

Chapter 3

SUMMARY OF SELECTED MODELS

Types of Models Available

There are two basic types of LRT Models: Lagrangian (trajectory) and Eulerian (grid).

A Lagrangian Model solves the conservation equations in a coordinate system fixed to each moving air parcel.

An Eulerian Model solves the conservation equations in a fixed coordinate system through which air masses are advected and diffused. The computation points are usually arranged in a fixed grid.

All models are then variations of these two basic approaches. One can have, for example, a statistical Lagrangian model or an analytical Eulerian model, the choice being made by the modeler to allow a certain form of output or to use a given form of input data.

The basic types of LRT models can be applied to both short-term (multi-day episodes) and long-term (monthly, seasonal, and annual) simulation periods, and outputs of both can be displayed as point values, areal values, or gridded values.

Work Group II decided that the annual time period should be the primary focus for modeling source-receptor relationships and fluxes for Phases I and II due to the large amount of preparatory work required to provide adequate shorter time