

Environmental Flexibility in Action: A Minnesota Case Study

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Executive Summary

Over the past few decades, Minnesota has generally followed a command-and-control approach to managing and protecting its environment. Once an environmental problem was identified, regulators prescribed uniform pollution-control remedies and environmental standards across the state. This approach to managing the environment commanded a growing share of resources.

But the advent of differing and varied environmental problems, coupled with the shortcomings of command-and-control regulations, prompted Minnesota's environmental authority—the Minnesota Pollution Control Agency (MPCA)—to begin adopting a new vision of environmental policy. State regulators and others are exploring new ways to utilize environmental protection dollars more effectively and efficiently.

Three case studies highlight the MPCA's move toward flexibility in protecting the environment. These programs emphasize attaining environmental performance goals instead of relying solely on traditional punitive measures and compliance with prescribed standards:

- A voluntary program to remediate brownfields is helping companies avoid the cumbersome Superfund process while ensuring the clean-up of unused industrial sites;
- A breakthrough pollution-trading program by the Rahr Malting Company has applied market mechanisms to water pollution control; achieving cleaner water than under the old system, and
- Experimentation with multimedia, facilitywide standards is underway at the Andersen Window Corporation, reducing regulatory burden while protecting the environment.

Besides demonstrating an effective alternative to traditional command-and-control regulation, the Minnesota experience also illustrates some of the challenges faced by those orchestrating a shift to more flexible, results-focused policy. Other states that are interested in moving away from command-and-control methods can profit from the lessons that Minnesota learned:

- **Focus on Local Priorities.** One of the paramount lessons from Minnesota is the need to bring decision-making close to those directly affected. Minnesota's shift toward geographical districts and toward a multimedia orientation was a crucial step in restructuring incentives for environmental protection.
- **Involve All Legitimate Interests.** The success of the Rahr permit, in addition to the MPCA's willingness to be flexible, resulted from the involvement of those directly affected. Involving all legitimately interested parties, even if it doesn't result in a consensus, alerts all sides to prevalent concerns and priorities.
- **Grant Liability Assurances.** Superfund's hazy liability rules discourages brownfield redevelopment. Insuring that owners are only liable for damage they cause encourages more remediation efforts.
- **Be Persistent.** Not every innovation will be perfectly crafted in its first iteration, and repeated experimentation and political skirmishes are often necessary to determine the best method of environmental protection. Experimentation in flexibility must often confront pre-existing interests and procedural inertia, so it is better to start on a small scale, with a less visible or noncontroversial area, rather than attempting a high-profile case at the outset.
- **Preserve Balance.** A backdrop of enforcement against intentional wrongdoing needs to go hand in hand with compliance assistance, or flexibility could result in avoidance of pollution-abatement responsibility.

Allowing Minnesotans the freedom to discover innovative ways to meet environmental goals should lead to large environmental gains. This means allowing individuals and businesses the freedom to decide *how* they will achieve pollution reduction. Market-based solutions, such as the Rahr example of point-to-nonpoint trading and the Andersen project, allow people to find better and cheaper ways to treat waste.

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Part 1

Introduction

A. In the Beginning...

In the early 1970s, a monumental shift occurred in U.S. environmental policy making. Primary responsibility for protecting the environment was transferred from numerous local and state authorities to a single federal authority, the U.S. Environmental Protection Agency (EPA). Since its inception in 1970, the EPA has centralized environmental management, replacing varied state and local policies with uniform regulations. The aggregation of environmental power in federal hands has produced a one-size-fits-all approach to regulation in which:

- Pollution standards are promulgated in Washington and applied nationwide with little regard to local or regional environmental considerations;
- Pollution-control technologies have often been required across all firms in a given industry without consideration of differences in cost and effectiveness;
- Environmental policy has focused more on input control and technology implementation than on actual environmental effects;
- Different environmental media (air, water, waste) are addressed through separate, unconnected regulations, rather than addressed in an integrated manner; and
- Only major, easily identifiable pollution sources are targeted.

Through a mix of public and private actions, environmental quality continues to improve across the nation, but the actual efficacy of command-and-control regulations is a subject of major debate. Moreover, the EPA has not systematically evaluated the costs and benefits of most national regulations.

B. The Minnesota Connection

The Minnesota Pollution Control Agency (MPCA) was created in 1967, predating the federal Environmental Protection Agency by three years. The command-and-control regulations that guided federal policy had a strong constituency at the MPCA in the 1970s and 1980s, though it was a regulatory framework that caused friction. Mark Paper, Chairman of Lewis Bolt & Nut Company, expressed the sentiments of the business community:

My contention is that with other states there's more of a sense of cooperation with the environmental agencies, whereas in general in Minnesota it's more adversarial. My sense is that there's a general anti-business feeling in the state compared to what I felt in the neighboring states.¹

Dale Nelson, a representative of the MPCA, gave the agency perspective in 1992:

Good business includes protection of the environment, and if a company cannot comply, maybe that isn't the type of company we want to encourage to do business in Minnesota. In the long term, the businesses that survive in Minnesota are more likely to be the ones that are sound and healthy and don't take the short-term view.²

But the adversarial attitude was on its last legs. The MPCA began to shift its focus in 1994, first under Commissioner Chuck Williams and then under the leadership of Peder Larson. Williams stated that business and industry were starting to view the intrinsic value of environmental improvements:

[The MPCA was] more intent on enforcement than cooperation, but in retrospect that was probably what was needed to get this movement started because companies weren't volunteering to do this stuff. But times changed and everybody realizes that to have a viable economy, you can't trash the resources.³

Larson ascended to commissioner of the MPCA shortly after Williams spoke those words, continuing Williams's initiatives to make the MPCA "customer-friendly" and back away from the punitive mindset. While command-and-control regulations had fulfilled the mission of protecting the environment, Larson observed that such regulations had gone as far as they could:

The environmental problems we're facing now are different than the ones that existed 25 years ago, and we really need to change how we approach them. We have to encourage a culture of innovation, helping staff members react quickly as they learn new ways of doing business.⁴

C. The Federal-State Question

Like most state-level environmental authorities, the MPCA has played a substantial role in implementing federal regulations. While enforcing federal environmental statutes pertaining to water- and air-pollution control, solid-waste disposal, noise-pollution control, and toxic- and hazardous-waste disposal, the MPCA garnered a reputation as "being tough on businesses in environmentally sensitive industries."⁵ Over its 30-year history, the agency increased in size and scope to accommodate the expansion of federal programs. As Figure 1 shows, MPCA's staffing level nearly tripled between 1979 and 1997, while the agency's budget grew in real terms from \$46.5 million in 1979 to about \$78 million in 1997.⁶

¹ Mark Paper, chairman of Lewis Bolt & Nut Co., quoted in Mark Johanson, "Minnesota Is Blazing the Regulatory Trail," *Minneapolis-St. Paul CityBusiness*, October 16, 1992, p. 6.

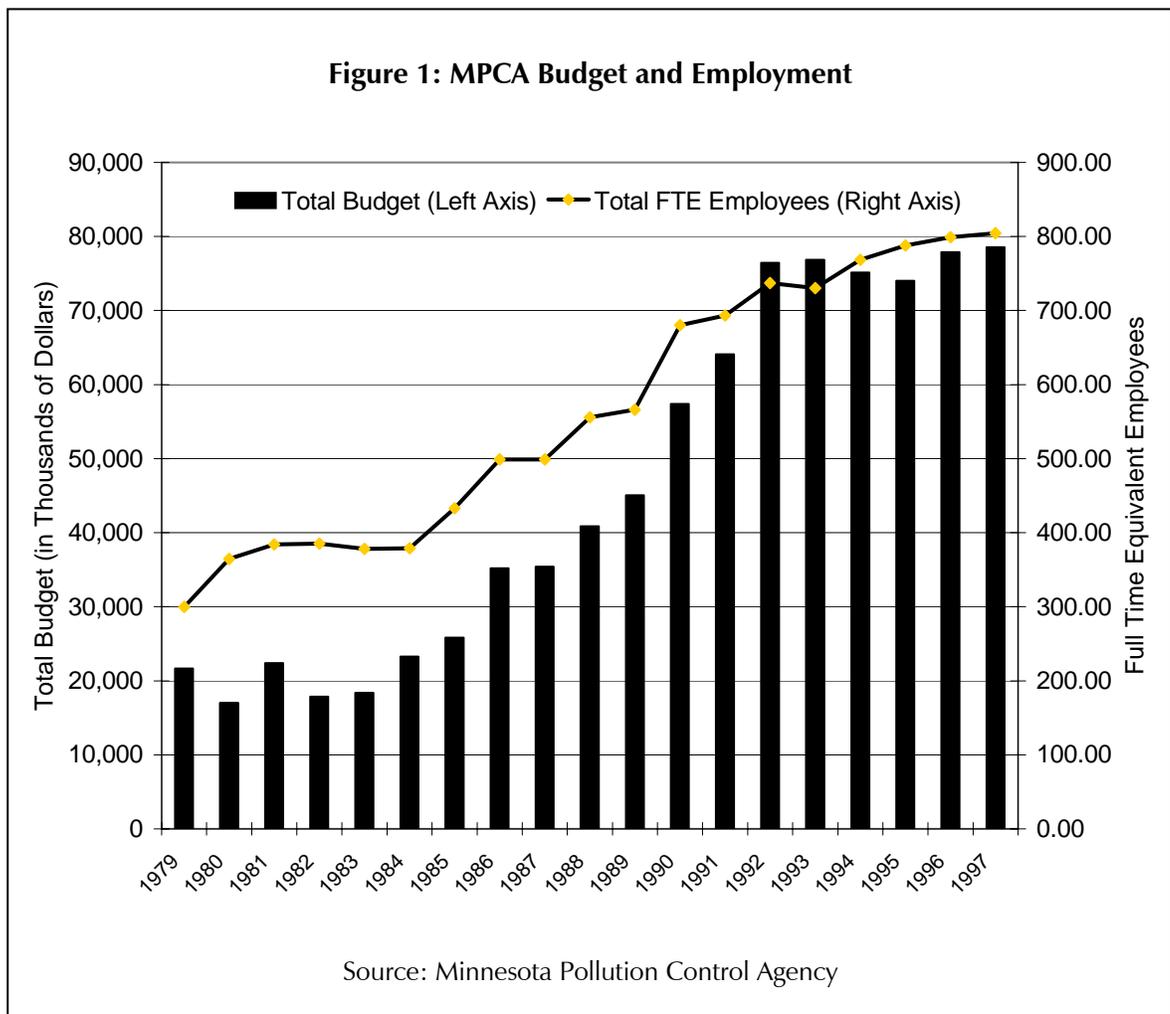
² Dale Newton, MPCA spokesman, quoted in Johanson, "Minnesota Is Blazing the Regulatory Trail."

³ Chuck Williams, Commissioner, MPCA, quoted in Tom Fredrickson, "MPCA Policies are at Crossroad," *Minneapolis-St. Paul CityBusiness*, September 23, 1994, p. 12.

⁴ Dave Price, "New Leader Plots Course of MPCA," *Minneapolis-St. Paul CityBusiness*, August 23, 1996, p. 14.

⁵ Johanson, "Minnesota Is Blazing the Regulatory Trail," p. 6.

⁶ MPCA's total budget and employment steadily increased during its first 10 years as well. However, due to changes in accounting and administrative practices, the data for some of these years are not available.



Most of the expansion at the MPCA reflects the increasing complexity of state and federal legislative initiatives. Federal legislation, such as the 1990 Clean Air Act Amendments, the 1988 Endangered Species Act (reauthorization), the 1987 Water Quality Act (reauthorization), and the 1980 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, a.k.a. Superfund), has governed most MPCA activity over the years (see Table 1). Federal Superfund laws, for example, have contributed to employment growth in the solid and hazardous waste division, where the largest increase in staff has been devoted to overseeing pollution cleanups.

