data to indicate the organization's environmental performance. Environmental problems are viewed as a break down in the management system.

CASE STUDY

The following sections discuss each step of the development of a regional EMS partnership with a focus on coached EMS and references to tools that can be used to develop a regional partnership.

PART 1: IDENTIFYING PARTICIPANTS

The first step in the development of the regional program was to identify members who were motivated to implement an environmental management system (EMS). The twelve local governments participating in a coached EMS training project for local governments were recruited to also participate in the partnership. Members of TCEQ's Clean Texas program, the EPA's National Performance Track program² (NEPT), Sustainable Dallas, and EPA's SmartWay were also invited to participate.

Key Concept: Declaration of Commitment

One of the most important elements in the initial phase was ensuring that participating organizations were fully aware of the resources that were needed for an EMS. Initial participants in the partnership were given extensive training and coaching in environmental management systems. Each participating organization was asked to supply a signed letter of commitment, which:

- identified staff for participation in the EMS process,
- established a budget, and
- outlined the level of participation in training.

The declaration was signed by a designated management official such as the mayor, city manager, facility manager, or director-level manager. The declaration must be agreed upon by someone authorized to make a commitment on behalf of the participant to implement an EMS. It ensures that adequate resources are allocated to the project. It is particularly important that the cities prepare a budget for their participation. Attachment 1 includes a sample Declaration of Commitment.

PART 2: THE COACHED EMS PROCESS

The NTREMS utilized a coached EMS to help partners identify opportunities to address their local and regional environmental issues. Training and assistance were provided at meetings and included the following during the project:

1. Benefits training
2. Environmental assessment
3. Implementation coaching
4. Measuring outcomes

² U.S. EPA halted the Performance Track Program in March 2009.

Training and coaching were important parts of each meeting. The training was highly interactive and relied on mentoring between participants. As the program grew, participants began to assume leadership roles and conducted additional trainings between local governments and businesses.
(See attachment 3 for sample curriculum).

1. Benefits Training – Winning Management Commitment

*You can't afford **not** to have an EMS.*

*Bob Herbert
Former City Manager, Roanoke Virginia*

The first group of class participants was mostly from environmental departments. To conduct a successful EMS they needed to gain support from all departments of their organizations. To gain the organizational approach participants were coached on gaining management support.

Participants were taught methods for winning management commitment by highlighting the benefits of a performance-based EMS. These benefits included:

- **Risk avoidance and compliance** – An EMS allows an organization to identify and minimize risk from environmental operations.
- **Compliance** - Several local governments were initially motivated to implement an EMS due to compliance issues. Some cities were motivated to implement an EMS as part of an agreed order under an enforcement action. Having an EMS in an agreed order allowed the city to avoid more burdensome penalties. The regulatory agency benefited by reducing their oversight burden.
- **Savings** – An EMS helps an organization save money through the efficient use of resources. Documentation of savings from reduced disposal, water-use reduction, clean-up savings and energy efficiency can justify budget expenditures and ensure continued support of the EMS.
- **Positive publicity** – The NTREMS members used the EMS to encourage positive media coverage. For instance, the City of Dallas hosted events to promote grease abatement and water conservation. These events were reported in the local media and won support from the mayor and other elected officials.

The first training gave participants a series of tools they could use to educate management of the benefits of an EMS. EPA Region 6 provided support to help the partnership organize a workshop for executive-level local government managers and sponsored a speaker from the Virginia Regional EMS (VREMS) program. Bob Herbert, Fellow with Virginia Tech's Center of Organizational and Technological Advancement and former City Manager for Roanoke, Virginia, explained to participants why an EMS was important and detailed Roanoke's City's path to environmental compliance through implementation of an EMS.

2. Identifying Environmental Priorities

“The important thing is to just get started”

Laura Fiffick,
Former Director of the City of Dallas’ Office of Environmental Quality.

Participants agreed that they wanted to focus their efforts on addressing the most important environmental issues in the region. TCEQ conducted four workshops designed to help identify and prioritize common environmental issues and set environmental reduction goals. This assessment training provided the basis for individual organizations to conduct an aspect and impact analysis.

