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Volume 96 | Issue 4

Article 11

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June 1994

## Market Dynamics and the Siting of LULUs: Questions to Raise in the Classroom about Existing Research

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### Recommended Citation

Vicki Been, *Market Dynamics and the Siting of LULUs: Questions to Raise in the Classroom about Existing Research*, 96 W. Va. L. Rev. (1994).

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# MARKET DYNAMICS AND THE SITING OF LULUs: QUESTIONS TO RAISE IN THE CLASSROOM ABOUT EXISTING RESEARCH

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I. INTRODUCTION . . . . .	1069
II. PROBLEMS WITH EXISTING RESEARCH . . . . .	1070
III. MARKET DYNAMICS AND LULUS . . . . .	1072
IV. REMEDYING THE GAPS IN EXISTING RESEARCH . . . . .	1075
A. <i>Overview of the Revised Studies</i> . . . . .	1075
B. <i>The Houston Study and Market Dynamics</i> . . . . .	1076
V. APPLICATION TO THE CLASSROOM . . . . .	1077

## I. INTRODUCTION

In this essay, I will provide a critical look at some of the existing scholarship on environmental justice. I also will discuss research that I have been doing to address flaws I see in the evidence regarding the distribution of locally undesirable land uses (LULUs).<sup>1</sup>

My comments in this essay are limited to that part of environmental justice literature that has to do with the siting of undesirable land uses. I'm not addressing the broad range of topics covered by the rubric "environmental justice," such as the disparities in occupational exposure, discrimination in the enforcement of existing environmental

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1. For a more detailed report on the research discussed in this essay, see Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383 (1994).

laws,<sup>2</sup> and the numerous other issues Dr. Bullard addresses in his essay.<sup>3</sup> But as both Dr. Bullard and Luke Cole have explained, part of the claim of environmental racism and part of the quest for environmental justice involves the charge that people of color and the poor are exposed to greater environmental risks than are whites and wealthier individuals because of racism and classism in the siting of undesirable land uses.<sup>4</sup> That charge, in turn, is premised upon more than a dozen studies that seek to document the extent to which undesirable land uses are disproportionately located in neighborhoods that are predominately populated by people of color and the poor.<sup>5</sup> Those studies reveal a correlation between the socio-economic characteristics of a neighborhood and the number of LULUs that it hosts: neighborhoods hosting LULUs tend to have more racial minorities as a percentage of their population, and to be poorer, than non-host communities. However, the existing research is deficient in two important respects.

## II. PROBLEMS WITH EXISTING RESEARCH

First, the research does not establish that the host communities were disproportionately poor or minority at the time that the site selec-

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2. For a discussion of discrimination in the enforcement of environmental protection laws, see Marianne Lavelle & Marcia Coyle, *Unequal Protection: The Racial Divide in Environmental Law*, NAT'L L.J., Sept. 21, 1992, at S1-S12 (finding that penalties against pollution law violators in minority areas are lower than those imposed for violations in largely white areas and that the government takes longer to clean up hazards in minority communities). *But see* 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).

3. See Robert D. Bullard, *Environmental Racism and 'Invisible' Communities*, 96 W. VA. L. REV. 1037 (1994).

4. See Bullard, *supra* note 3; Luke W. Cole, *Environmental Justice in the Classroom: Real Life Experiences for Law Students*, 96 W. VA. L. REV. 1051 (1994).

5. See, e.g., UNITED CHURCH OF CHRIST COMMISSION FOR RACIAL JUSTICE, TOXIC WASTES AND RACE IN THE UNITED STATES: A NATIONAL REPORT ON THE RACIAL AND SOCIO-ECONOMIC CHARACTERISTICS OF COMMUNITIES SURROUNDING HAZARDOUS WASTE SITES (1987) [hereinafter TOXIC WASTES AND RACE]; Robert D. Bullard, *Solid Waste Sites and the Black Houston Community*, 53 SOC. INQUIRY 273 (1983) [hereinafter Bullard, *Black Houston*]; U.S. GEN. ACCOUNTING OFFICE, PUB. NO. B-211461, SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES (1983) [hereinafter GAO STUDY].

tion was made. Most of the studies compare the current socio-economic characteristics of the communities that host various LULUs to those of communities that do not host LULUs. The research therefore leaves open the possibility that the LULUs originally were sited without discriminatory intent or impact, but that subsequent events produced the current disproportionate distribution of LULUs. The studies fail, in other words, to establish that the siting process was the *cause* of any disproportionate burden that the poor and people of color now bear in hosting LULUs.