Federal priorities have directed the bulk of the MPCA's work, as the state agency has labored to follow nationwide directives and mandates regarding water and air quality. The EPA has always remained the "elephant in the living room," as "any meaningful innovation that Minnesota . . . may attempt is subject to the approval or disapproval of the EPA."⁷ Charged with enforcing federal mandates, the MPCA has been unable, for much of its history, to emphasize the problems that Minnesotans uniquely face or to concentrate on projects that Minnesotans prefer to implement. The reliance on federal funding has encouraged this neglect of local priorities and ensured that the EPA would always have the final word in setting goals.

⁷ Donald Geffen, Professor, University of Minnesota Carlson School of Management, correspondence with the authors, August 3, 1999.

Table 1: Major Federal Environmental Laws		
Year	Environmental Laws	Public Law
1970	National Environmental Policy Act Clean Air Act Amendments Water Quality Improvement Act	91-190 91-604 91-224
1972	Federal Water Pollution Control Act Marine Protection, Research and Sanctuaries Act Coastal Zone Management Act Federal Environment Pesticide Control Act Noise Control Act	92-500 92-532 92-583 92-516 92-574
1973	Endangered Species Act	93-205
1974	Safe Drinking Water Act	93-523
1976	Federal Land Policy and Management Act National Forest Management Act Resource Conservation and Recovery Act Toxic Substances Control Act	94-579 94-588 94-580 94-469
1977	Clean Air Act Amendments Clean Water Act Surface Mining Control and Reclamation Act	97-375 95-217 95-87
1980	Comprehensive Environmental Response, Compensation and Liability Act (“Superfund”) Alaska National Interest Lands Conservation Act	96-510 96-487
1982	Nuclear Waste Policy Act	97-425
1984	Hazardous and Solid Waste Amendments	98-616
1986	Safe Drinking Water Amendments Superfund Amendments and Reauthorization Act Emergency Planning and Community Right-to-Know Act (Title III)	99-339 99-499 99-499
1987	Water Quality Act Nuclear Waste Policy Amendments	100-4 100-203
1988	Endangered Species Act Reauthorization Federal Insecticide, Fungicide and Rodenticide Act Amendments	100-478 100-532
1989	North American Wetlands Conservation Act	101-233
1990	Oil Pollution Act National Environment Education Act Clean Air Act Amendments	101-390 101-619 101-549
1992	Pipeline Safety Act	102-508

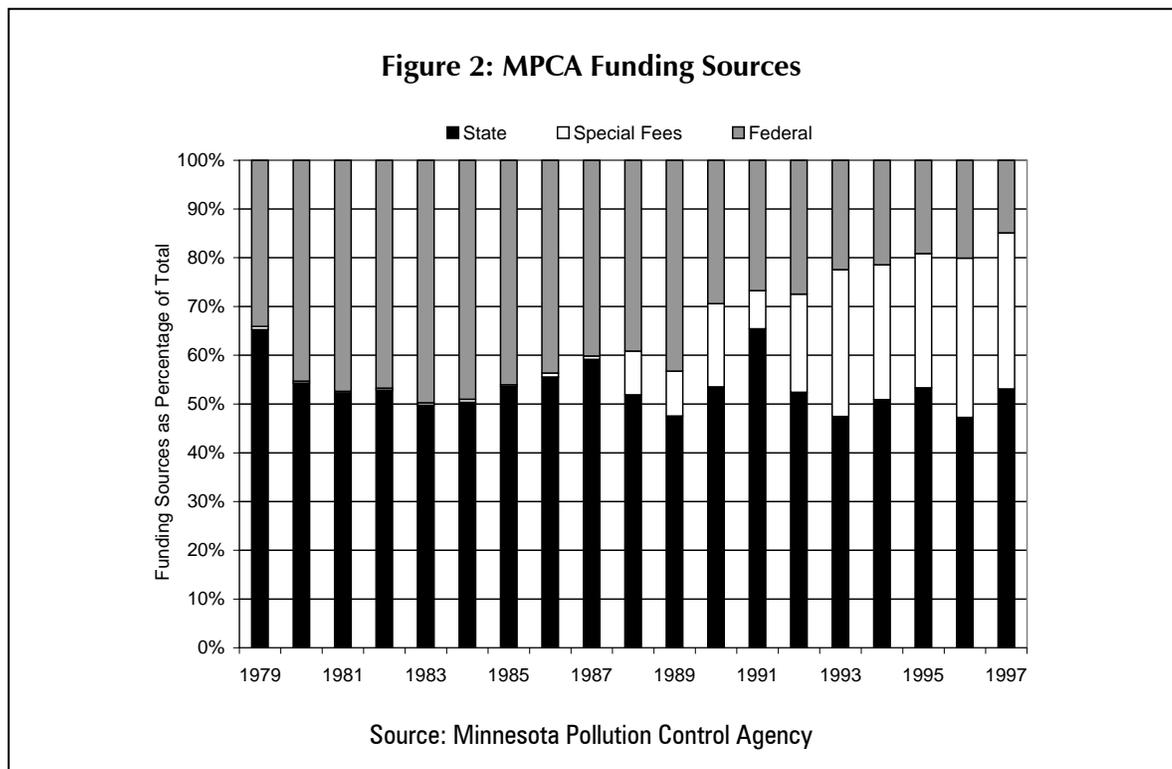
D. Funding

Throughout most of MPCA’s history, its primary funding sources have been federal and state general funds. Through the mid-1980s, increases in federal funding accompanied increased obligations to comply with federal laws and rules, peaking in 1992 at almost \$21 million in federal dollars allocated to the MPCA. In the mid-1980s, however, a new source of funding entered the MPCA’s budget: special revenues or fees. These

special fees essentially are taxes placed on the regulated community, and are reimbursements for MPCA expenditures and programs.

The differentiation between user fees and taxes deserves a second look. User fees are direct taxes targeted on only the people or industries who utilize a particular service. For example, Minnesota has a program that imposes a surcharge on vehicles that are to be inspected for emissions: this is a user fee, in that the burden falls only upon the owner of the vehicle that is being inspected. A tax or general fee, on the other hand, is a broad-based policy instrument without the fundamental connection between the regulated activity and the funding. In Minnesota, a general fee on hazardous-waste generators is used to fund state Superfund cleanups. This tax falls on the broad community of waste generators for a myriad of Superfund sites, rather than any one site with which the taxed generator may have had contact.⁸

Figure 2 shows the MPCA’s funding sources as a percentage of its total budget over time. In 1997, state general funds accounted for 53 percent of the total budget, special fees provided 32 percent, and federal funds provided 15 percent. The trend shown in the chart indicates that the MPCA garners a growing portion of its budget from the collection of special fees and a decreasing portion from federal funds.



As the MPCA weans itself off federal funds, the change in the balance of funding sources is leading to a reordering of priorities. With decreasing emphasis and reliance on federal funds, the MPCA is able to shift its focus more directly to the needs of Minnesotans, who now account for about 85 percent of the agency’s funding. Nevertheless, the past few years have exposed an underlying dilemma for the MPCA: how does an agency driven by federal legislation maintain a local focus and remain responsive to the state’s concerns?

⁸ Program Evaluation Division Office of the Legislative Auditor, State of Minnesota. “Pollution Control Agency,” p. xi.

1. Tapping Local Knowledge

An important way for a state agency to maintain a local focus is to organize its functions in a way that takes local knowledge and priorities into account. One of the showpieces of the MPCA's groundbreaking innovations was the geographic reorganization in 1998 under the GOAL 21 initiative (see Figure 3). Before reorganization, environmental decisions were compartmentalized into air, water, and waste departments, an arrangement that did not allow for coordination across media or among different departments. The new structure of the MPCA is based on geography and presents a more flexible approach, emphasizing environmental performance, not simply regulatory compliance or enforcement. The new structure allows greater scope in how the MPCA manages its resources and how individuals and firms achieve environmental performance goals.

The MPCA began its movement to a more decentralized geographic structure by creating three district offices—Southern, Northern, and Metro—with further subdistricts to take the place of the centralized approach. The intent of the districts and subdistrict formation was to allow each to focus its resources on the most serious environmental problems in that particular part of the state, taking advantage of local knowledge and preferences.⁹ Decentralized structures can lead to more effective environmental decision-making because decision-makers are closer to the actual situations and have a better understanding of the circumstances; as one participant in an MPCA forum on GOAL 21 noted, “[The] MPCA staff’s familiarity with local industries and people is expected to make the agency more sensitive to the impact of regulations on these industries and people.”¹⁰

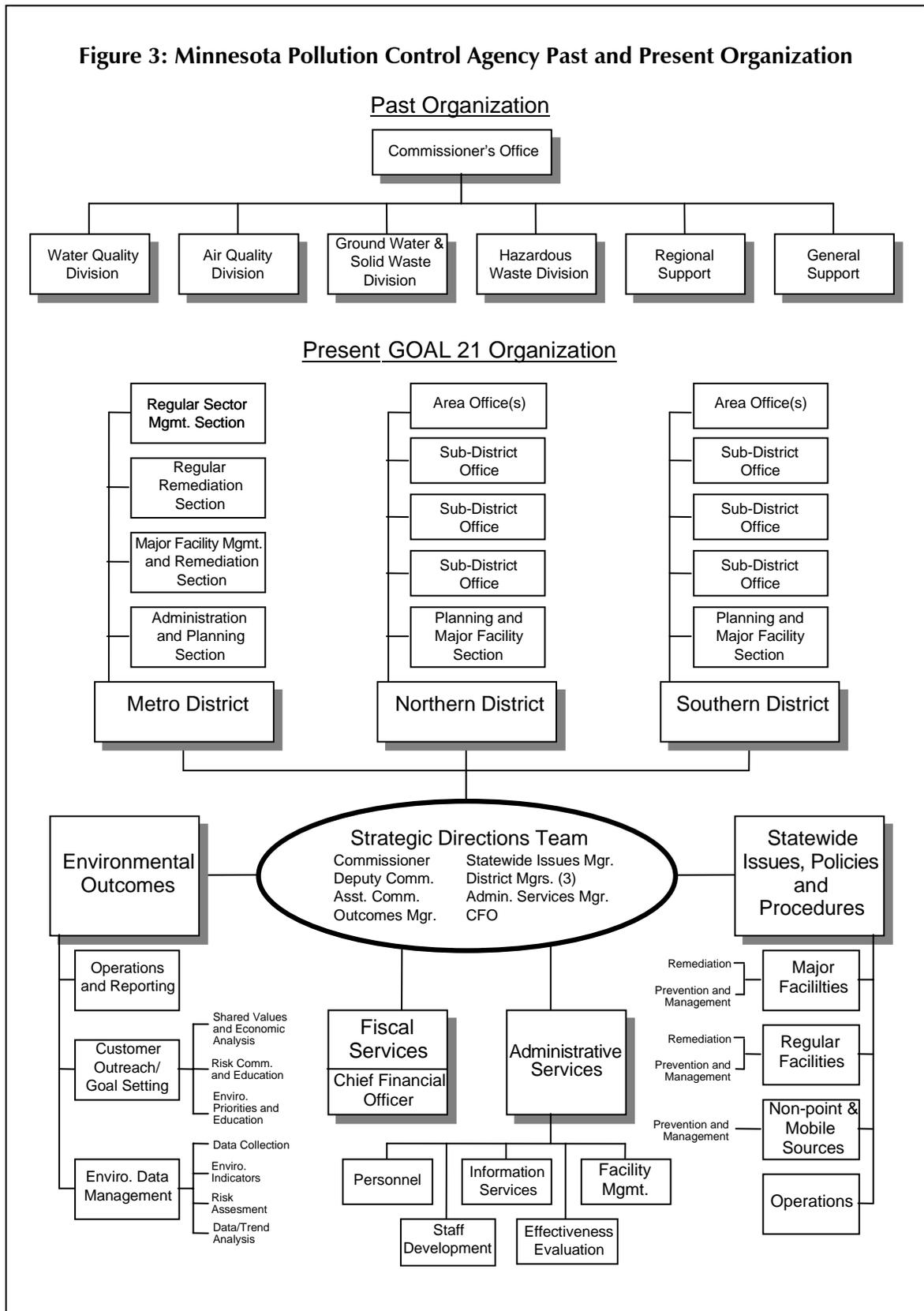
A further advantage of the geographical organization of the new-look MPCA is the harnessing of local needs. Innovation requires experimentation, and the jurisdictional competition among the districts and subdistricts, if designed properly, can enhance efforts aimed at protecting human health and the environment. Along with many management districts and subdistricts may come multiple approaches to a particular problem in contrast to a standardized national approach. The complexity of local conditions and idiosyncrasies may also spur on a site-specific solution that would be infeasible on a national scale. Environmental managers can then copy proven successful approaches and discard less successful approaches.

