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Environmental Justice and Discriminatory Siting: Risk-Based Representation and Equitable Compensation

Bradford Mank
University of Cincinnati College of Law, brad.mank@uc.edu

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BRADFORD C. MANK*

I. INTRODUCTION

Recent articles have argued that existing environmental laws work to the disadvantage of minorities or the poor and have used shorthand expressions such as "environmental racism," "environmental justice" or "environmental equity" to refer to a wide range of distributional issues.[1] It is fair to say that an

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* Assistant Professor of Law, University of Cincinnati; B.A., Harvard University, 1983; J.D., Yale Law School, 1987. I wish to thank Joe Tomain, John Applegate, Gordon Christenson, and Paul Schwartz for their comments on earlier drafts. Jennifer Tecson provided able research assistance. I also wish to thank law librarian Jim Hart for his assistance in obtaining various government documents and other hard-to-find sources. All errors or omissions are my responsibility.

[1] *See, e.g.*, Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383 (1994) [hereinafter Been, *Market Dynamics*]; Vicki Been, *What's Fairness Got To Do with It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001 (1993) [hereinafter Been, *Fairness*]; Richard J. Lazarus, *Pursuing "Environmental Justice": The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 787 (1993). Commentators have defined environmental equity, environmental justice, and environmental racism in slightly different ways:

> Environmental racism is the intentional or unintentional practice of racially discriminatory siting. Environmental equity involves evenly balancing the siting of potentially environmentally hazardous facilities among communities of all backgrounds. Environmental justice, on the other hand, has emerged as a movement to relieve all communities of the burden of emissions by curtailing waste generation and preventing all pollution.

Charles J. McDermott, *Balancing the Scales of Environmental Justice*, 21 FORDHAM URB. L.J. 689, 689 (1994). Rae Zimmerman says:

"environmental justice movement" now exists, including both activists and scholars. This movement frequently argues that people of color and the poor are exposed to greater environmental risks than are whites and wealthier Americans at least in part because of racism and classism in the siting of environmental risks, the promulgation of environmental laws and regulations, the enforcement of environmental laws, and the attention given to the cleanup of polluted areas.[2] In response to charges of class and racial bias, Carol Browner, Administrator of the United States Environmental Protection Agency (EPA), has identified the elimination of environmental racism as one of her top priorities.[3] President Clinton, in an Earth Day speech, called environmental justice an important domestic priority,[4] and on February 11, 1994, he issued Executive Order 12,898,[5] which requires all federal agencies to investigate to

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> Equity typically refers to the distribution of amenities and disadvantages across individuals and groups. Justice, however, focuses more on procedures to ensure fair distribution. Fairness refers to where one group or individual disproportionately bears the burdens of an action.

Rae Zimmerman, *Issues of Classification in Environmental Equity: How We Manage Is How We Measure*, 21 FORDHAM URB. L.J. 633, 633 n.1 (1994). Many scholars prefer the terms "environmental justice" or "equity" to the more negative and divisive shorthand of "environmental racism." Lazarus, *supra*, at 790. This Article uses the expression "environmental justice" because it refers to a range of issues broader than racism.

[2] *See* Been, *Market Dynamics*, *supra* note 1, at 1384 (discussing the environmental justice movement).

[3] Stephen C. Jones, *EPA Targets 'Environmental Racism'*, NAT'L L.J., Aug. 9, 1993, at 28, 34 (citing Carol M. Browner, Address at the District of Columbia Bar Association Luncheon, National Press Club, (June 25, 1993)). Under the Clinton Administration and the leadership of Carol Browner, the EPA has taken a more activist approach to environmental equity issues than the EPA did under the Bush Administration and EPA Administrator William K. Reilly. In 1992, after the *National Law Journal* released a study finding significant racial disparities in the agency's enforcement and remedy selection policies, EPA officials stated that more sophisticated studies were needed. Marianne Lavelle, *EPA Responds to Concerns of Minorities on Cleanups*, NAT'L L.J., May 9, 1994, at A12. By contrast, in 1994, Elliott P. Laws, the EPA's assistant administrator in charge of waste programs, argued that citizen groups concerned with environmental justice issues have been waiting for years for action and therefore that the Clinton Administration would not wait until more research is done. *Id.*

[4] Steven Keeva, *A Breath of Justice*, A.B.A. J., Feb. 1994, at 88, 88.

[5] Exec. Order No. 12,898, 59 Fed. Reg. 7629 (1994). Earlier, President Clinton had issued Executive Order 12,866, 3 C.F.R. 638 (1993), which requires agencies to "design its regulations in the most cost-effective manner to achieve the regulatory objective. In doing so, each agency shall consider incentives for innovation, consistency, predictability, the

what extent their policies may create environmental inequities in minority or low-income populations.

There is conflicting evidence about whether it is the initial siting decision or subsequent events attributable to market dynamics that cause disparities between the risks borne by whites and minorities, or by rich and poor.[6] It is important to understand the causes of such disparities because different remedies may be appropriate. Siting discrimination suits can address only disparities caused by the initial siting decision, but ongoing compensation or broad redistributive policies can at least partially redress the impact of market dynamics.

Siting discrimination suits under the Equal Protection Clause have generally failed because of that Clause's discriminatory intent requirement.[7] Many commentators propose a "disparate impact approach," which would allow a finding of discrimination without the need to prove discriminatory intent, contending that the intent requirement fails to address indirect racial discrimination resulting from past practices or unconscious attitudes.[8]

This Article disagrees with environmental justice advocates who would find discrimination whenever there are disparate impacts. The intent requirement legitimately distinguishes between intentional conduct perpetrated by bad actors and unintentional conduct that may have disparate impacts but is motivated by neutral decisionmaking criteria that serve legitimate business interests. The disparate impact approach raises troubling issues in defining what is statistically significant discrimination, what is the relevant geographical area affected by a facility, and which persons should be classified as belonging to a racial minority group.[9]

Courts applying the Equal Protection Clause should focus on whether minorities are adequately represented in the siting decisionmaking process rather than on the substantive merits of the siting decision.[10] A siting

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costs of enforcement and compliance (to the government, regulated entities, and the public), flexibility, distributive impacts, and equity." *Id.* at 639. Although the objectives of Executive Order 12,866 are laudatory, it provides no guidance on how agencies should choose among these goals if they conflict.

[6] *See generally* Been, *Market Dynamics*, *supra* note 1, at 1398–1407 (discussing market dynamics theory and presenting conflicting empirical evidence); *see also infra* notes 55–58 and accompanying text (discussing conflicting studies).

[7] *See generally* Lazarus, *supra* note 1, at 828–33 (citing sources and discussing four losing equal protection cases); *infra* notes 293–301 and accompanying text.

[8] *See* Lazarus, *supra* note 1, at 825–26; *see also* Sheila Foster, *Race(ial) Matters: The Quest for Environmental Justice*, 20 ECOLOGY L.Q. 721, 733–34; *infra* notes 307–13 and accompanying text.

[9] *See infra* notes 363–74 and accompanying text.

[10] *See generally* JOHN HART ELY, DEMOCRACY AND DISTRUST: A THEORY OF JUDICIAL

representation and compensation process should insure fair representation for minorities and make equal protection challenges irrelevant.

A "compensation approach" that fairly represents those at greatest risk, including minorities, is sufficient to address disparate impacts and does so without stigmatizing developers and government officials motivated by neutral decisionmaking criteria that serve legitimate business purposes. Compensation can at least partially address disparities that arise subsequent to the initial siting decision as a result of market dynamics. Disparate impact suits are ill-suited to addressing whether the benefits of a facility outweigh its costs. Moreover, eliminating all environmental disparities may be too costly in some cases.[11]

Unlike job discrimination, the siting of a polluting or disposal facility brings both costs and benefits to any community. Disparate impact challenges may actually harm a minority group if they block the siting of a project that brings to a community employment and tax benefits that outweigh the risks.[12] Minorities are likely to lose more than whites if legislative measures designed to reduce environmental inequities reduce the incentive for businesses to relocate into poor and minority areas.[13] The dangers of poverty and unemployment are often much greater than the risks associated with waste disposal facilities and industrial plants.[14] Indeed, in a number of siting disputes in which environmental justice groups challenged the siting of a particular facility, other well-established minority groups such as the local chapter of the National Association for the Advancement of Colored People (NAACP)

REVIEW, 87, 181 & *passim* (1980) (proposing theory of representation-reinforcing review and arguing that central purpose of Equal Protection Clause is protecting minority political participation, not preventing substantive injustices). Ely's theory has generated enormous controversy. *See generally* Michael J. Klarman, *The Puzzling Resistance to Political Process Theory*, 77 VA. L. REV. 747 (1991); Laurence H. Tribe, *The Puzzling Persistence of Process-Based Constitutional Theories*, 89 YALE L.J. 1063 (1980); Mark V. Tushnet, *Darkness on the Edge of Town: The Contributions of John Hart Ely to Constitutional Theory*, 89 YALE L.J. 1037 (1980); Symposium, *Judicial Review Versus Democracy*, 42 OHIO ST. L.J. 1 (1981); Ron Replogle, Note, *The Scope of Representation-Reinforcing Judicial Review*, 92 COLUM. L. REV. 1592 (1992). Regardless of the validity of Ely's theory of judicial review, his theory offers an appropriate analogy for a statutory proposal that emphasizes the adequate representation of minorities rather than equality of results.

[11] *See generally* Kent E. Portney, *Environmental Justice and Sustainability: Is There a Critical Nexus in the Case of Waste Disposal or Treatment Facility Siting?*, 21 FORDHAM URB. L.J. 827, 832–39 (1994); *see also* A. Dan Tarlock, *Environmental Protection: The Potential Misfit Between Equity and Efficiency*, 63 U. COLO. L. REV. 871 (1992) (discussing need to balance environmental equity and efficiency).

[12] *See infra* notes 13–15, 406–07 and accompanying text.

[13] CHRISTOPHER BOERNER & THOMAS LAMBERT, ENVIRONMENTAL JUSTICE? 6 (1994).

[14] *Id.*

supported construction of the facility.[15]

Developers can redress a facility's externalities by compensating affected groups. Existing compensation practices, however, do not sufficiently address distributional and representational issues. A number of states have some form of compensation system, but no system is designed to make sure that those at greatest risk receive roughly proportionate representation and compensation.[16]

This Article proposes a new risk-based approach to representing and compensating not only minorities but any person affected by a siting decision. This proposal would create a formal mechanism for achieving the desire of many environmental justice advocates to empower those local residents most affected by a siting decision.[17] The EPA or state siting agencies, however, would provide a technocratic framework for assessing the scope of risks, despite the limitations of risk and cost-benefit analysis;[18] would set limits on the maximum amount of risk in any community; and would specify the minimum compensation required from a developer. Immediate neighbors, political residents in the siting community, and regional residents would have a varying degree of input into the siting and compensation process depending upon the risk they bear from a facility.

After the EPA or siting board established minimum safety standards and determined the minimum compensation, a siting negotiation and compensation committee, elected by a risk-weighted voting system, would negotiate with a developer concerning both the amount and the distribution of compensation. Compensation would go to those who are at greatest risk rather than to local politicians and unrelated municipal service needs such as schools. The compensation process could take into account harms caused by both the initial

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[15] *Id.* at 13–14 (discussing proposed site in Brooksville, Mississippi and controversial Emelle Landfill in Sumter County, Alabama).

[16] *See infra* notes 159, 188–205 and accompanying text.

[17] *See generally* Regina Austin & Michael Schill, *Black, Brown, Poor & Poisoned: Minority Grassroots Environmentalism and the Quest for Eco-Justice*, 1 KAN. J.L. & PUB. POL'Y 69, 71–79 (1991) (discussing and praising minority grassroots environmental movement); Luke W. Cole, *Empowerment as the Key to Environmental Protection: The Need for Environmental Poverty Law*, 19 ECOLOGY L.Q. 619 (1992); Robert W. Collin, *Environmental Equity: A Law and Planning Approach to Environmental Racism*, 11 VA. ENVTL. L.J. 495 (1992) (advocating environmental planning at local level where detrimental impact of waste siting decisions is greatest).

[18] There are serious limitations in assessing the risks of carcinogens and especially noncarcinogens. *See generally* Bradford C. Mank, *What Comes After Technology: Using an "Exceptions Process" to Improve Residual Risk Regulation of Hazardous Air Pollutants*, 13 STAN. ENVTL. L.J. 263, 281–84 (1994); James H. Colopy, Comment, *The Road Less Traveled: Pursuing Environmental Justice Through Title VI of the Civil Rights Act of 1964*, 13 STAN. ENVTL. L.J. 125, 137–39 (1994); *infra* notes 386–401 and accompanying text.

siting process and subsequent ongoing or ex post risks. The compensation process would also determine the relative allocation of monies for remedial, preventive, and incentive purposes.

Part II of this Article discusses the empirical evidence regarding whether minorities are disproportionately affected by pollution and examines whether disparities are caused by the initial siting decision or by subsequent events attributable to market dynamics. Part III(A) reviews current siting practices and proposed environmental justice legislation. Part III(B) discusses the limitations of current compensation practices. Part III(C) explores the question of to what extent the public should participate in environmental decisionmaking. Part IV discusses recent equal protection challenges to allegedly discriminatory siting decisions and scrutinizes proposals by other commentators to allow for broadened disparate impact claims. Part V argues that equal protection suits should be allowed only when there is evidence of intentional discrimination. Disparate impact suits should be allowed only when there is statistically significant evidence of such impacts, the costs of discrimination outweigh the benefits of a proposed project to an affected group, and there is no adequate compensation process. Part VI presents a "risk-based" committee system that would give greater representation to those most at risk from locally undesirable land uses and would be the fairest system for compensating those who are at risk from locally undesirable land uses.

II. THE PROBLEM OF "ENVIRONMENTAL JUSTICE"

There is conflicting empirical evidence about the extent of environmental inequities, but there are some disparities at some sites.[19] A more difficult question is whether disparities are primarily caused by discriminatory initial siting decisions or by subsequent events attributable to market dynamics, which lead poor people to move toward undesirable facilities when property values fall.[20] It is important to understand the causes of disparities because the remedies for correcting them will differ accordingly.

A. *Evidence of Environmental Inequities*

In theory, it is probably to be expected that some segments of society will receive fewer environmental benefits and bear greater environmental burdens,

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[19] *See generally* Been, *Market Dynamics*, *supra* note 1, at 1398–1406 (reviewing environmental justice literature and criticizing several studies purporting to find environmental inequities); *infra* notes 59–68 and accompanying text.

[20] *See infra* notes 55–58 and accompanying text.

and a considerable literature has developed about this observation.[21] The existence of at least some environmental racial disparities in a society in which there are significant differences among minorities and whites in income levels, education, residential patterns, and access to political power is not surprising. Even if the government's enforcement and cleanup policies are the same in minority and white neighborhoods and in rich and poor neighborhoods, generally poor enforcement efforts by the EPA or delayed and inept cleanups may still disproportionately harm minority or poor neighborhoods if there are more such sites in these communities.[22] Furthermore, pollution prevention schemes that reduce the overall amount of pollution may simultaneously increase pollution for certain populations.[23]

Because minorities and poor people disproportionately live closer to polluting industries than do nonminorities,[24] minorities or the poor should obtain disproportionately larger benefits from any across-the-board reduction in pollution or increase in occupational safety.[25] It is not clear, however, that minorities or poor people, especially those living in urban areas, have in fact received proportionately larger increases,[26] and there is some evidence that greater benefits have gone to people living in nonurban areas.[27]

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[21] *See* Lazarus, *supra* note 1, at 792–94. Environmental protection laws tend to redistribute risks because the use of pollution control devices to reduce certain risks—for instance, air pollution scrubbers or municipal wastewater treatment facilities to reduce air or water pollution—frequently creates other types of pollution, such as sludge, that impose risks on a segment of the population different from the segment that would have been exposed to the initial pollution. *See* Lakshman Guruswamy, *Integrating Thoughtways: Re-Opening of the Environmental Mind?*, 1989 WIS. L. REV. 463–69 & *passim*; Lazarus, *supra* note 1, at 794–95.

[22] *See generally* Colopy, *supra* note 18, at 139–40.

[23] *See* Lazarus, *supra* note 1, at 794–95.

[24] *See infra* notes 28–29, 32–36, 41–44 and accompanying text.

[25] *See* E. Donald Elliott, *A Cabin on the Mountain: Reflections on the Distributional Consequences of Environmental Protection Programs*, 1 KAN. J.L. & PUB. POL'Y 5, 7 (1991) ("In my judgment, minorities and the poor probably benefit disproportionately from environmental protection measures."); Lazarus, *supra* note 1, at 798; William K. Reilly, *Environmental Equity: EPA's Position*, EPA J., Mar./Apr. 1992, at 18, 22 ("It is undeniable that minorities usually benefit from—are, indeed, the chief beneficiaries of—more general efforts to protect the environment.").

[26] *See* Lazarus, *supra* note 1, at 798–99; *infra* notes 41–45 and accompanying text. There is some evidence that uniform technology-based regulation of air pollution has resulted in higher-income persons receiving larger absolute benefits in pollution reduction compared to lower-income persons. *See* Lazarus, *supra* note 1, at 798–99 (citing studies). Higher-income individuals may even receive greater benefits from programs aimed at improving urban air quality. *See id.*

[27] As a result, there has been significant progress since 1970 in improving air quality

National uniform regulation in some circumstances does not effectively address localized concentrations of pollution, called "hot-spots,"[28] which often disproportionately impact minorities or poor people because they are more likely to breathe polluted urban air or eat contaminated fish.[29] Although there are significant differences between technology-based and market-based regulatory approaches,[30] neither type of regulation is especially adept at addressing localized hot-spots.[31]

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as measured by the national ambient air quality standards for criteria pollutants such as sulfur dioxide, nitrogen oxide, and particulates. *See* Lazarus, *supra* note 1, at 814 n.109 (arguing that greater progress has been made in improving general ambient air quality criteria than in reducing toxic air emissions and citing COUNCIL ON ENVIRONMENTAL QUALITY, SEVENTEENTH ANNUAL REPORT 17 (1986)). But relatively less progress has been made in reducing emissions of hazardous air pollutants, which often are of greater concern to neighbors, disproportionately minorities, of the toxic polluting source. *See id.* at 814. In another article, this author questioned how effectively the two-stage approach to regulating hazardous air pollutants in the 1990 Clean Air Act amendments will work at reducing overall emissions of hazardous air pollutants and in particular "hot-spots" that may disproportionately affect minorities and the poor. *See generally* Mank, *supra* note 18. Because a larger proportion of racial minorities reside in metropolitan areas, higher percentages of African-Americans and Hispanics, compared to white Americans, live in air nonattainment areas for particulate matter, carbon monoxide, ozone, sulfur dioxide, and lead. *See* 1 ENVTL. EQUITY WORKGROUP, OFFICE OF POLICY, PLANNING, AND EVALUATION, U.S. EPA, ENVIRONMENTAL EQUITY: REDUCING RISK FOR ALL COMMUNITIES, WORKGROUP REPORT TO THE ADMINISTRATOR 13–14 (June 1992) [hereinafter EPA ENVIRONMENTAL EQUITY REPORT].

[28] *See* Mank, *supra* note 18, at 290–91 (discussing hot-spots). *See generally* California Air Toxics "Hot Spots" Information and Assessment Act of 1987, CAL. HEALTH & SAFETY CODE §§ 44300–44384 (West Supp. 1995) (legislation providing for the collection of information and assessment of health risks regarding emissions of hazardous air pollutants that may cause hot-spots). Some pollutants, such as volatile organic compounds, do not have significant site-specific impacts, but other pollutants create localized pollution problems around the emitting source. Carbon monoxide, for example, can create hot-spots in and near tunnels and around major intersections where motor vehicle traffic is heaviest. *See* Mank, *supra* note 18, at 290 n.121.

[29] Minority groups' relative lack of political power at the national level may explain why air pollution control efforts typically focus on general ambient air quality concerns for an entire metropolitan region rather than on toxic hot-spots in any one particular area. *See* Lazarus, *supra* note 1, at 814; *see also* Mank, *supra* note 18, at 290–91 (discussing hot-spots).

[30] There has been an extensive academic debate about the relative merits of technology-based and economic incentive-based regulation. *See generally* Mank, *supra* note 18, at 297–99.

[31] Because the first major wave of environmental regulation in the 1970s relied primarily upon technology-based approaches, there is more evidence that such systems of

The real issue, however, is an empirical one: Are minorities or poor persons disproportionately disadvantaged by environmental laws? Several major studies have found that hazardous waste sites, solid waste dumps, polluting factories, and other locally undesirable land uses are located in areas that contain, on average, a higher percentage of racial minorities and are poorer than nonhost communities. In 1983, the United States General Accounting Office (GAO) examined the racial and socioeconomic characteristics of the communities surrounding four offsite hazardous waste landfills located in the eight southeastern states that make up the EPA's Region IV and found that "[b]lacks make up the majority of the population in three of the four communities where the landfills are located."[32] In 1987, the United Church of Christ Commission for Racial Justice published what was then the most comprehensive study, involving the location of all 415 commercial hazardous waste facilities in the contiguous United States that could be identified through the EPA's Hazardous Waste Data Management System, and concluded that "[a]lthough socioeconomic status appeared to play an important role in the location of commercial hazardous waste facilities, race still proved to be more significant."[33] In 1994, an updated study by the United Church of Christ found

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regulation have in many cases failed to achieve equitable reductions in the amount of pollution. *See* Lazarus, *supra* note 1, at 798–99, 814–15 (discussing various regulatory programs that may have had neutral or even regressive distributional impacts); *infra* notes 41–44 and accompanying text. Marketable permit systems, however, are not necessarily more effective than technology-based forms of regulation in reducing hot-spots. *See* TOM H. TIETENBERG, EMISSIONS TRADING: AN EXERCISE IN REFORMING POLLUTION POLICY 71 (1985) ("Neither the command-and-control nor the emissions permit policy considers source location in assigning control responsibility."). Market permit systems can even exacerbate pollution concentrations more so than uniform regulations because the distribution of pollution under a market system of transferable pollution rights will tend to replicate existing income and property distributions, which themselves may be the product of racial inequities. *See* Lazarus, *supra* note 1, at 849; Manley W. Roberts, Comment, *A Remedy for the Victims of Pollution Permit Markets*, 92 YALE L.J. 1022, 1027–28 & n.40 (1983). Incentive-based systems of regulation are no better than uniform standards in taking into account the actual amount of harm caused at a particular site, because there is a complex relationship between emission levels and "[t]he polluting effect of a given emission, [which] depends upon weather, season, air and water flow, and a host of other factors." STEPHEN BREYER, REGULATION AND ITS REFORM 276 (1982). Site-specific regulatory approaches, including variances or exceptions from otherwise nationally uniform legislation, can address hot-spots and can deal with local inequities generally. *See generally* Mank, *supra* note 18, at 313–26 *& passim.*

[32] U.S. GEN. ACCOUNTING OFFICE, SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES 1 (1983).

[33] UNITED CHURCH OF CHRIST COMM'N FOR RACIAL JUSTICE, TOXIC WASTES AND RACE

that the location of hazardous waste facilities reflects a national pattern of racial inequality that has grown worse during the past decade.[34] Professor Robert Bullard, a sociologist, found that although African-Americans made up only twenty-eight percent of the Houston population in 1980, six of Houston's eight incinerators and mini-incinerators and fifteen of seventeen landfills were located in predominantly African-American neighborhoods.[35] Other studies have questioned whether there are disparities between minorities and whites in the siting of solid and hazardous waste facilities or whether such disparities are caused by events subsequent to the initial siting process.[36]

There is evidence that the EPA and state agencies do not enforce environmental laws equally in white and minority areas. In 1992, the *National Law Journal* published a special issue on environmental racism that examined all Resource Recovery and Conservation Act civil penalty cases in the federal courts from 1985 through 1991 and concluded that race rather than income caused disparities in toxic waste penalties.[37] The same *National Law Journal*

IN THE UNITED STATES xiii (1987).

[34] *See generally* BENJAMIN A. GOLDMAN & LAURA FITTON, TOXIC WASTES AND RACE REVISITED (1994).

[35] *See* Robert D. Bullard, *Solid Waste and the Black Houston Community*, 53 SOC. INQUIRY 273, 279–83 (1983); Been, *Market Dynamics*, *supra* note 1, at 1395 n.49.

[36] *See infra* part II.B.

[37] Marianne Lavelle & Marcia Coyle, *Unequal Protection*, NAT'L L.J., Sept. 21, 1992, at S2, S2. The study found that penalties at sites having the greatest white population were about 500% higher than penalties at sites with the greatest minority population, averaging $335,566 for the white areas, compared to $55,318 for minority areas. On the other hand, there was no evidence of significant disparities between rich and poor areas for hazardous waste civil penalties. The average penalty in areas with the lowest median incomes was $113,491, which was three percent more than the $109,606 average penalty in areas with the highest median incomes. The study also examined all civil cases concluded from 1985 through 1991 under federal air, water, and waste laws and found disparities based upon both race and income. Penalties in white communities were 46% higher than in minority communities, $153,067 compared to $105,028, and penalties were 54% higher in high-income areas than in low-income areas, $146,993 compared to $95,664. *Id.* at S2, S4, S6. *But see* William K. Reilly, *EPA's Reilly Replies to 'Unequal Protection'*, NAT'L L.J., Jan. 25, 1993, at 16. Reilly, then Administrator of the EPA, criticized the study on the ground that the

> analysis was limited to a small, unrepresentative sample of the agency's enforcement actions—civil judicial suits for penalties—without regard to the many enforcement actions brought as administrative actions or criminal prosecutions.
>
> More important, the measure of enforcement effectiveness is not just how much money someone is penalized, but whether and how effectively the underlying environmental problem is corrected.

study found that, under the Superfund cleanup program, it took twenty percent longer in minority areas to have the EPA place a site on the national priority action list, 5.6 years from the date of discovery to the date of listing compared to 4.7 years in white areas, and ten percent longer in poor areas than in rich areas, 5.3 years compared to 4.8 years.[38] Congress has launched investigations into the EPA's enforcement and cleanup practices.[39] The United States Commission on Civil Rights is also currently investigating the EPA's enforcement and toxic waste cleanup decisions.[40]

There is also evidence that the poor and racial minorities are more likely to live near sources of air pollution and to drink polluted water.[41] Proponents of the environmental justice movement often argue that there has been greater progress in improving air and water quality in nonurban areas.[42] Although

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Id. at 18.

[38] Marianne Lavelle, *The Minorities Equation*, NAT'L L.J., Sept. 21, 1992, at S2. At the "minority sites," the EPA chose "containment," the capping or walling off of a hazardous waste dump site, seven percent more frequently than it did permanent "treatment," the cleanup method preferred under § 121 of the Superfund statute. Seventy-five sites were "contained"; 70 were "treated." Lavelle & Coyle, *supra* note 37, at S2, S6. At "white sites," the EPA ordered treatment 22% more often than it did containment, 88 treated sites compared to 72 contained sites. *Id.* Although § 121(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) favors permanent treatment solutions, § 121(a) gives the EPA considerable discretion in weighing costs and other factors when determining cleanup levels. *See* 42 U.S.C. § 9621(a), (b) (1988).

[39] *See* Marianne Lavelle, *Environmental Racism Targeted*, NAT'L L.J., Mar. 1, 1993, at 3; Marianne Lavelle, *Discrimination Probe Planned: House Committee to Investigate Environmental Racism*, NAT'L L.J., Sept. 28, 1992, at 1.

[40] *See* Marianne Lavelle, *EPA Enforcement to be Probed*, NAT'L L.J., Apr. 5, 1993, at 3, 34.

[41] *See generally* Lazarus, *supra* note 1, at 796–806. There is evidence that African-Americans and Hispanics are more likely than the poor population in general to live in urban areas that are not in compliance with federal Clean Air Act requirements for particulate matter, carbon monoxide, ozone, sulfur dioxide, and lead. 1 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 13–14 (stressing that measurements of environmental contaminants represent the "potential" for exposure and not "actual" exposure); Lazarus, *supra* note 1, at 805; D.R. Wernette & L.A. Nieves, *Breathing Polluted Air: Minorities Are Disproportionately Exposed*, EPA J. Mar./Apr. 1992, at 16, 17. Over 67% of African-American inner-city children suffer from excessive blood lead levels. *See* Jane Perkins, *Recognizing and Attacking Environmental Racism*, 26 CLEARINGHOUSE REV. 389, 394 (1992) (citing 1990 study by the Environmental Defense Fund); Colopy, *supra* note 18, at 132.

[42] *See* Lazarus, *supra* note 1, at 815. For example, significant financial resources have been devoted to nonurban issues such as the prevention of significant deteriorations in air quality, the reduction of "acid rain," and the protection of visibility in national parks and

programs designed to reduce pollution in areas often possess great merit, proponents of the environmental justice movement have contended that pollution control programs aimed at poor and minority urban areas, such as programs to reduce lead pollution, may yield greater returns in terms of overall public health per dollar invested.[43] On the other hand, it is important to recognize that our society has spent considerable resources to reduce urban pollution. "[B]etween 1970 and 1990 the United States expended more than $1 trillion on environmental protection, the vast majority spent controlling pollution in cities from industry, municipal facilities, and cars."[44]

The work activities of minorities also expose them to disproportionate environmental risks.[45] There is substantial evidence that minorities occupy significantly more environmentally hazardous jobs and, as a result, suffer a disproportionately higher number of environmentally related injuries.[46] For instance, epidemiologists found that ninety percent of steelworkers most heavily exposed to certain organic pollutants were nonwhite and that these persons suffered from respiratory cancer at a rate eight times greater than expected.[47] As many as 1,000 farmworkers, eighty to ninety percent of whom are minorities, primarily African-Americans or Hispanics, die, and over 300,000 experience pesticide-related illnesses each year from direct pesticide exposure.[48]

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wilderness areas. *Id.* In addition, Congress has directed substantial resources to improve water quality in nonurban areas. *Id.* Professor Lazarus acknowledges that the Clean Water Act's constructions grants program, which authorizes federal grants for municipal wastewater treatment, 33 U.S.C. §§ 1281–99 (1988), may be an exception to the pattern of relative neglect of urban areas that he sees in the Act, but he points out that the effectiveness of the grants program has long been controversial. Lazarus, *supra* note 1, at 815.

[43] Lazarus, *supra* note 1, at 815–16.

[44] *See* Michel Gelobter, *The Meaning of Urban Environmental Justice*, 21 FORDHAM URB. L.J. 841, 841 (1994) (citing COUNCIL ON ENVTL. QUALITY, EXECUTIVE OFFICE OF THE PRESIDENT, ENVIRONMENTAL QUALITY, TWENTIETH ANNUAL REPORT 430 (1990) (Table 7)).

