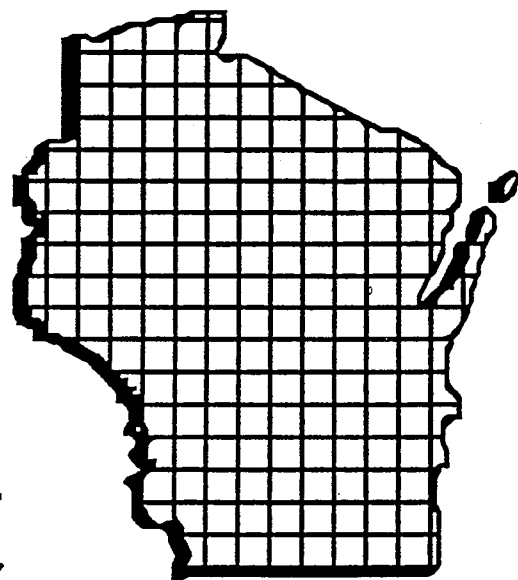


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**NEW STRATEGIES FOR  
ENVIRONMENTAL  
PROBLEMS IN  
WISCONSIN**

*Breaking Out of the Box*

## EXECUTIVE SUMMARY

Budgets are tight. Problems are tough. State and local government have increased responsibilities, without more money. Problems cut across jurisdictional lines and traditional departments. Like businesses, governments must change to cope with new realities. Old models cannot dealing with new problems.

Some Wisconsin local governments and state agencies are “breaking out of the box” to come up with new ways to deal with tough problems and tight budgets. The examples described here all pertain to water pollution and are all playing themselves out in northeastern Wisconsin. Each example provides a peek into the future. Together, they represent new models for governing ourselves. None of the models is perfect; none is entirely in place. They provide lessons about the characteristics that must be part of the new models that will emerge in government.

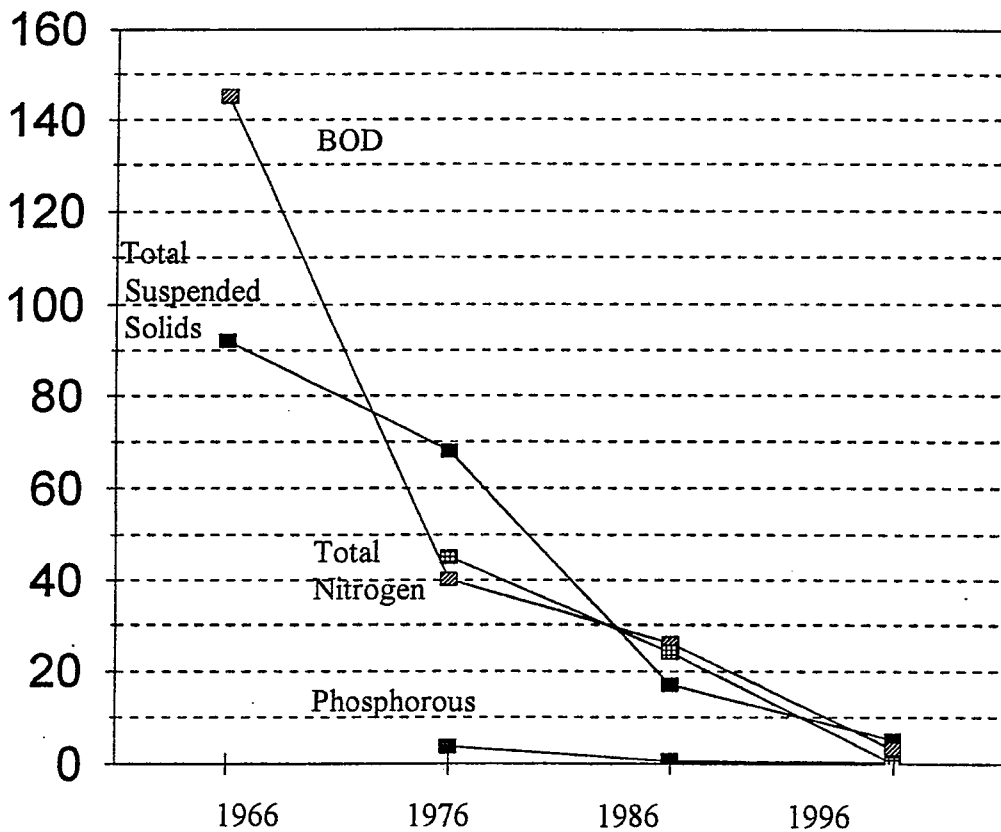
The Green Bay Metropolitan Sewerage District saved \$55 million on a \$125 million plant by thinking outside the box. The District decided that prevention is cheaper than treatment, so — working through the Brown County Solid Waste Department — it helped create a year-round, household hazardous-waste treatment facility that essentially paid for itself the first week it was open. Residents dropped off enough mercury to comprise the District’s total allowable discharge for the next 150 years, along with dioxin-laden materials, and a large quantity of DDT.

The District is committed to working with others to help learn and implement the most cost-effective means for cleaning the waters of the Fox and Wolf Rivers and the Bay of Green Bay. It created and provided initial funding for Fox-Wolf Basin 2000 (FWB 2000), a cooperative organization. A board of directors governs it; members are drawn from across the Fox-Wolf River watershed — including representatives of local government, environmentalists, industry, agriculture, citizens, and state elected officials. It is working to ensure a watershed approach, build scientific understanding to guide resource management strategies, and devise sensible policies. The Wisconsin Department of Natural Resources (DNR) is undergoing a fundamental reorganization and reorientation so that it can address problems more effectively than ever before, and do it within a tight budget. The DNR is working hard to become more collaborative, friendlier, and effective by reinventing itself. From now on, if all goes as planned, the DNR will take a multidisciplinary approach with a focus on solving problems in subregions, grouped mainly around watersheds. It is a bottoms-up systems approach that is truly on the frontier of public organization. The Fox River Coalition (FRC), the fourth example, is a voluntary partnership of the Wisconsin DNR, industry, and local governments working to clean up river sediments poisoned with polychlorinated biphenyls (PCBs) years ago. The Coalition is trying to learn how to clean the contaminated sediments without causing great harm to the local economy. The problem is that no one knows what to do, how to do it, or whether the attempt to clean the sediments will cause more harm than good.

