State Innovation Grant
Missouri Department of Natural Resources
St. Louis Air Quality Management Plan
4th Quarter 2010 Progress Report

This quarterly report includes:
1. A short summary of the work complete in the reporting period.
2. Description of progress on completing individual tasks and milestones reached.
3. Changes to the tasks listed in the work plan.
4. Changes to the task schedule based on events.
5. Summary of grant fund expenditures.
6. Planned next quarter activities.

Summary of the Work Completed

Two key tasks were completed in this quarter: 1) Develop a Request for Proposal (RFP) for emission/air quality modeling contract (Task 6.1.1), and 2) Evaluate contract proposals and select a contractor (Task 6.1.2). Also, during this quarter we continued to develop a local-scale toxics inventory for the pollutants of interest identified in the AQMP (Task 4.1).

Description of Progress on Completing Individual Tasks

The activities planned in this quarter are designed to continue construction of technical data necessary for implementation of the AQMP. Two tasks, identified on the attached Table 1 - Schedule of major project tasks, are completed in time.

Request For Proposal (RFP)

Since October 2010, Missouri APCP has worked closely with the OA Division of Purchasing to finalize the RFP. A pre-conference call with nine potential contractors was conducted on November 9, 2010. The RFP was revised twice based on the comments received during these calls. The final RFP was issued on December 13, 2010 and posted on the web site at: https://www.moolb.mo.gov/Glue/default.asp.

Contractor Section

At the end of the RFP deadline, we only received one proposal from ENVIRON out of 9 potential contractors. The original proposal sent by ENVIRON had a total cost estimate exceeded the budget allowed. Through negotiation and revision a final proposal was approved by the review committee. The total amount of the contract cost is $170,000.

Te final proposal was approved and it is waiting for the signed acceptance from ENVIRON. The following are major tasks that will be delivered under the contract:

- Develop Modeling Protocol for the Multi-Pollutant and Multi-Scale Emissions and Air Quality Modeling of St. Louis Area.

- Develop 2007 Base Case Model-Ready Emission Inputs for Point, area, non-road mobile and biogenic emissions.

- Generate 2007 Base Year On-Road Mobile Source Photochemical Grid Model (PGM) Model-ready Emission Inputs for June 1 through September 30.

- Compile Speciation Factors for VOCs and Air Toxics Pollutants.

- Develop Meteorological Fields for the 4 and 1 km Domains.

- Develop additional modeling Inputs.

- On-Going Assistance/Quality Assurance of Emissions and Air Quality Modeling.

- Generate SMOKE-Ready Area, Point and Non-Road Source Emission Inputs and SMOKE-MOVES Ready Future Year VMT Estimates.

- Prepare a Final Modeling Report that document the St. Louis Emissions and Air Quality Modeling Study for Inclusion in the Ozone and $PM_{2.5}$ SIPs as an Air Quality Technical Support Document (TSD).

Local-scale Toxics Inventory

The emission inventory staff continues working on the development of St. Louis air toxics inventory. A 2005 report entitled "St. Louis Community Air Project - Air Toxics Risk Characterization" has identified the following pollutants: benzene, formaldehyde, acetaldehyde, arsenic compounds, chromium compounds, and diesel particulates as major air toxics of concern to the community. Discussions with the AQMP Workgroup should continue regarding health-based evaluation metrics under the AQMP and the other ancillary air quality issues to be included.

During this quarter, APCP staff reviewed air toxics data collected at the National Air Toxics Trends Station (NATTS) during 2009. Staff examined both the cancer and non-cancer risks associated with ambient exposure to air toxics. Also, staff compared the results of this NATTS data analysis to data analyses of the 2005 National-Scale Air Toxics Assessment (NATA). A detailed staff report is attached with this quarterly report.

Changes to the Planned Tasks

Due to a limited budget awarded by EPA, the RFP review committee exerted a lot of effort to make the project tasks listed in the RFP are within the budget limit without compromising the quality of tasks needed from contractors. Developing mobile sources emission input is one of the most data intensive and time consuming task. The RFP committee suggested that there will be need to complete some of the tasks in house and let the contractor complete

tasks that require a lot of computing power. Specifically, there are two changes made for this task:

- Instead of generating CMAQ-ready on-road mobile source emissions inputs for the June-September 2007, ENVIRON will run the SMOKE-MOVES modeling system on the 4/1 km domains for the first two weeks of the four month modeling period. ENVIRON will then transfer the SMOKE-MOVES set up for the June-September 2007 period to the Missouri APCP and the APCP staff would generate the model-ready mobile source emissions for the remainder of the modeling period.

- To improve the efficiency of MOVES run, the ENVIRON Team would run MOVES for counties in Missouri, Illinois, Kansas, and Oklahoma. The ENVIRON Team will use the scripts to generate the meteorological data for MOVES and set up the multiple files for MOVES for each representative county. The MOVES runs will be executed using ENVIRON's MOVES-dedicated computer cluster of eight machines (one master and seven workers), reducing run time required to produce lookup tables.

Financial Report

The following items were billed to the grant during the 4th quarter 2010.

Expenditures as of 12-31-2010		
CATEGORY	**CURRENT PERIOD EXPENDITURES**	**CURRENT CUMULATIVE**
PERSONAL SERVICE	9,257	59,185
FRINGE	5,157	24,397
CONTRACTUAL	0	0
INDIRECT	4,397	22,280
SUPPLIES	0	0
OTHER	0	0
TRAVEL	0	113
TOTAL EXPENDITURES	**18,812**	**105,976**

This leads to a total expenditure of $105,976 during the 4th quarter 2010.

Next Quarter Activities

The activities in the 1st quarter of 2011 will further the implementation of the St. Louis AQMP. 1) The Air Quality Advisory Committee will meet to discuss about the implementation of the AQMP. 2) Review on the modeling protocol will start when submitted by ENVIRON. 3) Development of a local-scale toxics inventory for the pollutants identified will be continued. 4) Base Case 2007 MOVES runs will be commenced. . 5) In addition, discussions regarding health-based evaluation metrics under the AQMP and the other ancillary air quality issues to be included in the AQMP evaluations.

Table - Schedule Changes of Major Project Tasks

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
3B2	Quality Assurance Project Plan (QAPP)	Development and submittal of QAPP for creation and implementation of the St. Louis AQMP	Submittal of draft QAPP for the project to USEPA	10/08	3/09	Draft, yes. (12/08) Final, work in progress	EPA Region VII is continuing review of the draft QAPP and will provide additional specific comments on the QAPP
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	04/11	N/A	Work continues and staff has received air quality emission data from Illinois to proceed and continues work on the Missouri data

Table - Schedule of Major Project Tasks

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
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 promul-gated. 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 paradigm
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 $170 ,000 (this amount will not fund the whole effort; assistance only)	Completed RFP for modeling assistance	12/08	11/10	Complete	

Table 1 - Schedule of Major Project Tasks

	Task Name	Task Description	Outputs Expected	Start Date	End Date	Complete	Comments
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	01/11	Complete	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	07/10		Many of these choices have been made, but some of the remaining decisions will have to wait until EPA has finalized the new 8-hour ozone standard