[45] *See generally* George Friedman-Jiménez, *Achieving Environmental Justice: The Role of Occupational Health*, 21 FORDHAM URB. L.J. 605 (1994).

[46] *See id.* at 608–10; Lazarus, *supra* note 1, at 796–98 n.37.

[47] 1 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 17 (citing OFFICE OF HEALTH AND ENVTL. ASSESSMENT, U.S. EPA, CARCINOGEN ASSESSMENT OF COKE OVEN EMISSIONS (1984)). A study of long-term, full-time, topside coke oven workers found that they had a ten-fold increase in lung cancer and that 88% were nonwhites. Friedman-Jiménez, *supra* note 45, at 610 (citing Carol K. Redmond et al., *Long-Term Mortality Study of Steelworkers*, 14 J. OCCUPATIONAL MED. 621, 621 (1972)).

[48] *See* 1 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 16–17; Ivette Perfecto & Baldemar Velásquez, *Farm Workers: Among the Least Protected*, EPA J., Mar./Apr. 1992, at 13, 13–14; Colopy, *supra* note 18, at 132 (citing Paul M. Ong &

The EPA is just beginning to address important fish consumption issues that may cause toxic hot-spots to be especially dangerous to racial minorities.[49] Uniform water quality standards have failed to address the fact that some populations, such as subsistence fishers and some racial groups, consume more fish than the average population.[50] It is critical that water quality standards take into account the range of fish consumption among various subpopulations rather than just average fish consumption patterns because polychlorinated biphenyls, dioxins, furans, and many other chemicals can bioaccumulate in fish tissues to high concentrations, even when water concentrations of these chemicals are below detection limits.[51] The *EPA Environmental Equity Report* concluded that further study of the potential for contaminant exposure through fish ingestion was needed,[52] and EPA Administrator Carol Browner has specifically pledged to examine the fish consumption patterns of Native Americans.[53] There is some evidence that certain subpopulation groups are more sensitive to certain pollutants than is the general population.[54]

Evelyn Blumenberg, *An Unnatural Trade-Off: Latinos and Environmental Justice, in* LATINOS IN A CHANGING U.S. ECONOMY 207, 215 (Rebecca Morales & Frank Bonilla eds., 1993)).

[49] At least some minority groups, including African-Americans, Asian-Americans, and Native Americans, eat disproportionate amounts of fish, which may contain dangerous bioaccumulations of such chemicals as polychlorinated biphenyls, dioxins, and furans, and minorities also tend to prepare fish for eating in a manner in which more contaminants will be consumed, by including skin and trimming less fat. *See* 1 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 15–16; Lazarus, *supra* note 1, at 806 n.75.

[50] 1 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 15. In addition to the quantitative rate of fish consumption, fish preparation and species of fish eaten also can affect exposure to contaminants and may vary by socioeconomic factors. *Id.* at 16. As part of the 1987 amendments to the Clean Water Act, Congress recognized that uniform technology-based pollution control standards did not adequately address the problem of toxic hot-spots and enacted legislation requiring states to adopt "individual control strategies." 33 U.S.C. § 1314(*l*)(1)(C) (1988); Oliver A. Houck, *The Regulation of Toxic Pollutants Under the Clean Water Act*, [21 News & Analysis] Envtl. L. Rep. (Envtl. L. Inst.) 10,528, 10,547–48 (Sept. 1991).

[51] 1 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 15.

[52] *Id.*

[53] *See* Mank, *supra* note 18, at 336 n.341 (citing *Pollution Targeted: Protection of Poor, Minorities Ordered*, CIN. ENQUIRER, Feb. 12, 1993, at A3).

[54] There are uncertainties about whether risks applicable to the average white male in the United States apply to members of minorities who may eat different foods or prepare the same food in different ways, may have a high incidence of substance abuse, and may be frequently exposed to toxins in the workplace. 1 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 3, 22; Lazarus, *supra* note 1, at 806; Mank, *supra* note 18, at 282, 336–37; Colopy, *supra* note 18, at 137–39. According to the EPA, there is reason to believe that

B. *Market Dynamics and Evidence Contradicting the Discrimination Hypothesis*

1. *Market Dynamics*

Professor Vicki Been observes that most studies supporting the environmental inequity hypothesis compare the *current* socioeconomic characteristics of communities that host locally undesirable land uses to those of areas that do not host such undesirables.[55] She argues that these studies do not account for the possibility that the sites were chosen fairly in the sense that there was no disproportionate effect upon the poor or people of color at the time the sites were chosen, and that subsequent events attributable to market dynamics produced the current disproportionate siting by leading poor people to move toward a noxious site when property values fell.[56] Professor Been re-examined a subgroup of the sites that were the subject of Professor Bullard's 1983 study and found that the facilities in Houston were sited somewhat disproportionately in poor or minority communities, but that after the sitings, the levels of poverty and the percentages of African-Americans increased, and the property values in the neighborhoods declined.[57] On the other hand, Professor Been's extension of the General Accounting Office study of four hazardous waste landfills in the southeastern United States found a correlation between neighborhood demographics and initial siting decisions, but no evidence that market dynamics are leading the poor or people of color to

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"several population groups identified as being sensitive to the health effects of air pollution seem to be disproportionately composed of low-income or racial minority individuals compared to the general population." 1 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 22; *see also* Lazarus, *supra* note 1, at 806.

[55] *See* Been, *Market Dynamics*, *supra* note 1, at 1384–85; *see also* Lazarus, *supra* note 1, at 802 n.56 (stating that the United Church of Christ study relied on present demographic data); James T. Hamilton, *Politics and Social Costs: Estimating the Impact on Collective Action on Hazardous Waste Sites*, 24 RAND J. ECON. 101, 110 (1993) (examining initial siting versus subsequent developments).

[56] *See* Been, *Market Dynamics*, *supra* note 1, at 1385–92.

[57] Professor Been eliminated data about unpermitted municipal landfills and incinerators that had ceased to operate by the 1970s and thus avoided "double-counting" problems in Professor Bullard's study. *Id.* at 1400–01. *But see* Robert D. Bullard, *A New "Chicken-or-Egg" Debate: Which Came First—The Neighborhood, or the Toxic Dump?*, 19 THE WORKBOOK, Summer 1994, at 60–61 (challenging Been's exclusion of sites included in his earlier study). Professor Been used census tracts as the unit of analysis whereas Professor Bullard relied on his own "ethnographic" study and "field observations" to define the "neighborhoods" surrounding the sites even if the census tract data indicated that an area was predominantly white. Been, *Market Dynamics*, *supra* note 1, at 1401 n.72.

"come to the nuisance."[58]

Part VI of this Article proposes a new approach to compensation that addresses the concerns of both residents present during the initial siting decision and those who later move to the area as a result of market dynamics and other factors.

2. *Evidence Suggesting No Significant Racial Disparities*

Some commentators have challenged claims that plants specializing in the treatment, storage, and disposal of hazardous waste are more apt to be found in minority neighborhoods. In 1994, University of Massachusetts researchers released a study that examined 550 hazardous waste treatment, storage, and disposal facilities across the country and concluded that the census tracts in which these facilities were located generally did not have a greater number of minority residents.[59] Some studies since the *National Law Journal* report[60] have found no evidence of prosecutorial discrimination in the enforcement of environmental laws or even higher fines in poor and minority neighborhoods.[61]

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[58] Been, *Market Dynamics*, *supra* note 1, at 1398–1400, 1405.

[59] *See generally* Douglas Anderton et al., *Hazardous Waste Facilities: "Environmental Equity" Issues in Metropolitan Areas*, 18 EVALUATION REV. 123 (1994). While the United Church of Christ study looked at affected areas by zip codes, the University of Massachusetts study broke up the neighborhoods by census tracts. *Id.* at 127–29, 131. Charles Lee, coordinator of the United Church of Christ study, and Robert Bullard have each questioned the significance of the University of Massachusetts study, in part because Chemical Waste Management, Inc., the world's largest waste disposal company, provided funding. *See* Bullard, *supra* note 57, at 61 (criticizing University of Massachusetts study because of industry funding and failure to include nonmetropolitan sites such as Emelle, Alabama and Kettleman City, California facilities); *Two Reports Dispute Claims That Siting of Commercial Facilities Discriminatory*, [24 Current Developments] Env't Rep. (BNA) 2100, 2101 (Apr. 15, 1994) (reporting Charles Lee's criticism of University of Massachusetts study).

[60] *See supra* notes 37–38 and accompanying text.

[61] *See, e.g.*, John A. Hird, *Environmental Policy and Equity: The Case of Superfund*, 12 J. POL'Y ANALYSIS & MGMT. 323, 337 (1993) (finding no relationship between pace at which sites are cleaned up and host county's socioeconomic characteristics); Colopy, *supra* note 18, at 131–32 n.17. Colopy cites an unpublished May 26, 1993 study by the Environmental Protection Division of the Georgia Department of Natural Resources of 80 hazardous waste sites in Georgia from 1984 through March 1993, which examined the race of residents living within one-half mile of these sites and found that fines were higher in both minority and poor neighborhoods. The average fine was $33,844 in white areas and $45,626 in minority areas, and fines collected in areas with an annual household income of less than $20,000 were twice as large as the fines collected in areas with incomes over $30,000.

C. *Some Disparities Probably Exist*

It is difficult to assess precisely the extent to which environmental inequities exist. The government's records contain conflicting information even on the location of hazardous waste sites.[62] One cannot necessarily equate the siting of toxic sites with actual exposure to toxic releases.[63] Moreover, society has only a limited scientific understanding of the relationship between exposure to toxic chemicals and the development of disease.[64] Although some studies have found no evidence of disparities in the siting of hazardous facilities, it is difficult to discount the more numerous studies finding such evidence.[65]

In 1992, an EPA working group issued its "Environmental Equity" report,[66] which surveyed and evaluated pre-existing data regarding the extent to which minorities may bear a disproportionate share of environmental risks[67] and concluded that "available information suggests that racial minorities may have a greater *potential* for exposure to some pollutants because they tend to live in urban areas, are more likely to live near a waste site, or exhibit a greater tendency to rely on subsistence fishing for dietary protein."[68]

Despite the conflicting evidence, there is enough evidence of environmental inequities to support policies designed to reduce such disparities. It is important to understand, however, that polluting or disposal facilities bring benefits as well as risks and that siting disparities should not be reduced at the expense of jobs or the opportunity to earn compensation from developers in a fair and well-informed compensation process.

III. SITING, COMPENSATION, AND PUBLIC PARTICIPATION

States are generally free to locate solid and hazardous waste sites where they wish without much federal supervision.[69] Environmental justice

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[62] *See* Lavelle, *supra* note 3, at 12. An April 28, 1994 report by the EPA stated that a preliminary analysis of 300 Superfund sites showed a "slightly" higher-than-average minority population in the communities around those sites. *Id.*

[63] *See infra* notes 386–87 and accompanying text.

[64] *See infra* notes 393–401 and accompanying text.

[65] *See supra* notes 32–38, 41, 45–54 and accompanying text.

[66] 1–2 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27.

[67] The report did not provide any new research on this issue. *See* 2 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 107 (comments of Professor Robert D. Bullard).

[68] 2 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 15.

[69] The Resources Conservation and Recovery Act gives states primary siting responsibility and authorizes them to initiate their own hazardous waste programs. *See* 42

commentators have argued that state siting processes often neglect minority interests.[70] Several proposed bills in Congress would limit the siting discretion of states and impose siting restrictions designed to protect minorities.[71]

One possible approach to reduce siting disparities would involve having the federal government police a state's political process to insure that minorities are adequately represented in the political process under the Voting Rights Act,[72] but current efforts along those lines have not eliminated controversy about disproportionate siting of undesirable land uses in minority areas. This Article proposes a more focused approach to improve the representation of high-risk and minority groups in the siting process.

Many developers of solid or hazardous waste facilities pay compensation to local communities, and several states require such compensation.[73] There are several different ways to pay compensation.[74] Greater attention needs to be paid to how compensation is distributed among neighbors of a facility. Siting and compensation legislation raises broader issues about the relative role experts in administrative agencies and the general public should play in such matters.

A. *Current Siting Law and Proposed Environmental Justice Reforms*

In part because of pollution prevention and source reduction efforts, earlier projections of a shortage of hazardous waste facilities have given way to the

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U.S.C. § 6926(b) (1988); Edward P. Boyle, *It's Not Easy Bein' Green: The Psychology of Racism, Environmental Discrimination, and the Argument for Modernizing Equal Protection Analysis*, 46 VAND. L. REV. 937, 971–73 (1993).

[70] *See generally* Boyle, *supra* note 70, at 971–79; Rachel D. Godsil, Note, *Remedying Environmental Racism*, 90 MICH. L. REV. 394, 403–08 (1991); Audrey Wright, Comment, *Unequal Protection Under the Environmental Laws: Reviewing the Evidence on Environmental Racism and the Inequities of Environmental Legislation*, 39 WAYNE L. REV. 1725, 1731–38 (1993) (noting that states seek to limit ability of local communities to block siting of hazardous waste facilities and that minority communities often lack resources to stage successful protest against developers).

[71] *See infra* notes 115, 119–54 and accompanying text.

[72] *See generally* 42 U.S.C. § 1973 (1988); LANI GUINIER, THE TYRANNY OF THE MAJORITY: FUNDAMENTAL FAIRNESS IN REPRESENTATIVE DEMOCRACY (1994) (discussing different approaches to achieve genuine minority participation and representation in democracy); Samuel Issacharoff, *Judging Politics: The Elusive Quest for Judicial Review of Political Fairness*, 71 TEX. L. REV. 1643 (1993) (arguing current judicial doctrines are inadequate to control partisan misuse of the reapportionment process).

[73] *See infra* notes 158–59 and accompanying text.

[74] *See infra* notes 170–87 and accompanying text.

problem of excess capacity for at least the near future.[75] Even in an era of excess hazardous waste capacity, however, some new facilities are needed to meet demand or replace old, substandard, leaking disposal units,[76] and there is still a serious problem in siting high- or low-level radioactive waste disposal sites.[77]

"[E]ven new, 'state-of-the-art' [hazardous waste] facilities pose real environmental hazards,"[78] and the public is often unwilling to bear the risks of new facilities despite their benefits. A powerful Not-In-My-Backyard (NIMBY) movement has developed.[79] Increasingly, local communities have used their zoning and environmental ordinances to exclude locally undesirable land use projects, and state governments sometimes oppose controversial national or regional projects.[80] In some cases, local communities are likely to oppose the siting of locally undesirable land uses that have net positive benefits because "[s]iting of noxious facilities tends to concentrate costs within an area proximate to the site while providing diffuse benefits over a wide area."[81]

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[75] *See generally* Jeff Bailey, *Slump at Hazardous-Waste Dumps Raises Concerns*, WALL ST. J., Aug. 5, 1994, at B3 (noting that declining demand for hazardous waste disposal space between 1992 and 1994 has led to overcapacity but that there will continue to be a market for such landfills); Michael B. Gerrard, *Fear and Loathing in the Siting of Hazardous and Radioactive Waste Facilities: A Comprehensive Approach to a Misperceived Crisis*, 68 TUL. L. REV. 1047, 1050–55 & *passim* (1994) (arguing that the "shortage of disposal facilities is actually far less severe and more localized than usually portrayed" but proposing an approach to facilitate siting of needed facilities); *National Capacity for Waste Management Sufficient Through 2013, Draft Report Says*, [25 Current Developments] Env't Rep. (BNA) 1473, 1473–74 (Nov. 25, 1994) (discussing EPA draft report indicating excess hazardous waste capacity through the year 2013).

[76] *See* Gerrard, *supra* note 75, at 1050–55.

[77] *See generally* Vicki Been, *Compensated Siting Proposals: Is It Time to Pay Attention?*, 21 FORDHAM URB. L.J. 787, 800–10 (1994); Gerrard, *supra* note 75, at 1074–83.

[78] Gerrard, *supra* note 75, at 1054.

[79] *See generally* Denis J. Brion, *An Essay on LULU, NIMBY, and the Problem of Distributive Justice*, 15 B.C. ENVTL. AFF. L. REV. 437 (1988); Bradford C. Mank, *The Two-Headed Dragon of Siting and Cleaning Up Hazardous Waste Dumps: Can Economic Incentives or Mediation Slay the Monster?*, 19 B.C. ENVTL. AFF. L. REV. 239, 272–85 (discussing NIMBY problem and possible solutions); Peter Margulies, *Building Communities of Virtue: Political Theory, Land Use Policy, and the "Not In My Backyard" Syndrome*, 43 SYRACUSE L. REV. 945 (1992).

[80] *See generally* Been, *supra* note 77, at 800–08 (discussing Low-Level Radioactive Waste Policy Act and actual results); Gerrard, *supra* note 75, at 1162 (noting that state governments often block siting of hazardous or radioactive waste facilities even when local residents are willing to accept them); Mank, *supra* note 79, at 272–85.

[81] DAVID MORELL & CHRISTOPHER MAGORIAN, SITING HAZARDOUS WASTE FACILITIES:

NIMBY opposition is much more likely to block disposal facilities that employ relatively few people than to stop the siting of polluting factories that pose equal or greater dangers but employ more people.[82]

On the other hand, urban governments, whether led by whites or minorities, must compete to keep business from relocating to suburban areas and therefore have little power to reject any business that promises more tax revenues or jobs, even if it is environmentally risky.[83] The economic constraints on urban politics, including the ability to impose land use exactions or require compensation for the siting of undesirable land uses, are structural and derive from the multiplicity of local governments and the mobility of people and businesses.[84] Urban sites, however, tend to be more expensive than rural sites, especially because many urban sites are already contaminated from prior use and must be remediated before they can be reused, but there have been recent efforts to facilitate inner-city site cleanup as a way to create jobs in urban areas.[85] In addition, impoverished rural areas, including many with significant minority populations, may be attractive, low-cost sites for hazardous

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LOCAL OPPOSITION AND THE MYTH OF PREEMPTION 167 (1982) (advocating use of compensation to local communities to overcome inequities); *see also* Been, *supra* note 77, at 789–90; Gerrard, *supra* note 75, at 1153. In other cases, local communities may have an incentive to allow environmentally risky development in fragile "critical areas," such as coastal zones, shorelands, and wetlands. Gerrard, *supra* note 75, at 1153 n.677. "These are areas where the benefits of development, in terms of new jobs or an expanded tax base, will be enjoyed by local residents, while the environmental losses will be felt statewide." Richard Briffault, *Our Localism: Part I—The Structure of Local Government Law*, 90 COLUM. L. REV. 1, 65 (1990).

[82] On-site storage of nuclear or hazardous waste by nuclear power plants and chemical companies usually generates little controversy because of familiarity, absence of transportation risk, and the fact that the firms often create significant employment opportunities; by contrast, off-site facilities tend not to create many jobs and therefore are less able to mobilize local support. *See* Gerrard, *supra* note 75, at 1146–48; *see also* Been, *Fairness*, *supra* note 1, at 1044 (discussing difficulties in balancing employment gains to residents against damages to residents).

[83] *See* Richard Briffault, *Our Localism: Part II—Localism and Legal Theory*, 90 COLUM. L. REV. 346, 409–12 (1990).

[84] *See generally* Vicki Been, *"Exit" As a Constraint on Land Use Exactions: Rethinking the Unconstitutional Conditions Doctrine*, 91 COLUM. L. REV. 473, 506–28 (1991) (discussing competition as a constraint on government); Briffault, *supra* note 83, at 399–403 (discussing Tiebout hypothesis that the large number of local governments and the relative ease of individual movement from one locality to another fosters efficiency); Charles Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416, 416–18 (1956) (same).

[85] *See generally* James T. O'Reilly, *Environmental Racism, Site Cleanup and Inner City Jobs: Indiana's Urban In-Fill Incentives*, 11 YALE J. ON REG. 43 (1994).

waste facilities, may desperately need jobs at any cost, and therefore may be at risk for exploitation.[86]

States have set up hazardous waste management programs to either overcome or bypass local opposition.[87] States have taken three major procedural approaches in siting facilities: super review, site designation, and local control.[88] In addition, several states have adopted compensated siting as part of their hazardous waste siting programs.[89] None of the current approaches, however, insures adequate representation for high-risk or minority residents.

1. *Super Review*

Under super review, the most common approach to siting hazardous facilities, the developer of a hazardous waste facility selects a possible site and applies for a permit with the authorizing agency, typically a state EPA or Department of Natural Resources.[90] If the state EPA decides to issue a permit after evaluating potential environmental impacts, the state appoints a special administrative board whose explicit role is to allow the public to participate in the site selection process.[91] These special siting boards usually have some expert or technical members and some local representatives, but the composition of the boards and methods for selecting local representatives vary from state to state.[92] Often the implicit purpose of siting boards is to quell public opposition, minimize the issue of political expediency, and emphasize the safety of the proposal.[93]

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[86] *See generally* Conner Bailey & Charles E. Faupel, *Environmentalism and Civil Rights in Sumter County, Alabama* (providing data suggesting that poor African-Americans in rural Alabama had no real choice in accepting Emelle Landfill in exchange for compensation), *in* RACE AND THE INCIDENCE OF ENVIRONMENTAL HAZARDS: A TIME FOR DISCOURSE 140–43 (Bunyan Bryant & Paul Mohai eds., 1992); Robert B. Wiygul et al., *Environmental Justice in Rural Communities*, 96 W. VA. L. REV. 405, 441–48 (1993) (discussing location of hazardous waste sites in rural Alsen, Louisiana).

[87] Godsil, *supra* note 70, at 403.

[88] Collin, *supra* note 17, at 511; Godsil, *supra* note 70, at 403.

[89] *See infra* note 159 and accompanying text.

[90] Collin, *supra* note 17, at 511; Boyle, *supra* note 69, at 973; Godsil, *supra* note 70, at 403.

[91] Collin, *supra* note 17, at 511; Godsil, *supra* note 70, at 403.

[92] *See* Godsil, *supra* note 70, at 404. *See generally* Rodolfo Mata, *Hazardous Waste Facilities and Environmental Equity: A Proposed Siting Model*, 13 VA. ENVTL. L.J. 375, 447–67 (1994) (proposing two separate committees, a "technical review board" containing members from technical fields and a "local review board" of local residents).

[93] Collin, *supra* note 17, at 511; Godsil, *supra* note 70, at 403.

All of the states using a super review approach have preemption clauses that permit the siting of a facility despite community resistance.[94] Attempts to use federal or state preemptive laws to eliminate the ability of local communities to oppose undesired facilities, however, often lead to more intense local opposition and the use of political and other extralegal means to delay a project until it becomes economically futile to build.[95]

The super review approach may fail to prevent disparate siting because developers have an incentive to select sites in areas with low land values, which are often inhabited by the poor, especially poor minorities.[96] Developers may avoid wealthy or politically powerful communities that can "use their informal connections in state government to prevent the operation of a preemption statute, or resort to civil disobedience."[97]

2. *Site Designation*

Under the site designation approach to siting hazardous facilities, the state, not the private developer, creates an inventory of possible sites.[98] Techniques for developing the inventory vary from state to state.[99] Because site designation eliminates the developer's natural tendency to choose the least expensive site and provides a statewide data gathering mechanism that can inform future environmental decisionmaking to make sure no area is overburdened, site designation may lead, at least in theory, to a more equitable distribution of sites than does super review.[100] On the other hand, states or counties may choose geographically unsuitable sites if they wish to avoid siting unpopular facilities such as a low-level radioactive waste depository,[101] or politicians from politically powerful communities may lobby to remove their communities from the list.[102] In addition, the community may litigate against the facility or

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[94] Collin, *supra* note 17, at 511; Godsil, *supra* note 70, at 404.

[95] *See* Gerrard, *supra* note 75, at 1052 (noting that opponents of facilities have defeated elected officials and even engaged in civil disobedience involving vandalism and other illegal acts); Mank, *supra* note 79, at 274 (noting that local officials can influence state legislature and that citizens may engage in civil disobedience).

[96] *See* Boyle, *supra* note 69, at 973; Godsil, *supra* note 70, at 405; *see also* Mank, *supra* note 79, at 274.

[97] Godsil, *supra* note 70, at 405; Boyle, *supra* note 69, at 973; *see also* Mank, *supra* note 79, at 274.

[98] Collin, *supra* note 17, at 512; Godsil, *supra* note 70, at 405–06.

[99] Collin, *supra* note 17, at 512; Godsil, *supra* note 70, at 405–06.

[100] Collin, *supra* note 17, at 512; Godsil, *supra* note 70, at 406.

[101] *See* Been, *Fairness*, *supra* note 1, at 1033.

[102] *See* Godsil, *supra* note 70, at 406.

otherwise try to delay the siting, and the prospect of such delays may lead an agency to choose the least politically or economically powerful community, which often means a poor or minority community.[103]

3. *Local Control*

Only two states, California and Florida, continue to apply a de jure local control model in which local land use regulations are not preempted by a state hazardous waste management plan and a local community may impose strict land use regulations to block any hazardous waste site.[104] Politically or economically powerful communities, however, have exercised de facto local control in many cases to block or delay facilities until a developer abandoned a proposed site.[105]

Community control over siting has often disproportionately benefited wealthy suburbs and resulted in more undesirable facilities being located in poor or minority neighborhoods.[106] Dissatisfaction over the disparate abilities of communities to block the siting of locally undesirable land uses has contributed to the rise of the environmental justice movement.[107] Wealthy or politically well-organized communities may have an advantage in blocking projects through expensive litigation or lobbying techniques, and as a result such sites may be placed in less wealthy or politically powerful neighborhoods.[108] While there are some potential advantages to local control for both whites and minorities, local decisionmaking is often less representative or effective than is national policymaking.[109]

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[103] *See* Boyle, *supra* note 69, at 973–74; Godsil, *supra* note 70, at 406.

[104] Godsil, *supra* note 70, at 406–07.

[105] *See supra* notes 97, 102–03 and accompanying text; *infra* notes 106–08 and accompanying text.

[106] Environmental justice proponents often argue that middle-class neighborhoods have long blocked the siting of unwanted facilities and as a result more such facilities have been sited in poor and minority neighborhoods. *See* Cole, *supra* note 17, at 646–47 (arguing that NIMBY results in PIBBY, "Place in Blacks' Back Yard"); Foster, *supra* note 8, at 747 (same).

[107] *See* Austin & Schill, *supra* note 17, at 71–74; Been, *supra* note 77, at 789.

[108] *See* Austin & Schill, *supra* note 17, at 71–74; Been, *Fairness*, *supra* note 1, at 1047–52 (discussing difficulties in free-market society (or, indeed, any society) to force equal allocation of society's burdens); Mank, *supra* note 18, at 343.

[109] Local political control does not necessarily result in grassroots public participation. *See* Briffault, *supra* note 83, at 412–15, 453. In theory, shifting authority to local or smaller units of government should enhance opportunities for public participation; however, the empirical evidence for that assumption is inconclusive. *See id.* at 393–99 (discussing relationship between local governance and public participation). People in a highly mobile

Yet most advocates of environmental justice are in favor of greater community control over the siting of locally undesirable land uses.[110] Many environmental justice advocates have suggested that the movement seeks to block the siting of virtually all polluting or risky facilities.[111] They believe that current pollution control approaches are insufficiently protective, and they would like to eliminate risk to the greatest extent possible.[112] Eliminating all pollution is a politically appealing slogan, but society should reduce pollution only to the extent it is reasonably cost-effective to do so.[113] While environmental justice advocates may hope that greater community control will empower minority and poor neighborhoods, the results may simply be to give the rich more leverage over siting.

4. *Proposed Environmental Justice Siting Legislation*

Several recent proposals in Congress address alleged siting inequities. On the whole, they would make it more difficult to site new facilities in certain high-pollution or minority areas. These proposals represent a fourth approach to addressing siting issues. The congressional proposals generally seek to limit the number of sites in a particular area, but often do so through overly expensive moratorium strategies. These proposals fail to address the fundamental issue of increasing minority representation.

In 1992, Representative Henry Waxman held the first congressional

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society work, shop, go to school, or have other important affiliations outside their residential jurisdiction and may not identify exclusively with that jurisdiction. *Id.* at 413–14. Many people do not identify with their residential municipality as a "community" of shared interests. *Id.* at 414. While the ideal of local community involvement and control is theoretically attractive, local control can result in isolation of poor areas from wealthy suburbs rather than empowerment of the poor. *Id.* at 453.

110 *See* Lazarus, *supra* note 1, at 852.

111 *See* BOERNER & LAMBERT, *supra* note 13, at 7–8 (quoting several prominent environmental justice advocates whose goal is total elimination of all waste); Cole, *supra* note 17, at 644–45 (arguing for pollution prevention by blocking the siting of new facilities); Foster, *supra* note 8, at 748–49 (suggesting NIMBY should be expanded to "Not in Anybody's Backyard").

112 *See* Cole, *supra* note 17, at 642–45 (criticizing traditional focus of environmental law on control of pollutants to "safe" level and arguing for preventive approach); Foster, *supra* note 8, at 741–44 (challenging EPA's use of risk assessment to address only hazards that present a demonstrable link between exposure and measurable health effects).

113 *See* BOERNER & LAMBERT, *supra* note 13, at 9. *See generally* STEPHEN BREYER, BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION (1993); *infra* notes 402–05 and accompanying text.

hearing on environmental equity issues.[114] A number of congressional bills targeting environmental justice issues are now pending.[115] In the past, minorities were very underrepresented in Congress, especially in committees and subcommittees with jurisdiction over environmental issues.[116] In 1992, however, there was a significant increase in the number of minority representatives elected to the House of Representatives,[117] and minority representatives have recently become more active on environmental issues as environmental justice concerns have become more prominent.[118] In the 1994 elections, however, the Republican Party gained control of the House and Senate. Minority representatives, who are overwhelmingly Democrats, may lose whatever power they had recently gained.

Proposed procedural legislation that would require the EPA to consider distributional impacts[119] and to gather more information about possible racial and class disparities[120] would be advantageous, but there is no evidence the

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[114] *See* Lazarus, *supra* note 1, at 790 n.12 (citing *Disproportionate Impact of Lead Poisoning on Minority Communities: Hearings Before the Subcomm. on Health and the Environment of the House Comm. on Energy and Commerce*, 102d Cong., 2d Sess. (1992)).

[115] *See* Catalina Camia, *Poor, Minorities Want Voice in Environmental Choices*, 51 CONG. Q. 2257, 2257–60 (1993) (discussing proposed environmental justice legislation in Congress); Keeva, *supra* note 4, at 88 ("Currently [February 1994], at least nine bills before Congress—including the Environmental Justice Act and a bill to elevate the Environmental Protection Agency to Cabinet level—contain environmental justice-related provisions.").

