

## Harbor TMDL Oversight Group Meeting

Sept 13, 2007  
(Draft Oct 10, 2007)

The meeting was convened at EPA offices at 10:00. Participants included Kevin Bricke, Jim Olander, Rosella O'Connor, Maureen Krudner, Bob Nyman, Shadab Ahmad, Jeff Reading, Deb Hammond, Narinder Ahuja, Barbara Hirst (on phone), Phil O'Brien, Dick Draper, Phil DeGaetano (on phone), and Robin Miller. (check list)

The minutes from the previous meeting were approved. A few items were then discussed prior to the main agenda items:

- Barbara Hirst gave an update on the status of the BCUA model. She said that NJDEP sent written correspondence to the contractor Malcolm Pirnie and that the contractor will be updating the model. If the model is updated as planned and is accepted, then it will be used for a phase 2 TMDL.
  - Narinder asked what the federal policy was for partial treatment of POTW effluent. Jim Olander responded that the policy says that it is acceptable if the system is combined, but it must still meet standards. Olander will set up a session with NJ to discuss.
  - It was confirmed that the Yonkers POTW was alerted to the cost analysis work underway by NJHDG and NYCDEP (see attachment).
1. Rosella O'Connor said that HydroQual had completed the initial assessment of the CARP data with respect to state and federal standards and criteria. Robin Miller said that 39 contaminants or contaminant groups were assessed regarding probability that TMDLs would be needed. The contaminants were divided into 3 lists: TMDLs not likely (11 contaminants), uncertain (10 contaminants), or likely (18 contaminants). A PowerPoint presentation was given and is available. There was some discussion about the need for toxics TMDL if the chemicals are predominantly in the sediments. There appears to be a need to look at the harbor geographically and decide where the exceedances are. It was also noted that when the two state standards vary, the group needs to decide how to proceed. An assessment should be made of the Bioaccumulation Factor (BAF) and the Bioconcentration Factor (BCF) as it relates to how standards would change if they were based on a harbor specific BAF instead of generic BCF. This will be incorporated into a future work assignment for the contractor. The Toxics TMDL work group will review the report and provide feedback to the oversight group. Ms. O'Connor will share a draft of the next work assignment.

2. Maureen Krudner gave an update on the TMDL Implementation Work Group proposal. The proposed group would assist with identifying ways to reduce contaminants now, based on information contained in sources such as the New York Academy of Sciences Industrial Ecology reports. It was suggested that PAHs would be a good first contaminant for the group to look at and the proposal will be rewritten to focus on that contaminant. Comments are due by the oversight group in two weeks after receiving the revised proposal. The states will also designate representatives. The proposal will then be presented to the HEP Management Committee for consideration.
3. Jim Olander provided a handout on the status of three assignments for Hydrqual (see attachment).
  - Regarding the comparative analysis of CSO loadings - most CSO communities supplied information, which is currently being assessed by the PWG. This should take about one month to do.
  - The long term analysis is underway and the oversight group will need to select design criteria.
  - For the component responses, 18 management zones will be assessed including 3 sources per zone and for three indicators (entero, fecal and total).
4. Bob Nyman gave the Nutrients Work Group update presentation. There was discussion about the importance of nonpoint sources and the extent to which some level of reductions may have already occurred due to programs such as the MS4 six minimum measures for stormwater. The stormwater experts at EPA HQ will be consulted on this matter, as well as what their best estimate is for possible additional reductions. NJDEP said that they would not be doing the GIS analysis based on land use cover that they committed to at the last Nutrient Work Group meeting. The datum from which loadings will be reduced needs to be set. Nyman also agreed to distribute the Hackensack River loadings tables to the oversight group.
5. There was a brief discussion about the division of duties between the oversight group and the technical work groups. Nyman handed out a description of duties when the oversight group was first formed. It was suggested that the technical groups should do more of the assessment type of work and provide recommendations to the oversight group, while the oversight group should do more of the policy decision making.

The meeting was then adjourned.

