

US EPA ARCHIVE DOCUMENT

State Innovation Grant
Missouri Department of Natural Resources
St. Louis Air Quality Management Plan (AQMP)
3rd Quarter 2011 Progress Report

This quarterly report includes:

1. A short summary of the work performed during the reporting period.
2. Description of progress on completing individual tasks and milestones reached.
3. Summary of grant expenditure.
4. Planned next quarter activities.

List of the Tasks Worked On

The key tasks worked on in this quarter were:

1. Prepared revised draft modeling protocol (Environ),
2. Received and reviewed revised draft modeling protocol
3. Continued to acquire point, area, and nonroad emission inventories (Environ), and;
4. Collect air toxics data (Environ).
5. Set up photochemical modeling input processing.

Description of Progress on Completing Individual Tasks

The activities planned in this quarter were designed to continue development of technical data necessary for implementation of the AQMP. Below is a summary of tasks worked on.

Draft Modeling Protocol

Environ prepared a revised draft modeling protocol to account for comments from the Air Program and EPA. It was received on August 10th. Then, it was distributed amongst the Air Program staff, IEPA, and EPA regions 5 & 7 for comments.

Revised Draft Modeling Protocol Comments

One outstanding issue with the protocol was raised by EPA regarding the PM_{2.5} annual modeling. The Air Program decided to only model 4 months for PM_{2.5} due to the facts that the St. Louis area no longer violates the PM_{2.5} NAAQS and modeling for one year would require additional funding beyond what is include in this project.

Acquisition of Point, Area and Nonroad Emission Inventories

The ENVIRON Team continued acquisition of point, area and nonroad emission inventories. The team is making sure that all acquired data is quality assured. A status report from Environ is attached with this report.

Air Toxics Data Collection

The Environ Team collected and reviewed available air toxic measurement data for St. Louis modeling domain and episode. Available measurement data for air toxics identified in the AQMP3 was compiled from the AQS and NATTS databases. Initial screening shows that measurement data for lead, acetaldehyde, arsenic compounds, benzene, chromium compounds and formaldehyde are available for the modeling period (June to September 2007) at some of the NATTS monitoring sites within Missouri and Illinois. The AQS HAP database includes some measurements for acetaldehyde, benzene and formaldehyde during the modeling period. Diesel PM is evaluated using elemental carbon as a surrogate, which is regularly monitored at PM monitoring networks such as IMPROVE, CSN, and SEARCH.

Photochemical Processing Input

The Environ Team set up additional photochemical modeling input processing (IC/BC, photolysis rates, etc).

Financial Report

The following items were billed to the grant during the 2nd quarter 2011.

Expenditures as of 06-30-2011		
CATEGORY	CURRENT PERIOD EXPENDITURES	CURRENT CUMULATIVE
PERSONAL SERVICE	30,366	114,634
FRINGE	13,207	48,235
CONTRACTUAL	24,239	47,424
INDIRECT	22,468	58,646
SUPPLIES	0	0
OTHER	0	0
TRAVEL	0	113
TOTAL EXPENDITURES	90,279	269,051

Federal Funds Expended This Period: \$59,008
 Matching Funds Expended This Period: \$31,271
Total Funds Expended \$90,279

Next Quarter Activities

As stated above, the Air Program is not going to model for annual $PM_{2.5}$. In addition, modeling for ozone is not certain as a result of an EPA memorandum released on September 22, 2001 with the subject "Implementation of the Ozone National Ambient Air Quality Standard" which clarified for the states and local agencies the status of the ozone NAAQS and outlined implementation steps moving forward. It stated that "with the recent decision on the reconsideration of the ozone NAAQS, the current ozone NAAQS is 0.075 ppm." This is expected to result in a classification of the St. Louis area as a marginal nonattainment area which would preclude it from an air quality modeling requirement. Now that there are no $PM_{2.5}$ and ozone NAAQS to model and, hence, the core purpose of the AQMP is not applicable, the Air Program asked Environ to halt working on the contract until further notice. The Air Program is now considering how to proceed with these developments.