[116] *See generally* Lazarus, *supra* note 1, at 820–21; *supra* note 29 and accompanying text.

[117] In 1991, there were 31 minority representatives in the House, with 26 being members of the congressional black caucus. *See* 1 1991 CONGRESSIONAL STAFF DIRECTORY (Ann L. Brownson ed., 1991). In 1992, however, the number of African-Americans in Congress increased to 39 with the addition of 16 new members. Jeffrey L. Katz, *Growing Black Caucus May Have New Voice*, 51 CONG. Q. 5 (1993). Voters elected nine new Hispanic representatives for a record total of 19, including representatives from Puerto Rico and the U.S. Virgin Islands. *See* Ines Pinto Alicea, *Hispanics Gain Members*, 51 CONG. Q. 7 (1993).

[118] *See* Lazarus, *supra* note 1, at 821 nn.142–43 (discussing specific minority representatives).

[119] Senator Glenn and Representatives Synar and Clinger have proposed legislation to require the preparation of a community information statement assessing the demographic characteristics near proposed hazardous waste facilities. *See* S. 533, 103d Cong., 1st Sess. § 1 (1993); H.R. 495, 103d Cong., 1st Sess. § 1 (1993).

[120] For instance, the Environmental Health Equity Information Act of 1993 would have required the EPA and the Agency for Toxic Substances and Disease Registry to collect additional data on the race, age, gender, ethnic origin, income level, and educational level of persons living in communities adjacent to toxic substance contamination. *See* H.R. 1925,

impact statement approach would affect the distribution of new facilities.[121] There is the danger, however, that proposed substantive legislation will be overly restrictive, inefficient, and apply to areas that are not truly poor or significantly different in racial or ethnic composition from the rest of America.

In 1992, Representative John Lewis, a Georgia Democrat, and Senator, now Vice President, Al Gore introduced similar legislation entitled the "Environmental Justice Act of 1992,"[122] which would have required the identification of "environmental high impact areas" in the 100 counties or "other appropriate geographic unit[s]" with the highest total weight of toxic chemicals in the air, water, and soil during the past five years. The bills would have imposed, with certain exceptions, a moratorium on the siting or permitting of any new toxic chemical facility in an area identified as "high impact" under specified circumstances.[123]

Moratorium proposals are flawed because they avoid the fundamental question of whether a proposed facility will provide greater benefits than harms. It would make more sense for the EPA or a state to evaluate the siting of new projects on a case-by-case basis using cost-benefit analysis and scientific risk assessment procedures.[124]

The use in the Gore and Lewis bills of 100 environmental high-impact areas to trigger more agency scrutiny and to place the areas high on the EPA's priority list for pollution reduction is an example of appropriate congressional priority setting that recognizes that the EPA cannot solve every inequity problem immediately.[125] Focusing on counties with the heaviest pollution burdens is a reasonable place to start. The 1990 Clean Air Act amendments[126] divide ozone nonattainment areas into categories from marginal to extreme nonattainment and impose different requirements and deadlines depending upon the severity of the ozone pollution problem in a given area.[127] On the other hand, the Clean Air Act allows the siting of new sources if their increase in pollution is offset by an equal or greater reduction in the amount of pollution

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103d Cong., 1st Sess. § 2 (1993).

[121] *See* Been, *Fairness*, *supra* note 1, at 1071–74.

[122] H.R. 5326, 102d Cong., 2d Sess. (1992); S. 2806, 102d Cong., 2d Sess. (1992).

[123] *See* S. 2806, *supra* note 122, § 9; H.R. 5326, *supra* note 122, § 402.

[124] *See generally* Mank, *supra* note 18, at 266, 313–15, 326–45 (proposing individualized "exceptions process" for granting permits to sources of hazardous air pollutants).

[125] *See infra* notes 390–92 and accompanying text (discussing priority-setting approaches to regulation).

[126] *See* 42 U.S.C. §§ 7511–7511d (Supp. V 1993).

[127] There are also special provisions for moderate and serious carbon monoxide areas, 42 U.S.C. §§ 7512–7512a (Supp. V 1993), and moderate and serious PM-10 (particulate matter) areas, 42 U.S.C. §§ 7513–7513a (Supp. V 1993).

from existing sources.[128] The Gore and Lewis bills would have been more efficient if they had allowed exceptions for offsetting or other market-based approaches.

Another problem with the moratorium approach is that arbitrary geographical divisions such as county lines or the "other appropriate geographic unit[s]" in the Gore and Lewis bills may not take into account the population density in an area or the effects of spillover into other counties or states.[129] A more refined approach might regulate the 100 worst hot-spots within a smaller geographical area such as a two-mile radius,[130] a census tract,[131] or zip code area, or look at the actual risk posed by a proposed site.[132] The Gore and Lewis proposals do nothing for the area that is 101st on the list and indeed might create an incentive to locate in that area, which may have a much higher population than some areas on the top 100 list.[133]

The moratorium approach in the Gore and Lewis bills could prove to be either overly stringent or lenient because the proposed exceptions are vague.[134] The moratorium on construction would continue until the Administrator of the EPA concluded that the area has achieved "health-based levels" sufficient "to avoid adverse impacts on human health," a vague standard that could be

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[128] *See* 42 U.S.C. § 7511a(e)(1) (Supp. V 1993) (requiring offset of at least 1.5 to 1 in "extreme" ozone nonattainment areas).

[129] *See* Been, *Fairness*, *supra* note 1, at 1070–71 (criticizing use of arbitrary areas in "dispersion" statutes); Colin Crawford, *Strategies for Environmental Justice: Rethinking CERCLA Medical Monitoring Lawsuits*, 74 B.U. L. REV. 267, 294 (1994) (criticizing use of arbitrary geographical areas); *infra* notes 363, 483–84, 533–34 and accompanying text.

[130] Even a two-mile radius can be arbitrary. *See* Wiygul et al., *supra* note 86, at 437.

[131] *See supra* note 373 and accompanying text.

[132] *See infra* notes 485–89 and accompanying text.

[133] *See* Been, *Fairness*, *supra* note 1, at 1070–71.

[134] The version of the Lewis bill introduced in the 103rd Congress in 1993 would have allowed exceptions to the moratorium only if: "(1) the need for the activity is shown to the Secretary [of Health and Human Services]; (2) the owner or operator of the facility demonstrates that the facility will develop a plan and maintain a comprehensive pollution prevention program; and (3) the facility demonstrates that it will minimize uncontrolled releases into the environment." H.R. 2105, 103d Cong., 1st Sess. § 403 (1993); *see* Crawford, *supra* note 129, at 294 (arguing that exceptions under Environmental Justice Act may "give companies considerable leeway that may permit future siting of facilities in poor communities of color" and that hazardous waste managers will vigorously pursue exceptions). The legislation introduced in 1992 did not contain exception (2) for comprehensive pollution prevention. *See* S. 2806, *supra* note 122, § 10; H.R. 5326, *supra* note 122, § 403. Exceptions or emissions trading may pose their own dangers through the creation of hot-spots and should be carefully regulated. *See supra* notes 27–29, 31 and accompanying text.

impossible to achieve given the nonthreshold nature of many carcinogens.[135]

In 1993, Senator Baucus and Representative Lewis reintroduced legislation entitled the "Environmental Justice Act."[136] The Baucus proposal was more flexible than the moratorium approach in the Gore and Lewis bills. Under the Baucus proposal, a new or modified facility would have been able to obtain a permit if there were "a net reduction in the release of any toxic chemical determined to cause such significant adverse impacts on human health in that area."[137] The Baucus bill would have been more efficient than the Gore and Lewis bills because it would have allowed a source to offset increases in the emissions of a pollutant with reductions from another source.[138] One potential objection is that offsetting would not address potential hot-spots within a small area in the county, but neither the Gore nor the Lewis proposals addressed that issue.

Representative Collins sponsored the Environmental Equal Rights Act of 1993,[139] which would have amended Subtitle G of the Solid Waste Disposal Act[140] to allow petitions to be submitted to prevent certain waste facilities from being constructed in environmentally disadvantaged communities—defined as (1) those areas within two miles of the site that already have at least one active or inactive hazardous waste facility and have a higher percentage of minorities

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[135] *See* H.R. 2105, *supra* note 134, §§ 401(5), 403. Congress should avoid the use of unattainable health-based standards like "adverse impacts on human health" and instead aspire to reduce pollution until there is no statistically significant risk to a human subpopulation group. *See infra* notes 363–74 and accompanying text. At the individual plant level, the Gore and Lewis proposals recognize the need to trigger the moratorium only at a significant threshold of risk. The moratorium would apply only to sources emitting "toxic chemicals in quantities found to cause significant adverse impacts on human health." H.R. 2105, *supra* note 134, § 403. Realistically, an area would have a better chance of escaping such a moratorium if it is dropped from the top 100 list when the list is revised every five years than achieving the no "adverse impacts on human health" standard. *See id.* § 102 (requiring revision and republication of list of environmental high-impact areas every five years).

[136] S. 1161, 103d Cong., 1st Sess. (1993); H.R. 2105, *supra* note 134; *see Legislation Would Require Emission Freezes in 100 Most-Polluted Areas of U.S., Baucus Says*, [24 Current Developments] Env't Rep. (BNA) 392 (July 2, 1993).

[137] S. 1161, *supra* note 136, § 6.

[138] The Bush Administration adopted on a limited basis an even more favorable approach to business, involving emissions-averaging of different hazardous air pollutants. But there are serious methodological problems with comparing the toxicity of different types of toxic chemicals such as carcinogens and noncarcinogens. *See* Mank, *supra* note 18, at 284–88.

[139] H.R. 1924, 103d Cong., 1st Sess. (1993).

[140] Pub. L. No. 94-580, §§ 7001–7009, 90 Stat. 2795, 2824–28 (1976) (codified as amended at 42 U.S.C. §§ 6971n-6979b (1988)).

than the state or national average, or (2) areas that have twenty percent or more persons below the poverty line or a per capita income of eighty percent or less of the national average.[141] The bill would have required an administrative law judge to hold a public hearing and grant a petition seeking the prohibition of a facility unless the judge found that there were no less risky alternative sites in the state and that the proposed facility would not release contaminants or increase the cumulative impact of contaminants on any residents of the environmentally disadvantaged community.[142]

The Collins proposal should be rejected because it does not require consideration of the relative costs and benefits of a proposed facility. Indeed, a single challenger could block a project that is overwhelmingly popular.[143] A judge or agency should be able to block the siting of a proposed project only if it poses a discernible risk to a statistically significant subpopulation and if the costs, as measured by conservative but realistic risk assessment procedures, outweigh the benefits to that subpopulation.[144]

The Collins proposal was both more and less inclusive than the 1992 Environmental Justice Act proposals because it would have potentially covered a much larger area of the country rather than concentrated resources on a relatively small number of high-impact areas, but would have applied to only a two-mile radius rather than to an entire county.[145] The Collins bill did not protect communities without any facilities or against the expansion of existing ones.[146] Furthermore, the bill did not require an examination of relative risk before designating a community as an environmentally disadvantaged area and did not require that the percentage of the minority or poor population be significantly higher than the national average.[147] Nor was there any

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[141] *See* H.R. 1924, *supra* note 139, § 3.

[142] *See id.* § 3(a). Crawford argues that the lack of criteria for determining whether alternative locations may be acceptable would allow firms to obtain siting waivers based on the argument that the site has unique geographical characteristics. *See* Crawford, *supra* note 129, at 295. Similarly, Crawford worries that there are no standards for whether a proposed facility releases contaminants or will increase the cumulative impact of contaminants on a community. *Id.* While Crawford worries that the lack of standards will make it too easy to site new facilities, their absence will probably make it more difficult to site new facilities.

[143] *See* BOERNER & LAMBERT, *supra* note 13, at 11.

[144] *See infra* notes 363–74, 402–07 and accompanying text.

[145] A two-mile radius is a better test for determining which residents are at high risk than is a county-wide criterion, but even a two-mile radius is a rather arbitrary measure compared to an actual site-specific risk assessment. *See* Wiygul et al., *supra* note 86, at 437 (criticizing use of arbitrary two-mile radius).

[146] *See id.*

[147] *See generally* Been, *Fairness*, *supra* note 1, at 1084 (criticizing Collins proposal for ignoring relative burden imposed by proposed site and for limiting remedy to poor and

requirement that the challenger be personally at risk.[148] Finally, only citizens residing in the state where the new facility would be sited would have been able to object,[149] which might have further encouraged the "state line syndrome," in which waste disposal facilities are proposed for political subdivisions bordering another state.[150]

Collins also was a co-sponsor of the Pollution Prevention and Incineration Alternatives Act of 1993, which would have prohibited the siting of new solid waste incinerators until 1997.[151] Beginning in 1997, applicants would have had to meet numerous requirements, including a "demonstrat[ion] that the location of the facility will not have a disproportionate impact on minority or low-income communities."[152] A ban on all incinerators until some arbitrary date is unwise because such a moratorium is inefficient unless there are exceptions for new sources to replace existing sources.[153] The proposed Act does not define critical terms such as "disproportionate impact" and "minority or low-income communities." These terms can have widely divergent meanings.[154]

A more flexible approach to siting regulation is needed than has emerged from Congress. Because hazardous waste facilities can provide greater benefits than costs, it makes more sense to require proportionate compensation for a facility's externalities than to ban all new facilities. The proposed legislation does not grapple very well with the complex problem of balancing public participation with expert decisionmaking.

B. *The Compensation Approach*

Commentators have proposed various ways in which a developer might provide compensation as a means to win public approval of new facilities by making the benefits of the facility outweigh the costs.[155] Because locally

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minority neighborhoods when evidence does not support racial or class-based prejudice).

148 *See* BOERNER & LAMBERT, *supra* note 13, at 11.

149 H.R. 1924, *supra* note 139, § 3(a).

150 *See* Wiygul et al., *supra* note 86, at 437–38.

151 H.R. 2488, 103d Cong., 1st Sess. § 2(a) (1993).

152 *Id.*

153 *See supra* notes 130, 139–40 and accompanying text.

154 *See infra* notes 363–65, 371–74 and accompanying text (discussing difficulties in defining race, ethnicity, and geographical boundaries); *infra* notes 386–401, 482–93 and accompanying text (discussing complexities associated with defining risk to community).

155 *See* Been, *supra* note 77, at 789–91 (discussing justifications for compensation proposals); Gerrard, *supra* note 75, at 1196–99 (proposing reverse auction in which developer bids to pay community to accept new hazardous waste facility); Herbert Inhaber, *Of LULUs, NIMBYs, NIMTOOs*, 107 PUB. INTEREST 52, 60–63 (1992) (proposing a "reverse Dutch auction," in which government or industry would raise compensation until a

undesirable land uses typically concentrate costs in one community while providing benefits to a much larger area, proponents argue that compensation is an equitable solution where it would be impractical to equitably distribute risks physically or spatially, and that compensation can make siting decisions more efficient by forcing the facility's developer to internalize the cost of the facility.[156] While compensation at first blush may appear to be the equivalent of a bribe and to pose dangers to political minorities, compensation is consistent with the spirit of the Equal Protection Clause if minorities are adequately represented in the negotiation process.[157]

It is now common for solid waste firms to pay compensation to site landfills and incinerators, although it is not clear whether such programs have solved the shortage of disposal space in some areas of the country.[158] Several states have begun to require that developers of hazardous waste facilities pay compensation to host communities in an effort to eliminate local opposition.[159] Compensation programs have had a mixed record of success,[160] but they may still be the best approach to induce communities to accept otherwise undesirable land uses.[161] Studies show that risks that a community assumes voluntarily are more likely to be accepted than those imposed upon a community.[162]

By "voluntary," proponents of compensation generally mean that a municipality's political leadership or a majority of its voters have accepted a proposed project. Some environmental justice advocates believe that no hazardous waste project is safe and that acceptance by a poor or minority community is involuntary when induced by incentives.[163] Under the proposal in Part VI of this Article, compensation in exchange for siting an undesirable

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community volunteered to accept an otherwise environmentally unacceptable facility); Mank, *supra* note 79, at 241, 274–77, 282–85 (discussing use of compensation to site facilities and proposing risk substitution approach, in which developer remediates contaminated site in exchange for building new, safer facility).

156 *See* Been, *supra* note 77, at 791.

157 *See supra* note 10 and accompanying text; *infra* notes 428, 497 and accompanying text.

158 *See* Been, *supra* note 77, at 822–23.

159 *See id.* at 794–95 nn.45–47 (citing state compensation statutes); Godsil, *supra* note 73, at 407–08; *infra* notes 165–68 and accompanying text (discussing whether compensation actually reduces public opposition).

160 The use of compensation to induce communities to volunteer to site low-level radioactive waste disposal facilities has generally been unsuccessful. *See* Been, *supra* note 77, at 800–08.

161 *See id.* at 824.

162 Been, *supra* note 77, at 791–92 n.24 (citing sources).

163 *See* Cole, *supra* note 17, at 642–45 (arguing that pollution prevention, rather than safety, should be the goal); Bailey & Faupel, *supra* note 86, at 140–43.

project may be accepted if minorities and high-risk residents are adequately represented in the siting negotiation process.

The effectiveness of compensated siting programs varies because whether a developer is successful in siting a facility often depends on particular local circumstances.[164] There has been controversy about how effective compensation is at changing the minds of those who are initially opposed to a facility. Some public opinion surveys suggest that compensation may make potential neighbors more willing to accept hazardous waste facilities. Professor Been believes that "at least those compensation methods that guarantee local monitoring and control may sway a significant number of people to accept a facility. The studies also suggest that while compensation measures may not be sufficient to secure acceptance, they nevertheless may be necessary to gain sufficient support for the facility."[165] Michael Gerrard, however, believes that surveys suggesting that compensation can overcome public safety fears "do not seem to be translated into actual behavior."[166]

In an earlier article, the author suggested that beyond simply providing compensation, developers need to convince the local public about the overall safety of a project so that the community does not perceive the compensation as a bribe.[167] Gerrard argues that "compensation works when, and only when, the community does not believe the proposed facility poses an undue hazard."[168] Creating representation procedures that allow those at greatest risk to negotiate the terms of compensation may be crucial in convincing a community to accept a project.[169] The proposal in Part VI of this Article addresses the need for both compensation and special safety measures designed to reduce public fears. Residents at greatest risk must have the most input into the siting or cleanup decisionmaking. To protect the public safety and prevent exploitation of vulnerable groups, the EPA or a state siting agency should set minimum health standards and levels of compensation.

1. *Remedial, Preventive, and Incentive Compensation*

Compensation may serve as a remedy to make a community whole for damages it will suffer as a result of a facility, as a preventive measure to reduce the harm the facility will cause, or as a reward to the community for accepting

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164 *See* Gerrard, *supra* note 75, at 1209–10.

165 Been, *supra* note 77, at 800.

166 Gerrard, *supra* note 75, at 1155 n.692.

167 *See* Mank, *supra* note 79, at 675.

168 Gerrard, *supra* note 75, at 1155.

169 *See infra* notes 458–75 and accompanying text.

the facility by providing benefits in excess of a make-whole remedy.[170] A developer might compensate neighbors by agreeing to pay, either monetarily or in-kind, for any decrease in the market value of their homes caused by the facility.[171] Preventive measures might include buffer zones between a facility and its residential neighbors,[172] monitoring equipment or leakage barriers beyond that required by law, or additional emergency equipment.[173] Rewards, which are sometimes referred to as incentives, might include the payment of taxes or a percentage of the facility's gross or net profits to the host municipality.[174]

2. *Ex Ante, Ongoing, and Ex Post Compensation*

Compensation may be ex ante, before the facility is constructed; ongoing; or ex post, after the facility causes harm.[175] Ex ante grants might be technical assistance grants from the developer or the government to allow a host community or citizens group to hire its own experts to evaluate the proposed facility.[176] The author and others have discussed a special form of ex ante compensation, risk substitution, in which a developer would clean up all or some of a community's existing toxic waste sites in exchange for approval of the new facility.[177] Ex ante compensation can redress injuries suffered by those

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[170] *See* MORELL & MAGORIAN, *supra* note 81, at 164–75; Been, *supra* note 77, at 792; Mank, *supra* note 79, at 276–77.

[171] *See* Been, *supra* note 77, at 792; Bernard Holznagel, *Negotiation and Mediation: The Newest Approach to Hazardous Waste Facility Siting*, 13 B.C. ENVTL. AFF. L. REV. 329, 356 (1986) (arguing that a developer might compensate for loss of recreational land by providing other land); Mank, *supra* note 79, at 276. Guaranteeing property values, however, can be very expensive, and developers are likely to place limits on their liability. *See* Mank, *supra* note 79, at 276.

[172] *See* Bradford C. Mank, *Preventing Bhopal: "Dead Zones" and Toxic Death Risk Index Taxes*, 53 OHIO ST. L.J. 761, 763–64, 781–91, 802–04 (1992) (proposing use of buffer zones to minimize consequences of catastrophic releases of extremely hazardous chemicals).

[173] *See* Been, *supra* note 77, at 792–93; Mank, *supra* note 79, at 276.

[174] *See* Been, *supra* note 77, at 792–93; Mank, *supra* note 79, at 276–77.

[175] *See* Been, *supra* note 77, at 792–93.

[176] *See id.* at 793; Mank, *supra* note 18, at 340–43 (proposing expanded technical assistance grants to citizen groups).

[177] *See* KENT E. PORTNEY, SITING HAZARDOUS WASTE TREATMENT FACILITIES: THE NIMBY SYNDROME 137–59 (1991) (proposing existing risky facilities such as chemical plants, ammunition factories, and nuclear power plants be purchased, shut down, and replaced by new hazardous waste sites posing equal risk); Mank, *supra* note 79, at 282–85. *But see* Gerrard, *supra* note 75, at 1163–64 (arguing that for psychological reasons people

present at the time of the initial siting decision but cannot address injuries that will be suffered subsequent to the siting.[178]

Ongoing compensation often takes the form of special taxes or fees the facility regularly pays to the community, or services the facility regularly provides the community.[179] Ongoing measures may include mitigation of a facility's negative impacts and benefits to the local economy, such as jobs for local residents, purchases from local businesses, or contributions to charity.[180] Ongoing benefits may take the form of continuing opportunities for community participation in the management of the facility, such as site monitoring, deciding whether to close a facility, emergency response questions, or representation on the facility's governing board.[181] Ongoing compensation can at least partially redress injuries suffered by persons who move to a community after the initial siting process.[182]

Ex post compensation may include commitments to pay for, or insure against, future damages through property value guarantees,[183] indemnification agreements, or funds to compensate victims in the case of an accident.[184] Firms, however, may have an incentive to under-insure or to under-capitalize against future accidents, especially if bankruptcy laws limit their liability, and there is some empirical evidence that hazardous waste firms do so.[185] Current insurance and financial responsibility requirements tend to be inadequate to

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are unlikely to accept the trade of an old risk for a new one, and that if people are concerned about an existing risk, they may demand that it be abated regardless of any plans for new facilities); Stephen T. Washington & Robert H. Harris, *Necessary Evils*, 8 ISSUES SCI. & TECH. 86, 87 (1991) (reviewing PORTNEY, *supra*, and arguing that risk substitution may devote resources to cleanups that are not the most socially desirable). My earlier article emphasized the difficulties of inducing people to accept new risks in exchange for any form of compensation, cautioned that a number of different compensation approaches should be tried, and bluntly stated that risk substitution would fail in many cases. *See* Mank, *supra* note 79, at 272–85. There are no panaceas for siting locally undesirable land uses. Because not all proposed facilities ought to be sited, the fact that psychological factors may lead some attempts at risk substitution to fail does not mean that my proposal cannot be successful on other occasions.

178 *See infra* notes 179–87, 500–19 and accompanying text.

179 *See* Been, *supra* note 77, at 793; Mank, *supra* note 79, at 276–77.

180 *See* Been, *supra* note 77, at 792–93; Mank, *supra* note 79, at 276–77.

181 *See* Been, *supra* note 77, at 794.

182 *See infra* note 516 and accompanying text.

183 *See* Mank, *supra* note 79, at 276 (noting that developers are often reluctant to provide full property value insurance).

184 *See* Been, *supra* note 77, at 794.

185 *See* Mank, *supra* note 172, at 791–95.

force firms to fully internalize the risks posed by hazardous substances.[186] Nevertheless, appropriate ex post compensation can redress injuries that occur long after the initial siting decision.[187]

3. *Procedures for Determining Compensation*

There are at least five major ways in which a state may determine compensation: (1) legislative formulas, (2) administrative determinations, (3) negotiations, (4) reverse auctions, and (5) lotteries.[188] First, a legislature can establish a formula such as Indiana's tax of $11.50 per ton on commercial hazardous waste facilities, twenty-five percent of which goes to the host county.[189] There is a serious question, however, whether legislative formulas based upon a fixed percentage of receipts are flexible enough to adapt to varying circumstances[190] or to compensate those individuals most at risk from a facility.[191]

Second, a statute could authorize a statewide siting board to make a case-by-case administrative determination of the amount of compensation.[192] It is

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[186] *See id.* at 796–97; Steven W. Black, Comment, *The Fact and Fiction of Financial Responsibility for Hazardous Waste Management*, 17 ECOLOGY L.Q. 581, 581, 584 (1990).

[187] *See infra* notes 517–19 and accompanying text.

[188] *See* MICHAEL O'HARE ET AL., FACILITY SITING AND PUBLIC OPPOSITION 84–86 (1983) (discussing legislative formulas, administrative determinations, and negotiations); Been, *supra* note 77, at 794–95 (discussing all five); Holznagel, *supra* note 171, at 373–74 (discussing legislative formulas and negotiations); Mank, *supra* note 79, at 243–84 (discussing legislative formulas, administrative determinations, and negotiations).

[189] *See* IND. CODE ANN. §§ 6-6-6.6-2, -3 (West 1989); *see also* CONN. GEN. STAT. ANN. § 22A-128 (limit of 2.5% of quarterly gross receipts over $2,500,000) (West 1985); KY. REV. STAT. ANN. § 68.178(3) (Michie/Bobbs-Merrill 1994) (county may levy up to 5% of gross receipts of hazardous waste facility); ME. REV. STAT. ANN. tit. 38, § 1319-R(4) (West Supp. 1994) (host municipality may levy up to 2% of a commercial hazardous waste facility's annual billings).

[190] *See* O'HARE ET AL., *supra* note 188, at 84–85; Mank, *supra* note 79, at 277.

[191] *See infra* notes 480–520 and accompanying text.

[192] *See, e.g.*, IND. CODE ANN. § 13-7-8.6-11 (West 1990) (administrative body may assess fee to hazardous waste facility if it determines that facility creates a need to educate and train local officials and employees regarding emergency response measures); N.J. STAT. ANN. § 13:1E-80 (West Supp. 1994) (host municipality may levy up to 5% of receipts of hazardous waste facility, but amount may be increased or decreased by administrative agency); N.C. GEN. STAT. § 153A-152.1 (1991) (host county may levy tax on hazardous waste facility to compensate for additional costs it incurs as a result of facility, but facility may appeal to administrative body and to courts); N.C. GEN. STAT. § 160A-211.1 (1994) (host city may levy tax on hazardous waste facility to compensate for additional costs it incurs as a result of facility, but facility may appeal to administrative body

difficult, however, for the government to set values in the absence of a free market, and administrative determinations may involve high transaction costs.[193]

Third, the facility developer and community can negotiate a mutually satisfactory package.[194] A key question is how to elect representatives to serve on a negotiation committee. Part III(C)(2) of this Article discusses current approaches to electing representatives, and Part VI proposes a more equitable representation process.

A fourth approach to determining compensation is to auction the facility to the community willing to accept the least compensation.[195] Herbert Inhaber has proposed a reverse auction system in which a siting authority announces the facility it wishes to site, the environmental and safety criteria it will use to determine appropriate sites, and its initial bid for the site.[196] Any community that believes it has an appropriate site and wishes to accept the siting authority's bid may offer the site for consideration. If no community steps forward, the siting authority continues to raise its bid until the facility would no longer be cost-effective or until a community steps forward, whichever comes first. If a community accepts a bid, some percentage of the compensation is transferred to a trust fund for the community, where it is held until the proffered site is approved on environmental and safety grounds. If the siting authority disapproves a site, the trust fund returns the monies to the developer and the auction continues.[197]

Reverse auctions are inadequate because they do not address how compensation should be distributed among individuals, whether the compensation should be used for remedial or preventive purposes, or whether the compensation should be ex ante, ongoing, or ex post. To prevent poor communities that may lack the technical expertise to evaluate a facility from

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and to courts); *see* Been, *supra* note 77, at 794; Mank, *supra* note 79, at 277.

193 *See* O'HARE ET AL., *supra* note 188, at 85; Mank, *supra* note 79, at 277.

194 *See, e.g.*, CONN. GEN. STAT. ANN. § 22A-128 (West 1985); MICH. COMP. LAWS ANN. § 299.520(6) (West Supp. 1994); MINN. STAT. ANN. § 115A.191(5) (West Supp. 1995); R.I. GEN. LAWS § 23-19.7-8 (1989); VA. CODE ANN. § 10.1-1442 (Michie 1993); WIS. STAT. ANN. § 144.445(8) (West 1989); *see* O'HARE ET AL., *supra* note 188, at 85–86; Been, *supra* note 77, at 794–95; Holznagel, *supra* note 171, at 374; Mank, *supra* note 79, at 277.

195 *See, e.g.*, Been, *supra* note 77, at 795; Herbert Inhaber, *A Market-Based Solution to the Problem of Nuclear and Toxic Waste Disposal*, 41 J. AIR & WASTE MGMT. ASS'N 808, 812–15 (1991); Howard Kunreuther et al., *A Compensation Mechanism for Siting Noxious Facilities: Theory and Experimental Design*, 14 J. ENVTL. ECON. & MGMT. 371, 375 (1987).

