MEMORANDUM

To: Groundwater Advisory Council
From: H. Bokuniewicz
Re: Minutes of the meeting of June 1, 2015
Date: June 9, 2015

PRESENT
H. Bokuniewicz
S. Colabufo
C. Gallagher
K. Mishkin
D. Paquette
J. Pilewski
M. Scorca
W. Spitz
S. Terracciano

REGRETS
M. Alarcon
N. Bartilucci
P. Granger
R. Liebe
R. Mazza
M. Nofi
A. Rapiejko
H. Walker
M. White

1. The minutes of the last meeting (April 27, 2015) were revised and distributed. There were no additional comments at this time.

2. The discussion of data-basing continued. We would like to identify the types of data provided to the various agencies and the disposition of those data into accessible databases.

Water quantity (pumpage) data is provided by the water purveyors and the pumpage from significant, non-public water suppliers (greater than 45 gpm) such as, golf courses as well as SPDES discharges. Before 1986, agricultural wells were not required to report pumpage. Now even unpermitted irrigation wells are required to report. SPDES discharges are transmitted electronically but the other pumpage data are provided on paper (or scanned as PDF files). Data delivered to the DEC is reported per well although it may have been collected as aggregate values per well field. BNL reports both potable water quality and remediation testing by well. Quantity data is stored as yearly averages by well and monthly amount by district.

Historical pumpage data has been compiled electronically for use in the county groundwater models and in the Comprehensive Water Plan. Pumpage to 2010 was encoded into the USGS National Coastal Plain model. These data may not be in a database but are in a standard electronic format (EXCEL or GIS). The values however, are likely to be “interpreted” values adjusted for the distribution of pumpage or anticipated changes in demand, rather than actual pumped volumes.

Well locations and construction characteristics are delivered to the DEC by drillers and to the USGS by the EPA. Well locations including agricultural wells, are currently being assembled electronically at the DEC.

Water quality data is provided to the Suffolk County Health Department and the EPA. Laboratory data always tends to be managed electronically but not in a standardized format. The SCWA, for example, uses a commercial Laboratory Information Management System (LIMS) called “Labvantage” while the County uses “Blacksmith”. Concentrations of unregulated
contaminants are put into EPA’s SDWIS (Safe Drinking Water Information System). Suffolk County stores other water quality data in STORET, but STORET may soon be replaced by WQEXT. State and Federal Superfund sites and brownfields remedial water quality data is managed by the EPA and NYS DEC (Albany) in EQuIS.

Paper reporting or PDF reporting is a major obstacle, especially for quantitative data. It has to be hand-entered into standard (EXCEL) spreadsheets. Transcription errors either on the original documents or in key-punching are a persistent problem. Years ago we (LIGRI) had made an effort to get water suppliers to report electronically. At the time there was some resistance, it seemed, due to a fear of misuse. More recently LICAP expressed an interest in the same initiative and seemed to have some support. People who need to change their reporting methods need an incentive in time saving for example, or a “big stick”. There has to be some advantage to the data collector to electronic reporting. It would seem that the biggest user of an integrated database would be consultants (who may at times, be pitted against water purveyors). As a result, the goals of an integrated database need to be carefully crafted.

Even if data is stored electronically it is an engaging task to get these data into the format of a standard database. Even when data is a particular database it is not easily, certainly not automatically, transferrable to another database. The formats, coding QA/QC of one database may not be acceptable in another. It is unclear whether the strategy should be to get all the data into one existing database or whether it might be easier to create (yet another) specialized database for the region. This is the flow diagram I ended up with after the meeting.

In terms of water quality data it appears that STORET may be superseded by WQEXT. Water quality data seems to end up in EQuIS or in WQEXT but not both. Again, transfer of data from one to the other is not transparent. SDWIS seems to be a dead end. SCRIBE, apparently is only used by EPA field personnel, but seems to be a dead end also. I’d appreciate any corrections, revisions, suggestions, or any other advice.
3. The Center for Clean Water Technology, although funds are still pending, has a work plan with the following six elements.

- Microbial community composition and function during alternative, on-site wastewater treatment. Quantify microbial community composition and function in alternative, on-site wastewater treatment systems in order to optimize system design, operation and maintenance. This work will be carried out in conjunction with the Suffolk County Septic Tank Demonstration Program.

