Pollution Prevention

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Pollution Prevention

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A FRAMEWORK FOR ENVIRONMENTAL PRIORITIES
Midwestern Perspectives

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Midwestern Perspectives

Why do some environmental bills capture the attention of legislators far more quickly than others? Why are some questions economically or environmentally far more important than others? Why are some research results used widely, while others become peripheral? The motivation to better understand these type of questions propelled us to embark on a three-year (1992-95) project funded by the Joyce Foundation of Chicago, Illinois. In the Fall of 1992, a small but highly effective group of individuals, including elected representatives of midwestern legislatures, decision makers of major federal and private environmental organizations agreed to serve on a Steering Committee for this project. The Committee met once each year, during the summer of 1993 and 1994, for two days on the campus of the University of Iowa in Iowa City, Iowa.

During the first year, we investigated the factors contributing to the setting of agendas and priorities within the context of environmental bills in the Midwest. The Steering Committee, selected invited guests, and the project staff reviewed and evaluated a myriad of mechanisms that influence the agenda setting process in the enactment of environmental bills in Midwestern legislatures. In 1993, the project team actively evaluated the utility of the four competing paradigms of comparative risk assessment (CRA), environmental justice, pollution prevention, and innovation in the priority-setting process.

In 1993, we observed major national coalitions forming around the issues of unfunded mandates; regulatory reform through risk assessment and cost-benefit analysis; and expanding private property rights through a re-definition of "takings." Since the dramatic events of the 1994 elections, and the Republican "Contract with America," several Federal bills on unfunded mandates, takings (private property rights), and regulatory reform are currently making (or have already made) their way through the U.S. Congress. In the last few months alone, regulatory reform as well as the topics of unfunded mandates and takings/property rights have been hotly contested in the nation's capitol. In the context of this dynamic sea of political change, what is needed is the dissemination of timely, useful, and unbiased information to state-level elected officials and policy makers.

In the first two years we held conferences to explore the mechanisms by which environmental legislation gets formed, passed, or defeated in state legislatures in the Midwest. We explored the utility of the CRA paradigm and the competing or alternative paradigms of environmental justice, pollution prevention, and innovation in legislative settings. We also considered in detail the implications of the "Unfunded Mandates," and the "Takings/Property Rights" issues on the Midwestern legislatures.

Armed with much useful information on the above topics, we held three workshops, one each in Michigan, Kansas, and Minnesota during the Spring/Summer of 1995. These workshops investigated how the issues of unfunded mandate relief, property rights/takings and risk regulations at the federal level will influence the agendas of state legislative committees on the environment. Over eighty individuals, including about thirty-five Midwestern legislators, legislative staff, interest group leaders, and lobbyists from five states attended one of these workshops.

Based on the experiences over the last three years, including the 1995 workshops, we found that critical environmental problems have broad generality, are conflict-ridden, and require analysis in multi-dimensional information domains (such as social, political, legal, economic, public-opinion, and scientific spheres). Typical examples of such problems include the well known case of siting noxious facilities (the "not in my backyard syndrome," or NIMBY), the regulatory provisions of the various federal acts (Clean Air, Clean Water, Safe Drinking Water, RCRA, and CERCLA) which have led to the current impasse of "no more unfunded mandates," and debates over the various agenda or priority setting paradigms of CRA, environmental justice, pollution prevention, and innovation.

We concluded that timely dissemination of brief Research Note such as this would be of much value to state-level elected officials and others with strong interest in environmental protection and public policy.

About the Authors

R. Rajagopal, professor in the Departments of Geography and Civil and Environmental Engineering, The University of Iowa, has directed a number of integrated environmental assessments. He is the founding editor of The Environmental Professional, and in 1988 was recognized by the Environmental Protection Agency for his outstanding contributions to innovative problem solving and creative thinking.

David Osterberg, former state representative and past chair of the Energy and Environmental Protection Committee of the Iowa General Assembly, has been instrumental in initiating and developing key legislation in ground water protection, sustainable agriculture, and energy conservation in the state of Iowa. He holds an adjunct faculty appointment in the Department of Geography at The University of Iowa.

