with this subject in greater detail, a complete analysis of the impact of non-linearity is beyond the scope of this report. Additional sensitivity analyses and evaluations against measurement data are expected to shed more light on this matter.

7.2   Regional Modeling Approach

Eight long range transport models (Table 7.1) developed by Canadian and U.S. scientists were applied by the Regional Modeling Subgroup of Work Group 2 using standardized input data sets. This section discusses the general attributes and data input requirements of these models and the differences in the modeling techniques employed.

The techniques of simulating the transport, dispersion, transformation, and deposition of pollutants are quite varied since:

(1)   the best modeling techniques are not clearly discernible (that is, each technique has advantages and disadvantages);

(2)   the nature of all relevant physical and chemical processes is not fully understood;

(3)   each modeler makes various assumptions to simplify the complex processes; and

(4)   each model was developed independently.

This wide range in modeling techniques will become evident in the discussion in the subsequent section and from Table 7.2.