

**OUTFALL MONITORING SCIENCE ADVISORY PANEL (OMSAP)**  
**2003 MONITORING REVIEW WORKSHOP #2**  
Wednesday, June 18, 2003 – Thursday, June 19, 2003, 10:00 AM – 5:00 PM  
WHOI Clark 507  
**FINAL**

**SYNOPSIS OF RECOMMENDATIONS**

**Soft bottom sediment contaminant monitoring.** At the April workshop, OMSAP requested that MWRA present a justification for choosing stations for annual sampling. At this workshop, MWRA presented their rationale for opting for three potential stations (NF12, NF17, and NF24) and OMSAP recommended that of these three stations, NF12 and NF17 be sampled annually for sediment contaminants. All other sediment contaminant stations will be sampled on a three-year cycle beginning in 2005. The sediment grain sizes at NF12 and NF17 do not vary from year to year as much as NF24 therefore making them better candidates for annual sampling because of less interannual variability due to varying grain size.

**Water column monitoring.** MWRA presented results from their effluent and ambient water column monitoring as well as additional remote sensing data collected from the SeaWiFS satellite. MWRA also presented the results of the OMSAP-recommended statistical analysis that evaluated redundancy over time and space in the nearfield.

- OMSAP recommends that the nearfield stations be reduced from 21 to 7. The stations that would be maintained are: N01, N04, N07, N10, N16, N18, and N20.
- OMSAP recommends that the number of nearfield surveys be reduced from 17 to 12. The surveys that would be maintained are: February, February/March, March, April, May, June, July, August, 2 surveys in September, and 2 surveys in October. The survey schedule maintains the spring and fall surveys when plankton blooms and low dissolved oxygen are a concern.
- OMSAP also recommends that these changes be approved on the condition that MWRA augment the instrumentation on the USGS and NOAA moorings near the outfall that collect continuous water quality data. Continuous dissolved oxygen data, for example, would help determine when phytoplankton blooms begin, end, and decompose. OMSAP members suggested that the moorings have about five sensors (2-3 in the surface mixed layer, 1 mid-depth, and one bottom) that measure dissolved oxygen, salinity, temperature, fluorescence, and possibly other parameters such as longwave and shortwave radiation. MWRA agreed to report back to OMSAP in the near future on their plans for adding instrumentation to the moorings.
- OMSAP requests that MWRA repeat their statistical analysis examining the number of nearfield stations using only post-discharge data. Though the results of this analysis would not change their recommendations, members felt that this exercise would yield useful information.
- To reduce the error in primary production calculations introduced by the reduction of surveys, OMSAP suggests that MWRA examine interpolating the coefficients of the production curves and then use daily irradiance values for each day between the primary production sampling dates.

**Workshop #1.** OMSAP approved the synopsis of their March 31-April 1, 2003 workshop with no amendments.

**General Comments.** The recommended changes to the water column monitoring are based on a consensus of OMSAP members that there is both spatial and temporal redundancy in the nearfield sampling. In addition, MWRA should take advantage of innovations in water quality monitoring such as satellite information and continued improvements in the technology and reliability of instruments that are attached to moorings and collect continuous water quality data. Though the recommended revisions will still provide enough information about the nearfield, these technological advances can supplement the monitoring results at a lower cost than mobilizing a field survey. The use of continuous data would also facilitate a potential transition from fixed/scheduled sampling to responsive sampling (e.g. mobilizing a survey when sensors in Mass Bay indicate high surface dissolved oxygen during a phytoplankton bloom).

**MWRA's schedule for submitting the proposed revisions to EPA/MADEP.** This plan will include changes that were requested on an interim basis and other changes that have been discussed at the workshops.

- MWRA will submit proposed revisions to OMSAP, public, EPA, and MADEP August 13, 2003
- OMSAP will meet in October
- OMSAP will submit recommendations to EPA and MADEP in mid-October
- MWRA will submit a final draft on Friday, November 14, 2003, notice in Environmental Monitor
- Formal public and regulatory comment period
- EPA and MADEP makes determinations on proposed revisions
- MWRA will implement approved revisions in 2004

MWRA's information briefing for this workshop is located at:

<http://www.mwra.state.ma.us/harbor/enquad/pdf/ms-085.pdf>

#### **ATTENDANCE:**

##### **Wednesday, June 18, 2003**

**Members Present:** Andy Solow, WHOI (chair); Bob Beardsley, WHOI; Bob Kenney, U. Rhode Island; Norb Jaworski, retired; Scott Nixon, U. Rhode Island; Judy Pederson, MIT/Sea Grant; Mike Shiaris, U Mass Boston; and Jim Shine, Harvard School of Public Health.

**Observers:** Ellen Baptiste Carpenter, Battelle; Bruce Berman, Save the Harbor/Save the Bay (SH/SB); Mike Bothner, USGS; Jeanine Boyle, Battelle; Brad Butman, USGS; Todd Callaghan, MCZM; Cathy Coniaris, MADEP; Kelly Coughlin, MWRA; Mike Delaney, MWRA; David Dow, NMFS; Martin Dowgert, USFDA; Patty Foley, SH/SB; Rocky Geyer, WHOI; Maury Hall, MWRA; Carlton Hunt, Battelle; Mingshun Jiang, U Mass Boston; Chris John, MWRA; Ken Keay, MWRA; Ben Kelly, SH/SB; Suh Yuen Liang, MWRA; Scott Libby, Battelle; Matt Liebman, EPA; Mike Mickelson, MWRA; David Mountain, NMFS; Tara Nye, Association to Preserve Cape Cod; Candace Oviatt, U Rhode Island; Jeff Reade, MWRA; Andrea Rex, MWRA; Steve Rhode, MWRA; Ajit Subramaniam, U Maryland; Dave Taylor, MWRA; Steve Tucker, Cape Cod Commission; Jeff Turner, U Mass Dartmouth; Grace Vitale, MWRA; and Meng Zhou, U Mass Boston.

##### **Thursday, June 19, 2003**

**Members Present:** Andy Solow, WHOI (chair); Bob Beardsley, WHOI; Bob Kenney, U. Rhode Island; Norb Jaworski, retired; Scott Nixon, U. Rhode Island; Judy Pederson, MIT/Sea Grant; and Jim Shine, Harvard School of Public Health.

**Observers:** Ellen Baptiste Carpenter, Battelle; Bruce Berman, Save the Harbor/Save the Bay (SH/SB); David Borkman, U Rhode Island; Peter Borrelli, Center for Coastal Studies; Jeanine Boyle, Battelle; Todd Callaghan, MCZM; Cathy Coniaris, MADEP; David Dow, NMFS; Martin Dowgert, USFDA; Patty Foley, SH/SB; Carlton Hunt, Battelle; Mingshun Jiang, U Mass Boston; Chris John, MWRA; Ken Keay, MWRA; Ben Kelly, SH/SB; Suh Yuen Liang, MWRA; Scott Libby, Battelle; Matt Liebman, EPA; Mike Mickelson, MWRA; Tara Nye, Association to Preserve Cape Cod; Candace Oviatt, U Rhode Island; Andrea Rex, MWRA; Steve Rhode, MWRA; Steve Rust, Battelle; Dave Taylor, MWRA; Steve Tucker, Cape Cod Commission; Jeff Turner, U Mass Dartmouth; Anna Vilase, MWRA; and Meng Zhou, U Mass Boston.

#### **MEETING HANDOUTS:**

- Agenda
- June 2003 OMSAP/PIAC/IAAC membership lists
- Draft March/April workshop summary
- Information briefings and overheads of presentations