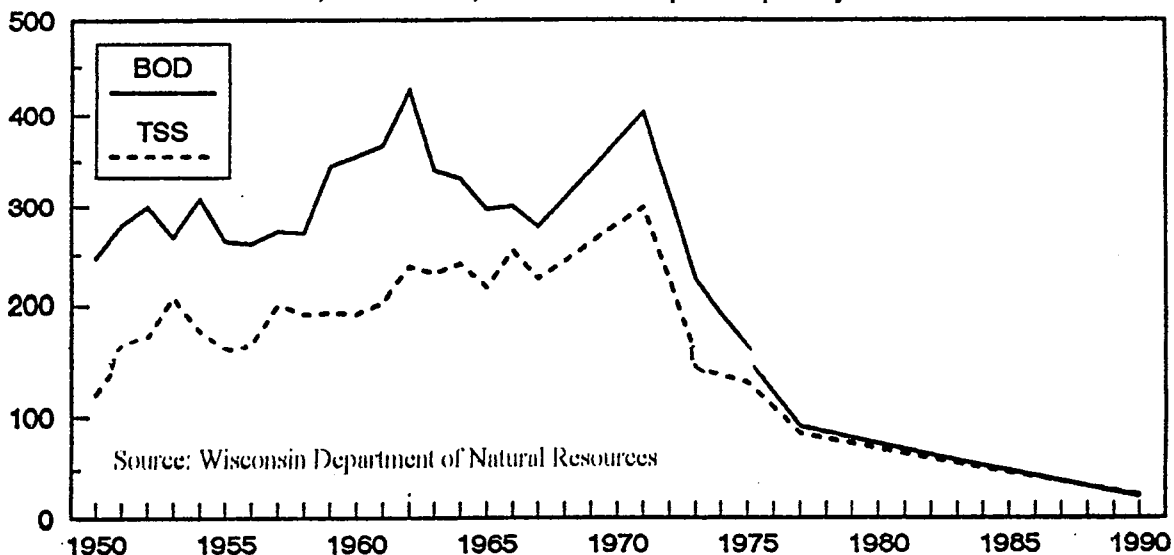
The old models are characterized by various combinations of bureaucratic bludgeoning, one-size-fits-all thinking, extremely expensive technological fixes, activity as a substitute for action, and top-down thinking. In water-pollution control, those models have given us very clean effluent from treatment plants, but rivers filled with dirty water. Municipalities with modern treatment facilities face extraordinarily high marginal costs and almost no marginal payoffs, yet regulators continue to ratchet up the requirements while almost ignoring nonpoint pollution. In the Fox-Wolf basin, three-fourths of the phosphorous and 90% of the suspended solids reaching the lower section of the Bay of Green Bay come from rural sources. If every point-source discharger in the basin were closed down tight tomorrow, the state’s water-quality goals for the Bay could not be attained. The old models have taken us as far as they can. They are out of steam. The problem has changed right before their eyes. They are doing as much harm as good.

The new models will feature cooperation and collaboration among governments at the same and different levels and between government and the private sector. Giantism is nearing an end. “Rafting up” among partners sharing similar visions will save money and time, and it will shift the focus to solving problems, instead of generating activity without much accomplishment. Cooperation and collaboration characterize the new models. They cut across boundaries. They are problem-focused and systems-oriented. Ideas flow from the bottom up and top down and sideways across disciplines and boundaries. The new paradigms are cost-conscious and concerned with effectiveness. They are, above all, pragmatic and action-oriented.

**FIGURE 2** Annual Mean Values of Effluent Quality, Green Bay Metropolitan Sewerage District, 1966, 1976, 1986, and 1996, in parts per million (mg/l)



**FIGURE 3** BOD and Total Suspended Solids Loadings to the Lower Fox River, 1950 to 1990, in thousands of pounds per day



basin meet high water-quality standards. The Fox and Wolf Rivers, however, get dirtier as they flow toward the Bay of Green Bay. They are contaminated by the time they converge just west of Oshkosh. Lake Winnebago, impounded by the dam and Neenah-Menasha, acts like a big water basin, storing nutrients and contaminants that flow into it from the rivers upstream. The nutrients, especially phosphorous, are the primary cause of the enormous algae blooms in the lake. Downstream from Neenah-Menasha, the Fox River to Green Bay is heavily contaminated by farm and rural housing runoff into tributary streams and directly into the river.

### **A Matter of Considerable Concern**

The problems of the Lower Fox, especially downstream (north) from De Pere to the Bay, and of the Bay of Green Bay are a matter of considerable concern in political, environmental, and scientific communities. The Great Lakes Water Quality Agreement (GLWQA) and its amendments are a treaty between the United States and Canada addressing joint concerns about Great Lakes waters. Under the direction of the International Joint Commission (IJC), the GLWQA called for the creation of Remedial Action Plan (RAP) programs in 43 "areas of concern" in the Lakes. The south end of the Bay of Green Bay and the Lower Fox River north from the dam at De Pere was designated as one of these areas of concern. Under the direction of the Wisconsin Department of Natural Resources, Citizen Advisory and Technical Advisory Committees of the RAP worked toward the development of a plan for cleaning up the area of concern. While the RAP has yet to develop an action plan for remediation, it did develop a report outlining the "Desired Future State" of the Lower Fox and the Bay. The report identified desirable target levels for toxins in the water. They are much lower than current levels.

The Lower Fox and the Bay receive considerable attention, too, from environmental scientists. Limnologists, engineers, and aquatic biologists from the University of Wisconsin-Green Bay and elsewhere conduct extensive research in this close-to-home laboratory. The Bay was the subject of a multimillion dollar "mass-balance" study in 1992-93 to learn about PCB contamination to the Bay from the water and the air. The Bay is rapidly becoming one of the most-studied bodies of water in the world. Concern about the consequences of the water and sediment contamination runs high among natural scientists, environmentalists, anglers, boaters, businesses, and citizens who recognize the value of the resource.

### **BREAKING OUT OF THE BOX: THE GREEN BAY METROPOLITAN SEWERAGE DISTRICT**

It was against this backdrop that, a decade ago, the Wisconsin Department of Natural Resources told the Green Bay Metropolitan Sewerage District that it would have to make major improvements in its effluent. The new limits would be incorporated into the GBMSD's new discharge permit. The new permit called for a significant reduction in how much ammonia GBMSD could discharge in its effluent. The plant had been discharging about 12 parts of ammonia per million parts of effluent, but that level was determined in the laboratory to be toxic for the standard-test creatures, fathead minnows and a kind of water flea named *Ceriodaphnia*. GBMSD would have to reduce its discharges to about four parts per million (ppm) to comply with its new permit. Failure to do so would mean large fines, a state-mandated shutdown of building permits in the metropolitan area, and other unpleasant consequences.

Faced with a plant upgrade that could cost between \$125 and \$325 million for a community of 150,000 residential users and local industry, District staff members and the District's five commissioners\* struggled to come up with a lower-cost alternative. The District has not levied a tax since 1974, nor does it receive any tax revenue from other sources. Its only revenue is from user charges, and the District's officers were unwilling to burden their customers with a major rate increase.

The District's executive director, Paul Thormodsgard, and his staff worked hard to cut away at the \$125 million minimum the consulting engineers said the project would cost. First, the Department of Natural Resources agreed that a 10-year planning horizon made much more sense than 20 years for the project. That saved a lot of concrete. Second, the District revisited its policy of providing each of its three major customers with individual ca-

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\* Commissioners are appointed, with approval of the County Board, by the Brown County Executive for five-year, staggered terms.

capacity to meet peak loads. History showed that three big customers (Green Bay and two paper mills) did not reach peak capacity at the same time. The District's legal counsel devised an ingenious means for the paper mills to lease capacity back and forth to one another almost instantaneously. The mills agreed. That decision saved an additional \$10 million in concrete. James River Corporation helped even more by accelerating a corporate decision to close its pulping operation and to build a recycling facility. More concrete saved.

Saving money on financing is just as important as saving money in concrete. The District had worked hard over the years to keep its financial house in order. As engineers were developing the design for the new plant, financial officers were in New York, working to ensure the District had the best possible bond rating. They were successful. When it came time to issue the bonds to build the project, the GBMSD had the best bond rating of any metropolitan sewerage district in the country. It was able, therefore, to float its bond issue at an exceptionally low rate.

The District's work paid off. The final project costs were about \$73 million. Strategic thinking and hard work saved \$55 million, based on the consulting engineers' very-best cost estimates just months before construction began.

More good news. The plant is a complete success. It produces even higher-quality effluent than the DNR discharge permit required and for which the plant was designed. The District's effluent is now close to "the level of detection" for suspended solids and BOD.