196 Inhaber, *supra* note 155, at 60–62; Inhaber, *supra* note 195, at 811–13.

197 Inhaber, *supra* note 155, at 60–62; Inhaber, *supra* note 195, at 811–13.

being exploited, the EPA or a state agency should require a minimum level of compensation,[198] and the developer or government should provide technical assistance grants to communities to enhance their ability to evaluate the risks and benefits of a proposed facility.[199]

Fifth, economist Arthur M. Sullivan has proposed a lottery scheme in which the siting government asks all citizens in a region to submit to the results of a lottery to pick the site for the facility, with the understanding that those who live in the areas spared the facility will be taxed to compensate those who live in the host community.[200] The compensation is the amount the government must promise its voters to secure unanimous consent for the lottery. Sullivan offers a two-city economic model to show that the compensation necessary to secure unanimous consent to the lottery will be lower than the compensation required to site facilities through negotiation.[201]

One must be skeptical of any proposal that requires unanimous consent because of the potential for holdout problems and strategic bargaining, especially where there are a limited number of suitable sites.[202] Sullivan's proposal would require a degree of regional cooperation that seldom has been achieved. Proposals requiring such cooperation have faced daunting political odds in light of the highly decentralized nature of American politics.[203] Sullivan's lottery scheme also fails to address the distribution of the compensation.[204]

The proposal in Part VI of this Article calls for determining compensation by negotiation, because it is the best method for taking into consideration unique, site-specific circumstances; allowing public participation; and addressing distributional issues. Reverse auctions and lotteries may in theory be more efficient than negotiations, but no state has adopted either scheme.[205] Negotiations between a developer and a community-based negotiation committee can provide nonmonetary communitarian benefits in the form of democratic participation and republican community that a purely economic

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198 *See infra* notes 409–10, 450–57 and accompanying text.

199 *See infra* notes 468, 474 and accompanying text.

200 *See* Arthur M. Sullivan, *Siting Noxious Facilities*, 31 J. URB. ECON. 360, 360–61 (1992).

201 *See id.* at 363–66.

202 *See infra* notes 459–62 and accompanying text.

203 *See infra* part VI.B.5.

204 Sullivan does state that in principle it is possible to provide greater compensation to residents who suffer greater property damage from a facility, but he does not offer any procedure for achieving this result. *See* Sullivan, *supra* note 200, at 373.

205 *See* Been, *supra* note 77, at 794–95 (citing states that have adopted legislative, administrative, and negotiation-based compensation strategies, but none that has adopted a reverse auction or lottery scheme).

approach does not provide. Both the reverse auction and lottery systems include some limited democratic decisionmaking, but neither addresses distributional considerations. Legislative and administrative solutions are too crude and inflexible to take into account local conditions and do not generally allow for significant community-based representation, although an administrative board could allow for some local representatives. None of the five approaches guarantees that those most at risk will receive proportionate compensation, but the negotiation approach has the greatest potential for addressing this problem.

4. *Equitable Issues in Determining Compensation*

Compensation proposals raise at least four moral questions: (1) Do compensation programs inappropriately make marketable commodities out of health and safety risks? (2) Are compensated siting proposals fair and voluntary to a poor community that cannot afford to say no? (3) Do compensated siting programs allow a community to trade away the rights of future generations, who are not represented at the bargaining table? (4) Are such schemes voluntary when local governments and citizens lack sufficient information and expertise to assess risky projects?[206]

Environmental justice advocates have suggested that compensation programs may harm the poor or minorities because they are especially vulnerable to economic exploitation by developers offering jobs or compensation to a disadvantaged community.[207] Yet, in Los Angeles community fears about dioxin from a proposed hazardous waste facility led to its defeat despite the developer's offer of $10,000,000 in compensation and the support of a key African-American city councilman.[208] But in other cases, minority groups have accepted projects bringing jobs or compensation despite

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[206] *See id.* at 824–25.

[207] *See* Lazarus, *supra* note 1, at 808 (arguing that minority communities are vulnerable to "environmental blackmail," when developers of locally undesirable land uses offer short-term economic relief in exchange for accepting long-term risk); Boyle, *supra* note 69, at 973–75 (arguing that communities may not fully understand health risks of project until it has been built and may fear losing jobs if residents voice safety concerns). One solution would be to allocate vouchers to poor or minority communities to allow them to bargain more effectively within the pollution rights market, but communities with fewer resources might still lack meaningful choice. *See* Lazarus, *supra* note 1, at 849. For a discussion of compensated siting proposals, see *supra* notes 170–205 and accompanying text.

[208] *See* Anthony R. Chase, *Assessing and Addressing Problems Posed by Environmental Racism*, 45 RUTGERS L. REV. 335, 346 (1993).

the opposition of an environmental justice coalition, presumably because the community decided that the benefits outweighed the risks.[209]

There is no simple way to measure the fairness of a siting process. Perhaps the best way to measure fairness is by the level of representation of minority groups in the process of selecting a community's siting negotiation committee.[210] One factor that may influence a community's perception of fairness is whether the community has volunteered to accept a facility or rather a developer has selected the community. Whether a siting process is voluntary depends upon the adequacy with which minorities and high-risk residents are represented in the siting negotiation process and their access to information about the relevant risks.

Many commentators have proposed that mediators assist in the negotiation of compensation.[211] According to one scholar's count, "Nineteen states have procedures for negotiation or mediation between facility developers and proposed host communities."[212] Some commentators, however, have argued that mediation, and especially mandatory arbitration, are inappropriate ways to resolve siting disputes because they do not address the potential problems of unequal bargaining power and informational asymmetries between a community and developer.[213]

In 1980, Massachusetts adopted a Hazardous Waste Siting Act,[214] which

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[209] *See supra* notes 13–15 and accompanying text; *infra* notes 413–28 and accompanying text.

[210] *See supra* note 10 and accompanying text; *infra* notes 428, 497 and accompanying text.

[211] *See generally* Gerrard, *supra* note 75, at 1156 n.694 (citing sources); Holznagel, *supra* note 171, at 364–66; Mank, *supra* note 79, at 274–82 (discussing advantages and disadvantages of mediated compensation); John C. Sassaman, Jr., Comment, *Siting Without Fighting: The Role of Mediation in Enhancing Public Participation in Siting Radioactive Waste Facilities*, 2 ALB. L.J. SCI. & TECH. 207, 223–24 (1992) (arguing mediation can enhance public participation). *But see* DOUGLAS J. AMY, THE POLITICS OF ENVIRONMENTAL MEDIATION 149–53, 189–90, 216–19 (1987) (arguing that mediated siting schemes can be coercive and inadequately representative, and can result in unsafe sites).

[212] Gerrard, *supra* note 75, at 1156.

[213] *See generally* AMY, *supra* note 211, at 149–53, 189–90, 216–19 (criticizing environmental mediation and arbitration); Mank, *supra* note 79, at 277–82 (discussing criticisms of mediation, arbitration, and negotiated compensation).

[214] MASS. GEN. LAWS ANN. ch. 21D, §§ 1–19 (West 1981); *see* Been, *supra* note 77, at 811–19 (discussing Massachusetts statute and attempts to site hazardous waste facilities under the statute); Mank, *supra* note 79, at 274–78 (same); Michael Wheeler, *Negotiating NIMBY's: Learning from the Failure of the Massachusetts Siting Law*, 11 YALE J. ON REG. 241, 255–80 (1994) (same).

has served as a model for other states.[215] The Massachusetts statute allows a developer to select a community, limits the ability of a municipality to pass local ordinances designed to block the proposed facility, requires the developer and community to negotiate concerning a broad range of compensation issues, and allows a state siting council to require the parties to submit to binding arbitration if negotiations reach an impasse.[216] Some commentators have criticized the Massachusetts negotiated compensation model on the grounds that it is coercive, does not adequately represent local citizens, and fails to address safety concerns.[217] Massachusetts has had, at best, a mixed record of success in using compensation in overcoming community opposition.[218] Wisconsin, which provides for voluntary mediation and then for binding arbitration by a waste facility siting board,[219] has probably enjoyed the greatest success of any state with a compensated siting program, although the measure of success depends upon whether one counts only actual sited facilities or siting agreements.[220]

For both equitable and practical reasons, mandatory arbitration should be avoided unless there is a pressing national or regional demand for a certain type of facility and no other alternative sites exist. Preemptive statutes often increase

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[215] *See, e.g.*, CONN. GEN. STAT. ANN. §§ 22a-114 to 34r (West 1985) (providing communities with choice between fixed assessment and negotiated compensation with ceiling on the amount of total compensation, and providing arbitration if negotiations fail); R.I. GEN. LAWS §§ 23-19.7-1 to -15 (1989) (providing negotiation and arbitration); WIS. STAT. ANN. §§ 144.43–.445 (West 1989) (providing voluntary mediation and binding arbitration by waste facility siting board if negotiations fail).

[216] *See* MASS. GEN. LAWS ANN. ch. 21D, §§ 1–19 (West 1981); Been, *supra* note 77, at 811–19; Mank, *supra* note 79, at 274–78; Wheeler, *supra* note 214, at 255–80.

[217] *See, e.g.*, AMY, *supra* note 211, at 149–53, 189–90, 216–19; Brion, *supra* note 79, at 447–52.

[218] *See generally* Been, *supra* note 77, at 811–19; Gerrard, *supra* note 75, at 1157 (arguing that Massachusetts experiment has failed because all six serious attempts at siting hazardous waste facilities between 1980 and 1992 failed); Mank, *supra* note 79, at 274–78; Wheeler, *supra* note 214, at 278–80.

[219] *See* WIS. STAT. ANN. § 144.445 (West 1989); Been, *supra* note 77, at 819–22; Arthur J. Harrington, *The Right to a Decent Burial: Hazardous Waste and Its Regulation in Wisconsin*, 66 MARQ. L. REV. 223, 262–66 (1983); Mary Beth Arnett, Comment, *Down in the Dumps and Wasted: The Need Determination in the Wisconsin Landfill Siting Process*, 1987 WIS. L. REV. 543, 547–49.

[220] *Compare* Been, *supra* note 77, at 821 ("By the end of 1993, siting agreements had been entered into for five hazardous waste sites and forty-one solid waste sites [in Wisconsin].") *with* Gerrard, *supra* note 75, at 1157 ("In Wisconsin, thirty-four solid waste facilities, but not a single new hazardous waste disposal facility, have been sited using negotiation.").

community opposition to a facility,[221] and there is the danger that politically weak communities, which tend to contain a disproportionate share of poor people or minorities, will be targeted by siting boards even when those boards have the authority to site a facility in a politically powerful area.[222] Mediation is less coercive and therefore better than mandatory arbitration. Mediation, however, generally does not redress inequities in bargaining power caused by the usually superior financial and informational resources available to industry compared to citizens or local governments.[223] The representation and compensation scheme proposed in Part VI of this Article includes ways to improve the mediation process so that citizens and local governments can effectively bargain with developers.

C. *Public Participation*

A fundamental question in siting decisions is the relative role career employees in a state or federal agency should play in comparison to the general public. The answer should depend, at least in part, upon the extent to which an administrative agency can claim technocratic expertise in generating and evaluating reliable scientific information that is inaccessible to most members of the general public and the extent to which the public can understand risk assessments and cost-benefit analysis. Some proponents of the environmental justice movement have suggested or clearly stated an intention to replace technocratic decisionmaking, by expert agencies, with community empowerment.[224] Technocratic decisionmaking, however, should guide and enhance public participation in siting negotiation and compensation decisions because technocratic tools are needed to identify high-risk residents and to give them proportionately greater votes in electing a siting negotiation committee.

Developers would like to know whether experts or the public are more willing on average to approve a siting proposal. Increased public participation in the siting process can either increase or decrease opposition to siting new facilities depending upon the particular facts and whether the facility is perceived as threatening.[225] Increased public access to information tends to increase the public's perception of risk and seldom decreases that perception.[226]

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[221] *See supra* note 95 and accompanying text.

[222] *See supra* notes 103, 108 and accompanying text.

[223] *See* AMY, *supra* note 211, at 149–53, 189–90, 216–19; Mank, *supra* note 79, at 280; *infra* notes 467–68 and accompanying text.

[224] *See generally* Austin & Schill, *supra* note 17, at 75–76; Cole, *supra* note 17, at 662–63.

[225] *See* Gerrard, *supra* note 75, at 1158.

[226] *Id.* at 1159.

Local residents, however, have been more willing than state governments to accept hazardous or radioactive waste facilities.[227]

If administrative agencies could make siting decisions without regard to public opinion, their staff probably would, on average, be more willing to grant permits to facilities based upon cost-benefit and risk assessment analysis than would the general public.[228] From the standpoint of democratic theory and moral legitimacy, however, only a system that combines administrative expertise and participation is likely to be successful.

Environmental justice commentators generally favor increased public participation in the siting process.[229] On the other hand, from a public choice perspective,[230] "organized, well-informed, resource-rich, politically connected neighborhood groups benefit from sitings of facilities in unorganized, uninformed, resource-lacking, politically powerless areas."[231] Because wealthy people have greater access to lawyers, lobbyists, and the media, a key question is whether any siting process that incorporates public opinion can temper the tendency to site facilities where people are relatively politically powerless.

1. *Public Participation Theory*

There are conflicting views about the value of public participation in environmental decisionmaking. Study after study shows that the public's evaluation of environmental and safety risks differs radically from any consensus of experts in the field.[232] Conflicts between expert and public views of policy questions occur in other fields such as the provision of medical services.[233] Cognitive error theory has demonstrated that individuals often

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[227] *Id.* at 1161–62.

[228] *See infra* note 476 and accompanying text.

[229] *See supra* notes 110–12 and accompanying text.

[230] "Public choice models often treat the legislative process as a microeconomic system in which interest groups manipulate the political process to obtain 'rents' in the form of tax relief, subsidies or favorable regulation to increase their wealth in excess of what the group could achieve in the marketplace without legislation." Mank, *supra* note 18, at 304–05; *see* Daniel A. Farber & Philip P. Frickey, *The Jurisprudence of Public Choice*, 65 TEX. L. REV. 873, 878 (1987). Public choice theory suggests that politically influential municipalities might manipulate the political process to lessen the likelihood that locally undesirable land uses will be located in their communities.

[231] Boyle, *supra* note 69, at 978 n.222.

[232] BREYER, *supra* note 113, at 33; *see also* CARNEGIE COMM'N, RISK AND THE ENVIRONMENT: IMPROVING REGULATORY DECISION MAKING 92–93 (1993) (discussing causes of divergence between "expert" and "public" beliefs about risk).

[233] Oregon uses a ranking of Medicaid services to reflect comparative benefits and denies payment for services below a certain ranking. *See* David Stipp, *Prevention May Be*

reach inconsistent conclusions about risky options solely as a function of the way these options are framed.[234] The question is whether society should base its policies on expert evaluations or public perceptions of risk.

Most commentators, including the author, have argued in favor of increased public participation in environmental decisionmaking primarily because such participation is consistent with democratic values and because administrative decisionmaking has its own limitations.[235] Expert risk assessment can be excessively narrow in scope and may not adequately consider values that the public considers important, such as voluntariness of risk.[236] Proponents of environmental justice generally believe that the limited

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Costlier Than a Cure, WALL ST. J., July 6, 1994, at B1, B4. But public hearings on Oregon's ranking system for Medicaid services led to decreasing weight on cost-effectiveness between 1990 and 1993. After public hearings, the Oregon Health Services Commission revised the rankings of about 400 of the 696 items on the final priority list because the Commission found that a list based upon cost-effectiveness alone did not follow the general public intuition of how to rank priorities. *Id.* at B4.

[234] *See* Donald T. Hornstein, *Reclaiming Environmental Law: A Normative Critique of Comparative Risk Analysis*, 92 COLUM. L. REV. 562, 606 (1992). Professor Hornstein, however, believes that society should not rely upon expert decisionmaking, despite the implications of cognitive error theory, because expert decisionmaking has its own limitations, and more fundamentally because "a fully synoptic system of comparative risk analysis would lack legitimacy because its decisions would be despised as undemocratic." *Id.* at 611.

[235] *See generally* Ellison Folk, *Public Participation in the Superfund Cleanup Process*, 18 ECOLOGY L.Q. 173, 213–20 (1991); Bruce C. French, *More Effective Citizen Participation in Environmental Decision-Making*, 24 U. TOL. L. REV. 389, 391–415 (1993); Mank, *supra* note 18, at 338–43.

[236] Many commentators favoring a public approach to risk have argued that environmental decisionmaking and regulation are ultimately based upon political factors rather than upon technical or analytical processes such as cost-benefit analysis. *See, e.g.*, Daniel A. Farber, *Environmentalism, Economics, and the Public Interest*, 41 STAN. L. REV. 1021, 1043 (1989) ("[C]ost-benefit analysis is misused to provide technocratic solutions to fundamentally political questions . . . ."); Mank, *supra* note 18, at 280–81, 306–09 (contrasting public and technocratic approaches to risk regulation); Joseph P. Tomain, *Distributional Consequences of Environmental Regulation: Economics, Politics, and Environmental Policymaking*, 1 KAN. J.L. & PUB. POL'Y 101, 110 (1991) (arguing that cost-benefit analysis is deficient because it obscures sociopolitical norms). A number of commentators have argued that formal cost-benefit analysis overemphasizes the costs, which are more easily quantifiable, and underemphasizes health concerns, which are difficult to quantify. *See, e.g.*, John P. Dwyer, *The Pathology of Symbolic Legislation*, 17 ECOLOGY L.Q. 233, 248 (1990). *See generally* Sidney A. Shapiro & Thomas O. McGarity, *Not So Paradoxical: The Rationale for Technology-Based Regulation*, 1991 DUKE L.J. 729, 731–36, 741. The bias toward emphasizing costs may be exacerbated by informational biases because industry generally has the best information about the costs and feasibility of

involvement of minorities in environmental decisionmaking has led agencies to ignore or underestimate risks that especially affect minorities.[237] Environmental justice proponents often contend that members of minority groups must be placed in key environmental policy roles so that they can set the environmental priorities for their communities.[238]

On the other side, there is a technocratic school of thought that generally prefers that Congress and the public take a limited role in setting broad policy goals and delegate most decisions to the discretion of expert administrative agencies.[239] Judge, now Justice, Stephen Breyer, in his 1993 book *Breaking the Vicious Circle*, argues that the public often overreacts to risks, that Congress responds to such public pressures, and that because Congress lacks expertise it is incapable of addressing risk comprehensively.[240] Breyer acknowledges that the public may legitimately take into account such factors as voluntariness of risk or whether the risk is likely to be accompanied by pain or dread,[241] but he argues that in many cases public perceptions about risk differ

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pollution controls. *See* Dwyer, *supra*, at 248. Critics of the expert approach and of formal cost-benefit analysis suggest that the analytical methods of the technical approach may make it risk-preferring, in contrast to the public's risk aversion. *See* Clayton P. Gillette & James E. Krier, *Risk, Courts, and Agencies*, 138 U. PA. L. REV. 1027, 1060–61 (1990).

[237] Proponents of environmental justice have suggested that limited public involvement in cleanup decisions may explain why the *National Law Journal* study, *supra* note 37, found that cleanups took longer in minority and low-income communities. *See* Deeohn Ferris, *Communities of Color and Hazardous Waste Cleanup: Expanding Public Participation in the Federal Superfund Program*, 21 FORDHAM URB. L.J. 671, 675 (1994).

[238] *See* Lazarus, *supra* note 1, at 850–52; Gerald Torres, *Environmental Burdens and Democratic Justice*, 21 FORDHAM URB. L.J. 431, 453–54 (1994).

[239] *See generally* BRUCE ACKERMAN & WILLIAM T. HASSLER, CLEAN COAL/DIRTY AIR (OR HOW THE CLEAN AIR ACT BECAME A MULTIBILLION-DOLLAR BAIL-OUT FOR HIGH SULFUR COAL PRODUCERS AND WHAT SHOULD BE DONE ABOUT IT) 5 (1981) (arguing that Congress should provide only the "most general kinds of policy guidance" to free the agency to engage in rationalist decisionmaking processes); John S. Applegate, *Worst Things First: Risk, Information, and Regulatory Structure in Toxic Substances Control*, 9 YALE J. ON REG. 277, 296–98 (1992) (discussing rationalist models of regulation that emphasize agency discretion and limit congressional role to broad goal setting); Mank, *supra* note 18, at 307 n.203 (citing sources); CARNEGIE COMM'N, *supra* note 232, at 118–19 (arguing that when divergence between public and expert risk assessments cannot be overcome through education, experts, rather than public, should reconsider).

[240] *See* BREYER, *supra* note 113, at 33–42; *see also* Mank, *supra* note 18, at 307–08 (discussing Breyer's argument).

[241] BREYER, *supra* note 113, at 33–35. Proponents of a public approach to risk assessment generally believe that it is important to look at numerous factors in assessing risk and most importantly to rely heavily upon public perceptions of risk, such as voluntariness or dread of worst case potential accidents. *See generally* James F. Freeman & Rachel D.

from expert opinions simply because the public misunderstands the actual risks involved.[242] Breyer is skeptical that better "risk communications" will improve public understanding of risk,[243] distrusts the ability of Congress to write an effective agency agenda for addressing risk,[244] and believes that the combination of uncertainties about risk and political pressures often lead to regulatory overkill by agencies.[245] In Breyer's view, greater knowledge and public awareness do not necessarily lead to better regulation.[246] Breyer's solution is to create an elite reviewing body of civil servants within the executive branch to coordinate risk regulation.[247] This bureaucratic elite would have interagency jurisdiction, political insulation, prestige, and authority unprecedented in American history.[248]

In another article, the author argued that although Breyer's assessment of how well the public and Congress have handled risk assessment issues in the past has considerable merit, his solution, as well as that of many other technocrats, underplays the need for public legitimacy[249] and participation.[250]

Godsil, *The Question of Risk: Incorporating Community Perceptions into Environmental Risk Assessments*, 21 FORDHAM URB. L.J. 547, 575 (1994) ("For the federal government to effect meaningful change in the siting process and waste management generally, it must do more to incorporate citizens' risk perceptions into its risk calculations and its regulations."); Gillette & Krier, *supra* note 236, at 1071–73; Hornstein, *supra* note 234, at 584–615. By contrast, technocratic experts tend to rely upon quantifiable, formal cost-benefit analysis and "body counts" of expected excess fatalities caused by different risks. *See generally* Gillette & Krier, *supra* note 236, at 1071–85 (arguing that experts tend to focus simply upon the expected annual fatalities, or "body count," caused by a chemical, whereas the lay person is also concerned with additional factors); Hornstein, *supra* note 234, at 585–87, 604–06 (contrasting expert and public perceptions of risk).

[242] *See* BREYER, *supra* note 113, at 33–39.

[243] *Id.* at 38–39. *But see* CARNEGIE COMM'N, *supra* note 232, at 92–93 (arguing that the public will substantially change its views on many but not all risk issues if exposed to full and balanced discussion that acknowledges uncertainty and presents framework of choices).

[244] *See* BREYER, *supra* note 113, at 39–42.

[245] *See id.* at 42–51.

[246] *See id.*

[247] *See id.* at 59–60.

[248] *See* David A. Dana, *Setting Environmental Priorities: The Promise of a Bureaucratic Solution*, 74 B.U. L. REV. 365, 372 (1994). As examples, Breyer points to the Office of Information and Regulatory Affairs within the United States Office of Management and Budget and the *Conseil d'Etat* in France, but neither has authority to determine substantive regulatory priorities. *See* BREYER, *supra* note 113, at 68–72; Dana, *supra*, at 372.

[249] *See* Douglas R. Williams, *Environmental Law and Democratic Legitimacy*, 4 DUKE ENVTL. L. & POL'Y. F. 1, 6–31 (1994) (discussing two contending views of democratic

Congress needs to make the basic policy choices about how to regulate pollution and what level of risk is acceptable.[251] Public participation is important as a value in itself, a means of developing a broader administrative record, and a means of lessening the risk that special interests will capture the EPA.[252] Breyer's proposal does not sufficiently acknowledge the uncertainties in risk assessment, especially when comparing different types of risk.[253]

Although democratic policymakers must give weight to public opinion, administrative agencies should consider the interests of future generations and take a longer view than the latest opinion polls or market reports.[254] A combination of technocratic decisionmaking and public participation should insure that risks are fairly compensated for both present and future generations.[255]

2. *Public Participation Statutes and Regulations*

Congress, states, and the EPA have often sought to encourage public participation in environmental decisionmaking.[256] Public participation in siting

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legitimacy, liberal economic theory and civic republican theory).

[250] *See* Mank, *supra* note 18, at 307–08.

[251] Craig Gannett, *Congress and the Reform of Risk Regulation*, 107 HARV. L. REV. 2095, 2100–04 (1994) (arguing that Breyer missed the new willingness of Congress to address risk issues and that the political branches of government must play a role in risk regulation); Mank, *supra* note 18, at 308.

[252] The EPA has not been captured by industry interests, in part because it regulates so many different industries and is subject to countervailing pressures by pollution-control industries, but mainly because of strong public interest in promoting environmental goals. *See* Dwyer, *supra* note 236, at 309–10; Mank, *supra* note 18, at 302–04; Bradford C. Mank, *Superfund Contractors and Agency Capture*, 2 N.Y.U. ENVTL. L.J. 34, 34–35, 49–54 (1993).

[253] *See* Dana, *supra* note 248, at 381–83 (criticizing Breyer's proposal for underestimating value judgments inherent in risk assessment).

[254] *See* Daniel A. Farber & Paul A. Hemmersbaugh, *The Shadow of the Future: Discount Rates, Later Generations, and the Environment*, 46 VAND. L. REV. 267, 271 (1993).

[255] *See infra* notes 480–520 and accompanying text.

[256] Congress has adopted a technical assistance grant program providing funds to citizen groups so they can challenge proposed cleanup strategies for Superfund sites put forward by either the EPA or potentially responsible parties. *See* 42 U.S.C. § 9617(e) (1988); Folk, *supra* note 235, at 194–95; *see also* Mank, *supra* note 18, at 340–43 (proposing technical assistance grants to allow neighbors of plants emitting significant amounts of hazardous air pollutants to seek more stringent permit conditions). On June 2, 1994, the EPA proposed a rule to increase public involvement early in the process for permitting hazardous waste facilities. The EPA has acknowledged that it must improve

or permit decisions runs the gamut from provisions for public hearings, the use of citizen advisory committees, and membership on state siting boards.[257] The EPA has begun creating Superfund Advisory Committees.[258] Superfund reform legislation proposed in the last Congress, House Bill 3800, would have allowed the EPA to consider future use in consultation with advisory community working groups.[259] Senator Specter introduced Senate Bill 443, which would have given developers a preference for state siting approval if they won support from a host community advisory committee.[260]

A potential problem with a siting committee or board is that, because only a limited number of community representatives can serve, many parties potentially affected by a siting or cleanup may be excluded.[261] A single community representative on a siting committee is unlikely to represent all of the interests of the host community.[262] On the other hand, there are practical limits to how many members can effectively serve on a siting committee. House Bill 3800 would have limited each community working group to twenty members.[263]

Statutes often provide only vague criteria for selecting representatives of siting or other environmental committees. For example, House Bill 3800 stated that "[s]pecial efforts shall be made to ensure that the composition of CWG's [Community Working Groups] reflects a balanced representation of all those

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public participation in the Superfund cleanup process and that the agency "must achieve earlier and more effective community involvement at each site." U.S. EPA, FINAL REPORT, SUPERFUND ADMINISTRATIVE IMPROVEMENTS 31 (1993); *see also* GEN. ACCOUNTING OFFICE, EPA'S COMMUNITY RELATIONS COULD BE MORE EFFECTIVE (1994) (arguing that the EPA's Superfund community relations program is generally effective but that the Agency should do more to increase public involvement). Proposed Superfund reform legislation would have expanded the availability of such grants to include state registry sites. Richard E. Bartelt & David E. Polter, *Summary of the Proposed Superfund Reform Act of 1994*, [25 Current Developments] Env't Rep. (BNA) 608, 610–11 (July 29, 1994).

257 *See* Gerrard, *supra* note 75, at 1158.

258 *See* Torres, *supra* note 238, at 454 n.137.

259 *See* H.R. 3800 (first version), 103d Cong., 2d Sess. §§ 102, 103, 502, 503 (1994); S. 1834, 103d Cong., 2d Sess. §§ 102, 103, 502, 503 (1994). Elliott Laws, the EPA's Assistant Administrator for Solid Waste and Emergency Response, has suggested that the remedy selection process "could be amended to give community work groups great deference in remedy selection: the agency would have to make a 'strong showing' to ignore the community's recommendation." Mary Bryant, *Environmental Justice Forum*, SONREEL NEWS, July/Aug. 1994, at 8 (reporting speech by Elliott Laws on April 29, 1994 at Environmental Justice Forum in Dallas).

260 *See* S. 443, 103d Cong., 1st Sess. § 3(b)(4) (1993).

261 *See* Sassaman, *supra* note 211, at 220.

262 *Id.*

263 *See* H.R. 3800, *supra* note 259, § 103(i)(4).

interested in facility representation."[264]

Despite the potential unrepresentativeness of siting committees, other methods of incorporating public input have their own flaws. Public hearings are often held after a siting commission has made its decision about where to locate a facility, and frequently such hearings are viewed as a ritual to obtain a stamp of approval rather than an effective way to solicit comments from the public.[265] The effectiveness of public hearings can be increased through the provision of technical assistance grants to citizens to enable them to challenge an applicant's data, requiring states to prepare detailed fact sheets, and the use of formal adjudicative procedures including the right to cross examination.[266] But it may be less necessary to hold expensive, formal public hearings if a representative siting committee has already had a chance to examine a siting or remedy selection proposal in depth and has convinced the community of the soundness of the committee's decision. Some commentators have argued that a binding or nonbinding referendum of the entire electorate is the best approach,[267] but such an approach does not give more weight to residents who bear greater risks.

Compensated siting programs typically rely upon elected officials or a bargaining committee, and in some cases allow a community referendum on the siting agreement.[268] But according to Professor Vicki Been, "none of the programs distinguishes between the interests of those who are most affected by the siting and those who are least affected."[269] A referendum process for ratifying a proposed compensation agreement raises serious questions about

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[264] *Id.* The bill provided that it is "appropriate" for the President to include representation from the following groups: (A) persons who are adjacent residents or directly affected by releases from the facility; (B) persons who are not physically close to the facility but who may be potentially affected by releases from the facility; (C) long-term residents who have resided in the community for at least five years and who are members of the medical community; (D) representatives of Indian tribes; (E) representatives of resident citizen groups; (F) local government officials; (G) workers at the facility who will be involved in actual cleanup operations; (H) persons at the facility during response actions; (I) facility owners and significant potentially responsible parties; and (J) members of the local business community. *Id.* The main problem with the bill is that it does not define how many persons from each group ought to serve on the CWG, except for a poorly worded reference to "a minimum of one representative of the recipient a grant [sic] for technical assistance, if any, awarded under subsection (e)." *Id.*

[265] *See* Sassaman, *supra* note 211, at 220.

[266] Mank, *supra* note 18, at 338–43.

[267] *See* Gerrard, *supra* note 75, at 1198 (proposing referenda at both the county and municipal levels); Inhaber, *supra* note 155, at 61–62 (proposing a county-wide referendum).

[268] *See* Been, *supra* note 77, at 826.