The second problem is that the research fails to explore an alternative, or at least an additional, explanation for the correlation that the studies reveal between the current demographics of the communities and the likelihood that they host LULUs. Regardless of whether the LULUs originally were sited without discriminatory intent or disparate effect, it could well be that the neighborhoods surrounding the LULUs became poorer and became home to a greater percentage of people of color over the years following the siting. Demographic change would be likely if market factors such as poverty, housing discrimination, and the location of jobs, transportation, and other public services force the poor and racial minorities to "come to the nuisance": to move to neighborhoods that host LULUs because those neighborhoods offer the cheapest available housing. None of the existing research on environmental justice has examined how the siting of undesirable land uses has affected the socioeconomic characteristics of the surrounding communities over time.

Because the research fails to prove that the siting process is the cause of the disproportionate burden that the poor and minorities now bear, and because this research has ignored the possibility that market dynamics may have played some role in the distribution of that burden, policymakers such as the legislators currently drafting environmental justice legislation have no way of knowing whether it is in fact the siting process that is broken and in need of fixing. Nor can they know whether even an ideal siting process that insured a perfectly fair initial distribution of LULUs would result in any long-term benefit to the poor or to people of color.

### III. MARKET DYNAMICS AND LULUS

I have tried in my own research to begin to remedy both of these gaps in the literature. Before reporting the results of my research, however, I need to briefly discuss how market dynamics might affect the demographics of the community surrounding an undesirable land use. I also will explain why an understanding of the role that market dynamics plays in the distribution of LULUs is necessary both to evaluate the fairness of the existing distribution of LULUs and to fashion an effective remedy for any unfairness in the distribution.

The siting of a LULU can influence the characteristics of a neighborhood in two ways. First, residents of a neighborhood may become dissatisfied if an undesirable land use is sited nearby, and those who can afford to move may leave the neighborhood.<sup>6</sup> Second, by making the neighborhood less desirable, the LULU may decrease property values and thereby make the housing more available to low-income households and less attractive to higher income households.<sup>7</sup> Ultimately, both influences are likely to cause the neighborhood to become poorer than it was before the siting of the LULU.

The neighborhood also is likely to become home to more people of color. Racial discrimination in the sale and rental of housing relegates people of color to the least desirable neighborhoods regardless of their income level.<sup>8</sup> Further, once a neighborhood becomes a commu-

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6. See, e.g., Mark Baldassare et al., *Urban Service and Environmental Stressor: The Impact of the Bay Area Rapid Transit System (BART) on Residential Mobility*, 11 ENV'T & BEHAV. 435, 441-42 (1979).

7. For an overview of the research on the impact LULUs can have on neighboring property values, see Been, *supra* note 1, at 1388 n.19.

8. See, e.g., DOUGLAS S. MASSEY & NANCY A. DENTON, *AMERICAN APARTHEID: THE SEGREGATION AND THE MAKING OF THE UNDERCLASS* (1993); see also John O. Calmore, *To Make Wrong Right: The Necessary and Proper Aspirations of Fair Housing*, in *THE STATE OF BLACK AMERICA 1989*, at 77, 90-95 (Janet Dewart ed., 1989) (discussing the continuing prevalence of racial discrimination in the housing market); Paul A. Jargowsky & Mary J. Bane, *Ghetto Poverty in the United States, 1970-1980*, in *THE URBAN UNDERCLASS* 235, 252 (Christopher Jencks & Paul E. Peterson eds., 1991) (describing how African-American households are disproportionately located in the poorest of all neighborhoods).

nity of color, racial discrimination in the promulgation and enforcement of zoning laws,<sup>9</sup> the provision of municipal services,<sup>10</sup> the lending practices of banks,<sup>11</sup> and the practices of insurance companies may cause the neighborhood quality to decline even further. That further decline in turn induces those who can leave the neighborhood to do so and leaves the most poor and those most subject to discrimination in the neighborhood.

The dynamics of the housing market therefore are likely to force the poor and people of color to move to or remain in the neighborhoods in which LULUs are located, regardless of the demographics of the communities at the time that the LULUs were first sited. Indeed as long as the market depends on existing wealth to allocate goods and services, it would be remarkable if over the long run LULUs did not impose a disproportionate burden on the poor and people of color. As long as the market discriminates on the basis of race, it would be quite surprising if LULUs did not impose a disproportionate burden upon people of color.