Participants formed workgroups to address the common issues identified. The workgroups formed were: Transportation, Ambient Air Quality, Water Resources, Energy/Emissions Solid Waste/Recycling.

A. Aspects and Impacts Analysis

In cooperation with the University of Texas at Arlington and private partners, a series of trainings and site visits were conducted to help participants identify their significant aspects and impacts.

Large cities such as Dallas had multiple meetings with different groups. The challenge was to pick an appropriate scope and narrow the aspects. EMS leaders in Dallas recognized that they would not get all of the aspects in the first, or even second, attempt.

Most cities used an aspects ranking tool, which categorized aspects by scale, severity, duration, probability of occurrence and compliance factors. One common aspect of all cities (and any facility) was the need to involve employees in the aspects identification process.

B. Aligning EMS with Organizational Priorities

Participants in the regional EMS program agree that alignment with the strategic goals of their organization was a key factor in the long term success of the project. For instance, on the state and federal level, particular attention should be focused on air quality in the region.

When designing the project, state, federal and local officials made sure that the goals were in alignment with state and federal strategic goals.

Implementation of EMS programs at the state, federal or local level requires a long-term commitment of resources from all of the partners. To ensure that these resources were available, each entity had to align their EMS program with the goals of their organization

and with state a federal priorities. Partners at all levels of the regional EMS program identified alignment with organizational goals as a key element for success.

a. Alignment with State Priorities

The TCEQ desired a focus by participants on projects and activities to:

- ensure and improve compliance,
- prevent air pollution,
- reduce toxics released and disposed of,
- reduce discharges of water pollutants,
- reduce waste generation,
- conserve water, and
- promote recycling.

These goals are key priorities in the agencies strategic plan. Project leads desired that measures would be collected to support agency priorities.

b. Alignment with Federal Priorities

On the federal level, project managers needed to ensure that the measurement of environmental outcomes supported EPA's strategic goals. In this case, the project was designed to promote reductions in:

- hazardous waste,
- non-hazardous wastes, and
- air emissions.

Project officers encouraged programs in their region to:

- promote water and energy conservation,
- enhance compliance,
- achieve cost savings,
- encourage partnerships with local governments, other public and private entities, and
- promote environmental managements systems.

c. Local Perspective

Local government's priorities varied. For larger cities, different departments – each with its own priority – needed to be informed of the benefits of the EMS. As stated previously, cities were highly motivated by the opportunity to reduce their risks, particularly the risks related to non-compliance. Some cities used high profile environmental projects to motivate their involvement in an EMS. For instance, many cities have teams to promote sustainability or “go green”. EMS programs have been characterized as an important part of any sustainability program. In the words of one partner, “If a city doesn't know its environmental aspects and impacts, how can it be sustainable?”

d. Regional Perspective

The NTREMS partnership comprises over 100 organizations facing a common set of environmental issues, including transportation, solid waste disposal, water quality and air quality. The partnership has been working to develop a set of common goals and measures through its workgroups.

Each workgroup designated a chair and a co-chair; set a series of short, medium and long term goals; and reported on its status at quarterly NTREMS meetings. An example of goals for a workgroup can be seen in Attachment 2.

5. Implementation Coaching

The coached EMS process relied on a series of half-day workshops held over a six month period. Between courses, participants were given “homework” assignments. These sessions required commitment and action from participants. Sessions were highly interactive and provided opportunity for participants to coach and advise each other.

Between the sessions trainers were available to provide assistance on how to accomplish of goals, deal with issues that arose, etc. During each workshop participants are given time to discuss the outcomes of their efforts, and receive coaching, and mentor each other.

The curriculum was adapted and changed as needed to meet the needs of the participants. Attachment 3 contains a lesson plan based on the FY09 curriculum.

6. Measuring Outcomes

If it isn't measured, then isn't done.

