

AERMOD Implementation

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Outline

- Approach to AERMOD Implementation
- Guidance Development
- Implementation Guide
- Model Improvements
- Summary

AERMOD Implementation Process

- NEED: As implementation proceeds issues will arise
- PROCESS:
 - ISC or AERMOD for one year after promulgation
 - Provide Implementation Guide with promulgation
 - Model Clearinghouse Process
 - State contacts Region
 - Region writes memo to Clearinghouse
 - Clearinghouse memo back to Region
 - Archive memos / Annual report
 - As precedents and consensus builds, develop guidance
 - Model improvements

Guidance Development

- PURPOSE: Facilitate the scientifically appropriate & consistent regulatory application of AERMOD
- Basic tenets:
 - Keep principle based - avoid overly prescriptive guidance
 - Recognize the importance of initial decisions (precedence)
 - Allow flexibility for unique cases
 - Vet, document & rule-make where appropriate
- Types of guidance:
 - Appendix “W”
 - EPA Report
 - OAQPS policy memos
 - Clearinghouse memos
 - Individual precedents

Implementation Guide

- Selecting Surface Characteristics (B_o , r & z_o)
 - Defining representativeness
 - Matching meteorological data with source location
- Selecting population for urban runs
- Modeling sources in gently down-slopping terrain
- Capped and horizontal stacks
- AERMAP:
 - Domain boundary
 - Manual entry of terrain
- Use of the area source algorithm

Model Improvements

- Near-Term Improvements:
 - AERSCREEN
 - Surrogate for on-site cloud cover (Bulk Richardson # approach)
- Possible future improvements (e.g.):
 - Selecting surface characteristics (AERSURFACE)
 - Capped & horizontal stacks
 - Reformulate urban
 - Code optimization
 - Use of gridded met data
 - Meander for area sources
 - PM_{2.5} Output: 98th percentile concentrations
 - Add wind direction dependency for h_c
 - Add additional source types:
 - Line source
 - Buoyant line
 - Flares
 - Improve B_o treatment by including soil moisture

Summary

- Implementation issues are expected
- Implement in a manner that facilitates consistency in permitting and SIP development
- Implementation process:
 - ISC or AERMOD for first year
 - Provide advice for presently understood issues (Implementation Guide)
 - Deal with case specific issues in a timely manner
 - Communicate decisions (Clearinghouse Memos)
 - Develop formal guidance as experience is gained and consensus is reached
 - Allow for flexibility
 - Improve AERMOD as \$\$\$\$ allow