Finally, the new organizational structure allows the MPCA greater flexibility in where to invest state risk-reduction resources (federal mandates still prescribe single-media solutions, but the MPCA has greater leeway in state initiatives). Because environmental regulations often target some ostensible threat to human health and the environment, resources used to suppress one risk cannot be spent on another. Many of these risks are real, but addressing them involves trade-offs. By decentralizing environmental decisions and allowing district managers flexibility in addressing environmental issues, risk-based priorities can be established. Attending to only one side of the trade off between competing risks can result in poor environmental results. By focusing available resources where risks to human health and the environment are the greatest, Minnesota more effectively uses its limited resources.

⁹ Minnesota Pollution Control Agency, *Update on GOAL 21* (St. Paul, MN: Minnesota Pollution Control Agency, February 1998).

¹⁰ Minnesota Pollution Control Agency, *Data Collection on GOAL 21 Reorganization Plan*, (St. Paul, MN: Minnesota Pollution Control Agency, June 1998).

Figure 3: Minnesota Pollution Control Agency Past and Present Organization



2. Increasing Accountability

Also under the GOAL 21 initiative, the MPCA has attempted to change its relations with the regulated community. As noted above, environmental regulation in Minnesota traditionally featured an adversarial relationship with the regulated community, an attitude that did not contribute to voluntary environmental involvement or progress. The MPCA's traditional method of environmental regulation relied primarily on punishment as a way of achieving environmental compliance. Increased enforcement activity was used as a positive sign of improved environmental quality, under the assumption that companies caught violating laws will change their ways. The ostensible purpose of enforcement actions is also to send a message: if a firm fails to comply, detection and punishment will follow.

However, focusing on inspections, violations, and enforcement actions often subjects law-abiding facilities—those of businesses and municipalities, for example—to lengthy procedures. And an enforcement-based focus turns attention away from the central question—do particular regulations actually improve environmental quality? Former Commissioner Williams proposed to “spend time at the front end looking at a facility. We have the opportunity to establish a dialogue so when violations are found, they can get remediated and we don't have all this paperwork.”¹¹ And Williams was not joking about paperwork. For example, water quality issues require 1,400 cities and companies in Minnesota to navigate an expanding maze of environmental rules and requirements. MPCA permits for wastewater treatment issued in 1998 contain 32 percent more requirements for major industrial facilities, and 10 percent more for major municipalities, than those issued just six or seven years ago.¹²

As the environmental regulatory labyrinth grows more complex, a “permitted” wastewater treatment facility has greater difficulty achieving total compliance and, subsequently, its chances of committing an unintentional violation increase:

*In the world of pollution-control enforcement, it is the paperwork that “proves” waste, wastewater, and air were properly handled. Regulatory inspectors are well-versed on the intricacies of paperwork. So when companies consistently do the right thing but somehow allow their paperwork to languish on some overworked engineer's desk, problems develop.*¹³

Indeed, the number of all violations increased by about 35 percent from 1992 to 1998.¹⁴ However, “the vast majority of infractions,” wrote *Star-Tribune* reporters, “were reporting violations, such as failure to file pollution reports completely on time.”¹⁵ As an employee of the MPCA noted, “There are many other factors by which a facility is measured for compliance. There are compliance schedules to be met, inspections to pass, operation and maintenance issues (i.e., not bypassing, no leaking ponds) etc.”¹⁶

¹¹ Quoted in Tom Fredrickson, “MPCA Policies are at Crossroad,” *Minneapolis-St. Paul CityBusiness*, September 23, 1994, p. 12.

¹² Peder Larson, internal memorandum, “Star-Tribune Investigative Report on the MPCA,” December 10, 1998.

¹³ Larry Sibik, “The Pendulum of Pollution Enforcement Swings Again,” *Minneapolis Star-Tribune*, February 15, 1999, p. 3D.

¹⁴ Linda Brooks, Minnesota Pollution Control Agency, correspondence with the authors, April 8, 1998.

¹⁵ Joe Rigert and Chris Ison, “State Watchdog Lags in Policing Water Polluters,” *Minneapolis Star Tribune*, December 13, 1998, p. A1.

¹⁶ Brooks, correspondence with the authors.

A more accurate measure of Minnesota industry's adherence to regulation is the compliance rate, which takes into account the number of violations and the increases in requirements. According to the MPCA, the compliance rate remained a steady 98 percent from 1992 to 1998.¹⁷ Yet even this statistic fails to reflect the tangible environmental improvements that Minnesota is achieving, because it focuses on the regulations themselves, which may not necessarily focus on environmental quality. Achieving 100 percent compliance with rules that are not protecting the environment is a questionable achievement.

The MPCA's reformation is an attempt to forge a more cooperative relationship with industry and environmental activists in the Gopher State, bringing affected parties on-board at an earlier stage in the game. Rather than focusing on inspections, violations, and enforcement actions, the agency is now focused on compliance assistance—helping cities and companies understand and comply with environmental regulations. Importantly, the MPCA measures, monitors, and reports on environmental quality and sets environmental standards when appropriate, while also acknowledging the expertise of others in determining the best means to reduce or control pollution.

E. Balancing Acts

Government agencies have a tendency to pursue high-profile activities, such as enforcement actions, to maintain the image of doing *something*.¹⁸ Less adversarial actions, such as compliance assistance, may create the appearance of being soft on polluters. As the MPCA is discovering, effective environmental regulation requires finding the right balance between compliance and enforcement activities.

Despite its shift towards compliance assistance, the MPCA has not forsaken enforcement altogether. The agency continues to enforce environmental rules—for example, the number of enforcement actions in 1998 are about twice as many as those in 1992—but enforcement has been de-emphasized as a measure of success. Sen. Steve Morse phrased it in a different manner at a meeting of the Minnesota legislature's Environment and Agriculture Budget subcommittee, when he proclaimed that environmental protection “is more than a question of enforcement. It's also an issue of how the MPCA leads on emerging environmental issues.”¹⁹ Instead of focusing on enforcement-accomplishment reports that highlight the dollar amount of penalties assessed per year, the agency has created an Environmental Outcomes Division, which monitors, measures, and assesses the state of the environment. For example, the MPCA's Voluntary Environmental Audit program provides immunity to businesses that voluntarily report environmental problems.²⁰ The program provides incentives for firms to self-regulate, and it is one way to empower individuals and firms with the responsibility of environmental protection. Focusing on environmental goals instead of punitive measures leads to better tracking of the success and effectiveness of environmental protection programs.

In the case studies that follow, we will track how the MPCA's new focus is helping to improve environmental outcomes in Minnesota. Utilizing principles of flexibility and decentralized decision-making, the MPCA is a leading innovator in the field of environmental regulation.

¹⁷ Peder Larson, quoted in Rigert and Ison, “State Watchdog Lags in Policing Water Polluters.”

¹⁸ See especially James Q. Wilson, *Bureaucracy* (New York: Basic Books, 1998) for an explanation on how agencies are driven by high-profile cases.

¹⁹ Tom Meersman, “Panel Hears About MPCA Enforcement of Water-Quality Laws,” *Minneapolis Star-Tribune*, January 20, 1999, p. 1B.

²⁰ “Environmental Auditing,” Minnesota Pollution Control Agency Web site, http://www.pca.state.mn.us/programs/audit_p.html. A benefit of this program is that it is enshrined in legislation, making flexibility a part of the laws of the state.

Part 2

Cultivating Greenfields

In 1980, federal Superfund legislation emerged as an attempt to clean up contaminated properties that had no identifiable or financially viable owners. However, Superfund's liability standards have proven a disincentive to those who would otherwise purchase brownfields (contaminated sites) for remediation.

Given the worries of potential landowners about their financial obligations, Superfund has proven to be an unsatisfactory strategy: cleanup of sites is slow, costs are high, and the program has spawned extensive litigation. Indeed, Superfund's problem has been characterized as "too few shovels . . . turned, too few sites cleaned, too few communities placated – Superfund had become a superfailure."²¹

Superfund's National Priorities List (NPL), which comprises the focus of Superfund cleanup efforts, includes about 1,350 sites, with 31 sites located in Minnesota in 1997.²² In practice, the EPA identifies sites for the NPL and names parties who in some way contributed or transported waste to the site (often in a lawful manner). EPA then brings suit against any one or all of these parties for the full cost of cleanup, regardless of their waste contribution apportionment.²³

Once listed on the NPL, a property can undergo a ten- to twelve-year evaluation and remediation process. From 1980 through 1995, the EPA spent an estimated \$14.9 billion on the program, while private companies spent an additional \$1.3 to \$1.4 billion per year on cleanups.²⁴ A Rand Corporation study estimated that 32 percent of total expenditures on the cleanup of a site were attributable to legal and other transaction costs.²⁵ As of October 1998, only 178 of the 1,350 NPL sites had been cleaned up during the legislation's 18-year history, with 18 Minnesota sites removed from the NPL.²⁶

²¹ Daniel Mazmanian and David Morell, *Beyond Superfailure: America's Toxic Policy for the 1990s* (San Francisco: Westview, 1992), p. 28. See also J. Winston Porter, *Cleaning Up Superfund: The Case for State Environmental Leadership*, Policy Study No. 195 (Los Angeles: Reason Public Policy Institute, September 1995).

²² *Minnesota Superfund Annual Report 1997* (St. Paul, MN: Minnesota Pollution Control Agency), p. 2.

²³ Superfund law utilizes strict, joint and several liability rules. The "strict" component of the liability rule means that evidence of a party's waste on the site is sufficient proof for that party's liability. The "joint and several" component means that any party from the group of liable parties can be held responsible for the full cost of cleanup. For more on the interest groups that won and lost in the political production of Superfund, see Brett Dalton, David Riggs, and Bruce Yandle, "The Political Production of Superfund: Some Financial Market Results," *Eastern Economic Journal*, vol. 22 no. 1 (Winter 1996), pp. 75-87.

²⁴ Richard L. Stroup, "Superfund: The Shortcut that Failed," *PERC Policy Series*, Issue Number PS-5, May 1996.

²⁵ Lloyd S. Dixon, Deborah S. Drezner, and James K. Hammit, *Private-Sector Cleanup Expenditures and Transaction Costs at 18 Superfund Sites* (Santa Monica: Rand Institute of Civil Justice, 1993), cited in Stroup, "Superfund: The Shortcut that Failed."

²⁶ Environmental Protection Agency web site, <http://www.epa.gov/superfund>.

Nationally, the number of properties that may be covered by state and/or federal Superfund law runs into the hundreds of thousands.²⁷ These sites are typically abandoned, idle, or underutilized industrial and commercial properties. The transfer, expansion, or development of these properties is complicated by the potential for them to be referred to the Superfund process. Even the possibility that a property will be designated a Superfund site is cause for owners, investors, and financial institutions to refuse participation in the improvement, financing, or sale of the site for fear of liability. Put simply, the legal liability for cleaning up a Superfund site falls not only on the polluter but also on these interested developers, as the purchasing party can be made to pay for the violations of earlier owners.

