

Meeting Summary
DEQ Water Resource Impact Work Group
Tuesday, August 6, 2002
DEQ – Piedmont Regional Office

The DEQ Water Resource Impact Work Group met at 10:00 a.m. on August 6, 2002 at DEQ's Piedmont Regional Office. In attendance David Nelms (USGS), Kurt Stephenson (VA Tech), Lynn Caldwell (National Committee for the New River), Patti Jackson (James River Association), Frank Harksen (Hanover Co.), Brooks Smith (Hunton & Williams), Marc Tufaro (SCC), Tom Botkins (Mead Westvaco), Cathy Taylor (Dominion Power) and Jane Cain (VA Water Well Assoc.). DEQ staff present included Allan Brockenbrough, Mike Scanlan, Joe Hassell, Kathy Frahm, Ellie Irons and Terry Wagner. The meeting was facilitated by Frank Dukes and Tanya Denckla of the Institute for Environmental Negotiation.

Frank Dukes reviewed the status of several items from the previous meeting:

- Meeting summaries and presentations are available on DEQ's website and at www.townhall.state.va.us .
- Combining air and water group efforts – no solution yet but a similar homework format to be used for each group
- Other states – an IEN grad student has done some research and will be preparing a report
- Status of power plant applications with SCC – provided by Marc Tufaro following last meeting
- DCR representation – no contact made yet with DCR

The draft summary of the last meeting has been provided by Allan Brockenbrough. He will take comments through August 8th, at which time the summary will be finalized and posted on the town hall website. Frank Dukes reminded those present of the group guidelines and reviewed the charge of the workgroup as outlined by DEQ Director Mr. Burnley during the 6/18/02 meeting.

Review of Handouts

Tanya Denckla reviewed the agenda. A review of the materials distributed prior to the meeting followed. Included were Marc Tufaro's spreadsheet on the status of SCC power plant applications, Kurt Stephenson's conceptual diagram on consequences of water withdrawals, John Kauffman's instream flow write-up and Joe Hassell's summary of water usage at the various existing and proposed power plants. Joe's summary is still a work in progress and generated the most discussion. Discussion included the number of plants actually being built as well as water use for the various power production technologies. The combustion turbine plants are peaking plants which use much less water (approx. 0.1 to 0.4 mgd) and are generally limited to less than 60 to 90 days of operation per year. The combined cycle plants use much more water on a daily basis (often 4 to 8.5 mgd) and generally operate about 60% of the time. It was suggested that Joe add a column to the report indicating status (proposed, built, etc.) and, if possible, the mode of operation (peaking, etc.) and whether or not complete water use information is on hand. Joe agreed to continue to modify the report. There was also a suggestion that the water use information provided in the SCC applications be standardized for consistency.

Regulation 11 Water Withdrawal Reporting

Mike Scanlan presented a summary of the DEQ's "Regulation 11" water withdrawal reporting program. The regulation requires yearly reporting of ground and surface water withdrawals exceeding an average of 10,000 gpd in any given month for non-agricultural use and 1 mgd in any month for agricultural use. The reporting forms are printed by DEQ staff and sent to the various users. Forms must be completed and submitted by Jan. 31st of each year. DEQ staff prepares a summary report for the governor's office and the legislature by the end of July. The quality control on the data is uneven. Staff does try to compare data to previous reports and follows up on obvious errors. The data is intended to be used in determining the need for surface

or ground water management areas, in ground water management permitting and to assist local water supply planning. The database does not indicate whether or not the withdrawals are consumptive or whether they involve any interbasin transfer. It is likely that some withdrawals may actually add water to one basin while removing water from another. In 1999, total withdrawals for the state were approx. 8.5 billion gallons per year with power generation accounting for approx. 83% of the total. Most of this use is by older power plants with "once through" cooling water. Public water supplies account for approx. 9% of the total and manufacturing accounts for approx. 7%. Agriculture, commercial and mining uses total approx. 1% of the total use on a yearly basis. Streams were the source of approx. 59% percent of the withdrawals in 1999, reservoirs 26%, wells 11% and springs 4%. Mike also mentioned the surface water gages and coastal plain wells monitored by USGS and DEQ. It was suggested that DEQ should use the data to actively evaluate the need for ground and surface water management areas.

A Perspective for Water Resources management for the James River

Kenneth Chandler, Director of Public Utilities of the City of Richmond, was introduced. He, in turn introduced Gary Duval, Deputy Director of Public Utilities, and Ron Bizzarri and Ed Cronin of Greeley & Hansen. Ken explained the City's interest in water rights and their investment in the riverfront. Ron Bizzarri then gave a presentation on the work done in support of the Falls of the James River Management Plan (RMP).

The RMP was prepared in support of Henrico County's application for a water withdrawal permit for their new water treatment plant. It covers a 10 mile section of river from the new intake approx. 3 miles above Boshers's Dam to the fall line. The fish ladder at Boshers's dam and the conditions of the RMP ensure passage of anadromous fish all the way to Lynchburg. There is no comprehensive management plan for river flow above the Henrico intake. River flows below the fall line are of concern due to all of the wasteload allocations between Richmond and Hopewell.

