

Planning for Sustainable Infrastructure – Water Supply and Wastewater Workshop Highlights

April 29, 2004

Monroe County Control Center, Snydersville, PA

***Sponsored by: Monroe County Conservation District, Monroe County Planning Commission,
Pocono Mountain Industrial Development Authority and Brodhead Watershed Association***

Moderator: Charles Leonard, Pocono Mountain IDA

Joanne Denworth – from the Governor’s Office of Policy.

-Reviewed the Administration’s programs relating to coordinating land use policies including infrastructure improvements.

Noted that, as part of its economic stimulus package, the Administration is committed to funding for infrastructure projects, Municipalities should take advantage of this program when legislation implementing the approved \$250 million bond issue is passed. (Now anticipated fall of 2004).

-Emphasized that planning for infrastructure is the responsibility of counties & local governments under Pa law. Ideally should be done on a watershed basis, and be consistent with county & local comprehensive plans. Plan for strategies to manage surface, groundwater and stormwater as an integrated system to protect both instream and withdrawal uses on a sustainable basis.

- Act 537 plans and plan revisions should be tied to land use regulations. Only local governments have the ability to approve or disapprove plan revisions based on their land use plans and ordinances. DEP can no longer disapprove a plan revision or permit on the ground of inconsistency with a plan or ordinance.

- Municipalities should use power to do multi-municipal planning to designate growth areas and plan for public infrastructure to serve those areas. State must consider and “may rely on” such plans in making funding and permitting decisions.

To be sustainable specific facilities should provide for the return of treated wastewater to the aquifer from which it was drawn where feasible, and in any event be designed to have little or no impact on streams or groundwater.

Bonnie Smith – representative from the non-profit environmental group in the upper Lehigh River watershed – North Pocono CARE and Tobyhanna Creek/Tunkhannock Creek Watershed Association and formerly attorney with DEP.

- Discussed alternative wastewater treatment and emphasized that the federal and state law requires developers to investigate new and alternative methods of wastewater disposal other than stream discharge.

Tom Kelso – President of Castle Valley Associates, a consulting firm that designs and oversees implementation of a variety of wastewater treatment facilities.

- Compared the use of spray irrigation and lagoon systems in Eastern PA, including the Monroe County Industrial Development project at Pocono Mountains Corporate Center West. That system will consist of a treatment facility, containment lagoons, and spray irrigation.

- Noted that soils, terrain, and weather affect the potential use of spray irrigation. Seasonal spray, or drip irrigation, is one option.

Chris McCue – Project Manager for the Great Wolf Resort and water park project in Pocono Twp.

- Great Wolf’s willingness to incorporate spray irrigation, along with limited stream discharge, was encouraged by the DEP and the Governor’s office from the beginning of the pre-application planning process and resulted in faster permit approvals by DEP.

- Spray irrigation is desirable even when only possible during late spring/summer months, as will be the case at Great Wolf Lodge.

Brad Graham – Director of Operations at Spruce Lake Retreat, Canadensis.

- Detailed Spruce Lake Retreat's lagoon treatment system with spray irrigation in adjacent woods. He indicated that they have experienced minimal effects on surrounding terrain and that those effects are species-related, based on water tolerance. The net effect has been positive.

Roger Borger – Director of Buildings and Grounds for the Pleasant Valley School District.

- PV pre-treats its effluent and then sprays onto district athletic fields. Athletic field quality is maintained at superior levels even during periods of drought through the use of spray irrigation.

In cases such as PV's, when no nearby stream is available for discharge, an alternative method such as treatment with spray irrigation can determine the feasibility of building on certain properties or can substantially lower the capital cost for disposal of wastewater.

- Initial public response concerned only the potential for odor problems; no odor problems, nor any other problems have been experienced.

Jon Reed – Executive Director of Site Services for Aventis Pasteur, Swiftwater, PA.

- New construction at Aventis Pasteur incorporates separation of waste streams and gray water reuse to supply heating, cooling, and sanitation water needs. Separation of waste streams may be difficult and costly in existing construction, but a water intensive industrial process that can achieve separation of waste streams and water reuse will see significant savings.

Darryl Fritz – DEP, Sewage Planning Supervisor

Split Rock Lodge, Tamiment, Mt. Airy and Woodloch Springs are golf courses that utilize spray irrigation. There are also four ski areas in southwestern PA that use treated effluent for snow making on ski runs. The ski areas utilize a dilution ratio of fresh water to sewage effluent varying from 2:1 to 10:1. Skiing is restricted in areas where snow making is occurring. Golf course and ski areas require a large quantity of water so they are a major factor when considering wastewater reuse options. Golf courses are the # 1 users of spray irrigation in the US.