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THE IOWA EXPERIENCE

We come from places wide and far
To find out what the factors are
That make a law succeed or fail,
The stones that lie along the trail
As we seek to break the long stagnation
With good environmental legislation
That has support of many factions
To guarantee successful actions
In a fight to save our whole landscape
From history’s abuse and rape;
To clean our water, land, and air
So our offspring know we really care;
To leave a legacy that’s prime,
And to know we acted just in time.
To share ideas we were hidden
To explore approaches value-ridden

And start upon a broad alliance
With a new context to air our science
Let’s carry on this weekend’s labors
And infect our legislative neighbors
‘Til they, without a single pause,
Unite with us in common cause,
So that efforts here to make a start
Won’t falter, fail, and fall apart
So that facts and feelings both come through
Yielding better laws for me and you
That yes, for ours and other nations,
Will last for seven generations,
And we’ll know we’ve played a special role
When we know, at last, our earth is whole.

Llewellyn R. Williams, Sage of the Sagebrush

Note: Dr. Llew Williams, one of our Steering Committee members from the U.S. EPA graciously contributed the above poem at the end of the first annual meeting in 1993; and also the poem on the back cover of this note at the end of the second annual meeting in 1994.
**History of pollution prevention**

The origin of pollution prevention as an environmental protection strategy can be traced to the National Environmental Policy Act (NEPA) of 1969. NEPA states as one of its purposes:

...to promote efforts which will prevent or eliminate damage to the environment and biosphere and will stimulate the wealth and welfare of man [emphasis added].

This prevention-oriented strategy, as envisioned under NEPA, quickly gave way to a variety of end-of-pipe control strategies. These strategies, as implemented under the Clean Air Act and other laws, result in a partial reduction of pollution so as to meet numerical emission and/or exposure standards. Pollution Prevention, on the other hand, is a strategy for managing pollution which suggests that instead of focusing exclusively on control of emissions, exposures and clean-up of toxic wastes, emphasis should be placed on preventing pollutants from entering the environment in the first place. Over the last twenty-five years, many local and state governments, and corporations have shown interest in varying degrees in the adoption of pollution prevention strategies. In January 1989, Mr. Lee Thomas, the EPA Administrator of the departing Reagan Administration submitted a “Pollution Prevention Policy Statement.”

The Pollution Prevention Act of 1990 established a hierarchy for pollution control efforts. At the top is prevention and reduction at the source. Pollution that is not preventable is to be recycled in a responsible manner. Pollution that cannot be recycled is to be treated for reduction in toxicity. Dumping or releasing contaminated wastes is to be a last resort. Under the Pollution Prevention Act, all pollutant emissions—whether into air, land, or water—fall under this hierarchy. On October 20, 1993, Bill Clinton signed Executive Order 12873 to help ensure that the federal government uses cost-effective waste reduction and recycling measures. A Federal Environmental Executive, designated by the President and operating within the EPA, will monitor federal agencies for compliance.

**Glossary of Terms**

- **Comparative Risk Analysis (CRA):** A procedure for ranking environmental problems by their seriousness (relative risk) for the purpose of assigning program priorities. Typically, a team of experts identify problems by type of risk: cancer, non-cancer health, ecological impacts, material damage, and so on. To arrive at a measure of relative risk, the experts then compare and rank the problems within each type based on factors such as severity of impact, the number of people exposed, the duration of exposure and the like.

- **Energy Efficiency:** Updating obsolete machinery, rethinking building designs, and converting lighting fixtures can lead to significant cost and energy savings when implemented on a large scale. Such activities can be implemented within the context of a comprehensive pollution prevention strategy.

- **Life Cycle Analysis:** A cradle-to-grave analysis of products and processes so as to obtain a holistic view which could result in significant reduction or prevention of pollution. This would require analysis of the complete process, including extraction of raw materials, production and distribution processes, waste generation, use, and ultimate disposal.

- **Pollution Prevention:** Advocates the management of environmental hazard by significant reduction in pollutants and processes which lead to the creation of such hazards. In many cases, this would require finding substitutes for pollutants such as CFCs and creating new uses for wastes such as paper, rubber, cans, and other material once they are generated.

- **Precautionary Principle:** The notion that environmental actions should be preventive instead of solution-oriented.

- **Responsible Care:** A program sponsored by manufacturing industries for continuous improvement in environmental safety. Endorsed by countries such as Canada, the United States, Australia, and many European nations, the program asks organizations to draft and implement environmental codes of conduct.

- **Source Reduction:** Reducing or eliminating pollution at the source or from the very beginning. This might require substitution of raw materials, changing routine plant operations, and/or reformulating or modifying products.

- **Waste Reduction:** By creating less packaging, eliminating redundant packaging, and creating more durable, reusable containers, the amount of trash going to landfills can be reduced.

