

# **The Future of Nonpoint Source Pollution Control: Evolving Tools to Meet The Challenge**

– by Jon M. Capacasa, EPA Region 3, Director, Water Protection Division, February 2008

## **Overview**

A series of recent events have focused anew on the challenge of nonpoint source pollution control and the means to ensure continued progress in our drive for Clean Water. This paper discusses those events and the evolving tools and approaches to meet the challenge as gleaned from a recent discussion forum of EPA Region 3 managers and the Water Directors of states and interstate basin commissions.

A National Academy of Public Administration (NAPA) report to EPA issued in 2007 entitled “Taking Environmental Protection to the Next Level” recommends that EPA and the states work to elevate attention to nonpoint sources of pollution on a par with the effort devoted to piped (point source) sources of pollution under the Clean Water Act. The Report says that EPA needs to “... clean-up ambient environmental conditions, not just large single sources of pollutants. This shift in emphasis makes EPA’s job much more difficult—and different—than in the past.”

The frequent news reports of the progress of nutrient pollution control in the Chesapeake Bay watershed also leads us to focus on diffuse sources of pollution, with the latest data showing in excess of 80% of the load emanating from agricultural runoff, urban runoff, air deposition and other diffuse sources. Total Maximum Daily Load (TMDLs) allocations completed in over 10,000 stream segments in the Mid-Atlantic quite often document the sizable reductions of pollutant load required from nonpoint sources to attain the goal of healthy streams. It is typical to see 70-90% reductions from current conditions called for to attain water quality criteria for the streams.

## **Region 3 States Forum**

In November 2007, we had the pleasure of convening a meeting of the State and Interstate Water Directors of the Mid-Atlantic Region for a discussion of the future of Clean Water programs at the 35<sup>th</sup> anniversary of the Clean Water Act. Our November 2007 meeting agenda included a lively discussion on the subject of the “Future of Nonpoint Source Control.” The meeting served as a valuable forum to tap the considerable experience of the Region 3 Directors on this important subject and to get a snapshot of what is to come in managing for results in nonpoint sources. The Mid-Atlantic states and interstate commissions have been key players over time in the development of tools to meet the nonpoint source challenge. Many new best management practices such as “no till” farming, precision farming, cover crops, critical areas protection laws, special protection waters, and feed management approaches were pioneered or first got full scale practice and application in this Region through the

Chesapeake Bay Program partnership and other watershed efforts to meet an urgent demand to protect vital ecosystems.

This paper summarizes the key points of the states discussion as a window into the next decade of Clean Water approaches to meet the nonpoint source challenge.

## **Progress in Clean Water At 35**

Clearly, significant progress has been documented in our Clean Water Act efforts over the past 35 years since the Act was passed. Profound progress has documented in point source wastewater treatment and control through such tools as federal and state assistance programs, technology-based requirements (e.g., secondary treatment requirements), and the early stages of water-quality based pollution controls via pollutant allocations from Total Maximum Daily Load (TMDLs). Over \$6 billion nationally has been invested in the wastewater treatment challenge. In addition, the Clean Water point source permitting program (NPDES) resulted in expanded coverage of a large number of regulated point source entities with the major increase being attributed to newer regulations for stormwater and Consolidated Animal Feeding Operations (CAFOs). In Region 3, over 20,000 individual or general Clean Water Act permits are in place to govern the allowable discharges from such sources as industrial output, municipal wastewater treatment facilities, and more recently overflows of sewage collection systems.

The success of the point source controls in this Region are evident in dramatic water quality improvements in our major interstate waterbodies; the Delaware River and Bay; the Susquehanna, Ohio and Potomac Rivers; and many subordinate stream systems.

The success of the point source control effort has brought us to the point where the remaining pollutant load is dominated by nonpoint sources, that is, diffuse pollution from a myriad of sources. It is often said that 80-90% of the remaining pollutant load comes from these type sources.

## **Strategic Importance of NPS**

In a strategic sense then, it is clear that our future success as water quality restoration and protection managers will be gauged by our success with nonpoint sources. It is the classic 80/20 rule theory. Yet the mere mention of the nonpoint challenge often brings ready acknowledgement of the lack of regulatory hooks, the difficulty of clear accountability and measurement of diffuse sources, the lack of adequate tools in the Clean Water Act or state tool box to fully meet the challenge, and a concern about having resources available on a par with point source treatment. (See NAPA report.) Diffuse sources are by their nature tougher to manage with single management approaches or programs. Sources such as land management and air deposition, for instance, affect water quality in very different and complex ways.

Yet, progress is being made every day on several fronts as new and innovative tools continue to be developed in an effort to meet the need in the Mid-Atlantic states. Let me now summarize some of the evolving tools and approaches being developed in this Region. The key points of our November 2007 discussion among the Region 3 Water Directors are summarized below on the question of how best to succeed in our nonpoint source pollution control challenge. This was an open brainstorming session and no single conclusion or consensus statement was generated from the discussion.

### **Key Points of the “Future of Nonpoint Source” Discussions**

These questions were posed to the group:

- “What do you see as the Future of Nonpoint Source Pollution Control?”
- “What do you see as the most effective tools going forward?”

