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By David L. Markell

Introduction

There is much fertile ground to cover in speculating about the future of solid and hazardous waste management and remediation. Enormous changes have occurred in the regulation of solid and hazardous waste over the past twenty-five years. As one report on the State Department of Environmental Conservation (DEC) recently observed, "[o]ver the last 25 years, the DEC’s solid and hazardous waste mission has grown and changed dramatically." Transformations of the regulatory scheme in this arena are likely to be equally dramatic over the next quarter century.

Volumes have been written about each of the four significant sub-topics: a) solid waste management; b) solid waste remediation; c) hazardous waste management; and d) hazardous waste remediation. Indeed, each of the sub-topics could easily be divided into a series of papers. A discussion of solid waste management, for example, could address issues such as flow control (the subject of a recent U.S. Supreme Court decision); the definition of "solid waste"; and the benefits and costs of the various strategies available to promote pollution prevention and other desired public policy outcomes.

Given the breadth of the topic and the limits of the present forum, I have confined my remarks to a discussion of four (of the many) themes that have the potential to influence the future shape and content of solid and hazardous waste management and remediation strategies: 1) the increasing role of pollution prevention; 2) expanding efforts to prioritize among competing needs and to develop measures of performance; 3) "beyond environmentalism"—related issues—i.e., the giving of substantial weight to non-environmental, as well as environmental, issues in formulating environmental policies and the expanded array of approaches likely to be used to shape and implement environmental policy; and 4) restructuring of the relationship among the federal, state, and local governments.

Pollution Prevention

Significant benefits in the form of pollution or source reduction opportunities await the proactive generator of waste that comprehensively assesses its processes for such opportunities, rather than concentrating its attention solely on "end of the pipe" controls. Many significant generators of solid and hazardous waste have begun to focus on pollution prevention opportunities. They have made considerable progress in reducing the volume and toxicity of the waste materials they generate by redesigning basic processes, improving housekeeping, and through other, non-end of the pipe controls. While there is disagreement as to whether sufficient priority is being given to pollution prevention as an environmental protection strategy, it is indisputable that there is a heightened focus on pollution prevention in the 1990’s compared to the 1970’s.

What accounts for the increased attention to pollution prevention? There is no single answer. Contributing factors no doubt include initiatives such as the Toxics Release Inventory (TRI) program required under the Emergency Planning and Community Right-To-Know Act (EPCRA). Under the TRI program, companies in certain industries are required annually to report to the government their releases to
the environment. This information is available to the public as well. The federal Environmental Protection Agency (EPA) and others have characterized the program as a "powerful tool for preventing pollution." The federal Pollution Prevention Act and the State of New York's Hazardous Waste Reduction Act are two other statutes that are likely to be played some role in encouraging efforts targeted to reduce the generation of hazardous waste. The 1988 amendments to the State's solid waste law, creating a statewide goal of reducing the volume of solid waste generated in the State by 50 percent by the year 1997, similarly may have provided an impetus for initiatives to reduce generation of solid waste. While I am overstating the point somewhat, one noteworthy feature common to all of the statutory frameworks identified above is that they tend towards the "hortatory" side of the regulatory continuum. They tend not to track one conventional regulation paradigm — notably, fixing specific standards, followed by monitoring and enforcement in appropriate circumstances. A wide variety of other "voluntary"-type programs designed to promote pollution prevention have emerged in recent years. Project XL and the Common Sense Initiative are two such programs. Participation by regulated parties in these initiatives is not required; EPA, however, has urged that taking part will pay dividends in the form, *inter alia*, of decreased numbers of inspections, etc. Two other non-coercive approaches pursued at the federal and state levels in recent years involve establishment or strengthening of technical assistance and other programs designed to educate regulated parties about opportunities to reduce their generation of waste, and "reward" programs intended to encourage such reductions by acknowledging and publicizing success stories. Under the theme of encouraging reductions in the generation of hazardous and/or solid waste, we are left with several points. First, a series of statutes have been enacted over the past decade that have the express purpose of achieving reductions in the generation of solid and/or hazardous waste, or that have accomplishing such reductions as an implicit goal. Second, many of these statutes have taken a relatively "soft" approach — rather than mandating specific volumes of reductions, these statutes have used approaches such as mandatory reporting (TRI), mandatory planning, and similar tools. EPA and many states, including New York, have also developed a variety of administrative programs intended to promote pollution prevention and other environmentally beneficial behavior. Again, these programs tend toward the voluntary, rather than the prescriptive, end of the continuum. Authors of one recent report highlighted the predominantly voluntary character of pollution prevention activities to date. In discussing the possibility of incorporating pollution prevention conditions into permits, they noted that "[t]he prescription of P2 [pollution prevention] conditions in permits is contrary to the premise that often accompanies P2 policy in this country that P2 should be a voluntary effort and every company is the best judge of the most effective P2 choices for its own facility." It appears clear that EPA will continue to emphasize pollution prevention. EPA itself has indicated that "pollution prevention should be the strategy of choice in all that the Agency does." Questions concerning the future direction of waste reduction programs include whether such programs will continue to emphasize relatively voluntary approaches; or whether government will begin to push more prescriptive approaches to promote waste reduction. In other words, will the "carrot" continue to be emphasized rather than the "stick?" The answer to this question will likely depend in part on assessments conducted on the efficacy of ongoing
To date, the environmental community has resisted supporting adoption of another Bond Act to finance remediation of the remaining sites.