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**Some propositions to ponder**

- Pollution prevention works to reduce the amount and toxicity of pollution, as well as change the industrial practices that produce pollution.
- Reduction in pollution can bring economic benefits to industry by creating more efficient and less expensive production methods and to taxpayers from reduced cost of goods and services, and potential health effects, because prevention costs over the long run are invariably smaller than clean-up costs.
- Prevention strategies do not limit quantity of production, are not constrained by the cost of control, and promote economic growth.
- Governmental coordination is
Pollution Prevention
In 1993, Renew America organized the Third Annual Environmental Leadership Conference titled: Agenda: Partners in Success for the 21st Century and How to Get There; Building a Shared Vision of Environmental and Economic Health, 1993. It was designed to bring people from businesses, non-profit groups, and government agencies together to share their insight, knowledge, and goals for a healthy environment. The pollution prevention group at this conference was chaired by Jack Azar of Xerox Corporation and facilitated by Erik Meyers of the Environmental Law Institute. The group emphasized that pollution prevention applies to natural resources/lands as well as to manufacturing, and noted that pollution prevention also includes a variety of small measures implemented by individuals. For further information contact: Renew America, 1400 16th Street NW, Suite 710, Washington, D.C. 20036. Tel.: (202) 232-2252.

Last summer, EPA Administrator Carol Browner announced the selection of six major U.S. industries (auto manufacturing, computers and electronics, iron and steel, metal finishing and plating, petroleum refining, and printing) under a common sense pollution prevention initiative. Collectively they release 345 million pounds of toxics into the environment. A team of individuals from EPA, industry, environmental organizations, and trade unions will develop a blue print based on six principles: comprehensive review of relevant EPA rules, pollution prevention as a guide, easier reporting and wider public access to environmental information, strong enforcement, improved permitting, and encouragement of innovation.

Recently, the U.S. EPA, the State of California and the trucking industry joined hands to substantially reduce nitrogen oxide (NOx) emissions from new trucks and buses starting in year 2004. Based on the goals stated in the Statement of Principles, the reduction in NOx emissions by the year 2020 (when the fleet would have turned over) would be about 900,000 tons. This level of reduction is equivalent to eliminating one in seven, or 1,000 coal-fired electric power plants in the country.

In the past few years, the U.S. EPA has had a policy of promoting supplemental projects, including pollution prevention projects, in Enforcement Settlements. In 1992, twenty-eight percent of the 222 such settlements involved pollution prevention. Such imaginative and creative approaches to promoting pollution prevention are worthy of further investigation.

Pollution prevention paradigm versus comparative risk analysis

At a recent conference sponsored by Resources for the Future, Barry Commoner, director of the Center for the Biology of Natural Systems at Queens College, distinguished between two fundamental strategies for solving environmental problems: "end-of-pipe" control versus pollution prevention. He argued in favor of pollution prevention as the preferred strategy and in favor of public opinion as the only means for setting priorities that logically follows from that choice. Commoner first argued that Comparative Risk Analysis [CRA] is wedded inextricably to the "failed national enterprise" of pollution control, because it is designed to identify the largest risks and only reduce them down to the level of the rest of the "environmental landscape." Second, he observed that pollution prevention on a large scale, such as a shift to electric cars, would engender massive social and economic changes, which may make the environmental impacts "a subsidiary, though welcome, consequence rather than the prime mover." Logically, only public judgment is broad enough to determine if these changes are desirable, he said; CRA is not.

John Graham, professor of health policy at the Harvard School of Public Health, countered that pollution prevention and CRA are complementary, not mutually exclusive, because pollution prevention is just one strategy for tackling high-priority problems identified by CRA. In some cases, prevention may even be more expensive than control, or may present new risks.

Alvin Aim, director and senior vice-president for energy and the environment for SAIC, Inc. (a supplier of high tech products and services) remarks that there exist a large number of past problems (such as Superfund and nuclear waste sites) which cannot be retroactively prevented. Priorities will still be necessary to decide which of the many pollution prevention, cleanup, and disposal activities to pursue and at what time schedule.

