Legal Aspects of Nonpoint Source Pollution

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Legal Aspects of Nonpoint Source Pollution

AN OVERVIEW OF THE NATIONAL NONPOINT SOURCE POLICY

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ABSTRACT

A task force composed of representatives of Federal, State, interstate, and local agencies and several private groups recently completed work on a new national nonpoint source policy. This policy will provide a framework for all nonpoint source programs. It sets out what activities are to be undertaken by each group. Among other things, the policy speaks to development of implementation strategies by the many agencies involved in nonpoint source management. In fact, the U.S. Environmental Protection Agency (EPA), the other Federal agencies involved in the task force, and several States have already developed implementation strategies. This paper presents key points from the policy and highlights of the various strategies, and it focuses on the most critical aspects for success. It also describes the evaluation framework EPA plans to use in assessing State program implementation strategies.

RESEARCH POINTED TO THE NEED FOR A NATIONAL NONPOINT SOURCE MANAGEMENT APPROACH

The impetus to embark on the process of developing a Federal, State, and local nonpoint source pollution policy began several years ago. In response to a Congressional mandate, the U.S. Environmental Protection Agency (EPA) conducted research to identify the magnitude and scope of this pollution problem. The research effort resulted in a Report to Congress, completed in the fall of 1983, which concludes that the pollutant loads from nonpoint sources present continuing problems in our efforts to achieve water quality goals and maintain designated uses in many parts of the Nation.

Other research efforts indicated similar findings:

- The 1982 State Section 305(b) reports indicated that virtually all of the States experienced water quality problems caused by nonpoint sources. One-half of the States identified this as a major barrier to achieving individual State water quality goals.
- The Association of State and Interstate Water Pollution Control Administrators (ASWPCA) conducted its Nonpoint Source Pollution Survey in February 1984. Survey results showed that 78 percent of the States saw their nonpoint source problems as greater than or equal to those caused by point sources.
- The 1983 Environmental Management Reports revealed that 6 out of the 10 EPA Regions considered nonpoint source pollution to be the principal remaining cause of water quality problems for their geographic regions.

In addition to the technical findings about the severity of the nonpoint source pollution problem, the Report to Congress discussed the institutional and management difficulties associated with addressing the problem. In particular, program coordination was identified as a problem area. Because of the number of Federal, State, and local agen-
cies involved—often with overlapping roles, responsibilities, and jurisdictions—the Report called for a coordinated management strategy.

A TASK FORCE IS ORGANIZED

Because one of its most direct agency missions is related to water quality, EPA assumed the leadership role and organized a task force. A group of 50 individuals representing Federal, State, and local agencies, as well as the private sector, worked for about 10 months to design a policy. The task force was successful in developing a policy that each agency endorsed.

The final policy establishes the framework and direction used by each participating agency to design its own individual strategy. The individual strategies specifically identify how—given each agency's perspective, mission, and capabilities—each agency can follow the policy and address the nonpoint source pollution problem. Supported by these strategies, the policy itself becomes a more profound statement.

THE NONPOINT SOURCE POLICY SETS A DIRECTION

The objective of the policy is “to support and accelerate the development and implementation of nonpoint source management programs that ensure water quality protection while recognizing the competing uses of resources.” Eight actions are listed as fundamental elements for the overall policy to succeed.

1. To build upon the current compendium of knowledge and to promote further research efforts. The group recognized that much has been done in this area, and that existing work should be enhanced, not recreated.

2. To identify the appropriate roles of each agency, understanding that both the public and the private sector must be involved.

3. To prepare specific agency strategies with the understanding that different geographical regions have different priority nonpoint source problems and are at different stages in developing programs.

4. To develop and assess Best Management Practices (BMP's) based upon site-specific factors. The group noted that natural background levels of pollution and the technical feasibility of the approach must be considered along with the social, political, and economic climate of the area.

5. To ensure the recognition that nonpoint sources are fundamentally different from point sources and should therefore be approached differently, and that nonpoint source programs must be based on site-specific actions and application of preventive practices.

6. To establish a working partnership among all participants: Federal, State, local, areawide, and interstate agencies, as well as the private sector, including nongovernmental agencies.

THE POLICY OUTLINES ROLES AND RESPONSIBILITIES

The policy asks for coordination and cooperation from all levels of government and outlines the major responsibilities for each level.

Federal agencies are asked to develop and implement their nonpoint source strategies. They are asked to integrate the provisions of the policy into their agency decisionmaking process and into their delivery systems for funding and technical assistance. EPA is asked to serve as the lead agency in coordinating interagency and State actions to manage nonpoint source programs.

States are assigned the lead in developing and implementing nonpoint source management strategies on State and private lands. Though several different State agencies may be needed to address nonpoint source problems, the policy asks that a lead State agency be designated to develop and implement State programs. The lead agency should have water quality as its primary concern.

Local, areawide, and interstate agencies are directed to use the mechanisms provided in the continuing water quality management planning process to develop their nonpoint source strategies. The policy recognizes that local agencies are often a first point of contact for the private sector. This position allows local agencies—with and through their areawide agencies—the opportunity to provide a vehicle for public participation.

The private sector is asked for its cooperation and effort. Government agencies will assist the landowners and help them coordinate nonpoint source management efforts with other components of the private sector. Government agencies will also help the private sector develop and apply resources to implement nonpoint source management practices.

SUCCESS RELIES HEAVILY ON THE INDIVIDUAL AGENCY STRATEGIES

Implementation

Skilful development of the specific agency strategies is vital to implementation. Each strategy is to include a discussion on (1) problem assessment, (2) program implementation, (3) incentives and compliance, (4) coordination, (5) resources, and (6) program evaluation and oversight.

The policy clearly recognizes that nonpoint source management actions must be site-specific. However, it does request a coordinated and a consistent approach across all levels of government.

Evaluation

EPA, as part of its responsibilities mandated under the Clean Water Act, reports to Congress on the effectiveness of water quality programs. Because each agency will periodically review its own program (the framework for oversight and evaluation is a part of each individual agency strategy), EPA will be able to use these evaluations in its overall assessment of whether national water quality goals are being adequately addressed. The direction of the national nonpoint source effort can be controlled and refined on the basis of well-planned evaluations.

In summary, the policy, like most policies, is a framework. It was carefully and diligently developed by the task force, and sets the direction for the next few years. It recognizes that much work has been done, but that nonpoint source problems require further attention if water quality goals are to be achieved. Most importantly, it challenges each agency to develop and carry out specific strategies to ensure implementation. Collectively, these strategies embody the principles of the policy and serve as the comprehensive plan to minimize nonpoint source pollution problems across the Nation.
APPENDIX A

NATIONAL NONPOINT SOURCE POLICY

PREAMBLE

The Clean Water Act establishes goals for the Nation's waters. Considerable progress has been made in achieving these goals. However, additional progress in restoring and maintaining the Nation's water quality and water uses will require greater implementation of nonpoint source (NPS) management programs in addition to ongoing point source control efforts. NPS management programs must build upon past planning and management efforts and strive for continued progress in achieving water quality goals and designated beneficial uses.

The objective of this National Nonpoint Source Policy is to support and accelerate the development and implementation of NPS management programs that ensure water quality protection while recognizing the competing uses of both the private and public sectors to manage their activities to support water quality goals wherever possible.

Meeting the objective of the Policy will require the following actions:

1. Use of the existing knowledge and program base and support of increased research efforts to define and assess NPS problems.

2. Identification of the appropriate roles of Federal, State, local, areawide, and interstate agencies and the private sector in developing and implementing NPS programs.

3. Development and assessment of Best Management Practices (BMP's) based upon site-specific conditions that reflect natural background and natural variability of nonpoint sources, and that include consideration of political, social, economic, and technical feasibility.

4. Support for an increased level of effort and emphasis on NPS programs by all levels of government and the private sector for the purpose of meeting water quality goals.

5. Preparation by each agency of a strategy for program development and implementation that incorporates both short- and long-term objectives; recognizes that different areas of the country are at different stages of developing their NPS management programs, and that different geographical areas have different priority NPS problems.

6. Development and assessment of Best Management Practices (BMP's) based upon site-specific conditions that reflect natural background and natural variability of nonpoint sources, and that include consideration of political, social, economic, and technical feasibility.

7. Ensuring the recognition that nonpoint sources are different from point sources and that NPS programs are based on site-specific actions and application of preventive practices. Further, recognition of the need for flexibility in water quality standards to address the impacts of time and space components of NPS as well as naturally occurring events.

8. Development of working partnerships among all Federal, State, local, areawide, and interstate agencies and the private sector, including nongovernmental organizations, to best address NPS problems. These organizations, working in partnership, will be responsible for identifying needs, developing NPS programs, gathering and assessing data, and maximizing available resources.

STATEMENT OF POLICY

Achievement of national clean water goals requires greater implementation of NPS management programs. Emphasis should be placed on implementing NPS programs in watersheds affecting priority waters. Sources of nonpoint pollution should be evaluated to assess potential water quality impacts and needed program actions. NPS management is required to protect high quality surface and ground waters, and to restore and/or improve water quality for designated uses. In many instances, prevention of pollution has proven to be far more cost-effective than remedial measures.

NPS management programs must be flexible to allow for site-specific solutions to problems, to accommodate changes in technical knowledge, to respond to changes in uses of land, and to optimize net on- and offsite benefits. A mix of both point and nonpoint source measures should be considered in developing cost-effective strategies to improve and maintain water quality.

With Federal leadership and coordination, all levels of government and the private sector need to cooperate to provide continued progress with available programs and delivery systems, to identify unmet needs, and to develop and implement NPS management programs where needed.

ROLES AND RESPONSIBILITIES

Following is a general summary of responsibilities of the different levels of government agencies and the private sector in managing NPS programs:

All agencies. All agencies, where appropriate, will determine what institutional barriers to NPS management and implementation exist and work to remove them. All agencies will work to coordinate their NPS related data collection and research activities. In addition, inter- and intra-agency mechanisms will be developed for coordinating NPS management and implementation.

Federal agencies. Federal agencies, in preparing their NPS strategies, will use available and future programs to provide State and local governments with financial and technical assistance and will conduct research and development. The provisions of this policy will be integrated into the decision processes of applicable Federal agencies and into their delivery systems for funding and technical assistance. Where Federal agencies have the responsibility for direct planning and management of NPS programs on public lands, they must coordinate NPS management actions with all levels of government.

As directed by the Clean Water Act, EPA will serve as the lead agency in coordinating interagency and State actions for managing nonpoint source programs. EPA will promote adoption of NPS management programs directed at achieving water quality goals; assist with program development; promote provision of incentives where needed; provide oversight of its water quality programs to ensure that they adequately address NPS problems; and include other agencies' evaluations of the water quality components of their programs in assessing overall NPS impacts on water quality. EPA will coordinate activities in research, education, demonstration projects, training, information transfer, technical assistance, and data collection and analysis with other agencies.

States. States will have the lead in developing and implementing NPS management strategies on State and private lands, in cooperation with appropriate levels of government and the private sector. Each strategy should define the State role and, in consultation with areawide and local agencies, the roles of areawide and local agencies in managing NPS programs, and designate a lead agency for managing NPS programs at State level (several different State agencies may be needed to address different types of nonpoint sources). The lead State agency is responsible for developing and implementing strategies for managing NPS programs and should have water quality as its primary concern. States with effective NPS management programs should share their experiences with other States.