Like every other discharger along the Fox River from Neenah-Menasha north to the Bay of Green Bay, the GBMSD had been improving the quality of its effluent discharges steadily for 30 years. Business and government have invested heavily over the past three decades to improve the extent to which they clean the water they return to the lakes and rivers. Today, they meet some of the highest standards in the world.

#### **"There Has to be a Better Way"**

The five appointed commissioners and the staff were pleased at the outcome of the project, but dismayed that it had so little impact on water quality in the Fox River and the Bay of Green Bay. Even the 28 to 45 million gallons of clean effluent discharged from the plant each day had no perceptible impact on the Bay's water quality. The commissioners commiserated that, if one were to spend \$75 million cleaning up the river and the Bay, one could certainly find better uses for the money than spending it to improve the GBMSD's effluent. "The marginal payoffs are almost nonexistent," lamented Commission President Jack Day. "All we'll get are more fish we can't eat."

Few people are more committed to water quality than Day. Professor Emeritus of Environmental Science at the University of Wisconsin-Green Bay, Day is a long time environmentalist and, for 25 years, a member of the District's governing body. His concern was that each dollar spent on cleaning the discharge from point sources in the Fox-Wolf River Basin had an almost-insignificant payoff. And yet it seemed clear to him, the other commissioners, and the staff that enormous benefits could be realized by modest efforts to reduce pollution from nonpoint sources. They endorsed high water-quality standards for Green Bay, but were convinced that — without a new approach to the problem — nothing of consequence could be achieved.

Bleak prospects troubled the commissioners. They had just spent \$75 million to upgrade their plant. They fully expected that DNR would give them new orders within a decade requiring further upgrades. The staff's best guess was the next project would cost at least \$125 million. The District already had raised rates to its customers by almost 50% over a five-year period to pay for the new plant upgrade. The Green Bay area depends heavily on water-intensive industry for employment: paper making, paper recycling, meat packing, and vegetable processing. They are all "wet industries." If the treatment rates got much higher, the commissioners feared unpleasant consequences for the local economy. Firms for which wastewater treatment is a big cost component are, naturally, sensitive to treatment costs. The commissioners wanted very much to keep the Green Bay metropolitan area economically competitive, while making the waters cleaner.

They were also upset that, no matter how much they spent, they could have almost no impact on water quality in lower Green Bay. "Even if we discharged distilled water," they complained, "we will still never have swimming at Bay Beach ... and we still won't be able to eat the fish we catch." Bay Beach is a favorite local park laden with community nostalgia concerning swimming, picnics, and amusement rides. By local standards, lifting the half-century swimming ban at Bay Beach would be a clear signal that the water was clean. The rallying cry for clean water in Wisconsin has been "swimmable, fishable waters."

### **Punching a Hole in the Box**

The commissioners and staff studied the dilemma with staff and outside experts. They became convinced of several propositions. First, they reasoned, it made a lot more sense to prevent pollution than it did to treat dirty water. Second, they believed that nonpoint sources were a major source of the problems in the rivers. Third, they believed it would be impossible to clean the waters of the Bay of Green Bay without first cleaning waters upstream. Finally, they were convinced that more of the same old approach of dealing with dirty water simply would not result in clean water. It would just get more expensive.

The District commissioners, led by Day, decided it was time to take a new approach. Determined to help clean up the rivers and the Bay while maintaining competitive treatment rates, the commissioners moved ahead to learn where the pollution was coming from and whether one could find much cheaper ways to clean up the waters.

They hired a Washington, D.C., consultant, Blair Bower, and charged him with looking at what might be done. Bower recommended developing a computer model of the Fox-Wolf watershed to learn where pollution comes from and to devise a "least-cost" approach to cleaning up the water.

Convinced of the logic of a watershed approach to a river cleanup, the commissioners voted in 1992 to put up \$200,000 to create a not-for-profit organization, Northeastern Waters of Wisconsin Tomorrow (NEWWT). Day took the lead in creating NEWWT and, with the help of community leaders who agreed to serve on the board of the new organization, raised another \$200,000 from local business and government. The GBMSD charged the new organization with recruiting a staff to create a computer simulation of the entire 6,400 square miles that comprise the Fox and Wolf River basins.

They recruited the small NEWWT "analysis team" nationally. It was augmented by two mid-level analysts from England's Severn-Trent Water Company who were, coincidentally, serving internships at the GBMSD and by environmental science students at the University of Wisconsin-Green Bay, where NEWWT was housed.

The team's job was to spend approximately one year to conduct a "first-cut" analysis of the sources of major pollutants and to come up with a rough-cut, least-cost approach for achieving water-quality goals in Lake Winnebago and the Bay of Green Bay.

The analysis team selected a computer-simulation model previously developed by the U.S. Department of Agriculture for application elsewhere. No new data were to be developed for the project; modelers were directed to rely on existing data. The team was told to study only two contaminants, suspended solids and phosphorous; to look at more would have cost too much and have taken too long. In any event, suspended solids and phosphorous are two major "stressors" of the Bay, so the findings would have significant value.

The results were an eye-opener. The team learned that 90% of the total suspended solids and more than 70% of the phosphorous reaching the Bay of Green Bay come from rural and agricultural runoff. They calculated that it is almost 600 times as expensive to remove suspended solids from the water at a treatment facility than it is to keep it on the farm. It costs about 17 times as much to remove phosphorous from the water at a treatment facility than it does to keep it from getting into the rivers and lakes in the first place (NEWWT).

Not long before the analysis team began its work, the state's Department of Natural Resources, working through its Remedial Action Plan process, established water quality goals for the Bay of Green Bay. The goals called for, among other things, cutting phosphorous and suspended solid loadings to the Bay by 50%. The analysis

team's work showed clearly and unequivocally that *the standards set for the Bay could not be met even if every point-source discharger in the basin were to be closed down completely!*

### **Stepping Outside the Box**

The reality of the situation began to sink in. Continuing to lower limits on point-source dischargers would never result in meeting water-quality goals. The reason is simple. Having cleaned up most of the point-source dischargers, they are no longer the biggest problem. Farms and rural residents, once a smaller part of the problem, are now the largest part of the problem. The goal necessarily had to move beyond simply stricter standards for dischargers to incrementally approach effluent as pure as distilled water. Some environmentalists are calling for a goal of "zero discharge" from point sources. That goal might be appropriate as a vision for the future, but it has no place in serious deliberations today. The focus has to be on investing effort and money so as to get the biggest bang for the buck.

In short, the problem has changed, while the solution has remained the same. The old solution — focusing almost exclusively on point-source dischargers — will not and cannot accomplish the goals. The GBMSD challenged NEWWT to take on the task of changing public policy and private behavior to a watershed approach. NEWWT board members and staff already had met with George Meyer, director of the Wisconsin Department of Natural Resources, to report their findings and to ask the Department to adopt a least-cost, watershed approach to cleaning Wisconsin's waters. The plea fell on receptive ears.

NEWWT subsequently changed its name to Fox-Wolf Basin 2000 to better reflect its basin-wide mission, hired a new director, moved its offices upstream to Appleton, and expanded its board of directors to include people from across the watershed. It began to carry its message throughout the 6,400 square miles and to the state capital. GBMSD continued to donate large amounts of money to the organization as it began to develop its own wings.

### **Breaking Free**

The commissioners and staff of the Green Bay Metropolitan Sewerage District had broken open a side of the box, peered out, and then stepped out. They had redefined the problem in their minds and in the minds of others. Simply regulating point-source dischargers was inadequate; a systems approach to clean the waters at the least cost was necessary. The District had been driven by a sincere desire to clean the water and wanted an approach that had a chance to accomplish that. They also came to see themselves as responsible, at least in part, for economic development of the metropolitan area. The District provides essential infrastructure services; they saw themselves as obliged to provide the highest level of service possible at competitive rates. The dual motivation, coupled with strong leadership, made it possible to break out of the box.

