

Addressing Heavy Metals from Atmospheric Deposition in the Los Angeles Region TMDLs

Jonathan S. Bishop
Executive Officer

Los Angeles Regional Water Quality Control
Board

Atmospheric Deposition Studies

- The Regional Board has contributed funding to SCCWRP and UCLA for studies of direct and indirect dry-weather deposition of metals since 1999
 - Direct dry-weather deposition on Santa Monica Bay and
 - Direct and indirect deposition in Los Angeles County

Current Studies

- Greatest potential impact to water quality due to indirect dry-weather deposition.
 - Accumulation of dry-weather deposition on land surfaces, which is then washed off during wet weather.
- Direct deposition (dry and wet) onto the waterbody surface is a relatively minor loading source.

Potential Contribution High

- Assuming 100% washoff in urban watersheds
- Potential indirect atmospheric deposition varies between p to 52-100 % stormwater loading, depending on the particular metal
(Sabin et al. 2005).

Actual Contributions

- 100% washoff does not occur throughout the watersheds
 - Retained in permeable surfaces
 - Uptake from vegetation

Methods for Reducing Loading

- Removal via street sweeping
- Removal via structural BMPs
- Source reduction

Where does it Come From?

- Re-suspended road dust major source
 - Possibly from automotive break pads, tires, and historic use of leaded gasoline
- Loadings in urban area significantly higher than in non-urban areas
- Variability low within the urban Los Angeles watersheds--except during fires, when values increased.

How is it Transported?

- Adsorbed to large diameter particulates
 - Greater than 10 microns

Los Angeles River and Ballona Creek Metals TMDLs

- Allows 5 years for special studies before reductions required in MS4 discharges
- LARWQCB met with Los Angeles County Department of Public Works (MS4 lead permittee), SCAQMD, and CARB to discuss UCLA studies and needed action

Next Steps

- Work with Air Boards to identify additional studies as needed to confirm sources and identify effective multi-media regulatory strategies.

TMDL Time Frame

- 5 years to provide special studies in time to allow Regional Board to assess proposed waste load reductions and control strategies.