

Appendix B--Measures and Indicators of Progress and Success

The following list illustrates measures and indicators which states may choose from or add to that will help the states and the public measure the progress and success of their programs. Most of the examples and categories below are approaches which have been successfully used as water quality and implementation measures and indicators in the past, and others are drawn from suggestions from EPA regions and state NPS programs for use as potential NPS program measures (including the discussions at the June 2012 National NPS Program Meeting). Some of the proposed measures listed below may not be applicable in all locations/settings, and states should use the measures appropriate to the conditions in a particular state. However, states must report on at least the three measures of progress that are identified in § 319(h)(11) (i.e., implementation milestones, available information on reductions in NPS pollutant loadings, and available information on improvements in water quality).

1. Water Quality Improvement from Nonpoint Source Controls

- a) Number (or percentage) of river/stream miles, lake acres, and estuarine and coastal square miles that fully meet all water quality standards.
- b) Number (or percentage) of river/stream miles, lake acres, and estuarine and coastal square miles that come into compliance with one or more designated uses (e.g., a river segment that is neither fishable nor swimmable becomes fishable), or with one or more numeric water quality standard (e.g., achieves a standard for phosphorus while continuing to exceed a standard for nitrogen).
- c) Opening of previously closed shellfish beds.
- d) Lifting of fish consumption advisories.
- e) Prevention of new impairments (e.g., number of river miles removed from the “threatened” lists, or number of miles of high-quality waters protected).
- f) Reduced beach closures.

2. Interim Progress Toward Restored Water Quality and Hydrology

- a) Develop environmental “success stories” to document interim progress toward restoration, which can be submitted to EPA as type 2 NPS success stories (see www.epa.gov/nps/success).
- b) Percentage of attainment of watershed specific interim load reduction goals (e.g., interim goal of 5,000 lbs/year reduction of phosphorus for a specific watershed).
- c) Percentage of TMDL or WBP-recommended BMPs implemented.
- d) Percentage of landowners in a watershed cooperating in the program by implementing targeted water quality practices.
- e) Track trends toward watershed-based targets for N, P, TSS, E. coli and/or bacteria in rivers.
- f) Track trends toward target trophic status scores (Carlson’s), secchi disk transparency depths and chlorophyll-a concentrations in lakes.
- g) Between 20XX and 20XX, the number of streams showing increased flow variability will not increase.

- h) Set targets for impervious surfaces within watersheds.
- i) Green infrastructure installed within watersheds (e.g., track the number of projects or square footage converted to green infrastructure).
- j) Number of curb and gutter roadways within watersheds.
- m) Number of watersheds that have or require shoreline buffers.

3. Protection of High Quality Waters

- a) Long-term protection of X acres in priority watersheds by 20XX.
- b) Long-term protection projects will prevent of X tons of sediment, Y pounds of nitrogen and Z pounds of phosphorus from entering waters of the state by 20XX.
- c) No waterbodies or reaches in high quality watersheds will be moved to the nonattainment lists due to NPS causes or pollution.
- d) Maintenance of filtration avoidance for certain water supply systems (i.e., no additional treatment or alternative sources of drinking water supply).
- e) Specific load reduction or maintenance goals (X lbs. of P per year) in protection oriented plans covering high value waters.
- f) Number or percentage of watersheds that hit their protection oriented goals each year.
- g) Improve trends in water quality of waterbodies that are threatened but not yet impaired so that the waterbodies remain off the nonattainment list.
- h) Number and type of BMPs implemented at critical source areas (demonstrating effective targeting).
- i) Length and width of improved or protected shoreline or riparian areas along streams.
- j) Stable or improving water quality/trophic status in lakes.
- k) Increase in the amount of lake shorelands (length and width) protected or maintained in a natural condition.
- l) Stable or improving water quality (biocriteria, DO, bacteria) in streams.

4. Nonpoint Source Pollutant Load Reduction

- a) Reductions in pollutant loadings (e.g., by pounds or percentage) from nonpoint sources in watersheds of impaired/threatened waters.
- b) Reductions in pollutant loadings (e.g., by pounds or percentage) from nonpoint sources in high-priority watersheds identified by the state's NPS management program.
- c) State-wide reduction in pollutant loadings from nonpoint sources.
- d) In the case of NPS pollution which may result from activities conducted in the future, prevention or minimization of new loadings, and/or offset of new loadings by reductions from existing sources.

5. Implementation of Nonpoint Source Controls

- a) Number of measures implemented in watersheds of impaired/threatened waters (e.g., number of on-the-ground practices implemented that reflect, for example, the "best practicable" approach to solve the identified problem.)
- b) Percentage of "needed" measures implemented in watersheds of impaired/threatened waters (e.g., where watershed analysis has shown the need to implement measures at 20

sites, annual progress in implementing a watershed project can be shown by the number of BMPs installed).

- c) Statistically-based survey of implementation rates (e.g., results of state-approved BMP use and effectiveness surveys).
- d) Percent of priority ground water addressed by NPS controls.

6. Public Education, Awareness, and Action

- a) Participation rates in education programs specifically directed to solving particular NPS pollution problems.
- b) Statistically-based survey of public awareness, knowledge, and action to measure changes in attitudes and action over time.
- c) Participation rates in various nonpoint source activities, such as citizen monitoring and watershed resource restoration activities.
- d) Participation rates in various public awareness and education efforts.
- e) Number of information and education (I/E) “success stories” by 20XX. I/E success stories document quantifiable changes in knowledge or behavior related to NPS pollutant issues.
- f) Use statistically-based social monitoring procedures to document a positive change in social indicator scores or responses for all I/E projects evaluated.
- g) Calculate and track a “measure of local interest” score to assess the diversity and productivity of local watershed groups.

7. Program Measures of Success

- a) Track number and diversity of partners in Statewide NPS Plan goals and watershed project implementation.
- b) Number of new 9-element watershed-based plans reviewed and accepted for funding by 20XX.
- c) Document the successful completion of categories of planned work (e.g., tracking materials developed, reports generated, producer contacts, management measures implemented) in a specified in a state’s NPS management program.