

## MEMORANDUM

To: Groundwater Advisory Council  
From: H. Bokuniewicz  
Re: Minutes of the meeting of 15 October 2007  
Date: October 16, 2007

### PRESENT

M. Alarcon  
R. Alvey  
N. Bartilucci  
H. Bokuniewicz  
R. Busciolano  
S. Colabufo  
R. Liebe  
M. Nofi  
D. Paquette  
K. Roberts  
W. Spitz  
S. Terracciano  
L. Zhou

### REGRETS

S. Jones  
L. Koppelman  
R. Mazza  
G. Proios  
A. Rapiejko  
K. Willis

1. The minutes of the last meeting (17 September) were distributed. They had been sent earlier. There were no comments.
2. The Pine Barrens Forum with its theme on water resources was held on Thursday, 11 October. Copies of the abstracts will be sent to the Council members and a video will be available if anyone is interested. (I will send a copy of the video to S. Colabufo, as requested, as soon as it's ready).
3. Lisha Zhou is a graduate student at Stony Brook working with Dr. Hanson. She introduced her thesis research. Ms. Zhou is working with NEXRAD, which is the Next Generation Radar Data from the National Weather Service, for precipitation estimates. Earlier work had used rain gage data to map the distribution of rainfall on Long Island. Forty-one stations were available to generate a map of average rainfall between 1951 and 1965. The results showed some distribution of rainfall on Long Island with higher precipitation in the center of the Island over areas of higher elevation. Modern data is available at only 17 stations. Ms. Zhou redid the analysis in GIS using kriging interpolation methods. Rainfall was, again, not uniformly distributed, but the area of high rainfall over central Long Island did not materialize. Instead, an area of high rainfall appeared over the south shore. However, the available gages did not include any in the central region of higher elevations.

The radar data is now available from a station at BNL that covers an area of 230 km in a 4 x 4 km grid (that puts some 650 grid cells on Long Island). Data is available every 15 minutes normally, and every six minutes during storms, beginning in July of 1996. Forty-one processed products are available including precipitation estimates in hourly, three-hourly and 24-hourly increments and totals during storms. Data collected before 2002, the so-called Stage III data, must be locally calibrated and earlier attempts introduced errors as large as 50%. Since August, 2002, however, data products are now calibrated to rain gages and other information (referred to as the MPE data).

Ms. Zhou spent two weeks at Dr. Hongjie Xie's laboratory in Texas (University of Texas in San Antonio) learning how to process these data. She hopes to obtain long term averages for Long Island (beginning with the year 2004). She intends to use these results to look for persistent patterns of precipitation that may influence recharge and for evidence of microclimates. It was suggested that a re-analyses of the older data be undertaken in light of any modern patterns that may emerge.

Also, the USGS uses rainfall measurements at Sag Harbor and Point Lookout that may be incorporated into a verification of the MPE calibration. Ron Busciolano and Jack Monti have recently been working with these data and we should meet with them. Additional, historical data may be available from 5 stations in Nassau County. Rob Alvey will inquire.

4. In the context of precipitation there was some discussion of droughts. Ron Busciolano has examined 50 years of data for a review of drought indices. On Long Island, what constitutes a drought depends, in part, on one's perspective. The functional definition is a lowering of the water table to an extent affecting surface waters.
5. There are a few initiatives in groundwater studies at the Southampton campus but they're a bit unfocused. Gil Hanson still intends to offer a two-week course in field techniques in groundwater hydrology over the summer probably with the help of Fred Stumm. Steve Jones has some interest in outfitting one of the SCWA's active pumping stations there for educational purposes. H. Bokuniewicz and S. Colabufo will arrange to meet there to look over the situation. We are also still interested in HOBO and GIS development there, although that initiative has stalled. We might be seeking funding from the Pine Barrens Commission, directly.
6. The next meeting is scheduled for Monday, November 19, 2007 at the SCWA in Oakdale.