TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
PRE-PROPOSAL FOR THE
2009 STATE INNOVATION GRANT PROGRAM
RFIP No: EPA-OPEI-NCEI-09-01

DECEMBER 10, 2008

Project Summary for the 2009 State Innovation Grant

Title: Texas Air Program Consolidated Data System Implementation

Applicant: Texas Commission on Environmental Quality (TCEQ)

Project Manager: Robert Opiela
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Total Project Cost: Total Budget: $150,000
Requested from EPA: $150,000

Project Period: October 1, 2009 - August 31, 2011

Project Abstract: The Texas Commission on Environmental Quality has identified an opportunity to fully utilize geospatial data that is scattered throughout the agency. This project will build upon the Regional Geographic Initiative - HRVOC Pilot Project from 2006, which showed the proof of concept that all air program related data has a common geographic component and that these data can be accessed through a graphical map interface. The proposal is to document business processes, operating procedures and data access tools to gather, store and analyze agency data, such as location, characteristics, and operating conditions, of air pollution sources. The project would also include training of key agency staff to use and maintain agency data from data gathering to data use and analysis. The objectives of the project is for agency staff to have the capability to bring together all the data the agency has available regarding permitted and reported emissions of pollutants, monitored concentrations of pollutants, monitored meteorological conditions, and reported excessive events to make informed decisions regarding permit issuance, site investigation, and mitigation strategy formulation. The measurable outcomes for the proposed project would be reduced permit review and site investigation timeframes.

Statutory Authority and Flexibility: The Federal Clean Air Act, Section 103 and the Texas Clean Air Act. No regulatory flexibility is needed to implement this project.

Certification of State Agency Support from the Highest Level: Mr. Carlos Rubinstein, Deputy Executive Director of the Texas Commission on Environmental Quality is aware of and endorses this proposal. If this proposal is selected in the Spring of 2009, a letter of endorsement from the Deputy Executive Director will be provided with the final work plan.

Pre-Proposal Project Narrative for the 2009 State Innovation Grant

Problem Statement: The TCEQ receives data from regulated entities regarding air pollution source identification, authorized pollutants and emission rates from those sources, unplanned air pollutant releases, and facility limitations (physical or regulatory) related to the air pollution sources. The TCEQ gathers data regarding air quality in the vicinity of many regulated entities. All of these data are used by the agency in granting pre-construction permits, determining compliance with enforceable permit conditions and regulations, and assessing air pollution control strategies to minimize exposure of air pollutants by the public. These various pieces of data are received and gathered by different areas within the agency and stored in different data systems. The data structure of each data system addresses business needs of the area receiving or gathering the data even though the data are used by many parts of the agency. When data are needed to be compiled from the different data systems for issuing permit conditions, determining regulatory compliance, or assessing environmental impact, it is often difficult and time consuming and involves multiple software applications and no standardized procedures. Due to time constraints, limited staff, and increased demand on agency resources, effective and efficient use and management of agency data are not always achieved leading to potentially uninformed decisions regarding permit issuance, determination of compliance, and assessment of environmental impact. The solution to making more informed decisions is to consolidate agency data around a common aspect, standardize means to access, analyze, edit, and update key pieces of data, and maintain consistent and long-term use of the data.

Background: TCEQ upper management has long been aware and concerned about issues related to data quality and management. In 1999, the agency Information Strategic Plan identified the need to merge data across the various data systems. In 2003, an agency work group identified the spatial location of regulated entities and agency assets as the unifying feature for agency data across the various data systems. In 2004, the TCEQ Water Quality Coordinating Team (WQCT) approved funding through the EPA Clean Water Act – 106 Supplemental grant to acquire and build a spatial data infrastructure. In 2005, through the EPA Region 6 Regional Geographic Initiative (RGI) grant, the TCEQ Air Permits Division (APD) completed the Air Program Geodatabase Pilot Project which took advantage of the agency spatial infrastructure and implemented agency Information Strategic Plan on a limited proof of concept basis. Though many of the pieces have been acquired, assembled, and tested, a cohesive and fully documented system of data, tools, and operating procedures has not been completed. The proposed project is to provide for the documentation of the existing spatial data system, provide documentation of standard procedures to access, analyze, edit, and update key pieces of data, and develop generalized and specific on-line training modules to ensure long-term and consistent use of agency systems for permitting, compliance, and environmental assessment.

The proposed project would support TCEQ functions authorized by the Clean Air Act (CAA), therefore, funding would be appropriate under Section 103 (b)(3) of the CAA. TCEQ permit, compliance, and assessment functions are aimed at air pollution control and prevention. In addition, the proposed project would support EPA Strategic Goal 1 – Clean Air and Global Climate Change and Goal 5 – Compliance and Environmental Stewardship.

