Advancing Environmental Justice Norms

Clifford Rechtschaffen[*]

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[*] Professor of Law, Golden Gate University School of Law. Thanks to Rebecca Robbins for excellent research assistance, and to Eileen Gauna and Karen Kramer for their helpful comments on earlier drafts of this article. Thanks also to Professor Holly Doremus, the U.C. Davis Law Review, Environs, and the U.C. Davis Environmental Law Society for inviting me to participate in this symposium.

INTRODUCTION

The theme of this symposium is the relationship between environmental ethics and public policy. Others have discussed whether a unique set of ethical principles underlies environmental law, and the extent to which environmental ethics are explicitly referred to in judicial decisions or legislative debates.[1] This article focuses on one important vehicle for giving concrete content to ethical norms in the implementation of environmental law and policy — the movement to achieve environmental justice.

As I argue below, in many ways the central premise of the environmental justice movement is to provide a stronger ethical direction for environmental law. Viewed another way, the movement represents an ethical challenge to the existing environmental regulation paradigm.

Part I of this Article provides brief background on the environmental justice movement. Part II generally describes some of the challenges that environmental justice principles pose for the traditional environmental decision-making paradigm. Part III presents several specific examples of how environmental justice norms can be incorporated to improve the ethical outcomes of traditional agency decision making.

I. WHAT IS ENVIRONMENTAL JUSTICE?

Broadly speaking, environmental justice refers to a political and social movement to address the disparate distribution of environmental harms and benefits in our society, and to reform the processes of environmental decision making so that all affected communities have a right to meaningful participation. Its roots lie in diverse political efforts: the civil rights movement, organizing efforts of Native Americans and labor, the traditional environmental movement, and perhaps most importantly, the local grass roots anti-toxics movement of the 1980s. Local in origin, the movement grew to national prominence in the late 1980s and early 1990s as local organizations formed regional environmental justice networks, the empirical evidence of environmental injustice mounted, and activists came together in 1991 for the First National People of Color Leadership Summit.

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[1] Alyson Flournoy, *Building an Environmental Ethic from the Ground Up*, 37 U.C. DAVIS L. REV. 53, *simultaneously published in* 27 ENVIRONS ENVTL. L. & POL'Y J. 53; Christopher Stone, *Do Morals Matter? The Influence of Ethics on Courts and Congress in Shaping U.S. Environmental Policies*, 37 U.C. DAVIS L. REV. 13, *simultaneously published in* 27 ENVIRONS ENVTL. L. & POL'Y J. 13 (2003).

Numerous studies show that a variety of environmental harms are disproportionately located in low-income communities and communities of color. These include hazardous waste Treatment, Storage and Disposal Facilities (TSDFs), air pollutants, water pollutants, air toxics, facilities that report under the Toxic Release Inventory (TRI) program, lead-based paint hazards, pesticide exposure, occupational environmental hazards, and others.[2] Some emerging literature likewise has documented disparities in environmental benefits, including parks and open space, transportation funding, and enforcement of environmental laws.[3] While arguments persist over whether these disparities are the result of racial discrimination or economic forces, race consistently has been shown to be a central explanatory factor (although not the only one). Even when controlling for political, economic, and other factors, studies show that race is a more important factor than income. The studies are generally consistent over time, whether they were conducted before 1992 (and thus typically analyzing just race and class) or since then (and thus typically employing more sophisticated multivariate models).[4] While some commentators have suggested that the inequitable distribution of noxious facilities is the result of demographic changes that occur after unwanted land uses are sited in communities,[5] the research to date provides little empirical support for

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[2] *See generally* LUKE COLE & SHEILA FOSTER, FROM THE GROUND UP: ENVIRONMENTAL RACISM AND THE RISE OF THE ENVIRONMENTAL JUSTICE MOVEMENT 167-183 (2000) (providing annotated bibliography of studies that document and describe disproportionate impact of environmental hazards by race and income); CLIFFORD RECHTSCHAFFEN & EILEEN GAUNA, ENVIRONMENTAL JUSTICE: LAW, POLICY AND REGULATION 55-76 (2002) (examining evidence on issue of environmental discrimination).

[3] *See* RECHTSCHAFFEN & GAUNA, *supra* note 2, at 78-85 (containing excerpts that look at distribution of transportation funding, open space, and access to waterfront).

[4] JAMES P. LESTER ET AL., ENVIRONMENTAL INJUSTICE IN THE UNITED STATES: MYTHS AND REALITIES 13-14 (2000). The authors also conducted their own very detailed study of a range of environmental harms at different levels of analysis: the state, county, and city level. The harms evaluated include air pollution (two measures), hazardous waste, solid waste, toxic waste, water pollution (two measures), releases of Toxic Release Inventory chemicals, and releases of lead. Their analysis shows a strong link between the percent population that is African American and the extent of environmental harms, and a significant, if less pronounced, link between the percent population that is Hispanic and environmental harms. Social class, as measured by income and education, is less significant than race as a predictor of where hazards are located. By contrast, the researchers found that higher levels of political mobilization did not lead to lower levels of environmental harms. *Id.* at 149-51.

[5] Most prominently, Professor Vicki Been suggested that the poor and racial minorities might move to neighborhoods that host a LULU (locally undesirable land use) because those neighborhoods offered the cheapest available housing, while the siting of a LULU may decrease the value of a neighborhood's property and the perceived quality of

this theory. [6]

Since the early 1990s, the environmental justice movement has influenced the way many policymakers, academics, regulated entities, affected communities, and others view environmental law and policy. In 1994, President Clinton issued an executive order mandating that all federal agencies make achieving environmental justice part of their mission. California adopted legislation in 1999 requiring similar actions by state environmental agencies. Numerous other states and localities have adopted environmental justice policies and guidances, or have otherwise sought to consider environmental justice principles in carrying out their functions.

What are some of the ethical norms and principles underlying the environmental justice movement? The broadest, most aspirational principles are those known as the *Principles of Environmental Justice*,[7] adopted collectively by several hundred activists at the First National People of Color Leadership Summit. Among other things, the *Principles* declare the following:

> The right of all species to be free from ecological destruction.[8]
>
> The right of environmental self-determination, and the full participation of all peoples at all levels of decision making.[9]

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life in a neighborhood, causing those who can afford to move to do so. Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383, 1385 (1994).

[6] In Professor Been's own nationwide study of hazardous waste facilities, for example, she found that neighborhoods surrounding the facilities did not become poorer or more heavily minority after the siting occurred there. Vicki Been & Francis Gupta, *Coming to the Nuisance or Going to the Barrios? A Longitudinal Analysis of Environmental Justice Claims*, 24 ECOLOGY L.Q. 1, 27-30 (1997). Another nationwide study of hazardous waste facilities reached similar results. *See also* John Michael Oakes et al., *A Longitudinal Analysis of Environmental Equity in Communities with Hazardous Waste Facilities*, 25 SOC. SCI. RES. 125, 147 (1996) (suggesting that placement of TSDFs have not increased percentage of minority composition in communities surrounding them).

[7] *Principles of Environmental Justice*, *in* PROCEEDINGS: THE FIRST NATIONAL PEOPLE OF COLOR ENVIRONMENTAL LEADERSHIP SUMMIT xiii, xiii (Oct. 24-27, 1991).

[8] *See id.* ("1. Environmental justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.").

[9] *See id.* ("5. Environmental justice affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples.... 7. Environmental justice demands the right to participate as equal partners at every level of decision making including needs assessment, planning, implementation, enforcement and evaluation.").

> That past and current producers of pollutants should be held strictly accountable for cleaning up contamination that they have caused.[10]
>
> That principles of informed consent should be strictly enforced.[11]
>
> The right of all workers to a safe and healthy work environment, without being forced to choose between an unsafe livelihood and unemployment.[12]
>
> The right to a healthy natural world for future generations, and a sustainable planet for humans and other living things.[13]

A more academic approach to understanding the ethical principles underlying environmental justice has been developed by Professor Robert Kuehn.[14] In his "taxonomy of environmental justice," Professor Kuehn identifies four types of "justice" that are embodied in environmental justice: distributive justice, procedural justice, corrective justice, and social justice.[15]

Distributive justice refers to the equitable distribution of environmental burdens from risk-producing facilities and environmental benefits from government and private programs.[16] This largely

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[10] *See id.* ("6. Environmental justice demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.").

[11] *See id.* at xiv ("13. Environmental justice calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.").

[12] *See id.* ("8. Environmental justice affirms the right of all workers to a safe and healthy work environment, without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.").

[13] *See id.* at xiii, xiv ("3. Environmental justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things .... 17. Environmental justice requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible, and make the conscious decision to challenge and reprioritize our lifestyles to insure the health of the natural world for present and future generations.").

[14] Robert R. Kuehn, *A Taxonomy of Environmental Justice*, 30 ENVTL. L. REP. 10,681 (2000).

[15] *Id.* at 10,681.

[16] Professor Shrader-Frechette argues that geographic considerations alone are "not morally relevant grounds for determining who ought to receive disproportionate environmental impacts .... There is no morally relevant reason (e.g., merit, need) that where people live should provide sufficient grounds for discriminating against them. Such

geographic conception is the one that probably comes to most people's minds when they hear the term "environmental justice." It is a misconception, however, that a primary goal of the environmental justice movement is to geographically redistribute environmentally hazardous facilities. A more accurate understanding of the desire for distributive justice is that if the burdens of harmful land uses are more equitably shared, this will create greater pressure to reduce pollution throughout society.