G. Michael Coley  
Director of Wastewater Facilities  
Westchester County Dept of Environmental Facilities  
270 North Avenue  
New Rochelle, NY 10801

(Dated July 18, 2007 on EPA letterhead)

Dear Mr. Coley:

At your request, your name was recently added to the distribution list for the Nutrient Work Group of the New York-New Jersey Harbor Estuary Program (HEP). We look forward to your participation. I understand from the New York State Department of Environmental Conservation that you are also the point of contact for the Yonkers Waste Water Treatment Plant. As you may be aware, the Yonkers plant is within the core area for the New York-New Jersey Harbor Estuary Program. Working with the states and EPA, HEP is currently in the process of developing Total Maximum Daily Loads (TMDLs), as necessary, for nutrients, pathogens, and toxics. We invite you to participate in the process through the various work groups.

One of the efforts that we are currently involved with is the development of a cost analysis component for nutrient removal. This information will be considered in the development of a load reduction program. Attached is a copy of the report that was recently developed by the New Jersey Harbor Dischargers Group for the eleven New Jersey plants. We expect that a similar report will be submitted shortly by the City of New York. Both of these were voluntary reports. While similar information was not requested for the Yonkers plant, HEP would consider it if such information were made available.

If you have any questions about HEP or the TMDL process for the Harbor, please contact me at 212-637-3809 or Dick Draper of NYSDEC at 518-402-8251.

Sincerely,

Robert M. Nyman, Director  
New York-New Jersey Harbor Estuary Program

**STATUS OF THE DEVELOPMENT OF THE NY/NJ  
HARBOR PATHOGEN TMDL  
SEPTEMBER 13, 2007**

**Comparative Analysis of CSO Loadings (Completion Time – 1 month,  
November 2007)**

There are fifteen New Jersey CSO communities that have developed either SWMM or InfoWorks models. These models have been calibrated to discharge data collected as part of the CSO characterization studies. Each community was also required to use these models to simulate the average design rainfall condition. This is a yearly simulation based on the observed rainfall at JFK airport for 1988. This rainfall condition had been pre-determined to represent an average yearly condition in the NY/NJ Harbor area. The EPA has requested these communities to submit the 1988 design rainfall discharge results to HydroQual.

HydroQual will compare the results from the communities to the 1988 RAINMAN simulation. As appropriate the RAINMAN model will be adjusted to be compatible with the more sophisticated landside model.

Each CSO outfall discharge characteristics will be examined separately. The key statistical characteristics that will be evaluated include but not limited to the following:

- Total annual volume
- Total number of storms
- Peak discharge rates

As mentioned above, if significant differences between the community results and RAINMAN are observed (i.e. > 10%), the RAINMAN model will be adjusted. The key areas of investigation for the adjustments include the following:

- Drainage Area
- Percent Impervious
- Regulator Hydraulic Capacity
- Treatment Plant or Pump Station Capacity

These comparisons and adjustments are critical to the integrity of this project. Probably the most important aspect of the Pathogen TMDL process is to adequately quantify the CSO loadings to the Harbor. This task, therefore, is an important quality insurance step for the project.

**Development of Long-Term Analysis (Completion Time – 3 months after the CSO  
Comparative Analysis is Completed, February 2008)**

The Harbor Estuary Program Pathogen Work Group must decide on design criteria for pathogen TMDL development. The major sources of Pathogens in NY/NJ Harbor are CSO and storm water discharges that are driven by rainfall. These discharges, particularly

CSOs, are a function of rainfall volume, duration, and intensity. In addition, pathogen indicator criteria are based on seasonal or 30-day moving geometric mean concentrations. Since the discharge of bacteria is a function of several rainfall parameters it is not intuitively obvious which years of historical rainfall are the most critical or which year is the most representative of a desired condition. Therefore, a long-term analysis is proposed to help in the selection of a yearly design condition.