Initiating the basin-wide analysis and creating FWB 2000 was only one step in fundamental changes at the District. More were to come. Three years ago, top staff and commissioners retreated to a remote site to rethink the District's mission and approach. At their retreat, the District's leaders decided they could no longer afford to be in the sewage-treatment business. They had to be in the business of ensuring, in cooperation with others, that "water dirtied by human activity was returned clean to the environment." That simple change freed the District to find even more cost-effective ways to get its work done.

On the inside, the organization took on the tough job of becoming better equipped for its new mission. The District began its move away from its traditional, hierarchical industrial organization toward a team-based, collaborative organization. Blue and light blue-collar staff members joined with white-collar management to solve problems jointly and to take greater responsibility for meeting new challenges. It's working.

At the same time the organization was becoming flatter and more flexible, commissioners were looking outside the organization. They determined that nothing could be accomplished without working more closely with the District's customers and with other organizations interested in public health, the environment, and economic development. Sometimes described by officials in other local governments in the area as "the 600-pound gorilla," the District began changing its approach to become more collaborative and cooperative in pursuit of mutual goals.

The new "partnering" is taking many forms. For example, the District was already involved heavily in an award-winning pretreatment program. The District worked closely with businesses to ensure that it was able to reduce its bills and its work by prudent, cost-effective practices. It took prevention a big step further. Staff were directed to propose to the County Solid Waste Department that it would share the cost of creating the state's first year-round, full-time, household, hazardous-waste center.

Prevention, the District reasoned, makes good economic sense. Solid waste usually turns into liquid waste. Materials deposited in landfills, like flashlight batteries, corrode and leak. The resulting liquid waste, called leachate, is piped or trucked to sewage-treatment facilities for cleaning. Pulling heavy metals and other poisons from wastewater is extremely expensive. The capital costs, if the GBMSD were required to remove cadmium, for example, would be many millions of dollars. The operating costs would be hundreds of thousands of dollars per pound for removal. Better to keep it from entering the waste stream in the first place.

Within two years of the initial contacts, the hazardous-waste recycling center opened, financed by all governments in the county, save two townships and a rural village. It is managed entirely by the Solid Waste Department, even though the District pays about half the capital and operating costs. That is just fine with District staff and commissioners; they have come to believe it doesn't matter who does the job as long as it gets done well.

Within the first month of operation, the household hazardous-waste center paid for itself. Fifteen pounds of elemental mercury were turned in by local residents. That represents 150 years of allowable discharge by the Sewerage District. Ten pounds of dioxin-laden materials were turned in, about 2.5 times the total entering the Bay of Green Bay from all waterborne sources in a year. A five-pound box of DDT was brought in for disposal. DDT has not been manufactured in the United States for three decades. No discharge at all is permitted. Had any of these materials found their way into landfills, storm, or sanitary sewers, the consequences would have been disastrous — and extremely expensive.

The GBMSD feels as though it is just beginning to understand the consequences and opportunities that come from stepping outside the box. Today, the special district is actively seeking ways to turn its sludge and its treated effluent into economic assets that can be sold or converted into other, more useful products.

## **THE FUNDAMENTAL CHALLENGE**

### **New Organizational Models**

The Green Bay Metropolitan Sewerage District broke free to redefine what it should be doing and how it should be doing it. It is just one of many organizations seeking ways to meet tough new challenges. Business organizations have taken the lead in breaking away from traditional models. The incentive for them is powerful. Business faces tough new challenges — challenges that did not exist 20 years ago. As the Cold War ended and we turned more of our attention to industry, it clearly had some catching up to do. While we were busy fighting the Cold War, others were busy inventing a new global economy, and the old ways of doing business were suddenly obsolete. The environment for business had changed radically and permanently: global business, rapid communication and travel, economic development in other countries, and exploding scientific and technical understanding. The old models are no longer adequate to ensure survival, much less profitability. Businesses that succeed are those that become efficient and effective, flexible, proactive, and sensitive to the needs of their customers. Some describe the changes as revolutionary. Whether revolutionary or evolutionary, the changes are dramatic.

It is not that the old models were wrong; it is simply that changing circumstances have rendered the old models ineffective. Failure to adapt means failure.

### **A Tough Challenge for Governments**

Just as business needs new models to cope with dramatically different realities, so too does government. And, while changing corporate strategies and organizational culture are difficult for business, creating significant, lasting change is doubly difficult for government. Corporations have greater control over their change processes.



For business, change can take place mostly within corporate walls. Unions are often a problem for companies that need to change, but, unlike government, there is rarely a large diverse set of external constituents struggling to maintain the *status quo*. Changing an agency's basic approach to dealing with problems means having to change expectations and behaviors of a dozen or more outside constituent organizations. Change means having to bring constituencies, regulators at higher levels of government, peer government agencies at the same level, the legislative body, and special interest groups along with the change. If they do not buy into the change, they naturally will resist.

Moreover, for many government agencies, little inherent pressure exists for change; there is no financial survival imperative. Revenues do not depend on success in coping with substantive problems. The survival imperative plays itself out in other arenas, such as playing the budgetary game effectively.

Despite the difficulties of changing and the absence of inherent incentives, government is changing. Part of the reason is leaders who see change as imperative. Another reason is the huge federal deficit. Deficits flow downhill; state government gets less financial aid and more responsibilities from the federal government. In turn, states ask more of local governments, but provide less help to them. Governments have to learn to do a lot more with a lot less. The more-capable government organizations are working hard to adapt.

Another force for change is the strong current of popular belief that we should decentralize responsibility. Today, popular doctrine is that the federal level should do less and that local government and citizens should be more involved in determining their own destinies.

To further complicate the picture, many problems we face have become more complex and pernicious. Public leaders who are more interested in solving problems than going through the motions are hard at work devising strategies that have a better chance of working.

Business has been dealing with its new realities by inventing new organizational paradigms, new models of how to get things done. Businesses that were massive, inflexible, wasteful bureaucracies are struggling to change both organizational structure and culture. The new organizations are flatter, leaner, more flexible, more decentralized, and more proactive. Businesses are developing "partnerships" with customers and suppliers. Increasingly, they are becoming "learning" organizations, focusing attention on continually improving their products and processes. In short, public leaders, like business leaders, are struggling to invent ways to deal with tough new realities.

Almost everyone would like the answers to be simple and straightforward. Most people would like a world with less complexity, uncertainty, danger, and ambiguity. Unfortunately, closing our eyes to reality will not make it go away. The reality is that one rarely finds simple answers to complex problems. We do not have enough money to waste it applying traditional solutions to nontraditional problems. The complexity of the problems makes it difficult to know what to do, many actors with divergent and conflicting agendas cloud the issues, and the problems cut across political boundaries. The stakes are as high as they have ever been, maybe higher. More of the same will not work.

### **Three More Cases**

Besides Green Bay's Sewerage District, this paper examines three other efforts involving northeastern-Wisconsin water quality. Each is an innovative, pragmatic effort to solve very tough problems. In trying to solve those problems, they are inventing new models. The three cases are the Fox-Wolf Basin 2000 grassroots effort to change state regulatory strategies, the Wisconsin Department of Natural Resources' basic reorganization and reorientation, and the Fox River Coalition's attempt to deal with contaminated sediments in the Fox River.