Procedural justice refers to fairness in the decision-making process, including the right of all members of the public to meaningful participation in all aspects of agency decisions.[17]

Corrective justice refers to fairness in punishment, including the duty to compensate losses for which one is responsible, and to clean up contamination that one has caused.

Social justice encompasses the idea of a more just ordering of society, in which all persons have their needs more fully met. In this view, environmental justice is part and parcel of the larger problems of racial, social, and economic injustice facing heavily burdened communities. Advocates note that the same underlying racial, political, and economic factors that cause disproportionate environmental harms also are responsible for poor housing, poor quality schools, lack of employment opportunities, and other problems in many communities. In turn, the presence of risky and undesirable land uses undermines neighborhood health and vitality, and leads to economic degradation.

Policymakers and legislators have sought to capture these principles in specific definitions and mandates. President Clinton's Executive Order on Environmental Justice (Exec. Order No. 12,898) directs each federal agency "[t]o greatest extent practicable and permitted by law . . . [to] make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."[18]

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discrimination instead seems to serve the interests of expediency, of using humans as *means* to some commercial or industrial *end*." KRISTIN SHRADER-FRECHETTE, ENVIRONMENTAL JUSTICE: CREATING EQUALITY, RECLAIMING DEMOCRACY 33 (2002) (emphasis in original).

[17] Professor Kaswan terms this prong of justice "political justice" because, in her view, the issue goes beyond the question of procedure to the substance of the deliberative process. That is, procedures that merely ensure the fair participation of all groups in the decision-making process, but that do not necessarily lead to decisions that are more responsive to public opinion, do not achieve what she describes as "political justice." Alice Kaswan, *Distributive Justice and the Environment*, 81 N.C. L. REV. 1031, 1045-47 (2003).

[18] Exec. Order No. 12898, 59 Fed. Reg. 7,629 (Feb. 16, 1994).

EPA also has defined environmental justice as:

> [T]he fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or a socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected. [19]

At the state level, California has adopted legislation mandating that the California Environmental Protection Agency (Cal/EPA) promote the enforcement of health and environmental statutes and conduct its programs and policies "in a manner that ensures the fair treatment of people of all races, cultures, and income levels."[20] Cal/EPA is also required to develop a model environmental justice mission statement for its constituent departments.[21] New York's environmental agency recently adopted a policy enhancing public participation (and other) requirements in the permitting process for projects in environmental justice areas. The policy also incorporates environmental justice

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[19] *See* U.S. ENVTL. PROT. AGENCY, ENVIRONMENTAL JUSTICE, *available at* http://www.epa.gov/compliance/environmentaljustice/index.html (last visited Sept. 26, 2003). In a 2001 memo reaffirming EPA's commitment to environmental justice, EPA Administrator Christine Whitman elaborated that "[e]nvironmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards *and* equal access to the decision-making process to have a healthy environment in which to live, learn, and work." Memoranda from Christine Whitman on EPA's Commitment to Environmental Justice (August 9, 2001) (emphasis in original), *available at* http://www.epa.gov/Compliance/resources/policies/ej/admin_ej_commit_letter_081401.pdf (last visited Sept. 26, 2003).

[20] CAL. PUB. RES. CODE § 71110(b), (c) (West 2003).

[21] *Id.* § 71111. The statute defines environmental justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." CAL. GOV'T. CODE § 65040.12(e) (West 2003).

concerns into some aspects of the agency's enforcement program, grants program and public participation provisions. Closely following EPA's definition, the policy defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."[22] A number of other states have adopted similar definitions in their environmental justice policies.[23]

As is clear from the above, environmental justice norms have not only attracted significant national attention, but they have also been recognized by policymakers in the form of legislative enactments, agency policies, and formal agency definitions. The next challenge is to translate these admittedly broad and aspirational principles into concrete agency actions.

II. HOW ENVIRONMENTAL JUSTICE POSES CHALLENGES TO ENVIRONMENTAL DECISION MAKING

In large measure, the traditional environmental regulatory scheme has ignored distributional issues.[24] Rather, most environmental regulation has been premised on largely utilitarian principles of achieving the

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[22] The policy provides that "fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies." *See* N.Y. STATE DEP'T OF ENVTL. CONSERVATION, CP-29 ENVIRONMENTAL JUSTICE AND PERMITTING (March 19, 2003), *available at* http://www.dec.state.ny.us/website/ej/ejpolicy.pdf (last visited Sept. 26, 2003).

[23] *See, e.g.*, INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, ENVIRONMENTAL JUSTICE STRATEGIC PLAN (2001) (providing in its Vision Statement, "No citizens or communities of the State of Indiana, regardless of race, color, national origin, income, or geographic location, will bear a disproportionate share of the risk and consequences of environmental pollution or will be denied equal access to environmental benefits."); RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, DRAFT ENVIRONMENTAL EQUITY POLICY (Jan. 7, 2001) (providing "[f]or purposes of this policy, environmental equity means that no person or particular group of persons suffers disproportionately from environmental degradation or intentional discrimination, or is denied enjoyment of a fair share of environmental improvements."), *cited in* Nicholas Targ, *Three Paths to the Environmental Justice Goal: Social Capital, Going Beyond Meaningful Public Participation* (on file with author). According to Targ, over the past decade thirty-five states have established authorities or undertaken initiatives of one kind or another to address environmental justice issues. *Id.*

[24] *See, e.g.*, Eileen Gauna, *The Environmental Justice Misfit: Public Participation and the Paradigm Paradox*, 17 STAN. ENVTL. L.J. 3, 9-11 (1998); Richard J. Lazarus, *Pursuing "Environmental Justice": The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 787, 792-96, 811-22 (1993).

greatest good for the greatest number in society. Environmental law has not been overtly concerned with whether the distribution of environmental harms is fair, whether there is an equitable match between individuals who bear the costs and those who reap the benefits, or whether it is unjust to impose incremental risks on populations already bearing disproportionate environmental and health risks (since few regulatory regimes mandate consideration of cumulative risk).

For example, as Professor Eileen Gauna argues, the "interest representation" or "pluralism" model that characterizes most administrative decision making treats all the interests (preferences) of participating stakeholders as equal. Those advocating protection of the environment, or fairness in who bears the risks of a proposed action, are not entitled to any special consideration. The task of the agency regulator is to ascertain what the collectively expressed preferences of stakeholders are in what amounts to a surrogate legislative process.[25]

Moreover, important trends in environmental regulation have the potential to exacerbate environmental inequities. One is the growing popularity of market-based incentives, including tradeable emission credits, as a means to promote more cost-effective regulation. EPA, for instance, recently adopted a trading policy for water pollutant discharges.[26] Tradeable credits also are the centerpiece of the Bush Administration's "Clear Skies" proposal for regulating power plant emissions.[27] Few if any trading systems explicitly protect against the creation of hot spots, which, when they occur are likely to disparately burden low-income communities and communities of color.[28] Most problematic are the trading programs that allow trading between mobile and stationary sources of air pollution, and cross-pollutant trading. For example, Rule 1610, the so-called "car-scrapping program" in the South Coast Air Quality Management District, allowed stationary source polluters to avoid pollution-control equipment by purchasing pollution credits generated by destroying old, high-polluting cars. Experience with the program showed that while the stationary sources that purchased credits and avoided pollution controls were located in

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[25] Gauna, *The Environmental Justice Misfit*, *supra* note 24 at 19-26.

[26] U.S. ENVTL. PROT. AGENCY, FINAL WATER QUALITY TRADING POLICY (Jan. 13, 2003), *available at* http://www.epa.gov/owow/watershed/trading/finalpolicy2003.html (last updated Apr. 4, 2003).

[27] *See* U.S. ENVTL. PROT. AGENCY, CLEAR SKIES, *available at* http://www.epa.gov/clearskies/ (last updated Sept. 8, 2003).

[28] *See* Stephen M. Johnson, *Economics vs. Equity: Do Market-Based Environmental Reforms Exacerbate Environmental Injustice?*, 56 WASH. & LEE L. REV. 111, 129-131 (Winter 1999).

communities that were overwhelmingly people of color, the benefits from car scrapping were felt over the entire metropolitan Los Angeles region, which is only 36 percent people of color.[29]

The current Administration, as well as critics of environmental regulation, also has been strongly pressing for greater reliance on cost-benefit analysis.[30] Virtually all cost-benefit analyses, however, examine *net* societal benefits and weigh them against *net* societal costs, without disaggregating which populations are experiencing the benefits and costs.[31] Moreover, to "monetize" the benefits achieved by a proposed regulation, economists often use contingent valuation surveys, asking the affected population how much they would be willing to pay for environmental or health benefits. These surveys contain an inherent bias against poor communities and individuals who are likely to express less "willingness to pay" to avoid environmental harms, simply because they have fewer resources. A standard cost-benefit analysis, therefore, tends to justify imposing greater environmental burdens on poor communities than on their wealthier counterparts.[32]

Similar issues arise with respect to the quantitative risk assessment and comparative risk assessment processes, on which cost-benefit analyses and many regulatory decisions are based. Quantitative risk

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[29] Richard Toshiyuki Drury, et al., *Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy*, 9 DUKE ENVTL. L. & POL'Y F. 231, 251-55 (Spring 1999).

