

Episodic Inventory Overview

Much of the technical work done to support the modeled attainment demonstration of the State Implementation Plan (SIP) for PM_{2.5} is the collection of accurate emissions inventories. The episodic inventory is an assessment of actual emissions paired in time with the episodes of elevated PM_{2.5} concentrations used to validate the air quality model. The inventory includes estimates for the following criteria pollutants: PM_{2.5}, SO_x, NO_x, VOC, CO, and NH₃. The inventory also includes contribution from a number of sectors. The Utah Division of Air Quality (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.

Episodic inventories are used to verify that the air quality model is working properly by replicating concentrations that were measured during the corresponding episode. The modeling analysis that supports this SIP evaluated three such episodes. The days selected included January 1, 2011 through January 10, 2011, December 7, 2013 through December 19, 2013, and February 1, 2016 through February 16, 2016. For further information on how the specific days were determined and incorporated into each of the episodic inventories, refer to the files in the rest of of this Technical Support Document, organized in the following fashion:

2.b Point Sources

2.c Area Sources

2.d Non-Road Mobile Sources

2.e On-road Mobile Sources