By failing to address how LULUs have affected the demographics of their host communities, the current research has ignored the possi-

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9. For a discussion of discrimination in the promulgation and enforcement of zoning laws see, e.g., Jon C. Dubin, *From Junkyards to Gentrification: Explicating a Right to Protective Zoning in Low-Income Communities of Color*, 77 MINN. L. REV. 739 (1993); Yale Rabin, *Expulsive Zoning: The Inequitable Legacy of Euclid*, in ZONING AND THE AMERICAN DREAM 101 (Charles M. Haar & Jerold S. Kayden eds., 1989).

10. For discussions of discrimination in the provision of municipal services, see, e.g., CHARLES M. HAAR & DANIEL W. FESSLER, *THE WRONG SIDE OF THE TRACKS* 38-41 (1986); ROBERT L. LINEBERRY, *EQUALITY AND URBAN POLICY* (1977); *EQUITY IN THE CITY* (P.N. Troy ed., 1981); Kenneth W. Bond, *Toward Equal Delivery of Municipal Services in the Central Cities*, 4 FORDHAM URB. L.J. 263 (1976); Robert L. Graham & Jason H. Kravitt, *The Evolution of Equal Protection—Education, Municipal Services and Wealth*, 7 HARV. C.R.-C.L. L. REV. 103, 111, 154-68 (1972); Robert P. Inman & Daniel L. Rubinfeld, *The Judicial Pursuit of Local Fiscal Equity*, 92 HARV. L. REV. 1662, 1697-1701 (1979); Gershon M. Ratner, *Inter-Neighborhood Denials of Equal Protection in the Provision of Municipal Services*, 4 HARV. C.R.-C.L. L. REV. 1 (1968).

11. For discussion of the evidence of discrimination in mortgage lending, see, e.g., Glen B. Canner & Dolores S. Smith, *Expanded HMDA Data on Residential Lending: One Year Later*, 78 FED. RESERVE BULL. 801 (1992); Glen B. Canner & Dolores S. Smith, *Home Mortgage Disclosure Act: Expanded Data on Residential Lending*, 77 FED. RESERVE BULL. 859 (1991).

bility that the correlation between the location of LULUs and the socioeconomic characteristics of neighborhoods may be a function of aspects of our free market system other than, or in addition to, the siting process. It is critical to examine that possibility, however, because both the justice of the distribution of LULUs and the remedy for any injustice may differ depending on whether host neighborhoods were disproportionately populated by racial minorities and the poor at the time they were chosen as hosts or whether they became so after the LULU was cited. If host neighborhoods were minority neighborhoods at the time of the siting decision, then obviously the choice of the sites may have had a disproportionate impact upon people of color or may even have been based upon intentional prejudice. If so, the siting decisions would have been unfair under most theories of discrimination, and changes in the decision-making process and the siting process would be required. On the other hand, if the disproportionate distribution of LULUs results because market forces other than racial discrimination drive the poor to live in neighborhoods that offer cheaper housing because they host LULUs, the fairness of the distribution becomes a question about the fairness of the market economy.

Some would argue that the disproportionate burden is part and parcel of a free market system that is overall fairer than alternative schemes. Others would argue that the poor suffer lower quality neighborhoods just as they suffer lower quality health care, lower quality housing, and lower quality food, but that the problem is better addressed through income redistribution than through changes in the siting process. I'm not going to get into any of those debates here because for my purposes, all that matters is that the debate about the justice of the distribution of LULUs must shift if the distribution is caused, at least in part, by the free market rather than the siting process.

Even if we assume *arguendo* that the current distribution of LULUs, even if caused in part by the dynamics of the free market, is not just, we still need to examine the role that market dynamics plays in the distribution of LULUs. If the free market is partly to blame for the distribution of LULUs, it won't be sufficient to just fix the siting process. Indeed, if market forces are a substantial cause of the correlation between the presence of LULUs and the current socioeconomic

characteristics of the neighborhood, even a radical revision of the siting process to insure that LULUs are distributed equally among neighborhoods may have only a short-term effect. The areas surrounding the LULUs distributed equitably will become less desirable neighborhoods and thus may soon be left to the people of color and the poor so that the pattern of inequitable siting is soon recreated.

If the disproportionate burden LULUs impose results from or is exacerbated by market dynamics, therefore, effective remedies must include much more than simple reforms in the siting process. Sweeping changes in the housing market itself then would be necessary.

#### IV. REMEDYING THE GAPS IN EXISTING RESEARCH

Information about the role that market dynamics play in the distribution of LULUs is necessary for a better understanding of the nature of the problem of environmental injustice and will help point the way to an appropriate solution. I will now briefly explain some work that I have done to try to provide that information. I have extended or revised two of the leading studies about environmental racism: (1) the GAO study of 1983<sup>12</sup> and (2) Professor Bullard's *Solid Waste Sites and the Black Houston Community*.<sup>13</sup> My extensions of those studies analyze data about the demographic characteristics of the host neighborhoods in those studies at the time that the siting decisions were made, then trace changes in the demographics of the surrounding neighborhoods after the siting took place.