[269] *Id.*

who could vote and the percentage required to ratify an agreement.[270] An administrative or judicial process rather than negotiation could determine compensation, "[b]ut problems of accountability, expertise, conflicts of interest, and special interest influence are likely to vex any such process."[271] Instead, representation should be based on the amount of risk that a site poses to surrounding residents.

IV. SITING, INTENTIONAL DISCRIMINATION, AND DISPARATE IMPACTS

Proponents of the environmental justice movement generally believe that environmental inequities are produced at least in part by conscious or unconscious racist attitudes.[272] Advocates of environmental justice have frequently suggested that the government and large corporations consciously select sites for undesirable facilities in poor or minority neighborhoods because such localities are less likely to have political clout.[273] Those responsible for siting decisions, however, usually disavow any efforts to select politically disadvantaged communities and argue that a particular siting decision was based upon cost, convenience, or sound geological reasons.[274]

Most litigants have invoked the Equal Protection Clause to challenge the siting of a facility in a predominantly minority community on the grounds that the government decisionmaker was racially discriminatory in selecting the site, but some recent academic commentators have argued that Title VI of the Civil Rights Act of 1964 provides a broader disparate impact approach.[275] Usually,

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[270] Been, *Fairness, supra* note 1, at 1045; *see* MARY R. ENGLISH, SITING LOW-LEVEL RADIOACTIVE WASTE DISPOSAL FACILITIES 74, 138–39 (1992).

[271] Been, *Fairness, supra* note 1, at 1045; *see* Gillette & Krier, *supra* note 236, at 1088–99.

[272] *See* Lazarus, *supra* note 1, at 806–07.

[273] *See* Austin & Schill, *supra* note 17, at 71–74; *supra* notes 106–12 and accompanying text.

[274] *See, e.g.*, Joan Z. Bernstein, *The Siting of Commercial Waste Facilities: An Evolution of Community Land Use Decisions*, 1 KAN. J.L. & PUB. POL'Y 83, 84 (1991) ("The waste industry's criteria for identifying attractive sites has [sic] evolved over the last several decades, from considerations that were primarily financial to considerations that reflect the priority of protecting human health and the environment."); McDermott, *supra* note 1, at 697 (arguing that WMX's Emelle Landfill in predominantly African-American Sumter County, Alabama was chosen because of its good transportation, aridity, sparse population, and, most importantly, its location atop the Selma chalk formation). *But see* Foster, *supra* note 8, at 729 (criticizing use of race-neutral grounds by private industry and suggesting they may be a cover for racism).

[275] *See* 42 U.S.C. § 2000d (1988); Lazarus, *supra* note 1, at 835–39; Colopy, *supra* note 18, at 128–29, 156–88.

plaintiffs seek declaratory and injunctive relief to prevent the siting of a facility, but Title VI may allow for a damages remedy where an existing facility has harmed a plaintiff.[276] While it is important in some cases to prevent the siting of a facility, minority residents and society as a whole would often be better off if a developer receives a siting permit but negotiates with a representative community siting committee to pay compensation for the external harms resulting from a facility.

When plaintiffs have challenged the granting of a permit to a developer, courts usually have found sufficient state action by a state or local siting board, either on its own or in ratifying the actions of developers, to allow a suit to go forward.[277] Equal protection suits alleging discriminatory siting of hazardous waste facilities have generally failed because courts have required evidence of discriminatory intent, which is difficult to obtain. Some commentators have argued that courts should abandon or weaken the intent requirement.[278] Other commentators have suggested that plaintiffs bring disparate impact suits based upon civil rights statutes such as Title VI,[279] which bans discrimination by federally funded programs and does not require proof of intentional discrimination.[280] Yet others have proposed that Congress enact a new statute

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[276] *See* Lazarus, *supra* note 1, at 836; Colopy, *supra* note 18, at 165–66.

[277] *See, e.g.*, Bean v. Southwestern Management Corp., 482 F. Supp. 673 (S.D. Tex. 1979), *aff'd*, 782 F.2d 1038 (5th Cir. 1986). The district court did not find it necessary to reach the issue of whether the actions of the developers were so intertwined with the state as to constitute state action.

[278] *See* Boyle, *supra* note 69, at 980–81 (proposing intermediate standard of review if plaintiff meets certain conditions).

[279] 42 U.S.C. § 2000d (1988); *see* Lazarus, *supra* note 1, at 835–39 (discussing and advocating use of Title VI in environmental cases); Colopy, *supra* note 18, at 128–29, 156–88 (same).

[280] Title VI is one of several theories to address environmental inequities that have not been fully explored. *See* Lazarus, *supra* note 1, at 829, 834–42 (discussing Equal Protection Clause, Title VI, Title VIII, and 42 U.S.C. § 1982); Omar Saleem, *Overcoming Environmental Discrimination: The Need for a Disparate Impact Test and Improved Notice Requirements in Facility Siting Decisions*, 19 COLUM. J. ENVTL. L. 211, 228–29 (1994) (same); Colopy, *supra* note 18, at 128–29 (Title VI). Proponents of environmental justice have argued that the federal government should begin enforcing civil rights laws that prohibit discrimination in programs receiving federal money. *Solutions: What Can Be Done*, NAT'L L.J., Sept. 21, 1992, at S12. Others have proposed using substantive environmental statutes to reduce inequities. *See* Crawford, *supra* note 129, at 273 (arguing that civil rights lawsuits have failed to address environmental justice problems and advocating use of CERCLA medical monitoring lawsuits); Foster, *supra* note 8, at 725 ("Environmental law and policy, because they are preventative in nature, are free from the constraints of strict remedial and causation requirements that characterize civil rights law."); Lazarus, *supra* note 1, at 842–49; Saleem, *supra*, at 229–30 (discussing substantive

allowing the use of disparate impacts to establish discrimination in siting cases.[281]

Under the Equal Protection Clause, the fundamental focus should be on ensuring adequate representation for minority groups rather than on the impossible task of achieving equality of substantive results.[282] If minorities are adequately represented in the political process, the legislative process is better suited to addressing broad questions of political and economic inequality than are courts in lawsuits alleging that state siting officials are placing a disproportionate number of hazardous waste facilities in minority neighborhoods. The proposal in Part VI of this Article is designed to provide adequate representation for those at greatest risk and for minority groups.[283] If minority groups are adequately represented in the siting process, courts generally should ignore environmental disparities because such disparities probably are the result of economic or historical factors beyond the control of environmental decisionmakers. In some cases, decisionmakers consciously use environmental quality arguments to discriminate against minorities,[284] but in most cases environmental disparities are probably the indirect product of differences in income, residential patterns, diet, or occupation.[285]

Assuming adequate representation of minority interests in selecting a negotiating committee and assuming that the committee has access to all relevant information about the risks of the projects and to the technical expertise needed to understand those risks, a compensation process is sufficient to address disparate impacts without stigmatizing developers and government officials who are motivated by neutral decisionmaking criteria that serve a legitimate business purpose. Courts should issue an injunction barring the construction of a facility approved by both a state regulatory agency and a community only when plaintiffs can prove intentional discrimination by the siting board or developer, or when the process for electing representatives to the siting board is so fundamentally unfair to minorities as to exclude them

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environmental statutes and tort law).

[281] Godsil, *supra* note 70, at 421–25.

[282] *See supra* note 10 and accompanying text.

[283] *See infra* notes 430, 502 and accompanying text.

[284] It is often alleged that environmental quality measures in local zoning laws are really aimed at excluding minorities or the poor. *See* Foster, *supra* note 8, at 737.

[285] *See* 1 EPA ENVIRONMENTAL EQUITY REPORT, *supra* note 27, at 12 ("All of these differences in exposures are complex and deeply rooted in many aspects of society, such as historical residence, politics, commerce, geography, state and local land use decisions and other socioeconomic factors that affect where people live and work."). *But see* Foster, *supra* note 8, at 736–37 (criticizing *EPA Environmental Equity Report* for failing to recognize "the social context and structural dynamics that influence the choices, mobility, and employment of people of color").

from the decisionmaking process. Discriminatory intent is difficult to prove and presents a substantial barrier to plaintiffs bringing equal protection challenges to allegedly discriminatory siting practices. It is inappropriate, however, to stigmatize government decisionmakers who intend to act in racially neutral ways, even if they are subtly influenced by unconscious or structural racism, because compensation can redress economic harms to minorities.[286]

A better approach than lawsuits seeking to brand government decisionmakers as racists is to reform the process of electing representatives to siting boards so that high-risk and minority residents are adequately represented and have access to the risk information and technical expertise needed to interpret the relevant factors. Many may question whether monetary compensation is an adequate remedy when a person is exposed to increased risk from a hazardous facility, but in a society in which some persons inevitably are exposed to higher risks than others, money is the most convenient and effective way to compensate high-risk persons. To prevent exploitation, the EPA and state siting agencies should set limits on the maximum level of risk acceptable for any community or individual.[287]

It may be argued that compensation will not eliminate the tendency to place locally undesirable land uses in minority and poor neighborhoods because wealthy or politically powerful communities will block their siting even if compensation is available.[288] Siting discrimination suits, however, cannot eliminate disparities caused by postsiting events attributable to market dynamics.[289] On the other hand, ongoing and ex post compensation can at least partially redress the injuries of those who move near an existing facility.[290] Ultimately, siting disparities can be addressed only through a profound redistribution of income and political power. The increasing political power of minorities both at the local level and in Congress[291] may in the long run

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[286] The Supreme Court has noted that invalidating a decision because of its disproportionate impact often would be a remedy disproportionate to the decisionmakers' presumably racially neutral act. *See* Hills v. Gautreaux, 425 U.S. 284, 293–94 (1976); Milliken v. Bradley, 418 U.S. 717, 738, 744–45 (1974). On the other hand, a strong argument can be made that the costs to minorities in not considering disproportionate impact far outweigh the risks in explicitly considering race. *See* Charles R. Lawrence III, *The Id, the Ego, and Equal Protection: Reckoning with Unconscious Racism*, 39 STAN. L. REV. 317, 320 n.12 (1987). Under the proposal in Part VI of this Article, the EPA would reduce disproportionate impacts to minorities whenever it is cost-efficient to do so.

[287] *See infra* notes 441–61 and accompanying text.

[288] *See supra* notes 106–12 and accompanying text; *infra* notes 437–41 and accompanying text.

[289] *See supra* notes 20, 55–58, 182, 187 and accompanying text.

[290] *See supra* notes 179–87 and accompanying text.

[291] *See supra* notes 116–18 and accompanying text.

diminish the impact of current patterns of indirect or structural racism.

Disparate impact suits should be allowed only when there is substantial statistical evidence of disparate impacts, as defined by well-established tests of statistical significance; evidence that the harms to the affected class of persons, based upon conservative but realistic expert risk assessments, outweigh the benefits in jobs and taxes to members of that affected class; and there is no adequate compensation process.[292] Developers should be able to avoid disparate impact suits if those persons at greatest risk are adequately represented in the siting negotiations and compensation process.

A. *Antidiscrimination Law and Environmental Justice*

1. *Equal Protection*

In *Village of Arlington Heights v. Metropolitan Housing Development Corp.*[293] and *Washington v. Davis*,[294] the Supreme Court established the requirement that in an equal protection case a plaintiff must demonstrate discriminatory intent before a court may invoke its remedial powers. In some cases, a plaintiff may use statistical evidence of disparate impacts to establish an inference of discriminatory intent,[295] but a plaintiff must show that the defendant's policies were undertaken at least in part because of and not in spite of their adverse effects upon an identifiable group.[296]

Even when there have been disparities in the location of hazardous waste facilities between minority and white areas, plaintiffs in equal protection cases often have been unable to provide statistically significant evidence of disparate

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[292] *See supra* note 15.

[293] 429 U.S. 252, 265 (1977). *Arlington Heights* established five factors in an equal protection analysis: (1) "[t]he impact of the official action—whether it 'bears more heavily on one race than another,'" *id.* at 266; (2) the historical background of the decision; (3) the series of events prior to the decision, which could reveal the decisionmaker's purpose; (4) any departures, substantive or procedural, from the normal decisionmaking process; and (5) the legislative and administrative history of the decision. *Id.* at 266–68. The Court later added the foreseeability of the adverse consequences as a factor. Godsil, *supra* note 70, at 410 (citing Personnel Adm'r v. Feeney, 442 U.S. 256, 279 n.25 (1979).

[294] 426 U.S. 229, 239 (1976).

[295] *See Arlington Heights*, 429 U.S. at 266 (holding that when a "clear pattern, unexplainable on grounds other than race, emerges from the effect of the state action even when the government legislation appears neutral on its face," a court may find invidious racial discrimination using that pattern as circumstantial evidence of intent); Colopy, *supra* note 18, at 146 n.88.

[296] Personnel Adm'r v. Feeney, 442 U.S. 256, 279 (1979); *see* Colopy, *supra* note 18, at 147 n.92.

impact because too few facilities existed in a particular geographical area to establish statistical significance.[297] Another reason why courts have generally failed to find evidence of intentional discrimination is that siting boards and developers can almost always offer some race-neutral justification for a site, including geological, economical, or transportation characteristics.[298] In *Bean v. Southwestern Waste Management Corp.*,[299] the district court did not find sufficient evidence to establish discriminatory intent, despite concluding that the Texas Department of Health's approach to the siting had been "unfortunate and insensitive."[300] In *R.I.S.E. v. Kay*,[301] the court found evidence of disparate impact, but held that the plaintiff presented insufficient evidence of discriminatory intent to support a finding that the Equal Protection Clause had been violated because the latest site chosen in a black community was environmentally more suitable for a landfill than the previously proposed site in a white community.

Plaintiffs have been more successful in using evidence of disparate impacts to establish an inference of discriminatory intent in cases involving the provision of municipal services, and some commentators have argued that courts in siting cases ought to apply a similar approach in determining whether evidence of disparate impacts creates an inference of discriminatory intent.[302]

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[297] *See* Colopy, *supra* note 18, at 150.

[298] *See* R.I.S.E., Inc. v. Kay, 768 F. Supp. 1144, 1149–50 (E.D. Va. 1991) (finding no evidence of discriminatory intent in siting of landfill in a predominantly African-American area despite the fact that three other landfills in the county were in predominantly African-American areas), *aff'd*, 977 F.2d 573 (4th Cir. 1992); East Bibb Twiggs Neighborhood Ass'n v. Macon-Bibb County Planning and Zoning Comm'n, 706 F. Supp. 880, 885–87 (M.D. Ga.), *aff'd*, 846 F.2d 1264 (11th Cir. 1989); Bean v. Southwestern Waste Management Corp., 482 F. Supp. 673, 677–78 (S.D. Tex. 1979), *aff'd*, 782 F.2d 1038 (5th Cir. 1986); NAACP v. Gorsuch, No. 82-768-CIV-5 (E.D.N.C. Aug. 10, 1982) (finding no evidence of discrimination in siting PCB disposal facility in county with highest percentage of minority residents in state of North Carolina); *In re* Genesee Power Station Ltd. Partnership, PSD Appeal Nos. 93-1 to 93-7, 1993 WL 473846, at *2 (EPA Oct. 22, 1993) (finding no support for charge that Michigan commission acted in a discriminatory fashion in approving the air permit in a minority area while denying permit in rural white area); *see also* Colopy, *supra* note 18 at 145–51.

[299] 482 F. Supp. 673 (S.D. Tex. 1979), *aff'd*, 782 F.2d 1038 (5th Cir. 1986).

[300] *Id.* at 680.

[301] 768 F. Supp. 1144, 1149–50 (E.D. Va. 1991), *aff'd*, 977 F.2d 573 (4th Cir. 1992).

[302] *See, e.g.*, Dowdell v. Apopka, 511 F. Supp. 1375, 1383 (M.D. Fla. 1981) (finding that disparities in water and stormwater drainage between black and white neighborhoods was motivated by discriminatory intent), *aff'd*, 698 F.2d 1181 (11th Cir. 1983); *see* Lazarus, *supra* note 1, at 833–34 (arguing that courts have been more willing to infer discriminatory intent when there is evidence of disparate provision of government services);

Some scholars have suggested that courts have been more reluctant to find discriminatory intent in siting cases than in government services cases because increasing government services for minority groups is less controversial than forcing another community to accept a locally undesirable land use after a court has ruled that it may not be sited in a minority neighborhood.[303] There is also a difference between denying services to minorities and granting a permit to site a facility in a minority area that brings both risks and benefits.[304] Since the Supreme Court decided *Washington v. Davis*[305] in 1976, lower courts have been less willing, even in municipal services cases, to use evidence of disparate impacts to establish discriminatory intent.[306]

Several proponents of environmental justice have sharply criticized cases that refused to find intentional discrimination by siting authorities despite substantial evidence of disparate impacts on minorities.[307] Their criticism is part of a larger school of thought challenging the requirement of evidence that an individual bad actor had a race-conscious impetus.[308] A number of scholars

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Colopy, *supra* note 18, at 149; Godsil, *supra* note 70, at 416–18 (discussing cases involving disparate impact of municipal services and analogizing them to siting cases). Courts may be more reluctant to draw an inference of discriminatory intent in siting cases than they are in municipal services cases because there are often only a few landfills or waste facilities in a geographical area, whereas city governments make countless decisions on how to distribute municipal services, which make patterns of long-term discrimination more apparent. Colopy, *supra* note 18, at 150. Developers often can provide apparently neutral criteria such as land cost and residential density to justify disproportionate siting. *Id.* The remedy in municipal services cases is simply to provide equal services to blacks and whites, but the remedy in a siting case may be to shift the burden to another community, a remedy courts may be reluctant to impose. *Id.*

303 *See* Lazarus, *supra* note 1, at 833.

304 *See* Crawford, *supra* note 129, at 293 n.126.

305 426 U.S. 229 (1976).

306 *See* Jon C. Dubin, *From Junkyards to Gentrification: Explicating a Right to Protective Zoning in Low-Income Communities of Color*, 77 MINN. L. REV. 739, 779–82 (1993).

307 *See, e.g.*, Lazarus, *supra* note 1, at 831–33; Saleem, *supra* note 280, at 225 ("In essence, courts narrowly construe the Equal Protection Clause to the detriment of groups that unfairly bear the brunt of environmental hazards under the guise of economic apportionment."); Godsil, *supra* note 70, at 410–16.

308 *See* Barbara J. Flagg, *"Was Blind, but Now I See": White Race Consciousness and the Requirement of Discriminatory Intent*, 91 MICH. L. REV. 953, 958–59 (1993); Alan D. Freeman, *Legitimatizing Racial Discrimination Through Antidiscrimination Law: A Critical Review of Supreme Court Doctrine*, 62 MINN. L. REV. 1049, 1052–57 (1978) (arguing that antidiscrimination law is based upon a model of discrimination that is focused on individual actors through a "perpetrator" perspective); Lawrence, *supra* note 286, at 318–19; Saleem, *supra* note 280, at 225–28.

have criticized the intent requirement in *Arlington Heights* and *Washington v. Davis* because it treats equal protection violations as though they were criminal in nature and required a culpable state of mind.[309] Because the intent-based test addresses only those who are consciously racist, it either ignores unconscious racism or treats the problem as being outside the ambit of the Equal Protection Clause.[310]

Some environmental justice advocates have argued that, even if it is not possible to establish a clear connection between racial disparities and intentional conduct on the basis of race, one may assume that there are unconscious racist attitudes and discriminatory structures that produce environmental disparities. Therefore, evidence of disproportionate impacts should be enough to trigger corrective measures.[311] These scholars often believe that courts have looked too narrowly at what constitutes racism. For instance, in *East Bibb Twiggs Neighborhood Ass'n v. Macon-Bibb County Planning & Zoning Commission*,[312] the district court looked only at whether the zoning agency responsible for the permit decision had a history of discrimination. The court refused to accept evidence of the history of state- and city-wide discrimination and concluded that there was no evidence of improper racial animus.[313]

While historical and institutional racism are serious problems, minorities will benefit more from remedial, preventive, and incentive compensation than from a court imposing findings of discrimination on siting boards that have applied race-neutral criteria in good faith, especially when a facility has net positive benefits for a community. It is inappropriate to so stigmatize a siting board or developer when a compensation program can redress any external costs imposed by a facility.

2. *Title VI*

Given the difficulties of proving discriminatory intent in equal protection cases, a number of commentators have recommended that environmental justice plaintiffs bring disparate impact actions under Title VI of the 1964 Civil Rights Act,[314] which provides that "[n]o person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be

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309 *See, e.g.*, Boyle, *supra* note 69, at 961–62.

310 *See id.* at 963.

311 *See* Foster, *supra* note 8, at 733–35, 737–38 & nn. 76–77, 79–81 (arguing that historical and institutional racism leads more minorities to live in polluted metropolitan areas and to work in dangerous occupations).

312 706 F. Supp. 880, 885–87 (M.D. Ga.), *aff'd*, 896 F.2d 1264 (11th Cir. 1989).

313 *Id.* at 884.

314 Civil Rights Act of 1964, Pub. L. No. 88-352, §§ 601–605, 78 Stat. 241, 252–53.

denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."[315] While *Regents of the University of California v. Bakke*[316] casts some doubt on the holding of *Lau v. Nichols*[317] that disparate impact is always enough to win a Title VI action, the Supreme Court in *Guardians Ass'n v. Civil Service Commission*[318] held that proof of discriminatory intent is not required in a Title VI action, at least where that view had been historically endorsed by federal agency regulations implementing the statutory mandate. The historical test of *Guardians* probably applies to the EPA's Title VI regulations, which have consistently embraced a discriminatory effects test.[319] Title VI applies only to federally funded programs, but virtually all federal environmental laws provide assistance to state governments.[320] Until recently, it appeared that Title VI provided only equitable relief, but the Supreme Court in *Franklin v. Gwinnett County Public Schools*[321] unanimously held that a damages remedy is available in implied rights of action brought under Title IX of the Education Act Amendments of 1972.[322] Because the language of Title IX was expressly modeled after that of Title VI and because the Supreme Court has frequently relied on constructions of one in interpreting the other, it is likely that a damages remedy is now available under Title VI, even absent a showing of discrimination.[323]

A plaintiff in a Title VI case must establish a prima facie case of "definite, measurable disparate impact" upon the affected community.[324] Once a prima facie case is established, a defendant can counter the plaintiff's charges with "evidence of a legitimate, nondiscriminatory reason for its action."[325] If the defendant provides a legitimate, nondiscriminatory business justification, the plaintiff must show that this justification is a pretext and that other selection devices would serve the defendant's interests with less discriminatory

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[315] 42 U.S.C. § 2000d (1988); *see* Lazarus, *supra* note 1, at 834–39; Colopy, *supra* note 18, at 128–29 & *passim.*

[316] 438 U.S. 265, 318–19 (1978) (Powell, J., announcing judgment); Colopy, *supra* note 18, at 158.

[317] 414 U.S. 563, 568 (1974); *see* Lazarus, *supra* note 1, at 834–35.

[318] 463 U.S. 582, 584 & n.2 (1983); *see* Colopy, *supra* note 18, at 159.

[319] *See* 40 C.F.R. § 7.35(b), (c) (1994); Lazarus, *supra* note 1, at 836.

[320] *See* Lazarus, *supra* note 1, at 835.

[321] 503 U.S. 60 (1992).

[322] 20 U.S.C. §§ 1681–1688 (1988).

[323] *See* Lazarus, *supra* note 1, at 836.

[324] *See* NAACP v. Medical Ctr., Inc., 657 F.2d 1322, 1332 (3d Cir. 1981); Colopy, *supra* note 18, at 161.

[325] *Medical Ctr.*, 657 F.2d at 1333; *see also* Coalition of Concerned Citizens Against I-670 v. Damian, 608 F. Supp. 110, 127 (S.D. Ohio 1984); Colopy, *supra* note 18, at 161–62.

impact.[326]

There has been controversy regarding whether Title VI was intended to cover environmental siting and permitting agencies.[327] From 1971 until early 1993, the EPA maintained that Title VI did not apply to its decisionmaking and often avoided enforcing the statute against state or local governments that received funding for projects such as sewers.[328] More recently, the EPA's office of civil rights has been investigating whether Louisiana and Mississippi are violating the rights of their African-American citizens under Title VI by issuing permits to hazardous waste treatment facilities in minority neighborhoods.[329] To resolve some of the uncertainties surrounding the scope of Title VI and environmental permitting, Senator Paul Wellstone introduced a bill, the Public Health and Equity Act of 1994, that would have clearly established that discrimination judgments against siting and permit agencies could be based solely upon a demonstration of disparate impact.[330]

There is the danger that Title VI or other types of disparate impact suits based merely upon differences in exposure or location of facilities will discourage government officials from permitting and facility owners from operating in communities where suits are likely to occur even if there is a net social benefit to poor and minority neighborhoods.[331] At least in theory, compensation is more socially efficient than disparate impact suits because a compensation process allows a worthwhile project to go forward and at the same time forces the developer to internalize all of the risks and costs of a

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[326] *See Medical Ctr.*, 657 F.2d at 1334–36; Colopy, *supra* note 18, at 162. A discussion of how courts' interpretation of the business justification defense has evolved over the years is beyond the scope of this Article.

[327] *See* BOERNER & LAMBERT, *supra* note 13, at 12; *see also* Saleem, *supra* note 280, at 228 ("However, it is currently unsettled as to whether Title VI applies to EPA decision-making."). A number of environmental justice proponents have advocated Title VI claims of disparate impact against environmental permitting agencies. *See* Lazarus, *supra* note 1, at 834–39; Colopy, *supra* note 18, at 128–29, 156–89; *supra* notes 279, 314 and accompanying text.

[328] *See* Lazarus, *supra* note 1, at 836–38 (discussing the EPA's decision to deemphasize its civil rights responsibilities under Title VI); Saleem, *supra* note 280, at 228 (arguing that the EPA's stance that its decisionmaking was exempt from Title VI "lacks support from any internal policy or legal precedent"); Colopy, *supra* note 18, at 180–88 (discussing history of the EPA's enforcement of its Title VI regulations).

[329] *See* Marianne Lavelle, *Clinton Pushes on Race and Environment*, NAT'L L.J., Oct. 6, 1993, at 1, 41; John H. Cushman, Jr., *U.S. to Weigh Blacks' Complaints About Pollution*, N.Y. TIMES, Nov. 19, 1993, at A16.

[330] *See* S. 1841, 103d Cong., 2d Sess. (1994); BOERNER & LAMBERT, *supra* note 13, at 12 (criticizing the bill).

[331] *See* BOERNER & LAMBERT, *supra* note 13, at 12–13.

facility.[332] In lieu of disparate impact suits, the proposal in Part VI of this Article includes a more equitable process for representing and compensating the neighbors of hazardous facilities.

3. *Proposals for Expanded Disparate Impact Claims*

James Colopy has argued that the Civil Rights Act of 1991,[333] which amended Title VII of the 1964 Civil Rights Act to make it easier to prove disparate impact, could significantly affect Title VI caselaw.[334] According to Colopy, under the 1991 Civil Rights Act, once a plaintiff establishes a prima facie case, the defendant has the affirmative burden of persuasion in demonstrating that "the challenged practice is job related for the position in question and consistent with business necessity."[335] If the defendant satisfies this requirement, the plaintiff can still present evidence that "other test or selection devices, without a similarly undesirable racial effect, would also serve the employer's legitimate interest in 'efficient and trustworthy workmanship.'"[336] Colopy proposes that this mechanism of disparate impact analysis be adopted for Title VI analysis as well.[337]

Assuming that Colopy's interpretation of the 1991 Civil Rights Act is correct, courts should not apply expansive Title VII analysis to Title VI unless Congress explicitly adopts such an approach. Siting decisions are different from job discrimination claims because facilities often bring greater tax and employment benefits than harms.[338] In the siting context, racial disparities sometimes benefit minorities. Therefore, a plaintiff should be required to prove not only that statistically significant siting disparities exist, but also that the harms to the affected subpopulation group exceed the benefits the facility provides to that group, using conservative but realistic risk assessments.[339]

Rachel Godsil has proposed that Congress enact a statute modeled after

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[332] It is difficult to measure the costs and benefits of a facility. *See infra* notes 407–25 and accompanying text.

[333] Pub. L. No. 102-166, § 105(a), 105 Stat. 1071, 1074–75 (codified at 42 U.S.C. § 2000e-2(k) (Supp. V 1993)). A discussion of the 1991 Civil Rights Act and how courts have interpreted its provisions is beyond the scope of this Article.

[334] *See* Colopy, *supra* note 18, at 163–64.

[335] 42 U.S.C. § 2000e-2(k)(1)(A)(i) (1991); *see* Colopy, *supra* note 18, at 163–64.

[336] Albemarle Paper Co. v. Moody, 422 U.S. 405, 425 (1975) (quoting McDonnell Douglas Corp. v. Green, 411 U.S. 792, 801 (1973)); Colopy, *supra* note 18, at 164.

[337] *See* Colopy, *supra* note 18, at 164.

[338] *See infra* notes 406–07, 414–28 and accompanying text.

[339] *See infra* notes 406–07, 414–28 and accompanying text.

Title VII to outlaw siting discrimination.[340] A minority community would have to establish that it bore greater burdens than a neighboring white community that could have been considered for a proposed site.[341] If a minority community could establish a prima facie case of disparate impacts and show that alternative sites existed, then the burden would shift to the siting agency to show that there was an environmental necessity for choosing the minority location, such as unique geological conditions.[342]

Godsil's proposal is troubling because it would explicitly favor minorities at the expense of whites.[343] Because of the controversial nature of favoring minorities at the expense of whites in the absence of intentional discrimination, one commentator has predicted that if Congress enacted the Godsil proposal, it would not explicitly address the issue of whether a plaintiff must establish discriminatory intent, and courts might impose such a requirement.[344] Godsil's proposal also fails to consider whether the benefits of a facility, including compensation and jobs, outweigh the risks.

Edward Boyle has argued that restructuring equal protection law to address siting disparities is preferable to Godsil's proposal to enact a statute because her views are so unlikely to be adopted by Congress.[345] Boyle proposes that the circuit courts manipulate the Supreme Court's intent test to create an intermediate scrutiny approach to equal protection cases involving siting issues.[346] If a plaintiff could show statistically significant evidence of disparate impact, then defendants would have the burden of showing that the affected minority group was adequately represented in the decisionmaking process.[347] If minorities were adequately represented, a court would apply a rational basis standard of review, but if minorities were inadequately represented, a court would apply intermediate scrutiny.[348]

Boyle correctly understands that the Equal Protection Clause is fundamentally concerned with whether minorities have been adequately represented rather than with substantive results.[349] But his attempt to avoid the necessity of congressional action by suggesting that circuit courts consciously

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340 *See* Godsil, *supra* note 70, at 421–23.

