
APPENDIX E

**Summary of 2005 and 1993 Groundwater
Management Plan Recommendations**

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Appendix E presents summary lists of the recommendations developed for the current Groundwater Management Plan and those recommendations from the previous (1993) plan that either have been implemented or are no longer applicable.

Table E1 contains a list of current recommendations categorized into the topics of: (1) actions to address groundwater resource issues and problems; (2) actions to address management issues; and (3) groundwater management support programs. A discussion of the issues and problems that each recommendation addresses is presented in the main report Sections 2, 3, and 4.

Table E2 is a summary list of those recommendations from the Commission's 1993 Groundwater Management Plan that either have been implemented or are not applicable today due to changed conditions or criteria. Information included in the list for each recommendation is its location in the 1993 report on the plan and a summary of actions taken since 1993.

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Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan

Issues	Problems	Recommendations
A. ACTIONS TO ADDRESS GROUNDWATER RESOURCE ISSUES AND PROBLEMS		
<p>1. Areas of Intense Growth and Development, and Consequent Water Resource Development (see Section 2.1 in main report)</p>	<p>Well interference.</p> <p>Exceedance of sustainable yield.</p> <p>Loss of recharge areas.</p>	<p>Where time and water resources are limited, a groundwater model should be used to provide a rapid prediction and evaluation. The use of a model would take into account the appropriateness of the particular approach, as well as the capabilities/limitations of the chosen model. In situations where the availability of water resources allows a more flexible, less time-sensitive approach, water level monitoring is recommended. For many cases, a combination of these approaches will provide the most effective solution, which could include mitigation of impacts. The implementation of such plans may require the coordination of appropriate federal, state and local agencies.</p> <p>Continue to require and review groundwater availability analyses for new projects and detailed water budgets for PSAs. For areas where undesirable effects have stemmed from groundwater withdrawals, and sustainable yields have been exceeded during the last few decades, review and reopen dockets, require a water budget analysis, and adjust the withdrawal rates for sustainability.</p> <p>The Commission should base its sustainable yield determination for approval quantities on estimates of the recharge available to a well that include post build-out conditions.</p> <p>Further, the Commission should encourage the use of “best management practices” (BMPs) that minimize the loss of recharge, such as those developed by the Commission's member jurisdictions. Available recharge should be verified after build-out and the approval amount increased (or decreased), based on the outcome of the verification study.</p>

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
A. ACTIONS TO ADDRESS GROUNDWATER RESOURCE ISSUES AND PROBLEMS (Continued)		
<p>2. Intensive Water Use in Small Basins (see Section 2.2 in main report)</p>	<p>Loss of base flow.</p> <p>Loss of perennial streamflow.</p>	<p>In recognition of the importance of headwater areas with respect to water quality, the Commission, in cooperation with member jurisdictions and other organizations, should educate the public and local land-use planners about the sustainability of these areas and the need to properly manage them.</p> <p>The Commission, in cooperation with member jurisdictions and other organizations, should evaluate headwater streams with respect to habitat, and apply special conditions prescribing passby and conservation flows to its approvals for both surface water and groundwater withdrawals in order to manage water quantity and quality of the stream. The recognition and management of critical recharge areas also would benefit these areas.</p>
<p>3. Watershed “Transfers” (see Section 2.3 in main report)</p>	<p>Wastewater is not returned to the watershed where it was withdrawn.</p>	<p>The Commission, in cooperation with member jurisdictions and other organizations, should educate the appropriate professional groups about the options of maintaining groundwater withdrawals and post-use discharges in the same watershed, and the factors involved in this decision. The Commission should evaluate the transfer of water from the source basin during its review.</p>
<p>4. Loss of “Clean” Water Input to AMD-Impacted Streams (see Section 2.4 in main report)</p>	<p>Degradation of stream quality.</p>	<p>The Commission's permitting process should include an evaluation of cumulative impacts from consumptive water uses to downstream water quality in AMD-impacted areas. The review of consumptive water use projects in watersheds that are tributary to streams not meeting state and federal water quality standards should consider cumulative impacts and the cost of mitigating the impacts. The Commission should coordinate with the appropriate state and federal agencies in its evaluation.</p>
<p>5. Unknown and Unregulated Groundwater Use (see Section 2.5 in main report)</p>	<p>Data gaps can prevent evaluation of true sustainability and cumulative impact.</p>	<p>The Commission should collect information on the magnitude, location and seasonality of agricultural, grandfathered, and unknown or unregulated withdrawals to improve its evaluation of the resources available to new projects.</p>