[30] Cost-benefit analysis is mandated by only a few environmental statutes. *See* SIDNEY A. SHAPIRO & ROBERT L. GLICKSMAN, RISK REGULATION AT RISK: RESTORING A PRAGMATIC APPROACH 40 (2003). However, Executive Order No. 12,866 requires federal agencies to prepare cost-benefit analyses for all "major" regulations (those with an annual economic impact of $100 million or more). Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (1993). The Bush Administration's Office of Management and Budget has stated that its policy is to "implement vigorously the principles and procedures" in the Executive Order. Memorandum from John D. Graham on Presidential Review of Agency Rulemaking by OIRA [Office of Information and Regulatory Affairs] (Sept. 20, 2001) *available at* http://www.whitehouse.gov/omb/inforeg/oira_review-process.html (last visited Sept. 4, 2003).

[31] LISA HEINZERLING AND FRANK ACKERMAN, PRICING THE PRICELESS: COST-BENEFIT ANALYSIS OF ENVIRONMENTAL PROTECTION 23 (Georgetown Envtl. L. & Pol'y Inst. 2002). As another scholar puts it: "Since a cost-benefit analysis of a toxic pollution problem typically does not support protecting all persons (because the marginal costs will be too high), cost-benefit analysis is incompatible with the goals of environmental justice. Cost-benefit analysis and its philosophic ancestor, utilitarianism, compared with environmental justice are simply two different and incompatible views for addressing the problems of guiding exposures to toxic substances." Carl F. Cranor, *Risk Assessment, Susceptible Subpopulations, and Environmental Justice, in* THE LAW OF ENVIRONMENTAL JUSTICE 328 (Michael Gerrard ed., 1999).

[32] HEINZERLING & ACKERMAN, *supra* note 31, at 23-24.

assessments attempt to quantify the probability of an adverse effect occurring because of exposure to a given hazard, for instance, the likelihood of residents developing cancer because they live adjacent to a benzene-emitting factory. Comparative risk assessments are used to rank environmental problems by their seriousness or relative risk. Risk assessments typically consider aggregate effects, such as total population risk, and downplay or fail to consider how these are distributed.[33] Additionally, as discussed below, risk assessments often fail to evaluate adequately the risks of especially vulnerable or highly exposed populations. Moreover, as Professor Sheila Foster notes, the risk-assessment and subsequent risk-management processes often do not afford affected communities a meaningful role, despite the numerous subjective judgments and value choices inherent in the processes.[34]

Having depicted in broad-brush strokes some of the inherent tensions between environmental justice principles and traditional environmental regulation, this Article next presents several concrete scenarios to illustrate how conflicts of this type may be resolved in a fairer and more ethical manner.

III. HOW ENVIRONMENTAL JUSTICE NORMS CAN BE USED TO IMPROVE THE ETHICAL OUTCOMES OF AGENCY DECISION MAKING

Disparities in environmental protection have occurred in a variety of regulatory contexts: the formulation of broad policy; the setting of environmental standards; permitting and land-use decisions; clean up of contaminated sites; and enforcement of environmental requirements. Thus, there are numerous ways in which environmental decision making

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[33] Donald T. Hornstein, *Reclaiming Environmental Law: A Normative Critique of Comparative Risk Analysis*, 92 COLUM. L. REV. 562, 592-604 (1992).

[34] *See* Sheila R. Foster, *Meeting the Environmental Justice Challenge: Evolving Norms in Environmental Decisionmaking*, 30 ENVTL. L. REP. 10,992, 10,999 (2000). Among other things, comparative risk assessment focuses on the probability of risk occurring and does not consider the qualitative components of risk — social, psychological, moral, and emotional — that are important to how the public evaluates risk. In a related vein, Professor Catherine O'Neill has pointed out the growing tendency among environmental decision makers to rely on strategies of *risk avoidance* — in which those who bear risks are asked to change their behavior to avoid environmental harm rather than risk-reduction strategies that require risk producers to reduce harm. Examples include fish and wildlife consumption advisories warning anglers not to fish in contaminated waters; plant-gathering restrictions; and air quality alerts. She notes that the burden of undertaking avoidance is likely to fall most heavily on communities of color, low-income communities, and indigenous peoples, who are disproportionately among the most exposed to environmental hazards. Catherine O'Neill, *Risk Avoidance, Cultural Discrimination, and Environmental Justice for Indigenous Peoples*, 30 ECOL. L. Q. 1, 2-3 (2003).

can be changed to incorporate environmental justice principles. This section briefly discusses four specific examples.

A. Reforming Standard Setting

Standards are the foundation upon which many regulatory requirements rest. Many environmental standards are health-based, expressed by the ambient amount of a pollutant that is safe. Many health-based standards fail to adequately protect certain subpopulations, particularly those that are especially vulnerable to environmental harms or those who are more heavily exposed to pollutants than the average individual.

One reason for this failure is the manner in which the risk assessments underlying many standards are carried out. Risk assessments generally utilize "a seventy-kilogram male with the general biology of a Caucasian, as a so-called reference man, in developing dose-response predictions and assume that this reference man is an appropriate surrogate for minorities, as well as women and children."[35] They typically fail to consider variability in the response of humans to different levels of pollution.[36] Moreover, most risk assessments evaluate the risks of a single proposed activity (or exposure to a single chemical), without considering the total risks that persons face from cumulative exposures, or the synergistic risks from the interaction of multiple pollutant exposures.[37] In addition, standards often are based on average exposure levels to a regulated substance, as opposed to the levels experienced by the most highly exposed populations.

These limitations in the traditional standard-setting process are illustrated in the following three examples.

1. Water Quality Standards

Under the Clean Water Act, water quality standards are set by EPA and the states to protect water bodies for certain designated uses,

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[35] Robert R. Kuehn, *The Environmental Justice Implications of Quantitative Risk Assessment*, 1996 U. ILL. L. REV. 103, 125 (1996).

[36] As Professor Kuehn notes, "[t]here is a high degree of variability in the response of humans to different levels of pollution. Age, lifestyle, genetic background, sex, ethnicity, and race may all play an important role in enhancing the susceptibility of persons to environmentally related disease. Studies have shown human variability of more than 1000-fold in drug metabolism and between 3- and 150-fold in the carcinogenic metabolism of various chemicals." *Id.* at 122.

[37] *Id.* at 117-18.

including swimming, recreation, and fish consumption. Traditionally, EPA assumed a fish consumption rate of 6.5 grams per day when setting water quality standards. This amount, based on market surveys of the general population conducted in the 1970s, presumed consumption of approximately one eight-ounce fish meal per month.[38]

As Professor Catherine O'Neill has documented, Native Americans and other subpopulations consume far greater quantities of fish than the general population. Studies of fish consumption rates in the Pacific Northwest, for example, indicate that the mean consumption rate for Native Americans in these areas ranges from approximately 60 to 80 grams per day; individuals at the 95th percentile of consumption eat approximately five times that amount, between 205 and 280 grams per day.[39] Studies of other groups show similar rates, for instance documenting the 90th percentile fish consumption rate at 225 grams per day for urban fishers on Los Angeles Bay, 242 grams per day for Asian and Pacific Islander communities in Kings County, Washington, and 489 grams per day for the Suquamish Indian Tribe.[40] As a result, Native Americans and other subgroups can experience risks significantly greater than those faced by the general population from consuming contaminated fish, in some cases, cancer risks of 1×10^{-4} (or higher) as compared to 1×10^{-6} (or lower) for the general population.[41] Critics note that the problems resulting from underestimates of fish consumption have been compounded by the fact that EPA's water quality standards traditionally failed to take into account the actual level of bio-accumulation of contaminants in fish.[42] EPA has defended water quality standards resulting in these disparate levels of protection as providing a "lower yet adequate" protection for higher-consuming subpopulations, an argument upheld by the Ninth Circuit.[43]

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[38] Catherine A. O'Neill, *Variable Justice: Environmental Standards, Contaminated Fish, and "Acceptable" Risk to Native Peoples*, 19 STAN. ENVTL. L.J. 3, 43-44 (2000) [hereinafter O'Neill, *Variable Justice*].

[39] *Id.* at 50-53.

[40] NATIONAL ENVIRONMENTAL JUSTICE ADVISORY COUNCIL, FISH CONSUMPTION AND ENVIRONMENTAL JUSTICE, A REPORT DEVELOPED FROM THE NATIONAL ENVIRONMENTAL JUSTICE ADVISORY COUNCIL MEETING OF DECEMBER 3-6, 2001, 27, *available at* http://www.epa.gov/compliance/resources/publications/ej/fish_consump_report_1102.pdf (last visited Sept. 24, 2003) [hereinafter NEJAC].

[41] O'Neill, *Variable Justice*, *supra* note 38, at 55-57, 62-64.

[42] Barry E. Hill & Nicholas Targ, *The Link Between Protecting Natural Resources and the Issue of Environmental Justice*, 28 B.C. ENVTL. AFF. L. REV. 1, 11 (2000).