341 *See id.* at 422.

342 *See id.* at 422–23.

343 *See* Crawford, *supra* note 129, at 296.

344 *See* Peter L. Reich, *Greening the Ghetto: A Theory of Environmental Race Discrimination*, 41 KAN. L. REV. 272, 294–96 (1992).

345 *See* Boyle, *supra* note 69, at 979–80 n.228.

346 *See id.* at 979–83, 988–89.

347 *See id.* at 980–83.

348 *See id.* at 982.

349 *See supra* note 10 and accompanying text.

distort Supreme Court precedents is unprincipled and impractical. Substantively, his proposal for increased judicial scrutiny is cumbersome because it may be difficult for courts to assess the adequacy of minority representation if the process nominally gives equal access to minorities, but minority groups feel excluded from the majority coalition making the real decisions.[350] The proposal in Part VI of this Article calls for a statutory scheme that would assure adequate minority representation through a weighted, cumulative, or proportional voting system, or other measures.[351] Boyle is right to be concerned about whether minorities are adequately represented in the decisionmaking process, but his proposal does not distinguish between those minorities who are actually at high risk from a facility and those minorities who might be counted as being the victim of disparate impacts because they live in a particular geographical area but who are at less risk than many white persons. This Article's proposal would assure that all persons who are at high risk from a facility, regardless of race or ethnicity, are adequately represented in the decisionmaking process.

B. *A Limited Defense of the Intent Requirement*

Proponents of environmental justice goals would have a stronger case for placing equity criteria above efficiency concerns if they could establish intentional discrimination.[352] Legally, and even socially, "racism" has been construed to mean intentional or purposeful conduct on the basis of race, or at

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[350] *See* GUINIER, *supra* note 72, at 4–6 & *passim* (arguing that minority oppression by white majority is possible despite opportunity to vote); Issacharoff, *supra* note 72, at 1644–46 (arguing that current judicial doctrines are inadequate to control partisan misuse of the reapportionment process).

[351] GUINIER, *supra* note 72, at 14–16 (discussing cumulative voting as a remedy for minority oppression); Mary A. Inman, Comment, *C.P.R. (Change Through Proportional Representation): Resuscitating a Federal Electoral System*, 141 U. PA. L. REV. 1991, 1999–2015 (1993) (proposing that representatives to United States House of Representatives be elected on statewide basis using Hare Single Transferable Vote proportional voting system); Edward Still, *Alternatives to Single-Member Districts* (discussing cumulative and proportional voting systems and arguing that proportional voting is superior), *in* MINORITY VOTE DILUTION 249, 255–64 (Chandler Davidson ed., 1989); John R. Low-Beer, Note, *The Constitutional Imperative of Proportional Representation*, YALE L.J. 163, 187–88 (1985) (proposing use of party-list proportional voting system with single-member districting in state and local elections); *infra* notes 429, 497 and accompanying text.

[352] By "intentional discrimination," I mean cases in which a plaintiff can establish an inference of purposeful intent through statistical evidence, but not cases based solely upon disparities, without any evidence of discriminatory intent. *See supra* notes 295–96 and accompanying text.

least some consciousness of race as a factor motivating conduct.[353] The discriminatory intent requirement is based upon the notion that racial discrimination is conscious, willful, and morally reprehensible.[354] Professor Gerald Torres, both a leading critical race and environmental scholar, has cautioned against using the term "environmental racism" too loosely because "calling something racist when another term might suffice risks subjecting the word to a kind of verbal inflation."[355]

Defenders of the intent-based approach to discrimination argue that volition is an essential element of race discrimination.[356] An intent requirement is a bottom-line standard for determining whether or not a person was motivated to harm a particular group, whereas a disparate impacts or effects test creates a laundry list of factors that can be balanced the way a particular decisionmaker wants.[357] Commentators have cited four major reasons for not adopting a discriminatory impact standard: (1) the impact standard would be too costly for the government; (2) under an impact standard, innocent people would bear the cost of remedying the harm; (3) the impact standard would be inconsistent with traditional equal protection doctrine, because the judicial decisionmaker would need to explicitly consider race; and (4) it would be inappropriate for the judiciary to remedy the impact of otherwise neutral government action at the expense of other legitimate social interests.[358]

Critics of the intent approach correctly observe that it does not address structural, indirect, or vestigial effects of racism,[359] but there are more effective ways to redress such issues than through discrimination suits. Broad

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[353] *See* Foster, *supra* note 8, at 731. *See generally* Lawrence, *supra* note 286, at 318–20, 347–49, 366–76 (explaining establishment of the intent-purpose requirement in Washington v. Davis, 426 U.S. 229 (1976), and Village of Arlington Heights v. Metropolitan Housing Development Corp., 429 U.S. 252 (1977), and its further inculcation in equal protection-race discrimination jurisprudence as a necessity in establishing actionable racism). Because of this intent requirement, a showing of a racially disparate impact of a facially neutral law or decision is insufficient without showing specific racial animus. *Id.* at 318–19; *see also* Foster, *supra* note 8, at 731 n.48 (discussing Lawrence).

[354] *See* Boyle, *supra* note 69, at 963 n.146 (citing sources).

[355] Gerald Torres, *Introduction: Understanding Environmental Racism*, 63 U. COLO. L. REV. 839, 839 (1992).

[356] *See, e.g.*, James F. Blumstein, *Defining and Proving Race Discrimination: Perspectives on the Purpose vs. Results Approach from the Voting Rights Act*, 69 VA. L. REV. 633, 643–44 (1983).

[357] *See id.* at 644–45.

[358] Lawrence, *supra* note 286, at 320–21; *see also* Colopy, *supra* note 18, at 146 (citing Lawrence).

[359] *See supra* notes 307–13 and accompanying text.

income redistribution policies designed to ameliorate market dynamics,[360] compensation schemes that internalize the social costs of pollution,[361] and environmental policies designed to reduce the impact of hot-spots[362] that disproportionately affect minorities will accomplish more than liberalized disparate impact suits.

C. *Statistical Significance and Disparate Impact Claims*

While it is undoubtedly frustrating for plaintiffs who allege discriminatory siting practices to be told by a court that there are not enough facilities in a given area to establish statistically significant evidence of disparate impacts, there is a danger in applying any lesser standard for determining whether a pattern of inequity exists. Some critics of studies alleging racial disparities have questioned the quality of the evidence. For example, studies that classify an area as minority or poor whenever the percentage of people of color or poor in the community exceeds that of the population as a whole ignore the population density within a neighborhood. They also classify predominantly white or wealthy areas in which the population variance from the national distribution is statistically insignificant as victims of disproportionate siting.[363] The *National Law Journal* study,[364] which found significant racial and income disparities, has been challenged on two grounds: first, all of the areas the authors defined as minority areas included a substantial majority of white persons; and second, the study failed to use standard tests of statistical significance.[365] In addition,

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[360] *See* Been, *Market Dynamics*, *supra* note 1, at 1390–92.

[361] *See supra* notes 170–87 and accompanying text; *infra* notes 480–520 and accompanying text.

[362] *See supra* notes 28–29, 31, 49–54 and accompanying text.

[363] *See* BOERNER & LAMBERT, *supra* note 13, at 4–5; Been, *Market Dynamics*, *supra* note 1, at 1384 n.2, 1403 n.85 (criticizing assumption that siting is always disproportionate when the percentage of a minority group in a host tract is higher than the percentage in nonhost tracts or the city or national average).

[364] *See supra* notes 37–38 and accompanying text.

[365] *See* Mary Bryant, *Unequal Justice? Lies, Damn Lies, and Statistics Revisited*, SONREEL NEWS, Sept./Oct. 1993, at 3, 3 (criticizing *National Law Journal* study for referring to populations that are at least 79% white as "minority" in nature); Lazarus, *supra* note 1, at 818 n.125. *But see Methodology*, NAT'L L.J., Sept. 21, 1992, at S4. Thomas E. Godfrey, vice president for research at Decision Demographics, which contributed to the study, defended it by arguing that "'[i]n a country where residential segregation abounds, an area that is 80 percent white or less might be considered highly integrated in the eyes of the residents,'" and that for the purposes of measuring environmental inequities such areas "'may still be arguably indicative of "minority" populations compared to an area that is nearly 100 percent white in population composition.'" *Id.* The *National Law Journal* did not

the *National Law Journal* data are not adjusted for time.[366]

Professor Lazarus, an advocate of reducing environmental inequities, has observed that the statistical findings of the 1987 United Church of Christ study[367] reflect a ninety percent confidence level, "which is not particularly high," and that the statistical methodology utilized in the study is controversial because the "study utilizes a 'discriminate' rather than 'regression' analysis technique, which is the more widely accepted basis for differentiating between the effect of multiple dependent variables."[368] Furthermore, he notes that the United Church of Christ study equates the siting of toxic sites with actual exposure to toxic releases and relies on present demographic data rather than the demographic data pertaining to the time when the initial siting decision may have been made.[369] Professor Been has severely criticized the methodology used by Professor Bullard in his studies of alleged discriminatory siting in Houston.[370]

Beyond requiring statistically significant evidence of discrimination, there are even more difficult problems that courts need to address in assessing claims of environmental inequities. Scholars have employed different definitions of race and ethnicity[371] and have disagreed about defining the location of subpopulations relative to the location of the activity, condition, or impact

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report the statistical significance of any element of its study. *See* Bryant, *supra*, at 4.

366 Because cleanup requirements have become more stringent since Congress enacted the 1986 Superfund Reform and Reauthorization Act, it is important to take into account when a cleanup occurred, but the *National Law Journal* study failed to do so. *See* Bryant, *supra* note 365, at 4. Other commentators have come to conflicting conclusions about whether race or class matters in determining how quickly EPA cleans up a site. *Compare* Hird, *supra* note 61, at 337 (finding no relationship between pace at which sites are cleaned up and host county's socioeconomic characteristics) *with* Rae Zimmerman, *Social Equity and Environmental Risk*, 13 RISK ANALYSIS: INT'L J. 649, 660–64 (1993) (finding that the higher the percentage of African-Americans in community, the less likely it was that hazardous waste sites in community had progressed to "Record of Decision" stage of cleanup, especially when community was also relatively poor; but finding that difference was primarily function of how long site had been listed on National Priorities List).

367 *See supra* note 31.

368 Lazarus, *supra* note 1, at 802 n.56.

369 *Id.*

370 Been notes that Bullard's data are confusing and perhaps incomplete, and that her own finding of disproportionate siting may not be correct if Bullard's data are flawed. Been, *Market Dynamics*, *supra* note 1, at 1400–01 n.69, 1403 n.85. *But see* Bullard, *supra* note 57, at 60–61 (challenging Been's exclusion of sites included in his earlier study).

371 *See* Zimmerman, *supra* note 1, at 634. Some scholars have suggested that race and ethnicity are meaningful only when combined with other factors, such as income. *See id.* at 665–66 (citing sources).

area.[372] Scholars have strongly disagreed about the appropriateness of using various geographical boundaries such as counties, municipalities, zip codes, service areas, census tracts, block groups, and blocks.[373] Because scholars cannot agree on how to define subpopulations or geographical areas, one must assess all existing empirical research with some caution.[374]

Courts need to establish clear tests for defining minority and ethnic groups and geographical areas, but it will be difficult. Courts should distinguish between disparities resulting from the initial siting decision and those caused by subsequent events attributable to market dynamics.

Courts should be relatively stringent in evaluating discrimination claims because of the stigma associated with branding a defendant as a discriminator. Many might argue that the threat of exposing minorities to disproportionate pollution is a far greater danger than the impact of a discrimination verdict upon a government official's career, but a legislative reform of the siting process that insures adequate minority representation and compensation can achieve more to prevent disparities and do so without the need for a finding of unlawful discrimination on the part of government officials. In light of the methodological difficulties in determining whether a particular ethnic or minority group has been discriminated against, it is better to use a compensation process to redress racial and income disparities unless a plaintiff can prove intentional discrimination.

V. A COST-BENEFIT APPROACH TO COMPENSATION AND RISK

A. *A Limited Defense of Cost-Benefit Analysis and Risk Management*

Professor Rodgers has argued that there are four basic approaches to using cost-benefit analysis for regulation: (1) cost-oblivious, which ignores cost because it is too hard to measure or because environmental values should be protected at any cost; (2) cost-effective, which takes cost into account only in implementing objectives or choosing means, not in setting goals or objectives;

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[372] *Id.*

[373] William K. Reilly, then Administrator of the EPA, criticized the use of zip code areas in the *National Law Journal* study because they vary in size and their overall population may not reflect the immediate population surrounding a facility. *See* Reilly, *supra* note 37, at 16. Likewise, Professor Been has argued that census tracts of approximately 2500 to 8000 people are a more reliable means to define a community than five-digit zip code areas, which may be smaller or larger than census tracts but typically are larger than census blocks or block groupings. *See* Been, *Market Dynamics*, *supra* note 1, at 1401 n.73, 1402–03 n.84.

[374] *See* Zimmerman, *supra* note 1, at 665–69.

(3) cost-sensitive, which takes cost into account both in setting and implementing policy; and (4) strict cost-benefit analysis based upon highly quantitative methods.[375] Most federal environmental statutes that regulate health risks favor the second or third approach over strict cost-benefit analysis.[376] While numerous provisions of environmental statutes require the EPA to consider economic factors, none explicitly requires a formal cost-benefit analysis.[377] A series of executive orders, however, require agencies issuing "major rules" to conduct a cost-benefit analysis to ensure that the benefits of a proposed regulation outweigh its costs.[378]

The great difficulty in conducting a cost-benefit analysis is in measuring the value of nonmarket goods such as human lives or the existence of other species.[379] For instance, existing regulations establish values ranging from $70,000 to $132,000,000 per life saved.[380] Another problem is that cost-benefit analysis does not address distributional issues.[381]

The EPA or a state siting board or agency should perform a limited cost-sensitive analysis to determine whether a proposed hazardous waste site poses an acceptable risk to a community and whether the developer's proposed compensation to a community is reasonable. Because there are too many difficulties in assessing environmental risks to apply a strict cost-benefit analysis, the EPA or a siting board should apply a cost-sensitive approach in which it considers costs, benefits, and other factors, including distributional

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375 *See generally* William H. Rodgers, Jr., *Benefits, Costs, and Risks: Oversight of Health and Environmental Decisionmaking*, 4 HARV. ENVTL. L. REV. 191, 201–14 (1980) (addressing regulatory cost-benefit analysis but not compensation).

376 Farber & Hemmersbaugh, *supra* note 254, at 272.

377 *Id.* In Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1214 (5th Cir. 1991), however, the EPA and Fifth Circuit independently concluded that the decisionmaking process should include a cost-benefit analysis even though the Toxic Substances Control Act, 15 U.S.C. §§ 2601–2629 (1988), does not explicitly require it. *See* Asbestos, Preamble to Final Rule, 54 Fed. Reg. 29,460, 29,467 (1989); Farber & Hemmersbaugh, *supra* note 254, at 272–73.

378 *See, e.g.*, Exec. Order No. 12,866, *supra* note 5, at 641 (President Clinton) (cost-benefit analysis required for any "significant" rule, that is, "a rule that may [have] an annual effect on the economy of $100 million or more or adversely affect in a material way the economy"); Exec. Order No. 12,291, 3 C.F.R. 127, 127 (1981) (President Reagan) (cost-benefit analysis required for any "major" rule, that is, "any regulation that is likely to result in [an] annual effect on the economy of $100 million or more [or a] major increase in costs or prices").

379 *See* Farber & Hemmersbaugh, *supra* note 254, at 273–74; Rodgers, *supra* note 375, at 194–96.

380 *See* Farber & Hemmersbaugh, *supra* note 254, at 273.

381 Rodgers, *supra* note 375, at 194.

inequities. The EPA or state agency should require higher minimum compensation for higher-risk facilities.[382]

1. *Risk Assessment: Imperfect but Necessary*

It is difficult to estimate the health risks of a hazardous waste facility. Given the uncertainties of risk assessment, some environmental justice proponents have proposed that all such facilities be closed down, or at least that no new facilities be built.[383] But some new facilities are needed to replace old ones or address new capacity needs.[384] Furthermore, there is some evidence suggesting that the benefits of such facilities outweigh their risks.[385]

The amount of potential risk a hazardous waste site generates has not been established, nor has the relationship been established between such risks and distance from a site.[386] The extent to which pollution from a facility reaches a given individual and reaches individual cells that are sensitive to the pollutant is difficult and expensive to measure.[387] The EPA generally uses predictive models, such as the Human Exposure Model, rather than direct measurements, to calculate the exposure of a hypothetical maximally exposed individual.[388] Some commentators have criticized this model for being overly conservative, but others have defended conservative assumptions because it is better to err on the side of safety.[389]

To understand the relative risk of hazardous waste facilities, it would be helpful to compare their risks to those of other types of polluting facilities or substances. The EPA has already undertaken a large amount of research on interprogram priority setting, based upon the premise of the commensurability of risks.[390] The EPA is currently establishing a process to set pollution

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382 *See infra* notes 451–55 and accompanying text.

383 *See infra* notes 106–12 and accompanying text.

384 *See supra* notes 75–77 and accompanying text.

385 *See infra* notes 414–28 and accompanying text.

386 *See* Anderton et al., *supra* note 59, at 124–25.

387 *See* Mank, *supra* note 18, at 336–37.

388 *Id.* at 335 n.334.

389 *See id.* (citing sources).

390 *See* U.S. EPA, COMPARING RISKS AND SETTING ENVIRONMENTAL PRIORITIES: OVERVIEW OF THREE REGIONAL PROJECTS (1989) [hereinafter EPA, COMPARING RISKS]; U.S. EPA, SCIENCE ADVISORY BD., REDUCING RISK: SETTING PRIORITIES AND STRATEGIES FOR ENVIRONMENTAL PROTECTION (1990) [hereinafter EPA, REDUCING RISK]; U.S. EPA, UNFINISHED BUSINESS: A COMPARATIVE ASSESSMENT OF ENVIRONMENTAL PROBLEMS (1987) [hereinafter EPA, UNFINISHED BUSINESS]; *see also* Richard L. Andrews, *Long-Range Planning in Environmental and Health Regulatory Agencies*, 20 ECOLOGY L.Q. 515, 552–57 (1993); Applegate, *supra* note 239, at 349–51 (citing sources).

reduction and resource priorities.[391] The most difficult problem is comparing health risks in different contexts, such as pesticides, water pollution, air pollution, and land disposal of toxic wastes, each of which presents different routes of exposure, costs and benefits, and types of risk.[392]

There has been considerable scholarly debate about the EPA's basic premise that different types of risk are commensurable.[393] Opponents of risk assessment often criticize attempts by experts to rate the risk of a single chemical based upon expected fatalities because of pervasive scientific uncertainties, inadequate information, and the need to consider moral, equitable, and distributional issues.[394] In addition, critics of comparative risk assessment often argue (1) that society lacks sufficient information to compare different types of risk or health effects; (2) that the pain of dying from cancer is not comparable to the impact of reproductive or neurological disease; and (3) that comparative risk assessment does not consider the distribution of risk-bearing and control costs, the concentration and dispersion of risks in space or time, or intergenerational equity.[395] Professor Hornstein believes that because social priority setting is inescapably collective and political, proponents of comparative risk analysis exaggerate its scientific legitimacy.[396]

The EPA has used carcinogenicity as a common metric, but that single measure cannot provide scientific answers on how to compare the impact of

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[391] In a December 22, 1993 memorandum, EPA Administrator Carol M. Browner announced a new Science Policy Council and the elimination of the narrower Risk Assessment Council. *Science Panel Set to Begin Projects on Peer Review, Risk Characterization*, [25 Current Developments] Env't Rep. (BNA) 19, 19-20 (May 6, 1994). The Council's duties will include: "Determining priorities among issues identified by EPA regions, programs, the Risk Assessment Forum, Science Advisory Board, other federal agencies, and other major working groups and committees . . . ." *Id.* at 20.

[392] *See* Applegate, *supra* note 239, at 350–51.

[393] *See id.* at 349–51 (citing sources); Hornstein, *supra* note 234, at 584–616 (criticizing comparative risk assessment); Symposium, *Risk Analysis and the U.S. Environmental Protection Agency*, 21 ENVTL. L. 1321 (1991); *Setting Environmental Priorities: The Debate About Risk*, 17 EPA J. (1991) (entire issue).

[394] *See generally* Gillette & Krier, *supra* note 236, at 1071–85 (arguing for multi-factor "public" approach to risk and against "expert" cost-benefit analysis of expected fatalities).

[395] *See generally* Hornstein, *supra* note 234, at 584–616, 631–33 & *passim*; Robin Shifrin, Note, *Not by Risk Alone: Reforming EPA Research Priorities*, 102 YALE L.J. 547, 560–62 (1992) (arguing that comparative risk assessment tends to focus on aggregate risk reduction and largely ignores the equitable norm that all members of society should bear a similar average risk); *see also* Gillette & Krier, *supra* note 236, at 1071–85 (arguing for multi-factor "public" approach to risk and against "expert" cost-benefit analysis of expected fatalities).

[396] *See generally* Hornstein, *supra* note 234, at 584–616, 631–33 & *passim.*

cancer on diverse, exposed subpopulations such as children and adults, or the tradeoffs between using two chemicals that are more or less risky to farmworkers or applicators as opposed to consumers.[397] Cancer research cannot always measure the risk of a chemical within a range of two orders of magnitude, a factor of 100.[398] When hard data are lacking, the EPA may create a grossly inflated upper bound for actual cancer risk from specific pollutants or may create too low a bound despite conservative assumptions.[399] There are even greater uncertainties about measuring on a single risk index the risks from chemicals that present dangers of such noncancer "endpoints" as birth defects, reproductive failure, acute poisonings, and neurological defects.[400] This author agrees in many respects with critics of comparative risk assessment who argue that it is methodologically impossible and misleading to compare carcinogens and noncarcinogens on a single risk index.[401]

Although the numbers used by risk or cost-benefit analysis may provide a misleading sense of accuracy in a field based upon assumption after assumption, there are some meaningful differences in risk and cost that might be used as the basis for a rough siting evaluation and compensation process. A recent Harvard Lifesaving Study by the Harvard School of Public Health's Center for Risk Analysis found that medical care generally saves lives at less cost than workplace-safety or environmental measures, and that extravagantly large sums are spent to alleviate minor cancer risks.[402] The Harvard study points out some examples of pollution control requirements that are clearly cost-ineffective by any measure. For instance, preventing releases of carcinogenic chloroform at pulp mills costs an estimated $99.4 billion for each

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[397] *See* Donald T. Hornstein, *Lessons from Federal Pesticide Regulation on the Paradigms and Politics of Environmental Law Reform*, 10 YALE J. ON REG. 369, 441; Mank, *supra* note 18, at 282.

[398] *See* Mank, *supra* note 18, at 281–83, 333; Alon Rosenthal et al., *Legislating Acceptable Cancer Risk from Exposure to Toxic Chemicals*, 19 ECOLOGY L.Q. 269, 338 (1992).

[399] *See* Mank, *supra* note 18, at 282.

[400] *See id.* at 283–84, 333.

[401] *See id.* at 283–85 (criticizing Bush Administration's efforts to use single risk index for carcinogens and noncarcinogens).

[402] Tammy O. Tengs et al., Five-Hundred Life-Saving Interventions and Their Cost-Effectiveness 13 (July 7, 1994) (unpublished manuscript, on file with author). According to the study, each year of life bought by a medical intervention costs, on average, $19,000, but a life-year saved by toxin control costs more than $2,700,000. *Id.* Outside researchers say that the Harvard study, begun in 1990, is more rigorous than previous studies because some 90% of its data were drawn from government or peer-reviewed studies in technical journals and because of its breadth and the number of interventions analyzed. *See* Stipp, *supra* note 233, at B1.

life-year saved.[403]

Because it is unacceptable to spend billions of dollars for each life-year saved by regulation, the EPA must refine its risk and cost-benefit analyses and avoid rapidly escalating costs that fail the "knee-of-the-curve" test.[404] The EPA or state agencies, however, should still take into account normative reasons such as equity in making decisions—even if such decisions are not justified by a strict cost-benefit analysis, which is likely to be imperfect in light of pervasive scientific uncertainties and high informational costs—as long as the cost of reducing inequities is not too far out of line with other pollution reducing priorities.[405]

Some risks, however, are so remote or expensive to remediate that nothing should be spent on them because the money could be better spent elsewhere or because there are negative "income effects" leading to poorer diet or more unemployment, which in turn may increase the number of heart attacks or suicides.[406] By reducing the incentives for businesses to locate in poor and minority areas, legislative proposals to reduce environmental inequities may exacerbate local problems of poverty and unemployment that are far more unhealthy than the minute risks associated with waste disposal facilities and industrial plants.[407]

2. *Assessing a Developer's Compensation*

It is relatively easy to measure the benefits of a proposed hazardous waste facility. Developers are quick to provide information in terms of new jobs, tax revenues, and additional compensation.[408] An agency or siting board should verify how the developer came up with the numbers and perhaps hire a consulting firm to perform an independent analysis. The siting board should analyze both the overall benefits to a community and the distribution of benefits to particular individuals.

A much more difficult task is assessing whether the compensation offered by a developer is sufficient to internalize the externalities that the facility will impose on surrounding residents. Because of the uncertainties in risk assessment, the EPA or a state agency should determine only whether the

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[403] Tengs et al., *supra* note 402, at 50; Stipp, *supra* note 233, at B2.

[404] *See* Mank, *supra* note 18, at 327, 331 n.320; Shapiro & McGarity, *supra* note 236, at 743 n.77.

[405] *See* Mank, *supra* note 18, at 328.

[406] *See* BREYER, *supra* note 113, at 16–29.

[407] *See* BOERNER & LAMBERT, *supra* note 13, at 6.

[408] *See* McDermott, *supra* note 1, at 698 (discussing benefits of Emelle Landfill in Sumter County, Alabama).

developer's offer meets minimum standards and then allow a community to negotiate a higher amount.[409] The EPA or state agency could either base minimum compensation on a historical examination of what developers have offered in the past five or ten years for a facility of similar size or risk, or rely upon surveys of residents who live near similar facilities to determine what they believe would be fair compensation.[410] In formulating its 1989 benzene standards, the EPA used a historical survey to determine that a one-in-ten-thousand risk to the maximally exposed person constituted an acceptable risk to human health.[411] Critics of the benzene rule have argued that use of historical survey data is inappropriate for setting current standards.[412] Even if their criticism of the benzene standard is appropriate, a historical survey could be used to set minimum compensation standards that would serve as the starting point for compensating neighbors of a hazardous waste site.

3. *The Emelle Landfill Example*

One example may help in assessing the relative costs and benefits of a hazardous waste facility to a minority community. Chemical Waste Management's Emelle Landfill in rural Sumter County, Alabama is one of the largest hazardous waste facilities in the United States.[413] Charles McDermott, Director of Government Affairs for WMX Technologies, the parent of Chemical Waste Management,[414] claims that the facility provides a minimum of $4,200,000 in taxes to Sumter County, has a payroll of $10,000,000 and that sixty percent of the employees live in the county.[415] The facility has provided in-kind services such as water supply hookups, the construction of the

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[409] *See infra* notes 451–74 and accompanying text.

[410] *See* Been, *supra* note 77, at 796–800 (discussing surveys of residents who actually or potentially live near a hazardous or radioactive waste facility).

[411] *See* National Emission Standards for Hazardous Air Pollutants; Benzene Emissions from Maleic Anhydride Plants, Ethyl Benzene Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Products Recovery Plants, Preamble to Final Rule, 54 Fed. Reg. 38,044, 38,045–46 (1989) (describing how EPA selected its method for setting emissions standards for benzene and radionuclide categories); Natural Resources Defense Council, Inc. v. EPA, 824 F.2d 1146, 1164–66 (D.C. Cir. 1987) (en banc) (suggesting use of historical surveys in determining acceptable risk); Mank, *supra* note 18, at 270–71, 276–77 (discussing benzene rule and use of historical risk survey).

[412] *See* Janet L. McQuaid, Note, *Risk Assessment of Hazardous Air Pollutants Under the EPA's Final Benzene Rules and the Clean Air Act Amendments of 1990*, 70 TEX. L. REV. 427, 437 (1991).

[413] *See* McDermott, *supra* note 1, at 697.

[414] *Id.* at 693 n.16.

[415] *See id.* at 698.

town hall, and a baseball field.[416] He contends that the site was chosen because it was sparsely populated, had good access to transportation, was relatively arid, and, most importantly, was located atop the Selma chalk formation, which consists of several hundred square miles of dense, 700-foot-thick natural chalk, an ideal barrier between disposal activities and the nearest aquifer feeding a drinking source.[417]

Environmental justice proponents Conner Bailey and Charles E. Faupel use the Emelle Landfill as an example of how economic considerations encourage the placement of environmental hazards in minority communities.[418] They argue that the "black, rural, and poor" area of Sumter County has become dependent upon the Emelle Landfill for economic survival and that the county's depressed economy prevented citizens from organizing aggressive opposition to the siting of the facility in their community.[419]

The EPA has ranked the relative risk posed by several different kinds of environmental problems and found that hazardous waste facilities permitted under the Resource Conservation and Recovery Act (RCRA)[420] pose relatively low risks, even though much more of the agency's budget is spent to regulate them than on other, more serious environmental problems.[421] Similarly, the

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416 *See id.*

417 *See id.* at 697.

418 Bailey & Faupel, *supra* note 86.

419 *See id.* at 140–43.

