Scientific Decision Making: A Barrier to Citizen Participation in Environmental Agency Decision Making

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INTRODUCTION

In recent years, environmental regulatory agencies have been delegated broad regulatory power, often with a minimum of legislative control. In addition, courts defer to agency expertise and are reluctant to find an abuse of rule-making or regulatory power. The expansion of administrative power is troubling to citizens who face the effects of an agency’s decision to issue a permit for a hazardous waste facility or landfill.

Citizens are concerned that agency decision makers have become

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1. Agency power has expanded to include greater discretionary power in three areas of environmental regulation. First, state and federal legislatures delegate broad authority to administrative agencies to regulate environmental activities, often with minimal statutory guidance. See Yellin, Science, Technology, and Administrative Government: Institutional Designs for Environmental Decisionmaking, 92 Yale L.J. 1300 (1983). “[T]he use of sophisticated mathematical and biological models distinguishes modern administrative experts from their Roosevelt-era predecessors.... [The effect of the use of these models is to] distance a modern agency’s reasoning from ordinary experience and insulate regulatory decisions from generalist review.” Id. at 1300.

Second, the range of regulatory alternatives expanded from the traditional command and control approach to an incentive-based approach which encourages voluntary industry compliance. See Davis, Approaches to the Regulation of Hazardous Wastes, 18 Envt’l. L. 505, 513 (1988); Gelpe, Organizing Themes of Environmental Law, 16 WM. MITCHELL L. REV. 897 (1990). The incentives for the regulated party can range from decreased taxes and fee structures to a property interest in the amount of reduced emissions which can be traded or sold to others. Id. at 909.

Third, agency power broadened because of the use of rulemaking negotiations with the regulated party. See generally Perritt, Negotiated Rulemaking Before Federal Agencies: Evaluation of Recommendations by the Administrative Conference of the United States, 74 Geo. L.J. 1625 (1986) (discussing negotiated rulemaking and administrative agencies).

2. Courts reviewing technological decision making often defer to agency expertise. See, e.g., Ethyl Corp. v. EPA, 541 F.2d 1, 28 (D.C. Cir.) (en banc) (“The Administrator may apply his expertise to draw conclusions from suspected, but not completely substantiated, relationships between facts, from trends among facts, from theoretical projections from imperfect data, from probative preliminary data not yet certifiable as ‘fact,’ and the like.”), cert. denied, 426 U.S. 941 (1976).

See also Glicksman, A Retreat From Judicial Activism: The Seventh Circuit and The Environment, 63 Chi. Kent. L. Rev. 209 (1987). The author notes that federal courts are increasingly reluctant to actively promote environmental protection objectives: “[M]ore recent decisions reflect the belief that an unrestrained judiciary actively seeking to implement its own notions of public policy infringes improperly upon executive and legislative authority.” Id. at 210; Levy & Glicksman, Judicial Activism and Restraint in the Supreme Court’s Environmental Law Decisions, 42 Vand. L. Rev. 343 (1989). The Supreme Court shifted its environmental law decisions from judicial pro-environmental activism to pro-development. This represents a new emphasis of deference toward agency interpretation of statutes. Id. at 346; Schuck & Elliott, Studying Administrative Law: A Methodology for, and Report on, New Empirical Research, 42 Admin. L. Rev. 519, 533 (1990) (A twenty year longitudinal study of federal courts demonstrated “a growing tendency of reviewing courts to defer to agencies . . . .”).
insulated from accountability to the electorate. In our political culture, citizens value public participation as a means to control and limit governmental power and are reluctant to delegate collective decisions to administrative agencies and scientific experts.

For citizens facing the possible health effects of a hazardous landfill, their concept of a just and democratic government is one where respect for the individual is paramount. Unfortunately, public participation programs and procedures have not achieved the kind of


Since the 1960s there has been a growing dissatisfaction with the ability of the federal government, as represented by administrative agencies, to solve the degradation of the environment. Russell & Gregory, Award of Attorney’s Fees in Environmental Litigation: Citizen Suits and the “Appropriate” Standard, 18 GA. L. REV. 307, 307 (1984). “People no longer held to the New Deal dream that the ills of society could be cured by delegating authority to administrative agencies that would creatively regulate complex social problems in the public interest.” Id. at 308.

See also Sunstein, Participation, Public Law, and Venue Reform, 49 U. CHI. L. REV. 976, 985-86 (1982).

[In the last twenty years], Congress has delegated considerable discretion to unelected officials who make regulatory decisions for which the governing statutes fix only vague limits. This development has placed considerable strains on the original constitutional understanding that public officials would be more or less directly accountable to the electorate . . . .

Id. (footnote omitted).


5. See generally Schroeder, Rights Against Risks, 86 COLUM. L. REV. 495 (1986) (discussing citizens' view that health risks should not be weighed against economic benefits).

6. The most common public participation programs, derived from state procedures or the federal Administrative Procedure Act (APA) involve public hearings or meetings. At least three major defects of public meetings have been identified: (1) participants are not from a broad cross-section of the public; (2) the most successful citizen inputs are found in programs which require the least scientific expertise; and (3) most participatory programs are geared to intervention at the local level which leaves policy decisions unaffected. See generally Crosby, Kelly & Schaefer, Citizen Panels: A New Approach to Citizen Participation, 48 PUB. ADMIN. REV. 170 (1986); but see Rosener, Making Bureaucrats Responsive: A Study of the Impact of Citizen Participation and Staff Recommendations on Regulatory Decision Making, 42 PUB. ADMIN. REV. 339 (1982).

In a study of 1,816 public hearings held by the California Coastal Commission, the author found that citizen participation was a variable which significantly increased the probability of citizen success in the Commission denial of a permit.

Additional barriers to effective citizen participation have also been identified. These include: (1) structural barriers, such as administrative procedures and rules that do not require participation; see Bacow & Milkey, Overcoming Local Opposition to Hazardous Waste Facilities: The Massachusetts Approach, 6 HARV. ENVTL. L. REV. 265, 270-72 (1982); Saunders, Interpretive Rules with Legislative Effect: An Analysis and a Proposal for Public Participation, 1986 DUKE L.J. 346; (2) economic barriers, such as the costs of hiring scientific experts and lawyers to challenge agency action in court; see Boyer & Meidinger, Privatizing Regulatory Enforcement: A Preliminary Assessment of Citizen Suits Under Federal Environmental Laws, 34 BUFF. L. REV. 833, 839-40, 851 (1985); (3) scien-
participatory democracy demanded by a public concerned about increased health and environmental risks. The public's inability to influence agency decision making encourages individuals and communities to undertake strategic behavior designed to block the proposed activity.

This Comment tests one hypothesis for the failure of public participation to influence environmental agency decision making. The hypothesis is that citizens bring a form of information to the decision-making process that the government agencies do not have the flexibility to accommodate. Such information is likely to be relevant primarily to the public's understanding of the problem and may not be easily synthesized by the agencies to make sound decisions. For instance, citizens are likely to have more information about local conditions and may have a greater appreciation for the idiosyncrasies of the community. Agencies, on the other hand, may have more information about national and international trends and may have a broader perspective on the problem. Therefore, citizens may be more likely to bring information to the decision-making process that will be of limited use to the agencies.

7. The APA comes under increasing attack as failing to provide the most effective means for public participation in agency decision making. Pressure for reform has intensified in recent years because of the broad scope of agency rulemaking and agency discretionary power, and the resulting social impact. Magat & Schroeder, supra note 3, at 303-08.


9. The term "influence" is used in this paper to connote a sharing of agency authority with local citizens. Citizens value public participation as a means to obtain "sufficient information to evaluate risks, opportunity for questioning the existence of such hazards, and a voice in their control." Paehlke, Democracy, Bureaucracy, and Environmentalism, 10 ENVTL. ETHICS 291, 303 (1988).


The critics of broadened citizen participation argue that agencies would be unduly hampered by having to share decisional power with the public. After all, the need for administrative agencies stems from the inability and inefficiency of individuals and communities to distribute risk burdens on their own. Id. at 305-08. See also Hanes, Citizen Participation and Its Impact upon Prompt and Responsible Administrative Action, 24 Sw. L.J. 731 (1970). "It is reasonable to anticipate that this unprecedented participation by individual citizens . . . and groups on their behalf will tax the time, energy, and ingenuity of the administrative agencies and result in major delays in the consummation of proceedings of great economic and social consequence." Id. at 738.

10. Strategic behavior is the use of holdout strategies by citizens to bargain for their preferred outcome. For example, citizens frustrated by the lack of agency sensitivity to community concerns may delay agency proceedings by resorting to litigation or administrative hearings. See, e.g., Note, Enhancing the Community's Role in Landfill Siting in Illinois, 1 U. ILL. L. REV. 97, 101-03 (1987) (discussing use of local home rule areas to block Illinois land fill actions).
making process that environmental regulatory agencies are unable to assimilate. To test this hypothesis, a survey was conducted to assess the impact of scientific decision making on citizens and agency staff.

**Thesis**

The failure of citizens to influence environmental decision makers is directly related to the inability of the scientific decision-making process to accommodate cultural and political rationality in agency decision making. Although public participation procedures, such as the Administrative Procedure Act (APA), legitimized lay access to agency proceedings, the specialized language and the need for scientific proof seriously hinders the ability of lay citizens to influence health or environmental agency action.\(^{11}\)

Environmental regulatory agencies\(^ {12}\) use a scientific model as the basis for decision making.\(^ {13}\) In this paper, “scientific rationality” refers to agency use of a scientific model and its resulting impact on citizen participation. “Political rationality”\(^ {14}\) is the process by which citizens communicate their concerns to government; “cultural rationality”\(^ {15}\) is the process by which citizens define the meaning of

11. Citizens are at a serious disadvantage in trying to challenge industry or agency scientific data. One author found, “While the regulated industry usually has access to the best and perhaps the only relevant data, the data base of public interest groups is relatively poor. Thus, they either must seek to discredit industry statistics, often without alternative data sources of high quality, or must take the industry data as given and seek to draw contrary inferences from it.” Schuck, Public Interest Groups and The Policy Process, 37 PUB. ADMIN. REV. 132, 137 (1977).

12. This Comment discusses only environmental regulatory agencies. For convenience, the term “agencies” is used to refer to environmental regulatory agencies.

13. The term “scientific model” is used in this Comment to describe a form of reasoning which consists of several analytic steps. First, a theory is developed to explain the health or environmental effects from a given chemical or substance. Second, the theory is used to conduct experiments, usually animal studies, to determine the degree of health effects likely to harm humans or the environment. Third, a mathematical model and equation are deduced from this theory to predict the probability of harm. The resulting model, along with any assumptions and extrapolations from experimental data, is used by regulators as the basis for the desired regulatory standard. A detailed discussion of scientific decision making is beyond the scope of this Comment. An excellent discussion can be found in Latin, Good Science, Bad Regulation, and Toxic Risk Assessment, 5 YALE J. ON REG. 89 (1988).

14. Political rationality is the process by which citizens communicate their ideals of representative democracy, fairness, and equity in distributing the effects of environmental action on individual citizens.

15. Cultural rationality includes several key factors that affect the citizen’s perception of risk:

(a) Voluntary risks are accepted more readily than those that are imposed. . . .

(b) Risks under individual control are accepted more readily than those under government control. . . .

...
health risks for themselves. Political and cultural rationality are interrelated. Once citizens have defined the risks as they understand them, they use the political process to communicate those risks to government.\(^{16}\)

Citizens generally understand risks in cultural and political terms, such as the fairness of exposing a group of people, without their consent, to health risks. They often challenge agency action on the basis of cultural and political rationality. Such cultural and political rationality are not readily assimilated into a scientific decision-making process which relies upon empirical and theoretical data as the basis for agency action.\(^{17}\)

Scientists regard health and environmental risks in measurable and definable terms, such as the probability of harm from a technological risk.\(^{18}\) Policy makers and regulators prefer to use the scientific form of rationality for determining agency action because the experts' perception of risk is often deemed more "rational and more consistent with society's interests than the 'subjective' judgments of the less technically sophisticated public."\(^{19}\)

(d) Risk information \ldots from trustworthy sources is more readily believed than information from untrustworthy sources. \ldots

(f) Natural risks seem more acceptable than artificial risks. \ldots

(k) Risks that are well understood by science are more acceptable than those that are not. \ldots

The greater the number and seriousness of these factors, the greater the likelihood of public concern about the risk, regardless of the data.


