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State Water Plan and Its Designation of Critical Water Planning Areas

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On Nov. 18, the Pennsylvania Statewide Water Resources Committee adopted an amendment to the new Pennsylvania State water plan designating two pairs of watersheds as "critical water planning areas."

Specifically, the statewide committee accepted the recommendation of the Ohio River Basin Regional Committee to designate Laurel Hill Creek and Back Creek in the western part of Somerset County and the recommendation of the Potomac River Basin Regional Committee to designate Marsh Creek and Rock Creek in Adams County. Those actions will become final when the Secretary of Environmental Protection concurs. Four other watersheds — the Brodhead Creek in Monroe County, the Little Lehigh Creek in Berks and Lehigh Counties, Sugar Creek in Bradford County, and Spring Creek in Center County — were placed on a special "watch list," but not designated as critical.

If you missed the excitement and hoopla surrounding the event, you may be forgiven. Research has not located any news coverage of the Nov. 18 meeting. Indeed, one suspects that most readers have missed entirely that Pennsylvania even has a state water plan, let alone a new one.

Pennsylvania is fairly wet. On average, about 42 inches of rain fall across the commonwealth every year. Most of the old development in Pennsylvania lies fairly far down watersheds along major waterways. However, higher up in watersheds the streams are smaller.

Moreover, in periods without rain, groundwater levels can drop, leaving wells dry. Late in the last decade, Pennsylvania experienced several years of drought.

In 2002, just before the inauguration of Gov. Edward G. Rendell, the General Assembly passed the Water Resources Planning Act (Act 220) in order to develop updated and improved approaches to managing water resources in the commonwealth. At the time, the commonwealth had in place a state water plan, but it had been prepared between 1975 and 1983, and therefore was a generation out-of-date.

Act 220 called for completion of a new state water plan. The process for doing so involved six regional committees and a statewide committee with a total of 169 committee members. Once the regional committees had developed their components of the plan, the statewide committee adopted them and certain statewide components.

The secretary also had to adopt the plan, which happened in January 2009. You will find a copy of the various plan components and a digital atlas of water resource features on DEP's website at www.pawaterplan.dep.state.pa.us.

Implementation of Act 220 did not end with adoption of the State water plan. Indeed, the statute provides that the plan is to be updated on a five-year cycle. DEP and the statewide committee put over some of the incomplete portions of the plan from the first iteration to the second.

Among other objectives, Act 220 established a process to attempt avoiding or mitigating the most extreme cases of water shortage in which the availability of water might constrain new residential development or economic activity.

Act 220 defines a "critical water planning area," or "CWPA," as a "significant hydrologic unit where existing or future

demands exceed or threaten to exceed the safe yield of water resources." In plain language, a critical water planning area is the watershed of a stream from which users might wish to withdraw more water than the stream has available in a dry period.

The statute calls for the preparation of a "critical area resource plan," or "CARP," for each CWSA. The designation of the critical water planning area, as well as the CARP, became amendments to the state water plan. The state water plan is intended to provide a decision making resource for private persons and every level of government — from local land use regulators to state permitting and economic development agencies. Accordingly, designation of CWSAs and development of CARPs is intended to facilitate wiser land use, permitting and grant-making decisions at the state, county and local levels to alleviate the pressure on water resources.

A legal issue exists as to whether the plan binds decision makers. Section 3116(a) of the statute states that "[t]he state water plan is not intended to constitute or contain legally binding regulations, prohibitions or prescriptions."

However, certain regulations seem to require, or at least to encourage, consistency with the state water plan prior to obtaining permits. So, before granting a water obstruction or encroachment permit under Chapter 105 of DEP's regulations to allow projects that cross streams or fill wetlands, DEP is required to evaluate "consistency with ... the state water plan."