##### A. Overview of the Revised Studies

My revision of Professor Bullard's study indicates that market dynamics may be a significant part of the cause of the disparity between the racial composition of host communities and that of non-host communities. In that revision, sitings initially had a disproportionate effect upon people of color and poor communities. The sitings were then followed by increases in the neighborhood's level of poverty,

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12. GAO STUDY, *supra* note 5.

13. Bullard, *Black Houston*, *supra* note 5.



increases in the percentage of African-Americans in the neighborhood's population, and decreases in property values. Accordingly, the studies suggest that while siting decisions may have had an initial disproportionate impact upon minorities and the poor, market dynamics also played a very significant role in distributing the burdens LULUs impose.

My revision of the smaller GAO study, on the other hand, yielded different results. The revised GAO study again finds a correlation between neighborhood demographics and initial siting decisions, but finds no evidence that market dynamics then played any role in distributing the burden of the LULUs.

### *B. The Houston Study and Market Dynamics*

Professor Bullard studied the location of incinerators and landfills in Houston. His study concluded that twenty-one of Houston's twenty-five incinerators, mini-incinerators, and landfills were located in predominantly African-American neighborhoods. In my research, I used a subset of Professor Bullard's sample: those landfills, incinerators, and mini-incinerators sited after 1950.<sup>14</sup> When I looked at the data for the census tracts<sup>15</sup> from the time of the siting, I discovered that half of all the facilities were sited in areas that were disproportionately African-American at the time of the siting. Because one-quarter of Houston's population was African-American during the decades at issue, the study indicates that the siting process itself had a disproportionate effect upon African-Americans.

However, the analysis then goes on to show that the siting process was not the sole cause of the disproportionate burden that African-American communities now bear. The number of African-Americans as a percentage of the population increased between 1970 and 1980 in all of the neighborhoods surrounding the landfills and increased again

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14. I used a subset of ten facilities that had been sited between 1950 and 1978, because there was insufficient longitudinal data available to study facilities sited before 1950.

15. I used census tracts, not neighborhoods, so there is a difference between my revision of Dr. Bullard's study and his original study. For a discussion of the relative merits of using tracts rather than neighborhoods, see Been, *supra* note 1, at 1401-03.

between 1980 and 1990 in all but one neighborhood. The increase was as much as 223%, compared to a 7% increase in Houston as a whole. The end result was that by 1990, all of the neighborhoods hosting the landfills had become home to a disproportionate percentage of African-Americans.

Examination of the economic data reveals a similar pattern. At the time of the siting, only three of the ten host areas had poverty rates that were significantly higher than the surrounding area. The percentage of the host neighborhoods' population with incomes below the poverty level increased after the sitings, however, so that by the time of the 1990 census, seven out of the ten host communities had become significantly poorer than the surrounding area. Similarly, median family incomes dropped over the decades at issue, and property values suffered marked declines over the decades following the siting.

Thus, examining the data for the census closest to the date of the siting decision shows that the siting process had a disproportionate effect on African-Americans, but it also provides considerable support for the theory that market dynamics contributes to the disproportionate burden that LULUs now impose upon people of color and the poor. Accordingly, market dynamics ought to be addressed in any discussions about appropriate solutions to the problem.

## V. APPLICATION TO THE CLASSROOM

What does this mean for professors of environmental or land use law? Critical analysis of the existing research on environmental injustice (specifically the current siting research) helps to teach students a number of important skills. Comparing the different studies and analyzing how effective and reliable each study is will help promote critical thinking. In addition, looking at the issue of market dynamics is a very good way to get students involved in grappling with statistics, empirical research, and basic economic theory. It also will help force students to focus on the kinds of questions that they would have to address if they were developing the evidence necessary to support an environmental justice lawsuit. Lastly, and perhaps most importantly, critical analysis of the current literature on environmental justice will focus students' attention on the difficulty of finding appropriate solu-

tions to problems such as how fairness in the distribution of undesirable land uses should be defined; how a fair siting process should be designed; and how remedies for past instances of environmental justice should be shaped.<sup>16</sup> By introducing critical perspectives on the current research, law professors will both further students' theoretical and analytical skills and improve students' ability to craft solutions to difficult problems.

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16. I addressed many of these questions in 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).