

Massachusetts Water Resources Authority

Normandeau has been awarded a multi-year project assessing effects of MWRA's ocean discharge on key marine biota under the Harbor and Outfall Monitoring (HOM) program. Discharge from MWRA's ocean outfall has the potential to introduce various contaminants to the Massachusetts Bay ecosystem. Effects may be apparent as increased body burdens in marine organisms or as increased susceptibility to disease as evidenced by lesions or tumors. The purpose of the fish and shellfish monitoring program is to document the existence of these indicators in the vicinity of the outfall and in farfield areas to aid in the evaluation of outfall impacts. Health of marine organisms, as represented by winter flounder, American lobster, and blue mussel, has ramifications both to the ecosystem and to human use and health. Key questions addressed by this monitoring effort include:

- Spatial and temporal patterns of external and internal physical abnormalities and meristics in flounder
- Spatial and temporal patterns of external physical abnormalities and meristics in lobsters
- Spatial and temporal patterns of biological (flounder, lobster, and mussel) uptake of chemical constituents that may be linked to the outfall, and
- Relationship of body burdens to environmental and human health thresholds.

Normandeau Associates is leading a team of experts to assist MWRA to meet their permit requirements and address these important questions for the citizens of eastern Massachusetts. Normandeau will be assisted by Menzie-Cura & Associates, Inc., who specialize in the application of risk assessment to characterize and manage risks from chemical releases to the environment. Dr. Michael Moore of the Woods Hole Oceanographic Institute will lead the histology study. He has worked on this program for MWRA for many years, and is known throughout the region for his work on histology of marine organisms. New Environmental Horizons, Inc. (NEH) is recognized in New England as technical experts in the quality assurance and data validation of environmental measurements and will oversee data quality for the project. The chemical analysis of samples will be performed by Columbia Analytical Services, Inc. (CAS), headquartered in Kelso, Washington, is a full-service analytical laboratory network.