

EDITORIAL

The Right to Know

John H. Perkins

In my last column I addressed some implications of September 11 for environmental professionals (*Environmental Practice*, Volume 3, Number 4, December 2001). My concern was that *government facilities* would deprive surrounding communities of information. It turns out, however, that the problem may be of a different sort: the right-to-know provisions of several major federal laws. Under these laws, *private companies* must report emissions of toxic chemicals to state and federal authorities.

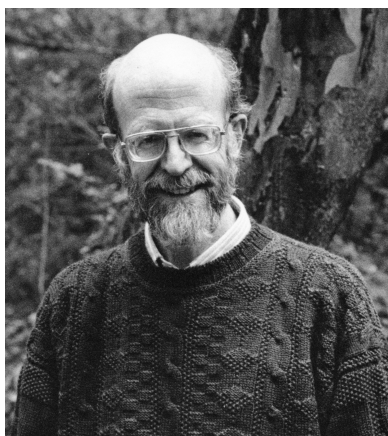
Recently, I became aware of a press release, "Terrorists Shouldn't Have a 'Right to Know,'" dated October 10, 2001, from the Competitive Enterprise Institute, a non-profit policy analysis organization in Washington, DC. The Institute's statement calls for a "repeal of the 'right to know' law" and specifically praised USEPA's temporary removal from the World Wide Web of risk-management plans for chemical facilities. These plans were mandated by the 1990 amendments to the Clean Air Act. The Institute urged a permanent removal of this information.

Angela Logomasini, director of risk and environmental policy at the Institute, noted, "This information is only useful to groups that want to scare the public about chemical risks, or those who might use it for selecting targets." Clearly, the Institute is calling for a drastic curtailment of the free flow of environmental information to the public and basing its logic on the terrorist crimes of September 11.

EPCRA (the Emergency Planning and Community Right-To-Know Act, 42 USC 11001 et seq. (1986)) is apparently the major target of the Institute's ire, although their

press release specifically mentions only the Clean Air Act. EPCRA was Title III of the Superfund Amendments and Reauthorization Act of 1986, and it represented Congress's agreement that people had a right to know about the chemicals emitted in their neighborhoods and places of work. In turn, other laws followed that had a variety of right-to-know provisions, including the Occupational Safety and Health Act, the Safe Drinking Water Act, and, as mentioned, the Clean Air Act.

Congress passed EPCRA shortly after the tragic death of thousands from the 1984 ac-



cidental chemical leak at Union Carbide's plant in Bhopal, India. A similar leak shortly thereafter at a Union Carbide plant in Institute, West Virginia, indicated that such accidents were as possible in the US as in other countries. Thus, at the time, the right-to-know law was a clear protector of American citizens' security. Perhaps times have changed, however, so it would be inappropriate to dismiss the Competitive Enterprise Institute's policy proposal out of hand. The first consideration would be whether any benefits have come from the right-to-know laws.

Three stand out. First, a number of sources have indicated that publication of the Toxic

Release Inventory has been an important factor in leading to a reduction of releases from some stationary, private sources. Second, important policy studies, based on the structure and information of the Toxic Release Inventory, have provided significant insights into the health effects from and the nature of emission trends, and how to further reduce them. Third, local emergency-response-planning teams gain very important information from the wide availability of data about toxic emissions. They are thus better prepared to protect the public during emergencies.

Another important consideration about the Institute's proposal centers on the question of whether elimination of public disclosure would really help prevent terrorists from identifying targets. The answer here is "not likely," for a number of reasons. First, many prime emitters are big installations, well publicized in the business press. They are hardly invisible and include such installations as power plants, oil refineries, smelters, and mines.

Some are in remote rural areas (such as mines), and an attack on them would not likely accomplish the terrorist objective of harm to many people. Others, such as fossil-fuel power plants, emit as they operate, and an attack on them would eliminate the operations and thus the emissions.

Whether a terrorist could, from right-to-know laws and not from other sources, identify a plant storing large quantities of toxic material, located in a highly populated area, is not clear . . . but it seems unlikely. Such sources include nuclear power plants and chemical manufacturing facilities.

If the Competitive Enterprise Institute's proposal has any merit, it is to direct attention to the hazards of storing large amounts of toxic material. Addressing this problem logically, however, would not begin with elimination of the right-to-know laws. In

fact, it is more likely that such issues will be addressed if the right-to-know legislation remains in place.

