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## Home is Where the Health Is: The Convergence of Environmental Justice, Affordable Housing, and Green Building

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ARTICLE

**Home is Where the Health Is: The  
Convergence of Environmental Justice,  
Affordable Housing, and Green Building**

KEVIN C. FOY\*

**I. INTRODUCTION**

Housing in the United States, at least prior to the recent economic downturn, came to be viewed as an investment that grew over time, and which could then be cashed in either for better housing or for other uses, much like a growth stock or savings account. But housing's fundamental purpose is to provide a decent place to live—a comfortable place physically and emotionally; a reliably safe and healthy place; a place that is the basis for other life activities. In order to fulfill its basic purpose, housing must be affordable. That is, it cannot consume too much of a family's income, to the detriment of other life pursuits. But the full cost of housing is not measured only in the cost of the initial capital investment—whether in mortgage payments (including essential costs like *ad valorem* taxes and insurance) or opportunity costs. It is also measured in terms of the other costs associated with living in the housing: the cost of heating and cooling; the cost of routine maintenance; the cost of water, sewer, and other utilities; and the cost of transportation. Some costs are

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less apparent: the costs of adverse health effects that may be associated with housing. For example, poor air quality inside a home can exacerbate asthma or cause other breathing and cardiopulmonary problems. Green housing provides one way to address these additional costs.

Environmental benefits are sometimes viewed as a luxury that those with a low or moderate income cannot afford. This article shows why that view is a fallacy. Greening the housing stock, both of new and existing housing, is a means to insure long-term affordability while simultaneously improving people's health and living conditions. Green affordable housing is a matter of environmental justice because, while environmental justice can be defined as the "fair treatment and meaningful involvement of all people" regardless of economic or other status, justice is achieved when "everyone enjoys the same degree of protection from environmental and health hazards."<sup>1</sup> Green affordable housing provides the same degree of protection from environmental and health hazards at home for people of modest means as people with higher incomes enjoy. Furthermore, greening the housing stock is a matter not just of economics and health but also of social concern. The ability of neighborhoods to thrive is dependent on a strong social fabric, which is dependent on stability. This means that people must have both the economic means to live in a neighborhood as well as the desire to do so. Greening affordable housing is a positive action, and in this sense represents an evolution in the continuing understanding of what constitutes justice in the context of the environment.<sup>2</sup> The early awakening of environmental justice was prompted by immediate threats, like hazardous waste dumps in low-wealth communities. The visibility and immediacy of such a threat is different from justice concerns in the context of housing. A toxic waste dump presents a clear and present danger; health threats in housing are more subtle. But there are

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1. *Environmental Justice*, EPA, <http://www.epa.gov/environmentaljustice/index.html> (last visited Oct. 22, 2012).

2. See M. Nils Peterson et al., *Moving Toward Sustainability: Integrating Social Practice and Material Process*, in ENVIRONMENTAL JUSTICE AND ENVIRONMENTALISM: THE SOCIAL JUSTICE CHALLENGE TO THE ENVIRONMENTAL MOVEMENT 189,193 (Ronald Sandler & Phaedra C. Pezzullo eds., 2007).

connections between how justice is served when people fight to keep something like a toxic waste dump out of a community and when people insist in fairness that something be included, like healthy housing. It is not just environmental degradation that is a matter for environmental justice, but also the distribution of environmental benefits, and one area where environmental benefits accrue is in green affordable housing.<sup>3</sup>

The issues this paper discusses—housing affordability, environmental equity, indoor and outdoor air quality, responsible use of natural resources, transportation and neighborhood character—are all connected.<sup>4</sup> Green affordable housing is especially important in the context of the disproportionate effects that low-wealth households experience from environmental degradation, including air, water, and noise pollution.<sup>5</sup>

To frame this discussion, Part II of this paper discusses the concept of environmental justice, a relatively new topic in the arena of American environmental concerns. It looks at how the concept has evolved over time, to the point that it is no longer concerned only with disparate impacts of environmental hazards but also the equitable distribution of environmental benefits. Part III looks at what constitutes affordable housing, and how supplying it is a function of local governments' land use authority. Part IV merges the concepts of affordable housing and environmental justice in the paradigm of green housing, demonstrating why both affordability and environmental justice are closely tied to issues of energy efficiency, transportation, indoor air quality, water conservation, and other attributes of green housing. Part V and VI conclude with observations about how law and policy can help establish comprehensive plans and legal mandates to insure that green features and affordability are incorporated in housing planning, as a matter of environmental justice.