[43] Dioxin/Organochlorine Ctr. v. Clarke, 57 F.3d 1517, 1524 (9th Cir. 1995).

More recently, EPA has revised its methodology for setting water quality standards to incorporate a higher national default fish consumption rate of 17.5 grams per day for the general population and recreational fishers and 142.4 grams/day for subsistence fishers.[44] However, many state water quality standards currently in effect are still based on the old 6.5 grams per day standard.[45] Moreover, the new standard is still inadequate to protect higher-consuming subpopulations, even though, as a report by the National Environmental Justice Advisory Council noted, "consumption at these rates may reflect the very practices that these affected groups would want to see perpetuated and protected for cultural, traditional, religious, economic, and other reasons."[46]

2. Farm Worker Entry Restrictions

Under the Federal Insecticide, Fungicide & Rodenticide Act (FIFRA), EPA sets entry restrictions for farm workers, provisions that require a waiting period between pesticide application and worker reentry into the fields. As explained by Professor Gauna, in setting the reentry intervals, EPA assumed a default body weight appropriate for adults, 154 pounds, unless there is potential harm to fetal development, in which case the default weight is 132 pounds, the average weight of women during childbearing years. The youngest legal farm workers, however, are only twelve years old, and have a median weight of only 100 pounds.[47] The default weight — and resulting standard — is even less appropriate for children younger than twelve, yet farm worker parents often take their preschool children (some of them infants) into the fields with them due to lack of day care services, a fact known to

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[44] *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* (Oct. 2000), *available at* http://www.epa.gov/waterscience/humanhealth/method/method.html (last visited Sept. 24, 2003).

[45] NEJAC, *supra* note 40, at 34.

[46] *Id.* at 28. According to the NEJAC report, anglers consuming at the maximum rates documented in some communities — 1453.6 grams per day (Suquamish Indian Tribe); 182.3 grams per day (Laotian communities in West Contra Costa County, California); 391.4 grams per day (the Squaxin Island and Tulalip tribes); and 972 grams per day (four Columbia River tribes) — "would be grossly under protected by the new standard." *Id.*

[47] Eileen Gauna, *Farmworkers as an Environmental Justice Issue: Similarities and Differences*, 25 ENVIRONS ENVTL L. & POL'Y 67, 69 (2002), *citing* U.S. GEN. ACCOUNTING OFFICE, PESTICIDES, IMPROVEMENTS NEEDED TO ENSURE THE SAFETY OF FARMWORKERS AND THEIR CHILDREN, GAO/RCED-00-40, 19 (2000) [hereinafter GAO, PESTICIDES, IMPROVEMENTS NEEDED]. EPA justified the 154/132-pound basis for the reentry period by assuming that although twelve year olds were on average 100 pounds, their bodies have less surface area and they perform less work, resulting in less physical contact with pesticide-treated plants. *Id.*

EPA.[48] Children are especially vulnerable to environmental hazards because their systems are still developing, because they eat proportionately more food, drink more fluids, and breathe more air than adults, and because their behavior patterns, such as playing close to the ground and hand-to-mouth activity, increases their exposure to hazards.[49]

The population affected by the entry standards is overwhelmingly minority. Ninety percent of the approximately two million hired farm workers in the United States are people of color.[50] EPA estimated in 1999 that there were 10,000 to 20,000 incidents of physician-diagnosed pesticide illnesses and injuries per year in farm work, but acknowledges that this is a serious underestimate.[51]

3. Ambient Particulate Matter Standards in California

A final example involves the California Air Resources Board's (ARB) recent effort to revise the state's ambient air standards for particulate emissions. This example is noteworthy because the ARB failed to recognize the distributional implications of its decision, despite having just adopted a comprehensive environmental justice strategy that calls for the agency to integrate environmental justice into all of its programs, policies, and regulations.[52]

Under California law, ambient air quality standards must be set at levels that adequately protect the health of the public, including infants and children, with an adequate margin of safety.[53] The ARB's staff report

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[48] *Id.*

[49] A recent EPA report concluded that children younger than two years face a 10-fold risk of developing cancer when exposed to certain toxic substances (mutagens, which cause cancer by damaging DNA), while children ages 2 to 15 have a risk three times that of adults from exposure to these substances. Jennifer Lee, *Agency Says Children's Risk is Higher for Some Cancers*, N.Y. TIMES, Mar. 4, 2003, at A19.

[50] The majority are Chicanos, followed by Puerto Ricans, Caribbean blacks, and African Americans. Ivette Perfecto & Baldemar Velásquez, *Farm Workers: Among the Least Protected*, 18 EPA J. 13, 14 (Mar./Apr. 1992).

[51] GAO, PESTICIDES, IMPROVEMENTS NEEDED, *supra* note 47, at 12. The GAO concluded that comprehensive information on the occurrence of acute and chronic health effects for farm workers due to pesticide exposure does not exist. *Id.* at 4.

[52] *See* CAL. AIR RES. BD., POLICIES AND ACTIONS FOR ENVIRONMENTAL JUSTICE (2001), *available at* http://www.arb.ca.gov/ch/programs/ej/ejpolicies.pdf (last updated May 5, 2003). A report by the National Academy of Public Administration suggested that the ARB's policy may be the most comprehensive environmental justice plan in the country. *See* NATIONAL ACADEMY OF PUBLIC ADMINISTRATION, MODELS FOR CHANGE: EFFORTS BY FOUR STATES TO ADDRESS ENVIRONMENTAL JUSTICE 96 (2002).

[53] CAL. HEALTH & SAFETY CODE § 39606(d)(2) (West 2003).

on the proposed rule acknowledged that its proposed limits on $PM_{2.5}$ (particulate matter 2.5 microns or less) would still result in close to 3000 deaths and over 10,000 serious circulatory or respiratory illnesses each year.[54] The report also recognized that "some communities continue to experience higher exposures than others as a result of the cumulative impacts of air pollution from multiple mobile and stationary sources and thus may suffer a disproportionate level of adverse health effects."[55] Community groups urged the ARB to adopt a more protective standard, pointing out that the populations that will suffer disproportionately from the ongoing particulate exposures are low-income people and people of color, since they tend to live closer to factories, power plants, congested highways, and other sources of particulate emissions.[56] Indeed, there is clear evidence that in California, as elsewhere, people of color face higher than average exposure to harmful air pollutants.[57] The ARB refused to set a stricter standard, and it dismissed the environmental justice concerns by contending that "[b]ecause ambient air quality standards simply define clean air, all of California's

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[54] *See* CAL. AIR RES. BD., STAFF REPORT: PUBLIC HEARING TO CONSIDER AMENDMENTS TO THE AMBIENT AIR QUALITY STANDARDS FOR PARTICULATE MATTER AND SULFATES, at 9-21 to 9-22 tbls.9.4-9.5 (May 3, 2002) *available at* http://www.arb.ca.gov/research/aaqs/std-rs/pm-final/pm-final.htm (last updated May 6, 2002) [hereinafter ARB STAFF REPORT].

[55] *Id.* at 2-9.

[56] Comments of Golden Gate University Environmental Law & Justice Clinic et al., to Cal. Air Resources Board, on Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates 8, 10 (June 18, 2002) (on file with author).

[57] For example, in 1990, the South Coast Air Quality Management District estimated that 71% of African Americans and 50% of Latinos reside in areas with the most polluted air, as contrasted with 34% of whites. ERIC MANN, L.A.'S LETHAL AIR: NEW STRATEGIES FOR POLICY, ORGANIZING, AND ACTION 31 (1991). In the Los Angeles area, the average cancer risk from air emissions is 35% greater for Latinos and 28% greater for Asian Americans and African Americans than for whites, after controlling for income and numerous other factors. Rachel Morello-Frosch, et al., *Environmental Justice and Southern California's "Riskscape": The Distribution of Air Toxics Exposures and Health Risks Among Diverse Communities*, 36 URBAN AFF. REV. 551, 565-70 (2001). In Los Angeles, moreover, minority school children, particularly Latinos, are more likely to be in public schools surrounded by heavily polluted air than other children (after controlling for other factors). Manuel Pastor, Jr., et al., *Who's Minding the Kids? Pollution, Public Schools and Environmental Justice in Los Angeles*, 83 SOC. SCI. Q. 263, 264 (2002). The higher environmental risks faced by these children of color have been shown partially to contribute to their lower academic performance, even after controlling for factors such as percent of students on free lunches, teacher quality, percent of English learners, and other explanatory variables. Rachel Morello-Frosch, et al., *Integrating Environmental Justice and the Precautionary Principle in Research and Policy Making: The Case of Ambient Air Toxic Exposures and Health Risks Among Schoolchildren in Los Angeles*, 584 ANNALS OF AMER. ACAD. POL. & SOC. SCI. 47, 52-57 (2002) [hereinafter Morello-Frosch, *Integrating Environmental Justice and the Precautionary Principle*].

communities will benefit from the proposed health-based standards, as progress is made to attain the standards."[58]

When agencies set standards knowing that they will result in inadequate or lower protections for certain individuals or groups, the decisions raise fundamental questions about fair treatment. In essence, agencies are trading the health and safety of certain persons to lower overall costs for regulated entities and to promote the general welfare. As Professor Kristin Shrader-Frechette argues in her recent book on environmental justice, however, permitting activities that benefit society as a whole while imposing disparate environmental burdens on certain subgroups requires special justification, for instance, that the activity lead to greater long-term equality.[59] Otherwise, such discrimination amounts to treating certain individuals merely as means to the ends of others.[60]

These concerns are magnified where the most highly exposed persons are not "anonymously" distributed throughout the general population, but are members of clearly identifiable subgroups, such as low-income populations, people of color, and Native Americans.[61] These subpopulations, as compared to the general population, are worse off economically, have experienced and continue to experience discrimination in housing, employment, and other areas, suffer greater health problems, have less access to health care, and are exposed to higher levels of pollution. Moreover, in the case of Native Americans, insufficiently protective standards can threaten their cultural integrity, which, for example, may depend on fish and fish consumption. [62]

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[58] ARB STAFF REPORT, *supra* note 54, at 2-9.