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
A. ACTIONS TO ADDRESS GROUNDWATER RESOURCE ISSUES AND PROBLEMS (Continued)		
5. Unknown and Unregulated Groundwater Use (Continued)	<p>Loss of base flow during the growing season.</p> <p>Interference with existing water sources.</p>	<p>Where loss of base flow is a recurring problem, a water budget and cumulative impact analysis will be essential tools needed to manage withdrawals for sustainability, and minimize impact to other water sources and the environment. Adverse impacts to base flow during periods of low flow should be addressed by managing withdrawals, storage, and conjunctive water use.</p> <p>A water budget should be performed to determine the available water resources. Alternating and/or non-synchronous pumping of interfering sources will often address local, marginal overdrafts.</p>
6. Scarcity of Clean Water in Coal-Mined Areas (see Section 2.6 in main report)	Preferential development of high quality groundwater sources.	<p>The Commission, in cooperation with member jurisdictions and other organizations, should act to manage the quantity and quality of water from these watersheds, recognizing that water resources are necessary for the economic growth of mining-affected regions. Education of local government officials and municipal engineering firms is imperative. In the long-term, this would be most effectively accomplished through coordination among the Commission, the appropriate state and federal agencies, and other organizations. The Commission and others must recognize, however, that if municipalities in coal mining affected areas are to experience beneficial economic growth and development, they must turn to these clean watersheds for water supply while maintaining a balance with the need to protect aquatic resources. The Commission should also support efforts by the member jurisdictions for “grayfields” initiatives which encourage the beneficial use of AMD-affected waters.</p>

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
A. ACTIONS TO ADDRESS GROUNDWATER RESOURCE ISSUES AND PROBLEMS (Continued)		
<p>7. Drought Impact to Base Flow (see Section 2.7 in main report)</p>	<p>Insufficient streamflow to sustain instream flow needs or downstream water supplies.</p>	<p>The Commission, in cooperation with member jurisdictions and other organizations, should act to maintain stream base flow by protecting the groundwater flow that sustains it by: (1) educating local jurisdictions about maximizing high quality groundwater recharge through the support for implementation of stormwater management practices that promote infiltration, identification of CARAs, and application of “best management practices for development”; and (2) carrying out and/or supporting research on fisheries, particularly warm-water fisheries to provide improved knowledge of required conditions for their survival and a scientific basis for their protection.</p>
<p>8. Impacts of Mining (see Section 2.8 in main report)</p>	<p>The positive and beneficial use of water discharged from mining operations is underutilized as a resource.</p> <p>Extensive aquifer dewatering.</p>	<p>The Commission should encourage cooperative efforts to promote the development of reliable water supplies related to active and abandoned mining operations, for public drinking water, commercial operations, and industrial supplies.</p> <p>The area of influence and capture area for the mine withdrawal should be delineated, and the impacts identified. This is best accomplished through a study, which may incorporate a water budget analysis, field mapping of aquifer permeability features and water levels, and groundwater modeling. Once identified, the impacts may be mitigated through a variety of methods, including redirection/redistribution of the mine pumpage and modification or replacement of impacted sources. Where exceedence of sustainable yield is occurring, mine pumpage can be reduced through the grouting of water inflow points, or other methods as appropriate, if economically and technically feasible.</p>

