Policy Issues Related to Atmospheric Deposition and Receiving Water Quality

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Overview

- Recognition of the connection between atmospheric deposition and water quality
- Multi-media problems demand multi-agency planning and policy coordination.
- California needs the Air Board and the Water Board to work together and with others.

The Air-Water Interface

- USEPA recognized the connection between atmospheric deposition and water quality and started a collaborative effort by the Office of Air and Radiation and the Office of Water to Address the Air-Water Interface.

- In 2001, EPA prepared an "Air-Water Interface Work Plan" and published *Frequently Asked Questions about Atmospheric Deposition, A Handbook for Watershed Managers*.

- Much of the collaborative technical work has focused on mercury and nitrogen and has mostly taken place in the Great Lakes and East Coast states.

Water Pollutants Identified as Significant for Atmospheric Deposition in at Least One Location

- Sulfur compounds
- Nitrogen compounds
- Mercury compounds
- Lead compounds
- Cadmium compounds
- Chlorpyrifos
- Copper
- Zinc
- Polychlorinated biphenols (PCBs)
- Diazinon
- Dioxins/furans
- Dieldrin
- DDT/DDE
- Hexacholorobenzene (HC3)
- a-hexachlorocyclohexane (a-HCH)
- Lindane
- Toxaphene
- Polycyclic organic matter (POM), incl. polycyclic aromatic hydrocarbons (PAHs)
- Atrazine

Source: USEPA, *Frequently Asked Questions About Atmospheric Deposition, A Handbook for Watershed Managers*, Sept. 2001.

Adoption of TMDLs Has Focused Attention on the Air-Water Interface

- The Regional Water Boards in California are rapidly adopting Total Maximum Daily Loads (TMDLs) for waters that have been listed as impaired.
- These TMDLs assign loads to various sources of the constituents of concern and the Implementation Plans assign responsibility for reducing the pollutant loads.
- The regulatory reality is that water boards can regulate their permittees but don't have regulatory control over some of the major pollutant sources such as the sources of atmospheric deposition.

Storm Water Permittees Caught in a Regulatory/Authority Bind

- The combination of directly connected impervious areas and atmospheric deposition of pollutants produces a "perfect storm" impacting water quality control.
- Removing all pollutants at the end of storm drains would be very expensive - many, many billions of dollars.
- Source control is essential and municipalities do not have the authority to control many of the major sources, including the sources of atmospheric deposition.

Airsheds and Watersheds

- A basic law of ecology is that everything is related to everything else.
- Policies to regulate water quality in physical watersheds must consider information about theoretical airsheds if we are going to meet water quality standards.
- We particularly need to understand the impacts of dry indirect deposition on water quality and determine how to regulate the sources of that deposition.

The Water Boards and the Regulated Community Need Help from the Air Boards

- While water quality regulations have been broadening, air quality regulation has become more focused.
- Air quality regulation is increasingly focused on fine, breathable particles.
- Air deposition impacts on water quality involve both fine particles and coarse particles.
- Water quality practitioners need help from the Air Boards to monitor a wider range of particle sizes.
- The Air Boards need to acknowledge that water pollution is one of the public welfare effects that need to be addressed in regulating sources of atmospheric pollution.

