

DRAFT ALTERNATIVE OUTLINE – JANUARY 10, 2007

1. Introduction
 - 1.1. Needs, problem statement, in addition to process-based motivations (e.g., NRC, etc.)
 - 1.2. Context (e.g., existing institutional framework, long term needs – e.g., changing climate)
 - 1.3. What are the goals (of risk assessment)
 - 1.4. What can be accomplished with a risk-based approach, and desired outcomes
 - 1.5. (process oriented background – e.g., NRC, etc.)
2. Current Knowledge and Practice
 - 2.1. What has lead to the current single pollutant non-risk-based approach (e.g, mention institutional framework that constrains current approaches)
 - 2.2. Current information, knowledge, concepts: state of practice (what do we do now?), state of the science (what ca/could we do now?)
 - 2.3. Case Studies (highlight where there have been gaps or stovepiping – set stage for opportunity for improvement)
3. Emerging Needs
 - 3.1. Climate and air quality
 - 3.2. Others?
 - 3.3. Scope of this report (limitations on scope, acknowledgement of key issues that are important but are not addressed in detail here – e.g., indirect pathways, other pollutants, etc.)
4. Vision
 - 4.1. (a normative statement of an overall framework. Chapters that follow are based on major components of the framework)
 - 4.2. brief preview of general information, data, knowledge required
5. Hazard Identification and Formulating Objectives
 - 5.1. Scientific basis
 - 5.2. Methodology: e.g, risk-risk comparisons, comparisons between eco and human health
 - 5.3. Data/information/tools needed
 - 5.4. Stakeholder process, science-policy dialogue in developing objectives
 - 5.5. Uncertainties (need to be addressed for each major methodological component in each of these chapters)

6. Sources: Factors Affecting Multipollutant Emissions and Concepts for Multipollutant Control
 - 6.1. **Scope** (e.g., Point, mobile, area, biogenic/agricultural, pollutants)
 - 6.2. **Scientific basis**
 - 6.3. **Current status of methodology:** e.g., mass balance, emission factors, measurements, models, etc.
 - 6.4. **Prospects for future directions**
 - 6.5. **Data/information/tools needed** (rely on citation of NARTSO EI Assessment, with some elaboration as needed to deal with the multipollutant and control issues)
 - 6.6. **Metrics** (to help set up the chapter on accountability)
 - 6.7. **Uncertainties** (need to be addressed for each major methodological component in each of these chapters)
7. Fate and Transport: Atmospheric Science (and Multi-Media?)
(same general subsections as Chapter 6)
8. Exposure (human)
(same general subsections as Chapter 6)
9. Human Dose and Response
(same general subsections as Chapter 6)
10. Ecological Effects
11. Risk Characterization – Integration of System Components
 - 11.1. Overview of individual components and their key inputs/outputs
 - 11.2. Linkages between components: feed-forward, feed-back, common inputs
 - 11.3. Manual hand-off versus Integrated modeling approaches
 - 11.4. Risk Metrics and Indicators
 - 11.5. Uncertainty
12. Risk Management (how does one design a program based on the results of a risk assessment)
 - 12.1. Risk Management Process: Interface between Risk Analysis and Risk Management
 - 12.2. Conceptual Frameworks for Decision Making (e.g., multi-attribute, single attribute, risk preference/aversion, non-modeled issues)
 - 12.3. Data and Information Needs, and Communication
13. Accountability Assessment
(points of comparison are parallel to major components of the risk assessment framework – e.g., hazard ID, emissions, ambient concentration, exposure, dose, effects)

14. Revisit Case Studies (?) – i.e. what can be achieved if the “vision” is more fully realized? E.g., take an old one and what would happen if you made it better, or take a synthetic/conceptual new example and compare old and new approaches.

15. Conclusions and Recommendations

15.1. Roadmap

15.1.1. near-term (under current legal/institutional framework)

15.1.2. medium-term

15.1.3. long term (what can be realized if legal/institutional constraints are relaxed)

15.1.3.1. Development of methodology

15.1.3.2. Information/data needs

15.1.3.3. New tools

15.1.3.4. Etc.

16. Appendices

16.1. Overview of Existing Data

16.2. Overview of Existing Tools

16.3. Overview of other resources

16.4. Details of Case Studies