16. Citizen reactions are often dismissed by agencies as irrational. Agency staff conclude that citizens are unable to understand the scientific aspects of risk. As a consequence, both agency scientists and citizens become frustrated in attempts to communicate with each other over risk issues. Agency scientists and policy makers feel their expertise, experience, and commitment are unappreciated by the communities they seek to serve. Citizens may also be outraged by what they interpret as the agency's condescending attitude and insensitivity to community concerns. Id. at 210.

17. Agency staff interpret cultural expressions of risk as "irrational" or as an obstacle to overcome rather than as an expression of fundamental democratic values. For example, "State agencies \ldots must retain the power to override local officials when irrational public opposition prevents reasoned decision making. A more efficient siting process would insure that local siting boards approve or reject a site solely on the basis of local need and environmental impact." Note, supra note 10, at 99 (emphasis added).

18. Latin, supra note 13, at 89 (discussing scientific decision making).

19. Fiorino, supra note 4, at 532. See KRIMSKY & PLOUGH, supra note 6, at 298-306.

Agency policy makers often consider one of the following actions: "(1) circumventing the public by avoiding disclosure, by distraction, by preemption, or by citing
Numerous public perceptions about health or environmental risk are inconsistent with so-called objective or scientific information. For example, people are said to exhibit too little concern about some hazards, such as smoking and exposure to sunlight, and too much concern about others, such as nuclear power and pesticides. These observations have important implications for agencies communicating with the public about hazardous activities.20

Part one of this Comment explores the use of scientific decision making by environmental regulators. Part two sets out the results of the survey which examined the effect of scientific rationality on public participation. Finally, part three suggests ways in which the negative effect of scientific decision making on public participation can be minimized.

PART I

I. ENVIRONMENTAL AGENCY DECISION MAKING

Environmental agencies use scientific decision making because it is a rational process, capable of balancing the conflicts between the regulated party and the community they serve. Agencies serve three different constituencies. First, agencies serve the general public interest expressed through the legislature. The goal is to achieve health and environmental quality. Second, agencies serve the interests of the communities directly affected by agency action. Citizens are concerned about agency bias or "capture"21 by industry interests. For citizens, agency decisions that appear to favor industry interests seriously erode the legitimacy of the agency to regulate.22

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social contract doctrine . . . ; (2) appealing to some exemplary and independent authoritative body that will apply the rational decision framework and secure public confidence; or (3) communicating the risks and educating the public in thinking about the problem the way the experts do . . . ." Id. at 303. Commentators argue that none of these responses is appropriate; see also Murphy & Hoffman, Current Models for Improving Public Representation in the Administrative Process, 28 ADMIN. L. REV. 391 (1976) (discussing models used for improving public involvement in administrative law); Sproul, Public Participation in the Point Conception LNG Controversy: Energy Wasted or Energy Well-Spent? 13 ECOLOGY L.Q. 73 (1986) (discussing California residents' involvement in liquified natural gas permitting process).

20. See KRIMSKY & PLOUGH, supra note 6.

21. The term "capture" has been used to describe the tendency in public regulation for the regulators to be co-opted by those they regulate, coming to share their values and growing wary of conflict. See, e.g., Rickson, Dimensions of Environmental Management: Legitimation of Government Regulation by Industrial Managers, 14 Env't & BEHAV. 15 (1977) (analyzing government-industry relationship). But see Stewart, The Discontents of Legalism: Interest Group Relations in Administrative Regulation, 1985 Wis. L. REV. 655, 664-65 (arguing that industry influence or "capture" represents a socially beneficial response by regulators and the regulated party in that it reduces the incidence of litigation and encourages settlement).

22. McGarity, supra note 8, at 10,198; see Stewart, supra note 21, at 655.
When an agency adopts a cost-benefit approach which favors industry, the agency's purpose in promoting the public interest in health and environmental quality is questioned. Third, agencies serve the regulated party, e.g., industry. Industry is concerned about political pressure exerted by communities on agencies to achieve health and environmental quality at any cost.

Environmental agencies must balance the competing interests of the community and of the regulated parties to avoid the perception of bias. Scientific decision making enhances an agency's ability to balance these competing interests in three ways.

First, scientific decision making relies primarily on the use of objective data, thus avoiding the perception of undue bias toward either industry or citizens. Agencies use a risk assessment process based upon the best available scientific theories, carried out "independently from considerations of the consequences of regulatory ac-

23. The use of cost-benefit approaches to regulating hazardous wastes tends to "undermine the legitimacy of administrative and regulatory processes," by eliminating several ethical, moral, and political factors, and by reducing the credibility of agencies and their decisions. See Fiorino, supra note 4, at 523-25.

24. However, a strong level of public concern about environmental quality fosters agency independence from industry. One commentator argues that, without strong public support, government agencies become increasingly dependent on industry for the legitimation they need to justify their existence with state and federal legislators. As industry dominates agency policy, agencies become less aggressive in enforcing regulation because of declining public interest and political pressure. Rickson, supra note 21, at 35; see also Davis, supra note 1, at 655 (discussing various approaches to environmental management within the limits imposed by political and organizational factors).

25. One example of an administrative body using scientific decision-making is the California Safe Drinking Water and Toxic Enforcement Act Scientific Advisory Panel. The Panel was developed to provide state officials with scientific expertise and "to insure that regulatory decisions are based on scientific fact rather than political opinion." Shaffer, Improving California's Safe Drinking Water and Toxic Enforcement Act Scientific Advisory Panel Through Regulatory Reform, 77 CAL. L. REV. 1211, 1212 (1989); see also Goldstein, Risk Assessment and the Interface Between Science and Law, 14 COLUM. J. ENVTL. L. 343 (1989) (discussing the risk assessment process which employs scientific information and is used by the legal community); Shapiro, Scientific Issues and the Function of Hearing Procedures: Evaluating the FDA's Public Board of Inquiry, 1986 DUKE L.J. 288 (discussing the effectiveness of the FDA's panel of three scientists which perform the role of an administrative law judge).

26. Latin, supra note 13, at 92. Latin argues that the EPA has adopted a modified scientific approach to regulating potential hazardous substances. Unlike in pure scientific research, where the proper response to uncertainty is reservation of judgment pending the development of adequate data and testable hypotheses, the risk-assessment process cannot be suspended without significant social consequences. A finding that a vital issue is currently indeterminate would be entirely consistent with the practice of good science, but 'no decision' on a possible toxic hazard inescapably is a decision that promotes interests which benefit from the regulatory status quo.

Id.
tion."27 Risk assessment emphasizes the use of scientific theories and empirical data to explain the nature and degree of risks an activity poses to humans or to the environment.28 Risk assessment is used in agency rulemaking, permit, and compliance proceedings.29

Once the risks are assessed, the agency then takes the information collected and applies economic considerations, technological feasibility, and social objectives to arrive at the final regulatory standard or permit decision.30 This process is known as risk management. Policy makers believe that at the risk management stage, public participation would be most effective in sensitizing the agency to the political and cultural consequences of agency action. Citizens could take an active role in influencing the risk management component of agency decisions.


A political approach to risk assessment would encourage confrontation instead of consensus. Industry representatives would argue for a theory minimizing regulatory costs, and environmentalists would argue for minimizing health and ecological risks irrespective of regulatory costs. Latin, supra note 13, at 129; see also Goldstein, supra note 25, at 343-45 (1989) (arguing confrontation detracts from the pursuit of scientific truth).


29. For example, in Minnesota, the Pollution Control Agency (MPCA) is the central regulatory body for the control of air, water, and solid waste disposal in the state. The MPCA assesses risks when it promulgates rules for air quality by promoting, in the most practicable way possible, the use of energy sources and waste disposal methods which produce or emit the least air contaminants consistent with the agency's overall goal of reducing all forms of pollution. . . . Such standards of air quality shall be premised upon scientific knowledge of causes as well as effects based on technically substantiated criteria and commonly accepted practices, MINN. STAT. § 116.07, subd. 2 (1990).

30. In Minnesota, the risk management component requires the consideration of additional factors. "In exercising all its powers the pollution control agency shall give due consideration to the establishment, maintenance, operation and expansion of business, commerce, trade, industry, traffic, and other economic factors" affecting the feasibility and practicability of any proposed action. Id. § 116.07, subd. 6.

Risk management was originally conceived as a way for the agency to share decision-making power with the public. See Krimsky & Plough, supra note 6, at 302. However, in practice the concept has been difficult to apply. See Crosby, Kelly & Schaefer, supra note 6, at 170; see also Ethridge, Agency Responses to Citizen Participation Requirements: An Analysis of the Tennessee Experience, 14 MIDWEST REV. PUB. ADMIN. 95 (1980). The author proposes:

[T]he more 'technical' agencies, may perceive that they have relatively less discretion in their rule-making decisions. It is more likely that administrators in these agencies would feel that physical, legal, or fiscal constraints allowed little latitude in rule making, and that public participation would simply encourage discussion of administrative alternatives which are impracticable or impossible. Id. at 101.
The ability, however, of policy makers and scientists to make this "sharp distinction between scientific and social policy dimensions of toxics regulation" has been challenged.\textsuperscript{31} Instead, the science and policy distinction serves to limit the influence of public participation in agency risks assessment.\textsuperscript{32} As a result, agency expertise is enhanced at the expense of public participation in and acceptance of agency decisions.

A second reason is that scientific decision making fits the rational structure of administrative rulemaking and policy analysis.\textsuperscript{33} Scientific rationality allows environmental agencies to measure, in an empirical sense, the success of agency regulations in achieving the desired state of environmental or human health.\textsuperscript{34} In this manner, the legitimacy of agency authority to impose controls on the regulated party is enhanced.\textsuperscript{35}

\textsuperscript{31} Latin, \textit{supra} note 13, at 89. "The illusion that risk assessment is a purely scientific activity reduces the visibility and political accountability of policy judgments that often guide regulatory decisions on toxic hazards." \textit{Id.} at 93-94 (emphasis deleted). "Risk assessment is not driven by the pursuit of knowledge for its own sake, the explicit goal of science, but by the need to decide whether potentially severe health hazards should be allowed to continue or whether high control costs should be imposed . . . ." \textit{Id.} at 92. "[T]housands of lives and billions of dollars in regulatory costs may depend on an agency's choice of controversial risk-assessment principles." \textit{Id.} at 95; see also McGarity, \textit{Substantive and Procedural Discretion in Administrative Resolution of Science Policy Questions: Regulating Carcinogens in EPA and OSHA}, 67 Geo. L.J. 729, 733 (1979) ("Many highly technical questions that are cast in scientific terms cannot for various practical or moral reasons be answered by science.").

\textsuperscript{32} Paehlke, \textit{Democracy, Bureaucracy, and Environmentalism}, 10 Envtl. Ethics, 291, 298 (1988). The author noted:

[B]ureaucracies, almost by definition, seek silence, and if open to participation, prefer managed participation. As Max Weber observed early in this century: "Every bureaucracy seeks to increase the superiority of the professionally informed by keeping their knowledge and intentions secret. Bureaucratic administration always tends to be an administration of 'secret sessions': insofar as it can, it hides its knowledge and action from criticism." \textit{Id.} (quoting H.H. Gerth and C. Wright Mills, in \textit{From Max Weber: Essays in Sociology} 233 (1946)).

\textsuperscript{33} Auerbach, \textit{Bonfield on State Administrative Rulemaking: A Critique}, 71 Minn. L. Rev. 543, 545 (1987). See also West, \textit{Institutionalizing Rationality in Regulatory Administration}, 1983 Pub. Admin. Rev. 326. Agency decision making is held to a standard that emphasizes substantive rationality, focusing on the persuasiveness of the agency's articulated justification for a regulation and the sufficiency of the factual support that underlies it. West notes several recent developments in administrative law supporting the need for a rational decision-making process: (1) an increased reliance on rulemaking as a form of policy making; (2) judicialized rulemaking procedures to assure the integrity of the decision-making process; and (3) the use of cost-benefit analysis, the attractiveness of which relates to its "seeming objectivity and its enlistment of science in the pursuit of sound government policy." \textit{Id.} at 329-32; Teeguarden, \textit{Benefit-Cost Analysis in National Forest System Planning: Policy, Uses, and Limitations}, 17 Envtl. L. 393 (1987).

\textsuperscript{34} Davis, \textit{supra} note 1, at 514-16.