Local, areawide, and interstate agencies. Local, areawide, and interstate agencies, through the mechanisms provided in continuing WQM planning processes, will develop NPS strategies in coordination with their respective States and will implement the programs within their jurisdictions using direct or delegated authorities.

Private sector. For activities other than those on Federal and State lands, successful implementation of the NPS Policy and agencies' strategies is dependent on the cooperation and effort of the private sector. It is the policy of the government agencies to assist landowners and coordinate efforts with involved organizations, associations, and industry. It is the further intention of these agencies to help develop the potential for application of managerial and other private resources in the implementation of NPS management practices as part of each agency's strategy. Private investment in nonpoint source research and development of BMP's is strongly encouraged and will be supported with agency resources where feasible and available.

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IMPLEMENTATION

To implement this National Policy, Federal, State, local, areawide and interstate agencies will develop and implement NPS strategies. Key strategy activities for policy implementation include: problem assessment (e.g., problem identification, monitoring and data maintenance, research and development); program implementation (e.g., program planning, development, and implementation, targeting technical assistance and education, BMP emplacement); incentives and compliance (including enforcement); coordination; resources; program evaluation and oversight. The strategies will be refined as existing programs and authorities are reviewed for consistency with existing and future State NPS management objectives and as institutional barriers are identified.

Responsibility for NPS implementation will depend on the nature of the NPS problem, the area in question, and the statutory framework. Implementation activities will emphasize site-specific solutions but will maintain a consistent NPS management approach across all levels of government and the private sector. Where appropriate, all agencies should consider and include as part of their strategies minimum eligibility requirements to enhance implementation of NPS management practices. Cooperative agreements will be developed, as needed, to ensure continued progress toward meeting national water quality objectives.

A schedule for strategy development and implementation should be drafted recognizing the nationwide variability in program implementation.

EVALUATION

The Clean Water Act requires EPA to oversee the implementation of water quality programs and to report to Congress on the effectiveness of these programs. Given that all agencies are individually responsible for the periodic evaluation of their programs, EPA will include these evaluations in its assessment of NPS management efforts in determining if national water quality goals are being adequately addressed.

GLOSSARY

Agencies: All governmental bodies and entities that—under their mandates—have a role in addressing and/or mitigating NPS pollution. Federal, State, local, areawide, and interstate agencies are included.

Benefits (onsite and offsite): The whole range of direct and indirect benefits including, but not limited to, water quality, soil conservation, recreational and other beneficial uses, habitat and wildlife protection, increased productivity, flood control, and economic benefits to landowners or the public at large.

Best Management Practices (BMP’s): Methods, measures, or practices to prevent or reduce water pollution, including, but not limited to, structural and nonstructural controls and operation and maintenance procedures. Usually, BMP’s are applied as a system of practices rather than a single practice. BMP’s are selected on the basis of site-specific conditions that reflect natural background conditions and political, social, economic, and technical feasibility.

Net Benefits: Since trade-offs (competitive relationships, in the language of economics) may exist between water quality and other social benefits, the social objective must be in terms of optimizing net benefits.

NPS Management Programs: All programs conducted by the public and/or private sector toward the goal of preventing or abating nonpoint source pollution. A wide range of activities may be pursued to this end, including BMP identification, training, dissemination of educational materials, technical assistance, monitoring, research and development, and oversight/evaluation. Cost-sharing programs and other incentives can also play vital roles. Programs may be regulatory or nonregulatory (voluntary), or combinations of both.

Nonpoint Source (NPS) Pollution: Diffuse sources of water pollution that are not regulated as point sources and normally include agricultural and urban runoff, runoff from construction activities, etc. In practical terms, nonpoint sources do not discharge at a specific, single location (such as a single pipe). Nonpoint source pollutants are generally carried over or through the soil and ground cover via stormflow processes. Unlike point sources of pollution (such as industrial and municipal effluent discharge pipes), nonpoint sources are diffuse and can come from any land area. It must be kept in mind that this definition is necessarily general; legal and regulatory decisions have sometimes resulted in certain sources being assigned to either the point or nonpoint source categories because of considerations other than their manner of discharge (for example, irrigation return flows are designated as "nonpoint sources" by law, even though the discharge is through a discrete conveyance).

Partnership: As defined in this policy statement, "partnership" describes the arrangement between interested parties for solving the problem of NPS pollution. The key quality of this arrangement is cooperation. The NPS problem inherently requires that the private sector and all levels of government contribute to its solution. All entities act as decisionmakers within their respective roles and areas of responsibility, and the one that can most appropriately address a particular problem takes the lead. The specific arrangements that implement a partnership may vary from informal public agency/private entity cooperation in non-regulatory programs to memoranda of understanding, contractual agreements, and cooperative agreements as defined by OMB under Federal guidance (Federal Register, Vol. 43, No. 61, August 18, 1978).

Strategies: Written documents that specifically outline an Agency’s plan of action to address nonpoint source problems that fall within its jurisdiction or legislative mandate. Strategy activities should be defined under six broad topics: problem assessment; program implementation; incentives and compliance; coordination; resources; program evaluation and oversight. A consideration of timeliness should be included.
INTERGOVERNMENTAL COORDINATION: FEAST OR FAMINE?

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ABSTRACT

Lake Washington, on Florida's east coast, is the sole water supply for over 100,000 people in south Brevard County. This lake is one of a chain of lakes on the St. Johns River. Water quality problems in Lake Washington, as well as the St. Johns River, have been described as natural problems aggravated by man. All of the man-induced water quality problems are the result of nonpoint sources. Historically, diking and draining of the St. Johns River marsh and continued agricultural drainage has been the principal nonpoint source of pollution. During the last 15 to 20 years, urban drainage has been introduced into the lake. An interagency task force was formed to protect and improve the water quality of Lake Washington. This task force included the major regulatory agencies, water resource managers, and water users of Lake Washington. The task force's effectiveness was governed by (1) problem definition, (2) agency statutory power, (3) agency program priority, and (4) interaction by policy level individuals.

Intergovernmental coordination has been a popular battle cry in recent years. Most public work projects and, in particular, water resources projects will affect more than one unit of government. The hierarchical nature of American government with cities, counties or parishes, sub-State, State, and Federal levels dictates that several levels of government will become involved. In an attempt to put some order into this past institutional requirement for coordination. In 1971, the Internal Improvement Trust Fund Act required an intergovernmental coordination element in all local plans. Numerous examples exist. The planning advisory committees required by the 201 and 208 programs are a recent past institutional requirement for coordination. In Florida, the Local Government Comprehensive Planning Act required an intergovernmental coordination element in all local plans.

This paper discusses the recent experience of intergovernmental coordination in a nonpoint source control program in Brevard County on Florida's east coast. This paper presents several observations on the efforts of the Lake Washington Water Quality Improvement Task Force and discusses some reasons for the success or failure of that Task Force.

BACKGROUND

In May and June of 1970, the Brevard County Board of County Commissioners constructed a canal approximately 540 m in length, known as the Sands Canal, connecting upland drainage with Lake Washington. This canal was constructed without the necessary State permits. Negotiations from 1972 to 1975 between the Florida Department of Environmental Regulation and Brevard County attempted to resolve this matter.

In 1976, the Department advised the County of its intent to deny the County an after-the-fact permit application. At this point, the County requested a formal administrative hearing. This hearing resulted in a recommendation of denial from the hearing officer, and the Department issued a final order on Oct. 15, 1977, denying the after-the-fact permit and directing the County to submit a plan of restoration for the canal.

Brevard County then appealed the permit denial to the governor and cabinet, sitting as the Board of Trustees of the Internal Improvement Trust Fund. In May 1978, the Trustees entered an order remanding the case to the respondent, directing the Department to formulate acceptable modifications. On Feb. 22, 1983, a consent order was agreed upon which settled this case.

The consent order required the following major actions. First, the County is to construct a permanent weir structure at the end of the Sands Canal. The purpose of the weir is to ensure the separation of waters between Lake Washington and the canal during periods when Lake Washington is below 405 cm msl. To provide navigational access across the weir, the weir may contain a movable gate. The gate's lowest elevation is 315 cm msl.

The County also is required to maintain a water quality monitoring program. Two sampling stations, one within the Sands Canal landward of the permanent structure previously described, and the second waterward of the canal entrance to reflect background conditions. Monitoring is required not less than once a month.

The third condition of the consent order concerns the operation of the adjustable weir gate. When the water quality monitoring of the lake shows no violations of Class 1 water quality standards in the canal and the lake stage is below 405 cm msl, the gate may be open. Any time lake stages exceed 405 cm msl the gates may be opened since the crest elevation of the weir is 405 cm msl.

The final requirement is the establishment of a Lake Washington Water Quality Improvement Task Force. This paper will discuss, in detail, the Task Force and its effectiveness.

LAKE WASHINGTON

Lake Washington is located on the St. Johns River in south Brevard County on Florida's east coast. The city of Melbourne is located just east of the lake (Fig. 1). The headwater of the lake begins in a large marsh in Indian River and Okeechobee County. 32 km to the south. The overall drainage basin is approximately 275,465 ha. The lake is relatively shallow with a bottom elevation of 2.3 meters msl. The stage duration curves developed for the lake stages are less than 4.1 m msl 50 percent of the time. The bottom is typically of unconsolidated organic matter. At this time, few submersed species of vegetation exist in the lake. The shoreline is dominated by wetlands composed of saw grass (Cladium jamaicense), maldencane (Panicum hemitomon), spikerush (Eleocharis sp.), nutgrass (Cyperus sp.) and swamp willow (Salix carolinia). The eastern shore has one small area of urban land use, including a public boat ramp, marina, a home, and two water treatment plants.

The water quality of the lake is highly variable, depending on the time of year, lake stages, and local climatic conditions. In general, water quality and water quantity appear to be closely related, as water quality deteriorates with a decrease in flow. However, low dissolved oxygen and high color are associated with high flow conditions.

The water quality of Lake Washington is affected by
several factors. The drainage basin of Lake Washington is dominated by large wetland systems, including marshes and hardwood swamps. These wetlands contribute to the color and organic loadings to the lake. In addition, during the last 50 to 60 years, much of the basin has been converted to agricultural lands. This has resulted in the loss of floodplain wetlands, the channelization of the marsh, agricultural runoff, and finally, significant alteration of the natural hydrograph. Other factors affecting the water quality of the lake, particularly during periods of low flow are: (1) inflow of ground water having higher chlorides and total dissolved solids concentrations, (2) canals that drain the uplands east of the lake, and (3) evaporation and evapotranspiration during the dry season.

Cultural pollution is from agricultural runoff and urban drainage. No sewage treatment plants discharge into the lake or its drainage basin. Lake Washington is used mostly as a potable water supply. Since 1959, the city of Melbourne, which serves approximately 109,000 people, has used Lake Washington as its source of drinking water. The water quality has been described by the city as the most difficult to treat in the nation, primarily because of rapid changes in color and TOC. An algae bloom in the lake during 1984 resulted in taste and odor complaints for several days. Another concern is chlorides and total dissolved solids. As lake levels drop, these parameters increase in concentration. During a drought in 1980–81, the drinking water standard for chlorides was exceeded for 90 consecutive days and the TDS standard was exceeded twice for 140 and 141 consecutive days.

The lake is classified by the Florida Department of Environmental Regulation as a Class 1 surface potable water supply.

