

## **Nonpoint Source Pollution Control – Briefing Paper**

Major national efforts to control water pollution began in 1972 with the creation of the US Environmental Protection Agency and the passage of the Federal Water Pollution Control Act of 1972, which later became known as the Clean Water Act (CWA). Early water pollution control efforts focused on point sources such as industrial and municipal wastewater discharges because they were readily identified and control technology was readily available. Because of these factors, nonpoint source pollution control and holistic watershed management were deferred.

Nonpoint source pollution, as the name implies, results from diffuse sources such as agricultural runoff, road construction, logging, and urban lot development. It is caused by rainfall or snowmelt moving over and through the ground and carrying natural and human-made pollutants into waterbodies. In terms of total pollutant loads, number of sources, aerial extent, and number of persons contributing, nonpoint source pollution is a much larger and complex problem than point source water pollution. In South Dakota, nonpoint sources cause over 85% of the water pollution. The primary parameters of concern are sediment, nitrogen, phosphorous and bacteria. Economic impacts of nonpoint source pollution in the state are generally undocumented but substantial. As examples, power generation reductions at Oahe Dam caused by sediment from the Bad River annually average \$12 million; costs to relocate public wells in the Sioux Rural Water System near Watertown due to nitrate contamination exceeded \$1 million; and the costs to restore Swan Lake in Turner County, including sediment removal, exceeded 1.1 million.

In the late 70s and early 80s, nonpoint sources began to be addressed, at least to a minor degree, through section 208 of the CWA. These control efforts generally failed because funds were available for planning only.

The Clean Water Act Amendments of 1987, authorized section 319 which provided for nonpoint source water pollution control strategies and funding for implementation. Congress did not appropriate money for 319 until 1990. South Dakota and Delaware were the first states to implement a nonpoint source program by transferring funds from the EPA wastewater treatment plant construction program to fund 319 activities in 1988, which gave South Dakota a two year head start on most states' programs.

The SD nonpoint source program, as a component of the Watershed Protection Program, is built on voluntary participation and local leadership. The program is designed to reduce and prevent water pollutant loadings to rivers, lakes, streams, wetlands and groundwater so that water quality standards are met and the assigned beneficial uses are supported. The program is, in essence, the Total Maximum Daily Loading (TMDL) process in that watershed areas are assessed, pollutant sources are identified, necessary reductions are calculated and restoration methods are implemented.

All projects are sponsored by local entities such as Conservation Districts, Water Development Districts or communities. The Watershed Protection Program of the Department of Environment and Natural Resources provides leadership, technical, planning, and financial support along with information and education assistance to local project sponsors. Project management is the responsibility of the local sponsors.

DENR annually secured federal 319 funds of approximately \$1.6 million through a competitive process at the EPA regional level to support the watershed and nonpoint source programs. Beginning with FY97, the process became noncompetitive and relies on a national formula for distribution of 319 funds. South Dakota's share in recent years is approximately \$2,400,000. These funds are matched by local entities at a 60/40 rate and supplemented by other project funds. The nonpoint source program is involved in about 14 projects worth about \$20 million at any one time. DENR also receives \$100,000 annually under section 604(b) to support local planning efforts and staff.

South Dakota's nonpoint source program has some relatively unique aspects which contribute to its success. The first is the existence and composition of the Nonpoint Source Task Force which is an ad hoc group that was first formed in 1988 and acts in an advisory capacity to the Watershed Program. The task force is comprised of representatives from state and federal agencies, special interest groups, tribes, production/commodity groups and special purpose districts. In its advisory capacity, the task force has been delegated the responsibility to review grant applications from local sponsors for section 319 funding, discuss and make recommendation for funding to the Board of Water and Natural Resources.

The recommendations of the Board of Water and Natural Resources are submitted to EPA Region 8 for final funding approval.

Another unique aspect of the program is the technical assistance provided. When a watershed problem is brought to the watershed program by a group or individual, a staff member is assigned to assist throughout the assessment, planning and implementation phases of any project that is developed. The staff member does not lead the effort but rather assists the sponsors with their efforts.

Program neutral planning is another component on the watershed program policy that has led to the success of a variety of projects. Rather than chasing funding programs, efforts are focused on defining the problem and the solution. Once it has been determined what needs to be done, assistance is provided to find the necessary resources.

And finally, local project sponsorship and the inclusion of any and all possible partners are the primary factors leading to the success of the program. Local sponsorship leads to project ownership and a resolve to deal with problems as they occur. Experience has shown a much higher satisfaction rate with local sponsorship and management. Inclusion of all the potential partners early in the process helps resolve differences

before they become major stumbling blocks. Plus, it opens the process to a wealth of experience and new ideas.

## **COMPONENTS OF A WATERSHED RESTORATION PROJECT**

Successful watershed projects follow a logical progression through five phases. They are:

- problem identification and prioritization
- assessment
- planning
- implementation
- operation and maintenance

Of critical importance following the definition of the problem, is the assessment of the watershed in question. A typical assessment consists of a two year effort that includes gathering and analysis of all pertinent existing information, water quality sampling, runoff measurement, biological information, land use, social and economic concerns, watershed modeling, total maximum daily and annual load calculations, and development of restoration alternatives. This whole assessment process is what constitutes the development of a TMDL, according to EPA criteria. Since EPA requires each state to prepare TMDL's for all impaired waterbodies, the process has met the needs of both EPA and the local project sponsors.

The planning, implementation and O&M phases are a fairly straightforward process of determining what acceptable restoration alternatives are and matching them with available funding sources; beginning construction or resource management activities to correct or prevent the sources of pollution and continuing to maintain the project to assure continued benefits.