[59] SHRADER-FRECHETTE, *supra* note 16, at 26-27. Moreover, the burden of establishing such justification should be on the party responsible for such differential burdens, since "[n]ot to put this burden on the possible discriminator would be to encourage power, rather than fairness, to determine treatment under the law." *Id.* at 27.

[60] *Id.* at 91. She notes that "all justifications for unequal treatment must be based on morally relevant considerations, if they are to be acceptable. If all humans have equal rights and equal dignity, then people ought to respect others' moral autonomy. Such respect means treating them as ends in themselves, and never merely as means to the ends of others."

[61] As Professor O'Neill notes, at this point agency decision makers are no longer "debating identity-less, anonymous, statistical lives." Rather, they are "deciding with full knowledge whom to protect. It involves nothing less than deciding, to paraphrase Annette Baier, which harms to notice and on whom we will with good conscience impose death, or risk of death." O'Neill, *Variable Justice, supra* note 38, at 74-75 (quoting Annette Baier, *Poisoning the Wells, in* VALUES AT RISK 49, 51 (Douglas MacLean ed., 1986)).

[62] Professor O'Neill explains that "[f]ish, especially salmon, are necessary for the survival of the native peoples of the Pacific Northwest, both as individuals and as a people. O'Neill, *Variable Justice, supra* note 38, 5-6. Fish are crucial for native peoples' sustenance,

Many decisions about where to set environmental standards come down to questions of cost-effectiveness — what is the point at which the marginal costs to regulated entities of increased controls become too high to justify increased levels of protections? The ethical implications of approving standards with knowledge that they will disproportionately affect people of color or low-income communities have not been squarely on the table, but they need to be. In short, environmental justice principles must be directly incorporated into the standard-setting process. For example, regulators should add an extra margin of safety to water quality standards to ensure that poor communities of color and Native Americans are not subject to heightened health risks when they consume fish — rather than consigning these groups to a less protective level of safety than the general population.

B. Incorporating the Precautionary Principle into Decision Making

Over the past decade or so, the precautionary principle has emerged as an important framework for public policy. The precautionary principle has different formulations, but at its core provides that when an activity raises potential threats to the environment or human health, precautionary measures should be taken even if there is scientific uncertainty about those impacts. Important corollaries are that in such situations, the party responsible for creating the risk should bear the burden of proving that an action is safe and that a full range of alternatives to the potentially harmful activity must be examined.[63]

Several ethical notions support the precautionary principle. First, it is fundamentally unfair to make the public bear the risks of uncertainty associated with toxic chemicals and other risk-producing activities. As Professor Robert Bullard has argued, the public, particularly heavily affected communities, often lacks the resources to hire the lawyers, expert witnesses, and doctors needed to prove harm. By contrast, businesses that introduce toxic chemicals into the environment benefit from their use, and are in the best position to prove their safety. Second, it violates principles of personal autonomy and informed consent for

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as a way to feed their family. *Id.* Fish are also crucial for subsistence, in the sense of a culture or way of life with economic, spiritual, social, and physical dimensions — a way to *be* Yakama, or to *be* Tulalip. *Id.* Salmon, especially, are central to the belief systems, identities, and social relationships that define these peoples. *Id.*

[63] *See* Wingspread Statement on the Precautionary Principle (Jan. 1998), *cited in* JOEL TICKNER ET AL., THE PRECAUTIONARY PRINCIPLE IN ACTION: A HANDBOOK, Appendix, (Science and Environmental Health Network), *available at* http://www.sehn.org/rtfdocs/handbook-rtf.rtf.

people to be exposed to potentially harmful chemicals without being informed of their risks. Finally, precautionary action, taken to avoid unknown, long-term risks, is justified by the ethical obligations that current generations have to future generations.[64]

The roots of the precautionary principle lie in international law and policy, where it has been integrated into a number of international conventions and agreements.[65] Elements of the precautionary approach are also found to some degree in existing environmental statutes, i.e., the Clean Air Act's mandate that ambient air quality standards be set at a level requisite to protect the public health, allowing an "adequate margin of safety."[66] The precautionary principle has been criticized, however, as a threat to technological progress,[67] and as insufficiently determinate, and failing to provide meaningful guidance to regulators.[68] It is beyond the scope of this article to delve into the larger debate about the precautionary principle and how its contours should be defined. Broadly speaking, however, greater reliance on the principle in environmental decision making is desirable because it will help advance the goals of the environmental justice movement, and hence improve the ethical outcomes of environmental decisions.

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[64] As prominently articulated by Professor Edith Brown Weiss, intergenerational equity requires each generation to pass the planet on in no worse condition than it received it in and to provide equitable access to its resources and benefits. Edith Brown Weiss, *Our Rights and Obligations to Future Generations for the Environment*, 84 AM. J. INT'L. L. 198, 200 (1990).

[65] These include the Rio Declaration of the United Nations Conference on Environment and Development, the Bergen Declaration on Sustainable Development, the Maastricht Treaty on the European Union, the Barcelona Convention, the Cartagena Protocol to the Convention on Biodiversity, and the 1992 Framework Convention on Climate Change. TICKNER, ET AL., *supra* note 63, at Appendix.

[66] 42 U.S.C. § 7409(b) (2003).

[67] *See, e.g.*, John S. Applegate, *The Taming of the Precautionary Principle*, 27 WM. & MARY ENVTL. L. & POL'Y REV. 13, 15 (2002) ("Within the United States, senior government officials and many prominent scholars vigorously oppose the precautionary principle, because they see it as a replacement for the risk-based, science-dominated, cost-sensitive regulatory structures that have come to characterize most of the world's sophisticated environmental regimes. These regulatory regimes proceed from the view that economic expansion and technological innovation are to be encouraged, because they increase overall social welfare, including improved human and environmental health. In this view, the precautionary principle offers an unwelcome and technically insupportable alternative.")

[68] Christopher D. Stone, *Is There a Precautionary Principle?*, 31 ENVTL. L. REP. 10,790, 10,792-99 (2001). Professor Stone argues that no single principle can encompass all of the concerns that motivate caution in the face of potentially risk-producing activities. *Id.* John Graham, Director of the Office of Information & Regulatory Affairs in the White House Office of Management and Budget, recently said of the precautionary principle: "We consider it to be a mythical concept, perhaps like a unicorn." Samuel Loewenberg, *Precaution is for Europeans*, N.Y. TIMES, May 18, 2003, at § 4, 14.

At its core, the precautionary principle is designed to lead to overall reductions in risk-producing activities. Currently, poor people and people of color are exposed disproportionately to environmental hazards, including hazards whose long-term effects are unknown, or are otherwise of uncertain dimension. Minorities and the poor disproportionately bear the risks, for example, of exposure to pesticides, of childhood lead poisoning, of chronic exposure to air pollutants, and of exposure to a suite of toxic substances in the workplace. Reducing risky activities will benefit populations who are most likely to bear the brunt of environmental harms.[69]

Consider, for example, the large gaps in our information about toxic substances. We have introduced into commerce thousands of chemical substances (EPA lists 75,000 chemicals in its Toxic Substances Control Act (TSCA) inventory as having some toxic effects), yet we know very little about the health effects of most of these chemicals.[70] This is true even for the 3,000 so-called high production volume chemicals (HPV), those produced or imported in quantities of over one million pounds per year. EPA found in 1998 that for 93 percent of the HPV chemicals, some basic toxicity data necessary for a minimum understanding of a chemical's toxicity is lacking. There is *no* basic toxicity data for 43 percent of HPV chemicals.[71] Consider also the case of lead. Lead poisoning is widely regarded as the most serious environmental health hazard facing children today.[72] Moreover, children from poor families are eight times more likely to be poisoned than those from higher income families, and African-American children are five times more likely to be poisoned than white children.[73] Knowledge about the full extent of

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[69] *See generally,* Morello-Frosch, *Integrating Environmental Justice and the Precautionary Principle, supra* note 57, at 48, 60-62 (noting important overlapping goals of environmental justice and precautionary principle and suggesting ways that two concepts could be better integrated to protect health of poor communities of color).

[70] ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE AND POLICY 375 (3d ed. 2000).