420 Resource Conservation and Recovery Act of 1976, Pub. L. No. 94-580, 90 Stat. 2795.

421 An EPA study assessing the relative risk of 31 different environmental problems found that the following issues posed a high risk to human health or the environment but received relatively little attention or funding from the agency: indoor radon; indoor air pollution; ozone depletion; global warming; non-point sources; discharges to estuaries, coastal waters, and oceans; other pesticide risks; accidental releases of toxins; consumer products; and worker exposures. *See* EPA, UNFINISHED BUSINESS, *supra* note 390, at xv; *see also* U.S. EPA, A RISK ANALYSIS OF TWENTY-SIX ENVIRONMENTAL PROBLEMS: SUMMARY REPORT (1991) (ranking the relative risk of 26 different environmental problems ranging from ozone depletion and radon exposure to several common industrial activities and RCRA-permitted facilities) [hereinafter EPA, TWENTY-SIX PROBLEMS]; McDermott, *supra* note 1, at 692. Other problems posed relatively lower risks, but the EPA spent a great deal of resources in redressing them: active hazardous waste RCRA sites; National Priorities List abandoned waste sites eligible for Superfund monies; underground storage tanks; and municipal nonhazardous waste sites. *See* EPA, UNFINISHED BUSINESS, *supra* note 390, at xv; *see also* EPA, TWENTY-SIX PROBLEMS, *supra*, at 9 (ranking RCRA-permitted facilities among lowest tested risks); McDermott, *supra* note 1, at 692 (same). The implications of the EPA's studies for developing risk-based priorities and for comparative risk assessment are beyond the scope of this Article. *See generally* EPA, REDUCING RISK, *supra* note 390 (qualifiedly endorsing risk-based prioritization and comparative risk assessment); Applegate,

amount of money allocated to Superfund cleanups of abandoned hazardous waste sites corresponds more closely to public perceptions of risk than actual risks, and less money is allocated to more serious problems such as pesticide residues because of the public's misperception of the relative risks.[422]

On the other hand, Professor Hornstein and others have observed that a perfectly plausible equitable argument can be made that it is more important to eliminate highly concentrated risks from hazardous waste sites that include the risk of destroying whole families or neighborhoods than greater but more diffuse risks such as those posed by chlorine by-products in public drinking water.[423] A recent study found that the risks of Superfund sites to present populations are generally relatively low but quite substantial in many instances.[424] For instance, Superfund sites on the National Priorities List often contain lead, polychlorinated biphenyls (PCBs), benzene, or pesticides.[425] Hazardous waste sites may pose considerable risks to future generations, depending upon the validity of certain assumptions about future use of a site,[426] an issue addressed in Part VI(B)(2). In a world of scarce financial and informational resources, environmental policymaking should consider the relative risks of different types of problems[427] and the views of those citizens most at risk from concentrated dangers.[428]

Although it is probably impossible to fully assess the risks produced by the Emelle facility, in light of the relatively low risks posed by hazardous waste

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supra note 239, at 309–10 (qualifiedly endorsing risk-based prioritization); Hornstein, *supra* note 234, at 584–629 (criticizing comparative risk assessment).

[422] *See* EPA, UNFINISHED BUSINESS, *supra* note 390, at 77–78, 84–86, 91–99; EPA, COMPARING RISKS, *supra* note 390, at 62–65; Applegate, *supra* note 239, at 279; *see also* Lester B. Lave, *Risk Assessment and Regulatory Priorities*, 14 COLUM. J. ENVTL. L. 307, 309–11 (1989) (discussing studies showing that regulatory expenditures do not correlate with greater risk).

[423] *See* Hornstein, *supra* note 235, at 593; Shifrin, *supra* note 395, at 561 (arguing that even if Superfund sites pose relatively low overall risk, they may pose concentrated risks to nearby residents justifying substantial expenditures on equitable grounds).

[424] Professors James T. Hamilton and W. Kip Viscusi analyzed the exposure pathways considered in the human health risk assessments conducted at 78 Superfund sites with Records of Decision signed in 1991 or 1992, and found that the risks to present populations were relatively low but could not be classified as trivial. James T. Hamilton & W. Kip Viscusi, *Human Health Risk Assessments for Superfund*, 21 ECOLOGY L.Q. 573, 576, 608–09 (1994).

[425] Jeffrey Spear, Comment, *Remedy Selection Under CERCLA and Our Responsibilities to Future Generations*, 2 N.Y.U. ENVTL. L.J. 117, 139–40 (1993).

[426] *See* Hamilton & Viscusi, *supra* note 424, at 608–09.

[427] *See* Applegate, *supra* note 239, at 282–87.

[428] *See* Hornstein, *supra* note 234, at 593; Shifrin, *supra* note 395, at 561.

facilities in general, it is not unreasonable for an agency and community to conclude that the overall benefits of the landfill outweigh its risks. While Bailey and Faupel may be right that poor blacks in rural Sumter County are more vulnerable to the economic inducements offered by the facility, local residents ought to be able to accept such a facility as long as the risk is reasonable as judged by technocratic experts and those most at risk in the community think that the benefits outweigh the costs. Environmental justice proponents are undoubtedly genuinely concerned about the risk of facilities such as the Emelle Landfill, but local residents may be making the right choice in accepting relatively minor risks in exchange for concrete benefits. Existing compensation programs, however, do not guarantee that those most at risk will have a voice in negotiating compensation.

VI. SOLUTION: RISK-BASED COMPENSATION COMMITTEES

A national or state risk assessment process should be used to set maximum levels of risk within a local area to prevent exploitation of any community. The risk assessment process could also determine the minimum amount of compensation that a developer, owner, or operator must provide to compensate a local community.

A risk-based siting committee would ultimately determine whether to accept a site and would negotiate the amount and distribution of compensation paid by the developer. The relative say that nearby residents, residents in a municipality, and regional neighbors have on a siting negotiation committee would depend on the relative amount of risk to which individuals are potentially or actually exposed, as determined by the risk assessment process. This siting proposal differs from previous siting proposals in that the risk assessment process would determine both the membership of the local siting committee and the minimum amount of compensation. To protect the interests of racial minorities and those exposed to higher risks, special voting systems could be used, such as weighted cumulative voting or proportional voting.[429]

A. *Limits on Risk: Technocratic Maximums*

If all communities are fully informed about the costs of a facility and all enjoy equal bargaining power, a siting will be most efficient if the facility is placed in the community that is willing to accept the facility for the lowest price, assuming that the price covers all the costs the facility imposes.[430] To

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[429] *See supra* note 349.

[430] Been, *supra* note 77, at 796.

promote such efficiency, some proposals attempt to create a competitive market between facility developers and communities.[431] While studies have disagreed about whether there are widespread siting disparities,[432] there is enough evidence to cast doubt on rosy assumptions about equal access to full information and bargaining power among all communities. Given the complexities of risk assessment,[433] it would be surprising if access to full information was the norm among potential siting communities in the United States. At the very least, a siting scheme must consider inefficiencies in the market for siting hazardous waste facilities and the need for some government regulation.

Technical experts from state or federal administrative agencies should determine maximum levels of allowable risk and impose moratoria on the construction of new disposal or polluting facilities in high-risk areas.[434] A cost-benefit and risk assessment analysis could determine if any subpopulation group is likely to receive substantially disproportionate harm from a proposed facility.[435] Part VI(B)(3) discusses alternative approaches for defining the appropriate geographical area and the relevant class of protected persons. Unlike the Gore, Lewis, and Collins bills,[436] however, there should be an opportunity to build new facilities if an equal or greater amount of risk was eliminated by closing an existing facility. The proposed moratoria approach would prevent any one area, whether predominantly white or minority, from being exploited.

There should be no attempt, however, to insure that all areas have roughly the same amount of risk, because in a market-based society it is too difficult to mandate equality of results. Attempts to use a "fair share" approach or a mathematical formula for allocating low-income housing have enjoyed only a mixed record of success.[437] Even for a single type of locally undesirable land use, mathematical determinations of "fair share" involve an enormous number

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[431] *See id.*

[432] *See supra* part II.

[433] *See supra* part V.A.1.

[434] *See infra* notes 441–49 and accompanying text.

[435] *See supra* note 54 and accompanying text; *infra* notes 449, 492 and accompanying text.

[436] *See supra* part III.A.4.

[437] The New Jersey Supreme Court used such an approach with mixed success to force exclusive suburbs to open their doors to low- and moderate-income housing. *See* Southern Burlington County NAACP v. Township of Mount Laurel, 456 A.2d 390 (N.J. 1983); Southern Burlington County NAACP v. Township of Mount Laurel, 336 A.2d 713 (N.J.), *appeal dismissed and cert. denied*, 423 U.S. 808 (1975); Been, *Fairness*, *supra* note 1, at 1076 (noting mixed record of success of fair share housing plans).

of value judgments and measurements that are likely to result in litigation.[438] A recent proposal to have states adopt a point-system siting model that takes into account factors such as race, income, history of siting practices, and geographical fairness is likely to fail because it is too difficult to balance such complex and diverse technical and social factors, especially to the extent that incommensurable notions of equity are at stake.[439] In a free-market society there is no way to prevent wealthy people from living in areas that are unsuitable for locally undesirable land uses, and therefore national or state attempts to impose a fair distribution of such projects on local communities are likely to be unsuccessful.[440] Nevertheless, the process of establishing moratoria in high-risk areas may indirectly encourage the siting of facilities in lower risk locations as developers look for alternative sites.[441]

The EPA and state agencies already employ a number of technical and risk assessment criteria to evaluate the suitability of proposed locations or the risk of proposed or existing sites. Most existing state siting schemes look at hard-technical criteria including the physical and geological characteristics of the site, natural hazards such as earthquakes or flooding, drinking water sources, surrounding fragile land areas such as wetlands or shorelines, ecological habitats, and historic areas.[442] In addition, most states examine soft-technical criteria such as economic development and traffic congestion.[443]

Risk assessment procedures are used to evaluate the risk of existing or proposed sites. For example, the National Priorities List for cleaning up Superfund sites uses a Hazard Ranking System, a scoring system, to rate the

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[438] *See* Been, *Fairness, supra* note 1, at 1075–76.

[439] *See* Mata, *supra* note 92, at 447–67 (proposing siting model based on point system for assessing both technical and equitable factors). *See generally* Hornstein, *supra* note 234, at 602.

> In general, to the extent that incommensurable notions of equity are at stake, they cannot be resolved simply by combining equity "points" that might be generated even by a richer model of expected utility; incommensurability means that there cannot *be* a single equity scale that can generate "points" which represent meaningful conclusions about the equitable thing to do in any particular environmental decision.

Id.

[440] *See* Been, *Fairness, supra* note 1, at 1050.

[441] Because developers often avoid high-cost areas, to the extent the proposal increases the cost of locating in an already high-risk area, developers would presumably select an alternative, lower-risk and lower-cost location. *See supra* notes 96–97 and accompanying text.

[442] *See* Mata, *supra* note 92, at 454–55.

[443] *See id.* at 455.

relative risk posed by a potential clean-up sites.[444] Section 112(f) of the Clean Air Act requires a risk assessment of the carcinogenic danger of major sources emitting hazardous air pollutants in determining whether the EPA must promulgate residual risk standards.[445]

Both the EPA and state agencies have used risk assessments to determine what constitutes an unacceptable level of risk,[446] often recognizing the uncertainties of risk assessment by looking at a range of possible risk.[447] Generally, a level of excess cancer risk greater than one-in-ten-thousand is unacceptable and a risk less than one-in-one-million is presumptively acceptable.[448] The EPA needs to develop better techniques for assessing noncarcinogenic risks and for evaluating the risks to subpopulations whose dietary and work patterns differ from the national average.[449] Despite its limitations, however, risk assessment can serve a protective function in preventing excessive concentrations of risk from environmental pollution.

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[444] *See* 40 C.F.R. pt. 300, app. A (1994); *see also* John S. Applegate, *How to Save the National Priorities List from the D.C. Circuit—and Itself*, 9 J. NAT. RESOURCES & ENVTL. L. 211, 214–15 (1994); Ragna Henrichs, *Superfund's NPL: The Listing Process*, 63 ST. JOHN'S L. REV. 717, 729–37 (1989).

[445] *See* 42 U.S.C. § 7412(f) (Supp. V 1993); Mank, *supra* note 18, at 274–76.

[446] *See, e.g.*, 42 U.S.C. § 7412(f)(2)(A) (Supp. V 1993) (using one-in-one-million standard to trigger residual risk provisions for hazardous air pollutants); Mank, *supra* note 18, at 275–77, 309–10, 332 (discussing several statutes and regulations relating to toxic chemicals that use one-in-one-million standard).

[447] A risk range approach would start with a basic acceptable risk range of an excess cancer risk of one-in-ten-thousand to one-in-one-million. The EPA and at least one state currently use such ranges to guide their decisions. *See* Mank, *supra* note 18, at 332 (discussing use of risk ranges by the EPA's Office of Solid Waste and the New Jersey Department of Environmental Protection's Division of Environmental Quality). "For example, the EPA's Office of Solid Waste in selecting among cleanup alternatives for corrective action for Solid Waste Management Units at active hazardous waste facilities seeks to reduce lifetime cancer risks into the one-in-ten-thousand to one-in-a-million range." *Id.* at 332 n.326 (discussing Corrective Action for Solid Waste Management Units (SWMUs) at Hazardous Waste Facilities, 40 C.F.R. pts. 264, 265, 270, 271 (1994)); *see also infra* notes 448, 453, 493 and accompanying text.

[448] *See id.* at 332 (discussing United States EPA's standards for hazardous waste facilities and New Jersey Department of Environmental Protection's standards); Corrective Action for Solid Waste Management Units (SMWU's) at Hazardous Waste Facilities, 55 Fed. Reg. 30,798, 30,825–27 (1990); National Oil and Hazardous Substances Contingency Plan, 55 Fed. Reg. 8666, 8717–23, 8768 (1990).

[449] *See* Mank, *supra* note 18, at 281–84, 336–37.

B. *Negotiated Compensation: Technocratic Minimums and Risk-Based Negotiating Committees*

Membership of siting negotiation committees should be determined by a risk assessment process that gives proportionately increased representation to those who are likely to be exposed to greater risks from a proposed facility. The risk assessment process should establish a minimum amount of compensation that a developer must pay to a community, perhaps based in part upon how much developers of similar facilities have paid or surveys of residents in communities with similar facilities.[450] Technical representatives from the EPA, a state agency, or independent consultants paid for by government or developer funds would assist the local citizens on the negotiating committee in understanding the complex risk issues.

1. *Minimum Compensation Benchmarks and Agency Expertise*

The EPA could set minimum compensation benchmarks based upon a scientific risk assessment process. Negotiation-based assessments of cost may be too low because of imperfect information or poor negotiating skills.[451] There are difficult problems in measuring the appropriate amount of compensation, especially for hazardous and radioactive wastes, and in allocating compensation among potential recipients,[452] but the agency's minimum compensation figure would provide a starting place for negotiations. If the EPA found that the risk could range from an excess cancer risk of one-in-two-hundred-fifty-thousand to a risk of one-in-one-million, it would base compensation on its lower assessment of risk, one-in-one-million, and then allow the community committee to bargain with the developer over the possibility that the risk is really at the high end of the agency's estimate, one-in-two-hundred-fifty-thousand.

For example, the EPA or a state agency could give persons exposed to greater than a one-in-one-hundred-thousand excess cancer risk the right to demand that the developer, owner, or operator buy out those persons' homes at the fair market value absent the facility.[453] Congress and the EPA have

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[450] *See supra* notes 410–12 and accompanying text.

[451] *See* Been, *Fairness*, *supra* note 1, at 1043–44.

[452] *See id.* at 1042–46; Gerrard, *supra* note 75, at 1212–13 (explaining that different modeling assumptions can produce very different results in identifying ideal facility locations).

[453] *See* Gerrard, *supra* note 75, at 1198–99 (arguing that "[p]eople within a close radius of the site should not be trapped; they should be offered the preproposal value of their property, plus relocation costs," and discussing examples of buyouts); Mank, *supra*

authorized the buyout of property and relocation of residents when remediation of a site was infeasible.[454] For the siting of new facilities, however, the EPA normally should not authorize the siting of a high-risk facility requiring relocation of residents unless the facility is of critical importance and there are no other reasonable locations. Developers should not normally have an implicit eminent domain authority to force a reallocation of property rights.[455]

Developers enjoy some constitutional protection from unreasonable demands. Under *Dolan v. City of Tigard*,[456] governmental exactions imposed upon a developer must be roughly proportionate to the harm the development imposes on a neighborhood.[457]

2. *Risk-Based Negotiating Committees*

Whenever a new facility is sited, the EPA or a state agency should establish a Community Negotiation and Compensation Committee and determine its membership based on technocratic risk assessment procedures. In selecting representatives, the EPA or a state agency should ignore political jurisdictions to the extent possible to prevent the "'state line syndrome' in which waste disposal facilities are frequently proposed for political subdivisions bordering another state."[458] This proposal focuses on three categories of members: (1) immediate neighbors or those most at risk; (2) state and local government officials and voters; and (3) regional residents.

A local siting negotiation committee should be free to reject a site unless a state or federal agency determined that the proposed facility was critically needed and could not reasonably be sited in another location. The siting committee would negotiate both the amount and the distribution of the compensation.

This proposal differs from previous compensation schemes in that those groups or individuals most at risk would have the largest representation on the

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note 172, at 786–91 (proposing use of buffer zones around facilities handling extremely hazardous chemicals liable to cause catastrophic accidents). Gerrard does not define "close neighbors" or "close radius."

[454] *See* Marianne Lavelle, *Help Sought from 'Green' Justice Panel*, NAT'L L.J., Oct. 31, 1994, at A16 (explaining that in 1991 Congress authorized a bill ordering the EPA to buy out 79 homes and a church in the Carver Terrace subdivision in Texarkana, Texas).

[455] *See* Mank, *supra* note 172, at 803–04 (discussing buyouts of contaminated areas and fairness issues raised by in effect giving polluters eminent domain rights).

[456] 114 S. Ct. 2309 (1994); *see also* Nollan v. California Coastal Comm'n, 483 U.S. 825 (1987).

[457] *Dolan*, 114 S. Ct. at 2319.

[458] Wiygul et al., *supra* note 86, at 437–38.

negotiation and compensation committee. For example, if a neighborhood within the host municipality was exposed to an excess cancer risk of less than one-in-one-million, it would have relatively little representation in the siting or remedy selection process. If nonimmediate neighbors of the facility, those who live outside the host municipality, were exposed to an excess cancer risk of between one-in-ten-thousand and one-in-one-hundred-thousand, they would have greater representation than residents of the host municipality.

The agency could also set upper limits on compensation to prevent socially inefficient compensation that gives neighbors no incentive to be the least cost avoider.[459] Such an approach, however, is probably politically infeasible, especially in light of scientific uncertainties. Negotiation-based assessments of cost may be too high as a result of strategic bargaining, because people in the neighborhood have excessive risk perceptions, or because people believe that money cannot replace lost health.[460] Compensation is socially inefficient when resources are devoted to mitigation or risk reduction measures that are not the most socially desirable.[461] For instance, compensation may be inefficient if it eliminates the incentive for surrounding neighbors to take precautionary measures that are cheaper than those that the developer is capable of implementing.[462]

Any attempt, however, to preempt local decisionmaking by limiting the amount of compensation would likely engender indirect political forces that would seek to block or delay a proposed project.[463] Preemptive statutes have not worked well in overcoming determined local opposition.[464] Coercive preemption statutes should be limited to situations in which there is a critical national or regional need for a facility and there are no reasonable alternative

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[459] *See* Been, *Fairness*, *supra* note 1, at 1045–46.

[460] *See id.* at 1043–44.

[461] *See id.* at 1045 n.234; *infra* note 177 (discussing whether risk substitution is socially efficient).

[462] The facility could attempt to negotiate a level of compensation that would encourage the neighbors to take the precautions, but that solution creates holdout problems and other transaction costs. *See* Been, *Fairness*, *supra* note 1, at 1045–46. Numerous commentators have discussed the problem of developing socially efficient legal frameworks that encourage the least cost avoider to take action. *See* WILLIAM J. BAUMOL, SUPERFAIRNESS 96–104 (1986); R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 31–34 (1960); Maureen L. Cropper & Wallace E. Oates, *Environmental Economics: A Survey*, 30 J. ECON. LIT. 675, 680–81 (1992); *see also* Lawrence Blume & Daniel L. Rubinfeld, *Compensation for Takings: An Economic Analysis*, 72 CAL. L. REV. 569, 592–97 (1984) (discussing potential inefficiency of analogous compensation schemes for governmental takings of private property).

[463] *See supra* notes 95, 97, 101–03, 218, 221–22 and accompanying text.

[464] *See supra* notes 95, 97, 101–03, 218, 221–22 and accompanying text.

sites.

Because mediation can facilitate communication between hostile parties,[465] voluntary mediation between the negotiating committee and the developer should be encouraged. Coercive, mandatory arbitration should not be used unless there is a critical need for a facility and there are no reasonable alternative sites.[466] The presence of a mediator, however, is unlikely to eliminate unequal bargaining power caused by financial or informational disparities.[467] It may be necessary to provide financial and technical assistance grants to local negotiating teams so they can bargain with developers with relatively equal strength.[468]

The Community Negotiation and Compensation Committee would retain significant discretion in making choices among different types of compensation, such as choosing among remedial, preventive, or incentive compensation.[469] The Committee would also choose among ex ante, ongoing, and ex post compensation.[470] Part VI(B)(3) discusses some of the problems that may arise in choosing among various types of compensation.

Critics of compensation argue that minority or poor residents should not be placed in the position of giving up their health in a devil's bargain for cash.[471] It is paternalistic and patronizing to presume that minority groups or the poor cannot make rational decisions even if they are fairly represented and have access to technical experts to assist them in understanding and questioning the developer's proposal. It should be assumed that poor or minority residents are as capable as wealthy persons of bargaining with developers, as long as the process for selecting the negotiating team adequately represents high-risk and minority residents and the team has access to adequate technical support selected by the team but paid for by the government or the developer. It is not clear whether poor communities are more vulnerable to offers of compensation or whether there are more complex cultural explanations, such as a long tradition of hosting military-related projects, for why some communities accept risky projects, while others do not.[472] Because poverty and unemployment carry significant health risks, local minority groups should be able to determine whether the benefits in jobs and taxes outweigh the risks of a proposed facility,

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[465] *See supra* notes 211–23 and accompanying text.

[466] *See supra* notes 211–23 and accompanying text.

[467] *See* Mank, *supra* note 79, at 280.

[468] *See generally* Mank, *supra* note 18, at 342–43; *infra* note 474 and accompanying text.

[469] *See supra* part III.B.1.

[470] *See supra* part III.B.2.

[471] *See* Been, *Fairness*, *supra* note 1, at 1040–42.

[472] *See* Gerrard, *supra* note 75, at 1147–52, 1196–97.

unless an expert agency finds that the risks are unacceptable.[473] The provision of technical assistance grants to local communities or citizen groups could provide a more equal bargaining environment and improve the ability of poor communities to assess health risks.[474]

While there is some danger that certain communities will be exploited by accepting dangerous projects in exchange for inadequate compensation, probably the greater problem with this proposal is that risk-based committees in many cases will refuse to accept even remote risks or will demand compensation far in excess of any scientifically credible estimate, if they believe that money cannot replace lost health. This proposal could reduce NIMBY opposition if a community, believing that the Community Negotiation and Compensation Committee fairly represents its interests, accepts a facility it would have rejected under a different siting process. More likely, at least some individual residents will oppose a proposed facility even if neighborhood representatives strongly favor its construction.[475]

Justice Breyer probably would prefer that siting decisions be made by a politically insulated, technocratic body rather than the general public or the proposed risk-based siting committee. Yet even expert agencies make mistakes, and at least in the American tradition of democratic society it is unrealistic to expect agencies to operate without public approval, even if Breyer is correct that public opinion is often ill-informed.[476]

A risk-based representation and rights statute should not guarantee absolutely equal distribution of risks, but should force developers and potentially responsible parties to give greater attention to high-risk residents.[477]

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[473] *See supra* notes 13–15, 406–07, 414–28 and accompanying text.

[474] *See generally* Mank, *supra* note 18, at 338–43 (discussing ways to improve public participation in permit-issuing process for sources of hazardous air pollutants, including provision of technical assistance grants). Eleven states provide such grants. Gerrard, *supra* note 75, at 1158. The provision of such grants may discourage litigation in some cases, although there is the danger that such grants will be used as de facto settlements to get rid of litigation. For example, environmental justice groups that had petitioned the EPA to address pollution in the New River withdrew their petition on the final day of the 90-day appeal period after the Agency promised to consider funding a "community empowerment grant" to be used by the petitioners to follow all the regulatory activities associated with the New River. *See Environmental Justice Groups Withdraw Petition That Urged EPA to Address Pollution in New River*, [25 Current Developments] Env't Rep. (BNA) 260 (June 10, 1994).

[475] *See* Been, *Fairness*, *supra* note 1, at 1045.

[476] *See supra* notes 248–55 and accompanying text.

[477] A policy that limits the number of hazardous facilities sited in any given area may indirectly encourage developers to site facilities in pristine areas without any hazardous facilities and as a result may run counter to the policy of preserving pristine areas contained, for example, in the Clean Air Act's prevention of significant deterioration provisions. But

The process of local decisionmaking and guaranteeing a minimum level of safety to all persons are both important. Whether a risk-based committee accepts or denies a proposed facility, it is most equitable that those who bear the greatest risks have the greatest role in the decisionmaking process, subject to a risk assessment process that places some limits on what risks or compensation is reasonable.

From the standpoint of environmental justice, if minorities are in fact more often exposed to high-risk projects and pollution, a risk-based committee system ought to empower them and all persons at greatest risk. Additional reforms may be necessary to improve the effectiveness of risk-based committees, including the provision of technical assistance grants, better notification of residents through individual notice, and Spanish or other foreign language translations.[478]

In *Dolan v. City of Tigard*,[479] the Supreme Court held that a government body may not put conditions on the granting of a discretionary benefit to an individual unless the government meets its burden in demonstrating that the conditions are in rough proportion to the impact of the proposed development. While a siting board's granting of a permit to a proposed hazardous waste facility will not ordinarily effect an unconstitutional taking of an adjacent property owner's land despite the potential for negative impacts, there ought to be some rough proportion between the burdens imposed by a facility and the benefits received by individual owners. The best way to achieve this proportionality is to allocate representation on a siting board according to the risks posed to respective groups of residents.

3. *Neighbors in the "Danger Zone"*

Professor Been argues "that compensation programs may underprotect the immediate neighbors of [a locally undesirable land use] because acceptance of the compensation is often based upon consent of the majority of the political jurisdiction, rather than the majority of those most seriously burdened by the [land use]."[480] A similar issue can arise when communities approve cleanup or future use plans for an abandoned waste site.

The people who are most threatened by a site should be most heavily

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provisions preserving pristine areas are seen by some as hurting minorities and low-income persons living in urban areas. *See supra* notes 42–43 and accompanying text.

[478] *See generally* Saleem, *supra* note 280, at 246–47 (arguing that current notice requirements are inadequate and proposing individual notice and translations for foreign language speakers).

[479] 114 S. Ct. 2309, 2319 (1994).

[480] Been, *supra* note 77, at 788 n.2; *id.* at 826.

represented on the committee that advises or decides siting or cleanup issues. There should be a lesser or no role for residents in a municipality or state who bear little or no risk. Even these simple principles, however, are very difficult to apply. One must consider the relative rights of future and present residents[481] or whether residents in the area most at risk who may benefit from the site as a result of obtaining employment should have the same right to representation as others who do not receive any employment benefits. Moreover, it is difficult to assess risk in light of the pervasive scientific uncertainties and to quantify all of the benefits and risks posed by a proposed facility.[482] Nevertheless, a risk-based approach is the fairest one possible.

There are at least three major ways to define the affected neighborhood—that is, who is most vulnerable. First, Congress or a state legislature could choose an arbitrary geographical boundary, such as a two-mile radius around the facility, a census tract, or a zip code.[483] But the magnitude of potential risk generated by hazardous waste sites has not been established nor has the relationship between such risks and distance from a site been determined.[484] Accordingly, a fixed distance approach is not the best way to measure risk.

Second, Congress or a state legislature could require the developer, owner, or operator to conduct a site-specific risk assessment to determine which residents are most vulnerable.[485] The EPA conducts extensive studies of the exposure pathways by which a population may be exposed to chemicals at, or originating from, each Superfund site.[486] Site-specific risk assessments often involve a combination of physical exposure assessments and models based upon extrapolations of data from that source.[487] The public should have an opportunity to challenge that assessment before a siting committee is elected. People living in an area with an excess cancer risk of one-in-fifty-thousand ought to have roughly ten times the representation of those who bear a risk of only one-in-five-hundred-thousand. Undoubtedly, there will be people at the periphery of areas that could be classified as living in either a high-risk or low-risk area, but the proposed scheme would correspond to actual risk better than

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481 *See* Been, *Fairness*, *supra* note 1, at 1044.

482 *Id.* at 1042–43.

483 *See supra* note 373 and accompanying text.

484 Anderton et al., *supra* note 59, at 124–25. A forthcoming study, *Evaluating Environmental Equity: The Impacts of Industrial Hazards on Selected Social Groups in Allegheny County, Pennsylvania*, by Theodore Glickman at Resources for the Future, examines the distribution of locally undesirable land uses by risk and proximity. This study became available too late in the publishing process to include its results. I wish to thank Professor Vicki Been for alerting me to this study.

485 *See infra* notes 486–89 and accompanying text.

486 *See* Hamilton & Viscusi, *supra* note 424, at 576–77 & *passim*.

487 *See* Mank, *supra* note 18, at 334–37.

do arbitrary geographical tests.

One objection to using a risk assessment process to select representatives is cost. Courts have frequently upheld the EPA's rejection of site-specific variance procedures proposed by industry on the ground that they are too costly or bureaucratically cumbersome.[488] Using actual exposure assessments or even models would be more expensive than relying upon arbitrary geographical tests,[489] and there would be more possibilities for litigation regarding the amount of risk and representation. Nevertheless, Congress or a state legislature might establish criteria for when exposure assessments are required. One possibility would be to limit costs to one-half of one percent of the total cost of building a new facility or cleaning up an abandoned site, then using geographical tests as a default mechanism for selecting a committee.

A third method of defining the affected neighborhood involves statistical averages or models. The EPA or states could predict the risk of a facility having particular characteristics, such as volume and toxicity of waste, based on studies of similar facilities or on computer models of the proposed site.[490] While models are often used in environmental law,[491] using statistical averages or profiles to predict a facility's risk and basing representation on a siting or compensation committee on that prediction is a new approach.

For both individualized risk assessments and estimates based upon statistical averages, there will be difficulties in measuring carcinogenic risks and even greater difficulties in assessing the risks of noncarcinogens, especially for subpopulation groups whose dietary patterns differ considerably from the national average.[492] An agency is more likely to estimate a range of risk from a site than to provide a single number.[493] The EPA or state authorities will have to exercise their technocratic judgment as to conflicting risk assessments and in defining the geographic boundaries of the various levels of risk.

In addition, Congress or a state legislature could provide a list of desiderata to help define the relevant groups most at risk. One possibility would be to require that racial minorities living in high-risk areas have representation proportionate to their numbers in that high-risk area. Another possibility would

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[488] *See, e.g.*, Leather Indus. of Am. v. EPA, 40 F.3d 392, 405 (D.C. Cir. 1994).

[489] *See* Mank, *supra* note 18, at 334–35.