- Function and optimization of pressurized, shallow narrow drain fields. Evaluate the function of pressurized shallow narrow drain fields in order to optimize their performance.

- On-site wastewater treatment based on novel denitrification pathways – a proof-of-concept. Demonstrate the feasibility of a novel on-site wastewater treatment system at the lab-scale based on the ANAMMOX and/or Fe-AMMOX denitrification pathway.

- Demonstration of a passive, autotrophic denitrification system for on-site wastewater treatment. Examine passive, nitrogen removal systems that promote the anaerobic denitrification process. For example, we will demonstrate a novel, passive nitrogen removal system that couples ammonia adsorption with autotrophic denitrification in a hydraulically passive system (i.e., no pumping required).

- Request for Research Applications. The Center will also solicit research proposals from within SUNY and other universities. In the first year, we will develop technical and performance specifications, develop a grant application scoring criteria, issue a request for grant applications, review and select grants, and initiate the research projects.

- Water Technology Challenge. To accelerate development of new technology. In the first year, the Center will develop a work group, identify partners, and establish objectives, scope, structure, and expected outcomes, develop a solicitation and website, select winning technologies, and provide analytical support for field-testing and validation.

- Strategic Partnership for Industrial Resurgence. To support NY-based water technology companies through the Strategic Partnership for Industrial Resurgence (SPIR) program.

4. The Hydrology Master’s Program in Geosciences has been revised. The new curriculum needs to be approved on campus but it corrects the requirements to replace courses that are no longer offered.

Students are required to complete a minimum of 30 credits, including 6-9 units of research, 21-24 credits of formal coursework, and a capstone project. The formal coursework includes the core course, a minimum of three courses from category A, and electives chosen from category B.

**Required Courses (3 Cr)**
GEO 514 (3) Introduction to Physical Hydrogeology
GEO 595 (0) Capstone project (new course)

Category A Courses: minimum of three of these courses are required (9 Cr)
GEO 515 (3) Geohydrology
GEO 519 (3) Geochemistry of Natural Waters
GEO 520 (3) Glacial Geology
GEO 524 / MAR 524 (3) Organic Contaminant Hydrology
GEO 525 (3) GIS Fundamentals II (GEO 513 GIS Fundamentals I is a pre-requisite)
GEO 526 (3) Low-Temperature Geochemistry
GEO 5XX (3) Geology of Long Island (new course)
MAR 521 (3) Long Island’s Groundwater

Category B Courses: Additional courses may be chosen from these
CEY 503 /MAR 536 (3) Environmental Law and Regulation
CEY 509 /MAR525 (3) Environment and Public Health
EST 588 (3) Technical Communication for Management and Engineering
EST 593 Risk Assessment and Hazard Management
EST 595 Principles of Environmental Systems Analysis
EST 596 / HPH 689 Simulation Models for Environmental and Waste Management
EST 597 Waste Management: Systems and Principles
GEO 513 GIS Fundamentals I
GEO 523 Geodatabase and Design
GEO 547 Remote Sensing
GEO 564 Numerical Hydrology

Research: In addition to formal coursework, the curriculum for the M.S. with concentration in Hydrogeology includes a minimum of six credits of research, either GEO 590, GEO 599, or approved equivalent, after consultation with the appropriate professor. This research is to be carried out over a period of two or more semesters, and will be designed through a mutual consultation between the student and one or more members of the participating faculty. The purpose of the research is to give the student experience at solving hydrogeological(170,707),(994,815)

Although on-line offerings had been discussed, they are not yet included to meet these requirements and there were some questions about whether the full array of courses would be offered in the evening to accommodate working professionals. I will provide an update in the fall, but any advice or comments would be appreciated.

5. The last EPA “groundwater group” meeting was held on 29 April at TNC. Informational talks were provided by the USGS, the EPA (on superfund sites), the DEC, Suffolk County. The EPA intends that these meetings will facilitate action items that can bring EPA resources to bear on Long Island water issues.
6. LICAP subcommittee will meet on 3 June; the full LICAP committee on 10 June; Wastewater on 17 June and Water Quality on 1 July.

7. We will break for the summer and resume again in the fall.

HB/ed
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