Table - Schedule Changes of Major Project Tasks

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
1	AQMP Work Plan	Development of AQMP plan including input from both states, regional Offices, OAQPS, and stakeholders	Submit workplan to USEPA	10/07	1/08	Yes	Submitted on 1/15/08
2	Summary of Current Status	Development of AQMP document that provides the current status of St. Louis with respect to current air quality, planning activities, problems, outreach efforts, SIP history	Submit summary to USEPA	1/08	6/08	Yes	Final draft summary was submitted on 5/22/08
3	Conceptual Model	Development of AQMP document that provides the conceptual model for the project including discussion of individual pollutant formation, planning activities/outreach and policy issues	Submitted conceptual model to USEPA	5/08	9/08	Yes, submitted in January 2009	Conference calls are on-going
3B1	Draft Quality Assurance Project Plan (QAPP)	Development and submittal of draft QAPP for creation and implementation of the St. Louis AQMP	Submittal of draft QAPP for the project to USEPA	10/08	1/09	Yes, Submitted a draft to EPA, 12/08	
3B2	Final Quality Assurance Project Plan (QAPP)	Development and submittal of QAPP for creation and implementation of the St. Louis AQMP	Submittal of final QAPP for the project to USEPA	1/09	3/09	pending	EPA Region VII is continuing review of the final QAPP and will provide additional specific comments on the

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
							QAPP
4	Additional Analyses for Efforts affecting Air Quality	Development of the tools necessary to begin the AQMP technical work including air toxics inventory creation, quality assurance, and subsequent analyses, emission model training and construct/data transfer, and photochemical model training/transfer (including air toxics)	Detailed under each sub-task				Work Stopped
4.1	Air Toxics Inventory	Obtain and process for use air toxics inventory information from Missouri/Illinois sources along with EPA National Toxics Inventory database for point, area, and mobile sources as a template for AQMP use	Template to develop air toxics inventory for use in photochemical modeling and inventory analyses	7/08	10/09		Work Stopped
4.1.1	Emission Model Construct Transfer/Training *	EPA-OAQPS has developed an emission modeling construct to process air toxics inventory information from a wide variety of sources that is critical for use in this project; transfer of this construct from OAQPS along with guidance and support for use	Transfer of information from EPA-OAQPS and trained technical staff (with guidance from EPA)	7-8/08	1-3/09	N/A	EPA-OAQPS has told us there is no construct to transfer. This will require a thorough review of the methods utilized by EPA and training for the staff mentioned in the workplan, but

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
							will require additional effort to begin the modeling process
4.2	Photochemical Modeling Transfer/Training **	EPA-OAQPS has developed (is developing) an air quality (photochemical) model to evaluate ozone, PM, and air toxics using the same model/inputs; transfer of this model to allow for a comprehensive evaluation of all relevant pollutants in St. Louis	Transfer of information from EPA-OAQPS and trained technical staff (with EPA guidance)	10/08	4-6/09	N/A	Same as 4.1.1
5	Creation of AQMP*	Development of the plan entails considerable public outreach, incorporation of technical information, policy discussions between the relevant agencies and stakeholders, and ultimately decisions about what are air quality priorities in St. Louis (how can we reach them)	The AQMP submitted to USEPA	12/07	12/09	N/A	The AQMP development is proceeding. The development of the conceptual model has lead to the discovery of policy issues that need to be addressed in the coming months.
5.1	Public Outreach/ Education*	Meetings with local community to begin the education process about AQMPs; meetings with AQMP team, stakeholders and internal management to discuss	Meeting summaries; documented revisions to the AQMP; Missouri Air Conservation Commission adoption	12/07	12/09	on-going	Two meetings of the Air Quality Advisory Committee in St. Louis were held and the AQMP is

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
		technical policy issues related to the AQMP; formal public comments/hearing on the plan	of the AQMP				an on-going topic with discussion regarding progress and upcoming developments
5.2	Incorporation of Technical Information**	Incorporate experience with model constructs and processes from Task 4 into the AQMP structure	Discussion within the AQMP about problems/solutions, concepts to be included, start of documentation regarding transfer of data to others	4-6/09		on-going	
5.3	Prioritization of Air Quality Issues in St. Louis**	Decisions by the agencies with substantive stakeholder input regarding the prioritization of air quality problems within the area, resource allocation, staffing, etc.	Discussion within the AQMP about resources, air quality priorities, funding issues, etc.	8/09	10/09	Draft, This task is on-going as new standards are promulgated. It is complete for now, but will change in the future.	At this point, the key focus areas are the 2010 ozone standard and the air toxics evaluation necessary for inclusion. The new SO2 standard is problematic for the St. Louis area and will ultimately be part of control decisions using the multi-pollutant