Because of the Superfund law, businesses and organizations have become unwilling to develop property with known or suspected environmental problems. Depending on anticipated land use, many of the properties, though technically “contaminated,” pose little or no increased risk to human health. Bringing these sites back into productive use will merely require dissemination of information about the property’s environmental and health risk statutes to landowners, prospective buyers, and financial institutions, in order to secure relief from future liability. On the other hand, some of the remaining sites do require extensive remediation to decrease the health risk. These sites often remain idle or abandoned due to the liability risks for any party that becomes involved with the property.²⁸

A. Towards Voluntary Cleanup

The MPCA launched the Voluntary Investigation and Cleanup (VIC) program in the 1980s to speed the remediation of contaminated sites in Minnesota. VIC promotes investigation and cleanup activity on property with known or suspected environmental contamination. The impetus for the program was the continuing potential for environmental and public-health consequences at contaminated sites, as well as the opportunity costs from unused commercial property:

*The specter of liability has prompted many buyers, owners, and developers to bypass former industrial properties in cities and move instead to unpolluted rural communities. The VIC program reverses this trend by giving developers clear guidelines for following the laws governing the revitalization of contaminated properties.*²⁹

Minnesota’s VIC program falls under the state’s Superfund law, amended in 1988 and in 1992 with the Minnesota Land Recycling Act. The VIC program provides technical assistance to property owners, developers, and buyers who voluntarily investigate and clean up contaminated land, but with the added incentive of liability assurances to protect various parties from state Superfund liability risks. (Minnesota was the first state in the nation to link these two facets of Superfund.³⁰)

²⁷ James V. DeLong, “Privatizing Superfund: How to Clean Up Hazardous Waste,” *Policy Analysis #247* (Washington, D.C.: Cato Institute, December 1995).

²⁸ DeLong, “Privatizing Superfund: How to Clean Up Hazardous Waste.”

²⁹ “Voluntary Investigation and Clean-up,” 1994 Award Winner, Innovations in State and Local Government, John F. Kennedy School of Government, Harvard University, obtained from: <http://ksgwww.harvard.edu/~innovat/winners/vicmn94.htm>.

³⁰ Ibid.

Participants in the VIC program who are *not* responsible for contamination of the property are eligible for protection from liability. When selling or developing a potentially contaminated property, a buyer or lending institution would prefer not to be liable for current or unforeseen future remedial activity for damages they did not cause, and any attempt to make them liable for past damages will discourage development of the site. Under the VIC program, financial-lending institutions and purchasers of property are eligible for a “No Action Assurance” from the MPCA, which protects them from being sued by the state.

The VIC program is a step toward allowing the market to work unimpeded in the cleanup of brownfields. Companies in the remediation business are stepping in to fill the niche in assisting industries and interested buyers to become compliant, shifting the clean-up of these sites from a court-imposed cost to an economic opportunity. The predominant innovation in the VIC program is that property owners, developers, and buyers participate on a voluntary basis. This is important because it means that the “voluntary party” has an economic interest in improving the property. The motivation for improvement pre-exists at the start of the VIC process instead of associated parties being sued into what amounts to an untenable plan for remediation and improvement, as in the case of many Superfund sites. Relative to Superfund, the VIC program fosters a cooperative relationship between the agency and associated parties.³¹

Moving away from the long-standing adversarial relationship between the state and industries, the VIC program requires close coordination between the MPCA and the interested party. As Gerald Stahnke, an employee at the MPCA phrased it:

*The people I work with and for (my customers) get along well. We [the MPCA] seem to have formed alliances to get things accomplished. We often have a win-win situation; the developer gets a new development done; the state gets a cleanup completed; and often new jobs are created.*³²

When a party enters the VIC program, the MPCA provides guidance and sets standards for a site investigation, offering a free one-hour consultation for businesses to “make sure that they really belong in the program before they officially enter.”³³ After this initial phase, the MPCA is involved in reviewing the adequacy and completeness of the investigation and approves the response-action cleanup plans of the identified contaminant. Participants in VIC can use the MPCA’s assistance and contract with private site-assessment experts to evaluate technical issues that are part of the investigation and cleanup of the property. If contamination is discovered, the VIC program clearly delineates the MPCA’s authority to take enforcement actions or recover cleanup costs.

If the investigation determines that a hazardous substance (with demonstrated characteristics that jeopardize public health or the environment) has contaminated the property, then the property is referred to the MPCA Site Assessment Unit, which represents the initial stages of the Superfund process. This could happen, for example, if contamination from the property has entered a drinking water supply. The VIC program provides a positive incentive to develop property under which the public health is protected and property owners are free from unrealistic regulations.

If the voluntary party wishes to exit the VIC program, but the property is shown to have potential for the release of a hazardous substance, then the property reverts to the Superfund process. If the MPCA determines that the voluntary party demonstrates a lack of cooperation, then the property can be moved to

³¹ To disseminate information and expedite the VIC program process, the MPCA provides a detailed Web site describing the program’s procedure at <http://www.pca.state.mn.us/cleanup/vic.html>.

³² Gerald Stahnke, Project Manager, Minnesota Pollution Control Agency VIC Program, interview with the authors, March 24, 1999.

³³ Ibid.

Superfund.³⁴ Rather than completely repudiating the old system, the MPCA has overlaid its experimentation on top of the existing regulations as a precaution against failure.

For many properties, the potential for environmental and public-health risks are negligible, especially when considering how the land will be used. The VIC program is well-suited for these properties because the emphasis is based on a prospective-risk assessment rather than a retroactive focus on assessing liability for negligible past damages.³⁵ For example, land that will be used as a parking lot should have different standards than a brownfield that will be redeveloped into a block of residential properties. Requiring the same standards regardless of property use and potential-risk exposures will make development for low-risk uses prohibitively expensive, as costs for interested parties will far outweigh the marginal benefits of developing the property. The VIC program's risk assessment component weights these factors accordingly, and the initial consultation between the developer and the MPCA helps to assess the extent of remediation needed.³⁶

Prior to VIC, each property was given a score and put into a "worst-first" queue, creating an extensive backlog of cases. Since its inception, 1,052 potentially contaminated sites have entered the VIC program, with 492 properties no longer active in the program.³⁷ The MPCA estimated that an average of five sites entered the VIC program weekly by the end of 1997.³⁸ Although the duration of a property in the program varies depending on the initial conditions at the property, most sites have a four to nine-month holdover in the program, wherein documents are researched about the property's past land use, physical sampling of suspected contamination is conducted, and potential liability problems are resolved.

The VIC program is an effective way to put valuable resources back into productive use. Beneficiaries of the program include real-estate sellers, real-estate purchasers, lending institutions, developers, and local communities. The public benefits from the environmental and economic benefits of improved and productive property. Against the federal Superfund backdrop, the VIC program allows property transactions to progress quickly, expediting the redevelopment of contaminated property. The program reduces the environmental and public-health risks associated with contaminated property and benefits communities by bringing idle or abandoned resources back into productive use, especially in old industrial areas.

B. Successes and Challenges

Ken Haberman, former supervisor of the VIC program, touted its success in a 1995 editorial:

*The Voluntary Investigation and Cleanup program has had success at nearly 500 sites around Minnesota, many of them in urban areas where the "recycled" land boosted job growth and the tax base. And although . . . the program has evolved into a 20-person staff with an annual budget of more than \$1 million, the taxpayers pay almost nothing because we charge developers for our costs (the fee is usually less than \$5,000). This not only makes good environmental sense, it makes good business sense, too.*³⁹

³⁴ Minnesota Pollution Control Agency VIC Program Web site, <http://www.pca.state.mn.us/cleanup/vic.html>.

³⁵ Minnesota Pollution Control Agency VIC Program Web site, <http://www.pca.state.mn.us/cleanup/riskbasedoc.html>

³⁶ Stahnke, interview with the authors.

³⁷ Minnesota Pollution Control Agency VIC Program Web site, <http://www.pca.state.mn.us/cleanup/vic.html#accomplishments>.

³⁸ *Minnesota Superfund Annual Report 1997*, p. 4.

³⁹ Ken Haberman, "Government Works! 5 Success Stories; Recycling Dumps," *New York Times*, January 14, 1995, p. 23.

One case that typifies the success of the VIC program occurred in an urban area of Minneapolis, where several lots with a history of commercial and industrial use lay vacant. Rather than spending large sums of money on identifying liable parties and other technical problems under the state Superfund law, a nonprofit community organization called Urban Ventures focused its limited resources on the investigation and development of the property. After completing an environmental investigation that determined safe cleanup standards for its designated use and receiving liability assurances from the MPCA, the community organization purchased the property, which is now being developed into athletic fields for an urban-youth program.⁴⁰

In general, MPCA's Stahnke observes, the VIC program has been supported at the community level:

*Often the city development agencies are aligned with the developer. We have a very active public participation program. Once informed, the public is often comfortable with the clean up and we get words of encouragement. The public outcry that we get is from the NIMBYs who are just plain old opposed to any development in their neighborhood and they tend to be land use and not pollution issues.*⁴¹

Ironically, the largest challenge the VIC program faces is not from past liability claims but from the future political climate. The liability pledge that the VIC program carries with it is perceived as not entirely solid, and this has inhibited some developers from entering the program. Dick Nowlin, an environmental attorney in St. Paul, noted:

*[There is] very, very little liability risk for those who undertake development of such properties. We've reduced the risk to below 5 percent, but there's still a question in many lenders' minds about possible future regulatory changes which could lead to more obligation and liability in relation to contamination.*⁴²

As a way to hedge against this possibility, an indemnity fund was discussed in the Minnesota legislature to cover future costs of liability; as of October 1999, this idea still remained on the drawing board.⁴³

A larger challenge confronting the VIC program is that it can only absolve the landowner of liability from state prosecution in the Superfund process: EPA and third parties can still hold the developer liable and seek damages. This hidden threat of the EPA "overfiling" has caused banks and developers to still be sensitive about the liability issue.⁴⁴

A final problem that the VIC program has confronted may be mitigated by the MPCA's geographic reorganization: "The current structure of the VIC program is not conducive to participation by private parties and local government outside of the Twin Cities metropolitan area."⁴⁵ Part of this deficiency comes simply

⁴⁰ Minnesota Pollution Control Agency VIC Program Web site, <http://www.pca.state.mn.us/cleanup/vicstories.html>.

⁴¹ Stahnke, interview with the authors.

⁴² Quoted in Dan Emerson, "Real Estate Gets Greener Outlook," *Minneapolis-St. Paul CityBusiness*, November 29, 1996, p. 26.

⁴³ Ibid.

⁴⁴ Frank Jossi, "Greening the Brown Fields," *Minneapolis-St. Paul CityBusiness*, January 13, 1995, p. 11.

⁴⁵ Minnesota Pollution Control Agency, *Agency Self-Assessment 1996*, p. 20.

from a lack of experience. By decentralizing the decision-making apparatus, the different regions of the MPCA should be able to spread the VIC program around more easily, taking into account local knowledge.