\textsuperscript{35} \textit{Id.}
The third reason is that agency action grounded in empirical evidence of risks to human or environmental health provides a basis for adopting a particular environmental standard. For environmental regulators charged with the legislative mandate to protect society from health or environmental risks, the inference that an activity poses a risk to human or environmental health carries with it "an ethical obligation to act as if the inference might be true." 36

The emphasis on scientific decision making by administrative agencies, however, can create a significant barrier to achieving the goals of public participation. The scientific decision-making process fails to integrate political or cultural values, the principal contribution of public participation, into the decision-making process. 37

II. PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISION MAKING

The use of scientific decision making by environmental agencies helps explain why citizen participation has had minimal success in influencing agency action, especially at the local or community level. 38 In setting health risks standards the scientist focuses on a narrow range of risks parameters with emphasis on scientific inputs rather than on cultural and political inputs. 39

Cultural perceptions of health risks embrace a broader concept of risk. 40 Health risks that are voluntarily assumed are accepted more readily than those that are imposed on the community. 41 Frequently, the expression of cultural rationality is at odds with the rationality of technical experts. 42 The conflict often results in the technical experts attempting to communicate the risks and to educate the public to think about risks in the same way as the experts do, and to bring public perception into conformity with scientific ration-

37. See KRIMSKY & PLOUGH, supra note 6, at 306. "Lay people bring many more factors into a risk event than do scientists. For technical experts, the event is denuded of elements that are irrelevant to the analytical model. Many events that are deemed to have very low or insignificant risks by experts are viewed as serious problems by the laity." Id. at 305.
38. See supra notes 6 and 16 and accompanying text. "An institutionalized group is one that is regarded as a legitimate and recurring actor by agency officials. State and local citizen groups seem less successful than national ones in developing institutionalized working arrangements with agencies." Berry, Beyond Citizen Participation: Effective Advocacy Before Administrative Agencies, 17 J. APPLIED BEHAV. SCI. 463, 464 (1981). Local citizen groups need to become more aggressive in establishing regular channels of communication with agency staff. See id. at 464-65.
39. See supra note 19 and accompanying text.
40. See supra note 15 and accompanying text.
41. "Health risks under individual control are accepted more readily than those under government control, and health risks that seem fair are more acceptable than those that seem unfair." EFFECTIVE RISK COMMUNICATION, supra note 15, at 211.
42. See supra text accompanying note 17.
ality. Yet, however precise the calculation of risks regarding the exposure to a given chemical, whether one chooses to run such risks is a value question which the public is uniquely qualified and competent to answer. If the goal of citizen participation is to foster participatory democracy by affording citizens a voice in decisions that affect their lives, then the scientific decision-making process must accommodate community values in agency decision making.

In the vast majority of environmental decision making, citizen participation becomes a dominant force only in the final stages, long after formal rules are proposed. The majority of citizens become aware of an environmental issue only when their community is faced with the effects of an agency's decision to issue a permit for a landfill or other undesirable activity. At this stage in the decision-making process, these facts, inferences, and assumptions, marshalled by an agency in support of its decision, take on the characteristics of an irrebuttable presumption of validity in favor of the agency—a presumption that citizens at the community level rarely have the scientific or legal expertise to challenge.

43. See Krimsky & Plough, supra note 6, at 303.

44. For example, in Minnesota, a proposed rule must be noticed and published in the State Register. All interested parties have thirty days to respond to the proposed rule, or twenty-five or more persons may request an administrative hearing to present testimony concerning the proposed rule. Minn. Stat. § 14.22 (1990).

For the time period of January 1989 to March 1990, the author counted nineteen proposed rules which were published in the State Register. The subject matter included water quality permit fees, the list of priorities for hazardous substances and pollutants, open-burning restrictions, and rules relating to hazardous waste facility amendments.

45. For example, the Minnesota Supreme Court stated: "Earth Protector has identified no experts, has submitted no new evidence and has cited no convincing authority that would demonstrate that a contested case hearing would assist the MPCA in making a final determination on the permit amendment." In re Amendment No. 4 to Air Emission Facility Permit No. 2021-85-OT-1, 454 N.W.2d 427, 430 (Minn. 1990). In this case, Northern States Power company filed a request for amendment of its operating permit to allow the installation of new pollution control equipment. Id. at 428. An environmental group, Earth Protector, brought a petition for a contested case hearing which the Pollution Control Agency denied. Id. at 429. The court of appeals had reversed the trial court, concluding that such a hearing would aid the agency in making its final permit determination. Id.

In Minnesota, a contested case hearing is held when the person requesting the hearing has met three requirements. First, the party must raise a material issue of fact or of the application of facts to law related to the terms of the permit. Second, the agency must have jurisdiction to decide the issues presented. Finally, there must be a "reasonable basis" underlying the issues of fact or law raised by the person requesting the hearing which would assist the agency in making a final determination on the permit application. Id.

The Minnesota Supreme Court reversed the court of appeals finding that "the mere fact that some evidence may exist as to beneficial alternatives" is insufficient to require a contested case hearing. Id. at 430; see In re Proposed N. States Power Co. Willmarth Indus. Solid Waste Incinerator Ash Storage Facility, 459 N.W.2d 922, 923
To make matters worse, the scope of risk management decisions that agencies can entertain at the state and local level are limited by fiscal, legal, and economic resources. For example, agency decision makers have limited authority to impose additional pollution abatement controls once the regulated party has already satisfied the permit and regulatory requirements for licensing. As a result, citizens are left to challenge what little amount of discretionary power agencies retain over environmental decisions after formal rules have been adopted, after local government land use and zoning decisions are considered, and after compliance with state and federal laws.

The public response to barriers to public participation is threefold: (1) citizens are suspicious of and no longer accepting of scientific competence as a sufficient basis for decision making; (2) they become cynical and feel powerless to influence agency decisions that


46. In Minnesota, once formal rules have been adopted, citizens may challenge agency action through a contested case hearing or court challenge. See MINN. STAT. §§ 14.57 and 14.63 (1990). In the area of technological decision making, citizens have not been very successful in challenging agency action. See cases cited supra note 45. Citizens may also challenge agency action under the Minnesota Environmental Rights Act, MINN. STAT. §§ 116B.01-.13 (1990).

Citizens, however, have had limited success under these statutory provisions. See Citizens Against Power Plant Pollution, Inc. v. Minnesota Envtl. Quality Bd., 305 N.W.2d 575, 583 (Minn. 1981) (denying administrative challenge under Minnesota Environmental Rights Act); Floodwood-Fine Lakes Citizens Group v. Minnesota Envtl. Quality Council, 287 N.W.2d 390, 397-98 (Minn. 1979) (finding procedural requirements for administrative challenge under the Minnesota Environmental Rights Act fulfilled).

47. In recent years, local governments, by passing ordinances or by amending zoning laws, have attempted to prevent landfills and other undesirable activities in their communities. Courts have struck down these efforts under doctrines of preemption, conflict of law, and constitutional violation. See generally Andreen, supra note 9. In Minnesota, local governments may establish stationary source standards for air quality, sound, or hazardous waste emission which are more stringent than those set by the MPCA. MINN. STAT. § 116.07, subd. 4 (1990). However, local governments may not set standards which conflict or are inconsistent with standards set by the pollution control agency. Id. § 116.07, subd. 2. See Northern States Power Co. v. City of Granite Falls, 463 N.W.2d 541, 545 (Minn. Ct. App. 1990) (striking down ordinance with 1,500 foot setback rule prohibiting application of a permit to burn PCB oil).

affect their lives;⁴⁹ and (3) they use the political and legal process to "fight for their preferred outcome as a matter of principle,"⁵⁰ thereby increasing the transaction costs of reaching a negotiated settlement. The public's feelings of frustration and anger become directed at agency staff, local government, and the political process.

Agency staff members often find themselves in the untenable position of having to balance community health concerns with the welfare of the general public. For example, a landfill will benefit the public, even if the landfill presents some degree of health risks to the community. Before the agency can issue the permit for the landfill, it must weigh the health risks to the community against the benefits to the general public. But, as one observer noted: "We cannot trust those who would subject us to risk to do so for our benefit. On the other hand, we still want the freedom to impose some risk upon ourselves and others."⁵¹ The agency thus becomes a battleground of conflicting interests: the community against the general public good, the public good against the need to regulate industry, and the need of industry to satisfy the market demand for goods. Agency resources are ill equipped to moderate the conflicts between these competing interests.

The dilemma becomes how to integrate community input into agency decision making without destroying the balance between public and private interests. The dilemma is likely to persist. As William Ruckelshaus, former EPA Administrator, noted: "The question before us is not whether there is going to be a sharing, whether we will have participatory democracy with regard to the management of risk, but how."⁵²

PART II
I. THE STUDY⁵³

This section of the Comment is divided into three parts. Part one discusses the methodology of the study, demographics of the study

⁵⁰. Stewart, supra note 21, at 674.
⁵². Krimsky & Plough, supra note 6, at 3 (quoting Ruckelshaus, Overview of the Problem: Communicating About Risk, in Risk Communication, Proceedings of the National Conference on Risk Communication (J. Davies, V. Covello, and F. Allen, eds. 1987)).
⁵³. A copy of the survey questions and raw data used in the study is available in the William Mitchell Law Review office. Individual responses, however, are confidential and cannot be released without the author's permission.

The percentages have been rounded up from decimal point five. Because not all questions were answered by all participants, the percentages may not add up to 100%.
population, and some introductory viewpoints about the Minnesota Pollution Control Agency (MPCA). Part two discusses the predicted effects of scientific decision making on citizen participation. Finally, the predicted effects are compared to the findings of the study.

A. Methodology

Two groups actively involved in the environmental decision-making process were selected to test the impact of scientific decision making on public participation. The first group consisted of staff members involved in agency decision making at the MPCA.\(^{54}\) The second group consisted of citizens from across the state randomly selected from agency mailing lists, environmental groups, and those who attend agency meetings.\(^{55}\)

The survey consisted of thirty questions. Twenty questions were matched,\(^{56}\) and nine were identical. Because citizen participation in agency decision making is a complex and multifaceted topic, respondents were surveyed at a random point in time, with no specific environmental issue in mind. It was anticipated that by capturing a general sense of the issues facing both citizen and agency participants a control survey would not be necessary.

In analyzing the data, the responses to several questions were not used because the responses indicated the question may have been too ambiguous. In addition, the sample size for agency respondents was small. Consistency of responses across agency divisions, however, indicated the high quality of the responses.

B. Demographics of the Study Participants

The participants in the citizen survey were 58% male and 42% female. The ages of citizen participants were almost evenly divided across all age groups, with 87% between the ages of twenty-three and sixty years, and 12% between the ages of sixty-one and seventy-

\(^{54}\) Staff members were chosen because of their involvement with public participation and scientific decision making. Fifty members were selected from five divisions: Hazardous Waste, Water Quality, Environmental Support, Air Quality, and Ground Water and Solid Waste.

\(^{55}\) A total of 95 citizens were surveyed.

\(^{56}\) The same question was asked from the perspective of the citizen and of the agency staff. For example, citizens were asked if they agreed, strongly agreed, disagreed, or strongly disagreed with the following statement: “Open public meetings are the best way for the Pollution Control Agency to understand community concerns.” Pollution Control Citizen Survey, App. A, Ques. 8(1) [hereinafter Citizen Survey]. Correspondingly, agency staff were asked if they agreed, strongly agreed, disagreed, or strongly disagreed with the following statement: “Open public meetings are the best way to collect information about community environmental concerns.” Pollution Control Agency Survey, App. B, Ques. 13(1) [hereinafter Agency Survey].
five years. Over 71% of the citizen participants were college graduates, and 15% worked in scientific fields, such as chemistry or biology. Most were active in some form of local or national environmental groups, with 36% reporting affiliation with at least two groups. In addition, citizen survey respondents had on average been exposed to at least four public meetings of the MPCA.

The participants in the agency survey were 65% male and 35% female. The agency survey participants were on average younger than citizen survey participants. The majority of survey participants were between the ages of thirty-six and forty-five, with 12% over the age of forty-six. Educational achievement was high: 99% of the agency participants had attained college or graduate degrees. Approximately 70% of agency respondents work directly with the risk assessment process. On average, agency participants had attended five public meetings of the MPCA in the last twelve months. Agency staff had on average twenty-two public contacts and twenty industry contacts per month. Survey response rates were high with 68% of the agency staff sampled responding and with 74% of citizens responding to the citizen survey.