The amount of funding requested for the proposed project is $150,000. The funding could be received incrementally as one phase of the project must be completed until the next phase can be commenced. The proposed start date would be October 1, 2009 with project duration of 18-23 months. The primary use of the funding is for documentation of data and procedures and developing training for key agency staff.

The proposed project will meet Threshold Criteria #1 by making existing data easier to use. A former TCEQ commissioner once commented that the agency is drowning in information but thirsts for knowledge. The proposed project, which would document data identification, business processes, and standardized business procedures, would allow permit reviewers, compliance investigators, and environmental assessors to filter to information only relevant to their specific permit, investigation, or environmental assessment. This same clarity of information would translate to the public through inquiries regarding permit applications, compliance histories, and emission reduction strategies.

The proposed project will meet Threshold Criteria #2 by educating agency staff on consistence approaches using existing agency tools, mainly GIS enabled computer software. By applying consistent use of GIS enabled software, permit reviewers, site investigators, and risk assessors, can more easily determine cause and effect by accessing information on air pollution sources and ambient air monitors. The proposed project, by documenting step by step how staff can move through a wealth of data, will provide sufficient information to identify what the environmental effect is and assist in pinpointing the potential causes.

Project Objectives: The project objectives include identifying and describing what agency data are in the form of a data catalog and metadata of spatial data, so agency staff, management, and commissioners will be provided with clear knowledge of what information is presented when making recommendations or decisions. In some case, it is not clear what the data describe, how old the data are, what the quality of the data are, and what the source of the data are. All these factors enter into the decision making process.

The project objectives include documenting operating procedures used to access, analyze, edit, and update key pieces of data, so information can be more effectively and more efficiently passed to decisions makers. In addition, decisions makers can more quickly understand complex issues when they are presented data in a consistent repeatable manner. The documentation will be accessible from a centralized location.

The project objectives include developing on-line training modules so staff can keep apprised of current agency standard operating procedures for air permitting, site investigations, and environmental assessment. A training program will provide long-term consistency in use and exchange of agency data.

Methodology or Technical Approach: The innovation demonstrated by the proposed project is its emphasis on simplistic and long-term approach to permitting, site investigation, and environmental assessment.

The first task is to assemble agency air program stakeholders and identify key data that stakeholders use in day-to-day operations or less frequent time-consuming projects. Once the data have been identified and structured, a grant-funded contractor will generate a data catalog identifying what the data are and generate metadata of the spatial data derived and any associated and related data in the existing agency geodatabase. This task should be completed within 6 months.

Once the geodatabase is complete (non-funding portion of the project), air program stakeholders will again assemble to develop general and job-function specific operating procedures using data from the agency geodatabase with existing agency GIS enabled software. A grant-funded contractor will shadow agency staff when performing general and job-function specific procedures and document the procedures. The documentation will be located in an electronic format in a centralize location for agency-wide access. This task should be completed within 6 months.

After completion of documentation of standard operating procedures (SOPs), a grant-funded contractor will develop on-line training modules based on the documented SOPs. The on-line training will have agency-wide access and should be incorporated into staff professional development plans. This task should be completed within 6-11 months.

Though simplistic in its approach, the propose project would support EPA Strategic Goal 1 – Clean Air and Global Climate Change and Goal 5 – Compliance and Environmental Stewardship clearly documenting data and procedures the agency uses to achieve these goals.

Since the TCEQ implements a minor New Source Review Permitting program, a wealth of information on small businesses is available. However, due to that information being located in several existing data systems, it is not easy to access or analyze. The proposed project, by providing clear documentation on agency data, will allow for data to be filtered for specific business sectors so data already received by the TCEQ can be used as input to Environmental Results Programs (ERPs).

Though the proposed project is specifically for Air Program related data, existing data on other media and programs, can be juxtaposed with air data using GIS enabled software. This would be the purpose of the general SOPs and associated training modules. Though integrating permitting may not be possible in a regulatory sense, the data related to a single entity or a specific location can used for decisions regarding a media-specific permitting issues.

The measurable outcomes for the proposed project would be reduced permit review and site investigation timeframes. Though not so easily measured, the reduction in authorized air emissions would be another metric to consider. If the project is funded, these metrics could be analyzed for targeted locations as well as state-wide.

Though the project is specific to Air Program data, other media data could be documented in the same way.

