Baseline and Projection-Year Inventory Overview

The Maintenance Plans for PM_{10} requires a quantitative demonstration of continued attainment over a 10-year span beginning from the point of EPA approval. This typically involves forecasting PM_{10} concentrations using an air quality model, and the basis for these forecasts is an accurate inventory of emissions.

The air quality modeling is done in a relative sense, meaning that for each future projection of PM_{10} concentration, the model (CMAQ) is run twice, once using the baseline inventory and then again using a projection-year inventory. Each projection-year inventory is constructed by adjusting the baseline inventory to reflect growth in population, vehicle miles traveled, and industrial activity as well as the benefits of emission controls resulting from the SIP or otherwise. The baseline inventory is therefore essential to this process.

The baseline inventory should correspond to the period with a recently observed design value. In this case, monitored concentrations from 2011 – 2014 will be considered in constructing the monitored design values that are used in conjunction with the modeled concentrations. 2011 is within this time span, and is also the most recent tri-annual inventory on file with the Utah Division of Air Quality (UDAQ). 2011 was therefore chosen as the baseline year for the purpose of SIP modeling.

The baseline inventory includes estimates of actual emissions for the following criteria pollutants: PM_{10}, SO_2, NOx, VOC, CO, and NH_3.

It also includes contribution from a number of sectors. UDAQ routinely considers emissions from the following generalized source groupings:

- Large industrial *point sources*;
- *Area sources*, which include smaller, and more numerous, industrial sources as well as activities like space heating that may be well approximated by surrogate indicators such as population;
- *On-road mobile sources;* and
- *Non-road mobile sources.*

Projection year inventories were prepared for the following years: 2019, 2024, 2028, and 2030.

To assist the reader, the baseline and projection-year inventory portion of the TSD is organized using the categorizations discussed above.

A summary table of emissions for each of these years (after pre-processing in the SMOKE model) is presented in the SIP narratives. The following sections of the TSD include more in-depth information for point sources, area sources, on-road mobile sources and non-road mobile sources, including summary tables for each.