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3. Colin Crawford, *Environmental Benefits and the Notion of Positive Environmental Justice*, 32 U. PA. J. INT'L L. 911, 914 (2011).

4. See generally William Bradshaw et al., *The Costs & Benefits of Green Affordable Housing*, NEW ECOLOGY INC. (2005), <http://www.landuseimpacts.com/pdf/affordable%20green%20housing%20report.pdf>.

5. See ROBERT BULLARD, *DUMPING IN DIXIE: RACE, CLASS, AND ENVIRONMENTAL QUALITY* (3d ed. 2000).

## II. ENVIRONMENTAL JUSTICE

Environmental justice is a concept that brings together strands of policy, law, equity, economics, and environment. One distillation of the idea articulates it as

the right to a safe, healthy, productive, and sustainable environment, where “environment” is considered in its totality to include the ecological, physical, social, political, aesthetic, and economic environment. Environmental justice addresses the disproportionate environmental risks borne by low-income communities and communities of color resulting from poor housing stock, poor nutrition, lack of access to healthcare, unemployment, underemployment, and employment in the most hazardous jobs.<sup>6</sup>

However, this definition represents only one effort to encapsulate what has become a force in environmental law that was either nonexistent or deeply buried in the modern origins of the movement for environmental protection in the United States. The idea of explicitly merging justice and the environment has a relatively short history, rooted in a dichotomy between civil rights and environmental protection.<sup>7</sup>

Environmental protection as an aspect of the law is not new. In fact, environmental protection can be traced to common law claims of nuisance and trespass. Both English and American courts were willing to enforce an individual right to be free from pollution, although the scope of enforcement at common law was often impeded by practical realities.<sup>8</sup> In addition, with the

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6. *Environmental Justice*, NAT’L ASS’N OF CNTY. & CITY HEALTH OFFICIALS, <http://www.naccho.org/topics/environmental/justice> (last visited Oct. 22, 2012). See also *Principles of Environmental Justice*, ENVTL. JUSTICE RES. CTR., <http://www.ejrc.cau.edu/princej.html> (last visited Oct. 22, 2012).

7. See Charles Lord & Keaton Norquist, *Cities as Emergent Systems: Race as a Rule in Organized Complexity*, 40 ENVTL. L. 551, 553 (2010) (showing that “the evidence is overwhelming that African-American and Hispanic neighborhoods play host to a disproportionately high percentage of environmental ‘disamenities’” or locally undesirable land uses); see also CEDAR GROVE INST. FOR SUSTAINABLE COMTYS., *ADDRESSING RACIAL DISPARITIES IN LOCAL GOVERNMENT ACTIONS: THE MEBANE CASE STUDY* (2003).

8. See *Madison v. Ducktown Sulphur, Copper, & Iron Co.*, 83 S.W. 658 (Tenn. 1904) (demonstrating the limits of a common law nuisance, where the

Industrial Revolution came an easing of the original rigidity that attached to property rights. The first American national statutory efforts at environmental protection were driven by concern for commerce more than other values. For example, the Rivers & Harbors Act of 1899 represented an effort to keep the waters of the United States free from debris, so as not to impede shipping lanes.<sup>9</sup> As the twentieth century progressed, however, other values, including human health, scenic beauty, wilderness protection, and conservation, began to evolve. With the emphasis on these values, in addition to commerce, the reach of environmental protection expanded.<sup>10</sup>

After World War II, with the explosion of industrial activity—in particular, the use and availability of a broad range of new products like plastics that depended on chemicals—along with rapid population growth and increasing wealth, came both new kinds of pollution and more visible evidence of that pollution. Examples of this pollution can be found in the air, in the water, and on land.<sup>11</sup>

Public concern, which drove the need for government intervention to reduce pollution and thereby protect the environment, gained momentum in the 1960s. Many observers trace the catalyst for public concern to Rachel Carson's classic monograph on the effects that chemical use had on the

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court refused the requested relief to small farmers severely damaged by nearby polluting industrial activities).

