



# Department of Health

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Executive Deputy Commissioner

June 7, 2016

David S. Warne  
Assistant Commissioner  
NYC Department of Environmental Protection  
Bureau of Water Supply  
465 Columbus Avenue  
Valhalla, NY 10595

Dear Mr. Warne:

NYSDOH and USEPA have reviewed the Revised 2007 FAD deliverables that were due by March 31, 2016. Our comments on deliverables for the *Watershed Forestry Program*, the *Stream Management Program*, the *Multi-Tiered Water Quality Modeling Program*, and the *Waterborne Disease Risk Assessment Program* are attached. Comments on the *Watershed Protection Program Summary and Assessment Report* will be sent under separate cover.

We would appreciate if you could provide a reply to these comments by July 8, 2016. Please feel free to contact me if you have any questions.

Sincerely,

Pamela L. Young, Ph.D.  
Chief, NYC Watershed Section  
Bureau of Water Supply Protection

Att.

Cc (electronic):

R. Sokol  
T. Boepple-Swider  
D. Pabst/K. Lynch – USEPA  
K. Kosinski – NYSDEC

## **DOH/EPA Comments on FAD Deliverables due March 31, 2016**

### **4.5 Watershed Forestry Program**

The Revised 2007 FAD required DEP to evaluate the implementation status of the five-year-old WAC forest management plans. The evaluation of the WAC forest management plans that reached their five-year status in 2015 was completed by DEP and submitted to NYSDOH/EPA for review and comment.

The report provides valuable information about the history and evolution of the program; discusses programmatic successes and challenges; and justifies a recommendation by DEP to discontinue the current requirement (i.e., evaluation of the implementation status of five-year-old WAC forest management plans). The report indicates that, due to various factors (including periodic ownership changes, perpetual updates to the plans, and redundancy in assessments), implementation status could not be accurately evaluated, and the acquired analytical data were not useful. In addition, the fact that many landowners had to complete multiple surveys in the past few years threatens to result in 'landowner fatigue' and reluctance to participate.

Based on its assessment, DEP proposes that "next year's report mark the end of this particular FAD requirement." NYSDOH/EPA appreciates DEP's input and will revisit the issue during upcoming planning meetings for the 2017 FAD, in order to make a final determination regarding the adequacy of this particular deliverable.

Additional information/further clarifications are requested at this time:

- On page 1, the report describes collaborative efforts with SUNY ESF in 2009-2011. Any reference to either the published results or the final report from this study will be appreciated.
- On page 5, the report states that three MAP projects have been cancelled by landowners. What were the reasons?
- DEP wrote that meeting a metric of "x" amount of forest plans per review period has become problematic for a number of reasons. What other metric(s) would better capture the success of the program? Some examples might be: number of implemented BMPs (as is now done); total acreage; or total length of logging road repaired and/or relocated?
- Are any complaints ever registered with DEP related to poor forest harvest management?
- What forestry practices does DEP regard as the most important in relation to water quality protection?

## **4.6 Stream Management Program**

The Revised 2007 FAD requires DEP to “complete construction of seven stream management projects within the Ashokan basin with a goal of protecting water quality, in particular by reducing turbidity”. Annually, by March 31 of each year, NYCDEP must submit brief descriptions of proposed projects and anticipated timelines for completion. NYCDEP submitted a letter dated February 25, 2016, describing three water quality-driven stream projects within the Ashokan basin: one project on the Stony Clove Creek near Wright Road, and two projects on the Beaver Kill near Van Hoagland Road.

NYSDOH/USEPA and NYSDEC reviewed the information provided in the letter, and NYSDOH visited the proposed project locations. We agree that these projects meet the goal of protecting water quality, in particular by reducing turbidity, and should be counted toward the seven projects required by the Revised 2007 FAD.