C. The Minnesota Pollution Control Agency

The MPCA is unique among state regulatory agencies. Almost all agency authority is vested in a board of nine lay citizens. Citizens are appointed by the governor, with the consent of the state senate, to serve four-year terms.57 The citizen board of the MPCA may have several beneficial effects on public participation. First, the need for agency staff to think through a decision and present it to a citizen board for approval at open public meetings enhances the public’s ability to understand the decision-making process.58 Second, the citizen board provides the public with a greater voice in agency decisions.59 The survey findings support the positive influences of a citizen board on public participation.

The majority of agency respondents—78%—believed the citizen board promotes public participation in agency decision making. Yet, some agency staff members believed that board members were more

58. Gelpe, supra note 57.
59. Id. at 458.

[Public opinions may be heard more carefully by a citizen agency than by professional bureaucrats. The existence of the citizen board as the final agency decision maker also induces the professional staff of that agency to be more receptive to public input. The staff’s need to respond to a citizen on a regular basis is likely to create a culture of listening to non-professionals.

Id.
responsive to citizen concerns than to agency concerns. One agency respondent said, "Technical staff are often frustrated by board decisions which appear to be based on emotion rather than technical data."60 Another commented, "The board’s interest in meeting citizen concerns often places undue workloads on the staff who still have all the commitments mandated by the legislature, rules, the EPA, and other promises to citizens, developers . . . ."61

Conversely, citizens were skeptical of the objectivity of the citizen board, with 58% believing that "the board is too close to the agency to understand a citizen’s point of view."62 One citizen noted, "The board tends to give a much greater deference to the opinions expressed by the PCA staff than to the opinions expressed by the public."63 Another stated, "I don’t believe that the PCA board’s closeness to staff inhibits understanding but I do believe that there is insufficient counter weight to the staff’s easy access in the decision making process."64

D. Theory

An analysis of the scientific decision-making model suggests that citizen cultural perceptions of risk are not readily assimilated into agency decision making because cultural values do not fit the scientific model of rationality. This general proposition illustrates at least three possible effects of scientific rationality on citizen participation.

First, technical or scientific data brought by citizens to agency meetings have little substantive impact on agency action. In determining risk assessment parameters under the scientific model, each inference about possible health or environmental risk must be warranted by evidence and must be subject to extensive scientific scrutiny before being adopted in a regulatory standard. The final regulatory standard or measurement thus represents the "best possible science." The consideration of additional scientific data later in the process would be inefficient and unnecessary. Once a regulatory standard is adopted, the agency has little incentive to reopen the debate about the choice of inference or assumptions selected in the final standard. Unfortunately, citizens often become involved in an environmental issue long after the formal rules were adopted.

60. Response to Question 19, "Is there anything else you would like to tell us with regard to the Pollution Control Agency?" Agency Survey, App. B, Ques. 19 (Respondent B).
61. Id. (Respondent A) (emphasis in original).
62. Response to Question 14, "Is there anything else you would like to tell us with regard to the Pollution Control Agency?" Citizen Survey, App. A, Ques. 14 (Respondent V).
63. Id. (Respondent I).
64. Id. (Respondent T) (emphasis in original).
Citizens are equally disadvantaged when attempting to present scientific data during agency permit proceedings. Citizens rarely have the economic or scientific resources to discredit industry or agency data concerning the health or environmental risks of an activity. As a result, citizens are unable to generate the scientific resources necessary to successfully challenge scientific data incorporated in agency rulemaking and permit decisions.

Second, citizen cultural data have minimal impact on agency risk management decisions. Policy makers hoped that citizen participation would inform agency decision makers about the social and economic ramifications of agency action. Yet, no mechanism exists for agency staff to utilize citizen cultural data in agency decision making. Once a project has been approved, state environmental agencies have little authority to require the regulated party to move the project to another community, or to impose additional pollution abatement measures beyond those required by state regulations. Realistically, the risk assessment process limits the range of risk management options an agency may consider. As a result, citizen cultural data have little power to influence the outcome of agency action.

Finally, scientific decision making inhibits the ability of citizens and agency staff to communicate with each other about risk issues. For example, in communicating the scientific basis for agency action, agency staff may depersonalize health risks by emphasizing the statistical probability of harm. Conversely, citizens tend to personalize statistical risk information to family and friends. As a result, agency staff become impatient with citizens who seem unable to understand the scientific basis for agency action. Citizens in turn become angered at the insensitivity and unfairness of agency decisions that expose family and friends to any increased health risk.

II. RESULTS OF THE SURVEY

A. The Use of Citizen Scientific Data

1. Conclusion

As predicted by the scientific model for agency action, citizens are at a disadvantage when communicating or providing scientific data to agency staff. In general, the survey findings indicate that agency staff are skeptical about the accuracy of citizen scientific data, and only rarely do citizen data influence the outcome of agency action. Agency staff were more likely to view industry data as accurate despite the inadequacy of agency resources to test that data.

2. Results and Analysis

When asked how often health risk information provided by citizens
affected the final decision in their area, 64% of agency staff responded "occasionally." At the same time only 3% of agency staff believed that citizen scientific data were "usually" valid.

These findings suggest that agency staff view citizen data with skepticism. One agency staff member commented, "Issues have become so technical in the health risk assessment area that it is very unlikely that any citizen . . . has the sophistication and expertise to add meaningful data to a discussion." These findings suggest that agency staff view citizen data with skepticism. One agency staff member commented, "Issues have become so technical in the health risk assessment area that it is very unlikely that any citizen . . . has the sophistication and expertise to add meaningful data to a discussion."

Agency skepticism of citizen scientific data is especially interesting when compared to the acceptance rate of industry scientific data. Over 48% of agency staff believed that industry estimates of health risk were reasonably accurate. In contrast, only 3% believed the same for citizen data. Yet, 59% of agency staff were skeptical of the ability of scientists to accurately predict the harm from most chemicals. Also, 64% of agency staff felt that division resources were inadequate to independently verify industry test results. Several factors may account for the high rejection rate of citizen scientific data over industry data.

Citizens at the local level have limited economic or scientific resources to participate in the collection of risk assessment data for permit purposes. In addition, citizen scientific data are often presented during emotionally charged public meetings when community outrage over agency action is high. Agency staff, listening to citizens voice concerns over agency action, may perceive citizen scientific data as being irrational and therefore less accurate.

It is likely that citizen health risk data are presented too late in the decision-making process to alter risk assessment methodology. By the time citizens become involved in agency decisions, the only decision remaining for agency staff is to determine if the project has satisfied all of the applicable regulatory standards.

Another factor is that agency staff have limited legislative authority or incentive to reopen the risk assessment or rule making process. One agency member commented, "Often, the first time the public becomes involved in a project is during environmental review or permitting by the MPCA. Unfortunately, this may be a company's last
step in completing a project that has been on the drawing board for years and for which a lot of money has been expended.”72 Thus, citizen scientific data is presented too late in the decision-making process, after risk assessment policy and regulations have been adopted and after agency and industry resources are committed.

Finally, industry data are institutionalized into the scientific decision-making process. Because the agency often has limited economic and human resources to generate independent data for regulatory purposes,73 industry becomes the major source of environmental data for agency use in risk assessment, permit applications, and emission monitoring.74

In contrast, citizens are rarely able to generate site specific assessment data. Therefore, citizen scientific data is generally ill-suited for agency use because it is likely to be in a form not readily adaptable for use in agency permits. Thus, because industry data is more adaptable for agency use, agency staff may become dependent on industry data.

To have an effect on agency decision making, citizens must present scientific data at the earliest stages of agency decision making and before formal rules have been adopted.75 Generally, the presentation of valid technical and scientific data occurs too late in the decision-making process, and may be viewed as tainted by cultural expressions of risks: a perception which further reduces the effectiveness of citizen influence on agency action.

B. The Use of Citizen Cultural Data

1. Conclusion

According to policy makers, public participation should be most effective in the risk management stage of agency decision making.

72. Id. Response to Question 19 (Respondent D).
74. For example, Minnesota’s regulatory system for water and air pollution relies on self-monitoring and reporting by permit holders. Consequently the system depends on the accuracy of the results submitted by the permit holders. MPCA staff “rarely verify the validity of these reports by reviewing companies raw CEM [Continuous Emissions Monitoring] data.” Id.
75. Citizens may also have to overcome the agency perception that citizen scientific data is not reliable. One agency respondent commented on the use of citizen scientific data in agency decisions: “Citizen groups need to get more credible technical (and legal) advice . . . . Too often these groups are led by ‘flakes’ who have little or no technical or health risk basis for their arguments.” Agency Survey, App. B, Ques. 19 (Respondent F).

The majority of citizens agreed with agency staff that citizen groups would be more effective with the help of scientific experts (95%) and with legal assistance (80%) in influencing agency decisions. Citizen Survey, App. A, Ques. 8(8) and 8(3).
Citizens would inform agency decision makers about the economic, social, and political ramifications of agency action. The survey findings, however, refute the idea that citizen participation at the risk management stage of agency decision making has any significant impact on agency action.

Citizens do inform agency decision makers about the political and cultural impacts of agency action. However, agency staff have little statutory or regulatory authority to address these issues. Agency staff prefer to deal with scientific issues, and most indicated that agency decisions are based upon health risks data. One staff member commented, "The staff and board are ill equipped to deal with the economic and social aspects of permitting decisions." In reality, the citizen cultural data in the risk management process is largely ineffective because the agency is unable to incorporate this data in its decision making. In contrast, political data, such as equity in distributing the risks, offered by citizens, are more likely to be used in the risk management process by the agency.

2. Results and Analysis

Three cultural components—health, social, and economic—of risks of a proposed activity on the community were measured in the survey. Both citizen and agency respondents commented that health risks should be the most important consideration in agency decision making. When asked to rate this component, over 98% of citizens and 97% of agency staff responded that it was "very important." The economic impact on a community was of less concern to agency staff: only 15% thought it was very important in comparison with 44% of citizens surveyed. Only 9% of agency staff felt social impact was very important in contrast to 54% of citizens surveyed.

The differences between agency and staff responses to cultural risk measurements are consistent with their use of and reliance on the scientific decision-making model. Agency staff are accustomed to using scientific data instead of cultural data when making agency decisions. Agency staff, however, are not insensitive to citizen concerns. Rather, when agency staff are faced with the decision to
impose "moderate" health risks on a community, 63% of agency staff favored placing greater emphasis on community concerns in the decision-making process.\textsuperscript{85}

The scientific model for agency action tends to inhibit the use of citizen cultural data in agency decision making because it provides no formula or theory to quantify citizen data for agency use in decision making. As a result, agency staff may feel frustrated in dealing with citizen cultural issues which appear unrelated to scientific information. Even though agency staff are sensitive to community social and economic concerns, they feel constrained to make the final decision based solely upon scientific risk information.

This hypothesis is supported by survey comments. For example, one MPCA staff member stated, "People do not completely understand what the MPCA has authority to do. That is we must consider a permit application. If the activity can be conducted without unreasonable risk to public health and the environment, the MPCA must issue the permit or face a legal challenge."\textsuperscript{86} At least one citizen seemed to recognize this limitation. "Staff are bound by legislative rules which limit their perview \[sic\] of issues such as alternatives, exported risk, indirect impacts. Thus, the board issues permits out of fear of being sued for delaying a permit."\textsuperscript{87} Yet, one citizen related "feelings of despair, hopelessness, and powerlessness in relation to decision-making bureaucracies," a common theme among citizens.

The failure of agency decision making to accommodate citizen cultural concerns regarding agency action may contribute to public dissatisfaction with agency decisions. In response to the question of how well the MPCA was protecting the community from health risks, over 75% of citizens were dissatisfied with the agency's work.\textsuperscript{89}

\textsuperscript{85} The question, "Agency staff should place greater emphasis on community concerns when health risks are moderate," elicited the following response: 63% agreed, 16% were neutral, 16% disagreed, and 6% strongly disagreed. Agency Survey, App. B, Ques. 1(6). Citizens also favored greater decision-making authority when the health risks were unknown (70%). Citizens Survey, App. A, Ques. 1(3). Regardless of the economic benefit to the community, citizens thought agency staff should reject activities if there are moderate risks to public health (88%). \textit{Id.} Ques. 1(5).

\textsuperscript{86} Response to Question 19, "Is there anything else you would like to tell us with regard to the Pollution Control Agency?" Agency Survey, App. B, Ques. 19 (Respondent I) (emphasis in original).

\textsuperscript{87} Response to Question 13, "What do you see as barriers to effective public participation in the decision-making process on environmental issues?" Citizen Survey, App. A, Ques. 13 (Respondent S).

