

Environmental Protection Agency, Office of Water (EPA 841-B-96-004) (1997)) and other publications that are listed at <http://www.epa.gov/owow/nps/bestnpsdocs.html#nps>.

1. Environmental Indicators

States need to use several sets of measures to fully determine their success in implementing their nonpoint source programs. These include measures that indicate progress towards achieving and maintaining beneficial uses of water; towards other long-term goals of the State's program (e.g., achieving load reductions, installing appropriate technology at all animal waste facilities that need to be upgraded, or implementing particular watershed projects); and towards shorter-term goals and objectives (e.g., successfully implementing a particular technology) that are designed to lead to the achievement of longer-term goals.

As discussed in Section IV.E of these guidelines, States must include in their annual reports at least the three measures of progress that are required by Section 319(h)(11), including implementation milestones, available information on reductions in nonpoint source pollutant loadings, and available information on improvements in water quality. Approaches that can be used to meet either short-term tracking or longer-term project evaluation needs include ambient water quality monitoring (e.g., edge-of-field, small watersheds, multiple watersheds, in-lake, in-aquifer monitoring), beneficial use assessment (e.g., biological/ habitat assessment, attainment of water quality standards), implementation monitoring (e.g., audits, activity tracking, geographic information system tracking of land use and land management), model projections, and photographic evidence. Ambient monitoring and beneficial use assessment tracking should be included for projects wherever feasible.

Appendix A of these guidelines contains an illustrative set of these and other indicators and measures, including those required to implement Section 319(h)(11) and TMDLs, that can help the States and the public gauge the progress and success of their programs. States may identify and use other indicators and measures that are most relevant to their particular nonpoint source problems, programs, and projects. However, States should in all cases use environmental indicators to the greatest extent feasible, so that the State and the public may best recognize the State's progress in addressing water quality problems in terms that are most relevant to the public's concerns.

2. Monitoring in Watershed Projects

Appropriate monitoring of watershed project implementation is an essential tool to enable States to identify nonpoint source pollution problems, develop effective watershed-based plans, evaluate the effectiveness of actions taken, and meet reporting requirements under Section 319(h)(11). All watershed projects designed to implement a watershed-based plan must describe how the plan's monitoring component will be used to evaluate the effectiveness of the implementation efforts over time, measured against the specific criteria that are established in the watershed plan. As described in Section III.D ("Watershed-Based Plans"), the criteria against which progress is being monitored should be designed to focus on whether loading reductions are being achieved over time and substantial progress is being made towards attaining or maintaining water quality standards. This can be achieved through watershed-scale monitoring to measure the impacts of multiple programs, projects, and trends over time (i.e., monitoring need not be conducted for individual BMPs unless that is particularly relevant to the project). Information on reductions in nonpoint pollutant loads will then be tracked and reported in the Section 319 Grants Reporting and Tracking System (GRTS) as described below in Section IV.E.

While States may use Section 319(h) grant funds for monitoring activities for particular watershed projects, States are encouraged to also explore other cost-effective approaches to conducting monitoring. For example, the U.S. Geological Survey and the National Oceanic and Atmospheric Administration hold an array of ambient data and can provide support for various monitoring activities. In addition, volunteer monitoring programs are used by many States to obtain water quality data in a cost-effective manner.

3. National Monitoring Program

To provide a national documentation of the feasibility of controlling and preventing pollution resulting from nonpoint sources, and to improve technical understanding of nonpoint source pollution and the effectiveness of nonpoint source control technology and approaches, EPA and many States have been implementing a more rigorous and standardized monitoring framework that can be used for a representative subset of watershed projects funded under Section 319. Monitoring for this subset of selected watershed projects is being conducted at appropriate frequency

intervals and for appropriately long periods of time that include monitoring before, during, and following implementation to assure the accounting of various sources of variation. We encourage States to conduct intensive water quality monitoring of one or more of their projects as part of this national evaluation.

EPA has developed a framework for selecting national monitoring projects, issued guidelines for minimum monitoring activities, and developed software for managing and reporting data. To date, 23 high-quality national projects have been selected across the country through a rigorous but collaborative process involving the States, EPA Regions, and EPA Headquarters. Additional high-quality monitoring projects will be selected in future years using the same collaborative process. For all projects, EPA provides specialized technical support in project development, monitoring design, data management and analysis, and reporting. From time to time, and in close collaboration with relevant States and project managers, EPA will publish progress reports and results. The most recent report, *Section 319 National Monitoring Program Projects* (December 2001), includes information on each of the 23 projects and highlights the documented water quality improvements achieved by some of the projects to date. To view or download this report, or to obtain further information on the National Monitoring Program, see <http://h2osparc.wq.ncsu.edu/319index.html>. This report illustrates the water quality benefits of well-designed and implemented watershed projects.

IV. Grants

Section 319 grants are important resources available to States to restore impaired waters and to protect threatened and good-quality waters. These guidelines provide States with a framework to use Section 319 grant funds in a manner that will implement their nonpoint source management programs effectively to achieve the vision established at the beginning of these guidelines and to achieve the specific goals and objectives established in their upgraded State nonpoint source management programs. Moreover, EPA and States will continue to minimize administrative responsibilities to assure that the funds are being used effectively and in a legally appropriate manner.

While Section 319 funds are important resources, it remains critical for States to continue to build their existing partnerships and to develop