The comparative risk movement, and the 400/95 program, embody a desire to focus limited resources on the most significant problems. One consequence of these efforts in the context of solid and hazardous waste management and remediation is the heightened degree of attention given to major generators of hazardous waste. Combined with the 1990 Hazardous Waste Reduction Act, it is likely that this universe of generators will continue to receive a high level of regulatory attention in the future.

Among a host of other issues for the future of solid and hazardous waste regulation that an increased focus on prioritization raises are the following two: 1) to what extent will prioritization lead to actual reductions in the size of the regulated party universe; and 2) to what extent will it lead to development of multiple regulatory approaches, with each tailored to specific sub-groups of regulated parties. Concerning the former, particularly at the federal level, a debate is currently raging concerning wastes at the low toxicity end of the risk spectrum. While the regulated party universe in all programs has seemed inexorably to expand over the past two decades, this debate frames the question: will the future bring reductions in the number of parties or amount of materials regulated. Signs that more carefully tailored regulatory approaches are under consideration or being implemented are evident under many programs. For example, DEC is using general permits under the Clean Water Act that are designed to tailor government’s oversight, and regulated parties’ responsibili-
ties, to the level of risk that the particular covered activities present.

Another significant issue in the context of solid and hazardous waste management and remediation is the impact of the prioritization movement on allocation of the DEC’s, and New York’s, resources to the effort to remediate contaminated sites. With the enactment of the 1986 Environmental Quality Bond Act, the State Superfund program has been relatively flush with funds. The number of program staff devoted to remediating inactive hazardous waste disposal sites has expanded dramatically in recent years.

DEC has reported that its Superfund will be exhausted within the next couple of years, while the number of sites requiring and awaiting cleanup remains substantial. To date, the environmental community has resisted supporting adoption of another Bond Act to finance remediation of the remaining sites. Industry is vigorously contesting steps to accumulate the necessary funds through increased taxation.

While the debate has not yet begun in earnest, the relative risk that these sites pose is likely to be an important feature of the discussion over replenishment of the State’s coffers for Superfund. The issue of “cleanup standards,” with which DEC has been wrestling for years, is likely to be a prominent part of these discussions as well.

In sum, well before the end of the decade (and end of the century), exhaustion of its Superfund will put the State at a critical juncture in terms of one of its most prominent programs – the inactive hazardous waste disposal site program. Central to the debate over the future existence and scope of this program are likely to be issues relating to risk prioritization. The future shape of the State’s environmental bureaucracy may well be affected significantly by the outcome of this debate.