\textsuperscript{88} \textit{Id.} (Respondent U).

\textsuperscript{89} \textit{Id.} Ques. 1(2). Citizens were equally dissatisfied (70%) with the job local government was doing in protecting the community from health risks. \textit{Id.} Ques. 1(8). The majority of citizens felt that they should be more involved in the collection of health risk information (86%), \textit{id.} Ques. 8(4), and that the agency should collect
Furthermore, citizen dissatisfaction with agency action may relate, in part, to the perception that the agency’s primary function is to prevent, not merely to reduce, the production of pollutants. The overwhelming majority of citizens (90%) believe that the mission of the MPCA is to prevent the release of potentially harmful substances into the environment. One citizen stated that the agency should be renamed the “Pollution Prevention Agency.” In contrast, only 42% of agency staff agreed with the majority of citizens that the MPCA mission is prevention. One staff member said, “The Pollution Control Agency is just that . . . not the Pollution Elimination Agency.” These sentiments reflect a basic conflict over the mission of the MPCA and may contribute to citizen dissatisfaction with agency action.

C. Communication

1. Conclusion

Public meetings are the principal means by which agency staff gather data about citizen concerns over a proposed activity. Yet, many studies have confirmed the limited value of public meetings in influencing agency action. In general, citizens and agency staff expressed difficulty talking with one another about scientific and cultural risk issues. Results from the author’s survey support these conclusions.

The majority of citizens felt that agency meetings were the best way to inform agency decision makers. Only a fraction of those

90. Id. Ques. 1(6).
91. Id. Ques. 1(1).
93. Response to Question 19, “Is there anything else you would like to tell us with regard to the Pollution Control Agency?” Id. Ques. 19 (Respondent C).
94. See, e.g., Cramton, The Why, Where, and How of Broadened Public Participation in the Administrative Process, 60 GEO. L.J. 525 (1972). Citizens who attend agency meetings may reflect complex and diverse interests. As such, no single or absolute public interest exists. The task of “divining” which public interest or blending of interests to apply in the decision-making process presents a significant challenge to agency resources. Administrative agencies often blend and balance the competing viewpoints resulting in “a decision reflecting the agency’s response to its political necessities—its insider perspective about the public interest.” Murphy & Hoffman, supra note 19, at 394 (quoting Sax, Defending the Environment 61 (1970)) (emphasis in original).
95. Citizen Survey, App. A, Ques. 8(1) (84%).
same citizens, however, thought that public meetings actually influenced the outcome of agency action.\textsuperscript{96} In contrast, the majority of agency staff believed that public meetings had a "significant" impact on decision making in their area.\textsuperscript{97} At the same time, many agency staff believed that public meetings failed to reduce community concerns over agency decisions.\textsuperscript{98}

One possible explanation for the discrepancy in opinions over the usefulness of agency meetings is that citizens and agency staff may use public meetings to achieve different goals. For citizens, public meetings may be the only forum for the expression of cultural concerns. At the same time, citizen cultural concerns are almost never resolved at public meetings. This fact contributes to the perception that citizen participation in agency meetings rarely influences agency action.

Similarly, the inability of agency staff to satisfy cultural concerns may have contributed to the perception of agency staff that public meetings are not useful in reducing community concern about agency action. On the other hand, public meetings have some positive influence on agency decision makers. Because agency staff must respond to citizen comments about agency action, the input from public meetings can significantly expand the range and scope of environmental review. In this way, citizen participation is successful in informing agency decisions.

2. Results and Analysis

Citizens were positive about the use of public meetings to educate the agency about community concerns (84%).\textsuperscript{99} Yet, many were skeptical of the ability of public meetings to influence agency decision making (60%).\textsuperscript{100}

There may be several reasons for citizen frustration over agency

\begin{itemize}
\item \textsuperscript{96} Id. Ques. 8(2) (23%).
\item \textsuperscript{97} The survey examined agency staff perceptions that public informational meetings and board meetings contribute significantly to MPCA decision making. \textit{See} Agency Survey, App. B, Ques. 7 and 4.
\item \textsuperscript{98} Id. Ques. 13(1) (47%).
\item \textsuperscript{99} Citizen Survey, App. A, Ques. 8(1).
\item \textsuperscript{100} Id. Ques. 13. One citizen voiced a common response regarding the effect public meetings have on agency decisions: "The MPCA seems to be uninterested in public participation. They do not see the public as a group to turn to for input, but rather as something they have to tolerate before deciding things the way they had previously decided." (Respondent V).
\item Another participant added this observation: "We are not able to sit down at a table with industry and the PCA and have an open discussion. Instead we drive 120 miles, take a day off work from our jobs, pay large babysitting fees and have the PCA tell us we have 15 minutes total to talk." (Respondent X) (emphasis in original). Responses to Question 13, "What do you see as barriers to effective public participation in the decision making process on environmental issues?" Id. Ques. 13.
\end{itemize}
meetings. Citizens may view agency meetings as a way to negotiate for their preferred outcome. Agency staff, however, have little authority to deal with these issues. When it becomes clear that agency staff are unable to accommodate citizen cultural concerns over agency action, citizens feel powerless to change the decision-making process.

Agency staff were divided on the usefulness of agency meetings in collecting citizen environmental concerns. However, the majority of agency staff believed that information obtained from board meetings (62%) and public informational meetings (67%) was a "significant factor in PCA decision making." At the same time, 47% of agency staff agreed that public meetings did little to allay community concern over agency decisions.

One potential area for citizen and agency communication problems is in the area of health risk communication. One assumption often made by agency staff is that citizens are unable to understand the scientific basis for agency action and, as a result, agency staff are unable to satisfy citizen concerns. The majority of agency staff (88%) believed that the agency risk assessment process was not well understood by the public.

In reality, however, agency staff may be attempting to communicate the scientific basis for agency action while citizens are attempting to communicate cultural concerns about agency action. This conclusion is supported by exploring agency and citizen responses to risks. Both agency staff and citizens were asked to rank the perception of risks to the following statement: If 100,000 people are exposed to an environmental activity for their lifetime, and this exposure results in one additional case of cancer, then this activity is: high, moderate or low risk. Agency staff perceived this risk measure-
ment to be: high (13%), moderate (25%) and low (61%).\textsuperscript{105} Citizens perceived this risk measurement to be: high (41%), moderate (20%), and low (39%).\textsuperscript{106}

The results are significant for two reasons. First, the percentage of citizens ranking the risk as high may reflect a blending of cultural and technical risks information. One citizen noted "1:100,000 sounds like low risk, but even one additional case is too much."\textsuperscript{107} Citizen responses indicate a high degree of concern about any environmental or health risk, however minimal. It may be difficult for agency staff, many of whom are scientists, to accept citizens' concern about activities that present a scientifically low risk.\textsuperscript{108} Other researchers of environmental risks communication note that community perceptions of risks may have little to do with scientifically determined risk.\textsuperscript{109} This raises an important question of how effectively agency staff can communicate scientific perceptions of risks when citizens are concerned about cultural perceptions of risks.

A second reason is that a significant portion of the public agreed with agency staff that a 1:100,000 ratio of health risks represents a low risk. This finding suggests that the public can and does understand the use of scientific criteria for describing the potential for health risks from an activity. Agency staff may be discounting the ability of the public to understand risk issues, confusing cultural responses to risks with the failure to understand scientific concepts about risks.\textsuperscript{110}

The perception by agency staff that citizens use health risks data as a "smoke screen to oppose an activity that has minimal environmental impacts"\textsuperscript{111} may lead agency staff to reject valid scientific arguments presented by citizens and focus instead on the expression of cultural risks. Consequently, the inability of staff to deal with cultural risk issues in the decision-making process creates barriers to communication between citizens and agency staff.

\textsuperscript{105} Id. Ques. 7.
\textsuperscript{106} Citizen Survey, App. A, Ques. 3.
\textsuperscript{107} Id. (Respondent M).
\textsuperscript{108} One staff member commented: "[The public's] scope is narrow and they do not question carefully how they expose themselves to other pollutants in their life, either voluntarily or involuntarily." Agency Survey, App. B, Ques. 19 (Respondent G).
\textsuperscript{110} One agency staff member commented: "While most citizens are genuinely concerned with the health risks of subject facilities, it is often difficult and frustrating for staff to deal with those hidden economic or social agendas." Agency Survey, App. B, Ques. 19 (Respondent H).
\textsuperscript{111} Id. (Respondent B).
D. Conclusion

In sum, the use of a scientific decision-making model presents a significant barrier to effective public participation. It is unlikely that the public will acquiesce to agency authority to regulate environmental issues, or that agency decision makers will abandon the scientific decision-making model for agency action. Thus, policy makers, legislators, and agency staff must find alternative means to incorporate citizen concerns in agency decision making.

PART III

Since the first major public participation legislation, the Administrative Procedure Act (APA), was passed in 1946, public involvement in agency decision making has centered around three core participatory models: public meetings, notice and comment rule-making, and adjudication.112

In the increasingly complex area of environmental regulation, citizens confined to the use of traditional citizen participation models are at a serious disadvantage in influencing agency decision makers. Citizens affected by agency action often bring scientific information too late in the decision-making process to influence agency decisions. Public meetings are often scheduled too late in the decision-making process for citizens to influence risk assessment regulations.

In addition, rule making and adjudication procedures are likely to involve scientific and legal issues, requiring citizens to hire scientists and lawyers to effectively challenge agency regulations.113 Even when citizens have the economic resources to challenge agency regulations, courts generally defer to agency expertise. The courts grant limited review to determine only whether agency action was within its authority or whether the agency acted arbitrarily or capriciously.

Alternative models for public participation have been proposed: citizen panels,114 lobbying groups,115 and risk communication plans

112. See Gellhorn, Public Participation in Administrative Proceedings, 81 YALE L. J. 359, 369-72 (1972); Murphy & Hoffman, supra note 19, at 398-99.
113. See Berry, supra note 38, at 472-73. "[I]t is an irrational allocation of resources for most citizen groups to extend any significant effort toward reforming existing citizen participation programs." Id. at 467 (emphasis deleted). More emphasis should be placed on legislative lobbying and agency policy making. First, citizens should identify and cultivate allies in the bureaucracy with which they primarily deal. Second, citizens should become a reliable and valuable source of information for bureaucrats in the agency. Third, citizens should prove to officials that their active opposition to agency policy can be politically damaging. Id. at 472-74.
114. Crosby, Kelly & Schaefer, supra note 5, at 171. These authors propose the utilization of randomly chosen citizen panels who are informed on a topic, to recommend policy options to agencies. The central purpose of this participatory model is to overcome the perceived defects in existing participation schemes. For example, there is no standard for selecting citizens in most participation models and anyone
to educate agency staff about cultural risk concerns. Most of these proposals are designed to improve the communication process between citizens and agency staff. These proposals do not, however, dissipate the chilling effects that the use of a scientific decision-making model has on citizen participation.

In the present scheme of regulatory relationships, the agency and project proposer negotiate over regulatory costs of a proposed activity. This paper proposes that citizens participate in those negotiations. To be effective, a public participation model must restore the balance of inputs of a free market relationship; citizens, agency decision makers, and the regulated party must be allowed to negotiate for a preferred outcome.

The regulator and regulated share a mutual interest in bargained accommodation because resorting to legal or political action is costly who wants to participate is allowed to participate. If large groups take advantage of this right to participate, it becomes difficult for agency staff to communicate and ascertain which viewpoint predominates. If small groups take advantage, then the question is raised as to whom the groups represent. The authors propose that random selection procedures based upon public opinion polls would effectively represent the viewpoints of those affected by the agency action. This participation model is aimed at providing a balanced public input for agency decision making and would be most useful in issues of a non-technical nature. However, a shared scientific and citizen panel may be helpful in dealing with complex technical issues.

115. Berry, supra note 38, at 463. As previously mentioned, Professor Berry argues that it would be a waste of resources for citizen groups to extend any significant effort toward reforming existing participation programs. Id. at 467. While existing public participation programs have created a right to participate which is a useful step toward a right to consult and even a possible right to share power, whatever influence can ultimately be derived from these programs can be gained through the current programs. Conventional lobbying would allow citizen groups to acquire more power to influence agency action. However, this notion of increasing citizen effectiveness is aimed at legislative and institutionalized practices and offers little assistance to citizens at the local level of agency action.