Waste reduction

Non-hazardous wastes

EPA figures indicate that the U.S. produces more than 11 billion tons of solid, non-hazardous wastes yearly. Industry alone produces 7.6 billion tons, while household trash (municipal waste) is only 1.5 percent of the total waste stream, approximately 180 million tons a year. The nation's 6,000 landfills are filling up; and
Examples of some who would be green

Many national organizations, peer groups, journals, and private foundations such as Renew America, the Chemical Manufacturer's Association, the National Wildlife Federation, and the Ford Foundation recognize environmental achievement, performance, success, and leadership by awarding prizes to winners at well publicized banquets and ceremonies. A small selection of such noteworthy organizations and a brief statement of their activities are listed below:

1. **Apple Computer** has plans to eliminate chlorofluorocarbon (CFC) use in the cleaning of electronic assemblies by 1993.
2. **Ben & Jerry's Ice Cream** has set up an experimental solar aquatics waste-water treatment program.
3. **California's Recycling Market Development Zone (RMDZ)**: By creating markets, RMDZ businesses have recycled 1.2 million tons of solid waste and created 600 new recycling industry jobs since 1989. This program was named a Renew America's 5th Annual National Award Winner for Environmental Sustainability in 1995.
4. **Digital Equipment Corporation** has an imaginative program of source reduction for its wastes.
5. **Du Pont** is expanding its CFC recovery and plastics recycling programs.
6. **Hyatt Hotels and Resorts** founded a recycling consulting firm to advise hotels and convention centers.
7. **Martin Marietta**: A TQM program to reduce hazardous waste and toxic chemicals resulted in the reduction of 88% of hazardous wastes, 83% of toxics releases, and 80% of ozone-depleting chemical releases from 1987–88 levels. Named a Renew America's 5th Annual National Award Winner for Environmental Sustainability in 1995.
8. **3M's “Pollution Prevention Pays” program** saved the company $500 million.
9. **New England Electric's retrofitting program** for energy efficiency resulted in $65 million of subsidies for its business customers.
10. **Patagonia** has a stringent in-house energy-saving program, and donates 10 percent of its pretax profits to grassroots environmental organizations.
11. **Pennsylvania/Pittsburgh's Frick Park Photovoltaic Project**, a cooperative replacement lighting system effort of the Pennsylvania Energy Office, City of Pittsburgh, and Schenley High School of Pittsburgh, has saved Pittsburgh $3 million and 80 million BTUs over the past decade. Named a Renew America's 5th Annual National Award Winner for Environmental Sustainability in 1995.
12. **Polocarid's promotion and reward systems** are linked to employee pollution-reduction initiatives.
13. **Procter & Gamble** has attained up to 75 percent reduction in some of its packaging efforts.

Opening new ones is fraught with environmental concerns, public health issues, and cost. Waste disposal has traditionally been a local issue (i.e., where to put the landfill), and now state and local governments are trying to deal with the monumental piles of trash by waste reduction, recycling, incineration, composting, and regulation through requiring companies use the “best available technology” to limit emissions.

An efficient waste reduction program can be created by providing incentives for residents, businesses, and industries who participate. Such a system takes in all aspects of waste: more efficient production of raw materials, less packaging, better product design and manufacturing techniques, and careful attention to disposal, favoring recycling and reclamation of wastes over land-filling and incineration. For such a system to work, government must encourage and participate in recycling, consumption of recycled products, and investment in recycling technology.

**Hazardous wastes**

Each year in the US more than 260 million tons of hazardous waste materials are produced, primarily by industry, especially the chemical and petrochemical industries. Every year in the United States, more than one ton of hazardous waste is created for each person. Hazardous waste issues are further complicated by the toxic build-up of years of poorly regulated or unregulated disposal.

While toxic waste is still largely land-disposed (landfills, waste impoundment, and deep well injection), it is the least desirable method for both the public and industry, because of increased regulation, negative public opinion, and the potential for future liability for cleaning up of contaminated sites. Alternatives to land disposal include reducing the use of toxic materials, technological innovation, and waste management/waste reduction, in which the hazardous waste properties are changed in volume and/or toxicity. It is important to note that almost all chemical wastes can be treated either physically, chemically, or biologically to reduce volume and/or the toxic aspects.

**Agricultural runoff**

Fertilizer and manure runoff from farms and large feedlots present a serious threat to water quality; two-thirds of the water readily available

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The only means of conservation is innovation

Peter Drucker
A FRAMEWORK FOR ENVIRONMENTAL PRIORITIES

for human consumption is contaminated by anthropogenic pollution. The estimated expense of meeting these threats, by testing and treating water supplies, is $54 billion for 1995, and is expected to increase to $64 billion by the year 2000. While agribusiness touts the extra yields and revenue from heavy pesticide and fertilizer use, the costs of water treatment continue to rise. Encouraging reductions in farm chemical use may be the least expensive way to protect water supplies, while regulating manure buildup on large feed lots is being considered by some states.

