AQRP Monthly Technical Report

PROJECT TITLE	Development and Evaluation of the FINNv.2 Global Model Application and Fire Emissions Estimates for the Expanded Texas Air Quality Modeling Domain	PROJECT #	18-022
PROJECT PARTICIPANTS	University of Texas at Austin (UT Austin) Sonoma Technology, Inc. (STI) Dr. Christine Wiedinmyer	DATE SUBMITTED	7/8/2019
REPORTING PERIOD	**From:** 6/1/2019 **To:** 6/30/2019	REPORT #	9

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

Task 1. Development and Release of the FINN v2 Global Application
The development of FINNv2.2 has been completed. The University of Texas at Austin team and Dr. Wiedinmyer have been working on documenting the methodology used in the FINNv2.2 development.

Task 2. FINN v2 Global Emissions Estimates
Global simulations for 2016 and 2018 with FINNv2.2 using MODIS and VIIRS active fire detections have been completed.

Task 3. Assessment of FINN Performance Using Satellite Observations
Predictions of air quality from the Comprehensive Air Quality Model with Extensions (CAMx) with FINNv2.2 fire emissions estimates for 2012 are being evaluated with the Multi-Angle Implementation of Atmospheric Correction (MAIAC) aerosol optical depth (AOD) product to assess FINN performance. CAMx simulations were completed with all fire emissions removed ("no fires") as a basis for reference, with processed FINNv2.2 emissions with MODIS and VIIRS active fire detections, and with processed FINNv2.2 emissions with only MODIS detections. AOD values were calculated using CAMx simulation results and meteorology based on the second IMPROVE equation. HYSPLIT dispersion runs are nearly completed using FINNv2.2 fire emissions and completed runs are being converted to AOD values for comparison with satellite observations.

Preliminary Analysis
As above.

Data Collected
None.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments
None.

Goals and Anticipated Issues for the Succeeding Reporting Period
Major goals for the next reporting period include completing documentation of the FINN v2.2 development and simulations for the draft final report, as well as preparation of the presentations for the 2019 Emission Inventory Conference.

Detailed Analysis of the Progress of the Task Order to Date
The project is proceeding as planned.

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
Two presentations will be made at the 2019 Emission Inventory Conference on August 2, 2019 in Dallas, Texas.

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

Submitted to AQRP by

Elena McDonald-Buller