9. Rivers & Harbors Act of 1899, 33 U.S.C. § 403 (2006).

10. Among the environmental leaders of the twentieth century who expanded the rationale for environmental protection beyond the utilitarian and commercial were John Muir, founder of the Sierra Club who advocated wilderness protection, Gifford Pinchot, the first chief of the U.S. Forest Service who articulated a conservation ethic, and Theodore Roosevelt, who used the presidency to preserve more than 230 million acres of land as national monuments and national parks. *See generally* DONALD WORSTER, *A PASSION FOR NATURE: THE LIFE OF JOHN MUIR* (2008); *THE CONSERVATION DIARIES OF GIFFORD PINCHOT* (Harold K. Steen ed., 2001); DOUGLAS BRINKLEY, *THE WILDERNESS WARRIOR: THEODORE ROOSEVELT AND THE CRUSADE FOR AMERICA* (2009).

11. *See, e.g.*, Jonathan H. Adler, *Fables of the Cuyahoga: Reconstructing a History of Environmental Protection*, 14 *FORDHAM ENVTL. L.J.* 89, 95 (2002) (noting that “[w]ater pollution in the 1960s was a major environmental problem throughout the nation. Many rivers were declared industrial streams, used predominantly for commercial purposes and industrial waste.”).

environment and on human health: *Silent Spring*, published in 1962.<sup>12</sup> Yet there were other forces at work as well.<sup>13</sup>

The modern era of national laws designed to regulate pollution includes an array of interconnecting efforts, implemented across many federal agencies, controlling the effects of human interaction with the environment. Most of these laws took shape in the 1970s and 1980s.<sup>14</sup> When Congress enacted this body of laws, it usually set forth at the outset of each a statement as to the law's purpose. For example, under the National Environmental Policy Act (NEPA), Congress declared that the law's purpose was to "encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation . . . ." <sup>15</sup> NEPA was among the earliest of modern environmental laws, enacted in 1970, and is broadly applicable to government activities. It therefore set a standard for the behavior of federal agencies with respect to the environment. It also demonstrates the aspirations that lawmakers had for environmental protection generally. It is instructive that the stated purpose of the law does not include recognition that some American communities might already enjoy harmony with the environment, while others might be suffering disproportionately from the ill effects of a degraded environment.<sup>16</sup> Similarly, the Clean Air Act speaks generically

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12. See generally RACHEL CARSON, *SILENT SPRING* (1962).

13. Heightened public consciousness about environmental degradation spurred the 1961 founding of the World Wildlife Fund and the 1967 founding of the Environmental Defense Fund. See *History*, WORLD WILDLIFE FED'N, <http://www.worldwildlife.org/who/History/historyt.html> (last visited Oct. 22, 2012); *Our Mission & History*, ENVTL. DEF. FUND, <http://www.edf.org/about/our-mission-and-history> (last visited Oct. 22, 2012).

14. See, e.g., Clean Water Act of 1977, 33 U.S.C. § 1251 (2006); Clean Air Act Amendments of 1970, 42 U.S.C. § 7401 (2006); Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6901 (2006); Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. § 9601 (2006).

15. 42 U.S.C. § 4321 (2006).

16. NEPA includes the statement that the national policy is to "assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing

about protecting air quality “so as to promote the public health and welfare” but does not evince a concern for any sector of society that might require greater focus.<sup>17</sup> In fact, the Solid Waste Disposal Act, which deals with burying waste—including hazardous waste—on land, notes as part of its declaration of national policy that “[w]aste that is nevertheless generated should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment.”<sup>18</sup> Although this statement appears to protect human health, on closer examination it acknowledges that toxic pollution will continue to be generated and to affect human health, and the law seeks only to “minimize” that effect. The statement does not suggest that there is any need to take into account the disparate impact that this policy might have on some sectors of society.<sup>19</sup>

A lack of concern as reflected in national policy about the disproportionate impact that environmental degradation has on minority and low-wealth communities reflects the greater disconnection between environmental protection and social justice.<sup>20</sup> For most of their history, national organizations like

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surroundings,” but does not acknowledge either existing disparate treatment or the likelihood of future disparate treatment. 42 U.S.C. § 4331(b)(2) (2006).

17. 42 U.S.C. § 7401(b)(1) (2006).

18. 42 U.S.C. § 6902(b) (2006).

19. When Congress wants to include a specific statement of concern, it does so. For example, the Toxic Substances Control Act, 15 U.S.C. §§ 2601-2697 (2006), is the federal law that regulates chemical substances that have an adverse effect on human health. Congress set as national policy a goal that “authority over chemical substances and mixtures should be exercised in such a manner as not to impede unduly or create unnecessary economic barriers to technological innovation . . . .” *Id.* at § 2601(b)(3). This statement is meant to insure that economic concerns are part of any regulations promulgated pursuant to the Act, and to give courts guidance in interpreting the law. In other words, protecting the financial interest of chemical manufacturers is part of the national policy. There is, however, no statement of Congressional concern that toxic substances might impede unduly the ability of some sectors of society to enjoy a healthy environment free from toxic effects, as compared with other sectors of society.