Air quality

Air pollution research has shown that a small percentage of cars create a large percentage of air pollution. The older the car, the more likely it is to emit large amounts of pollutants. Researchers believe that 50 percent of the air pollution is caused by 10 percent of the cars in Denver, and 7 percent in California. In contrast, the cleanest, most energy efficient automobiles (50 percent of those on the road today) emit only 3 percent of air pollutants. While emissions testing and requirements are a good start, old cars generally fail the emissions tests. In some states, there are buy-back and repair programs aimed at older cars.

A midwestern example of pollution prevention

Everyone knows that steel mills are big polluters. As a steel mill environmental engineer explains, "Steel-making...involves taking dirt and rocks, burning them, and converting them into useful household products." Indiana has become the largest US steel making state, producing 20 million tons in 1992. This has been a problem for Lake Michigan, on whose southern shore the US Steel and Indiana Steel plants are located, because of the convenient transportation via the lake, and the need for large amounts of water. To obtain the virtual elimination of toxic discharge into the Great Lakes specified in agreements by the Canadian and US governments, the Indiana steel plants have had to change the way they dispose their wastes. They now use a combination of waste reduction, recycling, and technological innovation. Indiana steel mills reduce the amount of waste they create by reusing flue dust and mill scale, mixed with limestone and dolomite, for use in furnaces. Water wastes and hydraulic oils are also recycled, as is waste pickling liquor, which through an outside agency is transformed into magnetic powder for use in the construction of video and audio tapes.

Reduction of volatile and toxic organic compounds (VOCs and TOCs) has been achieved by increasing efficiency through maintenance, and by installing new seals and doors on furnaces and ovens. Instead of direct spraying to reduce gas temperatures inside coke ovens, water filled plates are used with a 75 percent reduction in VOCs. Other technology initiatives include developing "direct steelmaking," which would eliminate the coke ovens, further reducing pollution emissions.

Great Lakes Protection Fund: Pollution Prevention

The Great Lakes Protection Fund is an endowment, with the goal of $100 million, created by the Governors of the Great Lakes states for the management of this shared natural resource. Pollution prevention is the Fund's most important strategy for reducing damage to the lakes. It requires elimination of toxic or damaging substances or practices so that cleanup or treatment is minimized or unnecessary. Completed and current projects include,

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>ORGANIZATION</th>
<th>GRANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pollution Prevention in Manufacturing</td>
<td>Lake Michigan Federation</td>
<td>$50,000</td>
</tr>
<tr>
<td>2. Pollution Prevention Teleconferences</td>
<td>Cleveland Adv. Mfg. Program</td>
<td>$20,000</td>
</tr>
<tr>
<td>3. Collaboration of Oil Spill Protection</td>
<td>Council of Great Lakes Governors</td>
<td>$51,000</td>
</tr>
<tr>
<td>4. Promoting Zero Discharge</td>
<td>Great Lakes United</td>
<td>$92,000</td>
</tr>
<tr>
<td>5. Inventory of Toxic Air Emissions</td>
<td>Great Lakes Commission</td>
<td>$20,000</td>
</tr>
<tr>
<td>6. Environmental Reporting Workshop</td>
<td>Scientists' Institute for Pub. Inf.</td>
<td>$25,000</td>
</tr>
<tr>
<td>7. Citizen Workshop on Clean Air Act</td>
<td>Sierra Club Midwest</td>
<td>$27,000</td>
</tr>
<tr>
<td>8. Great Lakes Television Consortium</td>
<td>WTTW/Channel 11</td>
<td>$40,000</td>
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</tbody>
</table>

Source: Steps Toward Stewardship. Great Lakes Protection Fund. 35, E. Wacker Drive, Suite 1880, Chicago, IL 60601. Tel.: 312-201-0660.
What are midwestern states doing?

Illinois, Indiana, Iowa, Minnesota, and Ohio have adopted pollution prevention measures aimed at reducing the use of toxics. Some key points of their laws are:

- Iowa: Passed a toxic pollution law in 1991 that defines toxic pollution reduction in terms of prevention, with prevention being the first priority. Iowa's definition of reduction is strict, and does not count treatment, waste burning for energy recovery, transfers of waste to other mediums, off-site waste recycling, and other end-of-pipe measures as toxic use reduction. While the 1991 Iowa law defines pollution reduction/prevention, many of the existing programs such as the Waste Reduction Center at the University of Northern Iowa, the Leopold Center for Sustainable Agriculture at Iowa State University, and the Iowa DNR's Waste Management Division were initiated under the rubric of earlier laws.