**TASK FORCE**

One of the requirements of the consent order was the establishment of a Lake Washington Water Quality Improvement Task Force. This Task Force, led by Brevard County, was to be composed of governmental agencies and interested parties who are involved in the preservation and protection of Lake Washington.

The Task Force had five specific purposes. The first was to evaluate existing and potential sources of pollution in Lake Washington. This included any canals or ditches leading into the lake. The second task was to identify existing and prospective uses of the Lake Washington water resources.

The Task Force was also to review land use planning and implementation. In reviewing policies and ordinances, potential sources of domestic or industrial wastes, stormwater sources, and the loss of filtrative vegetation were to be considered.

The fourth item was to develop educational materials on pollution abatement, stormwater management, and strategies to preserve and restore Lake Washington water quality. These are to be provided to existing and future property owners in the Lake Washington watershed. Finally, the Task Force was to identify sources of funding that may be used to mitigate water pollution in the lake. The work of this Task Force was to be completed in 24 months from the entry of the consent order.

In May 1983, the Brevard County Board of County Commissioners organized the Lake Washington Water Quality Improvement Task Force. It was decided that the Task Force would be a policymaking board. The membership consisted of:

1. The District 3 Brevard County commissioner.
2. The District 5 Brevard County commissioner.
3. The district manager of the St. Johns River District Office of the Florida Department of Environmental Regulation (FDER).
4. The Executive Director of the St. Johns River Water Management District (SJRWMD).
5. The representative of the Florida Game and Freshwater Fish Commission (GFWFC).
6. The city manager of the city of Melbourne.

In the summer of 1983 the South Brevard Water Authority, the agency responsible for public water supply in the South Brevard area, was created and the Authority's executive director appointed to the Task Force.

In addition, a Technical Advisory Committee was established to perform the technical aspects of the study and to advise the Task Force. Each of the following agencies had one technical representative:

- Florida Department of Environmental Regulation
- St. Johns River Water Management District
- Florida Game and Freshwater Fish Commission
- Florida Institute of Technology Staff

The Brevard County Water Resources Department Staff acted as staff to the Task Force and the Technical Advisory Committee.

A plan of study was developed to facilitate the work of the Task Force. The overall program was divided into four subprograms: historical data, resource management, implementation, and post-implementation. Table 1 outlines this plan of study. A schedule provided that the work could be completed in 18 months, allowing for flexibility in meeting the 24-month deadline requirements of the consent order.

The Task Force met six times. A final report was adopted at the Task Force's last meeting, February 1985.
Table 1.—Plan of study.

*Task Force Meeting—Organizational.

History
1. Lake Washington boat tour.
2. Historical and existing information (water quality, water quantity, land and water uses).

*Task Force Meeting—adoption of a comprehensive report on the background of Lake Washington.

Resource Management
4. Resource evaluation: surface and ground water hydrology, water chemistry.
5. Resource evaluation: ecology, sociology (meeting with agricultural committee).
6. Resource management alternatives and funding.

*Task Force Meeting—prioritize management alternatives.

Implementation
7. Land acquisition program.
8. Water and land management regulations.

*Task Force Meeting—selection of implementation program.

Post-Implementation
10. Educational material.
11. Establish continuing planning/cooperation program.

*Task Force Meeting—review final report.

EVALUATION

The effectiveness of an intergovernmental activity is hard to measure. If one agency provides strong leadership, a program may be implemented even without intergovernmental activity. Intergovernmental coordination may slow down or enhance implementation.

Accordingly, the success or failure of the Lake Washington Water Quality Improvement Task Force is also very difficult to evaluate. First, the recommendations of the Task Force have only recently been completed, in February 1985. Sufficient time has not passed to evaluate the success or failure of implementation. Secondly, many of the Task Force's recommendations resemble existing programs of the participant agencies. What effect the Task Force will have on them is not yet known.

However, various aspects of the Task Force can be discussed at this time. The four major factors affecting the effectiveness of the Task Force were (1) problem definition, (2) agency statutory power, (3) agency program priority, and (4) interaction by policy level individuals.

The first step in solving any problem is defining the problem. The consent order makes some vague reference to water quality standards. Studies have shown that the water quality of the St. Johns River and Lake Washington may be affected by numerous factors. However, direct cause and effect relationships have not been accurately defined. To minimize the area studied by the Task Force, the study area's boundaries were limited to the immediate area of Lake Washington (Fig. 2). This is just a small portion of the lake's total watershed.

As a result, the Task Force had a poorly defined problem. The cause and effect relationships needed to produce defensible solutions were not available. The study area boundaries needed to keep the study manageable also eliminated the most significant flow contribution to the lake—the watershed of the St. Johns River.

Each of the participants in the Task Force was limited by statutory authority. In a gross generalization, the FDER is responsible for water quality, the SJRWMD is responsible for water quantity and the GFWFC is responsible for wildlife. Each agency's responsibilities directly affect the others. However, because of their statutory limitations, it is difficult to estimate official agency interest outside of their jurisdictional boundaries.

Often, statutory authority is not considered. The consent order was developed between Brevard County and FDER. The SJRWMD was not a party to it even though they had to issue the permit for the required weir.

Because of statutory constraints as well as budget considerations, policies, and competing issues, each agency has its own program priority. Brevard County had a high priority in seeing the completion of the Task Force's work because of the consent order. The other participants did not have the same priority. The Task Force's work could be considered someone else's responsibility. In addition, because of incomplete programs which directly affect Lake Washington, agencies were reluctant to make specific recommendations or commitments. At that time, the SJRWMD was completing the Upper Basin Management Plan for the St. Johns River, and the Task Force final report was completed before SJRWMD publicly released their plan.

Finally, the individual level of participation affected the effectiveness of the Task Force. The GFWFC never appointed a representative. The FDER Task Force member never attended; however, his alternate did, occasionally. The SJRWMD member attended only the initial meeting.

The Task Force was established as a policy level group. Without the attendance of these individuals, resolution of policy conflict or commitment of resources could not be made.
CONCLUSIONS

The Lake Washington Water Quality Improvement Task Force was established to provide intergovernmental coordination in developing management policies for Lake Washington. The principal agencies concerned with the resources of the lake were involved; however, their effectiveness was limited by problem definition, statute, program priority and participation.

To enhance the effectiveness of intergovernmental coordination, the following is recommended:

1. **Problem definition.** It is important to keep the problem small enough to minimize necessary variables. However, in establishing the boundaries of the study, do not exclude variables that may have a significant impact.

   If there is not enough information to define the problem, then wait. Do not attempt to develop a solution with a poorly defined problem. This will only result in an inadequate solution.

2. **Statutory power.** The powers given to an agency by the legislature must not limit or hinder intergovernmental coordination. One alternative is to divide agency responsibility by broad subject areas such as transportation, education, and natural resources, rather than by specific responsibilities such as water quantity, water quality, and wildlife.

   A second alternative is to give each agency the specific authority to consider cumulative effects or multidisciplinary effects. While the agency's responsibility may remain specific, the ability to consider other effects will force intergovernmental coordination.

3. **Program priority.** Agency-established priorities will not enhance coordination. Program priority must come from one centralized authority. This can be done by an office of planning and budgeting within the governor's office, or a legislatively established budget review process. A statewide, regional specific plan of State priorities must be developed and periodically updated.

4. **Participation.** In general, intergovernmental coordination at the technical staff level appears to exist and often works well. It is at the policy level where coordination is often missing. One way to improve this is to hold regular symposia to discuss issues of mutual concern.

Intergovernmental coordination is not a cure-all or a curse. Because of the nature of American government, multiple agency involvement will occur. Coordination of these agencies' activities is essential to minimize wasteful duplication and unnecessary delays. However, coordination must be carefully managed to avoid prolonged discussion of the problem. Don't assume that since several agencies are meeting and discussing a problem they are coordinating their efforts. Strong leadership and individual commitment will help ensure intergovernmental coordination.
THE BASIC LEGAL ISSUES

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ABSTRACT

Nonpoint source water pollution is thought difficult to control because it derives from diffuse sources over a broad area. Many forms of nonpoint source pollution derive, however, from inappropriate use of land or water resources which are subject to regulation through Federal and State wetland protection laws, such as the Clean Water Act section 404 Program, local government zoning powers, and other local, State or Federal laws which control the siting of major infrastructure facilities which contribute directly or indirectly to nonpoint source pollution. With respect to urban or highway runoff, vigorous enforcement of Clean Air Act programs relating to mobile and stationary sources may result in significant reduction of impacts of metals, organics, and acid rain. Non-enforceable BMP's are virtually useless at controlling nonpoint source pollution. For some existing nonpoint source pollution, such as agricultural soil, nutrient and pesticide runoff, we must identify cost-effective economic investments which control such pollution through alternative use of waste resources and find the institutional mechanisms to facilitate those investments.

INTRODUCTION

The Federal Clean Water Act, 33 U.S.C. Section 1251 et seq., divides all causes of surface water degradation into two parts: point and nonpoint source pollution. In general, that Act prescribes regulatory programs to control discharges of pollutants and establishes planning programs to promote control of all other pollution, defined in Section 502(19) to be the manmade or man-induced alteration of the chemical, physical, biological or radiological integrity of water. Some courts have held and the U.S. Environmental Protection Agency has taken the position that the Clean Water Act's permit programs do not regulate discharges into ground water; therefore, under the Clean Water Act, pollution of ground water and in turn degradation of surface waters by contaminated ground water, are viewed as nonpoint sources of pollution. Subsequent Federal and related laws, however, including the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6991, and the Safe Drinking Water Act (SDWA), 42 U.S.C. Section 300f, provide for regulation of major discrete sources of ground water pollution, such as industrial impoundments, storage tanks, landfills, and underground injection wells. We can, therefore characterize them as point sources of water pollution as well.

In general, we can view nonpoint source pollution as any pollution of ground or surface waters associated with diffuse land use activities that cumulatively result in water quality degradation. Agricultural, mining, and construction-related activities, urban or highway runoff, and residential or commercial septic system and lawn discharges are typical nonpoint pollution sources. Such pollution sources are recognized as major causes of degradation of many surface and ground water systems. However, since they are viewed as land use problems, the Congress and most States have not adopted regulatory programs to control them.

The theme of this paper is that Congressional hesitation notwithstanding, much nonpoint source pollution can in fact be controlled or prevented by existing State and Federal programs, coupled with local government land use powers; that local land use authority is not, by itself, typically effective at controlling nonpoint source pollution and that we need a Federal legal program that gives State and local governments and Federal agencies a compelling framework for using existing authorities to control nonpoint source pollution.

BASIC CONCEPTS

In designing a meaningful local, State or Federal nonpoint source pollution control strategy, we should keep in mind three basic principles.

First, nonpoint source pollution results from and is associated with a loss of natural vegetative cover. Natural forest or other plant communities do not generate pollution as defined in the Clean Water Act. Differently stated, retention or re-establishment of natural plant cover prevents or abates such pollution. The objective of a nonpoint source pollution control program must therefore be to retain or re-establish natural plant communities as much as possible.

Second, while most nonpoint source pollution is not directly controlled or regulated under State and Federal environmental laws, a good portion of it arises from preceding individual acts which are in fact point sources of pollution and regulated as such through existing permit programs. Increasingly, therefore, nonpoint source pollution is a reflection of ineffective or inadequate implementation of point source pollution permitting authorities. If we recognize this fact and intend to do better in the future, it makes sense to distinguish future from existing nonpoint source pollution.