It appears that the Institute is merely using the tragedy of September 11 to advance its own ill-conceived agenda. At the present time and for the foreseeable future, a crucial part of environmental protection is the right to know, and these laws must be preserved.

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I'm grateful to Debora Holmes for helping to obtain information for this column. Robert Pregulman of the Washington Public Interest Research Group brought our attention to the position statement by the Competitive Enterprise Institute.

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FROM THE PRESIDENT OF NAEP

Bruce Hasbrouck

By the time you're reading this, the planning for the 2002 NAEP Conference in Dearborn is almost complete and registrations are coming in. The committee has worked many hours to prepare a program and associated activities that will provide participants with a most enriching and enjoyable occasion. This year's Co-Chairs are Ron Deverman of Parsons Transportation Group in Chicago and Robert Anderson of CTI & Associates in Brighton, Michigan. Ron is working on the technical side of the conference, and Robert is handling the logistical issues. The Michigan Chapter is providing a lot of support, as is our Conference Coordinator, Donna Carter. Numerous others have contributed to the effort, and I encourage you to visit our Web site to see their results. I look forward to another outstanding conference.

Another area of effort that is equally involved, and just as important, is our ongoing National Involvement Initiative. NAEP is reaching out to agencies, universities, and other organizations to participate in decision making that will affect our profession. As an example, a group led by Jim Melton of Portage Environmental in Idaho Falls is working closely with the President's Council on Environmental Quality (CEQ) to consider how NEPA affects projects and the role environmental professionals have in the process. Lucy Schwartz of Battelle Memorial Institute in Washington, DC, Bob Cunningham with the US Forest Service in Washington, DC, and Charles Eccleston in Richland, Washington, are playing integral roles in the effort.

The election process for the Board of Directors is underway. Each year, the term is up for four of the twelve elected Board members. The Board members whose terms are expiring are Helene Merkel, Norm Arnold, Fred Pinkney, and George Wood. Each of these individuals has provided outstanding results in several endeavors, including revisions to the NAEP



is an Environmental Professional. Their writing is based on their frame of reference, and is an opportunity for learning more about our practice.

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Handbook and bylaws, a balanced budget and appropriate spending, the Awards program, and our business plan. Each of these efforts continues to provide a solid foundation for our Association.

Nominations for new Board members can be provided by accessing our Web site. If you are interested in participating in a rewarding experience, it is acceptable to nominate yourself. In fact, it is actually encouraged, as you can be the best judge of your ability to make the commitment. While the position does require one to travel annually to four separate Board meetings and to be regularly involved during the course of the three-year term, the numerous chances to represent our profession and affect the future of the organization is well worth the time. The professional development that is obtained from continuous involvement with various types of environmental professionals cannot be easily measured. Finally, the recognition that your company or agency gains from the quality representation provided has great value.

This issue of *Environmental Practice* is filled with practical information about numerous aspects of our profession. I encourage you to take the time to read each article, even if it appears the topic is not within your area of practice. Our profession is filled with numerous examples of interlocking knowledge and experience. Who knows where someone else's understanding may affect our own? Remember, every author, book reviewer, or contributing editor

PERSPECTIVE

The Bottom Liner

Marc C. Bruner

I heard a news item recently that suggested that the United States was in the middle of a minor time capsule crisis. It seems that the Bicentennial year of 1976 encouraged a flurry of activity to place time capsules. The earliest of these were generally scheduled to be exhumed in 25 years, or the year 2001. The minor crisis arose when one of several things happened. First, the capsules simply couldn't be found because the directions to locate the capsule were wrong. Second, the capsules were placed in inappropriate locations, or had been made of materials that could not withstand burial for 25 years, and the capsules had disintegrated or were useless. Third, some capsules were located and made of appropriate materials, but they had not been sealed adequately, and the contents inside were spoiled.

This news item led me to reflect, believe it or not, upon the design and construction of landfill liners. Time capsules and landfills have somewhat of a common goal—keeping what is inside them isolated from the environment and secure for long periods of time. The problems encountered with the time capsules point out the basic principles for designing landfill liner systems. Liners, like time capsules, should be placed in the appropriate locations, and those locations should be clearly identified. They should also be made of appropriate materials, and should be installed with sufficient care to assure their long-term integrity. Surrounding those simple principles, there lies an abundance of misunderstanding and confusion.

