

LIST OF TABLES

PM SCIENCE FOR POLICY MAKERS: SYNTHESIS

Table S.1 (1.3). Existing national PM standards and their implementation timetables.	10
Table S.2 (5.1 - 5.3). Measurement uncertainty in PM physical and chemical characteristics.	17
Table S.3 (8.2). Levels of confidence in aspects of chemical-transport model simulations.	31
Table S.4 (3.2). Typical pollutant/atmospheric issue relationships.	37
Table S.5 (9.2). Responses of regional haze and climate to reductions in the emissions of secondary PM precursors and primary PM.	38
Table S.6 (4.8). Estimated confidence level of emission estimates.....	41
Table S.7. Typical periods for acquisition of information on progress.	46
Table S.8 (adapted from Textbox 2.5). Availability of ambient measurement methods for hypothesized causal elements of PM-induced health effects.	49
Table S.9. Policy benefits of the specific research directions.	52

CHAPTER 1

Table 1.1. Comparison of ambient particle fractions.	55
Table 1.2. General descriptions of PM emissions and source types.	60
Table 1.3. Existing PM standards and their implementation timetables.	63

CHAPTER 2

Table 2.1. Comparison of Mortality Risk Ratios for Smoking and Air Pollution from the Six Cities and ACS Prospective Cohort Studies.	87
---	----

CHAPTER 3

Table 3.1. Predicted changes in aerosol component concentrations for a reduction in precursor emissions for Southern California.	115
Table 3.2. Typical pollutant/atmospheric issue relationships.	122

CHAPTER 4

Table 4.1. Global sources of airborne particles roughly less than 10 μm in diameter	128
Table 4.2. Illustrative linkages between current emission information used for estimating ambient concentrations relevant to hypothesized causal elements for PM health effects.	131
Table 4.3. Summary of nationwide 1995 Canadian and 1999 U.S. emissions by similar categories.	133
Table 4.4. Demographics of example North American cities.	134
Table 4.5. Comparison of PM_{10} and $\text{PM}_{2.5}$ emissions between Atlanta, Toronto, Mexico City, and Los Angeles.	135
Table 4.6. Comparison of precursor gas emissions for Atlanta, Los Angeles, Mexico City, and Toronto.	136
Table 4.7. Summary of historical and projected national emissions for Canada and the United States.	143
Table 4.8. Estimated confidence level of emission estimates.	147

LIST OF TABLES

CHAPTER 5

Table 5.1. Estimated uncertainty in measurements of the physical properties of PM.	175
Table 5.2. Uncertainty in measurements of the chemical composition of PM: acids and inorganics.	176
Table 5.3. Uncertainty in measurements of the chemical composition of PM: carbon and organics.	177
Table 5.4. Uncertainty in routine measurements of gas-phase compounds.	179

CHAPTER 7

Table 7.1. Summary of receptor model source-apportionment models.	242 et seq.
Table 7.2. Receptor and source methods used to attribute SO_4^- in the Grand Canyon to Mohave.	264 et seq.

CHAPTER 8

Table 8.1. Performance evaluations of PM grid models for $\text{PM}_{2.5}$ and components with the SCAQS data base in the Los Angeles basin.	303
Table 8.2. Present qualitative levels of confidence in various aspect of PM CTM simulations.	314 et seq.

CHAPTER 9

Table 9.1. Recent short-term visibility measurement programs.	336
Table 9.2. Responses of regional haze and climate to reductions in the emissions of secondary PM precursors and primary PM from present-day levels.	344

CHAPTER 10

Table 10.1. Average chemical composition of $\text{PM}_{2.5}$ at four sites, from March 2 to March 19, 1997.	376
Table 10.2. 1998 Emission Inventory for the MCMA.	378
Table 10.3. Difference in annual average (1999) $\text{PM}_{2.5}$ levels in the urban-rural pairs of the SEARCH network.	380
Table 10.4. Long-term average values reported by national and state or provincial agencies for $\text{PM}_{2.5}$ and PM_{10} concentrations.	399
Table 10.5. Comparison of urban and rural $\text{PM}_{2.5}$ speciation measurements.	400
Table 10.6. Period-of-record mean levels measured in Alberta, Canada for the types of sites as indicated.	401

CHAPTER 11

Table 11.1. Summary of Recommendations.	416 et seq.
--	-------------

APPENDIX A.

Table A.1. 1999 U.S national emissions for PM and related pollutants (thousand short tons).	446
Table A.2. 1999 Canadian emission inventory for PM and related pollutants (Ktonnes/yr).	454

APPENDIX B.

Table B.1. Quantifiable properties for particle and particle-related measurements.	460
Table B.2. Major components of selected integrated particulate samplers.	464
Table B.3. Summary of real-time particle monitoring techniques.	469
Table B.4. Summary of real-time single particle measurement techniques.	475
Table B.5.a. In-situ measurements of aerosol optical properties.	477
Table B.5.b. Long path measurements of aerosol optical properties.	477
Table B.6. Summary of real-time gas-phase precursor measurements. a. Sulfur compounds.	479
Table B.6. b. Ammonia.	480
Table B.6. c. Ozone.	480
Table B.6. d. Carbon monoxide.	481
Table B.6. e. Speciated volatile organic compounds.	482
Table B.6. f. Nitric oxide, nitrogen dioxide, and total reactive nitrogen.	483
Table B.6. g. Other nitrogen oxides.	484
Table B.6. h. Peroxides.	485
Table B.6. i. Odd hydrogen species.	485
Table B.7. Instruments used to measure meteorological parameters over a long-path and/or above the surface.	486

APPENDIX C.

Table C.1. General specifications for PM observation and monitoring networks.	495
--	-----

LIST OF TABLES