In many cases, effective use of point source pollution control programs to prevent future nonpoint source pollution may make economic and social sense. Emphasizing remedial action is always more problematic. In a world of limited resources, the pros and cons of preventive and remedial actions must always be assessed. We should also recognize that much nonpoint source pollution is a result of Federal and State-funded activities and may therefore be controlled through budgetary and planning processes.

Third, the siting of an agricultural, forestry, mining, transportation, commercial or residential activity within a surface or ground water watershed is central to its potential nonpoint source pollution impact on receiving surface or ground water quality. In terms of effect, the siting of such activities is as important as and often more important than the operational design.
It is appropriate to consider the critical portion of a surface or ground water recharge watershed as a basis for developing siting criteria for activities which may cause nonpoint source pollution. For a surface water basin, the most critical portion of the watershed may be its wetlands within the floodplain of the receiving river, lake, or estuary. For a ground water system, it is likewise possible to delineate a critical recharge zone in terms of soil conditions, recharge areas, and ground water residence times.

Imposing controls based on the location of an activity within a watershed and its nonpoint source pollution potential has a legal basis in many Federal and State environmental laws, including the Clean Water Act, the Clean Air Act, 42 U.S.C. Section 7601, RCRA, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. Section 136, the Toxic Substance Control Act (TOSCA), 15 U.S.C. Section 2601, the Safe Drinking Water Act (SDWA) and the Surface Mining Control and Reclamation Act, 30 U.S.C. Section 1201. These Federal laws and their State counterparts in some measure authorize regulatory programs that incorporate geographic or siting criteria based on water quality, among other values, and can be used to prohibit siting of nonpoint source pollution-generating land uses in critical watersheds. Federal and State agencies, however, typically utilize these legal authorities less than might be expected.

We can see how these general principles operate in a variety of contexts involving nonpoint source pollution activities.

**Example I: Agriculture**

Agricultural runoff with sediments, nutrients, or toxic chemicals is a prime example of nonpoint source pollution. The siting of agricultural activity can have a major impact on receiving water quality. Row crop operations in low lying floodplain areas, including freshwater wetlands, can have tremendous impacts on receiving water quality because of their proximity to receiving waters and the loss of the natural wetland communities that could buffer upland runoff. Similarly, agricultural operations in critical ground water watershed areas can often result in high and damaging levels of nutrients and pesticides in recharged ground water.

With some 98 million acres of wetlands remaining (some 95 percent freshwater wetlands), the 48 coterminous States have lost more than 50 percent of their wetlands, more than 80 percent because of agricultural conversion, clearing, and drainage. In many riverine floodplains, including those in the Lower Mississippi Alluvial Valley, floodplain vegetation has been cleared to stream banks, with massive water quality degradation resulting. Agricultural conversion of floodplain wetland communities must therefore be viewed as a major nonpoint pollution source. Once the conversion has occurred, nonpoint source pollution inevitably increases dramatically. While agricultural conversions of wetland systems traditionally have not been regulated at all (indeed, Federal water resource development programs have subsidized and promoted them), they are now regulable under Section 404 of the Clean Water Act, 33 U.S.C. Section 1344, and some State wetland programs as well. In Avoyelles Sportsmen's League v. Marsh, 715 F. 2d 897 (5th Cir. 1983), upholding a district court opinion, 473 F. Supp. 525 (WD: La. 1979), the Fifth Circuit held that agricultural conversions of Section 404 wetlands are not exempted as normal agricultural activities under Section 404(f)(1)(A); instead, mechanized clearing operations are "point sources" of pollution which "redeposit" cleared material. In addition, they are clearly regulated under Section 404(f)(2) which provides for any discharge of dredged or fill material into waters of the United States "incidental" to a change in use where the reach of those waters is impaired. The Seventh Circuit has recently rendered a similar opinion, United States v. Huenber, 752 F. 2d 1235 (7th Cir. 1985). Thus, future nonpoint source pollution resulting from agricultural conversion of wetlands can be regulated and avoided.

In terms of water quality and aquatic ecosystem protection, the fact is that row crop agriculture should not be sited in wetland areas. The Clean Water Act Section 404 program provides a legal basis for preventing such nonpoint source pollution. Some State wetland laws, for example, Florida's Warren S. Henderson Wetlands Protection Act, Fla. Stat. Section 403.901 et seq.,1 provide some limited protection from water quality degradation although other State wetland laws generally exempt agriculture. We need effective enforcement of the Section 404 to limit agricultural conversion of wetlands.2

The role of wetlands in maintaining water quality and filtering water laden with sediments and nutrients would suggest that reforestation of wetland riparian areas, as well as converting high erodible lands to pasture or forest cover, should be prime remedial action strategies where existing agricultural activities are a major nonpoint pollution source. However, the Clean Water Act provides no legal basis to compel such a result.

The recent experiences with contamination of ground water by aldicarb in Suffolk County, Long Island, and by aldicarb and EDB in Florida show that pesticide-related degradation of ground water quality can be severe when the agricultural operations that use such pesticides are located in central recharge areas with soils not effective at retarding movement of such toxic pollutants. While EPA may have properly registered these pesticides, their use in such sensitive recharge areas was clearly inappropriate.

FIFRA provides a legal basis for restricting the use of registered pesticides geographically, although EPA has used this authority sparingly at best. Thus, FIFRA could be used to restrict use of specific pesticides in specific ground water recharge areas. Preparation of EPA's Ground-Water Protection Strategy (Aug. 1984) by EPA's Office of Ground-Water Protection may stimulate such use of FIFRA. Thus, although pesticide contamination of ground water is perceived as a nonpoint source of pollution, such contamination, whenever it occurs, is a consequence of a clearly regulatable act—the use of that pesticide in that area.

**Example II: Minerals Extraction**

Pollution of ground and surface waters associated with surface mining and other forms of mineral extraction has traditionally been viewed as nonpoint source. Certainly, Section 208(b)(2)(G) of the Clean Water Act, 33 U.S.C. Section 1288(b)(2)(G), viewed mining-related wastewater runoff in this light. Yet, many aspects of mineral extraction processes that can result in nonpoint source pollution are in fact subject to regulation.

Most aspects of surface mining, including development of mining and reclamation plans, are subject to Federal or, through delegation, State review and approval under the Surface Mining Control and Reclamation Act, 33 U.S.C. Section 1201. Section 101(c) of that Act, 30 U.S.C. Section 1201(c), recognizes that surface mining operations disturb surface waters, cause erosion, and pollute waters. Section 102(c) of this Act, 30 U.S.C. Section 1201(c), provides that mining is not to be conducted where reclamation is not feasible. If properly enforced, this Act should dramatically reduce contamination of surface and ground water arising from new mining operations that the Act regulates.
Further, to some degree, the Act provides for reclamation of abandoned stripmined sites which are a major cause of ground and surface water pollution in many parts of the country. The Act also provides legal authority to restrict surface mining operations that could cause irreversible pollution so that reclamation would be infeasible. In other words, the Act could be used to restrict the siting of surface mining in critical surface or ground water watershed areas highly sensitive to contaminants.

As another example, saltwater intrusion in coastal Louisiana, which contains 40 percent of the country's coastal wetlands, can be viewed as a nonpoint source pollution problem. Such saltwater intrusion, which contributes to the accelerating erosion of the Louisiana coastal zone (now eroding at a rate of some 40 square miles or 32,000 acres of wetland annually—an inexcusable, manmade biological travesty), results from the construction of canals in this richly convoluted wetland maze of subtle salinity sequences of the construction of this maze of canals include massive saltwater intrusion, interference with natural hydrological flows, extensive bank erosion, and accelerating rates of land loss. Yet, the construction of these canals has been subject to permit regulation for more than 10 years under the Corps of Engineers and the discharge permitting authority under Section 404 of the Clean Water Act, 33 U.S.C. Section 1344, and in the last 5 years under the Louisiana Coastal Zone Management Program.

Despite this State and Federal authority, permits continue to be routinely issued for construction of such canals with some conditions imposed to alter the alignment of canals and the design of dredged spoils. Neither the Coastal Zone Section of the State Department of Natural Resources nor the Corps of Engineers has used its legal authority to promote or force use of alternatives that in fact exist. Thus, while the Louisiana coastal zone suffers from increasing nonpoint source pollution in the form of saltwater intrusion and loss of sediments through erosion, construction of canals, the primary courses of such pollution, has been a regulated act for more than a decade.

The Suwannee River, an outstanding Florida water with its headwaters in the Okefenokee Swamp, a National Wildlife Refuge, and its mouth north of Cedar Key, Florida, is one of the few relatively pristine river systems remaining in Florida, indeed, in the entire Southeast. The Upper Suwannee River is characterized by unusual water quality—low both in nutrients and pH and high in color, a reflection of the swampy origins of its waters. The major cause of degradation of the Suwannee River is phosphate stripmining, mostly in Hamilton County, Florida. This pollution results from point source discharges into tributaries of the Upper Suwannee River, subject to NPDES permit requirements of Section 402 of the Clean Water Act, 33 U.S.C. Section 1342, and State water quality permit restrictions. It also results from loss of critical watershed wetlands that are stripmined or used as waste disposal sites. The mine-land wastewater discharges, while regulated, furthermore cause degradation because they directly destroy tributary wetlands.

The fact is that most aspects of this phosphate stripmining, including chemical plant and mineland wastewater discharges, design and siting of waste disposal sites, and the siting of mining operations in wetlands, are subject to State and Federal regulation. The Corps of Engineers has asserted jurisdiction over the wetlands in Hamilton County under Section 404 of the Clean Water Act, 33 U.S.C. Section 1344, and has released a draft environmental impact statement intended to assess the impacts of proposed and alternative mining and waste disposal operations on the aquatic environment. Thus, existing Federal and State law together provide express regulatory control over the siting of mining operations in wetland systems within the Suwannee River's tributary watersheds. Vigorous restrictions on the siting of such operations as well as appropriate controls on point source wastewater discharges could protect the Suwannee River. Thus, continued degradation of the Suwannee River resulting from phosphate stripmining is a consequence of discrete regulatable acts.

Example III: Publicly Funded Infrastructure

Another source of what is typically considered nonpoint source pollution is the construction and siting of public infrastructure facilities, such as highways or dams, funded by Federal, State or county agencies. Highways generate runoff with organic chemical contaminants and nutrients. In turn, with other public infrastructure investments such as sewers, they typically spur residential or commercial development that causes more nonpoint source pollution. The siting of highways in critical surface watershed areas, including wetlands, and in sensitive ground water recharge zones can greatly increase the magnitude of their impact on receiving waters.

Aside from direct funding controls, the siting of highways in wetland areas is regulatable under Section 404 of the Clean Water Act and under many State wetland laws. In addition, the siting of highways in a recharge zone of ground water designated as a sole source aquifer under Section 1424(e) of the Safe Drinking Water Act, 42 U.S.C. Section 300h-3(e), may be prohibited as a potential cause of ground water contamination by EPA. Needless to say, EPA has not used this veto authority aggressively. Further, because sole source aquifer designation now provides so little regulatory authority to control the siting of pollution sources in sensitive recharge areas, Section 1424(e) should be amended and strengthened. Senate Bill S.124 and House Bill H.R. 1650, the Safe Drinking Water Amendments of 1985 represent a step in this direction, although H.R. 1038 and S.24 would be a preferable amendment.

