AQRP Monthly Technical Report

PROJECT TITLE	MOVES-Based NO_x Analyses for Urban Case Studies in Texas	**PROJECT #**	16-010
PROJECT PARTICIPANTS	Sonoma Technology, Inc. (STI)	**DATE SUBMITTED**	May 8, 2017
REPORTING PERIOD	**From:** April 1, 2017 **To:** April 30, 2017	**REPORT #**	7

A Financial Status Report (FSR) and Invoice will be submitted separately from each of the Project Participants reflecting charges for this Reporting Period. I understand that the FSR and Invoice are due to the AQRP by the 15th of the month following the reporting period shown above.

Detailed Accomplishments by Task

During this reporting period, the STI team continued work on Task 2 MOVES Sensitivity Analyses with identifying key testing parameters, developing testing scenarios, and preparing MOVES modeling runs.

Preliminary Analysis

The project team continued work to prepare the MOVES modeling runs to test how NO_x emissions change against key input data. As summarized in the last technical report, four key factors have been identified as the focus in developing MOVES modeling scenarios: fleet mix (truck percentage), vehicle speed (VMT by speed distribution), vehicle age (VMT by age distribution), and meteorology (ambient temperature and relative humidity).

The team designed 16 MOVES testing scenarios (see the summary table below) for each of the three analysis areas (Fort Worth, Houston, and El Paso). These testing scenarios were designed to be associated with specific modeling context to quantify how NO_x emissions change when input data vary at different levels. This preliminary list of scenarios includes:

- Default – testing scenario with the MOVES2014a default input data;
- Base – testing scenario with MOVES input data from TCEQ, NCTCOG, and HGAC (consistent with the MOVES running scenarios in the Task 1 reconciliation analysis for developing MOVES-based CO/NO_x ratios);
- Truck % – testing scenarios with different truck % (VMT) assumptions from 0% to 30%;
- Speed Dist. – testing scenarios with different VMT by speed distribution assumptions (the TCEQ MOVES dataset for multiple county groups will be used to qualitatively develop low-speed, medium-speed, and high-speed distribution levels);

- Age Dist. – testing scenarios with different VMT by vehicle age distribution assumptions (the TCEQ MOVES dataset for multiple county groups will be used to qualitatively develop new, medium, and old vehicle fleet); and
- Temperature and Rel. Humidity – testing scenarios with temperature and relative humidity data from different averaging approaches (e.g., half-year season window, 3-month season window, and 1-month season representation).

Scenario	Truck %	Speed Dist.	Age Dist.	Temperature and Rel. Humidity
TrkDef_spdDef_ageDef_tempDef_RHDef	Default	Default	Default	Default
TrkBase_spdBase_ageBase_tempBase_RHBase	Base	Base	Base	Base
Trk0_spdBase_ageBase_tempBase_RHBase	0	Base	Base	Base
Trk5_spdBase_ageBase_tempBase_RHBase	5	Base	Base	Base
Trk10_spdBase_ageBase_tempBase_RHBase	10	Base	Base	Base
Trk20_spdBase_ageBase_tempBase_RHBase	20	Base	Base	Base
Trk30_spdBase_ageBase_tempBase_RHBase	30	Base	Base	Base
TrkBase_spdLow_ageBase_tempBase_RHBase	Base	Low	Base	Base
TrkBase_spdMid_ageBase_tempBase_RHBase	Base	Medium	Base	Base
TrkBase_spdHigh_ageBase_tempBase_RHBase	Base	High	Base	Base
TrkBase_spdBase_ageNew_tempBase_RHBase	Base	Base	New	Base
TrkBase_spdBase_ageMid_tempBase_RHBase	Base	Base	Medium	Base
TrkBase_spdBase_ageOld_tempBase_RHBase	Base	Base	Old	Base
TrkBase_spdBase_ageBase_tempSite_Sum_Win_RHSite_Sum_Win	Base	Base	Base	Site_Sum_Win
TrkBase_spdBase_ageBase_tempSite_Season_RHSite_Season	Base	Base	Base	Site_Season
TrkBase_spdBase_ageBase_tempSite_Month_RHSite_Month	Base	Base	Base	Site_Month

Data Collected

No new data were collected during this reporting period. The team is using the following data to set up MOVES modeling runs: MOVES2014a default input data from the County Data Manager, MOVES modeling input data included in the TCEQ dataset, local travel activity data from Texas Department of Transportation (TxDOT), and other related local MOVES input data (traffic count and speed) obtained from NCTCOG and HGAC for their emissions inventory development.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

The team continued to follow the analysis strategy described in previous monthly technical reports; no additional problems or issues were encountered during the reporting period.

Goals and Anticipated Issues for the Succeeding Reporting Period

The team continued work on the planned emissions reconciliation analysis and MOVES sensitivity analyses. No significant issues are expected in the next reporting period.

Detailed Analysis of the Progress of the Task Order to Date

The completion of project tasks and the project deliverables are expected to follow the schedule from the work plan and quality assurance project plan.

Do you have any publications related to this project currently under development? If so, please provide a working title, and the journals you plan to submit to.

___Yes _x_No

Do you have any publications related to this project currently under review by a journal? If so, what is the working title and the journal name? Have you sent a copy of the article to your AQRP Project Manager and your TCEQ Liaison?

___Yes _x_No

Do you have any bibliographic publications related to this project that have been published? If so, please list the reference information. List all items for the lifetime of the project.

___Yes _x_No

Do you have any presentations related to this project currently under development? If so, please provide working title, and the conference you plan to present it (this does not include presentations for the AQRP Workshop).

_x_Yes ___No

Working title: MOVES-Based NO_x Analyses for Urban Case Studies in Texas
Conference: US EPA Emissions Inventory Conference, Baltimore, MD, August 14-18, 2017
Podium session: Reconciling NO_x Emission Inventories with Ambient Observations

Do you have any presentations related to this project that have been published? If so, please list reference information. List all items for the lifetime of the project.

___Yes _x_No

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