# 3SDW NEPA AQ/AQRV Process Outline

# Draft: 7/25/2014

The National Environmental Policy Act (NEPA) establishes policy which requires federal agencies to prepare detailed statements assessing the environmental impact of major federal actions which may significantly affect the environment. The air component of a NEPA project might consist of evaluation of air quality (AQ) and air quality related value (AQRV) impacts due to emissions from a proposed action as part of NEPA related analyses, which may include analysis as part of an Environmental Assessment (EA), Environmental Impact Statement (EIS), Resource Management Plans (RMP) and/or leasing analyses.

The Three State Data Warehouse (3SDW) is a repository of air quality data related modeling, evaluation and visualization tools developed cooperatively by the Environmental Protection Agency (EPA) Region 8, Forest Service (FS), National Park Service (NPS), and Bureau of Land Management (BLM) and State agency offices in Colorado, Wyoming, and Utah State Offices. The air quality modeling resources and data packages available through the 3SDW have been designed, in part, to help ensure project consistency, comparability and transparency for NEPA related projects in this region. A general description of steps involved in the AQ/AQRV component of a NEPA project, including identification of resources available through the 3SDW, is outlined below.

## Project Description and Project Scoping Notice Issued by FLM

A Project could consist of a group of oil and gas (O&G) wells, mining, energy generator, or another source that is operating on Federal lands thereby triggering a NEPA analysis. The NEPA process would consist of an evaluation of the potential environmental impact of a proposed action and alternatives, which may involve modeling and other analyses to assess potential AQ/AQRV impacts.

If it is determined that photochemical air quality modeling assessments are required for NEPA analysis, the 3SDW offers a repository of modeling resources which adhere to an approved precedent for modeling in the region. For each 3SDW supported NEPA project, some information will be necessary from the user before data will be made available. This information will be used to obtain data access approvals from the Lead Agency, and to help track projects supported by the DW.

## Modeling Protocol

A user can browse available modeling platforms in the 3SDW and obtain a data manifest that describes files and specifications relevant to a specific 3SDW Modeling Package, which can be used to develop a modeling protocol and obtain approvals.

The DW may also contain references or links to publically available (Post-DEIS) protocol that were previously approved for other NEPA projects and may serve as a useful starting point for a new project.

Currently, the 3SDW modeling support is limited to PGMs (CAMx and CMAQ), and will not maintain CALPUFF and AERMOD input information that may be necessary in a modeling protocol document. Future 3SDW activities and work may include support for additional dispersion modeling.

## Project-Level Emissions Inventory (Near-field Modeling Inventory)

The 3SDW will maintain area and point O&G emissions for current and future no-action scenarios and these emissions inventories will be included in a 3SDW Modeling Package. A user would need to modify these inventories to reflect a specific proposed action and possible alternatives.

## Regional Modeling Inventory (Far-field Modeling Inventory) for Base Year and Projected year

The 3SDW will maintain model-ready U.S. and non-U.S. emission inventories excluding the O&G sources referenced above, and these emissions inventories will be included in a 3SDW Modeling Package.

Emissions inventory viewing tools including all data offered in each of the 3SDW modeling packages will be available on the 3SDW. Viewing tools will also have the option to download excel spreadsheets containing state and category specific annual summaries.

## Meteorological Model Performance Evaluation Report

The 3SDW will maintain model-ready meteorological input files, along with a meteorological performance evaluation (MPE) report. These files will be included in the 3SDW Modeling Package. Model performance review tools are also available through the 3SDW allowing for selection and evaluation of specific meteorological performance metrics for specific sites.

## Photochemical Grid Model Performance Evaluation Report

The 3SDW will maintain modeling scenarios, along with a photochemical grid model (PGM) model performance evaluation (MPE) report. These files will be included in the 3SDW Modeling Package. Model evaluation tools are also available through the 3SDW allowing for selection and evaluation of specific performance metrics for specific pollutants at specific sites.

## Near-Field Modeling (AERMOD) Analyses

The 3SDW currently only supports CMAQ and CAMx photochemical grid models. Information regarding approved AERMOD configuration and input files should be available from state offices and FLMs. Future versions of the 3SDW may support additional dispersion modeling files.

## Far-Field (Regional) Modeling Analyses

Upon approval by the 3SAQS Cooperators, users can obtain 3SDW Modeling Packages from the 3SDW for far-field CMAQ and CAMx modeling analyses. A data package manifest will be provided for each available 3SDW Modeling Package to outline modeling configuration and input files associated with each 3SDW Modeling package. Instructions will also be included for Quality Assurance (QA)/Quality Control (QC) procedures.

## Criteria pollutant and AQRV (Visibility, Deposition, and Lake Chemistry) impact ANALYSES

In general, the 3SDW will maintain Photochemical Grid Model (PGM) model input and configuration files, along with recommendations and instructions for performing a NEPA AQ/AQRV analyses. These items will make up a specific 3SDW Modeling Package. For each new NEPA study, the Lead Agency will only need to perform PGM modeling for the future no-action and proposed project scenarios. The NEPA contractor for the Lead Agency will not need to perform base case modeling because the 3SDW will have already performed the Model Performance Evaluation (MPE) for the base case period. The 3SDW will also perform a future no-action model simulation.

Additionally, guidance will be offered for the NEPA contractor to repeat the future no-action cases to demonstrate that the data transfer and modeling platform accurately reproduces the 3SDW model results for the future no-action cases. The simulations performed by the NEPA contractor and provided by the 3SDW will then be used to determine the impacts on air quality and AQRVs. Guidance for using the 3SDW modeling packages will be included with each package download. Guidance and tools will also be include to calculate ozone relative response factors (RRFs) for a project case relative to the base case.

Note that, currently, the 3SDW does not support analysis of impacts that may be required using AERMOD and CALPUFF models.

## Air Quality Technical Support Document

The final Air Quality Technical Support (TSD) document contains information about the NEPA project development, the model methodology, the model performance evaluation, and predicted impacts on air quality and AQRVs. The TSD is typically attached to the NEPA Environmental Impact Statement (EIS) as an appendix. Post decisional documentation may be made available through the 3SDW at the discretion of the lead agency.

# Environmental assessments

Following generation of quality approved modeling and analysis results, NEPA documentation, which may include Environmental Assessments (EAs), Environmental Impact Statements (EISs), Resource Management Plans (RMPs) and leasing analyses are generally released in draft and final stages. Note that the 3SDW supports only the AQ/AQRV components of NEPA documentation (e.g. Chapters 3 and 4 of an EIS).

At specific review points, the public, other federal agencies and outside parties may provide input into the preparation of these documents, and then comment on the drafts when completed. No pre-decisional information will be maintained or available through the 3SDW. Post-decisional, publically available documents may be made available through the 3SDW at the discretion of the Lead Agency.

# Record of Decision (ROD)

After a final EIS or other NEPA assessment is prepared and at the time of its decision, a federal agency will prepare a public record of it’s decision (ROD) addressing how the findings of the assessment, including consideration of alternatives, were incorporated into the agency's decision-making process.

Note that a ROD can require follow-up modeling that incorporates controls, BMPs, revisions, etc.