- Illinois and Indiana: The Toxic Pollution Prevention Act (IL) and the Industrial Prevention and Safe Materials article (IN), are both pollution prevention based, and in a recent study by the National Environmental Law Center and the Center for Policy Alternatives (NELC/CPA), both received ratings of "fair." Both laws are a good base for future legislation, and hold a strong potential for technical assistance.

- Minnesota: 1990 Pollution Prevention Act was also rated "fair" in the NELC/CPA study. It was seen as fundamentally weak, with a broad definition of pollution prevention, including pollution control methods that would reduce the release rate of toxic pollutants, hazardous wastes, and hazardous substances. In addition, reduction was not the top priority. A strong point, however, is that Minnesota is committed to funding their program, with a two percent per pound assessment on facilities that generate more than 25,000 pounds of toxics.

A ranked comparison of pollution prevention laws in selected states, including IL, IN, and MN, and the available level of funding is presented in the box below. The question of cost, however, is undoubtedly the biggest obstacle to effective pollution prevention, as the data shows. Massachusetts pays a lot more than any other of the study states for its highly ranked program.

What are other states doing?

- Massachusetts: The Massachusetts Toxic Waste Reduction Act is considered one of the best in the country. In the NELC/CPA study, it was the highest rated toxics prevention law, with a rating of 'very good.' The law focuses on reducing toxic wastes, makes prevention a priority, and requires companies to first plan and then report their waste tracking efforts. The law has been criticized, however, for its shortcomings in providing the technical assistance companies may need.

- New York: A New York pilot program, run by Barry Commoner and the Center for Biology of Natural Systems, showed that household recycling could reduce landfill wastes 85 percent (by weight). The price of

A Ranked Comparison of State Pollution Prevention Laws and Funding

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>Annual Funding</th>
<th>Source of Funding</th>
<th>Releases (million lbs)</th>
<th>Ratio ($/1000 lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MA</td>
<td>5,242,000</td>
<td>Fees/Grant</td>
<td>70</td>
<td>74.9</td>
</tr>
<tr>
<td>2.</td>
<td>OR</td>
<td>400,000</td>
<td>Fees</td>
<td>33</td>
<td>12.1</td>
</tr>
<tr>
<td>3.</td>
<td>IN</td>
<td>850,000</td>
<td>Grants/Appropriations</td>
<td>276</td>
<td>3.1</td>
</tr>
<tr>
<td>3.</td>
<td>WA</td>
<td>1,150,000</td>
<td>Fees/Grants/Appropriations</td>
<td>50</td>
<td>23.0</td>
</tr>
<tr>
<td>5.</td>
<td>IL</td>
<td>200,000</td>
<td>Grant</td>
<td>251</td>
<td>0.8</td>
</tr>
<tr>
<td>6.</td>
<td>ME</td>
<td>150,000</td>
<td>Fees</td>
<td>22</td>
<td>6.8</td>
</tr>
<tr>
<td>7.</td>
<td>CA</td>
<td>1,100,000</td>
<td>Fees/Grant</td>
<td>201</td>
<td>5.5</td>
</tr>
<tr>
<td>8.</td>
<td>MN</td>
<td>1,525,000</td>
<td>Fees/Grant</td>
<td>65</td>
<td>23.5</td>
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<tr>
<td>9.</td>
<td>GA</td>
<td>90,000</td>
<td>Grant</td>
<td>131</td>
<td>0.7</td>
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<tr>
<td>10.</td>
<td>TN</td>
<td>400,000</td>
<td>Grants/Appropriations</td>
<td>249</td>
<td>1.6</td>
</tr>
</tbody>
</table>

A panel of seven experts evaluated the toxic use reduction laws passed in 1989 and 1990 for these ten states, using the six factors: definition of toxics use reduction, planning requirements, reporting requirements, regulatory authority and reform, worker and community involvement, and technical assistance.

EPA's major voluntary partnerships

Voluntary programs have the potential to achieve long-term success, and a few EPA sponsored programs are listed below.

**Design for the Environment**, Office of Prevention, Pesticides, and Toxic Substances. This program has applied innovative risk-ranking efforts to computers and electronics, printing, and dry cleaning industries.