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
A. ACTIONS TO ADDRESS GROUNDWATER RESOURCE ISSUES AND PROBLEMS (Continued)		
8. Impacts of Mining (Continued)	Exceedance of sustainable yield.	Where mining withdrawals of groundwater exceed sustainable yield, mine pumpage can be reduced through the grouting of water inflow points if technically and economically feasible, or other methods, as appropriate. In cases where the aquifer is otherwise unused, the effects of exceedance of sustainable yield may be mitigated by various means as appropriate. These mitigation procedures should be coordinated through the appropriate state and federal agencies, in concert with the project's engineering and hydrogeological staff and consultants. Mine pumpage may reach or exceed the sustainable groundwater yield of a basin, and thus effectively limit the potential for other withdrawals to be approved.
9. Flow Compensation for Consumptive Water Uses (see Section 2.9 in main report)	Need for additional low flow augmentation to compensate for consumptive water uses.	The Commission should bring together key stakeholders to help promote the use of groundwater stored in "artificial" aquifers created by mining or flooded quarries to offset consumptive water uses and support instream flow needs during droughts.
B. ACTIONS TO ADDRESS MANAGEMENT ISSUES		
1. Multi-Agency Coordination (see Section 3.1 in main report)	Coordination among water resource agencies can be ineffective or incomplete.	The Commission's water resource data collection, planning, monitoring, and management procedures should be closely coordinated through multi-agency committees, and the Commission and all appropriate agencies should closely communicate on the Project Review Program to avoid conflicting actions.
2. Changes to Water Resource Utilization Over Time (see Section 3.2 in main report)	Water resource management programs can become less efficient with changes in technology and water use. Water supply sustainability and stream low flow conditions can be adversely impacted by lack of the best and most efficient use of groundwater resources.	To effectively manage changes in the utilization of the basin's water resources, the Commission must assess water resources utilization periodically through updated water budget analyses, preferably for watersheds at a scale of between 15 and 25 square miles focusing on PSAs of the basin, and make appropriate changes in its policies, procedures, and project review process. The Commission, in cooperation with member jurisdictions and other organizations, should strengthen requirements for water conservation and encourage reuse of treated wastewater and conjunctive use of groundwater and surface water.

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
B. ACTIONS TO ADDRESS MANAGEMENT ISSUES (Continued)		
3. Regulatory Duplication (see Section 3.3 in main report)	Change in the regulatory programs of the member jurisdictions may make some of the Commission's regulatory program redundant, inefficient, or inappropriate.	Close and effective coordination, including the use of formal arrangements such as memorandum of understanding, should be maintained among the Commission, its member jurisdictions, and key agencies to ensure that implementation of this plan's recommendations is effective, current groundwater information and technology are shared, consistency is maintained, and redundancy is minimized.
4. Increased Knowledge About Groundwater as a Resource (see Section 3.4 in main report)	Useful information about groundwater occurrence, availability, transmissivity, and yield is collected by various government permitting agencies and others, but is not compiled and shared among agencies nor disseminated to the professional community, developers of policy, or local decision-makers.	Capture and compile groundwater data submitted to the Commission by project sponsors to allow its use by the Commission and others.

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
B. ACTIONS TO ADDRESS MANAGEMENT ISSUES (Continued)		
4. Increased Knowledge About Groundwater as a Resource (Continued)	<p>Lack of fundamental knowledge of groundwater resources by many policy/decision-makers at the local, municipality level and by their constituents, and at the corporate level of private businesses, has hindered the understanding of sound groundwater management practices.</p> <p>Lack of consideration of factors important to groundwater protection and sustainability within the municipal planning process, resulting from limited knowledge of groundwater resources, has hindered the implementation of sound groundwater management practices.</p>	<p>Identify the various constituents that would benefit from a multifaceted outreach and educational program, including local governments; regulated community and related associations; consultants; environmental, conservation and citizen organizations; and possibly colleges and high schools. Develop tools these groups can use to make informed decisions.</p> <p>Encourage and assist local governments to include groundwater management concepts in planning and land-use control. Use the various tools identified below, including video, information sheets, informational meetings, etc.</p>