A concept related to prioritization is the notion of developing a set of “indicators” that can serve as a basis for evaluating environmental conditions and measuring the impact of regulatory and other approaches. While this effort is in its relative infancy, an enormous amount of energy is being expended at the federal level to develop such indicators, which then can be used as a framework for assessing performance. Some of this work is being driven by the panoply of environmental statutes. In 1993, Congress also enacted the Government Performance and Results Act of 1993, in which it announced its objective of moving agencies in the direction of conducting comprehensive strategic planning and performance measurement. Section 2(a)(2) of the Congressional Findings of the Act is an exemplar of the many provisions in this legislation that assert a need to focus on such activities. It provides that “[f]ederal managers are seriously disadvantaged in their efforts to improve program efficiency and effectiveness, because of insufficient articulation of program goals and inadequate information on program performance. . . .”

It is likely that this attempt at the federal level to promote strategic planning and development of environmental indicators and measures of performance in order to redirect agency activities will impact state approaches in the environmental regulatory area. Further, at some point the State may embark on a related effort to establish its own environmental goals, benchmarks, or indicators, and then redirect its energies towards meeting them. Almost inevitably, such an effort will have a significant impact on the State’s environmental priorities and its approaches and policies in the solid and hazardous waste arena. The issue of cleanup standards is one of many in this arena likely to be impacted by the confluence of the shift in thinking towards prioritization and development of indicators of environmental conditions and performance.

The Impact of “Non-Environmental” Issues on Environmental Policy and the Use of A Broader Array of Approaches to Implement Environmental Policies

The “brownfields” question that has received substantial attention in recent years is a good example of the impact on environmental policy of non-environmental concerns. The question no longer appears to be whether it is appropriate as a matter of public policy to encourage redevelopment of industrial properties (“brownfields”) rather than development of pristine areas (“greenfields”) for commercial or industrial use. Instead, the debate has turned to the implementation question of developing strategies that will produce this set of outcomes.

The “brownfields” question deserves special emphasis for at least two reasons. First, this issue is
likely to claim a great deal of attention over the next several years. Promoting brownfields redevelopment is one of the few areas of debate over Superfund reauthorization as to which some level of consensus seems to have emerged in Washington, D.C. The talk in Albany as well, from DEC headquarters, is about a heightened emphasis on such redevelopment. Among other reasons, the scope of the brownfields concern appears to be quite substantial. A January 1996 study from the United States Conference of Mayors reports that, based on the Conference’s survey, 39 cities that reported the presence of brownfields in their communities “identified more than 20,000 such properties or sites of multiple properties.” The report continues: “[w]hile these results do not allow for projections of total brownfields in the nation, the high counts of sites in this small sample of cities indicate the problem is a significant one.”

The brownfields issue is also important because many of the issues it raises ultimately may arise in connection with other aspects of hazardous and solid waste management as well. To list two:

First, “brownfields” proposals are not borne solely out of concern over environmental conditions. Instead, they stem from an interest in addressing a host of public policy issues, including promoting employment opportunities and increases in the tax base, especially but not exclusively in urban areas. Local governments’ interest in creating a legal framework that facilitates expeditious cleanups, for instance, is likely to be enhanced by decisions such as one recently issued by the Minnesota Supreme Court in Westling v. Mille Lacs County. In that case, the Minnesota court held that a contaminated 13-acre industrial parcel had a market value of $0 for property tax valuation purposes. This was so even though the property’s value would be in excess of $1 million if uncontaminated.

Perceptions concerning the non-environmental impacts associated with the remediation of contaminated waste sites are likely to shape the strategies used to accomplish the environmental objective of remediating these sites. In the context of the “brownfields” issue, for example, the perception that allowing industrial properties to lie fallow contributes to a wide variety of societal ills has led many to consider fundamental changes to the two major features of Superfund, notably its liability scheme and its approach to cleanup standards. A focus solely on the environmental issues posed by such sites would be less likely to trigger consideration of such fundamental changes.

This theme – that decision makers’ perspectives concerning the non-environmental, as well as the environmental, implications of environmental policies are likely to shape environmental regulatory approaches – is likely to be repeated in other contexts as well. The consequences promise to be significant for the future content of environmental policy.