**Sustainable Industries Project**, Office of Policy Planning and Evaluation. Data from the Toxic Release Inventory and the U.S. census, input from states and non-government organizations, were used to assist in decision-making in photo imaging, thermostat plastics, and metal finishing and plating industries.

**The 33/50 Program**, Office of Prevention, Pesticides, and Toxic Substances. More than 1,200 U.S. manufacturers are currently participating in the program, voluntarily committing to abatements of environmental releases. The inventory data show that members had accomplished a 40 percent reduction in toxic chemical releases by 1992.

**Wastewise**, Office of Solid Waste and Emergency Response. Two hundred eighty-two businesses have agreed to reduce their waste products (e.g., office papers, food scraps, and packaging), recycle more, and buy or manufacture recycled products.

**WAVE** *(Water Alliance for Voluntary Efficiency)*, Office of Water. This partnership agreement between EPA and the lodging industry is designed to reduce water use by 15–30 percent.

**Energy Star Buildings**, Office of Air and Radiation. This energy-efficiency program helps commercial building owners plan and implement energy upgrades. Initial estimates indicate that the program will be able to cut energy costs by 40 percent in commercial and industrial buildings.

**Green Lights Program**, Office of Air and Radiation. The program works with more than 1,500 participants to reduce air pollution by promoting energy-efficient lighting.

**Building Air Quality Alliance**, Office of Air and Radiation. EPA helps building owners and managers improve the air quality in their buildings by providing them with a manual outlining steps they can take.

Cons

- Does not address the pollution already in existence such as the wastes buried at the thousands of hazardous waste sites scattered across the United States.
- Requires a fundamental change in the way citizens, industry, and government consume and dispose of material goods: currently, only 18 percent of private citizens recycle.
- Cannot stand alone: borrows the empirical evidence on what kind of pollution should be addressed first from CRA, and technological initiative from the Innovation paradigm.
- Currently the use of recycled and reclaimed materials, and the purchase of products made from such materials is low.

Sources for further information


US EPA, Region VII (Kansas City): Regional Administrator. 726 Minnesota Avenue, Kansas City KS 66101. (913) 551-7006.


Indiana EPA (Pollution Control Division): Joanne Joyce. 105 South Meridian St., Indianapolis IN 46225. (317) 232-8172.


Great Lakes Protection Fund. Executive Director. 105 South Meridian St., Indianapolis IN 46225. (317) 232-8172.

Iowa Waste Reduction Center: John Konefes, Director. University of Northern Iowa, Cedar Falls IA 50614. (800) 422-3109/319 273-2079.


Leopold Center for Sustainable Agriculture: Dennis Keeney, Director USDA Soil Tilth Laboratory, Energy Center, Iowa State University, Ames, Iowa.

Don't get involved in partial problems, but always take flight to where there is a free view over the whole single great problem, even if this view is still not a clear one.

Ludwig Wittgenstein
EPA's Guiding Principles, Goals, and Benchmarks for Pollution Prevention

In July 1994, the US EPA issued a strategic plan, including the principle of Pollution Prevention—The Preferred Approach. Under this principle, the EPA will use market incentives and improved communication to prevent pollution. Two long range goals are described below, along with proposed benchmarks for the year 2005.

GOAL 1: PREVENTING SPILLS AND ACCIDENTS

Long-Range Goal: No unintended releases of substances which endanger our communities or wildlife.

Benchmark 1: 25% fewer accidental releases of oil, chemicals, and radioactive substances than in 1993 and 50% reduction in incidents that harm people, animals, and plants.

Benchmark 2: a 50% increase in facilities in high-risk areas which have reduced or eliminated hazardous waste inventories.

GOAL 2: PREVENTING WASTES AND TOXIC PRODUCTS

Long-Range Goal: Clean communities, due to efficient, environmentally safe production, consumption, and recycling.

Benchmark 1: a 25% reduction from 1992 levels in toxic chemicals released from industrial facilities.

Benchmark 2: a 25% increase in safety due to the broader use of new chemicals and safer use of existing chemicals.

Benchmark 3: 99% or more of chemicals approved since 1995 will be shown to have been safe.

Benchmark 4: 25% of government, industry, and consumer purchases will be for environmentally preferable products where available.

Benchmark 5: an increase in capital investments in prevention technologies from 20% of environmental investments in 1992 to 50%.

Benchmark 6: the reduction of municipal waste generated per capita to the 1990 level of 4.3 pounds per day, and recycling of municipal waste increased to 30%.