116. See generally Stenzel, The Need for a National Risk Assessment Communication Policy, 11 Harv. Envtl. L. Rev. 381 (1987). Miscommunication of risks or lack of communication is costly: the public distrusts regulatory agencies and does not readily accept their decisions. When the public contests or does not respect regulatory decisions, administrative agencies operate inefficiently. The law should require administrative agencies to share risk information with the public in a meaningful, consistent manner. Stenzel argues that this would have two beneficial effects. First, the public would begin to realize that there is no such thing as absolute safety in life, and would therefore, learn to tolerate risks. Second, the public would learn to distinguish between those risks which warrant investment of limited social resources from those which they must simply tolerate. This approach may have some positive effects on citizen and agency interaction over cultural responses to risk. Id.

117. See Stewart, The Reformation of Administrative Law, 88 Harv. L. Rev. 1669, 1805-13 (1975). These costs consist not only of the direct compliance expenditures required of regulated firms, but the indirect effects of regulatory burdens and constraints on investment, innovation, productivity growth, and the international competitiveness of the United States economy.
to both sides.\textsuperscript{118} Citizens, however, rarely have an opportunity to negotiate for their preferred outcome. Citizen participation at the earliest stages of environmental intervention would encourage citizens to seek the same kind of informal accommodations.

Citizens can bring at least four sources of power to the negotiation process. First, citizens have direct access to the local political process in which the regulated party wishes to locate an activity. Second, citizens have media access and can use that power to shape public opinion about the project, thereby gaining valuable support to fight for their preferred outcome.\textsuperscript{119} Third, citizens can delay projects through official regulatory channels, such as adjudicatory proceedings and public hearing procedures.\textsuperscript{120} Finally, citizens can resort to the courts.\textsuperscript{121}

I. THE BENEFITS OF EARLY CITIZEN PARTICIPATION

Requiring the agency to involve citizens in the early phase of the regulatory process could ameliorate the impact of the use of scientific decision making on citizen participation. First, early citizen negotiations with industry would encourage the assimilation of citizens' concerns in the decision-making process. The regulated party can respond to economic or social concerns about a proposed project. Industry can negotiate with the community for economic incentives to proceed with the project or it can set aside funds for future monitoring costs of the site.

Industry would be forced to deal with the externalities problem when faced with citizen demands for pollution abatement proposals.\textsuperscript{122} Externalities exist whenever a regulated party makes a decision about how to use resources without taking into account the effects—costs or benefits—of the decision. Because the effects fall on others, the regulated party can choose to ignore them. In the environmental regulatory context, requiring business to negotiate directly with citizens would force the regulated business to take into account the social costs of imposing health or environmental risks on the community.\textsuperscript{123}

\begin{itemize}
  \item \textsuperscript{118} Stewart, \textit{supra} note 21, at 659-60.
  \item \textsuperscript{119} The media can be a powerful tool for focusing attention on environmental issues and activating state political involvement in local issues. See Krimsky \& Plough, \textit{supra} note 6, at 63-64.
  \item \textsuperscript{121} Id.
  \item \textsuperscript{122} Demsetz, \textit{Toward a Theory of Property Rights}, 57 AM. ECON. REV. 347, 347-57 (1967).
  \item \textsuperscript{123} See generally id.
\end{itemize}
Early citizen participation could reduce citizen concerns over cultural risks issues and improve communication between citizens and agency staff. Citizens could become familiar with the possible health and environmental risks of an activity, thereby lessening anxiety over unknown or unfamiliar risks. Furthermore, citizens could acquire control over involuntary risks by obtaining concessions from industry and agency decision makers early in the regulatory process.

Finally, citizens could influence the outcome of agency action by negotiating directly with the regulated party. Citizens are often outraged when they learn that they are the last in a long chain of governmental and private actors to learn of a proposed project. The early involvement of citizens affected by a project could reduce delay tactics on the part of citizen and community groups. Citizen access at the earliest possible point could encourage community groups to participate in the planning phases of a project, enhancing the perception of shared decision-making power with agencies and industry.124

A. Early Public Participation Programs

The Massachusetts Hazardous Waste Facility Siting Act125 is the most sophisticated statute adopting an early citizen participation program. Generally, a developer proposing to construct, maintain, and operate a hazardous waste facility must obtain a siting agreement with the community before the facility can be constructed.126

The Massachusetts Act sets out five criteria in order to construct and operate a hazardous waste facility. First, the required licenses, permits, and siting agreement must be obtained.127 Second, before the local community can exclude a hazardous waste facility, it must show that the facility poses special risks to the community.128 Third, the community is encouraged to participate in the selection of sites

124. Fiorino, supra note 4, at 534. Research on public attitudes towards siting of hazardous waste facilities suggests a positive link between support for siting decisions, information about institutional controls, and the opportunity to influence siting decisions and control measures. A proposal having the greatest effect on attitudes was one allowing local public officials and citizens to conduct regular safety inspections. Id. at 533-34.


126. Id. ch. 21D, § 12.


128. MASS. GEN. LAWS ANN. ch. 21D, § 11 (West Supp. 1981). The grants are provided by waste facility councils which are appointed by the governor. Id. § 4.
for a proposed facility through the availability of technical assistance grants.\textsuperscript{129} Fourth, developers and communities must agree to binding arbitration if an agreement cannot be reached.\textsuperscript{130} Finally, compensation must be provided for neighboring communities likely to be affected by the hazardous waste facility.\textsuperscript{131}

The Massachusetts approach encourages public participation. The Massachusetts Act creates an incentive for the developer to negotiate with communities over siting and enforcement issues. For example, regulated parties can no longer rely on formal participation requirements to shelter them from public outrage over agency action.

Presently, many citizens have no formal means to negotiate directly with the regulated party, and often resort to the political or legal process to stop the proposed activity. While delaying tactics are one cost that may be reduced by early citizen participation, the uncertainty of citizen demands may create additional problems, such as increased potential for litigation.\textsuperscript{132} However, mandating citizen involvement in the beginning phase of the regulatory relationship would shift litigation costs to that phase of a project, thereby decreasing total litigation costs.\textsuperscript{133}

In addition, the incentive approach assumes that compensation for all costs can render an individual neutral toward a hazardous facility.\textsuperscript{134} The idea that communities can bargain away the health and safety of their friends and family may be morally repugnant to many.\textsuperscript{135} Indeed, offers of compensation may increase opposition to a proposed activity. Consequently, a pure compensation model may be objectionable to many communities.

A modified compensation model may be more acceptable to citizens. A statutory scheme could be set up in which communities would be given a range of environmental controls in addition to those established by existing regulations. The community and regu-

\textsuperscript{129} Id. ch. 21D, § 11.
\textsuperscript{130} Id. ch. 21D, § 14.
\textsuperscript{131} Id.
\textsuperscript{132} Stewart, supra note 21, at 677-78.
\textsuperscript{134} Bacow & Milkey, supra note 6, at 276.
\textsuperscript{135} Id. at 276-77. Bacow identifies three reasons why the costs of hazardous waste facilities may not be readily compensated by incentive programs:

First, consumers do not always conduct the rational risk-benefit analysis that is attributed to them by economists. . . .  
Second, many people object to the concept of putting a price on health or environmental amenities. . . .  
Third, even if social costs are compensable at the individual level, it may not be possible to reach a community consensus on the appropriate form or amount of compensation. . . .  [In addition,] developers have little incentive to negotiate unless agreements can curb opposition.

Id. at 277.
related party could negotiate for the most appropriate set of additional regulatory costs. For example, cultural risk research suggests that community control over the regulated site can reduce opposition to the activity.\textsuperscript{136} Thus, the community could require the project proposer to conduct additional environmental testing with the supervision of community representatives. Any violations by the project proposer could be subject to sanctions, with the community the direct recipient of the funds. As a result, the regulated party would have a direct financial incentive in maintaining strict emission or pollution control measures.

In addition, the siting agreement could shift some of the regulatory compliance costs to the private sector. In a recent report to the Minnesota State Legislature, several deficiencies were noted in MPCA environmental programs.\textsuperscript{137} For example, the report noted that the MPCA needs to collect more information on risk assessment issues, improve enforcement of regulations, and impose more fines for repeat violators.\textsuperscript{138} Citizens operating under the authority of a siting agreement could collect additional risk assessment data or require the project proposer to conduct more frequent emission testing. Citizens responding to the author's survey indicated a strong interest in compliance issues, and a desire to assist in the enforcement of pollution control measures.\textsuperscript{139} Thus, direct involvement by citizens in environmental monitoring could expand the agency's resources to deal with environmental issues.

Furthermore, a limited range of additional environmental controls could promote a negotiated agreement between citizens and the project proposer. First, the incentive for the project proposer to agree

\begin{footnotesize}
\begin{enumerate}
\item[136.] \textit{Effective Risk Communication}, supra note 15, at 213. See also Portney, \textit{The Potential of the Theory of Compensation for Mitigating Public Opposition to Hazardous Waste Treatment Facility Siting: Some Evidence from Five Massachusetts Communities}, 14 \textit{PO\'LY STUDIES J.} 81, 85-87 (1985). In a study of the Massachusetts approach, Portney found that 43.9% of those who opposed the siting of a facility in their community changed their mind under one of eleven proposals. The proposal which elicited the highest percentage change of opinion advocated regular safety inspections of the facility by citizens and community representatives. In each of the five communities studied, economic proposals such as the payment of all property taxes for ten years, improved fire protection, paying each resident the decreased property value, or paying a surcharge to the community for the amount of waste processed, varied depending on the particular interests of the community.
\item[137.] See \textit{Program Evaluation MPCA}, supra note 73.
\item[138.] \textit{Id.} at 59-60.
\item[139.] The majority of citizens (86\%) believed that they should be more involved in the collection of health risk information, Citizen Survey, App. A, Ques. 12, and in the enforcement of industry permits (85\%), \textit{Id.} Ques. 14.

The Agency Staff Survey showed that 47\% of the staff agreed that citizens should be involved in enforcement issues while 29\% opposed citizen involvement. Agency Survey, App. B, Ques. 13.
\end{enumerate}
\end{footnotesize}
to additional environmental controls would be the limited nature of additional regulatory burdens, and some guarantee that citizen opposition would be lessened. Second, the limited scope of additional environmental controls could reduce the tendency for communities, and the regulated party to undertake litigation in order to reduce uncertainty.\textsuperscript{140} Finally, for communities, additional environmental controls, including economic compensation plans, could accommodate concerns about the additional environmental risks and social costs of the proposed activity.

The range of additional regulatory burdens on the developer could be determined according to several factors, such as the type of project proposed, or the potential for increased health or environmental risks. In setting up a graduated scale, cultural risk data could be used, in addition to existing risk assessment data, to identify those variables creating a perception of enhanced risks by individuals.

On the other hand, mandating that the developer negotiate with citizens before a project is constructed may create concerns. First, small projects may not have the economic resources to accommodate citizen concerns over the activity. For example, citizens may demand the application of expensive pollution abatement technology not currently required by state or federal law. The cost may be burdensome for small businesses. In addition, some projects may be funded by municipalities or other governmental bodies. Citizen demands may create additional financial burdens on already limited budgets.

Despite these concerns, early citizen participation in environmental decision making is the most promising solution to the social, economic, and scientific barriers citizens face in influencing agency decision makers. Policy makers, by adopting an approach mandating the early involvement of citizens in environmental decision making, would address citizen concerns over agency action and would achieve the goals of participatory democracy.

The need for new sites for hazardous waste treatment and disposal facilities is likely to increase in the future.\textsuperscript{141} In order to satisfy the demand, policy makers must find a way to accommodate community concerns in the decision-making process or face increasingly hostile citizen reaction to the siting of a proposed activity. To address these concerns, Minnesota should adopt a modified hazardous waste siting

\textsuperscript{140} Stewart, \textit{supra} note 21, at 664. The rise of social regulations and the creation of public interest law have changed the predominant pattern of regulatory relationships. There has been increased litigation as a result of expanding the scope of regulation to include third party interests. Uncertainty leading to litigation is especially great at the onset of changing economic or social conditions. During such periods the regulated or regulators resort to litigation in an effort to redefine the law in a way favorable to their interests. \textit{Id.}

\textsuperscript{141} See generally Portney, \textit{supra} note 136.
plan, with limited environmental controls, and unlimited compensation plans to encourage the assimilation of cultural and political concerns in environmental decision making.