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
B. ACTIONS TO ADDRESS MANAGEMENT ISSUES (Continued)		
4. Increased Knowledge About Groundwater as a Resource (Continued)	There is the absence of an educational framework needed to present groundwater concepts and issues to a variety of audiences through several forms of media.	<p>Incorporate the following methods into the multifaceted outreach and education program:</p> <p><u>Publications</u>: Periodically publish articles in the Commission quarterly newsletter; draft and submit articles to be published in the various constituents' publications; produce related information sheets, etc.</p> <p><u>Conferences, workshops, and informational meetings</u>: Identify the various constituents' conferences and determine their schedules; create new exhibits/displays on the topic; exhibit and/or speak at the conferences, workshops and information meetings; conduct Commission-sponsored conferences, workshops, and informational meetings, as the need arises.</p> <p><u>Speakers' Bureau</u>: Update and enhance the Commission's existing groundwater management presentation and publicize its availability.</p> <p><u>Web Site</u>: Establish a new link and announce the availability of the plan on CD-Rom, any related information sheets or related links, and short video clips (see below).</p> <p><u>Video</u>: Obtain funds to produce a video targeted particularly to local governments (short clips of the video can be included in the web site).</p> <p><u>Media Relations</u>: Issue a press release on the new plan, pointing out key benefits and uses; periodically submit articles on the benefits of groundwater planning and management; and periodically participate in radio and television talk shows.</p>
5. Plan Performance and Accountability (see Section 3.5 in main report)	The management plan will not be productive unless the tasks identified are performed and accountability for accomplishing the tasks is established.	Periodic reporting on implementation of the plan's recommendations by the accountable agencies and groups and any new and significant groundwater management issues should be made by Commission staff to WRMAC.
6. Review and Update of the Plan (see Section 3.6 in main report)	This management plan needs to be reviewed and updated on a recurring basis in order to be current and of continuing value.	While the overall planning process should be continuous, a more comprehensive review and revision of this plan by WRMAC should occur at intervals not to exceed 10 years.

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
B. ACTIONS TO ADDRESS MANAGEMENT ISSUES (Continued)		
7. Funding to Implement the Plan (see Section 3.7 in main report)	Adequate long-term funding needs to be made available to implement the actions recommended in the plan.	Funding to implement the plan's recommended actions should be made available and/or proactively sought by the lead jurisdiction(s) for each action.
C. GROUNDWATER MANAGEMENT SUPPORT PROGRAMS (Continued)		
1. Protection of Groundwater Sources of Supply and Aquifers (see Section 4.1 in main report)	<p>Contamination of groundwater resources from the affects of improper land use planning and zoning.</p> <p>Lack of comprehensive groundwater quality datasets showing the extent and severity of nonpoint source pollution affecting groundwater resources basinwide, and the lack of management plans necessary for improving conditions.</p> <p>Degradation of water quality conditions in aquifers from point source discharges.</p>	<p>Encourage the states and local jurisdictions to develop regulations and programs designed to protect critical aquifers from contamination because wellhead protection programs do not provide for protecting future public supply wells, domestic wells, and other uses of wells.</p> <p>Continue and expand monitoring and research, in cooperation with member jurisdictions, related to nonpoint source contamination, including agricultural and other sources of groundwater. In addition, the Commission has in the past used private/existing wells to collect monitoring data, and plans to continue such efforts when appropriate. The Commission recommends encouraging such cooperative efforts both for Commission initiatives, and those initiated by other agencies and local jurisdictions. The information obtained can be used to assess the severity of the problem and the need for management initiatives. Several programs support the assessment and implementation of such actions and include TMDLs, USEPA's 319 Nonpoint Source Program, and United States Department of Agriculture/Natural Resource Conservation Service (USDA/NRCS) water programs.</p> <p>Support the member jurisdictions in their efforts to consider the affect of wastewater discharges on groundwater, including sensitive recharge areas, when issuing NPDES or SPDES permits. This should potentially include the installation of monitoring wells in particularly vulnerable aquifers.</p>