**BREAKING OUT OF THE BOX: FOX-WOLF BASIN 2000****Advocates for a New Model**

Fox Wolf Basin 2000 is the renamed Northeast Wisconsin Waters of Tomorrow created by the Green Bay Metropolitan Sewerage District to model the Fox-Wolf watershed. The organization is determined that a watershed approach be taken to cleaning up the Fox and Wolf Rivers and their pool lakes. More than that, the not-for-profit organization is committed to ensuring that the cleanup is based on a "least-cost mix" of resource-management strategies and practices to accomplish the cleanup. The organization's philosophy is straightforward: "The watershed approach requires that we accept the proposition that we're all in this together. If we work together, we can clean up the Fox-Wolf watershed. If we don't work together, we can't and we'll waste a lot of money. It's that simple" (NEWWT).

To achieve its goals, FWB 2000's directors knew it was essential to be more than just another advocacy organization. The organization seeks to be a "credible advocate." Credibility, they reasoned, requires two ingredients. One is to have a sound scientific and economic basis for its proposals. Consequently, FWB 2000 engages in and supports research to field test "best management practices" for stream-side land and is preparing to expand on its original computer modeling of the basin. The second ingredient is to ensure that it advocates positions, strategies, and practices that represent the common interests of a broad base of constituents. The original and abiding philosophy of the group is that "we're all in this thing together." The notion that municipal treatment plants and industry would group together to point their fingers at farmers was explicitly rejected early in the organization's formation. Farmers," they reasoned, "can't afford to carry the burden alone any more than the rest of us can."

Two features of FWB 2000 are particularly interesting. First, this is truly a grassroots organization. No known counterpart exists, although organizations dedicated to working on problems within specific watersheds exist in several states. FWB 2000 bubbled up directly from the Green Bay Metropolitan Sewerage District and from other citizens and public officials who joined in because they believed the watershed approach made good sense.

Second, it consciously chose a much-different basic philosophy than most other advocacy organizations; it reflects a collaborative ideal. FWB 2000 has chosen not to divide and conquer, but to pursue success through cooperation and collaboration. It seeks what college professors call "Pareto optimality." Pareto-optimal solutions are those that leave no one worse off than before, but are beneficial to at least some interests. In short, everyone's goal is clean water, and it is possible to achieve that goal in a way that also meets the needs of the Sierra Club, paper manufacturers, farmers, local government, and other interested parties.

The least-cost approach is premised on the belief that we no longer can afford to deal with problems by trying to drown them in a sea of money. The organization believes it must find the lowest-cost ways to address both contaminated water and contaminated sediments. Every dollar spent beyond that which is necessary to do the job is a dollar that cannot be spent on other public and private investment important to the regional economy. It is crucial that means be found to clean contaminated water and sediments that will not, at the same time, force farmers and industry out of business. Competition in agriculture and industry is global and fierce. Placing unrealistic burdens on farmers, businesses, industry, and local governments will ensure lower profits, unemployment, regional decline, and fewer dollars with which to fund any cleanups.

To further its goals, FWB 2000 created a board of directors that includes farmers, agribusiness leaders, conservationists, local and state elected officials, treatment-plant operators, environmentalists, industrialists, business people, and local land-conservation officials. Members are drawn from across the river basin. Regional DNR officials are frequent visitors to board meetings. Board members talk *with* one another rather than *at* one another.

The idea is to seek cooperative ways to pursue shared goals. The group is committed to fixing problems rather than fixing blame. The cooperation goes far beyond lip service. At least one of the large point-source dischargers in the basin is committed to the proposition that it would contribute millions of dollars to cleaning non-point source pollution, especially if doing so would alleviate the burden of spending those same dollars on improvements that have no real value.

## **A Sterling Record of Accomplishment**

Wisconsin's DNR did an exceptional job of water-quality management following passage of the landmark federal Clean Water Act in 1972. A decade later, the State's "overall compliance rate was more than 95 percent; for industrial discharges it was 100 percent" (Meyer and Baker). By almost any measure, Wisconsin's record in managing water resources is exemplary among the states. The primary focus was point-source polluters, but the agency began working early on reducing pollution from nonpoint sources. In 1979, "Wisconsin became the first state to set up a water quality program focused on nonpoint sources." So far, the nonpoint program has relied primarily on voluntary action by landowners. About 70% of landowners in high-priority, small watersheds have committed themselves to ensuring that pollution-reducing techniques are used. Point-source dischargers have never had the option of voluntary compliance, but unlike most states, Wisconsin is prepared to use mandatory enforcement in the case of nonpoint polluters. "We believe that the issue is not whether a program should be voluntary or mandatory, but how the two work in concert" (Meyer and Baker).

## **Fundamental Reinvention**

Until very recently, Wisconsin's Department of Natural Resources was organized and thinking in the old paradigm that still dominates government. Secretary Meyer is doing his best to change that. In 1994, the DNR reassessed its mechanism for addressing issues of water quality. The agency still was organized like most other government agencies. The central office in Madison was organized by function. Work plans and priorities were developed by functional unit, and money was allocated by function.

The fundamental DNR reorientation calls for organizing by 23 water basins that the agency calls "Geographic Management Units" (GMUs). These 23 GMUs would be served by five regional field offices. The "reinvention" means that problems and priorities will be defined in terms of those geographic management units. Each GMU will be headed by a basin team. Each basin team brings together specialists in aquatic biology, wastewater engineering, wetland and shoreline specialists, drinking-water engineering, fishery management, and water-resource planning (DNR). Other skills would be brought in as needed.

The basin teams would have four basic jobs. They would assess the quality of water, fisheries and aquatic resources in the basin, analyze and identify problems, involve citizens in setting river basin goals and priorities, and report progress and "applaud partner success."

The citizen team members would be drawn from civic groups, conservation clubs, environmental groups, business and industry, other government agencies (both federal and local), agriculture, and education. The plan is that each basin team would work with these "partners." Functional specialties within the agency then would contribute their expertise to help achieve the goals.

The old structure in the central office in Madison would be replaced with six divisions. It will have fewer layers and fewer staff. The central staff will provide policy and other essential support for field operations.

## **Not All That Easy**

The changes taking place at DNR are much more than a reorganization. They represent a complete reorientation intended to enable the organization to address issues more effectively than ever before. They will require a fundamental change in the organizational mindset and significant cultural transformation. Not the very least of the challenge is that central staff in Madison is going to have to learn to adopt a role supportive of the regional offices, rather than an authoritative one. This runs counter to the culture of virtually every governmental bureaucracy — at least in this galaxy.

Meyer understands fully that the DNR is adopting a fundamentally new paradigm. "But that new paradigm is developing in lots of places," he says. "In business, but also in government" (Meyer).

The change has not been easy. It has taken almost two years to get this far, and it will take even longer to

get everything in place. Many DNR employees find the changes threatening and stressful. Even in northeastern Wisconsin — picked as a pilot for the approach — the change is difficult, stressful, and time consuming. The region was picked as a pilot because staff there have a strong commitment to the watershed approach, a history of collaborative approaches to problems, strong grassroots support for the watershed approach, and cooperative local governments and industry.

When asked why he took on such a daunting challenge, Meyer replied he had two reasons. “First, the stars were aligned. By that, I mean the feds, before the 1994 election, believed there was a need to deal with the cumbersome, burdensome, and expensive regulatory process. There was also the sense that the states should do more — a real belief in devolution.” The stars were aligned at the state level, too. “The governor was breaking out of the box in other areas [like welfare] and the [DNR] board supported the effort ... there was clear support from business to cut red tape and costs.” Meyer went on to say, “Interest groups, like environmentalists and hunters, liked some parts, but not others. Environmentalists like the increased public involvement and reduced layers, but were concerned about the regulatory process.”