Larry Norris
Jamak Manufacturing

From the beginning of the project, partners were informed of the importance of benchmarking and measuring outcomes. Some key elements to success included:

- Including in the Declaration of Commitment (Attachment 1) a commitment to measure outcomes,
- Budgeting and planning for participation and for an on-site third party EMS assessment, and
- Including outcome measurement in all training and coaching sessions

A. Types of Measurement

Results collected and measurement was done in accordance with standards developed by the National Pollution Prevention Results Workgroup of the National Pollution Prevention Roundtable. This system has three types of measures:

- **Activity measures** from agencies (such as *Trainings Conducted*)
- **Behavioral results** (such as *number of programs adopting and EMS*)
- **Outcome measures** (such as *Hazardous Waste Reduced*)

Activity measures were collected by the University of Texas-Arlington, TCEQ and it's contractors as assistance was provided. Behavioral results were collected as programs began implementing an EMS. Outcome measures were collected by partners as they implemented the program.

B. Sources of Outcomes

One of the biggest challenges of implementing a regional EMS program was documenting environmental outcomes. Implementation of an EMS requires a minimum of one year and results are often achieved over a two-year timeframe or longer. Outcomes for this project tended to be from activities started three to five years previously.

With an EMS in place, participating organizations began to develop comprehensive systems for collecting data. Some examples of sources of data include:

- Reduction in water and electricity use collected from utility bills and normalized for changes in use and weather,
- Reduction in spills and leaks by departments, and
- Improvements in compliance collected by the water utility which issued Notices of Violations (NOVs) for failure to comply with local codes.

Savings from all of the above were documented using estimates of labor, maintenance and utility costs. Environmental results of participants are posted to the NTREMS website as they become available (www.NTREMS.Org).

7. Lessons Learned

In August of 2008, the NTREMS workgroups conducted an exercise to uncover activities that were not working. This section is derived largely from comments submitted by individual workgroups.

A. Take minutes and keep notes – attendees at meetings varied from meeting to meeting. It was essential that minutes be kept up to date so new participants could review status prior to the meeting and be ready to participate.

B. Use a website to foster communication – similar to making minutes available a website that fosters communication between participants is essential. Email is not a sufficient medium for sharing information. Members of the workgroup change, and people who are not on the email list may wish to download minutes, support documents or other information. Results and measurements posted on the website allow participants to promote their work.

C. Determine measures to report successes – Determining which measures to collect, and how they would be collected was an essential element for success. If the measure is not determined in advance of activity, it may be difficult to document success.

D. Use workgroups – Workgroups provide focus and facilitation for action. As the regional partnership grew, the workgroups were essential to maintaining progress towards state, local and regional goals.

E. Volunteers have limited time – members of the workgroup often participate in addition to their regular duties in their job. Workgroups, minutes, websites and team effort can help balance the workload so participants can maintain their core functions and participate in the workgroup.

F. Hold regular meetings – participants in the workgroups and the NTREMS meetings expressed a desire for frequent and regular meetings. Even with variability of attendance and level of participation, regular meetings keep the workgroup focused.

ATTACHMENT 1: DECLARATION OF COMMITMENT

This form was used to ensure that adequate resources were committed for the successful implementation of an environmental management system. Parts which applied to the specific regional project are highlighted and should be modified before using in another EMS program.

This is a Declaration of Commitment for the following named organization or facility: _____ (Participant) to implement an Environmental Management System (EMS) through participation in coached training and assistance provided by the University of Texas at Arlington. The training events and assistance will occur at no cost to the Participant from March 25, 2009 through November 2009.

Through this Declaration of Commitment, the Participant commits that the personnel attending the training event will fully participate in the events through 1) attendance of the training, 2) completing the EMS implementation homework tasks assigned, and 3) receiving the appropriate review of the EMS implementation from the Designated Management Official authorized to make a commitment on behalf of the Participant to implement an EMS.

The goal is for the Participant to complete the training portion by the end of November 2009 and implement a working EMS for the scope defined no later than March 2010. The participant will need to have conducted a readiness assessment by June 2010, as outlined in paragraph D below.