Cory Miller – Executive Director of the University Area Joint Authority, provider of wastewater collection and treatment services to the Centre Region Municipalities near State College, PA, and Brian Book of HRG, Inc, their engineer.

- UAJA employs a closed loop waste treatment/ water supply model which operates very efficiently by supplying a number of commercial and industrial users with water that has been treated only to the level that their operations require. i.e. their water supplied to local ski areas for snowmaking requires effluent be treated to a higher quality due to human contact than water being re-supplied to a metal finishing company.

- A goal of the UAJA system was to maintain adequate year round flow in the water supply creek and within the region's aquifer.

Jeff Jerome – Senior Civil Engineer with Burkavage Design Associates and Project Engineer for the Pike County Industrial Park wastewater recycling system.

- Treatment, spray irrigation and gray water reuse are features of the Pike County Industrial Park site. The package treatment module system has the advantage of requiring a much lower initial capital outlay, since new modules can be added to service additional tenants. The small footprint of the modular system vs. a standard treatment system allows Pike to offer a larger amount of its area for use by tenants.

Pat Ross – Chairman of the Board of Supervisors of Pocono Township.

- Pocono Township's Sewage Management District ordinance requires each on-lot sewage treatment system to be inspected every five years and pumped if necessary preempts system failures, especially in the case of older, in-ground systems.
- Many new residents in the Poconos come from more urban regions where central water and central sewer are common and are unfamiliar with the maintenance requirements of individual septic systems.

Ed Cramer – Stroud Township Supervisor serving as Vice-Chairman and Secretary-Treasurer of the Board.

- Discussed Stroud Township's ordinance requiring township review of developer-installed decentralized sewer systems as part of the land development process. - - Required monitoring and reporting by these decentralized system operators should provide greater assurance that these systems will remain operative into the future, preventing the need for the township to step in and take over management of the systems.

Representatives Kelly Lewis and Mario Scavello – PA House of Representatives

- Mr. Lewis noted the need for infrastructure investment, particularly central sewers, in the county as a means of increasing economic development. - Mr. Scavello noted the need for KOZ zones within the county in order to attract specific types of desirable business/industry development.

Ken Brown – Manager of the Stroudsburg Municipal Water Authority.

- Spoke about the water supply resources of SMA and highlighted the Authority's extremely successful program for leak detection and subsequent repair which has significantly reduced water use/loss.
- Despite extension of service to 500 additional customers, SMA currently uses less water now than before the leak detection program was instituted and the average user pays less for water service than when the plant first came on-line.

Jim Phillips – Borough Manager for the Borough of East Stroudsburg.

- Discussed East Stroudsburg's water supply system and management of the 1400 acre watershed property. This substantial buffer assures both water quality and quantity in its reservoir. Alternative source water is provided via two wells on ESU property.

Jan Bowers – Executive Director of the Chester County, PA Water Resources Authority.

- Discussed the impacts of growth on groundwater recharge and the need for planning and zoning implementation at the municipal level to guarantee continued water resources.
- Noted some of the groundwater modeling techniques that can be used to help estimate the carrying capacity of the aquifer.
- Noted the importance of zoning and the use of narrow easements to facilitate extending infrastructure across preservation areas without spurring development in those areas.

Greg Cavallo – Project Manager for the Ground Water Team for the Delaware River Basin Commission, Modeling and Monitoring Branch, and member of the Pocono Creek Pilot Study.

- Exhibited groundwater modeling data to show how current or future extraction from the groundwater reservoir in one location vs. another can impact that reservoir and consequently, the ecosystem that relies on it.
 - a) The modeling results examined the interrelationship between ground water withdrawals and impacts on streams flows.
 - b) Depending on the location of a ground water well a gallon of groundwater withdrawn from the aquifer represents a gallon of water taken from the stream at some point within the watershed. However, wells near watershed boundaries will capture ground water that would have discharged to a neighboring watershed

c) There is a time delay from the commencement of ground water pumping to the impact on stream flow.

- Displayed data supporting the fact that sewer lines draw down groundwater reservoirs by infiltration of groundwater into the sewer line. Most sewer lines are gravity-flow and as such are placed at a low point within the aquifer. Maintaining a sealed sewer system is difficult even with the modern materials available.

- During periods of extended drought, if the pressure of the groundwater surrounding the sewer line becomes less than the pressure of the untreated effluent within the pipeline, ex-filtration of effluent, into the groundwater reservoir can occur.