Part 3

Bargaining for Improved Water Quality

With the VIC program, Minnesota took a huge step in the direction of flexibility, offering technical assistance and liability assurances in exchange for remediation. This innovative thinking has carried over to other projects in the MPCA's purview. In Shakopee, Minnesota, the MPCA, working with the Rahr Malting Company, has embarked on a unique environmental-management program for the Minnesota River. The Minnesota River, which stretches approximately 410 miles, cuts through a 16,770 square-mile watershed to its confluence with the Mississippi River. Identified as one of the 20 most endangered waterways in America in 1997 by American Rivers (a nonprofit environmental organization), the Minnesota has been impacted by land-use changes over the past 150 years:

The Minnesota River basin once was a prairie and wetland landscape that supported a thriving population of birds and bison. The Minnesota River basin is now dominated by two major features. First is the vast agricultural landscape which contributes billions of dollars to the economy of Minnesota. Second is the large urban population center of the Twin Cities at the mouth of the Minnesota River where it enters the Mississippi River. Approximately 700,000 people live in the Minnesota River basin.⁴⁶

Numerous point and nonpoint water pollution-discharge sources can be found over the Minnesota's almost 11 million acres of drainage area.⁴⁷ Just some of the activities that contribute to the water's degradation include feedlots, septic systems, wastewater-treatment plants, stream and ditch erosion, and runoff or erosion from agricultural lands.⁴⁸

The MPCA has targeted the Minnesota River as a priority for remediation. To ensure that the river's natural capacity for assimilating effluent is not exceeded, the MPCA has a cap on new and existing discharges to the river.⁴⁹ The MPCA maintains a permitting process for point sources, such as a wastewater treatment plant, which allows a certain amount of discharges (and the permit includes conditions for treatment of effluents).

⁴⁶ "Minnesota River Basin Agricultural Resources and Research," Department of Soil, Water, and Climate, University of Minnesota Web site: <http://www.soils.agri.umn.edu/research/mn-river/index.html>. While offering an accurate assessment of the changing patterns of land-use, this Web site oversimplifies the ecological changes occurring in the river.

⁴⁷ A point source is discharge from a discrete, identifiable source, e.g., the end of a pipe. Nonpoint-source pollution is from diffuse, often unidentifiable, sources, e.g., runoff from agricultural land.

⁴⁸ "Minnesota River Basin Agricultural Resources and Research."

⁴⁹ Specifically, in this stretch of the river the MPCA established a total maximum daily load for carbonaceous biochemical oxygen demand of 53,000 pounds per day. See Minnesota Pollution Control Agency, "Nonpoint Source Trade Crediting Calculations: Finalized for Rahr Malting Permit on January 8, 1997," (St. Paul, MN: MPCA, January 1997); and Norman Senjem, "Pollutant Trading: Theory and Practice," (St. Paul, MN: MPCA, 1997).

A. Rahr's Dilemma

While expanding and improving its production process, Rahr negotiated an agreement with the MPCA to concurrently improve water quality in the river. The agreement breaks free of the command-and-control approach, relying on the ingenuity of the private sector to reach specified goals of pollution control. Rahr's agreement with the MPCA also sets a precedent for the establishment of environmental credits, credits that can be traded or sold among interested parties.

Historically, Rahr sent its wastewater generated from the malting production process to the Blue Lake regional treatment plant in Shakopee. Rahr's original discharge cap, set by the state, allowed the company to discharge up to 1.5 million gallons of wastewater per day. In an effort to control and reduce costs, Rahr decided to move forward with a plan to operate its own treatment plant rather than transport the discharge to the Blue Lake plant. This plan, while well conceived from Rahr's point of view, hit a regulatory snag: the discharge that Rahr was sending to the Blue Lake facility was allocated to Blue Lake's permit and not to Rahr. Moreover, the MPCA maintained that the effluent discharge cap for the river could not be compromised, so Rahr could not increase its own production if Blue Lake was to maintain its level.

This limitation presented a challenge for Rahr's cost-reduction plans. A compromise about the transfer of discharge rights between the Blue Lake facility and Rahr could not be reached, as the Blue Lake facility maintained that its discharge rights were necessary reserve capacity for their future expansion. Furthermore, even if a compromise had been reached, it is not clear that the MPCA or the EPA would have approved the transfer of discharge rights because such a transfer had never been done before. As Jeff Syme of Metropolitan Council Environmental Services, the public agency that runs the wastewater systems in the Twin Cities area, noted,

We're permitted by EPA to operate the system, and so hold the public permits. Rahr is a private firm that we permit to discharge into our regional system, at pre-established quantities and standards, etc., and so would not be in a position to sell our discharge authority rights.⁵⁰

Rahr's position was further complicated by the fact that it could not add to the Minnesota River's assigned pollutant loadings with their own treatment plant unless some form of reduction was accomplished to keep the total maximum daily load (TMDL) constant. Consequently, under the traditional approach, Rahr was denied a permit to discharge from their own treatment facility; they would need to continue utilizing the Blue Lake facility, in spite of the escalating costs and their preferences.⁵¹

B. The Innovation

Stymied by this seemingly intractable situation, Rahr was ready to try some nonconventional approaches to problem-solving. Bob Micheletti, Rahr's vice president of operations, happened to catch a television program featuring Scott Sparlin, coordinator of the Coalition for a Clean Minnesota River:

⁵⁰ Jeff Syme, Metropolitan Council Environmental Services (MCES), correspondence with the authors, April 2, 1999.

⁵¹ Robert Peplin, "Trading Up," *Pollution Engineering OnLine*, <http://www.manufacturing.net/magazine/polleng/archives/1997/pol0701.97/07ajk2f2.htm>.

I saw Scott's organization working on hands-on projects that get to the heart of the Minnesota River's non-point source pollution problems, and I thought there might be some way for a private entity like Rahr to get involved.⁵²

Spurred on by this unlikely epiphany, Rahr, HDR Inc. (an independent engineering company that Rahr brought on board) and the Coalition for a Clean Minnesota River created a plan for improving water quality in the river. The innovation that emerged was a groundbreaking program, allowing Rahr the flexibility to trade among pollutants under a set limit. The permit would allow Rahr to discharge from its new wastewater-treatment plant if other discharge sources on the river were reduced; that is, if Rahr reduced the discharge from other sources by at least the amount of additional discharge that their new wastewater treatment plant would contribute, the company's cost-reduction plans could move forward.

The Rahr plan was similar in spirit to a process that was utilized on the Tar-Pimlico Estuary in North Carolina. In this case, the river was plagued by excessive nutrient loadings that originated from agricultural nonpoint sources and the proliferation of wastewater-treatment plants. A voluntary consortium of 13 treatment plants formed the Tar-Pimlico Basin Association in 1989 and set a nutrient cap on discharges into the river.⁵³ Trading was allowed among members under the nutrient cap, with the option of either treating effluent to remove nutrients or removing an equivalent level of agricultural runoff through a cost-sharing program.⁵⁴ The U.S. General Accounting Office (GAO) applauded the approach that the Tar-Pimlico Association utilized:

The major lessons of the Tar-Pimlico River Basin watershed project are that (1) flexible and innovative approaches—in this case, pollutant trading—may offer more cost-effective alternatives for improving water quality, and (2) the consensus process is essential for maintaining cohesion between stakeholder groups and keeping them committed to the project's goals.⁵⁵

In January 1997, the MPCA issued a permit to Rahr that incorporated the concept of pollution trading to achieve an overall lower pollution loading into the river.⁵⁶ Rahr is proceeding with its plans to build a state-of-the-art waste treatment plant, but the emissions from this plant are capped under the most restrictive limits of any permit on the Minnesota River. Within the permit guidelines, the company agreed to offset its wastewater load by funding what are known as best-management practices at agricultural sites. By funding these practices, the additional wastewater from Rahr is offset by reducing pollution from agricultural nonpoint sources upstream. Then-head of the MPCA, Peder Larson, applauded the process that led to this innovation, praising the “new paradigm we’re developing of working through tough issues with all stakeholders interested in our decisions.”⁵⁷

⁵² Scott Faber, “Water Pollution ‘Trade’ Approved for Minnesota River,” American Rivers Web site, <http://www.amrivers.org/mm/trade797.html>.

⁵³ Kurt Stephenson, Patricia Norris, and Leonard Shabman, “Watershed-Based Effluent Trading: The Nonpoint Source Challenge,” *Contemporary Economic Policy*, vol. XVI (October 1998), p. 418.

⁵⁴ David W. Riggs, *Market Incentives for Water Quality: A Case Study of the Tar-Pimlico River Basin, North Carolina*, Center for Policy Studies Property Rights Project, Clemson University, December 1993.

⁵⁵ U.S. General Accounting Office, *Agriculture and the Environment – Information on and Characteristics of Selected Watershed Projects*, June 29, 1995, GAO/RCED-95-218.

⁵⁶ Minnesota Pollution Control Agency, “Rahr Malting Company ‘Trading’ Permit,” (St. Paul, MN: MPCA, March 1997).

⁵⁷ “Governor Applauds Mankato’s Innovative Wastewater Permit,” MPCA Press Release, December 19, 1997.

The Rahr permit sets out specified categories of practices which the company can use to reduce nonpoint-source pollution in the Minnesota River. These practices include:⁵⁸

- Options that reduce gully erosion (not including high-residue tillage);
- Options that stabilize gully and bank erosion;
- Methods to exclude livestock from stream or river riparian zones;
- Rotational grazing with livestock excluded from riparian zones; and
- Constructed wetland treatment systems for storm-water runoff.

The MPCA justified the selection of these best-management practices in a fact sheet explaining the intricacies of the permit:⁵⁹

- **Equivalent.** Nonpoint-source best-management practices will be chosen to produce water-quality improvements equivalent to those which would have resulted from further reductions in point sources on the lower Minnesota River.
- **Accountable.** Best-management practices must be visually trackable or monitorable, as well as subject to a contract with Rahr Malting for long-term assurance.
- **Additional.** Best-management practices must promote additional opportunities for reduction of nonpoint-sources that are not yet widely adopted.

Bob Micheletti of Rahr trumpeted the approach that led to this agreement:

*We began the process seeking this permit as a way to control costs. We ended up with a resource management alternative that gives us this flexibility. It was an easy choice for us to make the commitment to help clean up the Minnesota River. We appreciate our consultant's help and the willingness of the MPCA and MCEA [Minnesota Center for Environmental Advocacy] to look at an innovative point/non-point trading program to help us stay competitive and at the same time help clean up the river.*⁶⁰

Former MPCA Commissioner Peder Larson was also enthusiastic about the program's flexibility:

*We're excited about this permit. It's a win-win situation. Because of this cooperative partnership, the company gets the flexibility they need and the Minnesota River gets less overall pollution. We hope to be doing more of these permits. It helps us to protect water resources better by expanding our focus to include watersheds.*⁶¹

C. Cleaning the River

In terms of water quality in the Minnesota River, the MPCA's goal for the trading scenario was to reduce oxygen demand. Nitrogen, phosphorus, total suspended solids (TSS), and carbonaceous biological oxygen

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Bob Micheletti, vice-president of operations, Rahr Malting Company, quoted in "First-of-its-Kind Wastewater Discharge Permit," HDR Web site, <http://www.hdrinc.com/HDRHot/rahrmalt.htm>.

⁶¹ Peder Larson, quoted in "First-of-its-Kind Wastewater Discharge Permit."

demand (CBOD₅), when discharged into the river, affect oxygen demand. Increased oxygen demand can, for example, diminish existing aquatic life by generating algae blooms. Under the trading scenario, each of these parameters is less than it would have been if Rahr had continued its discharge to the Blue Lake plant, because of the stricter limits placed on Rahr's waste treatment plant and the reductions from nonpoint sources.

The Technical Details

Under Rahr's new permit, their wastewater facility is designed to treat an average flow of 1.5 million gallons per day—approximately the same rate that they discharged to Blue Lake. While the level or volume of wastewater discharge from Rahr has remained constant, concentrations of the parameters that determine oxygen demand in the river have declined due to the stricter treatment limits. The permitted concentration limits for CBOD₅ and phosphorus have declined for Rahr's new facility, while TSS and nitrogen have remained constant. Rahr's phosphorus limit is 2 milligrams per liter (mg/l) in contrast to Blue Lake, which does not have a permitted phosphorous limit, although their annual average is less than 2 mg/l.⁶² Similarly, Blue Lake has a seasonal CBOD₅ limit of 12 mg/l from June to September and 25 mg/l from October through May, whereas Rahr has a year-round CBOD₅ limit of 12 mg/l. Therefore, in terms of the parameters that determine oxygen demand, Rahr's contribution from a wastewater treatment plant has decreased.