Outcome and Measures: The main purpose of the proposed project is documentation of the data the TCEQ Air Program uses to make decisions regarding permitting, site investigations, and environmental assessment. The first stage is to identify the data itself, through a data catalog and metadata of feature classes (spatial data) and associated table classes (business data) in the existing agency geodatabase. The second stage of the project is to document procedures used to access, analyze, edit, and update with existing agency GIS enabled software. Air Program stakeholders would provide business knowledge expertise to contractors compiling and providing documentation. The last stage of the project is the development of training modules based on the documented SOPs from the previous stage. The training modules are for the purpose of maintaining agency institutional knowledge and consistency. One anticipated output from this project is long-term consistency of permitting, site investigations, and environmental assessment.

One first order environmental outcome is identification of areas in greatest need of improvement and the root causes of the need. From a geographic basis, agency permitting, investigation, and assessment resources could be reallocated to these areas. From analysis of the data based on standardized procedures, second order outcomes could be enacted through an agency strategy developed to mitigate the situation such as more stringent permit conditions and increase ambient air monitoring. Third order outcome would be achieved by review of ambient air monitoring data and source emissions data in that area. Progress of the project would be measured in the ease in tracking reported emissions and monitored values of pollutants.

Past Performance:

1) 2005 Regional Geographic Initiative
   a) HRVOC Pilot Project
      i) Tasks were successfully fulfilled
      ii) Final report submitted to EPA in a timely manner

2) Performance Partnership Grant - 2007 Special Projects
   a) Permit by Rule Protectiveness Review (Above Ground Storage Tanks)
      i) Tasks were successfully fulfilled
      ii) Quarterly reports and Final report submitted to EPA in a timely manner

3) Performance Partnership Grant - 2008 Special Projects
   a) Requirements Reference Tables
      i) Tasks were successfully fulfilled
      ii) Mid-year and end-of-year reports submitted to EPA in a timely manner

Project Budget for the 2009 State Innovation Grant

Budget Category	October 2009	October 2010	Total
Other - Temporary	$60,000.00	$60,000.00	$120,000.00
Capital Equipment		$15,000.00	$15,000.00
Travel/Training		$15,000.00	$15,000.00
Total	$60,000.00	$90,000.00	$150,000.00

Resume of Key Personnel for the 2009 State Innovation Grant

Robert Opiela, Project Manager

Education:

9/81-3/87	Stanford University, Stanford, CA. Received BS in Mechanical Engineering 1/88.
1/89-5/94	University of Houston, Houston, TX. Received Master of Mechanical Engineering 5/94.

Continuing Education:

1/97-5/97	University of Texas at Austin, Graduate Studies, Atmospheric Turbulence
9/98-12/98	University of Texas at Austin, Graduate Studies, Atmospheric Chemistry

Employment History:

Texas Commission on Environmental Quality (TCEQ)

Air Permits Division-Technical Program Support Section, Technical Specialist
3/1/08-Current; Provides advanced to highly advanced consultative and technical assistance related to the planning, development, implementation, and communication of air permitting policy, regulations, processes, and guidelines for internal and external customers of the TCEQ.

Air Permits Division-Atmospheric Dispersion Modeling Team, Team Leader
8/27/04-2/29/08; Supervisor of the Air Dispersion Modeling Team. Served as the agency consultant for all dispersion models and modeling techniques other than those related to the Ozone SIP; participate on agency and national teams and workgroups; and testifies at hearing and meeting on behalf of the agency.

Air Permits Division-Atmospheric Dispersion Modeling Team, Technical Specialist
9/1/00-8/27/04; Brief senior agency management and provide agency comments on issues that concerning dispersion modeling such as agency overall combustion strategy for hazardous waste incinerators, boilers, and industrial furnaces, national-scale air toxics assessment (NATA), and U.S.E.P.A. proposed air dispersion models, e.g. AERMOD. Conduct specialized dispersion modeling, e.g. ISCST3, AERMOD, CalPuff, to provide information on state regulation protectiveness, potential enforcement actions, and other special projects requested by the Executive Director's Office. Manage and supervise modeling staff in conducting risk assessment modeling analyses in support of agency combustion strategy and in developing software interface for CalPuff modeling system. Develop software applications to automate and streamline modeling procedures. Construct data models and databases storing modeling files, modeling data, permit data, and emissions inventory data. Formulate and implement geographic information systems (GIS) used to carry out dispersion modeling, air pollution permitting, and toxicological reviews. Serving as Chairperson of the agency GIS Steering Committee. Make recommendations to senior agency information technology (IT) management regarding agency GIS issues. Represent the agency at public meetings regarding dispersion modeling issues related to permitting actions.