The first and most simple confusion arises from people assuming when the term liner is used, it means that a single material is being placed on the ground and thinking that is all that is involved. Contemporary liners are liner *systems*, with multiple components that are designed to complement each other to provide a higher level of environmental protection. A typical liner sys-

tem is a carefully designed and constructed system of earthwork and specialized materials several feet in thickness. In fact, liner design begins with the facility siting process and some basic, common sense engineering. Criteria like not siting landfills over sinkholes, assuring through foundation analysis that a site can support the weight of the landfill without subsiding and causing the liner to fail, and determining the location of the water table in relation to liner placement are the first steps in the process that leads to the design of modern liners.

After the right place for a landfill and the liner have been identified, the materials for the liner system are selected. These are based, in part, on local availability. The basic components of a liner system are earth, clay, geosynthetics (i.e., plastic), rocks, and piping. Earth is used to construct a stable base for construction and to provide a protective layer over or between liner components. If there are deposits of clay in the area that are acceptable, meaning that they have the right physical and chemical makeup to make a low permeability layer, they may be used as a liner component. The clay layer is typically from one to three feet thick, depending on the permeability. These clay liners are combined with a geosynthetic layer to make what is called a composite liner. In areas where clay is unavailable, the design may use two layers of geosynthetic, separated by sand or some form of synthetic medium to provide a drainage layer between the two liners. These are typically called double liners. Both composite and double liners have piping systems installed on top of their liners to collect the liquid, called leachate, that may accumulate. Double liners collect leachate from both primary and secondary liners, and composite liners collect leachate from over a primary liner only. Earth, with sufficient permeability to assure water will move through it, is used to cover the top of the liner system to protect it from weather and to prevent damage to the liner when waste is first placed upon it.

The geosynthetic liners, and the material they are made of, are perhaps the most misunderstood and controversial component of landfill liner systems. Three plas-

tic materials have been used since the 1980s: Polyvinyl Chloride (PVC), Low-density Polyethylene (LDPE), and High-density Polyethylene (HDPE). Over time, HDPE seems to have become the most commonly used liner material. No matter what material is selected, liners are typically tested for chemical resistance against the leachate that is generated in landfills, using either synthetic leachate or actual leachate for a landfill. Most people know that polyethylene used in liners is the same basic material used in some plastic containers, trash bags, and insulation materials. This leads to part of the misunderstanding about liners. Most people intuitively understand that there are different types of steel, concrete, glass, and other types of building materials. But when it comes to landfill liners, and the siting of a landfill, that perspective is sometimes lost, and landfill liners are assumed to be the same as trash bags and pop bottles in thickness and quality. Liners are viewed as fragile, not durable, and not repairable.

Perhaps the most interesting thing I have seen in the public debates over landfill liners is the internal conflict some seem to suffer when it comes to plastics in or under landfills. I have heard people observe that plastics should be banned from disposal in landfills, because they are so resistant to decomposition that they will last virtually forever. At the same time, people in the same discussion will comment that landfill liners, made of essentially the same plastics, are so fragile that they will break down in a few years. It is almost as if the durability of these plastic materials is determined by the intent of the person generating them. If they are placed with the intent of disposal, they remain in perpetuity; if they are placed with the intent of lasting, they are ephemeral.

Issues of the nature of liners aside, I believe the single most important factor in assuring those landfill liner systems function properly is quality control during construction. The quality and performance of the materials used in liner systems are all well known. Perhaps the most significant variable is the skill of the people doing the installation. For this reason, there are extensive inspection and testing requirements

required in regulation, and even more extensive inspections are often incorporated into the contracts for construction. Seams in liner material that are joined at the factory prior to shipment are tested, and the quality control documentation is provided to the purchaser. Methods have been developed to test every inch of liner seam that is welded or glued in the field. In addition, there are requirements to take samples of the work and test them destructively in the laboratory. A third party, independent of the contractor and the purchaser, is retained to conduct the inspections and supervise the installation. A landfill operator is required to keep the documentation of the installation and testing of the liner con-

struction for the life of the landfill, plus the long-term care period of thirty years after closure. With many larger facilities, this means records will have to be kept for fifty or more years. This is, of course, in addition to all of the groundwater monitoring data, which is retained for the same time period.

I began by suggesting that landfills are *like* time capsules. Actually, I believe landfills *are* time capsules. Archaeologists and anthropologists look to the landfills of the past for clues as to how our ancestors lived their lives. One archaeologist, William Rathje, has even taken to excavating contemporary landfills for clues to both our

present and past. The bottom line is that, for good or ill, modern landfills will represent our society to those that follow us. The liner systems we use on our landfills assure that the waste we discard, with little or no thought to its ultimate destination, will provide insight to future investigators. Fortunately for them, it appears we do a better job at building landfill liners than we do at burying time capsules.

