



# New York – New Jersey Harbor Estuary Program Office

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**HEP Office**

*Robert Nyman, Director*  
290 Broadway, 24<sup>th</sup> Floor  
New York, NY 10007  
212-637-3809

DATE: June XX, 2006

SUBJECT: Adoption of SWEM for Nutrient TMDL Analysis

FROM: Robert Nyman, Director  
New York-New Jersey Harbor Estuary Program

TO: HEP Management Committee

As agreed to at the June 22, 2006 Management Committee meeting, this memo, along with the three attached letters, formalizes the adoption of the System Wide Eutrophication Model (SWEM) by the New York-New Jersey Harbor Estuary Program (HEP). HEP will use SWEM for the assessment of nutrient and dissolved oxygen conditions in the New York-New Jersey Harbor Estuary, and if necessary, for the development of Total Maximum Daily Loads (TMDLs).

Attachments.



*A Partnership to Restore and Protect the Sound*

June 5, 2001

Mr. Robert Gaffoglio, P.E.  
Deputy Commissioner  
New York City Department of Environmental Protection  
Bureau of Environmental Engineering  
96-05 Horace Harding Expressway, 5<sup>th</sup> floor  
Corona, NY 11368-5107

Dear Mr. Gaffoglio:

This is to inform you that the March 2, 2001 and May 17, 2001 technical memoranda provided by HydroQual, Inc. provide acceptable responses to the questions that have been raised relating to the Systemwide Eutrophication Model's (SWEM) computed residual non-tidal flows in the East River. As a result, we support the recommendations of the Model Evaluation Group and Systemwide Nutrient Work Group to accept SWEM as a tool to support ongoing evaluations of hypoxia and its management in Long Island Sound and adjacent estuaries. We do note that an ongoing program for SWEM use and development should include additional data collection to support further refinements in the East River hydrodynamic calibration and the transport dynamics critical to our understanding of Long Island Sound water quality.

We will recommend to the LISS Management Committee that the Systemwide Nutrient Work Group be reconvened to provide technical direction on the next steps to applying SWEM, including the use of funds approved for SWEM in the LISS FY01 budget. A discussion of SWEM, including future applications and enhancements, will be an agenda item for the July 19 Long Island Sound Study Management Committee meeting.

Thank you for your support of the additional analyses that were performed. We look forward to moving forward with our commitments to improve our understanding and management of hypoxia in Long Island Sound.

Sincerely,

Handwritten signature of Richard Draper in black ink.

Richard Draper, Chief  
NYSDEC Bureau of  
Watershed Management

Handwritten signature of Thomas Morrissey in black ink.

Thomas Morrissey, Director  
CTDEP Division of  
Planning and Standards

Handwritten signature of Mark Tedesco in black ink.

Mark Tedesco, Director  
EPA Long Island Sound  
Office

cc: LISS Management Committee

# New York State Department of Environmental Conservation

## Division of Water

Bureau of Water Assessment and Management, 4<sup>th</sup> Floor

625 Broadway, Albany, New York 12233-3502

Phone: (518) 402-8179 • FAX: (518) 402-9029

Website: www.dec.state.ny.us



Denise M. Sheehan  
Commissioner

May 15, 2006

Mr. Robert Nyman, Director  
U.S. Environmental Protection Agency  
New York-New Jersey Harbor Estuary Program Office  
290 Broadway, 24<sup>th</sup> Floor  
New York, New York 10007

Dear Mr. Nyman:

*Bob*

In response to your request, I am writing to reconfirm New York State Department of Conservation's (NYSDEC's) support of the System-wide Eutrophication Model (SWEM) as the analytical tool for evaluations of dissolved oxygen in the open waters of the New York/New Jersey Harbor and the estuaries within the SWEM spatial domain.

In June 2001, NYSDEC, along with Connecticut Department of Environmental Protection and EPA Long Island Sound Office, concurred with the recommendations of the Long Island Sound Study's Model Evaluation Group and Systemwide Nutrient Work Group and accepted the SWEM as a tool to support on going evaluations of hypoxia and its management in the Sound and the adjacent estuaries. This acceptance came after participating in an extensive peer review of the SWEM.

NYSDEC recommends that the Harbor Estuary Program's Management Committee should endorse the use of the SWEM for the nutrient planning and if necessary TMDL analyses for the New York/New Jersey Harbor.

Sincerely,

Jeffrey A. Myers

Director

Bureau of Water Assessment  
and Management

c: P. O'Brien

JON S. CORZINE  
Governor

State of New Jersey  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Watershed Management  
P.O. Box 418  
Trenton, New Jersey 08625-0418

LISA P. JACKSO  
Commissioner

Robin Landeck Miller  
HydroQual, Inc.  
MacArthur Blvd.  
Mahwah, NJ 07430

MAR 21 2006

Subject: System-Wide Eutrophication Model (SWEM) Phase 1 work

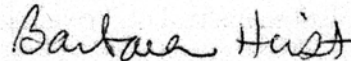
Dear Ms. Landeck Miller:

The Department is pleased to comment on the recent work completed on the System-Wide Eutrophication Model (SWEM) in New Jersey waters. As you know, SWEM, a model developed by HydroQual, Inc. is currently being applied by the NY/NJ Harbor Estuary Program (HEP) for future Nutrient TMDL planning purposes in the Harbor. There had been concern data available for New Jersey waters during model development had limitations that may have affected the models predictive value in New Jersey waters. Under contract agreement with NJDEP, HydroQual performed a post-audit of the SWEM calibration under the 1994-95 conditions relative to data collected between 2000-2005 by the Passaic Valley Sewerage Commissioners (PVSC) and New Jersey Harbor Dischargers Group (NJHDG).

The work performed included the following two tasks: 1) comparison of tributary head of tide loading concentration post-audit to determine whether or not SWEM calibration could benefit from additional data collected during 2000-05; and 2) comparison of ambient concentrations to determine whether or not the SWEM calibration could be improved by using the additional secchi disk data collected during 2000-05, and to assess the ambient conditions of 2000-05 to the ambient conditions of 1994-95.

Based on the outcome of the above work, HydroQual concluded that, in general, there is good agreement between the 1994-95 conditions and the 2000-05 conditions, and therefore, modifications to SWEM would not have a dramatic impact on the SWEM results. The Department is in agreement with this conclusion. Therefore, no further work is warranted to perform these modifications and SWEM is accepted as an adequate tool for use in the modeling for the NY/NJ Harbor TMDLs.

Sincerely,



Barbara Hirst, Chief  
Bureau of Environmental Analysis & Restoration

cc: Robert Nyman, USEPA, NY/NJ Harbor Estuary Program  
Larry Baier, Director, DWM  
Marzooq Alebus, NJDEP, DWM