Secondly, strategies being considered to address the “brownfields” issue range far and wide. They are by no means limited to traditional environmental approaches. Thus, a recent article reports that President Clinton proposes to alter the tax code to promote redevelopment of abandoned or underutilized industrial sites. Facilitating cleanups of these properties by allowing parties to “privatize” the oversight function, at least in part, is another theme that has gained some measure of popularity. Other strategies urged by the United States Conference of Mayors included provision of government financial support to help fund cleanup activities. In sum, the brownfields issue reflects that non-environmental concerns – employment opportunities, assuring an adequate tax base, etc. – may well have a significant influence on the shape of future environmental laws and policies. It also reflects an interest in using a variety of innovative tools to accomplish desired outcomes.

Federal/State/Local Relations

Traditionally, DEC, like most states, has enjoyed enormous autonomy in regulating solid waste. While federal EPA has delegated to the State authority to administer the RCRA hazardous waste management program, State autonomy in this area has been far more limited than has been the case in the solid waste arena.

In the remediation context, DEC (and the State generally) has administered New York’s inactive hazardous waste disposal site program with relatively little interference from EPA. The important exception to this statement relates to sites in New York that are on the federal National Priorities List (NPL). EPA has played an active role with respect to these sites.

While the ultimate shape and fate of the federal Superfund program remains uncertain, it appears likely that any amendments to the federal Superfund law will
shift authority to the states to a degree beyond that provided under the current law. A draft EPA guidance embodies EPA’s intention to limit its role with respect to contaminated waste sites, thereby transferring responsibility to the states, even absent statutory reauthorization.

In its widely cited report, the National Academy of Public Administration recommends creation of a new type of federal/state partnership that would afford states greater flexibility to allocate resources to priority matters, and reduce the level of federal oversight. It suggests that “EPA and Congress need to hand more responsibility and decision-making authority to the states ...[; that] a new partnership needs to be formed, based on ‘accountable devolution’ of national programs and on a reduction in EPA oversight when it is not needed.”

Over the past year, five states have entered into partnership agreements with EPA which are intended to recast the federal/state relationship. While New York is not among this group, the possibility exists for a dramatically reshaped relationship between EPA and the State in the near term. This restructuring will create an unparalleled opportunity for New Yorkers to establish their own priorities in the environmental arena and then allocate resources accordingly. It would be unfortunate if the State did not take full advantage of the potential for enhanced flexibility and autonomy. It will be incumbent upon concerned New Yorkers to participate meaningfully in the process to ensure that the opportunity is not squandered.

Another dimension of the federal/state/local relationship involves the role of local governments in environmental regulation. Local governments’ roles, especially with respect to solid waste, are currently in transition. Traditionally, local governments provided many solid waste management services, including operating landfills. The State (and the federal government) played little role. Over the past decade, the State’s role has expanded dramatically. The State has become increasingly active in setting management standards for the handling and disposal of solid waste. Further, particularly with the enactment of solid waste legislation in 1988, the State began to take a more active role in promoting planning to address solid waste needs.

One report concludes that this 1988 legislation “changed the historical relationship between state and local government on the solid waste front.” In particular, through a variety of financial mechanisms, including the 1986 Environmental Quality Bond Act and the Environmental Protection Fund, among others, the State also has positioned itself as a benefactor of local government solid waste officials. In this capacity, too, it has the ability to influence the direction of local government solid waste policies.

Over the next decade, it will be interesting to observe the evolution of the relationship and the balance of power between the State and local governments as they struggle to establish and implement solid waste policies. Two of the many issues that may affect this dynamic are: 1) the extent to which publicly-funded solid waste facilities are able to compete successfully in the marketplace. This issue will be particularly important for communities such as Washington and Warren counties, which own or operate
waste-to-energy or other facilities which depend on revenues from tipping fees to meet bond payments; and 2) related, the extent to which different components of the solid waste management operation (collection, hauling, disposal, etc.) are privatized, thereby potentially weakening local governments' control over the "facts on the ground" in terms of the actual handling of solid waste.

Conclusion

Twenty-five years ago, no one could have predicted the emergence of an extraordinarily prescriptive management scheme to govern the handling of hazardous waste (RCRA), or the creation of a remediation statute (CERCLA) that has probably been the most visible part of the environmental statutory edifice since its enactment in 1980. It similarly is impossible to predict where the future will take us in terms of environmental policies for solid and hazardous waste management and remediation. "Sustainable" policies are a worthwhile objective; the difficulty, obviously, is that there is little agreement on the definition of "sustainability" in this context.