After the hydrodynamic fields are constructed, the water quality model which tracks the fate of pathogens will be executed for each of the 13 years. Loads will be generated from the landside model RAINMAN. The results of these simulations for yearly and seasonal (summer) periods will be combined and long-term statistics will be developed for beaches and shellfish areas. For example, at beach locations, the percent of time the 30-day enterococci geometric mean concentration exceeds 35 will be calculated. Likewise, the percent of time the enterococci concentration exceed 104 (or other goals) will also be calculated.

The results of the long-term simulation will be presented to the PWG and OG for review. The results of the long-term simulation will be compared the various individual “years” of simulation. Key statistics will be summarized for the comparison. These statistics include but not limited to the following:

- Recreational Criteria and Guidelines
  - Enterococci Seasonal (or Annual) Geometric Means
  - 30-day Moving Geometric Mean
  - Percent Time > 104
  - Percent Time > 501
  
- Shellfish Standards
  - Total Coliform (Geometric Mean and Upper Limit)
  - Fecal Coliform (Geometric Mean and Upper Limit)

These comparisons will be used as guidelines for the PWG and OG to select design conditions and targets for the component analysis and the development of allowable loads. The design conditions will be selected considering the targets for the TMDL and the proposed margin of safety for the analysis.

The sub-tasks associated with this task are as follows:

- Prepare Hydrodynamics
- Perform Long-term Pathogen Simulations
- Compare Long-term Simulations to Yearly Results

### **Develop Component Responses (Completion Time – 2 months after Long-Term Analysis is completed, April 2008)**

PATH will be applied to run component analyses to assess the impacts of various source categories and jurisdictional areas on water quality. Management zones have been delineated for this task; these zones are shown on Figure 1 and specifically summarized in Table 1. As shown, there are 18 management zones configured to consider both regional receiving water-bodies and by regional jurisdictions.

In addition, EPA has recommended three source categories to be evaluated: these include CSO, permitted stormwater, and other stormwater. Therefore, the runoff loads from each of these 18 management zones must be segregated and quantified by the three source categories in preparation for the component simulations. The design conditions for this task will be based on the results of the Long-term Analysis task and the recommendations of the PWG. Given these assumptions, the total number of simulations for the component analysis is as follows:

- Design Conditions
  - 18 Management Zones
  - Three Sources Per Zone
  - $18 \times 3 = 54$

The sub-tasks associated with this task are as follows:

- Delineate RAINMAN Segments To Management Zones
- Segregate Loading Sources For Each Management Zone
- Execute Design Condition Components
- Reporting and Meetings

The results of all these simulations will be overwhelming to assimilate without a tool that condenses the information. A subsequent task, Develop Allowable Loadings, is designed to condense these results for application by the appropriate authorities.

### **Development of Allowable Loadings Matrix (Completion Time - 3 months after Component Response is Completed, July 2008)**

The results of the component simulations will be saved at about 200 key locations throughout the Harbor. For example, the component response from one or more regional jurisdictions (or by source) can be reduced by a certain percentage (i.e. 50%). Then the program will re-calculate the pathogen distributions at the designated 200 locations for the Design Yearly Condition. The program will also generate key statistics at the locations (i.e. geometric means, maximums, percent greater than 104). These results can be mapped directly to the screen using a pre-determined coloring index. In addition, the user can request probability distributions of the pathogen at any of the 200 locations. The user will

also have the option of printing any of the results. After the authorities screen alternatives using the programming tool, the final alternatives will be simulated using the PATH model. Two load response matrices are proposed – one for recreational waters (enterococci) and one for shellfish areas. Based on previous work, the results for shellfish area attainability are similar for both total and fecal coliform bacteria. Therefore, it is proposed that the load-response matrix for shellfish areas be developed for fecal coliform bacteria only. However, an optional sub-task for total coliform with a cost estimate is included.

Final simulations will be developed for inclusion of the recommended TMDL plan for all segments of the model.

The sub-tasks of this task are as follows:

- Develop Matrix
- Apply Design Condition Components (Enterococci)
- Apply Design Condition Components (Fecal Coliform)
- Apply Design Condition Components (Total Coliform – Optional)
- Final TMDL Simulations