In theory, even though Rahr's facility is state-of-the-art, total oxygen demand could potentially increase due to the presence of two wastewater-treatment plants, where previously there had been one. However, Rahr has offset the potential expansion in the wastewater treatment load with nonpoint-source reductions. Rahr established a \$275,000 nonpoint-source reduction trust fund and, to date, has used 60 percent of the fund by implementing best-management practices at three sites.⁶²

The best-management practices include methods of erosion control and fencing to keep livestock out of streams that drain into the Minnesota River. Two of the three sites establish conservation easements—voluntary contractual arrangement between a landowner and Rahr—along waterways. Rahr purchased easements located in a flood plain, which removes 100 acres of agricultural land from production. To reduce erosion, Rahr planted over 13,000 trees and placed nonerodable vegetation to convert the flood plains.⁶³ In addition, 20 acres were given to CCMR for conservation purposes. The remaining best-management practice site involved a feedlot operation. Fencing corridors were built to provide a separation distance between livestock and surface waters. This separation reduced bank erosion and direct fecal discharge to surface waters.

The MPCA estimates that 90 to 100 lbs. per day of oxygen demand are reduced as a result of the three best-management practice sites. Rahr contributes about the same amount of oxygen demand from its production process. Hence, the point to nonpoint trade is a net offset, with a remaining 40 percent in the best-management practice trust fund that has yet to be utilized. Early indications are that oxygen demand in the river will most likely improve as a result of the point to nonpoint trading scenario.⁶⁴

⁶² Senjem, "Pollutant Trading: Theory and Practice."

⁶³ Bob Micheletti, Rahr Malting Company, interview with the authors, December 15, 1998.

⁶⁴ Norman Senjem, "Pollutant Trading: Theory and Practice," p. 4.

Rahr's involvement in reducing nonpoint-source pollution along the river has also benefited homeowners and farmers upstream, who have long sought to fight erosion and pollution in their bailiwick but did not have the resources to tackle it alone. One such case was Harvey Fruhwirth, a farmer who was tackling the constant erosion that a tributary of the river caused to his farm. Fruhwirth had been trying for four years to find a solution to preserve his pastures, but he "ran into a lot of bureaucracy and couldn't get anything done."⁶⁵ Under Rahr's best-management practices program, they were able to invest \$14,000 in Fruhwirth's farm to fend off the erosion process and save Harvey's livelihood. As Fruhwirth himself said, "If nothing was done, it would have taken my fence away next year. And the year after that, it probably would have been up to the barn."⁶⁶

Help, such as that provided to Harvey Fruhwirth, has been institutionalized into Rahr's Corporate Sponsorship Program, which targets nonpoint-source pollution along the 16,770 miles of drainage along the Minnesota River. MPCA's flexibility in allowing this novel trading scheme has led to an elegant solution: pollution in the river has been reduced, Rahr is saving money in its production, and interested parties downstream are receiving aid that they otherwise might have missed. Involving the private sector in the cleanup of the Minnesota River has also provided an impetus for other groups to get involved. As local government officials commented:

*For the past 50 years, many government-sponsored cleanup programs have not been successful. Rahr Malting's corporate approach will be an alternative to government land-use rules.*⁶⁷

Scott Sparlin, coordinator of the Coalition for a Clean Minnesota River, also remarked on this component of the program's success:

*[The trading program] has the benefit of being a mostly private initiative, which is particularly attractive when dealing with rural communities that generally look suspiciously at anything that appears like the heavy hand of government.*⁶⁸

D. Obstacles to Overcome

Numerous implementation difficulties, such as defining appropriate trading ratios between different pollutants, were encountered on the road to building consensus on the permit. One such challenge occurred in finding the equivalence between CBOD discharges in the lower Minnesota River and phosphorus loadings from upstream sources like agricultural runoff. To deal with this issue, the MPCA conducted river studies relating phosphorus to chlorophyll-a, and chlorophyll-a to CBOD to arrive at a trading ratio of one pound of total phosphorus being equivalent to eight pounds of CBOD.⁶⁹

Once this ratio was established, the permit faced opposition from some in the environmental community. Environmental activists were originally opposed to the trading scheme, seeing any flexibility in environmental regulation as a step backward. The MPCA admitted that environmental interest groups would

⁶⁵ Peter Passi, "Pollution Trading Program Takes Shape," American Rivers Web site, <http://www.amrivers.org/mm/pollution198.html>.

⁶⁶ Ibid.

⁶⁷ Peplin, "Trading Up."

⁶⁸ Ibid.

⁶⁹ Senjem, "Pollutant Trading: Theory and Practice."

be opposed to the trading “on grounds that it may fail to ensure an environmental outcome as good as or better than that which would result from point source reductions only.”⁷⁰ Yet, after much haggling and assurances, the activists were brought on board. “We thought the first draft permit needed quite a bit of work, but the result of negotiations was a very good permit,” said Mark Ten Eyk, an attorney with the Minnesota Center for Environmental Advocacy (MCEA).⁷¹ MCEA was an active participant in the permit negotiations, a critical component of the negotiation’s success. Ten Eyk went on to state:

*Rahr’s initiative and willingness to cooperatively accept input from environmental organizations reflects an environmental ethic and level of corporate stewardship that clearly distinguishes them from many other businesses. The project benefited from the highest level of experience and commitment among all participating parties.*⁷²

Beyond community resistance and the problem of mapping virgin territory, the actual tradeoffs that would be needed, specifically in determining best-management practices, presented another problem. There would be high transaction costs to Rahr from “searching for appropriate best-management practices, evaluating their effectiveness, negotiating with landowners, writing a detailed contract, and then monitoring compliance with the terms of that contract for its duration.”⁷³ Once again, the partnership between Rahr and the Coalition for a Clean Minnesota River paid dividends to all concerned:

*Another means Rahr has used to . . . minimize its transaction costs has been to establish a close working partnership with an organization called A Coalition for a Clean Minnesota River. The director of the CCMR has taken the lead in identifying potential sites and participating in discussions with the city of New Ulm to secure easements on them. Since the restoration of these sites to nonagricultural uses accomplishes important objectives for the CCMR, the organization has embraced this intermediary role between the trading parties with energy and enthusiasm.*⁷⁴

E. Trading for Flexibility

In addition to Rahr increasing its operational flexibility and lowering production costs, this innovation demonstrates an evolving positive incentive structure for environmental stewardship. Although the more efficient solution to Rahr’s production changes may have been to define, enforce, and allow transfer of discharge rights, Rahr’s trading permit represents the initial stages in the establishment of environmental rights to the Minnesota River. The innovation that Rahr undertook was recognized in 1997 with an award from the Minnesota Environmental Initiative, and the success of this experiment bodes well for other water-based pollution-trading schemes and the establishment of a more mature system of secure, transferable rights and responsibilities.

⁷⁰ Norman Senjem, “Case Study: Minnesota—Pollutant Trading at Rahr Malting Co.,” Environmental Regulatory Innovations Symposium, Minneapolis, MN, November 5-7, 1997.

⁷¹ Passi, “Pollution Trading Program Takes Shape.”

⁷² Faber, “Water Pollution ‘Trade’ Approved.”

⁷³ Senjem, “Pollutant Trading,” p. 7.

⁷⁴ Ibid.

Part 4

All I Need Is the Air That I Breathe

In addition to concerns over clean water, Minnesota has faced the problem of air pollution as well. Over the last couple of decades, air pollution regulation in Minnesota and the United States followed an intriguing, if haphazard path. Theorists urged pollution authorities to adopt principles that would lead to the use of efficient methods for achieving cleaner air, such as tradable pollution permits or pollution charges.⁷⁵ These mechanisms achieve a given environmental goal at lesser cost than one-size-fits-all regulations, but they have only occasionally been employed.⁷⁶ Instead, a more prescriptive approach has been used: if air quality is to improve by, say, 50 percent, then each point source must reduce emissions by 50 percent.⁷⁷ Indeed, for most of the MPCA's history, the preferred policy instrument for air-pollution control has been to address each point source, requiring specific emission reductions at each source. This approach is costly for the MPCA to administer and for firms to achieve compliance.

Focusing on the separate emissions from a specific source misses the big picture of ambient air quality—the total amount and mix of emissions in a given area. Promising alternatives to piecemeal emission reduction have been suggested, such as developing an overall emission cap for a specific region, or by assigning an emissions cap to one particular plant. The regional emission cap would, in effect, establish an imaginary “bubble” of air for a specified level of air quality. This bubble is a geographic area assigned a maximum total air-pollution load, even though inside the bubble there may be multiple (even hundreds or thousands) points of emission. The firm or firms within a bubble are allowed flexibility in achieving air-pollution reductions as long as total emissions do not exceed a given regulatory maximum. This allows firms to find the lowest-cost method of reducing pollution.

A. False Starts

Under former MPCA Commissioners Chuck Williams and Peder Larson, the MPCA began to experiment with systems similar to the bubble method. Unfortunately, Minnesota's march towards innovation endured two false starts before finally spawning a success.

⁷⁵ See J.H. Dales, *Pollution, Property and Prices* (Toronto: University of Toronto Press, 1968); William Baumol and Wallace E. Oates, “The Use of Standards and Prices for the Protection of the Environment,” *Swedish Journal of Economics*, vol. 73 (1971), pp. 42-54; and Montgomery, W. D. “Markets in Licenses and Efficient Pollution Control Programs,” *Journal of Economic Theory*, vol. 5 (1972), pp. 395-418.

⁷⁶ For an assessment, see Robert W. Hahn, “Economic Prescriptions for Environmental Problems: How the Patient Followed the Doctor's Orders,” *Journal of Economic Perspectives*, vol. 3, no. 2 (Spring 1989), pp. 95-114.

⁷⁷ The most acclaimed exception here is the 1990 Clean Air Act's sulfur dioxide permit-trading program. This program provided performance-based standards rather than end-of-the-pipe regulation. Donald Geffen, Professor, University of Minnesota Carlson School of Management, correspondence with the authors, August 3, 1999. See also Dallas Burtraw, “Trading Emissions to Clean the Air: Exchanges Few but Savings Many,” *Resources*, vol. 122 (Winter 1996).

An early attempt by the MPCA to encourage innovation in air quality was developed with the 3M company, one of the state's largest employers and a leader in environmental management. In 1993, 3M and the MPCA had negotiated an air permit at 3M's tape-producing facility in Hutchinson that would provide 3M with some flexibility to make modifications to the plant without a lengthy bureaucratic process. The success of this initial permit led to the development of a flexible permit that would work on a multimedia level, giving 3M leeway in its production process while encouraging pollution prevention. This new permit was developed under the aegis of Project XL, the federal program that promised flexibility at the state level for "superior environmental performance."

The definition of what exactly "superior environmental performance" meant eventually turned out to be the permit's undoing, however, as EPA refused to grant 3M credit for its earlier, voluntary improvements, and insisted on a guarantee of progress beyond what 3M had already, voluntarily, achieved.⁷⁸ The undoing of the permit also came about through the MPCA's "mistaken" belief that "it had more authority to design an XL permit than the EPA was willing to grant it."⁷⁹ What would have been the nation's first XL project was derailed by the unwillingness of the EPA to compromise on the definition of "superior" performance and the lack of trust among the interested parties:

[A]rguments about what was superior and what wasn't and what role past good deeds should play helped create ill will and a lack of trust among the parties, although it didn't of itself kill the deal EPA was insisting on annual cumbersome and costly analyses of plant emissions and comparing these totals to what the then-otherwise applicable regulations required. 3M had to stay below that number. The process became too complicated, even for EPA. [3M] consequently withdrew from XL and although negotiations continued for another five months, 3M didn't see anything that could have changed their minds (they got regular permits from MPCA for new lines quicker and more easily than expected during this time!).⁸⁰

Following the 3M failure, the MPCA attempted to engineer a flexible permit for the Koch Refining Company, located about 20 miles south of the Twin Cities metropolitan area. Titled the Plantwide Applicability Limit (PAL), this permit utilized a bubble approach and promised lower volume of a wide variety of emissions than would be possible under the current, source-by-source permitting strategy.⁸¹ In return, Koch would save valuable labor hours that would have been spent on completing permit applications and other administrative activities. Similarly, the MPCA would have saved time and money by reducing the number of staff hours that would have been spent preparing and processing several major permit modifications.