The University of Texas at Arlington agrees to the following:

- Schedule and conduct eight group workshops to assist the Participant to implement an EMS.
- Provide course attendees with phone support between sessions.
- Provide course attendees with sample EMS program documents, guidance documents, and one-on-one coaching to expedite the implementation of an EMS.
- Schedule and conduct updates with the Designated Management Official to review Participant's progress toward EMS implementation.

The Participant agrees to the following:

A) Identify an EMS Coordinator and assemble a cross-functional core team of at least two additional employees from the Participant's organization to participate in the EMS training and implementation course. The team must commit to attend all training events for the duration of the training period or send a substitute if unforeseen circumstances arise.

B) By March 2010, the Participant will have implemented the following EMS program elements that meet the requirements in Title 30 Texas Administrative Code, Subchapter C: Regulatory Incentives for Using Environmental Management Systems. The EMS minimum requirements include:

- (1) Adopt a written environmental policy directed towards continuous improvement;
- (2) Identify the environmental aspects at the site;
- (3) Prioritize the environmental aspects by the significance of impacts at the site;

- (4) Set priorities, goals, and targets for continuous improvement in environmental performance and for ensuring compliance with environmental laws, regulations, and permit conditions;
- (5) Assign clear responsibilities for implementation, training, monitoring, and corrective action and for ensuring compliance with environmental laws, regulations, and permit conditions;
- (6) Prepare written documentation of the implementation procedures and results of so doing; and
- (7) Prepare a written evaluation, on a routine schedule, of the refinement to the EMS to demonstrate how attainment of the priorities, goals, and targets of the system has improved.

C) The Participant will apply for membership into the TCEQ's CLEAN TEXAS Program at the Bronze level. See www.cleantexas.org for CLEAN TEXAS information and application forms.

D) The Participant shall budget for an onsite review of their EMS implementation readiness assessment. The assessment shall be completed by August 2010 and be conducted by an independent party in accordance with TCEQ's *Independent EMS Assessment Criteria* (See the "Publications" link at www.cleantexas.org).

E) The Participant agrees to develop a project plan and allocate necessary staff resources for completing each of the tasks outlined in each class session.

F) The Participant's course attendees agree to complete and submit homework assignments to the course instructors by the designated due date. The results will be shared with the Designated Management Official to assist in monitoring progress.

G) The Participant agrees to share cost savings and estimated and measured environmental reductions in air emissions, waste generation, water use, and energy use achieved through implementing an EMS. The data may be used for case studies and shared in a common database, which will be shared with entities to benefit other cities in developing an EMS.

H) The EMS Coordinator and EMS Core team points of contact for the Participant are listed below (attach additional names as needed):

Name: _____ Title: _____ Organization: _____ Address: _____ _____ Phone: _____ E-mail: _____	Name: _____ Title: _____ Organization: _____ Address: _____ _____ Phone: _____ E-mail: _____
Name: _____ Title: _____ Organization: _____ Address: _____ _____ Phone: _____ E-mail: _____	Name: _____ Title: _____ Organization: _____ Address: _____ _____ Phone: _____ E-mail: _____

Accepted and agreed to by Designated Management Official (Mayor, City Manager, Facility Manager, or Director-Level Manager) authorized to make a commitment on behalf of the Participant to implement an EMS:

Designated Official Name: _____

Designated Official Title: _____

Signature: _____ Date: _____

ATTACHMENT 2: SAMPLE COMMITTEE GOAL FACT SHEET

Committee Name: Ambient Air Quality

Committee Chair (Lead): Kris Russell

Committee Sub-Chair (Moderator): Ryan Spicer

Committee Members (Name, Contact, Organization):

Kris Russell
Sr. Environmental Operations Analyst
Dallas/Fort Worth International Airport
3200 E Airfield Drive
DFW Airport, TX 75261
972-973-5591

Ryan Spicer
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(817) 608-2353

Pat Layton
City of Dallas
972-746-3690

Nicole Cooper
Environmental Coordinator
City of Dallas Office of Environmental Quality
214-670-6646

Initial goals (short-term gains, i.e. 3 months to 12 months maximum):