Much of the pollution associated with highway runoff stems from the exhaust and tire wear of automobiles, trucks, and buses. Although the organic chemicals and toxic metals in such runoff are deemed to be nonpoint sources of pollution, in fact these motor vehicle pollution sources are regulated under Subchapter II of the Clean Air Act, 42 U.S.C. Section 7521. Unfortunately, air pollution emission standards for trucks and buses are very lax, and emission standards for automobiles, as well as trucks and buses, are not stringent enough to prevent significant motor vehicle-related pollution runoff. Strengthened motor vehicle source emission standards would, of course, have innumerable benefits in terms of reducing concentrations of air pollutants, such as hydrocarbons, nitrogen oxides, carbon monoxide, and toxic air pollutants, as well as reducing concentrations of toxic contaminants in urban runoff. Highway runoff, which is presented as an example of nonpoint source pollution and which cannot be adequately treated by secondary treatment plants, arises in large part from a great number of regulated air pollution emission sources.

We have already mentioned one major cause of saltwater intrusion in coastal Louisiana—the construction of canals. Another cause of coastal riverine saltwater intrusion, such as is the case in the Gulf Coast of Texas, is constructing riverine dams for water supply and other purposes.
Aside from the issue of funding control, construction and, to a limited degree, the operation of such dams is subject to some regulatory control under the National Environmental Policy Act, 42 U.S.C. Section 4321 et seq., the 1958 Fish and Wildlife Coordination Act, 16 U.S.C. Section 661, and, in some cases, Section 404 of the Clean Water Act. The construction of massive regional sewer systems in Long Island that collect and treat wastewaters in a ground water-dependent system and discharge them into ocean water has also resulted in saltwater intrusion into Great South Bay. Construction of such sewer systems is subject to the same statutory requirements as dams. In addition to other legal requirements specified in Section 201 of the Clean Water Act, 33 U.S.C. Section 1281.

**Example IV: Residential and Commercial Development**

Residential and commercial development typically brings with it nonpoint sources of pollution—septic system discharges into ground water and lawn-related fertilizers and particles. The siting of such development is a major factor in determining the magnitude of its associated nonpoint source pollution on surface or ground water. As with all pollution sources, the siting of such development in wetlands, low lying floodplains, and other portions of critical surface or ground water watersheds can cause high levels of nitrate or organic chemical pollution. Its siting in less sensitive areas results in a far lesser impact.

Local governments in many parts of the country have recently been using their zoning authority to limit residential densities and prevent undue clearing of natural vegetation to protect ground and surface waters in critical watersheds. Long Island townships have used 2- and 5-acre zoning in part to limit residential pollution of ground water. Such zoning, when challenged, has been sustained. The New Jersey Pinelands Commission in its Pinelands Comprehensive Management Plan has severely restricted residential development in some 80 percent of the 1 million-acre Pine Barrens of southeastern New Jersey, in part to maintain the remarkably pristine quality of its surface and ground water, characterized by exceedingly low (below 0.2 parts per million) levels of nitrates. Indeed, that Commission has adopted the country's most ambitious multi-county transfer of development rights program in pursuing its objective to severely restrict development in the most sensitive areas of the Pinelands. A Virginia Court, *Aldre Properties v. Board of Supervisors*, ChanceryNos. 7846-3-A 19th Judic. Cir. V. Jan. 7, 1985, has recently upheld the rezoning of some 40,000 acres of a critical part of the watershed of the Occoquan reservoir in Fairfax County. Dade County, Florida, is prohibiting the siting of industrial facilities with any potential for discharge of broadly-defined hazardous wastes within the zones of influence of its new water supply well fields west of the most urbanized portions of the county.

Restrictions on residential and commercial and potential nonpoint source pollution in sensitive watersheds are not, however, limited to exercise of the zoning power. Local or State governments can and do ban the use of certain septic tank solvents and other toxic organic compounds in such watershed areas. In particularly sensitive areas, local or State governments could intensively apply such bans. In addition, under TOSCA, 15 U.S.C. Section 2601, EPA has the legal authority to prohibit use or disposal of specific chemicals. EPA could use this authority to limit or prohibit such use in sensitive ground or surface water watersheds.

**Example V: Atmospheric Pollution—Acid Rain**

Atmospheric pollution in the form of dry and wet deposition of oxides of sulfur and nitrogen—acid rain—is gradually being recognized as a major cause of acidification and resulting contamination by acid, sulfates, and mobilized toxic metals of surface waters in geologically sensitive areas. These sensitive areas are widespread—northern New England, the Adirondacks, portions of the Hudson Valley, the Catskills, the Appalachian Region, portions of Florida, the Upper Midwest, high elevation lakes and streams in the Rocky Mountain Region, and parts of the Northwest. Atmospheric deposition is therefore a major nonpoint source of water pollution.

While emissions of oxides of sulfur and nitrogen, the precursors of acid deposition from utilities, smelters, and other industrial sources, are not regulatable under the Clean Water Act, they are clearly regulatable under the Clean Air Act. The principal sources of sulfur oxides in the East and West are all "stationary sources" of air pollution. Further, acid deposition causes a range of adverse impacts on water quality, forests, crops, manmade materials, and visibility—all recognized as "welfare effects" as defined in Section 302(h) of the Clean Air Act, 42 U.S.C. Section 7602(h).

Unfortunately, the Administrator has not exercised his authority or performed his duty to establish a secondary annual national ambient air quality standard for sulfur deposition in the form of a sulfur deposition rate at a level designed to avoid sulfur's adverse welfare effects either based on an existing criteria pollutant, sulfur dioxide, under Section 109(b)(2), 42 U.S.C. Section 7409(b)(2), or by listing atmospheric sulfur in any chemical form as a new air pollutant under Section 108(a)(1) of the Clean Air Act, 42, U.S.C. Section 7408(a)(1), and subsequent establishing air quality criteria and a secondary standard. Despite this failure to act, however, this nonpoint source of pollution of water quality is controllable under the Clean Air Act. Needless to say, in the face of continued EPA disregard of its legal duties, we can hope that the Congress will establish a program to rapidly reduce sulfur oxide emissions from major stationary sources.

**CONCLUSION**

To a large extent, nonpoint sources of water pollution result from preceding acts that constitute point sources of pollution subject to regulation under existing Federal environmental laws and their State counterparts. Existing law therefore can control and limit future nonpoint source pollution and, to a more limited degree, be used to remedy historic nonpoint source pollution. Vigorous enforcement of the Clean Water Act Section 404 wetland protection program would, by way of example, enhance control of nonpoint source pollution.

Siting of nonpoint source pollution-generating activities within a ground or surface watershed is also a major factor in determining the magnitude of impact of that pollution of receiving waters. To control nonpoint source pollution, EPA and State environmental protection agencies must take advantage of those provisions in the Safe Drinking Water Act, RCRA, TOSCA, FIFRA, the Clean Water Act, and other laws that authorize use of siting criteria. Since local governments play a major role in making land use decisions, they too should take advantage of these provisions.

It is certainly the case that State agencies and EPA have not taken maximum advantage of these statutory authorities. We need a general legal framework that facili-
tates using these authorities at all levels of government. Strengthening the sole source aquifer programs of the Safe Drinking Water Act would be a step in this direction. Adopting a comparable program for critical surface water supply watersheds at the State or Federal level would also be useful. Adopting Clean Water Act amendments designed to stimulate design and implementation of regional nonpoint source pollution control programs would also provide a broad legal framework for taking advantage of existing regulatory authorities.

END NOTES
1The Florida Wetlands Protection Act expands State jurisdiction over the State's waters, including wetlands, and establishes that State's first permit program expressly designed to regulate activities in wetlands. It takes away from the State's Department of Environmental Regulation authority to regulate agricultural activities; insofar as they are regulated in connection with construction of agricultural water management systems, the State's water management districts are assigned that responsibility.
2Administrative implementation of the Avoyelles decision has been slow. In October 1984, the Assistant Administrator of EPA for External Affairs issued interim guidance to all EPA regions instructing them that agricultural conversion operations in bottomland hardwood wetlands in general are subject to Section 404 regulation. The U.S. Army Corps of Engineers which directly administers the Section 404 program has issued a Regulatory Guidance Letter No. 85-4 dated March 29, 1985, which reflects that agency's begrudging accommodation to the mandates of the Fifth Circuit.
Experience to date with implementation of measures to control nonpoint source pollution has been largely voluntary, dependent for success on education and subsidization of the costs of erosion control. The record is clear that these measures have not worked—nonpoint pollution is getting worse, not better. A dramatic change in attitudes about how to control nonpoint pollution must be made if this serious source of water quality degradation is to be brought under control. Any program to compel implementation of best management practices must acknowledge the differences between types of sources of nonpoint pollution and the features that distinguish nonpoint pollution from point source pollution (e.g., the inherent problems associated with measuring the amount of pollution caused by that source). What is an appropriate incentive to achieve one source’s compliance may not be appropriate for another. A mix of measures, ranging from traditional enforcement tools like citizen suits, cross compliance penalties, permits, and fines to financial incentives like taxes, subsidies, and rewards should be examined for their suitability to different sources of nonpoint pollution and to the particular conditions of a given watershed. The exact mix of measures should be determined at the State level in an EPA-approved nonpoint program. In applying these measures, off-farm contributors to the chain of nonpoint pollution should not be immune—for example, if excessive nitrogen is a water quality problem associated with nonpoint source pollution, then fertilizer manufacturers should be brought within the regulatory program. The final program must be equitable, effective, and easy to administer.

Although the catch-all title is “enforcement,” implementation of nonpoint controls can be achieved only by a creative mixture of traditional enforcement or regulatory tools and economic incentives. The bottom line to any nonpoint program must be a discernible improvement in water quality and any proposed technique to achieve that end must be measured against that goal.

Nonpoint pollution and nonpoint polluters differ from point source pollution and point source polluters in several key aspects, but are the same in others. Understanding these distinctions and similarities is critical to designing any program to implement nonpoint source controls.

Unlike the industrial point source program, the beneficiaries of nonpoint source pollution control and the observable impacts of this form of pollution are generally far away from the pollution’s point of origin. Runoff from a farm field or mine site often creates a water quality problem miles away from the pollution source, in some receiving stream, lake or estuary. This fact can create serious perception as well as enforcement problems. Farmers ask why they should be required to undertake the costs of implementing best management practices to produce benefits for the distant public-at-large; accordingly, they expect government assistance to offset the costs of implementing these controls. Whether or not that perception has any validity when compared to industrial pollution is irrelevant, because it must be dealt with in any nonpoint source implementation program.

The distance between the origin of pollution and its impact creates specific enforcement problems as well. Not all eroded soil ends up in a receiving stream. The distance factor makes it difficult to apportion liability for nonpoint pollution. Intervening causes of pollution have too much opportunity to occur between the points of origin of nonpoint pollution and its impact.

How can a specific farmer’s share of the pollution and liability for it be distinguished from naturally occurring nonpoint pollution or, for that matter, from the runoff coming from the farm downstream or upstream of him? What if farmer A’s eroded soil is being trapped by off-farm stream bank vegetation, but farmer B, who’s losing the same amount of soil, has no such assistance—should an enforcement policy distinguish between these farmers because only farmer B is causing a discernable water quality impact even though both farmers are losing soil?