This second foray into innovation was stymied by high-profile allegations that Koch had recently committed several environmental violations. An action brought against Koch in 1998, spurred on after employees at the Rosemount plant turned MPCA attention to violations of wastewater operations, resulted in Koch being assessed the highest fine ever levied by the MPCA (\$6.9 million).⁸² The case was picked up by the media

⁷⁸ For a more thorough discussion of the 3M case, see Christopher Hartwell, *Simplify, Simplify: Alternative Permitting at the State Level*, Policy Study No. 253 (Los Angeles: Reason Public Policy Institute, 1999).

⁷⁹ Geffen, correspondence with the authors.

⁸⁰ Ibid.

⁸¹ The permit was designed to include total suspended particulates (TSP), particulate matter (PM10), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), and total reduced sulfur gases (TRS).

⁸² Hartwell, *Simplify, Simplify*, p. 25.

and charges flew that the MPCA was being lax on enforcement, and that Peder Larson's "customer-oriented" approach was nothing more than a license to pollute.⁸³ Commissioner Larson, sensing that the window of opportunity for the PAL had passed, postponed the implementation of the PAL in order to "verify air emissions data" that Koch provided for the permit.⁸⁴ As of October 1999, the permit was still on hold, pending review by the Citizen's Advisory Board.

1. If at First You Don't Succeed...

The MPCA was determined to reform the air permitting system in spite of these two large setbacks. A new opportunity came in late 1997, when Andersen Windows, an environmentally conscientious producer located in Bayport, Minnesota, expressed interest to the MPCA in applying for a Project XL Pilot Project.⁸⁵ Andersen is a manufacturer of durable wood windows and patio doors and has been operating in the St. Croix Valley since 1903. They were noted by the MPCA as demonstrating "a long-term ethic of stewardship."⁸⁶

Andersen Windows had already invested much time and effort over the past decade in improving its environmental performance, shifting production processes from pentachlorophenolic wood preservatives to newer, recycled composite materials. In the original XL proposal, Andersen explained its exemplary environmental record and reasons why it should be granted flexibility:

We are proud of our achievements in the area of pollution prevention. In particular, we achieved an 85% reduction in releases of EPA 33/50 program substances in the period 1988-1995. Through calendar year 1996, and using 1988 as a baseline, we have reduced VOC [Volatile Organic Compound] emissions by 52%, reduced our Toxic Release Inventory emissions by 90%, and reduced solid waste landfill by 96%. We developed and implemented an environmental management system before it was fashionable to do so and routinely conduct compliance audits of our facility.⁸⁷

Andersen's purpose in applying for flexibility in its permitting was simple:

In broad terms, the intent of this project is to facilitate an extension of Andersen Corporation's environmental stewardship efforts. The company is seeking to implement new products and process technologies that bridge the gap between the level of compliance required under the current regulatory structure and the end goal of environmental and economic sustainability.⁸⁸

⁸³ Tom Meersman, "Gasoline Leak Spurs Scrutiny of the MPCA," *Minneapolis Star-Tribune*, September 12, 1997, p. 1B.

⁸⁴ Tom Meersman, "Long Permit Delay Likely for Koch," *Minneapolis Star-Tribune*, June 19, 1998, p. 1B.

⁸⁵ According to Donald Geffen of the University of Minnesota, Andersen had been interested in pursuing an XL project since 1995, and "watched the 3M experience carefully. . . [Andersen's] application was delayed by 3M's problems and a series of discussions with EPA on what was acceptable and what was not." Correspondence with the author, August 10, 1999.

⁸⁶ *Project XL Final Project Agreement for the Project XL Pilot at the Andersen Corporation*, p.11.

⁸⁷ Andersen Corporation XL Proposal, January 30, 1998.

⁸⁸ "Project XL Pilot Project: Andersen Windows," MPCA Web site at: <http://www.pca.state.mn.us/programs/projectxl/andersen.html>.

Andersen hoped to accomplish four major objectives through the XL process, each of which fit with the MPCA's reinvention strategies.⁸⁹

1. Improve environmental performance;
2. Maximize local public understanding;
3. Remove pollution-prevention barriers; and
4. Minimize administrative burdens for regulatory agencies and Andersen Corporation.

These objectives seemed remarkably similar to the stated goal of the MPCA to deliver environmental protection "cleaner, cheaper, smarter, and faster."⁹⁰

B. The Devil is in the Details

The next step in Andersen's journey was to work out the particulars of the permit. Similar to New Jersey's facilitywide permit (essentially a Plantwide Applicability Limit, as in the stalled Koch plan), the Bayport facility's permit would combine federal and state air, hazardous waste, and water-discharge conditions, to allow "simplified monitoring, reporting, and recordkeeping."⁹¹

The new multimedia permit would allow Andersen to revamp its production process in a manner that would cut emissions yet remain cost-effective:

The XL Permit would enable Andersen to:

1. *Expand production using its water-based preservation treatment process without the need for multiple permitting. Andersen Windows would then reduce its reliance on its two solvent-based deposit tanks, which have very high VOC allowables; and*
2. *Expand its Fibrex production without permits.*⁹²

The expanded use of Fibrex material, a composite of reclaimed sawdust and vinyl, was a key component of the XL permit's flexibility. Using Fibrex would reduce dependence on virgin wood materials and requires no wood-preservation treatment: the treatment process was the main culprit of VOC emissions from the Bayport plant, and substituting away from treatment meant a corresponding decrease in air emissions (see Table 2).⁹³

⁸⁹ Ibid.

⁹⁰ Minnesota Pollution Control Agency, "Program Self-Assessment: Message from the Commissioner," December 17, 1996.

⁹¹ "Project XL Pilot Project: Andersen Windows," MPCA Web site at: <http://www.pca.state.mn.us/programs/projectxl/andersen.html>. For a discussion of New Jersey's facilitywide permit, see Christopher Hartwell, *Simplify, Simplify: Alternative Permitting at the State Level*.

⁹² Geffen, correspondence with the authors, August 10, 1999.

⁹³ Ibid.

Table 2. Air Emissions Comparison: Vinyl Clad Wood to Fibrex Composite⁹⁴
(Based on 1,000,000 standard size window pieces)

Type of Emission	Vinyl-Clad Profile Air Emissions (in tons)	Fibrex Profile Air Emissions (in tons)
VOC	96.2	5.60
PM/PM10	0.69	1.88
HAP	0.19	0.03

Source: MPCA, <http://www.pca.state.mn.us/programs/projectxl/andersen.html>

The centerpiece of the agreement is an innovative performance ratio measurement that allows Andersen to increase production without having to undergo a review for VOC emission changes, up to a prearranged emissions cap.⁹⁵ In the past, when Andersen desired to make operational changes, MPCA oversight and approval of permit modifications was necessary. This process resulted in costly production delays for Andersen, hindering its ability to adjust to changing market conditions. This was a pervasive problem for industry in Minnesota; Mike Hansel, a former employee of the MPCA who moved to Koch's Environmental Strategic Planning division, described the cumbersome air-permit process in 1992:

*In the air permit, the MPCA wants to know exactly what comes off of our stacks and what came out of them over the past five years, hour by hour, day by day. Then you have to take that information and plug it into a computer model and show hour by hour with five years of weather data what the concentrations of various pollutants are around the refinery. . . . In the application process, you end up going back and forth probably a dozen times with the MPCA. They might want you to collect some new information and after adding the new information, new questions are raised.*⁹⁶

The performance ratio improved the old process considerably, allowing the Andersen facilities the flexibility to improvise and quickly change production, as long as emissions did not exceed the agreed-upon cap. Andersen was permitted to “modify and add VOC and milling and no-milling PM sources without additional . . . approvals, and eliminate certain existing VOC synthetic minor limits.”⁹⁷ The final agreement between the MPCA, EPA, and Andersen contrasted this new approach to the traditional *modus operandi*:

*The current command and control system relies on setting “worst case and minimum” compliance levels for regulated sources. The performance ratio is based on measuring and reporting actual environmental performance. . . . Traditional command and control regulatory systems have addressed penalties for bad environmental performance but have not focused on encouraging improved performance once a facility is in compliance. The performance ratio approach will have consequences for poor performance like the current regulatory system, and will also include rewards for better performance. This provides an incentive for Andersen Corporation to continue improvements in the environmental performance of the Bayport Facility.*⁹⁸

⁹⁴ PM/PM10 stands for Particulate Matter, and Particulate Matter of less than 10 micron mean diameter. HAP stands for Hazardous Air Pollutant.

⁹⁵ *Project XL Final Project Agreement for the Project XL Pilot at the Andersen Corporation*, p.7.

⁹⁶ Koch Refinery, *Koch Refining What's New*, http://www.kochrefining.com/news_72398c.html.

⁹⁷ *Project XL Final Project Agreement for the Project XL Pilot at the Andersen Corporation*, p.12.

⁹⁸ *Ibid.*

The performance ratio itself was the product of intense negotiations among all interested parties, who eventually agreed on the ratio of pounds of VOCs emitted per cubic foot of product shipped per tracking period, delineated into tiered limits:⁹⁹

- **Community Advisory Council (CAC) Limit.** The CAC limit is the primary limit for evaluating Andersen’s ongoing environmental performance. The CAC limit is the average of the prior five years’ performance ratios. The CAC limit will be recalculated once every three years, will decline if appropriate, but will increase only if the CAC approves the change, with the concurrence of EPA and MPCA.
- **Enforcement Limit.** A static enforcement limit for the ten-year duration of the project will be established utilizing the initial CAC limit plus two standard deviations. Two standard deviations allow for fluctuations in VOC emission performance due to normal and routine operating events. If the facility’s annual performance ratio exceeds the enforcement limit, the company could be subject to the enforcement actions that are available under current law.
- **Project Limit.** The adjusting project limit will be set at two standard deviations above the CAC limit. It will be the same as the enforcement limit for the initial three-year period but will be adjusted at the same time as the CAC limit. The project limit will never exceed the enforcement limit. If Andersen’s performance ratio exceeds the project limit, the project will end unless Andersen demonstrates to the satisfaction of the CAC, EPA, and MPCA, each acting in its independent capacity, why the project should continue.
- **Reward Limit.** The reward limit will be set at two standard deviations below the CAC limit. The reward limit will not increase and will only decline if Andersen remains below it for three consecutive years. If the facility operates below the reward limit, it will potentially receive rewards such as allowance for “mini-projects,” extension of the agreement, and recognition by the EPA.

The cap on VOC emissions that was included in the final agreement was 2,397 tons per year for the Bayport facility, with an additional 96 tons per year for a smaller site (known as “Andersen West”).¹⁰⁰ Additionally, the air permit provided a PM cap of 184.6 tons per year for the Bayport factory. The introduction of a floating band of emissions, typified in the enforcement and project limits, was not possible under the old system of static permits. It also allowed for a rapid change of processes, something that the one-size-fits-all regulations had stifled.

C. Negotiations

Having failed to navigate the XL labyrinth before, the MPCA was more insistent in pressing the Andersen application. Early negotiations were not encouraging, however, suggesting that the EPA had not learned from the 3M failure and was still intent on controlling the pace and flexibility in narrowly circumscribed parameters:

⁹⁹ *Project XL Final Project Agreement for the Project XL Pilot at the Andersen Corporation*, Attachment A: The Performance Ratio Approach.

