

in this report. A major effort will be made during Phase II to review available research results, both published and unpublished, in order to specify more precisely the validity and range of uncertainty that characterize the methodologies utilized and results presented in this and subsequent reports.

Although many substances may undergo transboundary atmospheric transport and have harmful effects upon either the atmosphere or surface receptors, acid deposition is the phenomenon of primary concern for the first two phases of our Work Group activities. As a consequence, highest priority has been given to the study of oxides of sulfur and nitrogen, the main precursors of acid precipitation. During this first phase, emphasis has also been placed on the development of the "transfer matrix" concept. It is this application of establishing quantitative relationships between sources and sensitive receptors for which mathematical models are uniquely suited, and the development of useful, comprehensible display of this information is of great importance.

This first report is structured to follow closely the terms of reference for the Group. The following two chapters describe the role of models in the particular application at hand, and those models which have been selected for use in Canada and the United States. In Chapter 4 source region and sensitive area development and the source-receptor matrix concept are presented. The fifth chapter, perhaps the most important of this Phase I