The second part of Meyer’s response was that “the ideas were starting to resonate. People understand looking at the resource as a whole — people understand that. They think about the river, not about point and non-point sources. ... People,” he added, “also wanted greater citizen involvement — a role in decision making. That idea is picking up speed.”

Meyer made it clear that the changes to the DNR were not entirely altruistic.

The old model just won’t work. If, for some reason, this model is not put in place, we will not be able to clean up the environment and we will still be spending a lot of money. It is perfectly clear that we have to move to a new model, if not today, then tomorrow.

Moreover, financial concerns helped force the decision. “Our budget is flat-lined,” Meyer explained. “We need real ‘partners’ to get the work done in the face of tight budgets.”

Like the Green Bay Metropolitan Sewerage District and Fox Wolf Basin 2000, Secretary Meyer found that not everyone is excited about the prospect of “partnering.” “There is a perceived risk,” he explained, “in moving from ‘stakeholders’ to ‘partners.’ Lots of people in the organization find it a little unsettling. For some, it is scary.” Change, with the ambiguity that inevitably accompanies it, is unsettling to many. To some, it is downright frightening.

The process is slow, but it is happening. “We’ve moved from a maximum of nine layers to four or five at most,” Meyer reports. “People like that. In the pilot region, things are getting done a lot faster, with no reduction in quality. We have good people who are doing good work. No one needs nine supervisors. ... On the customer side,” he continues, “there is a very noticeable difference. We are more friendly, fairer, and more timely.”

Some outside observers, pleased with the progress, are still cautious about what one might expect. One attorney, deeply involved in water quality issues, says, “It is naive to believe the DNR will ever have real ‘partners.’ After all, it is the regulatory body. I do believe, however, that the process and the agency are going to become a lot more collaborative than ever before.”

Others have observed that the DNR still doesn’t employ more than one or two economists; policies are still dominated by ecological and biological analyses, often without even lip service to cost-effectiveness considerations. Real, cultural change will begin when the DNR employs policy analysts as equal players in developing strategies and regulations.

As with the other stories, the final chapters remain to be written for the DNR reinvention. No one knows the extent to which the DNR will be successful with its attempt to focus itself on ecological systems, rather than pieces of those systems. No one is sure about the extent to which the new approach will result in effective, efficient solutions to tough, lingering problems. One thing is sure: the old way will not get the DNR where it has to be.

**BREAKING OUT OF THE BOX: THE FOX RIVER COALITION****The Contaminated-Sediment Dilemma**

The contaminated waters of the rivers and lakes present tough challenges to regulators and those they regulate, but the challenges associated with contaminated sediments are even tougher.

For about two decades, from the 1950s to the early 1970s, industries along the Fox and Wolf Rivers dumped PCBs into those rivers. Until 1977, it was an entirely legal and routine practice. Even as PCBs were being discharged to the River, some people suspected that their would be a heavy price to pay later. Few had any inkling, however, of the long-term toxic effects of PCBs and of how they would accumulate in the food chain. Rachel Carson's *Silent Spring*, published in 1962, sounded the alarm for DDT and other toxins. Not long after that, the folly of PCBs in water bodies was recognized and outlawed by federal and state law, and the practice ended.

Simply stopping the discharge of PCBs into the lakes and rivers did not do much to solve the problem. PCBs are persistent; they do not degrade biologically. They remain in the bottom muds, clinging to sediments, until taken up in plants along with nutrients. They find their way — through the food chain — into fish, birds, and people. Of the 100-odd PCBs, only a few cause cancer and birth defects, but there are enough of them to represent serious health risks to species at the top of the food chain and for humans who eat contaminated fish regularly.

The sediments are contaminated with much more than PCBs. The sediments include dioxin, furans, lead, mercury, pesticides, and a toxic mix of other chemicals. Found almost everywhere in the Lower Fox River, the PCBs are concentrated in about 40 "hot spots" from Neenah-Menasha north to Green Bay. Usually, the concentrations are just downstream from industrial outfalls.

Unfortunately, the contaminants do not lie quietly in one place. The toxic sediments migrate downstream following every storm. They pile up behind dams and, then, following large storms and spring runoffs, flow downstream in the mud-filled waters to contaminate other places in the rivers and bay.

The consequences are ugly. Cormorants living in the lower Bay of Green Bay die prematurely from crossed bills and other deformities resulting from bio-accumulation of poisons. Fish develop massive tumors. The walleye fishery downstream from the dam at De Pere produces near record-sized fish, but one is foolish to eat them for fear of birth deformities and cancer.

Clearly, the sediments constitute a health and environmental hazard that is cause for considerable concern. Consequently, there is pressure for a clean-up. The U.S.-Canadian Great Lakes Water Quality Agreement, operating through the International Joint Commission, labels the lower Bay as one of its 43 areas of concern. The federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, compels action in contaminated areas such as this. CERCLA authorizes the federal Environmental Protection Agency to compel parties responsible for contamination to help conduct or pay for clean-up.

**Creating a New Model**

The Fox River Coalition emerged within this context. The earliest record of the Coalition is December 1991. A meeting was held between the Fort Howard Corporation's Director of Environmental Affairs and the DNR's Director of Water Resources Management to discuss the possibility of voluntary cooperation on dealing with the contaminated sediments. The immediate focus of discussion was a proposed pilot project to remove PCB contamination from a place called Deposit A, in Little Lake Butte des Morts in Menasha (Johnson).

Representatives from the paper industry wanted to ensure that the organization would move ahead based on scientifically sound cleanup procedures, a cost-effective strategy, and a combination of public-private funding. The DNR wanted to keep its options open about how to proceed with the cleanup. Despite their different perspectives and interests, they formed the Fox River Coalition by July 1992.

Bioremediation has worked exceptionally well for cleaning soil contaminated by gasoline, diesel fuel, and other fuels, so there is at least the possibility that it could be used to clean soils contaminated by PCBs. Unfortunately, relatively little research has been conducted on bioremediation of PCBs, but some is being done. University researchers in California had some success this past year using microbes to break down PCBs in contaminated soils using a derivative of spearmint to accelerate the process (Gilbert). Scientists in Michigan are composting PCB-contaminated soils augmented with other agents intended to speed the process (Hickey and Smith). Bioremediation is the most-promising approach to a cost-effective cleanup of the contaminated sediments. More research and testing is essential.

None of these approaches comes without its own regulatory quagmire and potentially harmful by-products, especially when applied on-site in the stream itself. No one really knows what to do.

The second major concern is how much decontamination is enough. Assume for the moment that it is possible to remove the PCBs and other toxins from sediments at low cost. The question then becomes, "What proportion of the contaminants must be removed before the health risk diminishes from current levels?" Scientists do not know the extent to which toxic "threshold effects" exist for these chemicals. People usually assume that if we were to get 50% of the contaminants out of the river, then that would reduce the health hazard by 50%. If, however, threshold effects exist, then eliminating even 98% of the contaminants might mean no reduction at all in health or environmental risks. Although the PCBs are concentrated in a few dozen hot spots, they exist almost throughout the bottom muds of the River and lower Bay.

