Industrial Ecology, Pollution Prevention and the New York/New Jersey Harbor

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Abstract

Key environmental topics are being debated in the NY/NJ Harbor watershed, including water quality, impacts of land-use practices, implications of shipping channel dredging, and industrial pollution. Decisions made today will have far-reaching consequences for the future of this region. If pollution concerns are not resolved in an acceptable way for the broad base of stakeholders, human and environmental health will be compromised, and impede the region's economic vitality. We see to contribute to this decision-making process by bringing scientific and key environmental data as well as information on economic and technological alternatives to a consortium of stakeholders. The NYAS initiative aims to continue its efforts and identify and promote pollution prevention (P2) strategies for two additional contaminants, building on the success of our initial work on mercury, cadmium and PCBs.

Objective:

The objective of the project is to identify and implement environmentally sound and economically feasible P2 strategies for the NY/NJ Harbor watershed, leading to improved environmental indicators (in water quality, biota, fish and wildlife, recreational activities) and efficient resource use, material integration and waste minimization within the regional economy. The focal point of the project is reducing the contaminant load to the entire watershed.

Approach:

We use a three step approach: (a) material flows research, including a watershed mass balance for each contaminant to identify system-wide sources, pathways, re-mobilization through different media, and sinks as well as an industrial ecology assessment to identify design patterns, production, consumption and post consumption activities leading to releases; (b) risk management to identify P2 strategies, including process/product modification and re-engineering, identification of clean technologies, in consultation with industries or sectors involved in releases, as well as a socio-economic assessment of proposed P2 options; and (c) involvement of stakeholders to review scientific, technical, and socio-economic analysis, develop P2 strategies after multi-disciplinary valuation ranking, and to recommend and implement the action plan.

Expected Results:

This proposal concentrates on dioxins and PAHs. Short-term success is achieved by developing watershed wide P2 strategies, and progress is shown through our published reports. Long-term success is achieved through implementation of P2 strategies, and update reports will track progress. The reports, summarizing our three step approach, identifying sources and P2 strategies, implementation challenges and lessons learned, will be readily transferable to other regions. We will continue sharing research findings with the Bi-national Toxic Strategy Group, the Delaware River Basin Commission, the Long Island Sound Initiative, and others. The project directly benefits those using the watershed for recreational activities; environmental resources (fish, wildlife, and biota); and a regional economy of about 20 million people. Indirectly it supports the work of other watershed management programs.