## **5.2 Multi-Tiered Water Quality Modeling Program**

NYSDOH/EPA note that DEP climate change modeling had begun using a “bottom-up” approach and investigated the use of Synthetic Weather Generators (SWGs). This is the logical next step after system vulnerabilities were identified in the Water Research Project 4262. However, that was a pilot study where potential increased future water demand was a major driver. System vulnerabilities can also be identified from stakeholders and more traditional “top-down” approaches. How will DEP define system vulnerabilities moving forward?

NYSDOH/EPA request the following clarifications:

- Wilby and Dessai’s (2010) Cascade of Uncertainty (Figure 1) shows that uncertainty increases when downscaling from emission scenarios to local climate and adaptation. How does “bottom-up” enable more quantifiable and flexible definitions of uncertainty?

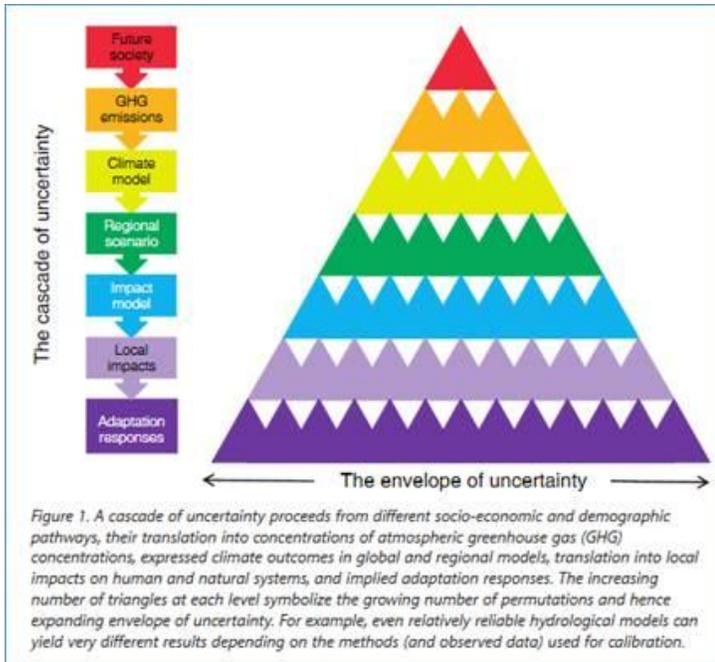


Figure 1. Wilby and Dessai. 2010. *Weather* 65(7):180-185.

- How are SWGs expected to better represent future extreme weather events over change factor methods? “Top-down” climate predictions can be defined as “plausible climate change scenarios”. How does this relate to the skill (accuracy) of SWGs?
- How does the probability of future events/projections/vulnerabilities play into sensitivity analysis and uncertainty?

The work on West of Hudson reservoir residence times and the revised bathymetric data are useful tools. We look forward to similar work on the East of Hudson reservoirs, as this could be valuable information for TMDL work.

We are pleased to see the WRF Project 4422 work regarding characterization of NOM and DBP control under dynamic weather conditions has progressed, and note the importance of exploring both regulated and unregulated DBPs. Have the optical properties been used to estimate more traditional parameters such as UV254 and SUVA?

NYSDOH/EPA look forward to the results from WRF Project 4590 (wildfire impacts on forests), particularly as it relates to disinfection byproduct work.

We note the Modeling Program’s numerous collaborations, conference presentations, and journal publications. It is good to see that the extensive data collected under the FAD are being shared and used to frame and answer broad-based basic scientific questions. The effects of climate change on early spring runoff and lake

productivity are particularly interesting and important to the interpretation of findings from the DEP's initial "top-down" climate change work.

### **8.1 Waterborne Disease Risk Assessment Program**

The annual report for the Waterborne Disease Risk Assessment Program was submitted as required by the Revised 2007 FAD. The report provides valuable information about the status of the program, describes data collected during 2015, and concludes that during the reporting period there was no evidence of a drinking water-related outbreak in New York City.