How does one measure the percentage of pollution attributable to a particular activity and assess liability for it with any degree of precision, let alone equity—a basic premise of most pollution control programs—if one can’t establish, let alone quantify, the relationship between the polluting activity and the pollution? What unit of measurement can be used to design an effective effluent reduction program for nonpoint source pollution under these circumstances? The Universal Soil Loss Equation, which measures on-farm erosion, is of no use when it comes to assigning liability for an off-farm adverse water quality impact. These questions are unique to nonpoint pollution.

The fact that a nonpoint source enforcement agency is faced with trying to regulate pollution that can’t be measured at its source and can’t be attributed in many situations to a single identifiable cause would seem to eliminate those enforcement techniques that depend on apportioning responsibility between sources: for example, effluent fees or monetary penalties.

A second distinguishing characteristic of nonpoint source polluters is that some of them receive a direct economic benefit from the application of control measures, while others do not. Few, if any, point source polluters receive any benefit from pollution abatement. Thus, the farmer, the forest products company, the miner, and the rancher should all benefit from the retention of soil on their land; however, the industrial or urban source of nonpoint pollution may not. This distinction between sources has relevance for assessing whether incentives, like subsidies or tax relief, are appropriate for a particular source. It makes no sense to subsidize a farmer or timber products company for adopting control technologies that are already in its best interests to employ. Using a subsidy in those situations amounts to giving those polluters an unwarranted double benefit.

A separate question that must be raised when evaluating incentives as a means of achieving implementation of control practices is whether the particular circumstances
of the situation, such as the extremely depressed farm economy, warrant abandoning the basic premise of most pollution control statutes that polluters should not be reimbursed for the costs of cleaning up their pollution—"The polluter always pays" maxim. This is certainly a cardinal rule of the point source regulatory program. Yet, most discussions on achieving implementation of nonpoint pollution control measures assume the opposite, namely that the polluter should be reimbursed for his cleanup costs. I find these discussions deeply troubling and the relief proposed unwarranted in law or fact. Yet, mine is not a politically popular position to take and, therefore, one unlikely to prevail. However, if polluters are to be subsidized for the cost of implementing control technologies in the nonpoint as distinguished from the point source program, then that program must have as an indispensible component the achievement of some demonstrable reduction in nonpoint pollution. Otherwise, we will risk replicating the wasteful experience of the Rural Clean Water Program.

Another distinguishing characteristic of nonpoint pollution is that many factors affect nonpoint pollution, many of which are beyond the control of the source. Take, for example, agricultural nonpoint pollution. The occurrence or quality of agrically and nonpoint nonpoint pollution is influenced by weather, land contour, crop choice, plowing techniques, and pesticide and fertilizer use as well as by external factors, like the domestic and foreign demand for farm products, the cost of fuel and fertilizers, and government-subsidy programs (Harrington et al. 1985).

Instead of looking at this list and concluding that nonpoint pollution is too complex to tackle in any regulatory or incentives program, the length and diversity of the list should provide multiple opportunities for abating nonpoint pollution. A nonpoint source implementation strategy should look broadly at the chain of contributors to the pollution and not just the last link in the chain, the final source. For example, in terms of achieving water policy goals, imposing controls on the production and cost of pesticides may be more cost effective than requiring the farmer to build terraces.

The last distinguishing feature of nonpoint pollution that deserves some mention here is the view that the farmer cannot be compelled to do anything, that is, that a regulatory program with permissio, on-site inspections, and penalties simply will not work on the American farm. At the core of this perception is the myth that the American farm industry is composed of moderate-size family farms ($100,000 to $200,000 in annual product sales). The myth is given poignancy by the very real economic plight of the family farm.

In fact, the American family farm is disappearing. Today, the family farm represents less than 11 percent of moderate-size farms; a decade ago, the number was 21 percent. The American farm industry is clearly in transition, moving from a diverse collection of various size farms to a distinctly bipolar structure composed largely of very small or parttime enterprises and very large, industrialized operations. The disappearance of the family farm, without question, has created very real stress on the farm economy as well as stress on many watersheds. Good conservation, which is a long-term investment, may not appear relevant during an economic depression when short-term goals hold greatest appeal.

Implementation of nonpoint source controls clearly did not cause the disappearance of the moderate-size family farm. Just as clearly, the conditions of this transition period should not be allowed to define the content or approach of any nonpoint source program that Congress creates. Yet the myth of the family farm persists and is at the center of the different approaches taken toward the polluter in the nonpoint and point source programs, even today. How else can one explain the reluctance to impose regulatory controls on farming activities and the too-ready reliance on voluntary educational and subsidy programs? Yet, how different are the large, industrialized farms, which are clearly the wave of the American farm future, from industry or forest products companies?

A strictly voluntary approach has not worked and will not work for the farmer any more than it would work with the chemical industry. Nonpoint source pollution is increasing, not decreasing, perhaps reflecting the stress of the family farmer, who will opt for short-term gains and plow his highly erodible land rather than take it out of production. Why should the family farmer be any more willing to cut into profit margins than the steel industry, particularly in his economically distressed condition?

To allow the image of the family farm to dictate how we approach the nonpoint pollution problem would be a mistake. The attitude toward the farming community must change dramatically if this most serious source of water quality degradation is to be controlled. We must acknowledge that farming is no different from manufacturing chemicals, mining coal, or cutting trees when it comes to assigning responsibility for nonpoint pollution and bringing it under control.

I start with the premise that an effective nonpoint source control program must be regulatory in nature and generally indistinguishable from any other basic pollution control program. Such a program should provide for permits, objective standards, on-site inspection by State and Federal officials, and a full panoply of enforcement measures, including citizen suits. I think a useful model that might be pursued in designing such a program is that offered in the Surface Mining Reclamation and Control Act, a statute significantly dealing with erosion control and water quality.

The regulatory core of that statute is its performance standards and design criteria, which dictate with some precision how mining will be conducted in various parts of the country. The law requires the industry to implement specific technological controls—like terraces and sedimentation ponds—to prevent environmental problems from occurring. Additional features of interest in that law are its bonding, small operators’ assistance, and trust fund programs.

The design criteria approach of the Surface Mining Act, which is not very different from the technology-based approach of the Clean Water Act, has many of the same advantages for both the regulated industry and the regulating agency. Structures are easier to inspect than events, particularly nonpoint source effluents that can change under different background circumstances. Affected industries are given a measure of certainty that if they follow the design criteria they will meet the mandated performance standard and thus be in compliance with the law. These criteria and standards are objective and incontrovertible, limiting opportunities for subjective value judgments about possible violations. Certainty, equity, and ease of administration are important features of any regulatory program and, therefore, should be goals of a nonpoint source pollution control program.

Regulation, however, is not the only consideration in developing this program. Affirmative action must be taken to eliminate the incentives currently encouraging practices that lead to nonpoint pollution. Crop subsidies, price supports, disaster assistance, and other financial help should not be available in those circumstances that can cause nonpoint pollution. The tax code also should be reviewed with an eye toward eliminating tax relief for pollution-causing activities. Instead, incentives should be built into the commodity and tax programs for nonpoint source control. The entire chain of contributors to nonpoint source pollution should be part of this review. The goal
should be reduction at the source; in many instances this will not be the last link in the chain, but rather the first, for example, the producer of pesticides or fertilizers.

Any nonpoint source control program must be flexible and must offer a mix of measures, both disincentives and incentives, to achieve program goals. Different measures, both regulatory and economic, should be examined for their suitability to specific sources of nonpoint pollution and to the particular conditions of a given watershed. The exact mix of measures should be determined at the State level in an EPA-approved nonpoint program.

Any nonpoint program should have the capacity to distinguish between problems and to address those problems in some priority fashion. I would suggest that the first order of business should be bringing new activities into compliance, so that the inventory of problems does not keep growing. As those activities are brought within the regulatory fold, then the focus can shift to addressing the backlog of existing operations, which may be decreasing on its own for totally unrelated reasons.

Without question what I have proposed here is the most aggressive approach to solving the problem of nonpoint source pollution. It reflects my deep conviction that the problem is of sufficient severity to warrant the imposition of these types of measures and that the affected sources can absorb this responsibility like any other part of the economy, with neither less nor greater dislocation. Equally clear, traditional attitudes must change before this can be achieved. The legislation pending in Congress is a first step toward nonpoint source pollution control and does not bar States from following the approach proposed here. Should the States elect not to participate in the proposed program in a meaningful way, then Congress, at the next reauthorization of the Clean Water Act, should seriously consider taking the program to the next generation of control, as I have proposed in this paper.

REFERENCES

CONTROLLING NONPOINT SOURCES OF POLLUTION—THE FEDERAL LEGAL FRAMEWORK AND THE ALTERNATIVE OF NONFEDERAL ACTION

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ABSTRACT

This paper considers certain State and Federal legal aspects of nonpoint source pollution control including a general overview of Federal and representative State laws on the subject. A major emphasis is the benefits from reinforcing existing State legal and administrative institutions to serve as the foundation for a national nonpoint source pollution control effort. All too often, when a national regulatory effort is envisioned, individual State differences and preferences are ignored in the effort to articulate a single Federal policy. States can in fact develop, implement meaningful nonpoint pollution control programs without traditional Federal controls. Moreover, even where such pollution involves more than one State and control efforts must be expanded accordingly, there is the potential to use such proven non-Federal dispute resolution tools as Interstate compacts or interstate agreements. This paper also considers the adequacy of current Federal nonpoint source control efforts in the context of existing legislative authorities.

As each State strives to improve overall water quality, nonpoint source (NPS) pollution increasingly appears as a problem which has not been fully addressed in prior as well as current water quality enforcement efforts. (U.S. Geol. Survey, 1983; Off. Tech. Assessment, 1984). This conclusion becomes more apparent as existing Federal and State NPS statutes and regulations are enforced more strictly. Looking to the future, NPS pollution will have to be effectively controlled if the Nation's water quality is to continue to improve. While nonpoint source pollution is clearly a problem; the diffuse and intermittent nature of the discharges involved make definition as well as measurement difficult.

Many of the NPS pollution measurements are rather subjective in nature. For example, in America's Clean Water: The States' Evaluation of Progress 1972-1982 (Association of State & Interstate Water Pollution Control Administrators, 1984), States reported "severe" impairment of designated water uses as the result of nonpoint pollutants generated through the following activities (number of States reporting in parentheses): agricultural (16); urban (11); mining (15); land disposal (12); and construction (6). States reporting widespread geographic impairments caused by nonpoint pollutants from these same activities were as follows: agricultural (29); urban (8); mining (2); land disposal (5); and construction (6).

An important and still outstanding public policy question is whether the regulation of NPS pollution should be addressed through Federal or State control structure or some combination of the two. As a starting point in answering this question, this paper will examine the basic legal framework of Federal regulation of nonpoint source pollution of the Nation's water resources. Emphasis will be placed, of necessity, on the Federal Water Pollution Control Act, as amended by the Clean Water Act Amendments of 1977. The basic thesis of this paper is that in the context of applicable Federal laws, States have the latitude and should take the initiative to develop and implement meaningful NPS pollution programs. There is no need to wait for Congress to develop and implement a comprehensive regulatory program. In fact, it can be argued that a traditional Federal regulatory program is not in the States' collective best interest. Why? To oversimplify, it is all too often the case that when a Federal regulatory program is designed, individual State differences and preferences are overlooked in the implementation of a National regulatory structure.