[490] *See* ROGER W. FINDLEY & DANIEL A. FARBER, CASES AND MATERIALS ON ENVIRONMENTAL LAW 23–24 (3d ed. Supp. 1993); *see also* Glen O. Robinson & Kenneth S. Abraham, *Collective Justice in Tort Law*, 78 VA. L. REV. 1481, 1490–96 (1992) (proposing use of statistical claim profiles in tort cases).

[491] *See* Mank, *supra* note 18, at 335.

[492] *See supra* notes 54, 449 and accompanying text.

[493] *See* Mank, *supra* note 18, at 332–34 (discussing risk range concept and use of "fuzzy bright line" statutes and regulations acknowledging scientific uncertainties).

be to require that at least one committee member be a racial minority if there is a certain percentage of minorities in the high-risk area. Better ways to protect the interests of all minority groups and ways more consistent with democratic theory are a cumulative voting system, in which any self-identified minority can cumulate all of its votes for one candidate,[494] and a Hare Single Transferable Vote proportional voting system.[495] This Article's proposal differs from traditional cumulative or proportional voting systems in that votes would be weighted to give more influence to high-risk residents. Congress or a state legislature might also direct the EPA or state authorities to take into account geographical boundaries such as census tracts or political subdivisions if such boundaries coincide in large part with the high-risk area and if only a

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[494] *See* GUINIER, *supra* note 72, at 14–16 & *passim*. Guinier discusses the use of supermajority rules or a minority veto as voting remedies in extreme cases of majority domination. *Id.* at 16–17, 116–17, 260 n.119. Such drastic remedies should not be considered until cumulative voting has been shown to be ineffective at representing minority interests.

[495] In a Hare Single Transferable Vote proportional voting system, voters rank the candidates in order of preference. If a candidate has more than the minimum number of votes to win under the Droop formula, her "surplus" votes are transferred to her voter's second choice. If this transfer does not result in a winner, the candidate with the fewest votes is eliminated and her votes transferred to the next available preference, excluding winning candidates. *See* Inman, *supra* note 351, at 1999–2001; Still, *supra* note 351, at 258–59. Proponents of a Single Transferable Vote proportional voting system argue that it is less open to manipulation than cumulative voting as a result of either strategic voting or the encouragement of "straw men" to waste opponents' votes. *See* Still, *supra* note 351, at 260. A party-list proportional voting system, in which each voter votes for one party or list, has certain advantages compared to a Hare Single Transferable Vote system, but has significant drawbacks in nonpartisan elections in which the minority is a racial or ethnic minority rather than a political party. *See id.* at 262. While the formation of racial parties can reduce the problems that party-list systems can cause for minorities, this Article assumes that elections for a siting committee should be nonpartisan and that the Hare Single Transferable Vote system is probably a better approach for such elections.

The Michigan Supreme Court in two old cases held that cumulative voting and single transferable voting violated the Michigan Constitution's right of each citizen to vote for all elective officers. *See* Wattles v. Upjohn, 179 N.W. 335, 335–42 (Mich. 1920) (single transferable voting); Maynard v. Board of Dist. Canvassers, 47 N.W. 756, 756–61 (Mich. 1890) (cumulative voting). Many scholars have criticized *Maynard*'s poor reasoning, and *Wattles* is probably no longer good law. *See* Bernard Grofman, *Criteria for Districting: A Social Science Perspective*, 33 UCLA L. REV. 77, 165–66 (1985). Many courts have upheld the validity of cumulative or single transferable voting. *See, e.g.*, Campbell v. Board of Educ., 310 F. Supp. 94, 95–106 (E.D.N.Y. 1970); Moore v. Election Comm'rs, 35 N.E.2d 222, 229–41 (Mass. 1941); Johnson v. City of New York, 9 N.E.2d 30, 31–38 (N.Y. 1937); Reutener v. City of Cleveland, 141 N.E. 27, 32–34 (Ohio 1923).

few persons would be excluded from electing representatives to, or serving as members of, a siting or remedy selection committee by taking into account such boundaries.

There are a number of problems in apportioning representation among those who live or own property in a high-risk area. One problem involves apportioning representation among renters, resident property owners, and nonresident property owners.[496] Professor Been states that "[r]esidents would claim that they bear the most immediate risk and injury. Landlords, however, would assert that they absorb at least some, if not all, of the tenants' damages through lower rents."[497]

For equitable reasons, health risks should take precedence over risks to property. Renters who are at high risk of developing cancer ought to have more representation than nonresidential property owners. Nonresidential property owners should have to demonstrate that they are likely to live in their homes in the future or to articulate what property damages they expect as a result of the facility.[498] If the market for rent is efficient, landlords will benefit from higher rents if more people are willing to rent in an area that hosts a facility but compensates renters. Long-term residents should receive more representation than transient residents. For example, there could be a requirement that at least one representative on the siting committee have lived in the high-risk area for at least five years.[499]

An even more difficult problem is representing future residents.[500] A compensation committee must decide what percentage of compensation will be

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[496] *See* Been, *Fairness*, *supra* note 1, at 1044 (discussing allocation of compensation among residents, property owners, and the neighborhood itself).

[497] *Id.*

[498] There is mixed evidence regarding the impact of locally undesirable land uses on neighboring property values. *See id.* at 1020–23.

[499] Proposed Superfund legislation included precatory language suggesting that it is "appropriate" for the President to include representation from "long-term residents who are members of the medical community." H.R. 3800, *supra* note 259, § 103.

[500] *See* Been, *Fairness*, *supra* note 1, at 1044. *See generally* Farber & Hemmersbaugh, *supra* note 254 (discussing problems of discount rates and intergenerational effects); Roger E. Kasperson, *Social Issues in Radioactive Waste Management: The National Experience*, *in* EQUITY ISSUES IN RADIOACTIVE WASTE MANAGEMENT 24, 50–52 (Roger E. Kasperson ed., 1983); Guy Kirsch, *Solidarity Between Generations: Intergenerational Distributional Problems in Environmental and Resource Policy*, *in* DISTRIBUTIONAL CONFLICTS IN ENVIRONMENTAL RESOURCE POLICY 381 (Allan Schnaigberg et al. eds., 1986); Edith Brown Weiss, *Our Rights and Responsibilities to Future Generations for the Environment*, 84 AM. J. INT'L L. 198 (1990); E. Joshua Rosenkranz, Note, *A Ghost of Christmas Yet to Come: Standing to Sue for Future Generations*, 1 J.L. & TECH. 67 (1986).

ex ante, ongoing, or ex post.[501] In a recent study of Superfund sites, Professors Hamilton and Viscusi found that "future risks account[ed] for over 90% of all the risk-weighted pathways for the Superfund sites in our sample. Chief among these future risks is the projection that future residents will reside on sites that are not currently residential."[502] They argue that many of these risks could be eliminated by land use restrictions preventing residential use of highly polluted sites and by containment, including fences, but that these strategies would require a change in the EPA's legislative mandate preferring long-term effectiveness and permanence in remedy selection.[503] Legislation proposed in 1994 would have allowed the EPA to take into account the likely future use of a site, whether residential or industrial, and would have established Community Working Groups of up to twenty representatives to advise the EPA on land use recommendations affecting future use.[504]

Siting boards and negotiating committees face conflicts in representing present and future interests, and typically there are no statutory or regulatory guidelines that address conflicting or multiple interests.[505] Because present residents have an incentive to seek ex ante compensation, the government should appoint trustees to represent future residents. In traditional estates and trusts law, trustees often must make difficult choices between income- and principal-producing investments in fulfilling their duty to represent the conflicting interests of both present life beneficiaries and holders of future interests.[506] Trustees should represent only future generations, and those residents currently most at risk should have the greatest weight in electing representatives to act on behalf of present interests.[507]

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[501] *See supra* part III.B.2.

[502] Hamilton & Viscusi, *supra* note 424, at 608.

[503] *See id.* at 608–09.

[504] *See* H.R. 3800, *supra* note 259, § 102 (community working groups), § 502(2) (reasonably anticipated future uses of land); Douglas A. McWilliams, Comment, *Environmental Justice and Industrial Redevelopment: Economics and Equality in Urban Revitalization*, 21 ECOLOGY L.Q. 705, 774–75 (1994) (discussing community work group proposal).

[505] *See* ENGLISH, *supra* note 270, at 73–76 (discussing fiduciary responsibility of siting boards).

[506] *See* JESSE DUKEMINIER & STANLEY M. JOHANSON, WILLS, TRUSTS, AND ESTATES 876 (4th ed. 1990) (discussing fiduciary duty of impartiality in allocating income and principal). Professor Richard Epstein argues that genetic connection usually leads parents to protect the interests of their children if the parent as a life beneficiary of a trust has the right to invade principal at the expense of the remainderpersons, her children. *See* Richard A. Epstein, *Justice Across the Generations*, 67 TEX. L. REV. 1465, 1472–74 (1989).

[507] This proposal does not address discount rates or the trustee's time horizon. Another difficult issue is the extent of the current generation's obligations to future generations.

Several environmental statutes require the EPA or other government agencies to consider future threats to human health.[508] Most notably, the National Environmental Policy Act of 1969 (NEPA) declares that "it is the continuing responsibility of the federal government to use all practicable means, consistent with other essential considerations of national policy, to [ensure] . . . that the Nation may . . . fulfill the responsibilities of each generation as trustee of the environment for succeeding generations."[509] In both the Oil Pollution Act of 1990[510] and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA),[511] the

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> [T]he current generation is not truly a trustee with a moral obligation to preserve the entire corpus for future generations. . . . [W]e think that members of the current generation are felt to have a more compelling obligation toward the next generation (and perhaps at least to young grandchildren) than to later generations.

Farber & Hemmersbaugh, *supra* note 254, at 295.

[508] The Resource Conservation and Recovery Act mentions the minimization of "present and future threat[s] to human health and the environment" in a number of provisions. *See* 42 U.S.C. § 6902(b) (stating national policy), § 6922(b) (requiring generators to certify that technology in furtherance of this policy is being employed), § 6925(h)(2) (likewise conditioning permit issuance on use of compatible technologies) (1988); Spear, *supra* note 425, at 118–19 n.5 (1993). In defining the terms "remedy" and "remedial action," the Comprehensive Environmental Response, Compensation, and Liability Act requires that the chosen course of action "prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment." 42 U.S.C. § 9601(24) (1988); Spear, *supra* note 425, at 119 n.9 & *passim*. Title IV of the Clean Air Act, which addresses acid deposition, states that "current and future generations of Americans will be adversely affected by delaying measures to remedy the problem." 42 U.S.C. § 7651(a)(5) (Supp. V 1993). The Nuclear Waste Act states that "high-level radioactive waste and spent nuclear fuel have become major subjects of public concern, and appropriate precautions must be taken to ensure that such waste and spent fuel do not adversely affect the public health and safety and the environment for this or future generations." *Id.* § 10131(a)(7).

[509] *Id.* § 4331(b); *see* Gerald M. Levine, *The Rhetoric of Public Expectation: An Enquiry into the Concepts of Responsiveness and Responsibility Under the Environmental Laws*, 8 PACE ENVTL. L. REV. 389, 414–16 (1991) (discussing trustee provision in NEPA); Timothy P. Brady, Comment, *"But Most of It Belongs to Those Yet to Be Born:" The Public Trust Doctrine, NEPA, and the Stewardship Ethic*, 17 B.C. ENVTL. AFF. L. REV. 621, 644–45 (1990) (arguing NEPA has failed to incorporate public trust doctrine and is inadequate to protect future generations).

[510] 33 U.S.C. § 2706(b) (Supp. V 1993). *See generally* Symposium, *Oil Pollution Act Rulemaking*, 45 BAYLOR L. REV. 215 (1993).

[511] 42 U.S.C. § 9607(a)(4)(C) (1988). *See generally* Anthony R. Chase, *Remedying CERCLA's Natural Resource Damages Provision: Incorporation of the Public Trust Doctrine*

President, or the authorized representative of any state, Indian tribe, or foreign government, may designate trustees to present a claim and recover damages to compensate for harm to natural resources. In theory, trustees should protect environmental resources for future generations,[512] but both the Oil Pollution Act and CERCLA fail to specify how trustees should spend recovered damages in the future or where the money should be kept in the interim.[513] NEPA's provisions regarding the rights of future generations are purely procedural and lack any substantive power.[514]

A percentage of the seats on a Community Negotiation Compensation Committee should be assigned to government trustees whose sole purpose is to represent future generations.[515] Trustees should distinguish between those who will live near a facility while it is operating and those who will reside there only after the facility closes. Instead of making a lump sum payment to residents present when a facility is opened, an ongoing compensation plan could require annual payments to those residents present on a certain date, perhaps including a pro rata system for those present only part of a year.[516] To protect residents after a facility is closed, a developer could create an ex post trust fund or put up a bond to address future issues resulting from eventual closure of the site, such as post-closure monitoring or implementation of institutional controls including signs, a fence, or local land use regulations.[517]

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into Natural Resources Damage Actions, 11 VA. ENVTL. L.J. 353 (1992); Andrew J. Simons & James M. Wicks, *Natural Resources Damages Under CERCLA: Here They Come, Ready or Not*, 63 ST. JOHN'S L. REV. 801 (1989).

512 *See* Levine, *supra* note 509, at 414–16.

513 Chase, *supra* note 511, at 380 (discussing CERCLA).

514 *See* Brady, *supra* note 509, at 643–46.

515 The number or percentage of seats that ought to be assigned raises a number of complex questions related to the discounting of future harms or benefits. *See generally* Farber & Hemmersbaugh, *supra* note 254. Congress or a state legislature could mandate a fixed percentage or number of seats, or delegate this task to an administrative agency empowered to consider the question of discount rates.

516 Tooele County, Utah receives $2,000,000 in annual "mitigation fees," which have allowed the county to freeze its property taxes. Gerrard, *supra* note 75, at 1161. Efforts in several states to use ongoing compensation to convince residents to accept low-level radioactive waste facilities have failed. *See* Been, *supra* note 77, at 803–08.

517 Owners of hazardous waste facilities must set aside enough resources to assure site safety for 30 years after closure. 40 C.F.R. § 264.117(a)(1) (1994). *See generally* Bailey, *supra* note 75, at B3. The recent decline in demand for hazardous waste disposal has led to declining profits in the industry and raised questions about whether firms will be able to survive to fulfill postclosure requirements. Some states are requiring operators to put cash into trust funds to pay for postclosure monitoring. Bailey, *supra* note 75, at B3; *see also* Black, *supra* note 186, at 584 (criticizing current financial guarantee requirements for hazardous waste operators).

There is evidence that current financial responsibility requirements for hazardous waste operators are inadequate.[518] Efforts to create long-term repositories for high-level radioactive waste raise issues about our society's ability to establish institutional controls for centuries or millennia.[519] Ultimately, there is no perfect way to allocate seats or votes among renters and property owners, long-term and short-term residents, and especially among present and future residents, but a more representative siting system should at least take such factors into account.

There are important distributional issues concerning which citizens and governmental bodies in a community should benefit from compensation. Negotiation committees should have the authority to negotiate compensation from developers that is paid either directly by the developer or indirectly through a governmental body to mitigate the harms caused to individual residents. There would have to be some guidelines to prevent members of the committee from simply rewarding themselves or their friends, and to protect future residents. Compensation should be subject to public disclosure and debate, and to review by an administrative agency and the courts.

Remedial and preventive compensation should take precedence over simply providing incentives to accept a facility. It is more important to provide remedial compensation to persons who suffer actual health or property damage from a facility than to give every person in a host community $100 per year as an incentive to vote in favor of accepting the facility. The choice between providing remedial compensation to those who have suffered harm and using compensation to prevent future harms raises more complex issues. Ideally, a developer should compensate every person actually harmed, but the long latency periods of many diseases and the fact that there are many possible causes of cancer and other diseases make it difficult to determine whether the facility is a significant causal factor. Accordingly, it may make sense to concentrate on preventive measures that reduce the harmfulness of the facility.

Another issue is whether a compensation scheme should consider the employment or other in-kind benefits that a resident receives from a facility in reducing the amount of compensation.[520] In principle, a resident should not receive double benefits from a facility, such as both employment and compensation for living near her employer. On the other hand, an employee might argue that the benefits of working for the facility should be discounted by the possibility that the employee could obtain alternative employment and

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[518] *See supra* notes 186, 517 and accompanying text.

[519] A number of critics have questioned whether the Department of Energy's attempt to design a 10,000-year "keep out" sign at radioactive depositories is practical when no human institution has lasted that long. *See* Gerrard, *supra* note 75, at 1133.

[520] *See* Been, *Fairness*, *supra* note 1, at 1044.

then also receive compensation. For instance, if an employee makes $25,000 per year working at a hazardous waste facility but could make $24,500 per year at an alternate job, then the actual benefit of the facility to the employee is only $500 per year and not $25,000. Because the complexities of assessing an employee's substitute employment opportunities may outweigh the advantages of considering the benefits of employment, it may be better not to consider employment benefits in determining how much compensation a resident should receive from a facility owner or operator.

4. *Local Politicians and Political Residents*

The biggest potential losers from a scheme of risk-based compensation committees would be state and local politicians, who today normally have the greatest say in negotiating compensation from developers of risky projects, and residents of host communities who would benefit from compensation even if they were at low or no risk from the facility.[521] Because it is elected officials who bear much of the responsibility for the decisions that have created siting disparities, reducing their authority is a plausible strategy for reducing such disparities.[522] Even if elected officials are currently the best suited to make siting and compensation decisions, it may be better to allow others to negotiate with developers because many people associate elected officials with past discriminatory practices.[523] Furthermore, elected officials may not be representative of the public on the issues raised by the compensation proposal.[524]

To the extent that it is politically feasible, the Community Negotiation and Compensation Committees should supplant these politicians. Of course, there will always be some type of politics involved in any system of representation, but this proposal would at least reduce the role of elected politicians and increase the influence of those at greatest risk. Many politicians would be more than happy to dump divisive siting issues like a hot potato. Some politicians have lost re-election as a result of taking a stand on controversial siting issues.[525]

Residents of a state or municipality who elected local or state politicians or

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[521] *See id.* at 1045 (noting that state or local officials generally conduct siting compensation negotiations).

[522] *See id.*

[523] *See id.*

[524] *See id.*; ENGLISH, *supra* note 270, at 76, 138.

[525] *See* Gerrard, *supra* note 75, at 1052 n.9 (citing sources describing incumbents in Nebraska and Nevada who were defeated largely as a result of their positions on siting issues).

who have the right to vote in a referendum approving a site should lose power to the extent that the project does not pose a risk to them. Arguably, low-risk residents who receive compensation in excess of their harm from the facility are engaging in rent seeking, in the language of public choice theory,[526] at the expense of higher-risk residents or possibly the facility owner. Legislatures should reduce the political power of low-risk residents to give more power to endangered neighbors, but it may be difficult to accomplish this equitable goal if low-risk residents are well represented in the legislature. Low-risk residents should not have veto power over needed facilities if high-risk residents are willing to accept a facility. For example, the residents in Nevada who bear little or no risk should not decide whether a particular locality such as Nye County, the home of Yucca Mountain, ought to accept a high-level radioactive waste facility that is needed by the nation if local residents are willing to accept the risk, unless the state as a whole will bear substantial costs or risks.[527]

There are important equitable reasons for giving less money and authority to states, local governments, or individuals that do not bear significant risks from building a proposed facility or cleaning up an abandoned one. Compensation may be used by a state or municipality for such beneficial purposes as "tax relief, new schools and hospitals, and more police and teachers."[528] To the extent that this Article's proposal redirects more money to those neighbors at greatest risk, there will be less money for general municipal or state improvement projects. It is fairest, however, to compensate those who are actually at risk. Comprehensive property or income tax measures are a better way to raise revenues than is giving compensation to an entire state or municipality for a project that may place risks on only a few people within that political division. It is even more unfair when states or communities gain compensation for projects that cause significant externalities for residents of neighboring communities, states, or even foreign nations.[529] A risk-based representation system is fairer than relying upon existing political subdivisions that do not reflect the actual distribution of risks from a site.

5. *Regional Concerns*

Commentators have often argued in favor of regional political solutions to

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[526] *See supra* notes 230–31 and accompanying text.

[527] *See* Gerrard, *supra* note 75, at 1161–62 ("Many residents of Nye County, Nevada, the home of Yucca Mountain, support the construction of [such a facility], but the state has vigorously fought the proposal.").

[528] Gerrard, *supra* note 75, at 1199.

[529] *See supra* note 150 and accompanying text; *infra* notes 530–34, 543–44 and accompanying text.

social or environmental problems because states and municipalities tend to site polluting facilities on their boundaries, passing external costs on to other communities.[530] In an earlier article, this author noted the regional nature of pollution from waste disposal facilities and argued that "surrounding communities should have a greater role in negotiating compensation."[531] Subsequently, Michael Wheeler discussed the need for regional siting negotiations.[532] This Article's proposed risk-based siting committee differs from previous proposals by ignoring political subdivisions to the extent possible and allocating representation based on the risk that a facility presents to a group of persons rather than on where they live. Regional residents who do not live in the political subdivision hosting the facility would gain or lose power depending upon the actual risk posed by the site to them.

Pollution problems often create externalities or spillover effects that do not respect political boundaries.[533] Previous efforts to deal with interstate air pollution have not been effective because the EPA has been too reluctant to override political subdivisions for the sake of less pollution.[534] Thus, it is important to give more representation to regional residents who are affected by significant spillover effects. Regional residents who are at little risk from a project are often the most vociferous and best organized, and such residents would lose influence under the proposal.[535]

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[530] *See supra* note 150 and accompanying text; *infra* notes 531–34, 543–44 and accompanying text.

[531] Mank, *supra* note 79, at 284. The Massachusetts negotiated compensation statute permits a community that "hosts" a new facility to grant surrounding communities a role in negotiations and possibly in compensation. Under the Massachusetts administrative code, the chief executive officer of a host community of a hazardous waste facility can invite up to four people from abutting communities to be members of a local assessment committee. *See* MASS. REGS. CODE, tit. 990, § 8.02(1)(g) (1987 & Supp. 1993); Mank, *supra,* note 79, at 279 n.231, 284.

[532] *See* Wheeler, *supra* note 214, at 284–88.

[533] *See* Mank, *supra* note 172, at 784–86.

[534] *See* FINDLEY & FARBER, *supra* note 490, at 372–75 (3d ed. 1991) (discussing the failure of 1970 Clean Air Act §§ 110(a)(2)(E) and 126 to address interstate air pollution and judicial deference to the EPA, which approved state implementation plans unlikely to resolve interstate pollution problems).

[535] Much of the opposition to the siting of a high-level radioactive waste facility at Yucca Mountain comes from outside Nye County, the location of the proposed facility. *See* Gerrard, *supra* note 75, at 1150, 1161–62. The Department of Energy has had as much trouble regarding the cleanup of the Hanford nuclear facility from Seattle and Portland groups as from local residents. Interview with John S. Applegate, chairperson of the Citizens Task Force for cleaning up the Fernald, Ohio Department of Energy nuclear facility, in Cincinnati, Ohio (Aug. 10, 1994).

Local sovereignty in America has often resulted in an exodus of middle class people and businesses from the problems of the city into suburbs and thereby "segregated many of America's metropolitan areas into 'two nations': rich and poor, white and black, expanding and contracting."[536] Professor Jerry Frug has argued that new forms of regional organization should be created to address this problem and proposed that a regional legislature, with representatives elected from neighborhoods rather than from existing political subdivisions, should decide whether a locality may exclude a waste dump that the region needs.[537] Even a regional government's interests, however, would need some broader check.[538]

While Frug's proposal for regional legislatures remains a dream, three models of regional collaboration have been used with some degree of success: (1) special fora that allow municipalities to coordinate regional policies; (2) systems that allow communities to shift regional mandates; and (3) pooling arrangements that enable communities to share the costs and benefits of development more equitably.[539] Connecticut has adopted voluntary policy fora in which central cities and their suburban neighbors can negotiate "fair share housing compacts" regarding low-income housing.[540] New Jersey has created an administrative agency to determine each municipality's low-income housing obligations but allows authorized communities to lower their affordable housing burden by up to one-half if they could voluntarily negotiate with other municipalities to absorb more than their quota.[541] Since 1971, St. Paul and Minneapolis, Minnesota have participated in a seven-county regional tax-base-sharing area, which is essentially a pooling arrangement designed to reduce fiscal disparities between the two cities and the surrounding suburbs. Despite extensive discussion of the subject by academics and planners, no other major metropolitan area has adopted such an approach or genuine regional power sharing.[542]

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[536] Jerry Frug, *Decentering Decentralization*, 60 U. CHI. L. REV. 253, 256 (1993).

[537] *See id.* at 295–97.

[538] "As Foucault suggests, fear of sovereign power is so common that it is routinely converted into a subjected sovereignty, a sovereignty limited by some other sovereignty." *Id.* at 255 (discussing Michel Foucault, LANGUAGE, COUNTER-MEMORY, PRACTICE 221 (1977)).

[539] Wheeler, *supra* note 214, at 284.

[540] *See id.* at 284–85.

[541] *See* N.J. STAT. ANN. §§ 52:27D-305(a), -312(a) (West 1986 & Supp. 1994); Wheeler, *supra* note 216, at 285–86.

[542] *See* Mank, *supra* note 80, at 284–85 n.259 (citing sources discussing regional tax-based sharing); Wheeler, *supra* note 214, at 286.

Wheeler proposes that all communities in a region be assessed a NIMBY tax, the proceeds of which would compensate communities that agreed to take responsibility for treatment plants, prisons, or other needed facilities.[543] His proposal is interesting, but does not address who should serve on the compensation negotiation committee or direct compensation to those individuals at greatest risk.

A radical transformation to regional government is not necessary. Siting committee representation should be based on risk even if affected individuals live outside the host community's political boundaries. This approach could be implemented by using either geographical boundaries such as a two-mile radius or site-specific exposure assessments or models. Either way, nearby regional residents would have a greater say. Those who would suffer direct economic injury from a physical environmental effect of a proposed site should have a say in selecting the community negotiating committee, but indirect and tangential economic injuries should be ignored.[544]

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[543] *See* Wheeler, *supra* note 214, at 286–87.

[544] *See* Been, *supra* note 77, at 826. To answer a question posed by Professor Been, in selecting a siting committee, not much weight should be given to a ski resort 20 miles away that fears a facility might stigmatize the area and discourage tourism. Similarly, the Army Corps of Engineers may not deny a wetlands permit under § 404 of the Clean Water Act because of indirect socioeconomic impacts on a neighboring city unrelated to the direct physical impacts of a proposed suburban mall on wetlands. *See* Mall Properties, Inc. v. Marsh, 672 F. Supp. 561, 566–67 (D. Mass. 1987) (holding that Army Corps of Engineers may not deny wetlands permit based upon indirect socioeconomic impacts of suburban mall on merchants in nearby city), *appeal dismissed*, 841 F.2d 440 (1st Cir.), *cert. denied sub nom.* City of Newhaven v. Marsh, 488 U.S. 848 (1988). The National Environmental Policy Act distinguishes between direct socioeconomic impacts proximately caused by physical effects, which warrant discussion in an Environmental Impact Statement, and tangential social impacts, which may be omitted. *See* 42 U.S.C. §§ 4321–4370a; Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 773–77 (1983) (holding that psychological fears of nuclear accident at Three Mile Island are not a significant impact warranting an Environmental Impact Statement because there is not a reasonably close causal connection between a change in the physical environment and effect at issue); Glass Packaging Inst. v. Regan, 737 F.2d 1083, 1091–92 (D.C. Cir.) (holding that potential for increased tampering if agency adopts regulations allowing plastic liquor bottles is not an environmental consequence under National Environmental Policy Act), *cert. denied*, 469 U.S. 1035 (1984).

State and local governments should have a say based upon the actual risks or costs posed by a siting or remedy selection issue. This proposal would reduce the stateline problem discussed above and more accurately internalize the externalities caused by a project. Most likely, states or municipalities would fight any attempt to weaken their siting or remedy selection authority. The environmental justice movement, however, may force Congress to rethink the existing environmental decisionmaking framework.

VII. CONCLUSION

Because the central purpose of the Equal Protection Clause is to provide an adequate opportunity for political participation and representation to minority groups rather than to guarantee substantive fairness,[545] Congress and state legislatures should adopt this Article's proposal for enhancing the ability of those residents most at risk, including racial minorities, to select a community's siting negotiation and compensation committee rather than expand the ability of minority groups to bring disparate impact suits alleging substantive unfairness. Siting discrimination suits at best can address only inequities in the initial siting decision. A compensation process allows a community to negotiate with a developer to provide ex ante compensation to redress harms resulting from the initial siting decision, and also to provide ongoing or ex post compensation to compensate future residents. In the absence of intentional discrimination, a compensation process that adequately protects the ability of minorities to participate can address a broader range of harms than can siting discrimination suits and can do so without unfairly stigmatizing government officials or developers.[546]

This Article proposes a risk-based representation and compensation system in which the EPA or state agency would use its technocratic expertise to set upper limits on risk, establish minimum compensation, and determine representation on a risk-based negotiation committee. A weighted cumulative or proportional voting system might be used to enhance the ability of racial and other minorities to gain representation on the siting committee. The local risk-

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[545] *See supra* note 10 and accompanying text.

[546] While developers and government officials can reasonably expect to receive criticism for their siting decisions from various members of the public or the media, courts should not conclude that officials or developers have harmed minority groups unless one can reasonably infer conscious bias or that the siting process unreasonably excludes minorities from the decisionmaking process. If minorities are adequately represented and have reasonable access to information about a project, a siting committee ought to be able to place a project in a minority community unless there is an unreasonable overall risk to that community as determined by the EPA or a state agency.

based committees would determine whether to accept a proposed facility and would negotiate the amount and distribution of compensation. There are a number of complex issues in allocating representation among future and present residents, renters and property owners, transient and long-term residents, and in selecting among remedial, preventive, and incentive remedies. These issues should be confronted rather than ignored because of a misplaced focus on discrimination suits and judicial scrutiny of substantive results.[547]

[547] It is important that the committee determine a fair amount of compensation because its settlement with the developer should normally foreclose future litigation unless the developer withheld important information or significantly changes the scope of its operations. *Cf.* Boomer v. Atlantic Cement Co., 257 N.E.2d 870, 871–75 (N.Y. 1970) (granting injunction against defendant but allowing defendant to pay permanent damages to private plaintiffs that will foreclose future litigation by those plaintiffs); *see also* Daniel A. Farber, *Reassessing* Boomer*: Justice, Efficiency, and Nuisance Law, in* PROPERTY LAW AND LEGAL EDUCATION 7, 14–19 (Peter Hay & Michael H. Hoeflich eds., 1988) (criticizing *Boomer* court's damages approach and arguing for injunctive remedies).