The Watershed Management Approach: Potential Impacts on Fresh Water Inflows

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In the past 20 years, substantial reductions have been achieved in the discharge of pollutants into the nation's air, land and water. The federal laws that protect these resources have successfully reduced point sources of pollution. However, an integrated environmental management approach, which is now critical to address the remaining sources of pollution, has not been promoted by existing legislation. This has lead to program-based organizational structures within the Environmental Protection Agency (EPA) and the states that do not facilitate inter-program coordination on a watershed level. Consequently, significant gaps exist in our efforts to protect watersheds from the cumulative impacts of a multitude of land and water use activities that affect water quality.

The watershed approach has recently been adopted by many Federal, state and Tribal agencies to address this need for program integration. Watershed management is being used as a flexible framework for focusing and integrating current conservation efforts and exploring new ways to reduce water pollution. The watershed approach is the process among partners in a drainage area to identify and manage all pollutant loadings through cooperative actions. This provides a framework to integrate point and nonpoint sources of pollution, and consider the cumulative effects of pollution on water resources. EPA has established four guiding principles to move our water protection activities away from a program specific focus towards an integrated watershed approach. They are:

1. **Geographic Focus** - Management activities will be directed within specific geographic areas, typically the areas that drain to surface water bodies or that recharge or overlay ground waters.

2. **Action Driven by Environmental Objectives and by Strong Science and Data** -EPA will use an iterative process to address resource characterization, identify environmental objectives, establish priorities, develop and implement action plans, and evaluate environmental improvement.

3. **Partnerships** - Strong partnerships between industry, local citizens, and Tribal, state and Federal agencies are the key to successful watershed protection.

4. **Coordinated Priority Setting and Integrated Solutions** - Through coordinated efforts, appropriate parties can establish priorities and take actions based upon the consideration of all environmental issues in a watershed, including public health as well as the need to protect critical habitat and biological integrity.

It is important to note that the states and Tribes are the ultimate leaders in watershed planning and implementation. EPA's role is one of assistance to the states/Tribes as they implement institutional

changes and innovative controls to manage watersheds. This means that EPA water programs will focus on investing in state/Tribal reorientations towards the watershed approach, and realignment of Federal services to meet local needs as defined through state programs.

The Texas Natural Resource Conservation Commission (TNRCC) is currently implementing a comprehensive approach to better coordinate and integrate water resource management activities by river basin. This approach is guided by the Texas Clean Rivers Program (CRP) and the Permit by Basin Rule. The Clean Rivers Program has provided the geographic focus and stakeholder involvement necessary for successful watershed management. Representatives from various levels of government, the business community, agriculture and the public will be engaged in the watershed assessment and prioritization process through CRP steering committees. The Permit by Basin Rule has sequenced National Pollutant Discharge Elimination System permits by river basin using a five year cycle. This rule has established a framework from which watershed management in the state of Texas can be expanded upon for many other areas of water quality management.

Watershed Management and Freshwater Inflows

In the Houston/Galveston area, the quantity and quality of freshwater inflows from the Trinity River, the San Jacinto River and local urbanized subwatersheds are critical to the health of Galveston Bay. The move towards a comprehensive watershed approach at the Federal and state level will provide opportunities to improve the quality of waters upstream that ultimately impact sensitive coastal waters. One of the benefits the watershed approach can offer to improve freshwater inflows is enhanced stakeholder involvement upstream within the watershed. Through the Texas Clean Rivers Program, representatives throughout the Trinity basin are involved in watershed assessment and management decisions that can improve the quality of water reaching Galveston Bay. This connection between upstream and downstream users is fundamental to successful watershed management.

In an effort to improve the way we measure our success in watershed management, the EPA is promoting the use of environmental indicators in lieu of the programmatic measurements used in the past. This means, for example, instead of reporting on the number of actions taken to protect water quality, we will report on the actual improvement or impairment of water quality. Several indicators may help determine long term health trends for the Galveston Bay area, including a measure of healthy shellfish growing waters, wetland acreage and estuarine eutrophication conditions. This improvement in the way we measure our success can have a direct impact on the delivery of clean, fresh water to Galveston Bay by showing a true picture of water quality and habitat conditions.

Watershed management techniques are also changing regulatory processes at the Federal and state level. The Permit by Basin Rule, adopted by the TNRCC on January 3, 1995, requires comprehensive evaluation of the cumulative effects of multiple permitted discharges on water quality. This rule allows the TNRCC to bring greater consistency to the permitting process, and the 5 year schedule promotes the sequencing of any monitoring or modeling that should be completed before permits are issued. The Total Maximum Daily Load (TMDL) program at both the state and Federal levels is also receiving a great deal of emphasis

in the move towards watershed management. TMDLs are an important component of water quality management and EPA's approach to this program promotes a watershed protection driven by local conditions and state priorities. The TMDL process provides a mechanism for integrating the management of both point and nonpoint sources that together may contribute to a waterbody's impairment. TMDLs serve as the technical backbone of localized watershed management, and can identify the current loading and assimilative capacity of waterbodies so effective management techniques can be used to ensure that water quality is maintained.

There is a growing understanding that the watershed protection approach is the most sensible way to protect our water and to preserve and enhance our environment. Regardless of the concern, fresh water inflows, habitat improvement, or the presence of human pathogens, an integrated watershed approach to water quality management is required to address the problem. Full implementation of the approach is a long term commitment that will require cooperation at many levels of government and with industry and public partners. EPA is committed to supporting state, Tribal, Federal, local and community watershed protection efforts by targeting our resources towards locally identified priorities and by serving as a catalyst for local watershed stewardship. The Galveston Bay National Estuary Program is an excellent example of local stewardship and state leadership, and it will serve as a foundation for watershed implementation throughout the State of Texas.