Where NPS pollution involves more than one State and control efforts must be expanded accordingly, there is the potential to use such proven Federal dispute resolution tools such as interstate compacts. It is the very nature of the NPS pollution that the diffuse and intermittent nature of the discharges as well as potential legal problems associated with individual State action, that will often tend to support the interstate compact approach.

INTRODUCTION

It is often difficult to distinguish between point and nonpoint sources of water pollution. Many water pollution sources are not clearly "point" or "nonpoint", but have characteristics which suggest placement along a continuum between these two classifications. In addition, the classification of a pollutant as "point" or "nonpoint" may vary at different stages in the pollutant life cycle. For example, a nonpoint source may be reclassified as a point source if the pollutant material in question flow into a more discernible, confined conveyance such as a ditch or channel. (See, for example, Natural Resources Defense Council, Inc. v. Costle, 568 F.2d 1369 (1977).)

Unfortunately, Federal law does not provide a precise definition for NPS pollution. To understand the statutory scope of the concept, a mental definition must be drawn of the opposite of the following statutory definition for point source pollution:

... any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which pollutants are or may be discharged. (33 USC §1362 (14))

APPLICABLE FEDERAL LAW RELATING TO POINT SOURCE POLLUTION

It is somewhat paradoxical that to understand nonpoint source pollution, one must first examine the statutory definition of point source pollution. Point source pollution is concerned primarily with pollutants, discharged, or otherwise dispersed from a discrete pipe or conveyance.

*The opinions expressed in this paper are strictly those of the author and should not necessarily be construed as those of the Department of Interior.
PERSPECTIVES ON NONPOINT SOURCE POLLUTION

Among other examples of point source pollution are sewage effluent and incinerator residues. Applicable Federal law generally classifies any activity that emits pollution from an identifiable point source as point source pollution. Return flows from irrigated agriculture and unchanneled and uncollected surface water have been specifically exempted from the point source definition (33 USC §1362 (14)).

Since its original enactment in 1948 (pursuant to 62 Stat. 1155), the key Federal legislation for the control of all forms of water pollution has been the Federal Water Pollution Control Act (FWPCA). The Act was substantially amended in 1972 (pursuant to PL. 92-500; 86 Stat. 816) and again in 1977 (pursuant to PL. 95-217; 91 Stat. 1567). The 1977 amendments are known as the Clean Water Act of 1977.

Under the Federal Water Pollution Control Act, as amended (Clean Water Act), the actual administration of water quality standards for point sources has been left to the States, who are in turn free to impose stricter point source controls than these promulgated by the EPA. However, if the State standards are less strict than applicable Federal standards, the EPA may impose its own. Section 303 of the act requires States to identify water quality limited segments of streams or other watercourses. “Water quality limited” refers to that portion of a stream or watercourse that receives such a large amount of point source pollution that discharge standards alone are inadequate in and of themselves to preserve minimum water quality. Where such limitations on water quality apply, the act requires the establishment of total maximum daily waste loads for each threatened area. The total maximum waste load is then allocated among current users of the area.

Section 402 of the Clean Water Act established the National Pollution Discharge Elimination System (NPDES). An NPDES permit is required in order to discharge point source pollutants into navigable waters. To obtain a Section 402 NPDES permit, certification must be obtained from the applicable State agency (or the EPA in the absence of responsible State authority) must certify that the proposed discharge complies with applicable Federal effluent standards. For the purposes of compliance, such standards include those specified by Section 301 of the act. Pollution standards prescribed under Section 301 have become more stringent in recent years. Under the current schedule, there is an ongoing shift from the mandatory use of “best practicable technology” (BPT) to “best available technology” (BAT). The 1977 amendments to the Clean Water Act established a group of “conventional pollutants” (e.g. suspended solids, coliforms, etc.) for which the “best control technology” must be used.

It should be remembered that the funding authorization for the Federal Water Pollution Control Act is expired but the regulatory authority continues. Funding reauthorization will again be addressed in the 99th Congress.

THE FEDERAL WATER POLLUTION CONTROL ACT, POINT AND NONPOINT SOURCE POLLUTION AND THE STATES

The Federal Water Pollution Control Act (33 USC §1251 (b)) expressly recognizes "... the primary responsibilities of the States to prevent, reduce and eliminate pollution." The act does not in any way affect State authority to allocate quantities of water within State boundaries. The FWPCA (33 USC §1251 (a)) obligates the EPA Administrator to:

... encourage cooperative activities by the States for the prevention, reduction, and elimination of pollution, encour-

age the enactment of improved ... uniform State laws relating to the prevention, reduction and elimination of pollution; and encourage compacts between States for the prevention and control of pollution.

There is every reason why this same authority which encourages cooperation between States in the administration of point source control programs could also be used as support for State NPS control programs.

Nonpoint Source Pollution and Applicable Federal Law. Nonpoint sources of water pollution include diffuse pollution sources that are not regulated as point sources. It normally includes agricultural and urban runoff, runoff from construction and from surface mining activities, among other sources. As the court noted in United States v. Earth Sciences, Inc., 599 F. 2d 368, 373 (10th Cir., 1979): ... [the legislative history of the FWPCA indicates... Congress was classifying nonpoint source pollution as disparate runoff caused primarily by rainfall around activities that employ or cause pollutants.

The U.S. Senate Report on what eventually became the Clean Water Act (33 USC §1314) was cited by the court in Earth Sciences as indicative of the significance of NPS pollution in the overall Federal water pollution control effort. This Report stated, among other things:

Sediment, often associated with agricultural activities is by volume our major pollutant, not only by the degrading effect of the sediment, but because it transports other pollutants. Fertilizer and pesticide runoff are also major agricultural nonpoint sources. Poor forestry practices, including indiscriminate clear-cutting, may also generate substantial soil erosion problems.

One of the common problems associated with pollution control is the dramatic increase in storm runoff when the earth’s surface is made impermeable. Thus, highways, buildings, and parking lots all contribute substantially to the accelerated runoff of rainwater into natural water systems. The greater volume and greater velocity produce high rates of erosion and siltation. In addition, highway runoff often includes oil, rubber particles, lead asbestos and other elements or additives deposited on highways as a result of vehicular traffic.

There is some evidence in the legislative history of the 1972 and 1977 amendments to the Federal Water Pollution Control Act to suggest that Congress might have regulated nonpoint sources of pollution as well if they could have found a way to do so. Instead, Congress was forced to content itself with such statutory tools for addressing the NPS problem as the following:

Section 201, which declares that one of the key objectives of the United States Code subchapter (Section 201 et seq. of the FWPCA) relating to grants to municipalities for the construction of waste treatment works is control "to the extent practicable" of nonpoint sources.

Section 208, provides for areawide waste treatment management planning. The preparation of areawide plans started in the mid-1970's with the publication of guidelines by the EPA Administrator (pursuant to 40 Federal Register 55, 321, eventually codified as 40 CFR Part 35). The guidelines enable the Governor of each participating State to identify areas within the State as the result of urban-industrial pollution concentrations or other factors have substantial water quality problems.

Under Section 208, after the Governor of each State identifies the areas of the State having substantial water quality problems, he or she is then mandated to: (a) Designate the boundaries of each such area; and (b) select a single planning organization which includes local representation, capable of developing and implementing a continuing areawide waste treatment management planning process.

Each State is required to act as the chief planning agency for all portions of its territory not otherwise desig-
nated. An alternate procedure for the designation of water-quality impaired areas is available in the absence of gubernatorial action.

Plans developed under Section 208 process are required to contain alternatives for waste treatment and be applicable to all wastes (both point and nonpoint) generated in the area involved. Under Section 208, areawide plans must also identify municipal and industrial waste treatment nondue and necessary to meet the anticipated waste treatment needs of the designated area over a 20-year period. During the 1970's, a period of strong Federal support for the Section 208 construction program, the award of Federal waste treatment funds was based in large part on the identification of anticipated waste treatment needs.

Finally, Section 208 plans must include a process to identify and control nonpoint sources of pollution to the extent feasible. (Section 208 (b) (I) (F) through (H)). Unfortunately, feasibility is not defined in the statute or the applicable regulation (40 CFR §35.1505 (d)). According to 40 CFR §35.1521-4(c), Section 208 plans must control nonpoint sources of pollution through the use of best management practices (BMP's). In the nonpoint context, BMP's are defined as

... those methods, measures, or practices to prevent or reduce water pollution and include but are not limited to structural and nonstructural controls, and operation and maintenance procedures. BMP's can be applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters. Economic, institutional, and technical factors shall be considered in developing BMP's. BMP's shall be developed in a continuing process of identifying control needs and evaluating and modifying the BMP's as necessary to achieve water quality goals (see §35.1521-3 (h)). To the extent practicable, BMP's should be set forth in a document which can be distributed widely in the planning area. (40 CFR §35.1521-4 (c))

From the beginning, designated planning agencies found it easier to address point rather than nonpoint sources. Why? At the risk of considerable oversimplification, the key reason is that point sources are easily definable and control technologies are relatively well-developed. By contrast, the chief techniques for controlling NPS pollution often involve some form of land use planning or other public control of private land use, a topic over which there is much political controversy. The limited acceptability of key NPS control strategies coupled with delays on the part of EPA in preparing necessary guidelines, resulted in the targeting of such Section 208 waste treatment construction monies as were available on point source control efforts. This asymmetric targeting has resulted in the construction of a network of waste treatment facilities which are less than adequately equipped, in the view of several observers, to handle the more diffuse NPS problem.

While the 1977 amendments to Section 208 took certain steps toward regulating nonpoint sources, the nonregulatory flavor of the section was retained. On the control side, subsection (j) established an agricultural NPS control program. Under this subsection, the Secretary of Agriculture, in conjunction with the EPA Administrator, is empowered to develop and administer a program under which rural land owners and operators are eligible for Federal financial assistance for NPS control. In return, the rural land owner or operator must provide a contractual commitment of at least 5 years to use best management practices (BMP's) to control specified agriculturally-based nonpoint sources of water pollution. By virtue of the fact that contracts are made directly between the Department of Agriculture and the rural land owner or operator (rather than through the State or local government or areawide planning agency), Section 208 (j) authorizes what amounts to direct Federal support for NPS control. It should be emphasized, however, that participation under subsection (j) is voluntary.

The 1977 amendments to Section 208 also made clear that prior to the determination by the Governor of any State that an NPS control program was necessary under Section 208 (b)(4) to meet Statewide water quality standards and implementation plans required by Section 303, the approval of the EPA Administrator is necessary. It was previously unclear whether such approval was required.

Section 208 was also amended in 1977 to require that any NPS control program developed under Subsection (b)(4) as part of a Statewide program under Section 303, adequately consider the impact of nonpoint sources on the Nation's wetlands. This is done through the requirement (pursuant to §208 (b)(4)(B)) that any NPS program designed at least in part to control the discharge of dredge or fill materials into navigable waters include provisions to ensure: (1) coordination with approved State Section 404 programs; (2) that discharge activities are conducted pursuant to BMP's; and (3) consultation with relevant parties such as the State agency with primary jurisdiction over fish and wildlife resources.