[71] ENVT'L PROT. AGENCY, CHEMICAL HAZARD DATA AVAILABILITY STUDY (1998), *available at* http://www.epa.gov/oppt/chemtest/hazchem.htm (last visited Sept. 24, 2003). The chemical industry's own study of 3,000 HPV chemicals found very similar gaps in basic toxicity information. *See* David Roe, *Ready or Not: The Coming Wave of Toxic Chemicals*, 29 ECOLOGY L.Q. 623, 627-28 (2002).

[72] Clifford Rechtschaffen, *The Lead Poisoning Challenge: An Approach for California and Other States*, 21 HARV. ENVTL. L. REV. 387, 387 (1997) (citing LEAD-BASED PAINT HAZARD REDUCTION AND FINANCING TASK FORCE, PUTTING THE PIECES TOGETHER: CONTROLLING LEAD HAZARDS IN THE NATION'S HOUSING, REPORT OF THE LEAD-BASED PAINT HAZARD REDUCTION AND FINANCING TASK FORCE 2 (1995)) [hereinafter Rechtschaffen, *Lead Poisoning Challenge*].

[73] 46 MORBIDITY AND MORTALITY WKLY. REP. 141 (1997).

lead's toxicity, however, has only gradually emerged over an extended period. The recognized safe level of lead in the United States has been lowered dramatically over the last three decades, from blood-lead levels of 60 micrograms per deciliter of blood in the mid-1960s, to the current level of 10 micrograms per deciliter.[74] Based on recent research, scientists now believe that even this standard is too high, and that exposure to levels below 10 micrograms can have a very significant impact on intellectual development.[75]

Environmental justice advocates thus have embraced the precautionary principle as a means of reducing overall environmental risk, particularly avoidable risk. Mary O'Brien has argued that the assessment of alternatives mandated by following the precautionary principle will allow "people to see the potential in the concept that no risk is acceptable if there are better alternatives. This allows people to move toward the next logical step: that unnecessary risks and damages are unacceptable [and] indefensible."[76]

What does incorporating the precautionary principle into decision making look like in practice? A few examples follow.

The Los Angeles Unified School District adopted, in March of 1999, a policy requiring use of integrated pest management practices.[77] The policy announces that implementation of the precautionary principle is the district's long-term objective. Noting that no pesticide product is free from risk or threat to human health, the policy states that "industrial producers should be required to prove that their pesticide products demonstrate an absence of the risks . . . rather than requiring that the government or the public prove that human health is being harmed."[78] In the interim, the District will give non-chemical methods first consideration when selecting appropriate pest control techniques and will strive ultimately to eliminate the use of all chemical controls.[79]

Another precautionary approach is exemplified by the Massachusetts Toxic Use Reduction Act, passed in 1989. The act requires companies to analyze their use of toxic chemicals and undergo a detailed planning

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[74] Rechtschaffen, *Lead Poisoning Challenge*, *supra* note 72, at 391-92.

[75] Thomas H. Maugh, II, *"Safe" Lead Levels Lower IQ in Children, Study Finds*, L.A. TIMES, Apr. 17, 2003, at A1.

[76] MARY O'BRIEN, MAKING BETTER ENVIRONMENTAL DECISIONS: AN ALTERNATIVE TO RISK ASSESSMENT 213 (2000).

[77] *See* http://www.calisafe.org/policy.htm (last visited June 1, 2003).

[78] *Id.*

[79] *Id.*

process aimed at identifying options for reducing chemical use.[80] Companies are required to measure their progress yearly and to make this information available to the public. Firms are not required to take any specific action; but from 1990 to 1995, companies in the state nonetheless dramatically reduced their toxic chemical emissions by more than two-thirds, their total chemical waste by 30 percent, and their total use by 20 percent.[81]

San Francisco's Environment Commission recently established a goal of having all city departments implement the precautionary principle. To implement this objective, in August 2003, the Board of Supervisors adopted a preferential purchasing ordinance. The measure requires the city to develop a list of products that have "lesser impacts" on human health and the environment compared to other, similar products, and to give preference to purchasing these products.[82]

Another example is the European Union's recently adopted Chemicals Legislation.[83] The legislation implements a mandatory registration and testing process for over 30,000 new and existing chemicals produced in significant quantities, in explicit recognition of the lack of knowledge about the dangers of many chemicals on the market. Among other things, producers will be required to provide information on the intrinsic properties and hazards of each substance; the use for which it is intended and potential exposure scenarios; resulting human health and environmental risks; and a statement on how the producer or user is managing the risks associated with the use of the substance.[84] Substances with certain hazardous characteristics, including those that are carcinogenic, mutagenic, cause reproductive effects, or are persistent organic pollutants, will require government approval prior to use.[85] The policy consciously sets out to place a greater onus on industry to demonstrate the safety of their products.[86] As the EU explains, under previous law, "'[t]he burden of proof' is on the authorities: they need to prove that a use of a chemical substance is unsafe before they may

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[80] O'BRIEN, *supra* note 76, at 155-60.

[81] TICKNER, ET AL., *supra* note 63, at 6-7.

[82] *See* San Francisco, Cal., Precautionary Principle Ordinance (August 2003), *available at* http://sfgov.org/sfenvironment/aboutus/policy/legislation/precaution_principle.htm (last visited Sept. 24, 2003).

[83] *Available at* http://europa.eu.int/comm/enterprise/chemicals/chempol/whitepaper/reach.htm (last visited June 2, 2003).

[84] *Id.*

[85] *Id.*

[86] *Id.*

impose restrictions."[87] Under the new policy, "[t]he 'burden of proof' is on the industry. It has to be able to prove that the way it intends to use a chemical substance is safe. All actors in the supply chain will be obliged to assess and implement measures to ensure the safety of the chemical substances they handle."[88]

In this country, the onus remains on government agencies to prove that chemicals are unsafe before they can be regulated. The precautionary approach, however, could be employed to remedy our large data gap about toxic chemicals, by shifting the burden of proof to chemical producers to demonstrate the safety of toxic chemicals. For example, with respect to any HPV chemical for which we do not have a full suite of toxicity information, Congress could mandate that producers disclose the absence of such information, or, alternatively, that production decrease by a certain percentage annually until and unless this information is developed.[89]

While many other applications of the precautionary principle are possible, the examples above illustrate how policies that consciously advance environmental justice principles can improve the ethical outcomes of environmental decision making.

C. Reforming Land Use Decisions

In part, the inequitable distribution of environmental hazards is the result of land use regulation and zoning practices, some historical, some ongoing.[90] For example, as Professor Tony Arnold documented in a

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[87] *See* http://europa.eu.int/rapid/start/cgi/guesten.ksh?p_action.gettxt=gt&doc=MEMO/03/99|0|RAPID&lg=EN&display= (last visited Sept. 26, 2003).

[88] *Id.*

[89] David Roe has suggested that the "legal privileges" enjoyed by chemicals sold in commerce could be progressively withdrawn if the chemicals lack basic toxicity information. Examples of progressive steps might include a requirement to be tested under TSCA; automatic reclassification as a "new" chemical under TSCA, thereby making it subject to stricter requirements than those applicable for existing chemicals; and automatic forfeiture of confidentiality claims related to a chemical. Roe has described these and similar ideas as "ignorance-based" controls — that is, the level of controls imposed on toxic substances increases when we are ignorant about their effects. Roe, *supra* note 71, at 639-41.

[90] These include racially restrictive covenants, urban renewal policies, exclusionary zoning, and "expulsive zoning." Expulsive zoning refers to instances in which local governments "downzoned" neighborhoods of color to allow incompatible, industrial uses. Yale Rabin, *Expulsive Zoning: The Inequitable Legacy of* Euclid, *in* ZONING AND THE AMERICAN DREAM 101, 101-03, 106-18 (Charles M. Haar & Jerold S. Kayden eds., 1989). An example of how historic land use decisions have contributed to an inequitable distribution of environmental amenities is provided in Miller v. City of Dallas, 2002 WL 230834 (N.D. Tex. 2002). The plaintiffs in that case, residents of an African American community in

recent study of seven cities, low-income, high-minority neighborhoods are on the whole subject to more intensive zoning, allowing for industrial and commercial uses, than high-income, low-minority neighborhoods.[91] Likewise, current siting processes typically do not account for inequities in income, education, political power, and social capital among communities, disparities that often lead companies to site noxious facilities in low-income communities or communities of color. As Luke Cole and Sheila Foster argue, since "[s]tate permitting laws remain neutral, or blind, toward these inequalities . . . [they] perpetuate, and indeed exacerbate, distributional inequalities." [92]

While issues of distributive or social justice or fairness generally have not been criteria in land use regulation, they should be. This goal may be reached in a number of ways, a few of which are outlined below.[93]

Several states have adopted so-called "anti-concentration" statutes, which place substantive or special procedural limits on the number of facilities that can be located in an area.[94] In this vein, in 2001 California adopted legislation mandating that guidelines for general plans accomplish an equitable distribution of beneficial public services and avoid over-concentration of industrial facilities near schools and residences.[95] California land use law requires cities and counties to

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Dallas, alleged unequal provision of municipal services (flood protection, zoning, protection from industrial nuisances, landfill practices, and streets and drainage), based on the City of Dallas' long history of discriminatory zoning practices and their ongoing impacts (i.e., in the 1940's the city adopted ordinances prohibiting whites and blacks from living together; its 1945 Master Plan concluded that because of flooding concerns there should be no residential development in the area, a finding that was ignored when the city later designated the area as a Negro subdivision).