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
C. GROUNDWATER MANAGEMENT SUPPORT PROGRAMS (Continued)		
1. Protection of Groundwater Sources of Supply and Aquifers (Continued)	Limited support for local development of source water protection plans.	Assist communities with groundwater source protection by utilizing existing source-water assessment data and aquifer test data to provide educational and technical assistance in formulation of protection plans. The overwhelming need for education on this subject far exceeds the resource capabilities of any one agency or organization. The success of source water education and protection activities resides with building broad partnerships among both public and private partners, based on the need for the protection of water supplies to span a number of issues/areas (i.e., land use planning, hazardous material handling, municipal ordinances, water quality monitoring).
2. Water Use and Availability Information (see Section 4.2 in main report)	<p>Not all large volume withdrawals (>10,000 gpd) are registered (documented).</p> <p>Data on large volume users needs to be available for management use.</p> <p>Well information (water use) is not available to all agencies and local managers.</p> <p>Groundwater managers, planners, and decision-makers often do not have ready access to fundamentally important, basinwide information on groundwater.</p>	<p>Require large volume users of groundwater (>10,000 gpd) to register (document) their use. In addition, require all registered (documented) withdrawals to be reregistered (updated) periodically. Coordinate with member states and others to maintain a vibrant data set.</p> <p>Maintain a centralized database containing information on large users, and make these data available to planners and managers throughout the basin. Access and use of the information would be subject to security considerations.</p> <p>Maintain a centralized database containing well location information, and make these data available to planners and managers throughout the basin. Access and use of the information would be subject to security considerations.</p> <p>The Commission should partner with the appropriate agencies to develop the required information for the entire basin, and make it available on-line at an appropriate web location.</p>

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
C. GROUNDWATER MANAGEMENT SUPPORT PROGRAMS (Continued)		
<p>3. Well Requirements (see Section 4.3 in main report)</p>	<p>Improper well construction and abandonment procedures can cause aquifer contamination.</p> <p>Lack of certification program for drillers in Pennsylvania and the need for improving existing licensing/certification programs and well driller training in other basin states.</p> <p>The observation well network does not have the capability to monitor the dynamic response of aquifers in the basin to changes in precipitation.</p>	<p>Support state and local programs for well construction and abandonment standards and improved controls to prevent pollution. Several towns and municipalities in the basin have established successful ordinances to protect groundwater quality through controls on well abandonment and construction procedures. Examples are available from the state or respective state rural water associations. The Commission will continue to support state/local efforts for developing construction standards, as outlined in the Commission's Annual Water Resources Program document.</p> <p>Support legislation that works toward the development of a well driller's certification program in Pennsylvania, and support the improvement of programs that provide training and licensing/certification for all well drillers.</p> <p>The Commission should support effective maintenance of the observation well network by the USGS, and work toward improving the network, through cooperative agreements between USGS and the member jurisdictions. The goal is to provide a useful observation well with real-time monitoring capability in each county in the basin. Well OG-23 should be replaced with a well located in an aquifer that is commonly used for water supply and constructed to provide accurate monitoring of the water table or aquifer head.</p>

Table E1. Summary of Current Recommendations for the 2005 Groundwater Management Plan (Continued)

Issues	Problems	Recommendations
C. GROUNDWATER MANAGEMENT SUPPORT PROGRAMS (Continued)		
4. Assessment of State/Federal Groundwater Programs and Program Coordination (see Section 2.4 in main report)	State and federal agencies need to ensure their groundwater programs are current and responsive. In addition, these programs need to coordinate management activities to enhance program effectiveness and efficiency.	The Commission's member jurisdictions should continue periodic assessments of their groundwater programs to identify needed improvements and plan for their implementation.

