

SECTION 4: EMISSIONS INVENTORY

4.1 Overview

Section 110(a)(2)(B) of the CAA Amendments and the Air Emissions Reporting Requirements (AERR) (73 FR 76539, December 17, 2008) require that emissions inventories (EIs) be prepared for ozone nonattainment areas. Because ozone is photochemically produced in the atmosphere when volatile organic compounds (VOC) and nitrogen oxides (NO_x) mix in the presence of sunlight, information on sources of these precursor pollutants must be compiled. The EI identifies the types of emission sources present in the area, the amount of each pollutant emitted, and the types of processes and control devices employed at each plant or source category. The EI provides data for a variety of air quality planning tasks, including:

- establishing baseline emission levels;
- calculating emission reduction targets;
- developing control strategies for achieving the required emission reductions;
- providing emissions inputs into air quality simulation models; and
- tracking actual emission reduction against the established emission growth and control budgets.

The total anthropogenic inventory of emissions of VOC and NO_x for an area is summarized from the estimates developed for four general categories of emissions sources: point, nonpoint, onroad mobile, and nonroad mobile.

4.2 Point Sources

The state of Louisiana compiles a statewide emissions inventory for point sources on an annual basis. The reporting requirements for the nonattainment areas are in accordance with those of the CAA Amendments of 1990 and LAC 33:III.918 and 919 (Recordkeeping and Annual Reporting and Emissions Inventory). Emissions data provided by the facilities are estimates of actual emissions for the facility during the previous calendar year. Estimation methodologies are required to follow state and federal guidelines utilizing AP-42 or other approved methods. Actual testing or measurement data may be substituted as available.

For the purpose of emission inventory, point sources are defined as stationary commercial or industrial operations that emit 100 tons or more per year of VOC or NO_x. Each facility meeting the emissions criteria submit complete EI reports which contain site-specific

data in conformance with EPA guidance for ozone maintenance areas. A list of point sources, located in the BRNA as of August 10, 2009, is included in Appendix C.

4.3 Nonpoint Sources

Nonpoint sources, also known as area sources, are represented as many small, individually unidentified points of air pollution emissions within a specified geographical area. Typically these sources are too numerous or too small to be addressed individually and include, but are not limited to, activities such as dry cleaning, bakeries, graphic arts, auto refinishing, and consumer product usage. Emission factors used to estimate emissions are developed and applied for the aggregate source categories.

The data used for this section was provided by Environ International Corporation under contract to LDEQ. The methodology for the stationary nonpoint section can be found on page 3-6, of the Technical Support Document – Modeling to Support the Baton Rouge, Louisiana 8-Hour Ozone State Implementation Plan. (See Appendix D)

4.4 Onroad Mobile Sources

Onroad mobile vehicles are those light and heavy duty gasoline and diesel automobiles and trucks that travel primarily on public highways. Onroad mobile emissions estimates within the nonattainment area were developed based on parish-specific inputs provided by several state agencies. Two different nonattainment area onroad inventories were generated for each modeling year: (1) an initial inventory based on parish-level measured Highway Performance Monitoring System (HPMS) vehicle miles traveled (VMT) and MOBILE6 inputs; and (2) a final inventory based on link-level VMT derived from a transportation demand model (TDM) and parish-level MOBILE6 inputs. (See Appendix D)

4.5 Nonroad Mobile Sources

Nonroad mobile sources are often included as nonpoint sources because of the number and size of sources. Nonroad mobile sources include, but are not limited to, railroad locomotives, aircraft, commercial marine vessels, farm equipment, recreational boating, and lawn equipment.

The EPA's National Mobile Inventory Model (NMIM) model was used to generate Louisiana statewide parish-level offroad equipment emissions estimates for June 2006. NONROAD and NMIM do not include emissions estimates for railroad locomotives, aircraft, and marine vessels (excluding maintenance equipment). Louisiana emissions for locomotives and aircraft were derived from the 2006 TCEQ inventory, which were ultimately derived from the 2002 NEI. Marine shipping emissions for the entire modeling domain were developed from CENRAP inventories¹⁸.

¹⁸ <http://www.deq.louisiana.gov/portal/Default.aspx?tabid+2542>