No one knows how much has to be taken out to reach safe levels. Debate exists concerning what is a safe level. Scientists do not even agree about whether the current standard of two parts per million of PCBs in fish flesh is low enough. Acceptable levels of PCB concentration in fish flesh range from .05 ppm up to 2 ppm. Those seeking environmental justice look for the most-stringent standards. Those seeking cost-effective solutions look toward the 2 ppm standard. Everyone would like simple answers. The truth is that no one knows.

### **The Procedural Dilemma**

We do not yet know which path is least risky. Each is fraught with risk and ignorance. In the face of our collective ignorance, some people argue that the sediments should be left in place until we can learn more. Others want action now. The problem is made worse because it is laden with so much emotion from extremists on both sides. Some of those who feel they will have to pay for the cleanup fear bankruptcy and deny the need for action. Some environmental extremists seek retribution against what they see as evil corporations bent on destroying the environment. Nothing less than an immediate cleanup of every single molecule of PCB will satisfy them and the economic consequences be damned.

The substantive problems associated with contaminated sediments are ugly, but no uglier than the procedural, legal, and institutional problems. Those organizations that had a hand in depositing the PCBs in the river decades ago are understandably nervous about accepting liability for the cleanup. Everyone knows the costs will be extraordinarily high, but no one really has a decent estimate of how much it might cost. It is one thing to go ahead with a project where everything is known, but this situation is different. No one knows what to do, how to do it, and whether any action would make things better or worse.

Coupled with that, enormous uncertainty exists about subsequent liabilities. The Coalition members' choice was to do nothing or to move ahead, tentatively, in the face of ignorance. Individual firms and municipal governments believed the problem had to be dealt with, but no one was sure about the best way to proceed. No firm or municipality wanted to expose itself to unknown, possibly unlimited, liability — but almost everyone wanted to move ahead to get the job started.

The FRC quickly raised about \$600,000 for its initial efforts, with about one-fourth each from industry and local government, and about half from the State of Wisconsin. The money financed a remediation feasibility study that identified the major hot spots in the River.

## A Major Clash of Paradigms

The cooperative effort was moving forward slowly. The FRC was breaking new ground and doing so cautiously. The stakes were high. As the group was struggling to decide how to go ahead with its feasibility study, a major clash of paradigms emerged.

Section 107 of the CERCLA makes generators, transporters, site owners, and operators liable for the destruction of natural resources associated with the release of hazardous substances. Authority to recover the damages is given to the President, federal and authorized state agencies, and, sometimes, Indian tribes, acting for the public as "trustees" of the resource. The U.S. Department of Interior's Fish and Wildlife Service is the trustee for migratory birds and waterfowl, endangered species, and migratory fish, like the Great Lakes' rainbow trout and salmon. The Fish and Wildlife Service is authorized to conduct a Natural Resource Damage Assessment (NRDA) when contamination exists. Following development of the NRDA, the trustee or trustees bring a claim for damage to organizations named as the responsible parties. The alleged responsible parties can then either negotiate a settlement or go to court.

In March 1994, FRC members arrived at a meeting with checks in their hands to fund a remediation feasibility study. At that meeting, Coalition members were stunned when Fish and Wildlife officials present at the meeting announced that they were going to initiate a Natural Resource Damage Assessment, despite the voluntary efforts already underway. Some coalition members literally reached across the table to retrieve their checks.

That day, the Fox River Coalition almost died. The federal government, still operating under the old paradigm and a one-size-fits-all mentality, had just about destroyed the cooperative effort.

It took several months after that meeting to rebuild enough trust and confidence to continue. Then, in the fall of 1996, the federal government did it again. The *Federal Register* contained a notice that the Fish and Wildlife Service planned to go ahead with its resource-damage assessment and then initiate action against the parties alleged to be responsible for the PCB contamination. Speculation was that the Fish and Wildlife Service intended to move on its agenda before March 1997, after which it would be precluded from doing so by the statute of limitations.

As of this writing, no one knows what will happen. Rough estimates by some observers close to the action are that the Fish and Wildlife Service will find damages to the resource in the amount of about \$1 billion. It has sought damages in those amounts in other locales. If Fish and Wildlife does find damages of a billion dollars, or even half that amount, and if the courts uphold the claim, the consequences for the Fox River Valley's economy are bleak.

Besides the half dozen or so individual firms that Fish and Wildlife would name as responsible parties, they likely would name every municipality with a wastewater treatment facility as well. Imagine the consequences of having half a dozen firms in the Lower Fox River Valley and another half dozen municipalities being forced to come up with a billion dollars in damages over a few years. The economic consequences would be devastating. One easily could envisage corporate bankruptcies, thousands of lost jobs, municipal budgetary crises, and thousands of personal lives disrupted and destroyed. The region, now prosperous, could become an economic backwater. Even large firms that may have been building reserves to deal with such a contingency would find it a hard blow. It is difficult to imagine that some smaller firms would not find it a fatal blow.

Municipalities, many of which are already pushed up against state levy limits, would have few resources, if any, to pay for their share of the liability. Were they to borrow to pay the alleged damages, they would reduce substantially their ability to borrow for capital improvements. Borrowing costs would soar. It is almost impossible to imagine that both the economy and local government would not be left in shambles following such a court-ordered judgement for damages of a half billion dollars or more.

To make a bad situation worse, the money would be thrown at a problem about which we do not know what to do, how to do it, or the consequences of our actions. The worst part of the scenario is that there is absolutely no assurance that the PCB cleanup will reduce the risks to health appreciably. To top it all off, a billion dollars

could be spent on the river and nothing would have been done to reduce nonpoint-source pollution — which is, after all, what is making the rivers dirty. Finally, no one knows whether Fish and Wildlife will be any better at solving the intractable problems than those who are working at it now.

If Fish and Wildlife were to press a damage assessment that is anywhere close to a billion dollars, the matter would end up in court. Rather than face potentially devastating economic effects on the region, every firm and local government would be forced into litigation. The matter would drag on in the courts for years. It might well be the most cost-effective approach. Ultimately, some accord would be reached. It would delay cleaning the river a decade or more. No one would be happy. Except the lawyers. They would be the only winners.

Federal officials seem to miss the point completely. A local newspaper quoted a representative of the Fish and Wildlife Service as saying, "One of the largest misconceptions ... is that we're punishing people for what was legal at the time. That completely misses the point of restoration and compensation. We're trying to compensate the public for what they've lost from those legal activities" (Campbell 1996). Obviously, this is a distinction without a difference, except that the distinction is a legal device for stepping around the constitutional provision that precludes inflicting punishment for actions that were legal when they were taken. Moreover, if the public has lost something from the contamination, it has also gained from the activities that led to it. The prosperity of the region, even through the Great Depression, was a result of those industries being here. Tens of thousands of people who worked there benefited, just as everyone has paid the price in diminished use of the resource. Acting now, two decades after the admittedly legal practice ended, makes no more sense than suing the Indians who allegedly hunted the giant beaver to extinction or going back to farmers with streamside property and demanding reparation for the loss of a dozen native species of fish with major commercial and recreational value because previous owners cut down all the tree cover. Does it make any more sense than that to inflict such damage on a region when the responsible parties are already committed to cleaning the river? Does it make any sense when the rivers are being polluted now by nonpoint polluters who willfully continue contaminating the waterways even though the consequences of their actions are well-known?

## **Two Fundamental Options**

Fish and Wildlife officials have two fundamental options. The first is to plow ahead under the old paradigm, carrying out a narrowly defined function, ignoring both the economic consequences for the region and the long history of cooperative efforts. Pursuing the NRDA and the subsequent claim to get under the statute of limitation would almost certainly have calamitous economic consequences for the entire region. It would also end all attempts at collaboration. It would create bitterness and enmity among organizations that are now doing the best they can to deal with a tough problem with completely inadequate information.