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PERSPECTIVE

The Environmental Professional in Public Office: Putting Schizophrenia to Work for You

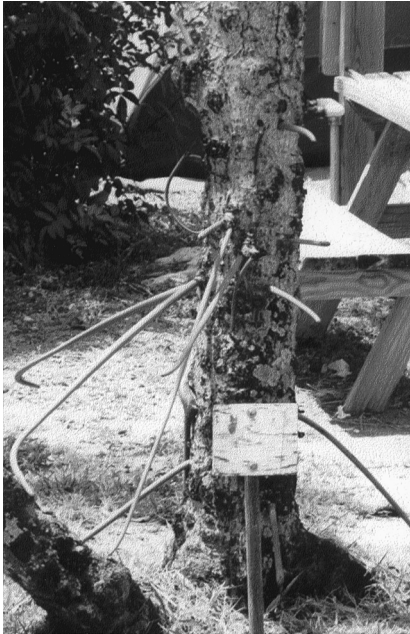
Thomas R. Cuba

The Environmental Professional who happens to be employed by the government is in a peculiar position. For this situation, let us presume that the public employee has achieved an advanced level of education as a forest ecologist. The job held, however, is broadly regulatory and the employee is responsible for controlling public activities such as development, mining, and road construction wherever they may occur within the political jurisdiction. The political jurisdiction extends well beyond forest ecology and includes lakes, streams, marshes, and perhaps even the airshed, soils, and groundwaters.

As you can easily see, the employee is going to be well versed in assessing impacts to one type of system within the jurisdiction, and somewhat limited in assessing others. This employee is, however, educated and can achieve some level of lateral thinking, thereby applying broad ecological philosophy to the lesser-known systems.

Now let's complicate things a bit. If the political jurisdiction is large enough, the managers may decide to allocate the regulation of the south end to one employee, and the north end to another. The complication is added when the second employee is presumed to be a History major who took a government job right after college and was transferred and promoted into the regulatory arena (I did not make this up). One side of the jurisdiction is being regulated by a PhD ecologist, and the other by an accident of employment history.

The reason that I have presented this scenario is to try to answer two questions brought up at the last annual conference of the National Association of Environmental Professionals. One I have come to call



A red mangrove (*Rhizophora mangle*) growing in an upland commercial setting, Florida Keys.

“Management by Dogma.” In this instance, the regulator appears to have no conscious thought whatsoever. If an application for a permit arrives on the desk and it contains a regulated component, then the regulation is to be applied to its fullest extent. To illustrate this, I have included a photograph of a mangrove tree growing in the middle of a Florida campground. This plant is normally found in marine intertidal waters and is highly regulated. In this particular instance, however, it would be absurd to attempt to apply the regulation. This is an example in the extreme, but does illustrate the point that there will always be situations where a regulation may not be applicable. But of the two employees, which is better able to make that decision? Of the two employees, which can be given latitudes the other is not? Should that occur, which attorney for the regulated public will decide there is arbitrary application of the regulations? Which labor union will demand equal freedoms of interpretation? Which snooty PhD will demand a higher pay scale because of the superior expertise?

Government is thereby forced to put in place the “Management by Dogma” policy

and require all its employees to treat the entire regulated public in like manner. To the historian, this makes the job easy and we often hear, “That’s the policy. I can’t do anything about it.” On the other hand, this frustrates the dickens out of the ecologist.

This frustration led to the second question, to which I referred earlier. At the conference, several Environmental Professionals expressed dismay over the total conflict in ethics that their job demanded. On the one hand, there was the ecological ethic that their science and education had imparted. On the other hand was the regulatory policy and direction. In many instances, an Environmental Professional was cornered into approving a proposal that they knew, as scientists, was a bad one.

The resolution is in the schizophrenia. The job that the government Environmental Professional has is most often not actually as a biologist, chemist, geologist, etc. The job typically is as a representative of the people of their jurisdiction, enforcing the laws passed by elected officials reacting to both political and scientific pressures. In that job, the environmental background may not be much more valuable than the history degree. It is required for purposes of appearance and so that the employee can have some understanding of what is going on. The ethic is to act as an enforcer of regulations. Ethics is about doing what is expected by your client or consumer, and in this instance, the ethic is simply to enforce the law. This may seem harsh, but the point has to be made.