B. Early Citizen Participation Program in Minnesota

Adopting an early citizen participation program, similar to the Massachusetts Hazardous Waste Facility Siting Act, would enhance the ability of project proposers to site facilities and give the community some control over the development and regulatory compliance of the facility. Past efforts to site undesirable activities in Minnesota have led to extensive public opposition, and even to withdrawal of project proposals.142

1. History of the Minnesota Waste Management Act

In 1980 the Minnesota Legislature enacted the Waste Management Act (Act)143 with provisions for a Hazardous Waste Management Board (Board). The Board was granted broad powers to evaluate, site, and operate hazardous waste facilities in any county in the state.144 Under the provisions of the Act the decisions of the Board are “final and shall supersede and preempt requirements of state agencies and political subdivisions” and “no charter provision, ordinance, rule, permit, or other requirement of any state agency or political subdivision” shall restrict the development and siting of a hazardous waste facility.145 In sum, the Act preempts any local efforts to restrict the siting of hazardous waste facilities.

In 1984, before any site was selected under the Act, public opposition prompted the legislature to amend the preemptive requirements.146 “The volunteer process may not work, but what we have been doing has not worked . . . . Once their guard is dropped and people don’t feel something is going to be forced on them, reason starts to prevail.”147 The Board was ordered to terminate all activities relating to the selection and evaluation of sites for hazardous waste facilities,148 and to dismiss any sites under consideration.149 However, the preemptive elements of the Act have never been re-

142. The local community strongly opposed a plan to reopen and enlarge a landfill in Eden Prairie, Minnesota. After four years, the developer abandoned the project. At one public meeting alone, nearly 500 “boisterous” community residents voiced concern over the landfill. St. Paul Pioneer Press, June 26, 1990, at 4B, col. 1.
144. Id. § 115A.08.
145. Id. § 115A.28, subd. 2.
146. Mpls. Star & Tribune, Mar. 6, 1986, at 1B, col. 7.
147. Quotation of Bill Walker, chair of the Waste Management Board, in reference to the adoption of a voluntary siting process. Id.
148. MINN. STAT. § 115A.175, subd. 1 (1990).
149. Id. § 115A.175, subd. 2.
pealed by the legislature\textsuperscript{150} and could be reactivated if the voluntary siting amendments to the Act fail.

2. The Voluntary Hazardous Waste Siting Act

In 1986 the original Act was amended to provide for a voluntary selection process\textsuperscript{151} with economic incentives for any community willing to consider the development of a hazardous waste stabilization and containment facility.\textsuperscript{152} It is important to note, however, that the amended Act applies only to state owned and operated hazardous waste stabilization and containment facilities.\textsuperscript{153} Thus, private hazardous waste developers may contract for the siting and operation of a hazardous waste facility, landfill, incinerator or other development in Minnesota without complying with the requirements of the Siting Act.

Once the county board has passed a resolution of interest\textsuperscript{154} the county is eligible for $6,000 per month in additional local government aid from the state, subject to certain limitations.\textsuperscript{155} If a county decides to accept a facility, state aid may not exceed $600,000 in any fiscal year.\textsuperscript{156}

After a county decides to enter into a binding contract for the development of a facility, the local political subdivision may impose reasonable requirements respecting the construction, inspection, operation, monitoring, and maintenance of a facility, subject to the ap-

\begin{footnotesize}
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\item \textsuperscript{150} Id. \textsection 115A.28, subd. 2.
\item \textsuperscript{151} If a county board negotiates, offers, or enters into a contract with the Hazardous Waste Board, the county must submit the question of whether to proceed with the contract to a vote of that county's eligible voters. See \textsc{Minn. Stat.} \textsection 115A.191, subd. 6 (1990).
\item \textsuperscript{152} Any eligible county may enter into a contract with the Waste Management Board "expressing their voluntary and mutually satisfactory agreement concerning the location and development of a stabilization and containment facility." \textsc{Minn. Stat.} \textsection 115A.191, subd. 1 (1990). After executing the contract, the county will receive various benefits including, but not limited to, "compensation for demonstrable private and community impacts from the facility," and "provision of services or benefits to promote the health, safety, comfort, and economic development and well-being of the county and its citizens . . . ." Id. \textsection 115A.191, subd. 5(c).
\item \textsuperscript{153} See id. \textsection 115A.195. The central purpose of a waste stabilization and containment facility is to apply a chemical or thermal process to metal contaminated inorganic wastes, such as ash and scrubber sludge from hazardous waste incinerators, in order to render the wastes less toxic and minimize the leaching of metals once the ash is disposed of in landfills. See \textsc{Minn. Waste Mgmt. Bd., Stabilization and Containment Report on Facility Development 3} (June 30, 1988) (Revised Draft).
\item \textsuperscript{154} \textsc{Minn. Stat.} \textsection 115A.191, subd. 2 (1990). A resolution of interest means that the county has expressed an interest in being a location for a stabilization and containment facility.
\item \textsuperscript{155} Id. \textsection 477A.012, subd. 2(a). The state has an overall cap of $40,000 per month for all the counties.
\item \textsuperscript{156} Id. \textsection 477A.012, subd. 2(b).
\end{itemize}
\end{footnotesize}
proval of those terms by the Board and other permitting agencies.\textsuperscript{157} The Board retains the final authority to "approve, disapprove, suspend, modify, or reverse" any local requirements.\textsuperscript{158} Since the Act was amended, thirteen counties have passed resolutions of interest. Each of the thirteen county boards expressed their interest in negotiations and their willingness to accept the preliminary evaluation of one or more study areas in their county. The resolutions, unlike the contract provisions of the Act, allow the county to withdraw the resolution of interest at any time. To date all thirteen counties have rejected the siting of a facility in their community.\textsuperscript{159}

Community response to the Minnesota Siting Act is not surprising. The Minnesota Act fails to address one of the most important cultural risk determinants: the ability of citizens to control the imposition of health and environmental risks. Under the Act, local citizens are being asked to bear the social and health risks costs of a facility with virtually no control over the negotiation process or management of the facility.\textsuperscript{160} Unlike the Massachusetts Act, the principal players in the Minnesota Siting Act are the county board and the Waste Management Board.\textsuperscript{161} In a national survey of hazardous waste siting programs,\textsuperscript{162} the most successful siting programs allowed citizens to negotiate for the most appropriate set of health and environmental controls.\textsuperscript{163}

\section{3. Citizen Participation Requirements}

Under the Minnesota Siting Act, citizen participation is limited to

\begin{flushleft}
\textsuperscript{157} \textit{Id.} § 115A.28, subd. 3; \textit{see also id.} § 115A.191, subd. 5.
\textsuperscript{158} \textit{Id.} § 115A.28, subd. 3.
\textsuperscript{159} Telephone interview with Bruce Brasaemle, staff, Office of Waste Management (formally Board of Waste Management) (Mar. 4, 1991). Under the Minnesota Siting Act, a resolution of interest signifies a county interest in negotiations and its willingness to accept the preliminary evaluation of one or more study areas in the county. \textit{Minn. Stat.} § 115A.191, subd. 2 (1990). A resolution of interest, however, may be withdrawn at any time before the parties execute a contract. \textit{Id.}
\textsuperscript{160} Local citizen participation contemplated under the Act is limited to the site selection process. Minnesota Statute section 115A.22 provides for the foundation of local project review committees consisting of parties with direct interests in the outcome of candidate site reviews and whose members are appointed by the governor. The committee's duties range from feasibility analysis to informing local citizens of the proposed project to developing a consensus of local attitudes for purposes of reporting to the Office of Waste Management. \textit{See id.} § 115A.22, subd. 5.
\textsuperscript{161} \textit{Id.} § 115A.191, subd. 1. "The office of waste management and any eligible county board may enter a contract as provided in this section expressing their voluntary and mutually satisfactory agreement concerning the location and development of a stabilization and containment facility." \textit{Id.}
\textsuperscript{162} LEGIS. COMM'N ON TOXIC SUBSTANCES & HAZARDOUS WASTES, HAZARDOUS WASTE FACILITY SITING: A NATIONAL SURVEY (June 1987).
\textsuperscript{163} \textit{Id.} at 21 (noting that extensive public participation programs appear to promote siting activity).
\end{flushleft}
public hearings and meetings.\textsuperscript{164} For example, the Act provides for citizen participation during the permitting and environmental review process.\textsuperscript{165} As noted above these participation mechanisms are rarely successful in mitigating cultural risk concerns.

The Act provides for the establishment of local committees, but committee members are selected by the governor and are not authorized by the statute to participate in contract negotiations with the state or project developer.\textsuperscript{166} In addition, the county board is encouraged to provide “affected political subdivisions and other interested persons with an opportunity to suggest contract terms.”\textsuperscript{167} Citizens may find it difficult to trust the county board, a governmental actor with a direct financial incentive in the outcome of the siting process. However, the statute is silent with regard to the establishment of an independent citizen panel for the representation of community residents.

4. \textit{Lack of Cultural Incentives}

If a county agrees to accept a hazardous waste facility, the Act provides for additional financial incentives.\textsuperscript{168} The incentives are aimed primarily at compensating the county for the perceived social and economic costs of the facility, such as decreased property values. While these provisions are useful, they fail to address cultural risks concerns, such as citizen control over the operation of the facility. Economic aid packages and other incentives do little to improve community acceptance of a hazardous waste facility, and may even increase opposition.\textsuperscript{169}

The Act allows the local political subdivision to request additional controls over the facility, such as maintenance and operation requirements.\textsuperscript{170} However, the Board retains final decision-making power over additional controls,\textsuperscript{171} and citizens have no independent power to negotiate directly with the state or developer. Because citizens rarely trust governmental authorities to act in their best interests, the Act should provide for the creation of independent citizen panels.

\begin{footnotes}
\item[164.] See Minn. Stat. § 115A.22, subd. 7 (1990).
\item[165.] Id. § 115A.35.
\item[166.] See supra note 160 and accompanying text.
\item[167.] Minn. Stat. § 115A.191, subd. 1 (1990).
\item[168.] For example, a contract between the state and the county may provide “compensation for local public expenditures necessitated by the facility; . . . demonstrable private and community impacts from the facility . . . [and] the provision of services or benefits to promote the health, safety, comfort, and economic development and well-being of the county and its citizens . . . .” Id. § 115A.191, subd. 5(c).
\item[169.] See supra notes 134-35 and accompanying text.
\item[170.] See Minn. Stat. § 115A.28, subd. 3 (1990).
\item[171.] Id. (“The [Board] may approve, disapprove, suspend, modify, or reverse any such requirements. The decision of the office or agency shall be final.”).
\end{footnotes}
panels with power to require additional testing, monitoring, and other cultural risk reduction incentives.

Moreover, the Act should provide financial assistance to the community for the purposes of hiring scientific experts to assist the community in the selection of appropriate health and environmental controls. State funding assures that hazardous waste facilities are not “dumped on poorer communities unable to mobilize the resources, both financial and scientific” to participate in the negotiation process.172

5. Uncertain Enforcement of Risks Controls Under the Act

The Act is not explicit regarding what enforcement authority the county or community would have against the facility developer. A facility “may be wholly owned by the state or jointly owned by the state and a developer selected by the [Board].”173 The Act is clear, however, that “[n]o civil action shall be maintained . . . with respect to conduct taken by a person pursuant to any environmental quality standard, limitation, rule, order, license, stipulation agreement or permit issued by the office [of Waste Management].”174 Because pursuing civil remedies against the state or developer is not an option, citizens are more likely to be reluctant to agree to the siting of a facility in their community. In contrast, the Massachusetts Siting Act provides explicit statutory authority for citizens to enforce contract terms against the developer.175

6. Economic Viability of a State-Operated Facility

If the Act is applied only to state-operated facilities, the competitiveness and therefore the economic viability of the facility may be in doubt. One state, Maryland, operated a facility on a state-owned site. Because it did not have a monopoly, it could not compete with the cheaper facilities of neighboring states.176 Even states that have identified environmentally safe locations for the development of a facility have discovered that the sites may not be “economically attractive to private enterprise operators.”177 The need to compete

174. Id. § 115A.30. The statute precludes civil actions concerning acts taken pursuant to Minnesota Statute sections 115A.18-.30. These sections include but are not limited to final decisions of the board, participation by affected localities, and any local requirements imposed by political subdivisions.
176. Andrews & Pierson, Local Control or State Override: Experiences and Lessons to Date, 14 POL’Y STUD. J. 90, 94 (1985).
177. Id. In order to compete effectively, some states which own and operate a waste facility or landfill, tax the disposal of hazardous waste imported from other states at rates higher than waste generated in-state. Under the “market participation
effectively in the waste disposal market has important implications for community acceptance of a waste facility. It may become necessary for a state-operated facility to accept waste from a large area in order to stay economically viable.