The second option would be for Fish and Wildlife to step outside the box to join the cooperative effort represented by the Fox River Coalition. It does not take too much imagination to think of a scenario that does not bankrupt the region, that results in a cleaner river, and that cleans up contaminated sediments. This is what it probably would take. First, the allegedly responsible parties would have to waive statute-of-limitations protection for damages under the NRDA process. That way, the damage assessment could continue. The damage claim would linger in the background as a strong incentive to keep up the cooperative effort. Second, Fish and Wildlife would have to agree to allow the allegedly responsible parties to contribute money toward a river cleanup without acknowledging known or unknown liabilities and, if the organizations were found liable subsequently, to count the contributions against any settlement. If those two things were agreed to, then Fish and Wildlife could continue with its natural-resource damage assessment and the Fox River Coalition could move forward to figure out what to do about the river.

The result could be beneficial to all parties. Several exciting possibilities exist. The Coalition members could contribute money to support research on PCB bioremediation; it holds the potential for dramatically reducing both the costs and the side effects of cleaning the sediments. Suppose, while that were happening, the DNR and Fish and Wildlife agreed that other voluntary contributions by the members of the Coalition were to be used to finance nonpoint source pollution reduction efforts in the Fox-Wolf River Basin. Right now, the DNR does not know how it can finance those efforts. A shortfall of almost \$20 million exists if rural pollution is to be addressed. If



those funds were counted, subsequently, against any potential damage assessment, cleaning the river system now would be possible while analysts search, in earnest, for ways to deal sensibly with contaminated sediments.

This second scenario is a “stepping-outside-the-box” approach to dealing with tough problems. It can make Fish and Wildlife, the DNR, the local economy, local government, environmentalists, and water users all winners. It requires more than a little trust, some risk-taking, and a lot of good faith, but the potential payoffs are extraordinary. The key is that it involves meeting the basic needs of all those who come to the table in good faith. It also requires largely ignoring those on either side of the issue who are unwilling to seek win-win solutions, but who are intent on pursuing other agendas.

## IMPLICATIONS OF BREAKING OUT OF THE BOX

### A National Context of Change

The “breaking-out” cases described here are taking place within a national context of change. Like the Wisconsin Department of Natural Resources, other state regulatory agencies are moving toward or thinking about a watershed approach. The U.S. Environmental Protection Agency is encouraging a watershed approach (Flynn and Williams). Other states are working more closely than ever before with the organizations they regulate (Arrandale). Like the Green Bay Metropolitan Sewerage District, other local governments are struggling to find cost-effective ways to accomplish their objectives. Like Fox Wolf 2000, other grassroots organizations are working to change state and local policy. Like the Fox River Coalition, other organizations are trying to work cooperatively to deal with tough problems.

If we can learn from the efforts in northeastern Wisconsin and elsewhere, then we can afford to clean our water resources and keep them clean. We will be able to clean the sediments in the rivers and control nonpoint source pollution, sustain a high level of environmental quality, and still enjoy economic prosperity. More important, we will have learned how to approach other kinds of problems in other places. We will have advanced our collective understanding of how to govern ourselves more effectively, more fairly, and more sensitively.

### Characteristics of the New Paradigm

The new models share several characteristics. First, they represent a shift from treating symptoms to working on systems of behavior to solve problems. Second, the models are a move away from giantism. That is, the organizations involved are not looking to expand their authority or jurisdiction to address problems. Instead, they seek to “raft up” with other organizations that have similar agendas to work cooperatively and get the job done. They are trying to generate synergies — situations in which the whole is more than the sum of the parts. Each case is characterized by attempted collaboration and cooperation among autonomous actors.

Third, the new models incorporate an appreciation of both “bottom-up” and “top-down” thinking. Relationships among the participants seem not to be controlled by concerns about hierarchy and legalisms. Instead, they are characterized by people from a variety of organizations working together to come up with the best approach to deal with specific problems in specific places. The old paradigm, still employed by many agencies, is “one-size-fits-all.”

Finally, the new models are concerned with cost-effective solutions. Government officials are increasingly concerned with cost; the federal deficit is driving officials at all levels.

### Lessons

*Breaking Out of the Box is Never Easy.* Innovators pay a high price for being in front. Old perceptions of roles and problems die slowly; unlearning past practices takes a lot of time and, for many people and agencies, is almost impossible. Role expectations die slowly; we are often locked into old patterns of understanding and action. Many people have a stake in maintaining the structures, practices, inequities, and ineffectiveness of past practices. Too many people are unable to see problems through anyone’s eyes but their own. Sustained change is difficult in business; it is downright tough in government.

***Change in Government Requires at Least Passive Support from the Outside.*** Change flourishes with congruence, but slows when constituents, peer agencies, executive and legislative leaders, and agencies in other governments try to maintain the old models. The Wisconsin Department of Natural Resources' efforts to establish priorities so it can clean up pollution cost-effectively, for example, are being jeopardized by proposals to do away with watershed priorities. The Department of Agriculture, Trade, and Consumer Protection, perhaps simply reflecting the position of several legislators, advocates an approach to nonpoint source pollution that would not set priorities among watersheds. DATCP suggests dividing the money available for nonpoint source pollution control by the number of counties in the state, allocating it to them, and letting them spend it on salaries. The idea is locked in the old paradigm. No priorities. No plan. No cooperation. No sense. If this proposal displaces the DNR approach, progress in cleaning up rural nonpoint source pollution will come to an abrupt halt.

Unless Fish and Wildlife chooses to join in the cooperative venture to clean the Fox River's contaminated sediments, the Fox River Coalition will collapse.

The innovators need at least some small level of support from outside agencies to survive, much less to succeed.

***Change in Government Requires Some Special Support.*** Some organizations will always lead. Most do not. If we want more governments and agencies to break out of the box, then we had better provide some positive incentives to do it. Regulatory agencies should foster experimentation and reward outstanding behaviors and accomplishments. Executives, legislatures, and regulators should aim at performance — not blind adherence to one-size-fits-all procedures. Executives and legislatures must create a climate that fosters experimentation and that accepts occasional failures as a routine price in the pursuit of excellence. They must foster climates that focus on solving problems rather than simply carrying out functions.

***Leadership is Critical.*** Visionary leadership is critically important to thinking outside the box. Actually breaking out of the box requires courageous and competent leadership in government or business. Staff members usually need permission to be bold; our old models keep people in tight little roles. The new empowerment models free people to solve problems and to do their best. Change is unsettling to most people; they need leadership to provide them with support and the confidence that the change will lead to a desirable future. Big changes are never easy and, usually, the future that emerges is not desirable for some participants. Fortunately, each organization examined here has benefited from visionary leadership and effective management.

### **The Potential Payoffs are Great**

Imagine the possibilities. Imagine cleaning up the nonpoint source pollution in the Fox-Wolf River basin at a cost we can afford. Imagine cleaning the contaminated sediments in the Lower Fox without destroying the regional economy and in a way that actually reduces the risks to human health and the ecosystem. Imagine partnerships cutting across political boundaries, levels of government, and public and private sectors to address our most pressing social, economic, and environmental problems. The potential payoffs of the new models are enormous, but the organizations trying to build the new models are fragile. The risk-taking organizations may not survive to see their efforts pay off. Good sense does not always come out on top. Nevertheless, new models will emerge to replace the old ones. Secretary Meyer put his finger on it when he said, "It is perfectly clear that we have to move to a new model, if not today, then tomorrow."

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