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
							paradigm
6	Development of technical Analysis Tool*	The AQMP will dictate that the area will continue to address air quality problems and the methodology utilized for environmental control decisions (include technical products that will be considered)	Technical outcomes (reports, memoranda, etc.) designed to inform decision-making on environment control in St. Louis	12/08	10/12		
6.1	Development of “Next Generation” Emission Inventory and Modeling database*	After the modeling constructs are implemented, the next step is the generation of new SIP technical products including criteria pollutant and toxics inventory creation, processing of emissions and other input data for use in the air quality modeling system (meteorological, air quality, etc.)	Detailed in each subtask	12/08	10/12		
6.1.1	Development of Request for Proposal (RFP) for Air Quality Modeling Contract**	After the “new” modeling constructs have been transferred, an RFP will be created for assistance in the development of the emission inventory and modeling databases for the AQMP process; the contract will be for \$169,973 (this amount will not fund the whole effort; assistance only)	Completed RFP for modeling assistance	12/08	3-5/09	Complete 11/10	Originally, \$100,000 was allocated for this task but additional fund needed to generate 4km/1km metrological data and on-road emissions using

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
							MOVES for Missouri, Kansas, Oklahoma states.
6.1.2	Selection of Contractor/Contract Agreement**	Evaluation of the RFP and completion of the contractor selection culminating in the negotiation and finalization of the contract	Documentation of contract process and selection of contractor for this project and final contract for use	7/09	9/09	Complete 1/11	ENVIRON was selected based on its technical expertise and experience
6.1.3	Selection of Modeling Database (year, domain, etc.)*	Selection of the new modeling inventory year and database including domain size(s) for evaluation of criteria pollutants and air toxics (the outcome of this task will drive the remainder of the process and will need to be thoroughly discussed with EPA OAQPS and the Regional Offices and will be based on available EPA guidance for the new NAAQS)	Technical document detailing decision and rationale	9/10/09			Work Stopped
6.1.4	Development of Baseyear Emission Inventory**	Obtain available emission inventory data from states, regional planning organizations, and EPA for criteria and air toxics pollutants (e.g. National Toxics Inventory); develop Missouri/St. Louis information then, process these data to develop the model-ready	Model-ready emission inventory database	Early 2010	Mid 2011		Work Stopped

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
		inventory database for the project (majority of contract funding will be expended here)					
6.1.5	Development of Other Baseyear Inputs	Development of air quality, metrological, and other photochemical modeling inputs (some of contract funding will be expended here)	Model-ready database	Early 2010	Mid 2011		Work Stopped
6.1.6	Baseyear Air Quality Modeling*	Development of air quality model that sufficiently predicts the monitored concentrations to be used in control strategy development (iterative process with inventory and other input development)	Air quality model ready for consideration of control strategy development	Mid-2010	Late-2011		Work Stopped
6.1.7	Development of "Attainment" Year Emission Inventory	Obtain available growth and control projection information from sources in 6.1.4; develop Missouri/St. Louis information; process data for inclusion in photochemical model	Model-ready future year (base) emission inventory database	Mid-2011	Late 2011		Work Stopped
6.1.8	Control Strategy Sensitivities*	Evaluate control strategies designed to achieve air quality goals in the photochemical model	Data used to support control decisions	Late 2011	10/12		Work Stopped
6.1.9	Air Toxics Reporting**	Detailed evaluation of air toxics exposure to the citizens of the St. Louis area based on the findings of 6.1.7 and 6.1.8.	Separate technical memorandum evaluating air toxics exposure in St. Louis	Late 2011	10/12		Work Stopped
6.2	Monitoring Data	On-going evaluations of	Reports regarding	10/08	10/12		Work Stopped

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
	Evaluation	ambient monitoring data in the St. Louis area utilized to identify problems and potential source contributions for all pollutants, including air toxics in 6.1.9	monitoring data				
7	Transfer of AQMP Data/Procedures to Other Agencies**	Task is designed to allow other regulatory agencies to evaluate the benefits/problems of the multi-pollutant AQMP approach through the plan itself and a narrative regarding issues associated with this approach compared to the current approach	Report on the efficacy of the project including problems and solutions	7/12	10/12		Work Stopped
8	Project Reports	Task is designed to provide quarterly and project completion reporting	Quarterly status reports to Region VII and final report documenting activities supported under the grant	1/09	10/12		Work Stopped

* Portions of this task funded buy SIG

** All task funded by SIG