A Minnesota hazardous waste facility would have to import an average of 20,000 tons annually over the 20 year life of the facility to make the project economically viable.\textsuperscript{178} The importation of waste generated outside the state may increase opposition to the facility and bring into question the ability of a state-owned facility to operate efficiently.

Because of the increased costs connected with the government operation of a waste facility, it may be more efficient and cost effective to allow citizens to negotiate directly with a private project proposer. The more control citizens have in the negotiation process, the less citizens feel the need to use delaying tactics or to resort to the political process to stop the project. Minnesota has spent over ten years and an inordinate amount of economic and human resources trying to site just one hazardous waste facility.

**CONCLUSION**

The Minnesota Hazardous Waste Siting Act offers citizens one of two choices. They can present their views in traditional public participation procedures with an opportunity to "suggest" contract terms. Or they can fight the siting of a hazardous waste facility in their community. As is evident from the thirteen communities which have withdrawn resolutions of interest for a facility, citizens are unwilling to trust cultural and health risks decisions to government officials.

The Minnesota Hazardous Waste Management Act should be amended to include at a minimum: (1) statutory mechanisms to allow citizens to negotiate directly with the state, county, and project developer; (2) community technical assistance grants to minimize the impact of scientific issues in the negotiation process; (3) binding arbitration for settling disputes over contract terms; (4) provisions to address cultural risk concerns, such as control over the facility, and community authority to shut the facility down for serious repeat violations; and finally, (5) the scope of the Act should be broadened to

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\textsuperscript{178} Telephone interview with Bruce Brasaemle, staff, Office of Waste Management (Mar. 4, 1991).

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\textsuperscript{178} Telephone interview with Bruce Brasaemle, staff, Office of Waste Management (Mar. 4, 1991).
include landfills, incinerators, and other waste disposal technology. The Act should also include private developers.

Although it appears unlikely that citizen opposition to the siting of a hazardous waste facility will evaporate even with significant community controls and economic incentives, it is also apparent that the Minnesota Siting Act has failed to recognize the degree of participatory democracy and control over risk events that citizens demand in a technological society.

Ann Bray†

† This Comment would not have been possible without the generous support and encouragement of Professor Marcia Gelpe, William Mitchell College of Law.
APPENDIX A: POLLUTION CONTROL CITIZEN SURVEY¹

Sex of Respondent

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<td>Male</td>
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Age of Respondent

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<td>36 - 40</td>
<td>21%</td>
</tr>
<tr>
<td>41 - 50</td>
<td>22%</td>
</tr>
<tr>
<td>51 - 60</td>
<td>22%</td>
</tr>
<tr>
<td>61 - 75</td>
<td>12%</td>
</tr>
<tr>
<td>Not given</td>
<td>3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>SA²</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(1)</td>
<td>70%</td>
<td>19%</td>
<td>2%</td>
<td>5%</td>
<td>4%</td>
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<tr>
<td>1(2)</td>
<td>2%</td>
<td>16%</td>
<td>7%</td>
<td>41%</td>
<td>34%</td>
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<td>1(3)</td>
<td>39%</td>
<td>32%</td>
<td>7%</td>
<td>12%</td>
<td>11%</td>
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<tr>
<td>1(4)</td>
<td>34%</td>
<td>39%</td>
<td>11%</td>
<td>14%</td>
<td>2%</td>
</tr>
<tr>
<td>1(5)</td>
<td>53%</td>
<td>35%</td>
<td>5%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>1(6)</td>
<td>2%</td>
<td>18%</td>
<td>9%</td>
<td>32%</td>
<td>39%</td>
</tr>
</tbody>
</table>

¹. The percentages have been rounded up from decimal point five. Consequently, they will not add up to 100%.

2. Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree.
1(7). The Citizen Board of the Pollution Control Agency is too close to the agency to understand a citizen's point of view.

1(8). Our local government does an adequate job of protecting our community from health risks.

1(9). The Pollution Control Agency uses scientific information from citizens about health risks.

1(10). I understand how the Pollution Control Agency measures health risks.

1(11). Ultimately, the Pollution Control Agency must make the final decision about the location of potential harmful activities.

2. How important are each of the following impact areas when a development is proposed in your area?

(1). The health impact on the community
(2). The economic impact on the community
(3). The social impact on the community

Very  Somewhat  Not at all
98%   2%      0%
44%   51%     5%
54%   42%     4%

3. If 100,000 people are exposed to an environmental activity for their lifetime, and this activity results in one case of cancer, then this activity is:

High risk  Moderate risk  Low risk
41%        20%       39%

4. I am aware of the Environmental Rights Act:

Yes  No
61%  39%

5. Industry estimates of health risks are:
   a. Much lower than actual risk  46%
   b. Lower than actual risk  43%
   c. Reasonably accurate  6%
   d. Higher than actual risk  4%
   e. Much higher than actual risk  2%

6. Industry activities can be environmentally risk free:
   a. Strongly Agree  7%
   b. Agree  41%
   c. Neutral  9%
   d. Disagree  33%
   e. Strongly Disagree  9%
7. Scientists can predict the harm caused by most chemicals:
   a. Very accurately 4%
   b. Accurately 30%
   c. Not very well 48%
   d. Not at all 19%

8(1). Open public meetings are the best way for the Pollution Control Agency to understand community concerns.

8(2). Public hearings and meetings have little effect on final decisions made by the Pollution Control Agency.

8(3). Citizen groups would be more effective with legal help.

8(4). Citizens should be involved in the collection of health risk information.

8(5). Whenever the risk to the community is low, I am less concerned about the decision to allow the activity in my area.

8(6). I feel public meetings have a direct impact on the Pollution Control Agency's decision making.

8(7). Citizens can request an environmental assessment of any project.

8(8). Citizen groups would be more effective with the help of scientific experts.

8(9). In my community, citizens should be involved in the enforcement of industry permits.

9. Please write in your job title or description.

10. How many years of schooling did you complete?

High School Vocational School Some College College Grad. or more
   5% 5% 18% 72%

11. Environmental groups or community associations to which you belong.

   0 - 1 groups 24%
   2 - 3 36%
12. In the past 12 months, about how many public meetings of the Pollution Control Agency have you attended?
   - 0 meetings: 26%
   - 1 - 4: 47%
   - 5 - 10: 21%
   - 11 - 20: 7%

13. What do you see as barriers to effective public participation in the decision-making process on environmental issues?

14. Is there anything else you would like to tell us with regard to the Pollution Control Agency?
APPENDIX B: POLLUTION CONTROL AGENCY SURVEY

Sex of Respondent

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>65%</td>
</tr>
<tr>
<td>Female</td>
<td>35%</td>
</tr>
</tbody>
</table>

Age of Respondent

<table>
<thead>
<tr>
<th>Age Range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>26-35</td>
<td>8%</td>
</tr>
<tr>
<td>36-40</td>
<td>40%</td>
</tr>
<tr>
<td>41-45</td>
<td>36%</td>
</tr>
<tr>
<td>46-51</td>
<td>12%</td>
</tr>
<tr>
<td>Not given</td>
<td>4%</td>
</tr>
</tbody>
</table>

SA A N D SD

1(1). At this time, environmental decisions in our area are based upon health risk information.

21% 53% 21% 6% 0%

1(2). Our division established an efficient system for keeping track of citizen input on environment issues.

12% 47% 15% 24% 3%

1(3). One role of the Pollution Control Agency's mission is to prevent the release of potentially harmful substances into the environment.

42% 39% 9% 6% 3%

1(4). The social impact on a community is as important as health risks in environmental decision making.

3% 27% 18% 44% 9%

1(5). Agency staff should encourage the Citizen Board to approve activities whenever the risk to the community is low.

6% 30% 30% 27% 6%

1(6). Agency staff should place more emphasis on community concerns when health risks are moderate.

0% 63% 16% 16% 6%

1(7). The Citizen Board of the Pollution Control Agency promotes citizen participation in decision making.

24% 54% 12% 9% 0%

1(8). Citizen input in the permit approval process should be eliminated.

0% 0% 9% 30% 61%
1(9). Regardless of economic benefit to the community, agency staff should recommend rejection of permits if there are moderate risks to public health.

1(10). Our division has established a record keeping system for information that is received from businesses seeking permits.

2. About how often do health risk data provided by citizen groups overcome industry data?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>10%</td>
</tr>
<tr>
<td>Occasionally</td>
<td>66%</td>
</tr>
<tr>
<td>About 50/50</td>
<td>14%</td>
</tr>
<tr>
<td>Often</td>
<td>10%</td>
</tr>
<tr>
<td>Always</td>
<td>0%</td>
</tr>
</tbody>
</table>

3. Information obtained from citizens at open public informational meetings has:
   a. No effect on PCA decision making 3%
   b. A small effect on PCA decision making 24%
   c. Contributes significantly to PCA decision making 67%
   d. Is a very important factor in decision making 6%
   e. Is the most important factor in decision making 0%

4. If 100,000 people are exposed to an environmental activity for their lifetime, and this exposure results in one case of cancer, then this activity is:
   a. High risk 13%
   b. Moderate risk 25%
   c. Low risk 61%

5. I am aware of the Environmental Rights Act:
   a. Yes 56%
   b. No 44%

6. The health risk information provided by citizen groups affects the final decision in our area:
   a. Never 9%
   b. Occasionally 64%
   c. About 50/50 9%
   d. Often 18%
   e. Always 0%

7. Information obtained from citizens at board meetings has:
   a. No effect on PCA decision making 0%
   b. A small effect on PCA decision making 24%
   c. Contributes significantly to PCA decision making 62%
   d. Is a very important factor in decision making 15%
   e. Is the most important factor in decision making 0%
8. How important are each of the following community impact areas when considering decision making?

<table>
<thead>
<tr>
<th>Area</th>
<th>Very</th>
<th>Somewhat</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>The health impact on a community</td>
<td>97%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>The economic impact on a community</td>
<td>15%</td>
<td>75%</td>
<td>9%</td>
</tr>
<tr>
<td>The social impact on a community</td>
<td>9%</td>
<td>66%</td>
<td>25%</td>
</tr>
</tbody>
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9. The resources our division has available to independently verify emission test results are:

a. More than adequate 11%  
b. Somewhat adequate 25%  
c. Somewhat inadequate 46%  
d. Completely inadequate 18%

10. Citizen groups provide valid technical data:

a. All of the time 0%  
b. Usually 3%  
c. Sometimes 82%  
d. Never 15%

11. Scientists can predict the harm caused by most chemicals:

a. Very accurately 0%  
b. Accurately 41%  
c. Not very well 59%  
d. Not at all 0%

12. Industry estimates of health risks are:

a. Much lower than actual risk 3%  
b. Lower than actual risk 48%  
c. Reasonably accurate 48%  
d. Higher than actual risk 0%  
e. Much higher than actual risk 0%

13(1). Public meetings effectively reduce community concerns about Pollution Control Agency’s decisions.

SA A N D SD
0% 35% 18% 41% 6%

13(2). Open public meetings are the best way to collect information about community environmental concerns.

3% 35% 21% 29% 12%

13(3). The process used by the Pollution Control Agency when making environmental risk decisions is well understood by the public.

0% 0% 12% 68% 21%
13(4). The public is confident of the Pollution Control Agency's ability to protect community health.

13(5). Public involvement in the risk assessment procedure tends to frustrate agency staff.


13(7). Citizens should be involved in the enforcement of industry permits.

14. How many years of schooling did you complete?
   College Grad.  Post Grad.
   47% 53%

15. My job includes work with technical risk/permit assessment.
   Yes  No
   70% 30%

16. How many other departments or agencies do you work with on permit applications?

17. In the past 12 months, about how many public meetings of the Pollution Control Agency have you attended?
   0 - 1  12%
   2 - 3  32%
   4 - 5  9%
   6 - 8  18%
   9  29%

18(a). In your job, about how many times per month do you come in contact with the public?
   0 - 10  35%
   11 - 30  50%
   31 - 50  9%
   51 - 64  3%
   99 or more 3%

18(b). In your job, about how many times per month do you come in contact with industry personnel?
   0 - 10  41%
   11 - 30  44%
   31 - 50  9%
   51 - 64  3%
   99 or more 3%

19. Is there anything else you would like to tell us with regard to the Pollution Control Agency?