1. Non-road mobile sources (Air Emissions from Construction Activities). Develop NOx/VOC emissions calculator to accurately and consistently measure ozone precursors (NOx and VOCs) generated from construction (mobile, non-road) activities.
2. Non-road mobile sources (Texas Emission Reduction Plan). Increase TERP awareness and participation through development/distribution of program brochures. Create a city manager contact list to mail TERP brochures [all city managers within 9 county 8-hour ozone nonattainment area]. Request program participation from city managers.
3. Area sources (Surface Coating Activities). Reduce VOC emissions from surface coating activities in the 9-county Ozone DFW non-attainment area. Create an air quality brochure informing contractors of low-VOC coating alternatives. Request program participation from city managers (distribute information).

Long-term goals (time allowing 12-36 months of implementation):

4. Non-road mobile sources (Air Emissions from Construction Activities). Implement use of emissions calculator at municipal level (City Building Code Departments). Use measured emissions (to identify actual emissions contribution from construction activities to North Central Texas). Provide EPA, TCEQ, and NCTCOG SIP planning staff regional construction emissions data. Reduce construction emissions in DFW 9-county Ozone non-attainment area by 50% (revise reduction goal to reach State Implementation Plan reduction goals). Preclude future mandatory implementation strategies developed by State (i.e. voluntary reductions vs. mandatory construction restrictions).

Results / Status:

- The AAQ has developed the emissions calculator for NOx and VOC emissions from construction equipment. TCEQ Air Quality Planning is reviewing the calculator based on their established Texas Non-road Model.
- The AAQ Committee will record written responses from city leaders confirming their commitment to participate in the above stated goals. To date, a letter has been drafted, and is scheduled to be finalized and mailed by February 2009.

Attachment 3: GOALS FOR WORKGROUPS

Use this list to help focus your workgroups.

- Make list of official group members to turn into facilitator
- Make wish list of who else should be invited to participate in this group before the next work group meeting
- Make list of who you want your letter of recognition for participation from the TCEQ to go to in your organization. Deanna will follow-up and get mailing address from you.
- Brainstorm on possible areas of focus within your working group. Decide whether one group is o.k. or whether you need to split into further sub-groupings
- Brainstorm on initial goals (short-term gains, i.e. 3 months to 12 months maximum)
 - Look for projects that could have a measurable outcome
 - Look for projects that are high visibility
 - Look for projects that would address a pervasive issues
- Brainstorm on long-term goals (time allowing 12-36 months of implementation)

Attachment 4: Sample Curriculum for Implementation Coaching Courses

Month 1: Overview of EMS

- ISO 14001
- Registration & Certifications
- Building a Business Case
- Selecting a Fence line
- Identifying an Environmental Management Representative
- Defining Your Environmental Footprint (Environmental Aspects & Impacts)
- Identifying the Environmental Hotspots (Significance Criteria)
- Identifying Legal and Other Requirements
- Developing the Environmental Policy
- Selecting an Implementation Team

Month 2: Environmental Priorities

- Ranking Aspects & Impacts
- Setting Objectives and Targets
- Getting from Here to There (Environmental Management Programs)
- Managing the Hotspots (Operational Controls)
- Operational Controls - Best Practices from LEED Green Building Standard

Month 4: Management Controls

- Who's Responsible? (Structure & Responsibility)
- Training
- Controlling Documentation
- Managing Records
- Communicating (Internally & Externally)

Month 5: Best Practices

- Cost Reduction Opportunities for Utility Reductions
- Controlling Facility Operations
- Best Practices from LEED-Cost Reductions
- EMS Success Stories

Month 6: Emergency Preparation and Measurement

- Emergency Preparedness and Response

- Monitoring and Measuring Performance

Month 7: Checking the System

- Assessing Compliance
- Calibration
- Non-Conformance and Corrective and Preventative Action

Month 8: Review

- Auditing the EMS
- Management Review

Month 9: Continuous Improvement

- Gap Analysis
- Project Implementation
- EMS Review

Month 10: Conclusion

- Coaching Session
- Group Determination of Next Steps for Project