The RMP has several major elements including protection of instream uses, public water supply, a canal withdrawal plan, and a water conservation program. A considerable amount of modeling and monitoring went into applying the Instream Flow Incremental Methodology (IFIM) in support of the plan. The RMP also serves as a framework for assessing future needs. Using IFIM, river flow rate was related to available habitat for various species of fish as well as recreational opportunities such as novice canoeing. Of the instream uses, shad require the most water and minimum instream flow (MIF) figures were established which would not alter the naturally occurring shad habitat by greater than 10%. These flow figures are considered to be protective of all other uses. The RMP includes no withdrawal restrictions when the river is greater than 5000 cfs. Below 5000 cfs, there are restrictions in winter/spring to protect shad migration and summer/fall to protect juvenile shad.

The RMP includes conditions on the withdrawals for the Kanawha and Haxall Canals. The canals have a maximum withdrawal of 250 cfs. Under water conservation conditions, flows are reduced to 50 cfs in the Kanawha Canal and 100 cfs in the Haxall Canal. The water conservation plan includes 5 basic measures: (1) water supply allocations, (2) canal withdrawals, (3) MIF maintenance, (4) water use codes and (5) enforcement. These 5 measures comprise the water conservation plan during the months of December through February. During the remainder of the year, if actual withdrawals exceed 90% of the allocated withdrawal rate, then additional conservation measures apply based on the river flow. These additional measures include voluntary and mandatory public use restrictions.

Subtracting the established MIFs from the naturally occurring instream flows gives a total available withdrawal allocation. Comparing the total withdrawal allocation to the sum of the actual existing water supply and canal diversion allocations for an average year and drought years of various return intervals gives an indication of when additional allocations are available and the frequency at which conservation measures would be required.

The MIF conditions for the RMP were established by the U. S. Army Corps of Engineers. Where Surface Water Management Areas (SWMAs) exist or Virginia Water Protection permits are required, DEQ can allocate the available flows above the MIF. Benefits of the RMP include state-of-the-art-instream technology, it balances withdrawals to maximize instream protection, it supports regional economic and cultural programs, it's easy to monitor and it makes future resource planning easy.

Ron Bizzarri reviewed the informational needs to perform a similar river management plan and addressed how the information is used in the process. The result is an equitable management policy which provides a comprehensive tool for evaluating withdrawal proposals and protecting instream uses.

The following issues were discussed in response to the presentation. The MIF figures are based upon a rolling 14-day average. Thus far this summer, river flows have not reached these critical levels on a 14-day average. The voluntary use restrictions announced to date were not required by the RMP. The various localities have called for the voluntary restrictions as a proactive response to many factors such as limitations in Henrico County's water distribution system, the duration of the drought, the level of the Swift Creek Reservoir in Chesterfield County, ground water elevations, etc. It was noted that the SWMA for the Falls of the James has been discussed and worked on for 10 years and the designation has still not been made. It was suggested that DEQ needs a better process to ensure that such designations are made in a more timely manner.

Review of Matrix

Mike Scanlan reviewed a matrix prepared after the last meeting addressing regulatory review for various ground and surface water withdrawal scenarios. The matrix also indicates when the various beneficial instream uses are considered in the regulatory review process. The matrix attempts to convey a lot of information on a single page and there was considerable discussion on corrections and/or additions to the matrix. There was no clear consensus on what the matrix should document - the current review process or whether or not regulatory authority exists for each withdrawal scenario. The State Water Control Board has broader regulatory authorities (e.g. Water Policy, Antidegradation Policy, etc.) which are not explicitly addressed in every permit program. Use of these broader authorities should be addressed in some fashion in the group's final report. There were discussion, both pro and con, of adding information tools such as Regulation 11 data and water supply planning documents to the matrix as well as to split the matrix into two separate charts. The matrix discussion was tabled due to a lack of time and Allan Brockenbrough agreed to make some of the changes that were discussed and send it back out to the group for further consideration.

Review of Tools

Tanya Denckla review a form developed by IEN for advisory group members to submit proposed options for consideration. The format mirrors the charge given to the group by DEQ Director Bob Burnley. It consists of 4 boxes – (1) the problem or concern to be addressed; (2) the proposed remedy or remedies (the methods or tools for measuring or predicting impacts, and options for how best to use the information generated) for the problem; (3) the anticipated benefits of the proposed remedy or remedies; and (4) the anticipated costs of the proposed remedy or remedies and options for meeting those costs. IEN will distribute the form electronically. Submittals should be made to IEN by September 5th so that they may be compiled prior to the next meeting at which time the various proposals will be discussed. Tanya Denckla presented four possible categories which individual subgroups may want to approach – planning, coverage, analysis and reporting. There was a request for more information from other states and for IEN to put together a "strawman" for the group to evaluate. Tanya Denckla agreed to provide such a document.

The floor was opened to other interested parties and no comments were made. The next meeting will be September 12th from 1:00 p.m. to 5:00 p.m. again at the DEQ – Piedmont Regional Office. At that meeting we will be reviewing the various proposals and discussing the format of the final report. A draft report will be prepared for the October meeting.