The same language appears in the regulation governing approval of highway obstructions in flood plains. And similar language appears in the regulations governing Pennsylvania Infrastructure Investment Authority ("PENNVEST") loans and grants. Thus, as Marc Davies argued in "Water Resource Planning Act: Pennsylvania's Blueprint for Land Development," a 2004 article in the *Temple Environmental Law and Technology Journal*, designation of critical water planning areas and adoption of CARPs might have become a tool for control of "sprawl" as residential and other development moved further away from existing urban centers and, therefore, further up watersheds, where the streams are smaller.

Nevertheless, the state water plan adopted in 2009 does not focus on patterns of residential land use. Residential water use turns out not to drive most mismatches between water demand and water supply. Agriculture represents a larger consumptive use of water, but farmers tend to attend closely to their water supplies.

The big water user is energy projects.

We make the overwhelming majority of our electricity by boiling water and running the resulting steam through turbines. Older plants withdraw a great deal of water for once-through cooling; they do return almost all of it — somewhat warmer — to the original stream. However, the 2nd Circuit U.S. Court of Appeals, in its *Riverkeeper v. EPA* decisions, one of which was remanded in 2009 by the Supreme Court in *Energy Corp. v. Riverkeeper*, has required EPA to issue regulations under section 316(b) of the Clean Water Act that tend to push power plants toward closed-loop cooling systems in order to reduce the number of fish and other organisms drawn into water intakes. Closed-loop systems withdraw less water, but they consume what they withdraw — the water is, for all intents and purposes, evaporated and withdrawn from the watershed.

Similarly, much ado has been made in Pennsylvania about water withdrawals to support development of Marcellus Shale natural gas.

Only about half the water used to stimulate natural gas wells by hydraulic fracturing returns to the surface immediately, and it returns in a condition that requires extensive treatment before being discharged back to a stream. Consequently, a great deal of that water is either reused or discharged to streams other than the one from which it was withdrawn.

Thus, if one really wanted to construct a plan to limit water resource conflicts, the plan would have to address with precision the location of energy, and probably industrial and agricultural, water uses much more than it would have to address residential development patterns. Most would question seriously whether water resource planning ought to dictate energy, industrial or agricultural planning. Typically, we rely on markets rather than plans to locate those kinds of uses.

The state water plan does make a start toward using market mechanisms to avoid water resource conflicts. To be sure, the result is not yet completely satisfactory.

In developing the plan, DEP engaged the United States Geological Survey to develop a screening tool. That screening tool used data collected from water supply registrations and other DEP sources to calculate locations where demand might approach or exceed supply, particularly in extreme conditions. Because the tool cannot accommodate a lot of idiosyncratic, site specific information, the screening information has to be verified, but the screen allows one to focus that verification effort.

Real estate developers and their lawyers will be familiar with similar screening tools.

For example, the National Wetlands Inventory provides a relatively rough map of the location of wetlands. Similarly, the Pennsylvania Natural Diversity Inventory ("PNDI") — now sometimes called the Pennsylvania Natural Heritage Program — identifies sites on which one may find rare or endangered species or their habitats. Just because a site appears on the NWI as including wetlands or on PNDI as including, for example, a bog turtle habitat does not mean that one will actually find wetlands vegetation or bog turtles on that site. However, the screening tool focuses the site-specific investigation.

A well-functioning water screening tool would allow potential project developers to investigate potential locations for water resource conflicts. It might also allow developers to play through "what if" scenarios to explore alternative project locations.

But we are not there yet.

The screening tool is only available to DEP. It uses what are now old data and it is not well-suited to hypothetical scenarios. Further, we are not certain to get there. The state water plan is unlikely to receive sufficient funding in the short term to allow improvements in the tool.

Nevertheless, one can only hope for increased economic activity in Pennsylvania. As that occurs, water resource conflicts may arise. Even though identification of critical water planning areas did not hit the front page of this publication — or, apparently, any other — sophisticated lawyers and their clients may want to have a look at the information resources available as the result of the Act 220 effort. They might consider whether further steps might improve the utility of that information. We are at that point in the political cycle. •

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