The second personality of our schizophrenic employee will arise when the regulation comes up for review. The managers will look to their staff for their primary interpretation of how well things are being managed. It is when the elected and appointed officials ask the ecologist if the regulations are effective that the ethics of the Environmental Professional, the ethics of the scientist, kick in. It is at this point that the employee must pull out all the stops and express in strict scientific and professional terms just exactly why the regulation must be changed or, in rare cases, kept as it is.

The reality is that this change in ethical responsibility can shift from moment to moment. In one instant, the employee may argue in private with the manager that the permit should not be issued; in the next, the employee may go to the office and sign it because it complies with the law. The acceptance of the schizophrenia allows us to feel good about this situation, because at least when the alter ego is allowed to come out, it is not the historian who is giving advice to the elected body.

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PERSPECTIVE

Does NEPA Planning Suffer from the Pike Syndrome?

Charles H. Eccleston

In the war of 1812, Oliver Hazard Perry pronounced, "We have seen the enemy, and they are us." In recent years, the National Environmental Policy Act (NEPA) has come under increasing scrutiny and criticism as many agencies have experienced delays and inefficiencies in this process. I personally believe that much of this problem stems not from inefficiencies inherent in NEPA's regulatory requirements, but instead from the way in which the planning process is implemented.

The Pike Syndrome

Before venturing further, let us ask ourselves, What does the NEPA process have in common with pike fish? Now, as many fishermen will testify, a pike is a long fish with razor-sharp teeth that preys viciously upon smaller prey. Long revered as a challenging and tenacious fighter, this fish is prized by sportsmen. But what few fishermen know is that these pike have also been the subject of some very enlightening experiments.

If a bell jar filled with minnows is introduced into an aquarium filled with pike, they will repeatedly lunge at the minnows, striking their face hard upon the glass bell jar. Bewildered, the pike eventually give up and ignore the minnows. Now here is where the experiment gets interesting. If the bell jar is removed, allowing the minnows to swim freely, the pike will continue to ignore them! The pike have been conditioned to leave the minnows alone; they are unable to adapt to their new surroundings. While swimming freely against a natural food supply of minnows, the pike may eventually starve to death rather than attack their natural food source. The pike is an animal incapable of adjusting to its surroundings, unable to comprehend that what it learned earlier is no longer applicable.

This experiment has since become known as the Pike Syndrome.¹ In scientific circles it has become a metaphor for fixed, unyielding, conditioned thinking. The Pike Syndrome has probably been responsible for the extinction of many species.

Does the Pike Syndrome Apply to NEPA?

When viewed with an eye to NEPA, the Pike Syndrome may explain why some quarters continue to experience inefficiencies and ineffectiveness in their NEPA process. Where projects are being managed more and more with an eye on effectiveness and costs, NEPA practitioners can little afford to continue the way of the pike. More effective, faster, and cost-efficient approaches must be incorporated into the NEPA process.

If viewed as a permitting requirement rather than a planning process, NEPA compliance can be slow, costly, and resource-intensive. Properly performed, however, NEPA provides planners and decision makers with a powerful tool for planning future actions.

Examples of NEPA's successes and failures abound. Described below are two different experiences in NEPA compliance—one a glimmering example of success, the other, anything but.² The first example vividly illustrates the true potential of NEPA in shaping federal planning. The second demonstrates the ineffectiveness of NEPA when it is improperly implemented. Let's examine both cases to see what can be learned from these experiences.

A Tale of Two Stories

In 1994, the US Department of Energy (DOE) issued a draft Environmental Impact Statement (EIS) for the Safe Interim Storage of high-level radioactive waste (The New Tank Waste EIS). The preferred alternative involved construction of up to six enormous high-level waste storage tanks, with a projected cost of \$435 million. The need for additional storage space was considered urgent, and "political" support was decidedly in favor of pushing this proposal forward as fast as possible.

But questions soon arose. In conducting the NEPA analysis, it soon became clear that the "purpose and need" for additional storage space was, in reality, not justified. During the NEPA process, a reconsideration of waste volume projections and management practices led DOE to eventually conclude that construction of the additional tanks was unjustified. The cost savings from this single decision alone are estimated to exceed the cost of DOE's *entire* NEPA process for many years into the future. Carol Brogstrom, director of DOE's Office of NEPA Policy and Assistance, stated that this was truly a "NEPA success story," and a letter to the DOE from the Confederated Tribes of the Umatilla Indian Reservation characterized this EIS as an excellent example for others to follow.