Table E2. Implemented or Deleted Recommendations from the Susquehanna River Basin Commission's 1993 Groundwater Management Plan

Topic	Page in 1993 Report	Recommendations	Actions Taken to Date and Comments
RESOURCE EVALUATION AND PROTECTION			
1. Groundwater Use	16 16 17	<p>The Commission should:</p> <ul style="list-style-type: none"> • Issue withdrawal permits based on long-term conservation management (the resource must be managed as a replenishable resource such that withdrawals do not exceed long-term recharge). • Determine that the proposed withdrawal is needed for a reasonable and beneficial use (reasonable and beneficial use means the use of groundwater in the requested quantity is necessary for an economic, social, or environmental purpose within the public interest, including, but not limited to, domestic, agricultural, industrial, mining, power, municipal, fish and wildlife, and recreational uses). • Insure that the proposed use will not cause unavoidable or unreasonable adverse environmental impacts. 	<p>The Commission is doing this for each water use request.</p> <p>The Commission determines if the requested quantity is reasonable. Beneficial use is accepted at face value.</p> <p>The Commission does this for each water use request for localized impacts.</p>
2. Balancing of Competing Users	18	<p>The Commission should:</p> <ul style="list-style-type: none"> • Verify that identified impacts are mitigated prior to issuing a permit; and require monitoring to assure there are no unforeseen impacts. 	<p>The Commission is verifying impact mitigation for local area only. Compliance and enforcement issues need to be addressed and are now part of a new recommendation in the current plan.</p>

Table E2. Implemented or Deleted Recommendations from the Susquehanna River Basin Commission's 1993 Groundwater Management Plan (Continued)

Topic	Page in 1993 Report	Recommendations	Actions Taken to Date and Comments
RESOURCE EVALUATION AND PROTECTION (Continued)			
3. Monitoring and Research	25	<p>The Commission should:</p> <ul style="list-style-type: none"> • Continue and expand research related to nonpoint source contamination of groundwater. 	<p>The Commission has done some limited work on this. This action has been incorporated into a new recommendation in the current plan.</p>
	25	<ul style="list-style-type: none"> • Support and promote consistency in the pollution source and public water supply monitoring efforts of the member states. 	<p>No actions to date by the Commission. This is not a proactive action.</p>
	25	<ul style="list-style-type: none"> • Encourage ambient-quality monitoring efforts that focus on random sampling of wells and the sampling of surface streams under base flow conditions. 	<p>No actions to date by the Commission. Limited monitoring efforts are done by state agencies, as required by USEPA.</p>
MANAGEMENT AND REGULATORY			
1. Water Use Registration	15	<p>The Commission should:</p> <ul style="list-style-type: none"> • Develop indirect methods to estimate the use by small-volume users in the basin 	<p>No actions taken to date. Work unlikely to be funded and results would be of limited value.</p>

Table E2. Implemented or Deleted Recommendations from the Susquehanna River Basin Commission's 1993 Groundwater Management Plan (Continued)

Topic	Page in 1993 Report	Recommendations	Actions Taken to Date and Comments
MANAGEMENT AND REGULATORY (Continued)			
2. Groundwater Use	16 17	<p>The Commission should:</p> <ul style="list-style-type: none"> • Require permits of all users of groundwater in excess of 100,000 gallons per day. This permit should be in the form of a water allocation that provides some level of protection to the applicant. • Issue permits for a specific period to provide for the recovery of investments made in developing a particular project. Modifications to an allocation during this period could only be made on an emergency basis, or as a result of conflicting water uses. In general, the 12-year duration for permits used by Maryland should be adequate. 	<p>The Commission is doing this. However, “permit” and “allocations” are incorrect terms and should be referred to as approvals.</p> <p>The Commission is issuing approvals based on a 25-year duration.</p>
3. Protection of Sources of Supply	20	<p>The Commission should:</p> <ul style="list-style-type: none"> • Support the states' efforts in establishing wellhead protection programs. 	<p>NY— Wellhead protection programs, which complement the baseline program implemented through state agency programs (NYSDOH and NYSDEC) are developed and adopted voluntarily by county and local governments and water suppliers.</p>

Table E2. Implemented or Deleted Recommendations from the Susquehanna River Basin Commission's 1993 Groundwater Management Plan (Continued)