[91] Craig Anthony Arnold, *Planning Milagros: Environmental Justice and Land Use Regulation*, 76 DENV. U. L. REV. 1, 77-86 (1998).

[92] COLE & FOSTER, *supra* note 2, at 71.

[93] As a theoretical matter, Professor Vicki Been has suggested various models of what fairness in siting could look like: (1) even apportionment of LULUs among all neighborhoods; (2) compensation of communities hosting LULUs by other communities; (3) progressive siting — wealthier neighborhoods receive more LULUs; (4) all communities receive an equal number of vetoes that can be used to exclude a LULU; (5) cost internalization — those who benefit bear the cost; (6) the siting process involves no intentional discrimination; and (7) the siting process shows "equal concern and respect" for all neighborhoods. 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, 1008 (1993).

[94] For example, in Arkansas, there is a presumption against the construction and operation of any high impact solid waste management facility within 12 miles of any existing similar facility. ARK. CODE ANN. § 8-6-1504 (Michie 2003). Alabama statutes prohibit more than one commercial hazardous waste treatment facility or disposal site within each county. ALA. CODE § 22-30-5.1 (2003).

[95] CAL. GOV'T CODE § 65040.12 (West 2003).

adopt a general plan guiding future development, composed of seven required elements (housing, transportation, open space, etc.). The State's draft guidelines provide that "[o]ver-concentration occurs when industrial facilities or uses do not individually exceed acceptable regulatory standards for public health and safety, but when considered cumulatively with other industrial facilities and uses, pose a significant health and safety hazard to adjacent residential and school uses."[96] They also state that cities and counties "should plan for the equitable distribution throughout the community of new public facilities and services that increase and enhance community quality of life" including, parks, open space, and recreational facilities.[97] Prior to the adoption of this legislation, some local governments in California had already added "environmental equity" elements to their general plans. For instance, the City of Los Angeles General Plan establishes as a goal of its land use policies a "physically balanced distribution of land uses."[98]

Likewise, New York City's "Fair Share Ordinance" requires that the selection of sites for city facilities "further the fair distribution among communities of the burdens and benefits associated with city facilities."[99] To implement the statute, New York City's Planning Commission adopted "Fair Share Criteria" that require city agencies to consider the distribution of similar facilities throughout the city, their compatibility with existing neighborhood conditions, and the effect of such facilities on

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[96] CAL. OFFICE PLANNING & RESEARCH, GEN. PLAN GUIDELINES, PRELIMINARY DRAFT (2002), at 21, *available at* http://www.opr.ca.gov/planning/PDFs/GPG_2002.pdf (last visited Sept. 23, 2003). The Guidelines discuss the use of buffer zones or capping the number of facilities within a certain distance of each other as among the ways to avoid over-concentrating potentially hazardous facilities. *Id.*

[97] *Id.* at 20. This latter requirement is an important recognition of the fact that environmental amenities often have been distributed unfairly. Robert García, for example, has documented the marked disparities in access to parks and recreation in Los Angeles (which he notes has fewer acres of parks per 1,000 residents than any major city in the country). Garcia points out that "[i]n the inner city where low income communities of color live, there are .3 acres of parks per thousand residents, compared to 1.7 acres in disproportionately white and relatively wealthy parts of Los Angeles. The paucity of parkland is matched by the lack of recreational facilities. Within a five mile radius of [a] planned Baldwin Hills state park, for example, in the historical heart of African-American Los Angeles, there is one picnic table for every 10,000 people, one playground for 23,000 children, one soccer field for 30,000 people and one basketball court for 36,000 people." Robert García, *Building Community: Lessons from the Urban Parks Movement in Los Angeles* (unpublished manuscript, on file with author); *see also* Zenobia Lai, Andrew Leong & Chi Chi Wu, *The Lessons of the Parcel C Struggle: Reflections on Community Lawyering*, 6 UCLA ASIAN PAC. AM. L.J. 1, 6-7 (Spring 2000) (noting that Boston's Chinatown has 0.6 acres of open space per 1,000 residents, least amount of open space per resident in city).

[98] CITY OF LOS ANGELES GENERAL PLAN ch. 3, goal 3A.

[99] N.Y. CITY CHARTER § 203 (as amended through Nov. 2002).

neighborhood character.[100]

As Professor Foster has described, other state laws that seek to influence the distribution of unwanted facilities require that decision makers consider so called "soft criteria" — i.e., factors other than the technical design of a project or a quantitative assessment of its health risks — in permit decisions.[101] Soft-criteria considerations include the socioeconomic status of the host community, community perceptions, psychic costs, the potential for change in property values, and the cumulative health risks presented by other environmental sources in the host community.[102]

These kinds of efforts to integrate environmental justice principles into land use decisions have the potential to make environmental law fairer and more ethical.

D. Reforming Environmental Review Statutes

Environmental review statutes such as the National Environmental Policy Act (NEPA) require federal agencies to analyze the effects of all federal projects that have a significant environmental impact. Sixteen states, plus the District of Columbia and Puerto Rico, have adopted similar statutes, known as state environmental policy acts (SEPAs), that govern projects approved by state or local agencies.[103] NEPA or its state analogues frequently will be implicated in permitting or other approval processes that raise environmental justice concerns. Traditionally, these statutes have not incorporated environmental justice principles, but they should be revised to do so, in a number of ways. A few of these are highlighted below.

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[100] N.Y. CITY PLANNING COMM'N, CRITERIA FOR THE LOCATION OF CITY FACILITIES 10 (Dec. 3, 1990). Michael Gerrard argues, however, that New York City's Fair Share program has had little demonstrable impact on the dispersion of unpopular facilities, and in only one reported case have plaintiffs prevailed in arguing that the siting of a facility violated the Fair Share criteria. Michael B. Gerrard, *Environmental Justice and Local Land Use Decisionmaking*, *in* TRENDS IN LAND USE LAW FROM A TO Z, 135-136 (Patricia E. Salkin ed., 2001).

[101] Sheila Foster, *Impact Assessment*, *in* THE LAW OF ENVIRONMENTAL JUSTICE: THEORIES AND PROCEDURES TO ADDRESS DISPROPORTIONATE RISKS 287-289 (Michael B. Gerrard ed., 1999). Typically, however, there is no statutory guidance for the weight decision makers must give these factors in the permitting process.

[102] *Id.*

[103] RECHTSCHAFFEN & GAUNA, *supra* note 2, at 309.

1. Enhanced Public Participation

One idea, much discussed in recent years, is to enhance public participation. NEPA requires agencies to provide for meaningful public involvement in the environmental review process.[104] Environmental justice advocates have advanced many thoughtful suggestions for agencies to augment customary practices for public outreach (both in the NEPA process and in other agency processes). These include, among other ideas, soliciting public comments on environmental documents through community, social service or religious organizations, or through radio and television;[105] holding meetings at community-friendly times in accessible locations; translating key documents into the language spoken by the affected community;[106] establishing information repositories with documents about the proposed action; and providing technical assistance to interpret technical documents to help develop potential

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[104] Agencies must seek public input at various points in the NEPA process, such as when determining the scope of what is to be included in an Environmental Impact Statement (EIS) ("scoping"), after issuing draft EISs, and after issuing final EISs but before final decisions have been made about the project. *Id.* at 310. Agencies also are required to hold public hearings when there is substantial controversy surrounding a project or substantial interest in a hearing. *Id.* They also are required to respond to all public comments submitted on draft EISs. *Id.* To facilitate public review, NEPA's regulations require that EISs must be written in "plain language . . . so that decision makers and the public can readily understand them." 40 C.F.R. § 1502.8 (2003). *See* RECHTSCHAFFEN & GAUNA, *supra* note 2, at 310.

[105] *See* J. Brooks Christol, *Tennessee Makes Strides on Environmental Justice Despite Budget Shortfalls*, Fall 2002 ECOStates 18, 18 (describing survey by Tennessee Dep't Environment & Conservation finding that residents had strongest preference for receiving environmental information by newspaper, radio or television) *available at* http://www.sso.org/ecos/publications/ECOStates.htm (last visited Sept. 19, 2003).