¹⁰⁰ The number used for the cap is closely related to the maximum annual emissions over the last ten years at the Andersen plant, but the current emissions are well below this level. Geffen, correspondence with the authors, August 10, 1999.

*EPA people believe they have learned from 3M. The problem is with the lessons they learned. EPA was asking Andersen Windows for guarantees of superior environmental performance, such as a continuously decreasing performance ratio – or else.*¹⁰¹

Furthermore, not everyone was sold on the idea of plantwide permits. As one EPA employee noted:

*There is debate within EPA on the effectiveness of [flexible permits] in general both with respect to protection of the environment and flexibility to a source. EPA is satisfied that the concept of the PAL will at a minimum not result in adverse environmental impacts; however, that concept must be translated into permit terms that accurately reflect the concept. Whether this PAL or any PAL results in increased flexibility and environmental control remains to be seen.*¹⁰²

In response to some of the EPA's early objections on measurement of emissions, Andersen's Environmental Affairs Manager, Richard Fowler, countered that:

*We have no desire to trade one set of regulations for another. Our most recent discussions suggest the possibility that an XL agreement could turn into simply another method of command and control without testing the core proposition of reinvention: "Is it possible to achieve better environmental results with less regulation?" With that concern in mind, we have not been willing to alter appreciably our proposal.*¹⁰³

After much haggling and the close involvement of the Community Advisory Council, the EPA was brought on board and a compromise was reached on the level of permitted emissions.

D. Bringing the Community on Board

An important facet of the Andersen permit was the involvement of community members in its formulation. Perhaps with the public outcry over Koch still fresh in their minds, the MPCA and Andersen were determined to solicit the greatest number of participants as possible, without making the process unwieldy. Twelve meetings were held with varied interests from December 1997 through September 1998 (meetings have continued to this day), with people present ranging from a Washington County Commissioner, Andersen employees, Bayport residents, to a lawyer from the Minnesota Center for Environmental Advocacy (MCEA), and members of the area chamber of commerce.

¹⁰¹ Ibid.

¹⁰² Rachel Rineheart, Final Project Agreement Contact, Environmental Protection Agency, correspondence with the authors, May 3, 1999.

¹⁰³ Letter from Richard Fowler, Environmental Affairs Manager, Andersen Corporation, to the EPA, June 12, 1998.

The participants were divided into three categories, in order to characterize their roles and participation in the negotiation process: direct participants, commentors, and members of the general public.¹⁰⁴ The differences between the three categories were further explained in the final agreement:¹⁰⁵

- **Direct participants** in project development work intensively with project sponsors to build a project from the ground up. The views of direct participant stakeholders will strongly influence the details of the project as well as EPA’s ultimate decision to approve or not approve the project.
- **Commentors** have an interest in the project, but not the desire to participate as intensively in its development. The project development process should inform and be informed by commentors on a periodic basis. The views of informed commentors are a strong indicator of the broad potential for wider applicability of the innovation being tested in a project.
- **Members of the general public** should have easy access both to the project development process and to information about the environmental results of the project once it is implemented, and should have the ability to participate more actively if they so choose.

After active negotiations over the exact composition of the Community Advisory Council, the institutionalized council was to be composed of:¹⁰⁶

- Two Bayport residents
- One Bayport City Council representative
- Two Baytown Township residents
- One Baytown Township board member
- One Bayport business
- One Andersen Bayport resident employee
- One Andersen employee
- One Washington County Commissioner or appointed representative
- One environmental group representative
- One Stillwater Area Chamber of Commerce representative
- One Stillwater Area School District representative (still unfilled)
- Two at-large members (optional unfilled seats).

Recognizing the difficulty of getting such a large group of disparate interests to agree, the final agreement called for the Community Advisory Committee to achieve “substantial consensus” rather than full consensus. As the agreement defined it, “substantial consensus means that, as the advisory body to the project, *most* members of the Community Advisory Committee agree on a particular position.”¹⁰⁷

¹⁰⁴ Andersen Corporation Project XL Stakeholder Involvement Plan, February 1999, p.4.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

E. Opposition

The opposition to the Andersen project was somewhat muted, given the fact that many of the potential objectors were afforded a seat at the bargaining table. The EPA took an active part in the negotiations and, as one participant noted, unlike the 3M case, the EPA was “approachable and open to new ideas.”¹⁰⁸ Another party was less sanguine in his comments about EPA involvement, however:

*The EPA . . . finally gave in quite a bit. There was an important distinction from the 3M case, where EPA was more intractable. Hutchinson [the 3M plant] was a complex facility with many products; new products coming in, old products out. EPA wasn't comfortable with the uncertainty. Andersen Windows is pretty much an easily understandable operation: windows and doors.*¹⁰⁹

Another participant noted that the organizational culture of the EPA was the biggest obstacle in the process, not the actual goals:

*The Environmental Protection Agency was easy to work with during the Andersen XL project negotiations. The EPA staff members working on the project were simultaneously forthright about their agency's interests . . . [However] it seemed that sometimes it was a challenge for the EPA staff to move these issues through their organization at the same pace as the other parties, all much smaller organizations than the EPA.*¹¹⁰

The Andersen XL Project was a step towards institutionalizing environmental outcomes as the goal of policy-making. In the end, the diverse number of local interests that were represented during the process, coupled with Andersen's excellent environmental record, was sufficient to overcome any outside opposition to the permit, with the only real resistance coming from the federal level.

F. A Clear View from the Windows

The flexibility of the Andersen Minnesota XL permit allows achievement of clean air standards at lower cost than individual point-source permitting. The emission-reduction mechanism can provide incentives for firms to go beyond the existing requirements of state and federal law. Greater flexibility and lower environmental-management costs are an integral part of the process to achieve lower emissions, as facility operators save both time and money as a result of their participation, and the MPCA improves its management and protection of the environment.

Unlike the 3M Project XL experience or the Koch PAL experiment, the Andersen Window project is moving towards a successful conclusion. The final XL agreement between Andersen, the MPCA, and the EPA was signed on March 31, 1999, and the permit was expected to be issued in December 1999.

¹⁰⁸ Jeffrey Travis, Program Manager, Solid and Hazardous Waster Program, Washington County Department of Public Health and the Environment, correspondence with the author, June 8, 1999.

¹⁰⁹ Geffen, correspondence with the authors, August 10, 1999.

¹¹⁰ Ibid.

Part 5

Conclusion

Many changes are taking place in how Minnesota manages its environment, and the MPCA is shifting away from established practices that stifle innovation. Traditional command-and-control environmental policies have shown that they can be costly to administer, overburdened with litigation, and most importantly, ineffective at achieving environmental goals. While overcoming many hurdles, the MPCA has taken steps to advance beyond a punitive, one-size-fits-all approach to managing the environment.

The previously described case studies show that significant barriers to innovative change remain:

- All three studies indicate a degree of resistance toward changing the regulatory status quo because each represents a break from established practices, which can invoke resistance toward that change from regulators, environmental activists, and the involved industries themselves. The barrier was overcome in the brownfields initiative through liability assurances, coupled with determined leadership repeatedly demonstrating the environmental benefits and cost savings that arise from the program. In the Rahr example, change was effected by bringing all interested parties to the table early in the program, having them involved in the negotiations on the permit. Finally, the Andersen example shows the importance of persistence, as some regulatory and community obstacles require a concerted effort from all parties to overcome.
- Resistance in the Andersen project was expected because it represented a significant change in the oversight of pollution control and the permitting process. The reduction in emissions, the cost savings garnered from a greater flexibility in the production process, and willingness from regulators and regulated industry to work toward these outcomes, should enable programs like a facilitywide permit to succeed. The political climate must, however, be conducive to implementation, and the community must be involved in formulation and implementation of such plans.
- The Rahr case study represents an attempt to overcome technological barriers by establishing point to nonpoint trading ratios. By incorporating a safety margin into the trading ratio, the uncertainty about pollution contribution and control from nonpoint sources is addressed. Trading in pollutants at the Rahr plant also shows the difficulties in agreeing on what constitutes a risk, as well as the importance of science in determining policy.

Although each has its limitations, the innovative policies demonstrate improvements in efficiency, flexibility, and reliance on market mechanisms. They show that the objective of environmental quality could be attained effectively through positive incentive structures instead of relying primarily on punitive measures. To varying degrees, the episodes incorporate measuring, monitoring, and reporting on the condition of the

environment. This fosters the type of progress measured by environmental improvement, not by the number of permits, enforcement actions, litigation cases, or implementation of prescribed technology.¹¹¹

A. Lessons Learned

The innovations that the MPCA has instituted over the past decade can be utilized by other states to move towards more flexible environmental decision-making. Several lessons stand out from Minnesota's experience:

- **Focus on Local Priorities.** One of the paramount lessons from Minnesota is the need to bring decision-making close to those directly affected. Minnesota's shift along geographical districts and towards a multimedia orientation is a crucial step in shifting incentives for environmental protection.
- **Involve All Legitimate Interests.** The success of the Rahr permit, in addition to the MPCA's willingness to be flexible, came from the involvement of those directly affected. By bringing environmental activists into the process early and often, potential problems were thwarted as a compromise was reached. The danger in this recommendation comes from gridlock: you can't please all of the people all of the time. Yet, involving all legitimately interested parties, even if it doesn't result in a consensus, will alert all sides to prevalent concerns and priorities.
- **Grant Liability Assurances.** Cleaning up brownfields under the VIC program coupled technical assistance with liability assurances, thus giving property developers some breathing space in which to cleanup contaminated properties. Superfund's broad liability rules have discouraged brownfield redevelopment; insuring that owners are only liable for damage they cause will encourage more remediation efforts.
- **Be Persistent.** The Andersen XL success was built upon the disappointments of the Koch and 3M flexibility efforts. The persistence of the MPCA in pushing for flexibility in air permitting finally paid off, if not for the specific facilities originally envisioned, for the permit process in Minnesota in general. This example also demonstrates the existence of a learning curve in innovation, one other states would do well to heed.
- **Preserve Balance.** Enforcement needs to go hand in hand with compliance assistance, or else flexibility may result in attempts to circumvent environmental laws. As Senator Steve Morse commented, "Collaboration and cooperation with industry is fine . . . but at some point you need an environmental cop."¹¹² Enforcement efforts will also bring environmental activists on board, in order to convince them that flexibility does not automatically equate with environmental degradation.

Allowing Minnesotans the freedom to discover innovative ways to meet environmental goals will likely increase environmental gains. This means allowing individuals and businesses the freedom to decide *how* they will achieve pollution reduction. Market-based solutions, such as the Rahr example of point to nonpoint trading and the Andersen emissions caps, allow ordinary people to find better and cheaper ways to treat waste.

¹¹¹ Bruce Yandle, "Environmental Regulation: Lessons from the Past and Future Prospects," in Terry L. Anderson (ed.), *Breaking the Environmental Policy Gridlock* (Stanford, CA: Hoover Institution Press, 1997), pp. 140- 167.

¹¹² Tom Meersman, "Gasoline Leak Spurs Scrutiny of the MPCA."

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List of Relevant Studies

J. Winston Porter, *Cleaning Up Superfund: The Case for State Environmental Leadership*, Policy Study No. 195 (Los Angeles: Reason Public Policy Institute, September 1995).

Alexander Volokh, Lynn Scarlett, and Scott Bush, *Race to the Top: The Innovative Face of State Environmental Management*, Policy Study No. 239 (Los Angeles: Reason Public Policy Institute, February 1998).

Christopher A. Hartwell, *Simplify, Simplify: Alternative Permitting at the State Level*, Policy Study No. 253 (Reason Public Policy Institute, February 1999).

Michael Harrington and Christopher A. Hartwell, *Rivers Among Us: Local Watershed Preservation and Resource Management in the Western United States*, Policy Study No. 259 (Reason Public Policy Institute, June 1999).