Topic	Page in 1993 Report	Recommendations	Actions Taken to Date and Comments
MANAGEMENT AND REGULATORY (Continued)			
3. Protection of Sources of Supply (Continued)	20	<p>The Commission should:</p> <ul style="list-style-type: none"> • Support the states' efforts in establishing wellhead protection programs. 	<p>PA—Wellhead Protection Plans are voluntary, but the water supplier is required to own or control the Zone One Wellhead Protection Area (having a 100-400 foot radius depending on source and aquifer characteristics). Also, source water assessments are required for new public water supply sources serving populations of 3300 or more.</p> <p>MD—WHP Plans voluntary at state level. Some local communities require them through ordinance. MDE provides funding and technical assistance and a model ordinance.</p>
4. Minimum Testing Requirements for Domestic Wells	23	<p>The Commission should promote the development of programs in Pennsylvania and New York:</p> <ul style="list-style-type: none"> ▪ For subdivisions using individual wells, establish minimum lot sizes and establish minimum offset distances for wells. Review subdivision plans for impacts on groundwater. 	<p>States have programs in place and local jurisdictions are doing subdivision reviews.</p>

Table E2. Implemented or Deleted Recommendations from the Susquehanna River Basin Commission's 1993 Groundwater Management Plan (Continued)

Topic	Page in 1993 Report	Recommendations	Actions Taken to Date and Comments
PUBLIC OUTREACH AND EDUCATION			
5. Monitoring and Research	25	<p>The Commission should:</p> <ul style="list-style-type: none"> • Establish a basinwide well registration program for all wells withdrawing more than 10,000 gallons per day. 	<p>No actions taken to date. This was duplicative of another 1993 recommendation and has been incorporated into a new recommendation in the current plan.</p>
	25	<ul style="list-style-type: none"> • Develop better estimates of present and projected self-supplied use of groundwater, including agricultural use. 	<p>No actions taken to date. Water source is domestic wells that are not large water suppliers.</p>
	26	<p>The Commission should:</p> <ul style="list-style-type: none"> • Actively participate in informational meetings and seminars on groundwater. 	<p>The Commission has been and will continue to do this</p>
	26	<ul style="list-style-type: none"> • Develop a public information “hot line” via a computerized bulletin board system. 	<p>No action taken specifically on a “hot line”, but the Commission's web site is a vehicle for public information.</p>
	26	<ul style="list-style-type: none"> • Insure that any agency publications and newsletters containing information related to groundwater reach the appropriate local governments. 	<p>The Commission has been and will continue to do this.</p>
	26	<ul style="list-style-type: none"> • When appropriate, review and comment on local management plans and ordinances related to groundwater. 	<p>The Commission does reviews of plans and ordinances as needed during normal work processes.</p>

Table E2. Implemented or Deleted Recommendations from the Susquehanna River Basin Commission's 1993 Groundwater Management Plan (Continued)

Topic	Page in 1993 Report	Recommendations	Actions Taken to Date and Comments
PUBLIC OUTREACH AND EDUCATION (Continued)			
	27	<p>The Commission should:</p> <ul style="list-style-type: none"> • Develop a handbook for the development and operation of individual water supply systems in the basin. 	No action to date by the Commission. USGS has developed a handbook.
	27	<ul style="list-style-type: none"> • Encourage and participate in the development and presentation of educational programs, including scholastic programs. 	The Commission has and will continue to participate in educational programs.
	27	<ul style="list-style-type: none"> • Develop educational materials (i.e., brochures, pamphlets, and handbooks) targeted for private well owners. 	No actions to date by the Commission. Material is being prepared by states and USGS.
MAINTENANCE OF MANAGEMENT PLAN			
	29	<ul style="list-style-type: none"> • A committee should be established with the agencies of the signatory parties to provide ongoing review and to recommend modifications to this plan. 	WRMAC has continued to serve as the review body for the plan. There is no need to establish a separate committee
	29	<ul style="list-style-type: none"> • Assessments of the reliable yield of aquifers and larger regions during periods of drought should be attached to this plan as they become available. 	Work done for assessments is discussed under another recommendation in the current plan. The Commission does not believe there is a significant value added by attaching this potentially voluminous information to the plan.