Now, contrast this experience with one where an EIS was prepared for a relatively modest proposal to stabilize plutonium at the DOE's Hanford Plutonium Finishing Plant. A decision was made to prepare an EIS even though there was substantial reason to believe that an Environmental Assessment (EA) could suffice. Properly implemented, a decision to prepare an EIS on such a modest proposal does not necessarily present a significant problem, from the standpoint of efficiency. Here, the "problem" was not so much the fact that an EIS had been undertaken, as the manner in which it was prepared. The final document was "bloated," well beyond the recommended page limit of 150 pages for a typical EIS, and was barely under the maximum allowable page limit of 300 pages (reserved for projects of unusual scope or complexity); this does not include almost 250 pages of appendices. Between the draft and final stages, the font was even changed to keep the length of the text within the prescribed guideline limits for length!

When compared to many other DOE actions of a nuclear nature, this activity was relatively innocuous. Worse, though, this encyclopedia of a document concluded that every impact investigated was insignificant—the very purpose for writing an EIS. Yes, not a single impact was found to pose a significant environmental effect! Yet this EIS contained more detail than the

New Tank Waste EIS where the analysis of issues, alternatives, and potential impacts were many times more complex. The amount of detail was completely out of proportion to the complexity of the action or the potential for impacts. Not surprisingly, this EIS ignored mandatory direction, which spans the NEPA Regulations for reducing the cost, effort, and size of an EIS. In the end, the EIS is estimated to have cost the American taxpayers an estimated five million dollars, and the contribution to the decision-making process was marginal at best! One recognized expert went so far as to describe this EIS as a “NEPA miscarriage.”

How does one account for such differences? What can we learn from such experiences? Why was one a major success in terms of efficiency, effectiveness and excellent decision making, while the other frittered away scarce resources with very little to show for it? Was this a case of the Pike Syndrome? Differences in philosophy certainly account for part of the contrast. Adherence to (or disregard of) regulatory direction and good methods of professional practice may account for much of the rest. These experiences demonstrate that, to a great extent, the NEPA planning process can be either a success story or a quagmire, depending on how one chooses to implement the process.

Traditional Problems that Have Plagued NEPA

Experience shows that a number of problems are continually responsible for inefficiencies and ineffectiveness in an agency’s NEPA process. Some of these problems include:

- Prescribed methods and regulatory provisions for reducing paperwork, cost, and delays in the NEPA process are often used ineffectively or ignored altogether;
- In interpreting regulatory provisions, agencies sometimes fail to apply reason or common sense. This is true even when certain provisions are inconsistent with the “rule of reason” because they conflict or lead to absurd results;
- Decision making, approaches, and analytical methodologies are often applied in an ad-hoc manner without regard to accepted methods of professional practice;
- Finally, there is often opposition or reluctance to accept new or innovative tools, techniques, and approaches, many of which may lead to greater efficiency (the Pike Syndrome?). The inevitable result is increased costs and delays as some issues are overly investigated, while others may be inadequately evaluated.

Particularly with respect to the last bullet, agencies have been granted a wide measure of latitude and flexibility in interpreting NEPA and implementing its requirements. While the Council on Environmental Quality (CEQ) grants this wide degree of latitude and flexibility, agencies often fail to take full advantage of the privilege.

A Flexible Process for Planning Future Actions

As a planning tool, NEPA allows agencies to account for environmental factors, yet it does not set performance standards or place burdensome restrictions on adminis-

trators or project engineers. Properly executed, NEPA can even assist an agency in planning future actions so that they avoid triggering subsequent permitting and regulatory requirements.

Unlike most other environmental laws, NEPA allows agencies to include other factors such as cost, schedules, safety, and risk assessment in reaching a final decision. Moreover, NEPA allows agencies to consider alternatives that lie outside its jurisdiction or that conflict with other existing laws and regulations; properly executed, a NEPA analysis can even provide the agency with a rigorous and publicly reviewed basis for seeking a change in existing law so that a more sensible or appealing alternative may be pursued.

It is time to start taking advantage of the great flexibility that NEPA brings to the field of environmental planning. If this is done, NEPA provides a unique and powerful tool for planning actions so as to avoid environmental damage. If not, we may eventually find that the field of environmental planning has gone the way of the pike.

Notes

1. P. Goldberg, 1990, *The Babinski Reflex*, Tarcher, Los Angeles.
2. C. H. Eccleston, 1999, *The NEPA Planning Process: A Comprehensive Guide with Emphasis on Efficiency*, Wiley, New York, 396 pp.

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