[106] One example in which a community was somewhat successful in arguing for translation of an environmental impact report is described in Lai, et al., *supra* note 97, at 20-21. In that case, residents of Boston's Chinatown opposed a proposed plan to construct a large parking garage for the New England Medical Center (NEMC) in their neighborhood. *Id.* at 11. The Medical Center prepared a draft report solely in English, but after protest by the community, translated a summary of the document into Chinese. *Id.* at 20. The Massachusetts Secretary of Environmental Affairs also required that NEMC translate "meaningful" portions of any subsequent environmental reports. *Id.* at 21. In another important case, a community group in Kettleman City, California, challenged a hazardous waste facility under the state analogue to NEPA (the California Environmental Quality Act, or CEQA) because the county refused to translate the environmental review documents into Spanish. *Id.* The court ruled that translation of an extended summary of the [Environmental Impact Report], public meeting notices, and public hearing testimony were required because close to 40 percent of residents in the affected community were monolingual in Spanish; the residents' "meaningful involvement in the CEQA review process was effectively precluded by the absence of the Spanish translation." El Pueblo para el Aire y Agua Limpio v. County of Kings, 22 ENVTL L. REP. 20,357 (Sup. Ct. Sacramento 1991).

alternatives and mitigation measures.[107] A number of federal agencies have significantly enhanced their community outreach efforts and public participation programs along some of these suggested lines, both with respect to NEPA and other processes.[108] A number of states have done the same. For example, in 1999 Texas adopted legislation requiring that the state environmental agency provide public notice of a permit upon an application's completion, rather than when agency staff and the applicant have finished negotiating the draft permit (and when, as a practical matter, it is often too late for affected communities to obtain meaningful changes in the design of a project).[109] In the first year after the law took effect, the agency's public meetings increased from about 25 to 89, and the agency received comments on more than 15 percent of total applications, rather than 10 percent in the prior year.[110]

NEPA's requirement for meaningful public participation should also extend to whether the environmental review process is free from racial bias. Consider the example of Louisiana Energy Services' application to site a uranium enrichment plant in Homer, Louisiana, approved by the Nuclear Regulatory Commission (NRC).[111] Community groups challenging the decision in an administrative appeal presented evidence that the NRC's review process was racially discriminatory, because at each successive stage, the communities under consideration for the project became poorer and more predominantly African American,

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[107] *See generally*, COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL JUSTICE: GUIDANCE UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT (1997), *available at* http://ceq.eh.doe.gov/nepa/regs/guidance.html (last visited Sept. 23, 2003); U.S. ENVT'L. PROT. AGENCY, FINAL GUIDANCE FOR INCORPORATING ENVIRONMENTAL JUSTICE CONCERNS IN EPA'S NEPA COMPLIANCE ANALYSES (1998), *available at* http://www.epa.gov /resources/policies/ej/ej_guidance_nepa_epa0498.pdf (last visited Sept. 23, 2003); NATIONAL ENVIRONMENTAL JUSTICE ADVISORY COUNCIL, NEJAC MODEL PUBLIC PARTICIPATION PLAN, *available at* http://www.epa.gov/projectxl/nejac.htm#back (last visited Sept. 23, 2003). *See also* CAL. PUB. RES. CODE § 71113(b)(5) (West 2003) (requiring Cal/EPA to recommend procedures to ensure that public documents, notices, and public hearings "are concise, understandable, and readily accessible to the public" and guidance for determining when it is appropriate to translate crucial public documents, notices, and hearings for limited-English speaking populations).

[108] *See* Dennis Binder, et al., *A Survey of Federal Agency Responses to President Clinton's Executive Order No. 12898 on Environmental Justice*, 31 ENVTL L. REP. 11,133, 11,138-39 (2001) (describing overall community outreach and public participation efforts of federal agencies in response to Executive Order No. 12898 on Environmental Justice).

[109] *See* TEX. HEALTH & SAFETY CODE ANN., § 382.056 (Vernon 2002).

[110] NAT'L ACADEMY OF PUB. ADMIN, ENVIRONMENTAL JUSTICE IN EPA PERMITTING: REDUCING POLLUTION IN HIGH-RISK COMMUNITIES IS INTEGRAL TO THE AGENCY'S MISSION 38 (2001).

[111] *In re* Louisiana Energy Services, L.P., 1998 NRC LEXIS, at *10-*11 (1998).

culminating in the selection of a site that was 97 percent African American and extremely poor.[112] Expert testimony introduced in the case also showed that the applicant's use of facially race-neutral siting criteria to screen out alternatives — such as eliminating sites close to sensitive receptors like hospitals, schools, and nursing homes — disadvantaged poor and minority communities by reinforcing the impact of prior discrimination that had left them without such institutions.[113] The initial reviewing body found that this evidence raised a "reasonable inference that racial considerations played some part in the site selection process," and remanded the case for a more complete investigation.[114] Responding to the NRC's contention that its decision was based solely on technical and business criteria, and that there was no specific evidence that racial considerations motivated the decision, the reviewing board wrote that racial discrimination "cannot be uncovered with only a cursory review of the description of the [site selection process]. If it were so easily detected, racial discrimination would not be such a persistent and enduring problem in American society."[115] On appeal, a panel of the NRC reversed this part of the board's order, holding that NEPA is not "a tool for addressing problems of racial discrimination."[116] In the panel's view, NEPA is limited to evaluating objective impacts, rather than the subjective motives of the applicant or permitting agency.[117]

The appellate decision in *In re Louisiana Energy Services* reflects an unduly narrow view of NEPA, an act intended to place central importance on procedure and meaningful public involvement in agency decisions.[118] For instance, how can federal decision makers "rigorously explore . . . all reasonable alternatives," as NEPA's implementing guidelines require, if the selection of potential alternatives is infected with racial bias?[119] Such bias clearly can impede a truly meaningful evaluation, by eliminating a host of potential alternatives from consideration, even where the subjective motives of the permitting agency are benign. Especially given NEPA's focus on process,

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[112] *See id.* at *58.

[113] *See id.* at *58-*60.

[114] *In re* Louisiana Energy Services, 1997 LEXIS, at *55 (1997).

[115] *Id.* at *54.

[116] *See In re* Louisiana Energy Services, 1998 NRC LEXIS, at *60.

[117] *See id.* at *62 (stating that Atomic Safety and Licensing Board's decision goes well beyond what NEPA has traditionally been interpreted to require).

[118] *See, e.g.*, Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 351 (1989) (stating that NEPA merely prohibits uninformed, rather than unwise, agency action).

[119] 40 C.F.R. § 1502.14(a) (2003).

community groups should be able to require that an agency reconsider its evaluation of alternatives when evidence demonstrates that the agency's decision results from a racially biased process.

2. A More Refined Environmental Analysis

NEPA also should be interpreted to require agencies to prepare a more refined (distributional) environmental analysis of the impacts of proposed projects. Traditionally, agency environmental reviews have not looked at particular subpopulations burdened by a project, but rather analyzed the effects across the entire range of the affected public. The Council on Environmental Quality's (CEQ) Environmental Justice Guidance helpfully calls on agencies to determine whether an area affected by a proposed project may include low income, minority, or tribal populations, and whether the proposed action is likely to have a disproportionately high and adverse impact on these populations.[120] Another part of the Louisiana Energy Services case discussed above provides an example of judicial application of this mandate. The reviewing board in that case overturned as inadequate the environmental review because the NRC did not take a more refined look at which subgroups in the affected area would be harmed, and which would be benefited, by the proposed uranium enrichment plant.[121] Specifically, the board found that the NRC had failed to examine the impact of a proposed road closure on the very low-income African-American community that used the road as a pedestrian corridor.[122] The environmental analysis also failed to disaggregate the project's impact on property values.[123] While the analysis found that the project would generally have beneficial effects on local housing values, it did not examine the likely adverse impact on property values in the low-income African-American community directly adjacent to the plant.[124]

This mandate to take a "more refined look" at affected subgroups is similar to the approach taken by EPA's Environmental Appeals Board in reviewing permitting decisions by EPA under other environmental statutes and the Executive Order on Environmental Justice. The Appeals Board has ruled that when there is a plausible claim presented that a

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[120] *See* ENVIRONMENTAL JUSTICE: GUIDANCE UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT, *supra* note 107.

[121] *In re* Louisiana Energy Services, 1997 LEXIS, at *102-*03 (1997).

[122] *Id.* at *79.

[123] *Id.* at *88-*89.

[124] *Id.*

proposed facility will have disproportionate effects on low-income communities or communities of color, EPA should "take a more refined look" at a project's health and environmental impacts, focusing on smaller subpopulations, even if the facility does not pose a threat to a broad cross-section of the community.[125]

3. Cumulative Impact Analysis

NEPA requires that agencies evaluate the cumulative impact of proposed projects. Cumulative impact, as defined by NEPA, is the sum of the incremental impact of a proposed action when added to other past, present, and reasonably foreseeable future actions.[126] NEPA's requirement of a cumulative impact analysis is especially important from an environmental justice perspective because almost no other pollution control statute requires it; indeed, the failure of other statutes to consider cumulative impacts is a major reason that, despite the protections afforded by individual laws, disproportionate burdens occur in low-income communities and communities of color. NEPA's cumulative impacts requirement should be interpreted broadly by agencies to include consideration of the existing concentration of industrial facilities and other undesirable land uses in the affected neighborhood, background community health conditions and health risks, and other workplace and environmental exposures in the area.

CONCLUSION

Over the past decade, environmental justice has become a part of the legal lexicon. And environmental justice principles — with their compelling call for fairness in treatment and meaningful inclusion in public processes — increasingly are becoming part of the environmental decision-making fabric. As discussed in this Article, there are many ways in which this trend can and should be reinforced. As these principles become more central to environmental decision making, they hold the promise of making environmental law more ethical.

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[125] *See, e.g., In re* Chemical Waste Management, Inc., 1995 EPA App. LEXIS 25, at *20 (1995). *See generally,* Richard J. Lazarus & Stephanie Tai, *Integrating Environmental Justice Into EPA Permitting Authority,* 26 ECOL. L. Q. 617, 660-69 (1999).

[126] 40 C.F.R. § 1508.7 (2003).

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