Overview of Particle Data

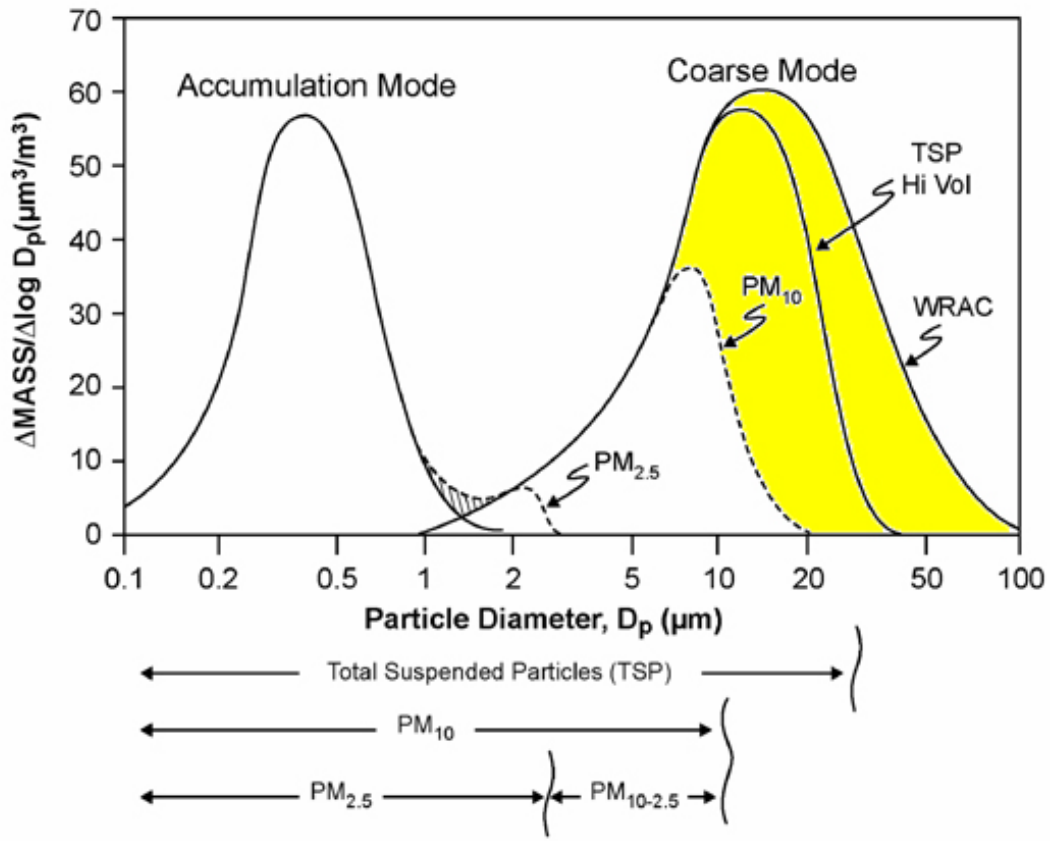

Figure 2-2. An idealized distribution of ambient PM showing fine and coarse particles and the fractions collected by size-selective samplers. (WRAC is the Wide Range Aerosol Classifier which collects the entire coarse mode).

Source: Adapted from Wilson and Suh (1997) and Whitby (1978); CD page 2-18

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Source: USEPA, *Review of National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information*, Dec., 2005.

Stakeholders are Willing to Help

- State Water Board Resolution 2005-0077 encourages local municipalities to work with the SCAQMD and CARB to further the identification and control of sources of trace metals in atmospheric deposition.
- The Los Angeles River Metals TMDL provides a four-year period for special studies to be completed.
- Permittees recognize the budget and staff constraints of the Air and Water Boards.
- Municipalities know that they will have to contribute financially to further identification and control of pollutants from atmospheric deposition and are preparing to do so.
- Cities in the Los Angeles River Watershed had a well-attended meeting in January with the County of Los Angeles and Caltrans to discuss development and funding of special studies.

The Air and Water Boards Can Start Addressing the Air-Water Interface Now

- Request that USEPA update and implement its "Air-Water Interface Work Plan."
- Submit joint comments to the Docket on the Proposed NAAQS for Particulate Matter, requesting that the Secondary Standards include standards for fine and course particles to provide protection against PM-related effects on water quality.
- Submit joint request to EPA Region 9 for assistance in addressing the air-water interface in California.
- Develop an Air-Water Interface Work Plan for California.

Conclusion

The Air Resources Board and the State Water Board need to work together and the regulated community needs to work with you.