The Key Points of that discussion follow:

1. **Divide to Conquer** – the nonpoint sources of pollution to our streams are many and varied. Don’t treat them as one single challenge with a global approach. Identify the specific components of the load. Success lies in developing highly tailored or customized management approaches to the specific sources. The tools you employ will vary widely. Be clear about the specific sources that make up this category and be specific in tailoring solutions to the mix.
2. **Customize the Tools to this Challenge** - Avoid applying the same tools as the point source agenda, e.g., permitting and enforcement. Customize solutions and tools to the nature of the issue. Evolve new tools to meet the challenge often adapting ideas from other areas of environmental protection, including other media programs.
3. **Recognize that Innovation is Happening Now** – Build upon the innovations being applied by selected states, local governments and Regions in advancing the nonpoint source control agenda. Best Practices are occurring through state-specific legislation, local ordinances and through voluntary agreements with EPA Regions, for instance, to address significant sources. Benchmark these and use active outreach efforts to promote an exchange and adoption of these best practices. Examples include: the PA Nutrient Management Laws; Cover Crop requirements in Maryland; and local and state-specific stormwater regulatory and technical assistance approaches which go beyond federal minimums to address post-construction monitoring and pre-construction environmental site design.
4. **Develop Resourcing Strategies** - The gap in addressing nonpoint sources is a resource gap on a par with the water and sewer infrastructure gap. Innovative states are developing tools to apply the State Revolving Fund and other assistance programs to nonpoint sources by addressing the institutional barriers that exist in providing grants or loans to diffuse pollution sources. The use of Farm Credit Banks, for instance, to serve as an intermediary for funding to

farmers is a good example in the Mid-Atlantic Region.

5. **One Tool Does Not Fit All** – The answer to nonpoint source control lies in a broad mix of tools – regulatory, marketing, outreach, assistance, innovation technologies and Best Management Practices, financial incentives and tax relief, etc. Across the board solutions are not likely to work here.
6. **Develop New Models** – The dominance of nonpoint sources demands that we develop and try new models to get traction and action. Some of these models may include:
  - a. Supply chain environmentalism (prime contractors holding suppliers accountable to environmental performance requirements).
  - b. Corporate environmental stewardship agreements (such as the Perdue Clean Bay Agreement with EPA) that commit a company to conduct assessments of grower operations and be the lead for correcting deficiencies in operations.
  - c. Social marketing to help change public behavior on common issues, such as lawn care and pesticide use, and clean energy use.
  - d. Economic incentives such as tax credit packages – e.g., PA REAP program for agricultural tax credits.
  - e. State Conformity Plans – Adopt watershed management plans and restoration action strategies into state-wide water quality management program regulations. Ensure conformity with these plans linked to economic incentives, permitting or other tools for accountability.
7. **Economic Incentives May Be Key** – We are accustomed to the engineered solutions of treatment facilities and best management practices. More and more, the tools of the open marketplace are seen as important drivers to change behavior using economic incentives and disincentives. Water quality trading programs should continue to evolve to meet part of this challenge – paying farmers for water friendly Best Management Practices, for example.
8. **The Communications Context** – We’ve come a long way since the beginnings of the Clean Water Act on nonpoint source control. Much has been done and much is underway. Don’t forget that in this short period of time, substantial progress has been made in incorporating new tools such as cover crops, no till farming, urban runoff controls, open space and agricultural land preservation, using State Revolving Funds for funding nonpoint controls, feed management programs, etc. Much has been done and more of the same is not a bad thing. Build on successes and continue to be specific about the tools that apply best to the different sources.
9. **Communications – Part II** – Consider the value of outreach and social marketing. Many of the remaining challenges are the product of consumer choices or public behavior. Broad social marketing campaigns need to be expanded to meet the challenge – clean energy, fertilizer use, coastal protection,

and wetlands protection -- are all linked to effective nonpoint source control and our water quality goals.

10. **Local Government Education and Delivery Systems** – Most of the action now is at the local level and local governments are making the decisions that affect water quality from these sources. Budget decisions are clearly impacting these choices. There is a clear need to educate and inform at this level. More delivery networks and systems at this level, such as the successful NEMO model, should be developed and supported.

## **Summary**

Nonpoint source pollution control is clearly on the critical path for our continuing success in clean water programs. Restoring and protecting water quality for the future will require a broad and diverse mix of tools, both known today and those under development. Our tools will need to continue to evolve and be customized to the many and varied components of the NPS load.

The future will rely on tools different from the point source controls including economic incentives, social marketing, outreach, and new models of environmental protection such as State Conformity Plans as examples.

Considerable progress has occurred to date in developing and applying new tools and the Mid-Atlantic Region is in the forefront of identifying the next generation of tools and applying them at a wholesale level to meet the challenge. It is an exciting time to participate in the evolution of clean water programs to address nonpoint sources and to prevent their impacts on our waterbodies.

## ***Sources:***

- NAPA Report
- Summary of November 2007 State Directors Meeting Discussion – the Future of NPS Control