To offer my own "wish list," it seems plausible to hope that, as a society, we will approach consensus on the issue of goals or objectives. At a minimum, efforts will be made to foster a more inclusive, systematic and sophisticated debate over this difficult set of questions. We also will make progress in determining how best to "mix and match" various regulatory and non-regulatory strategies to produce desired outcomes. Experiments with a wide variety of approaches are currently ongoing at the federal, state, and local levels.

At this stage in the twenty-five year history of environmental regulation, it seems clear that a heightened focus on pollution prevention offers great hope for producing significant environmental improvement at a far lower cost than would be involved in achieving a similar level of protection using conventional regulatory approaches. Other strategies - such as the use of market-based strategies, as is occurring under the Clean Air Act and, to a more limited extent, under the Clean Water Act, expanded roles for independent third-party auditors, and dissemination of information to the public - hold considerable promise. Lessons learned from experiments with these strategies, and a broad array of other regulatory and non-regulatory tools, are likely to transform our approach to environmental regulation.

It also seems clear that, at least in the near term, we will experience a devolution of authority to the state and local governments. Shifting authority in this way expands opportunities for innovation and creativity. If handled properly, this devolution is likely to expedite introduction and refinement of creative approaches to regulation.

This restructuring of the relationship among, federal, state and local governments relationship, however, also poses significant risks in terms of the future effectiveness of environmental regulatory approaches. Shifting authority challenges the state and local governments to produce. How they perform will be critical in terms of whether future environmental strategies succeed or fail. Those interested in helping to maximize the prospects that this fundamental realignment will succeed will need to keep in mind two realities. First, developing mechanisms that facilitate appropriate relationships among the various levels of government will be an essential, if unglamorous, task in the years ahead. Further, to close the loop, it will be essential for states to strengthen their capacity to set coherent goals, develop strategies reasonably likely to help achieve those goals, and monitor performance in terms of environmental results. Meeting these infrastructure needs must be a priority if the devolution-created opportunities for "grassroots"-driven change to our environmental regulatory approaches are to bear maximum fruit - rather than lead to a "re-federalization" of environmental law that will inevitably result from state and local governments' squandering their chance to lead.

In short, over the next several years New York State is likely to have an unparalleled opportunity to shape its environmental agenda and develop strategies for achieving its goals. The challenge is great and the stakes are high.

References

1. The Nelson A. Rockefeller Institute of Government, The Department of Environmental Conservation: A 25th Anniversary Review 65 (Feb. 1996)(the report continues: "[w]hen the Department was created in 1970, waste management was not even mentioned as a function in the DEC's regional organization study.") Id.

4. The related issues of adequate capacity for disposal and other needs, and siting of necessary facilities, are among the many other issues relating to solid and hazardous waste that warrant close attention. Michael B. Gerrard, Fear and Loathing in the Siting of Hazardous and Radioactive Waste Facilities: A Comprehensive Approach to a Misperceived Crisis, 68 Tulane L. Rev. 1047 (1994).

5. For a discussion of this concept in the hazardous waste context, see David L. Markell, Pollution Prevention, Environmental Law Practice Guide: State and Federal Law (Michael B. Gerrard, ed., 1995). In the 1990 Pollution Prevention Act, Congress has defined source reduction to include "reducing the amount of any ... pollutant ... entering any waste stream or otherwise released into the environment..." 42 U.S.C. § 13102(5)(A) (Supp. V 1993). Source reduction does not include neutralizing or otherwise rendering a pollutant more or less benign through processes that are "not integral to and necessary for the production of [the] product ..." 42 U.S.C. § 13102(5)(B) (Supp. V 1993).

6. See Markell, supra note 5.


12. By, inter alia, increasing the cost of disposal of hazardous waste, the land disposal restrictions (LDR's) under RCRA undoubtedly have induced generators to reduce their creation of hazardous waste as well. The expense of installing and operating pollution control equipment under the various environmental statutes likely have had a similar indirect impact.