Benchmark 7: the reduction to 50% of 1991 levels of the most persistent, bioaccumulative, and/or toxic constituents in hazardous wastes.

References Cited


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During 1992–94, several invited guests, experts, scholars, and specialists willingly came to Iowa City and shared much valuable information with the Steering Committee at our annual meetings. We thank the following individuals for either sharing their insights or being gracious hosts: Professor Lynton Caldwell, University of Indiana; Mr. Kevin Doyle, Director, National Programs, Environmental Careers Organization, Boston; Associate Dean John Fix, University of Iowa; Mr. John Griffin, Sokaugen-Chippewa tribal community representative, Wisconsin; Mr. John Konedes, Director, Iowa Waste Reduction Center, University of Northern Iowa; Ms. Kate Kramer, Director, Western Center for Comparative Risk, Boulder, Colorado; Mr. Larry Morandi, Senior Fellow, National Conference of State Legislatures, Mr. Tim Mulhollland, Scientist, Comparative Risk Assessment Project, Wisconsin DNR; Former Provost Peter Nathan, University of Iowa; Dr. Mary O’Brien, University of Montana; Mr. Adam Rombel, Editor, ECOS Magazine, Council of State Governments; Ms. Judith Stockdale, Former Executive Director, Great Lakes Protection Fund, Chicago; and Mr. Craig Struve, Owner/Manager, C-S Agrow Services, Iowa.

With the assistance and insights of the Steering Committee and the invited guests we learned a lot about the process of priority setting in the first two years (1992–94). During the last year, especially in the last six months, we took the show on the road and conducted three workshops, one each in Michigan, Kansas, and Minnesota. Once again, we owe much to the four Steering Committee members Rep. Bill Bobier (MI), Rep. Laura McClure (KS), Sen. Chris Beutler (NE), and Sen. Steven Morse (MN) who were instrumental in hosting these workshops and turning them into a highly productive learning experience for the participants and us. In all over eighty individuals, about thirty-five of whom were elected officials, attended and actively participated in the workshops. We very much appreciated their attendance and active participation.

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On perspective -- thought you would like to know

- On the average, an American spent about $4,000 per year (in 1992) on health care. Ninety percent of that money was spent in the last months of life.
- Less than one percent of the health care dollars went to preventive care, or less than $34 per person per year.
- Congress, in late July 1995, has been debating the EPA appropriations bill which will fix the U. S. EPA’s FY 96 budget at $4.89 billion, or less than $20 per person per year.
Change, Change on the Range

Iowa City, you sure look pretty with the sun of late Spring in your skies.
From dawn 'til dark, we're constructing an ark, as the waters of conflict arise.
So much to be done, such wars to be won, when the health of our world is at stake
It takes more than compliance and credible science if the logjam of problems we'll break.

The meeting gets brisk as comparative risk is put down with a sense of derision;
As the scientist says, there are so many ways to arrive at a better decision.
With so many actors and so many factors and so little money to burn,
We're going berserk: will alternatives work as we figure out just where to turn?

Will the world out there trust us to advocate justice for the groups with so little standing,
Where the easy solution's been to put the pollution in their yard without understanding
That someone must fight for their inalienable right to breathe free, to eat safe, to drink pure.
If they can't turn to you, then what else can they do, and who will their safety ensure?

Will the laws in the making protect from the taking the properties we've worked to own,
Or on the contrary, can some law arbitrary strip our holdings down to the bare bone?
As part of the scene, we'll go "Beyond the Green" to direct the environment movement
Restoring the brownfields or all the surroundfields to A- or B-level improvement.

It's never a breeze to collect impact fees when employers decide to just move,
And leaving the rest to just plain decongest does not always the environment improve.
To minimize harm, you just buy out a farm where expansion's at minimal cost;
Beware of the ruse, you may have a "lose-lose" when at both ends you see what's been lost.

Can we keep our production while we get waste reduction with newer approaches we use;
If we balance our wealth with ecological health, we'll find we don't have to abuse.
When we dug out the mud of the 100-year's flood and assessed all the disaster's reasons,
Just who's to account as restoring costs mount, when we knew well the risks of the seasons?

With all that we've shared, let's be better prepared to move forward with good legislation
That right from its birth clearly betters the Earth with efficient and just regulation.

Llewellyn R. Williams, "The Sage of Sagebrush"

A FRAMEWORK FOR ENVIRONMENTAL PRIORITIES
A Midwestern Perspective

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