

3-State Air Quality Study

Pilot Study Work Activities completed - August 2012 through September 2014

September 30, 2014 Summary

Goals of the 3-State Pilot Study (from 2012-14 Work Plan)

- Develop technical capacity and improved datasets for the cooperating agencies using standardized reproducible data collection, quality assessment, analysis, and storage protocols.
- Identify, document, and apply criteria for 3SAQS base-case and future projection years.
- Address the process for individual cooperating agencies to provide funding and in-kind resources for the ongoing 3SAQS project activities, as well as identifying metrics to track the effort invested by individual agencies in using the technical products and data warehouse.
- Identify the mechanisms to be used by the cooperators' Technical Committee to report recommendations and work products to the Steering Committee and Leadership Team.
 - The Technical Committee includes cooperators' expertise in monitoring, emissions, modeling, and Data Warehouse activities, to oversee development, analysis, and management of data.

Accomplishments 2012-14

Monitoring

- Developed a monitoring network assessment for joint and individual monitoring efforts of 3SAQS cooperating agencies for the 2014-17 time period, in Spring 2014.
- Ongoing tracking and access to 3-State region, western, and national ozone and other air quality monitoring data.

Meteorological Modeling

- Processed into 3SDW and used WestJumpAQMS 2008 meteorological data as the basis of 3SAQS2008baseA and baseB modeling platforms, and 3SAQS2020projection modeling platforms.
- Prepared and thoroughly evaluated annual WRF meteorological modeling inputs for the 2011 3SAQS2011baseA and 3SAQS2020projectionA modeling platforms.

Emissions

- Updated and made targeted improvement to WestJumpAQMS 2008 emissions data by improving chemical, temporal, and spatial profiles within the 3-State region.
- Used NEI 2011v1 emissions compiled by EPA to anchor 3SAQS2011baseA modeling platform.

- Leveraged and applied outside (non-EPA) inputs (biogenics, fire, O&G, others) into 3SAQS2011baseA modeling platform.
- Scaled O&G emissions accounting for growth and control from 2008 to 2011 for 3-State region basins and the South San Juan Basin.
- Leveraged and applied outside (MT-Dakotas BLM) 2011 O&G base year EI data into 3SAQS2011baseA modeling platform.

Modeling

- Transferred and archived WestJumpAQMS 2008 modeling and source apportionment results as the foundation for 3-State modeling and the Data Warehouse.
- 2008 3SAQS modeling platform setup, multiple runs, and evaluation using improvements to 3SAQS region emissions from WestJumpAQMS starting point.
- 2011 3SAQS modeling platform version 1 setup, initial evaluation run, and version 1 modeling results carrying forward earlier improvements and applying additional improvements, and leveraging outside resources for 3SAQS and western regions' emissions
- Based on the 3SAQS 2008 and 2011 base years' platforms, performed air quality modeling of 2020 projection years' emissions and air quality.
- Conducted outside "user testing" of 3SAQS modeling platforms and data transfer procedures.

Data Warehouse

- Completed version 1 of Data Warehouse development.
- Began Data Warehouse operations (hosting, data analysis and processing, tracking, maintenance, et cetera).
- Developed version 1 of transparent and documented procedures and protocols.
- Tested and completed transfer of large quantities of modeling input and output data to and from remote modeling centers to the Data Warehouse.
- Performed scoping of access/visualization tools for evaluation of modeling results within the Data Warehouse.