In addition to these regulatory requirements that directly lead to pollution reduction efforts, EPA is beginning to incorporate pollution prevention into its regulatory schemes under the Clean Water Act and Clean Air Act, among other statutes. Depending on the way in which EPA does so, the potential exists for specific amounts of pollution reductions to become mandatory and enforceable. See generally Markell, supra note 5, at §§ 18A.03-18.04. A recent report prepared for EPA reflects the view that before the agency incorporates enforceable pollution prevention obligations into permits, "EPA and the states need to develop more experience finding enforceable ways to allow firms to use P2 measures to meet emission limits and technology-based limits." Research Triangle Institute, State Experience Integrating Pollution Prevention Into Permits 2 (undated).


14. See generally Markell, supra note 5.


18. See, e.g., Clinton and Gore, supra note 34; National Academy of Public Administration Report to Congress, Setting Priorities, Getting Results: A New Direction for the Environmental Protection Agency (April 1995); Ginsberg, supra note 13.


22. Markell, States as Innovators, supra note 19. As I pointed out in the Albany Law Review article, in addition to its prioritization among competing needs, the 400/95 effort likely foreshadows the shape of future regulatory efforts through its decision to regulate the priority facilities in a comprehensive, multi-media fashion, rather than by focusing solely on media-specific issues. Id. at 368. As I have written elsewhere, the notion of pursuing multi-media approaches to regulation almost certainly will be (and in my view should be) an increasingly visible feature of environmental regulation.

24. The issue of refocusing RCRA so that it targets "high-risk" wastes is one of the prioritization-oriented changes that President Clinton and Vice President Gore specifically identified in their March 1995 report. Clinton and Gore, supra note 3, at 9.

25. See, e.g., Superfund Financing Takes Center Stage in New York Environmental Debate, Superfund Report 18, 19 (Mar. 6, 1996)(stating that current financing will "run out by March 1997," and indicating that 618 sites remain to be remediated).

26. See, e.g., id. (reporting that environmental organizations "object to the continuing use of taxpayer debt to fund the cleanup program").

27. See e.g., id. (reporting that "[t]he industry groups ... dismiss any additional industry-based fees as economically detrimental.")

28. DEC is not alone in this regard. For a recent article discussing the issue of cleanup standards at the federal level, see John Pendergrass, Use of Institutional Controls as Part of a Superfund Remedy: Lessons From Other Programs, 26 Envtl. L. Rep. (Envtl. L. Inst.) 10109 (March 1996).

29. Another issue may well be the nature and extent of the threat that Superfund sites pose, both in an absolute sense and compared to other environmental threats. See, e.g., James T. Hamilton & W. Kip Viscusi, Human Health Risk Assessments for Superfund, 21 ECOLOGY L.Q. 573, 576 (1994).


33. See e.g., id.

34. 543 N.W.2d 91 (Minn. 1996).


37. President to Unveil Details of Brownfields Tax Incentive in March, Envtl. POLY ALERT 12 (Feb. 28, 1996).

38. Supra note 36. Of course, with the construction grants program and now the loan program under the Clean Water Act, there is a long history of federal government funding of environmental infrastructure needs. One difference, however, is that the Clean Water Act funding focused primarily on providing financial support to local governments.


42. Upcoming EPA Guidance Hands States Greater Control Over Waste Cleanups, ENVTL POLY ALERT 8 (Feb. 28, 1996). In a different context, EPA has evinced an intent to phase out the federal underground storage tank (UST) program. States Concerned With EPA Plan to Withdraw From Tank Program, ENVTL POLY ALERT 5 (Feb. 28, 1996).

43. NATIONAL ACADEMY, supra note 18, at 2.

44. 26 Env't Rep. (BNA) No. 43 at 2094 (March 8, 1996). The five states are: Delaware, Illinois, Colorado, Utah, and New Jersey. The new system is formally known as the National Environmental Performance Partnership System (NEPPS). Id.

45. Depending on how it is structured, a pattern of devolution may require significant adjustments by state agencies. Perhaps of greatest significance will be the need to find new funding sources for State employees whose salaries are being paid in whole or in part through federal funding.


47. THE NELSON A. ROCKEFELLER INSTITUTE OF GOVERNMENT, supra note 1, at 72.