Section 304, relating to information and guidelines, contains a mandate to the EPA Administrator to develop (a) guidelines for identifying and evaluating the nature and extent of nonpoint sources of pollution; and (b) processes, procedures, and methods to control pollution resulting from such sources as:

- agriculture and silvicultural activities, including runoff from fields and crop and forest lands
- mining activities, including runoff and siltation from new, currently operating and abandoned surface or underground mines
- all construction activity including runoff from facilities resulting from such construction
- the disposal of pollutants in wells or in subsurface excavations
- salt water intrusion resulting from the reduction in fresh water flow for any cause
- changes in the movement, flow or circulation of ground waters.

However, Section 304 does not provide for the actual regulation of NPS pollution as such.

Section 304 was amended in 1977 to authorize the EPA Administrator to mandate BMP's to address toxic and hazardous pollutants (the section specifically mentions point sources but implicitly includes nonpoint sources as well) which are associated with or ancillary to an industrial manufacturing or waste treatment process. Over the longer term, the importance of these amendments to Section 304 will largely be a function of how the courts construe the terms "associated with or ancillary to".

Implementation of Applicable Federal Law by EPA.

Enforcement of the NPS provisions of the Federal Water Pollution Control Act has not been a high priority of the agency since the passage of the 1977 amendments. Regardless of whether the effect has been positive or negative it is clear that the issuance of NPS guidelines has, in some cases, been delayed and certain NPS regulatory initiatives have not moved beyond the proposal stage. Over the last year there has been renewed activity. On December 12, 1984, an EPA-directed task force issued a National Nonpoint Source Policy. The overall objective of the task force is to support and accelerate the development and implementation of NPS management programs that ensure water quality protection. The statement of general policy issued by the task force provides a key sense as to where EPA now wishes to direct its NPS control efforts.
Achievement of national clean water goals requires implementation of NPS management programs. Emphasis should be placed on implementing NPS programs in watersheds affected. Sources of nonpoint pollution should be evaluated to assess potential water quality impacts and needed program actions. NPS management is required to protect high quality surface and ground waters and to restore and/or improve water quality surface uses. In many instances, prevention of degradation has proven to be far more cost-effective than remedial measures.

NPS management programs must be flexible to allow for site-specific solutions to problems, to accommodate changes in technical knowledge, to respond to changes in uses of land, and to optimize net on- and off-site benefits. A mix of both point and nonpoint source measures should be considered in developing cost-effective strategies to improve and maintain water quality.

With federal leadership and coordination, all levels of government and the private sector need to cooperate to provide continued progress with available programs and delivery systems, to identify unmet needs, and to develop and implement NPS management programs where needed.

**Nonpoint Source Control at the State Level.** The preceding review of Federal law relating to point and nonpoint sources of water pollution was not meant to suggest that individual States have not been active. While it is beyond the scope of this paper to detail the range and variation of State NPS initiatives, two examples of State actions illustrate State involvement. Given the key role that agricultural activities play in the generation of NPS pollution, both of these examples come from the agricultural sector. In the 1970's, the State of Iowa enacted a soil conservation law (pursuant to Iowa Stat. Ann. Chapter 154, Sec. 2A) under which rural land owners and operators can, under certain circumstances, be forced to adopt soil conservation measures to reduce or eliminate NPS pollutants with the assistance of appropriate public agencies. Similarly, New York has enacted legislation that requires the development of soil conservation plans (Soil Conservation Districts Law §4 et seq., McKinney Consol. Laws).

**STATE MANAGEMENT OF THE NPS PROBLEM—A POLICY PERSPECTIVE**

From a more general, policy-oriented perspective, it seems likely that any attempt on the part of Congress to move toward Federal management of nonpoint sources of water pollution would be inherently ineffective because it would fail to recognize the very significant regional variations in the NPS problem. It is difficult to conceive of a system of Federal regulation that could adequately, effectively and equitably recognize different NPS problems in, for example, New York and Arizona.

The water policy of the current Administration clearly follows from the established tradition of congressional deference to State management of State water resources. The Administration takes the view that the States have primary authority for the management of their own water resources except where Congress has indicated otherwise on a case-by-case basis.

If the States are, as I suggest, going to continue to be the primary managers of their own water resources as well as address pollution problems that are not susceptible to cost-effective National regulation, then what mechanisms can be put forward in the name of effective State management. As the next section of this paper indicates, I believe that interstate compacts, a mechanism with proven success in resolving interstate surface water disputes, can be effective in controlling nonpoint sources of water pollution that affect more than one State.

**Constraints to Individual State Action.** Despite its traditional deference to State water laws and failure to definitively supersede State regulation of nonpoint sources, Congress has not granted States the authority to regulate. The Commerce Clause of the Federal Constitution would otherwise prohibit any individual State action to regulate NPS pollution on the basis of the police power reserved under the Tenth Amendment. The potential burden on commerce. A long series of U.S. Supreme Court decisions (e.g., West v. Kansas Natural Gas Co., 221 U.S. 229 (1911); Pennsylvania v. West Virginia, 262 U.S. 553 (1923); Pike v. Bruce Church, Inc., 397 U.S. 137 (1970); Douglas v. Seacoast Products, Inc., 431 U.S. 265 (1977); City of Philadelphia v. New Jersey, 437 U.S. 617 (1978); Hughes v. Oklahoma, 441 U.S. 322 (1979); and New England Power Co. v. New Hampshire, 102 S. Ct. 1096 (1982)) have invalidated State attempts to burden interstate commerce in the name of simple economic protectionism. Where this rationale has been utilized for State legislation seeking to regulate any form of interstate commerce, a per se rule of invalidity has traditionally been employed (Bowman v. Chicago & Northwestern Railroad Co., 125 U.S. 485 (1888); H.P. Hood & Sons v. Dumond, 336 U.S. 525 (1949); Bread v. City of Alexandria, La., 341 U.S. 622 (1951); Huron Portland Cement Co. v. City of Detroit, Michigan, 362 U.S. 440 (1960); and Sporhase v. Nebraska, ex rel., Douglas, 102 S. Ct. 3456 (1982)). Where State legislation has been sufficiently related to the public health, safety and welfare, the burden-on-commerce balancing test has been used Southern Pacific v. Arizona, 325 U.S. 761 (1945) and its progeny (especially Pike v. Bruce Church, Inc., 397 U.S. 137 (1970)). The burden-of-commerce test contained in Pike v. Bruce Church, Inc., 397 U.S. at 142, is worth repeating: [Where the [State] regulates evenhandedly to effectuate a legitimate public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.]

On the strength of the Commerce Clause, the Supremacy Clause and Court decisions (International Shoe Co. v. Washington, 326 U.S. 310 (1945); Prudential Insurance Co. v. Benjamin, 323 U.S. 408 (1946); and Western and Southern Life Ins. Co. v. State Board of Equalization of California, 101 S. Ct. 2070 (1981)), Congress may grant to the States authority to regulate commercial activities in the name of NPS control in a manner that would not otherwise be permissible. Since Congress has not chosen to do so, basic constitutional restraints on individual State action may encourage States to reexamine the compact alternative to NPS control.

**INTERSTATE COMPACTS—AN OPPORTUNITY FOR COLLECTIVE STATE ACTION**

It is always possible, of course, that Congress will determine that a comprehensive (and inherently expensive) Federal program to regulate and control nonpoint sources of water pollution is necessary. In such event, State laws (including compacts) could be superseded. I suggest, however, that in the present Federal budget climate, any such action is unlikely at best. Moreover, a National program to regulate nonpoint sources of water pollution may unavoidably overlook individual State differences and preferences in the effort to articulate a comprehensive Federal policy. What then are the options for States if one accepts the proposition that nonpoint sources of water pollution constitute, in certain areas, a potentially serious threat to public health? I suggest that there are basically two options. The first is individual State action as represented by the efforts of Iowa and New York (among other
States) to address NPS problems of particular concern. Such individual State action may not unduly burden interstate commerce. Second, and perhaps a more functional non-Federal approach given the often regional manifestations of NPS problems, is that of interstate compacts.

**Interstate Compacts and NPS Management.** Interstate compacts are cooperative agreements enacted by the legislatures of signatory States and thereafter consented to by Congress the requirement of congressional consent follows from the U.S. Constitution (Article I, §10) which (a) precludes States from entering into any treaty, alliance or confederation and (b) stipulates the consent of Congress to be a prerequisite for any State to enter into any agreement or compact with another State. The basic theory surrounding the requirement of Congressional consent is the purported need to protect the interests of the Federal Government and of States not parties to the compact. The late Justice Frankfurter has written of interstate compacts as the primary mechanisms available to the States to circumvent the institutional barriers to regional development. (Frankfurter and Landis, "The Compact Clause of the Constitution", 34 Yale Law Journal 685 (1925)).

Not every compact requires congressional consent. Following Virginia v. Tennessee, 148 U.S. 503, 518-519 (1893), it appears that consent is required only for those agreements that increase the political power of signatory States in contrast to nonsignatory States and thus potentially conflicts with the Supremacy Clause. Because any interstate compact dealing with nonpoint sources of water pollution can be viewed as being potentially in conflict with the Supremacy Clause, congressional consent is assumed for the purposes of this paper to be necessary.

Application of the compact approach to interstate water pollution problems is not a totally untried concept. While an interstate compact has yet to be developed to address purely nonpoint sources, at least four water pollution compacts have already been enacted:

1. **New England Interstate Water Pollution Control Compact.** Signatories: Connecticut; Maine; Massachusetts; New Hampshire; New York; Rhode Island and Vermont. Approved by Congress pursuant to 61 Stat. 682 (P.L. 80-292 (1947)). Purpose: To establish the New England Interstate Water Pollution Control Commission to control and reduce pollution on interstate waters in the New England States, including New York.

2. **New Hampshire-Vermont Interstate Sewage and Waste Disposal Facilities Compact.** Signatories: New Hampshire and Vermont. Approved by Congress pursuant to 90 Stat. 1221 (P.L. 94-403 (1976)). Purpose: To provide authority to local governments and sewage districts in New Hampshire and Vermont to establish joint sewage disposal and other waste product treatment facilities as part of comprehensive pollution abatement efforts.

3. **Ohio River Valley Water Sanitation Compact.** Signatories: Illinois; Indiana; Kentucky; New York; Ohio; Pennsylvania; Virginia and West Virginia. Approved by Congress pursuant to P.L. 78-739 (54 Stat. 742 (1940)). Purpose: to establish an Interstate Sanitation Commission with the overall mandate to improve water quality in the boundary areas shared by Connecticut, New Jersey, and New York.

Interstate efforts to address NPS problems of mutual concern may in time be preempted by a comprehensive Federal law. Such was in fact the case in the mid-to late-1960's when several interstate air pollution compacts were enacted (e.g., Illinois-Indiana Air Pollution Compact; Mid-Atlantic States Air Pollution Compact; Ohio-Kentucky Air Pollution Compact; Ohio-West Virginia Air Pollution Compact; and Kansas-Missouri Air Pollution Compact). While several of these compacts were pending before Congress, the Air Quality Act of 1967 was enacted (P.L. 90-148; 81 Stat. 485). Similar preemption of interstate NPS compacts is, of course, possible but it is considerably less likely for two reasons. First, a general scheme for the control of water pollution is already a part of Federal law. Second, Congress has expressly encouraged, pursuant to 33 USC §1251(a), compacts between States for the prevention and control of water pollution.