20. In some European countries there is a political alliance between parties concerned with social issues and parties concerned with environmental issues. This is familiarly termed a “Red-Green” coalition. See ANDREI S. MARKOVITS & PHILIP S. GORSKY, *THE GERMAN LEFT: RED, GREEN AND BEYOND* (1993). In the United States, on the other hand, there has been a “Red-Green” split.

the Sierra Club and the Natural Resources Defense Council saw their mission as focusing on the environment, with any social or health benefit being ancillary to broader environmental goals.<sup>21</sup> The movement toward protecting the environment, which originated in efforts to protect wilderness and natural areas rather than urban areas and human health,<sup>22</sup> came to be led by educated, upper middle-class people who were primarily not people of color.<sup>23</sup> In fact, the social justice and environmental movements were divided not only by race, but also by gender.<sup>24</sup> Because of this focus and leadership, the movement could also be categorized as primarily for the benefit of people who could afford the luxury of worrying about the environment.<sup>25</sup>

Juxtaposed with the building momentum of environmental protection, spawned in the 1960s and institutionalized in the

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21. Environmental organizations have subsequently embraced the environmental justice movement. See Renee Skelton & Vernice Miller, *The Environmental Justice Movement*, NRDC, <http://www.nrdc.org/ej/history/hej.asp> (last updated Oct. 12, 2006); see also Veronica Eady, *Warren County and the Birth of a Movement: The Troubled Marriage Between Environmentalism and Civil Rights*, 1 GOLDEN GATE U. ENVTL. L.J. 41, 50 (2007).

22. For example, John Muir, founder of the Sierra Club, was a naturalist primarily concerned with wilderness preservation. See WORSTER, *supra* note 10.

23. See generally EDUARDO LAO RHODES, ENVIRONMENTAL JUSTICE IN AMERICA: A NEW PARADIGM 31 (2003) (“The environmental movement both in and out of government, is primarily white and to a large extent indifferent to issues of social justice.”). Environmental organizations are trying to change that trend. See Kim Severson, *Program Shapes the New Faces of Conservation*, N.Y. TIMES, July 30, 2012, at A12 (Nature Conservancy is pushing to “create scientists and engineers who do not look like most of those already in the field” because the fact that “the largest conservation organizations in the country are predominantly white is no secret.”).

24. See Phaedra C. Pezzullo & Ronald Sandler, *Revisiting the Environmental Justice Challenge to Environmentalism*, INTRODUCTION TO ENVIRONMENTAL JUSTICE AND ENVIRONMENTALISM, *supra* note 2, at 9.

25. See COMM’N FOR RACIAL JUSTICE, TOXIC WASTES AND RACE IN THE UNITED STATES: A NATIONAL REPORT ON THE RACIAL AND SOCIO-ECONOMIC CHARACTERISTICS OF COMMUNITIES WITH HAZARDOUS WASTE SITES xi (1987) (explaining that one reason minority communities had not been involved in environmental issues “can be traced to the nature of the environmental movement which has historically been white middle and upper-class in its orientation.”). As to an assumption that environmental concern is a luxury reserved to wealthy white citizens, some current studies refute that. See Char Dae’ S. Love, *Environmental Concerns: Race, Gender, and Income*, 5 XULANEXUS 7 (2008) (concluding that “minorities as a whole are more likely to be concerned about the environment.”).

1970s and 1980s, was the civil rights movement. Its broad outlines are familiar as a social movement, but the consequences of that movement as embodied in the law include the 1954 decision in *Brown v. Board of Education*,<sup>26</sup> the Civil Rights Act of 1964,<sup>27</sup> and the Voting Rights Act of 1965.<sup>28</sup> The movement itself and the legal legacy that it bequeathed, however, focused on equal access to and treatment in public education,<sup>29</sup> equal access to and treatment in public accommodations,<sup>30</sup> and elimination of impediments to participating in elections.<sup>31</sup> It did not extend explicitly to the environment.

### A. Origins of the Environmental Justice Movement

Civil rights and the environment met in the early 1980s, with environmental justice growing more out of the civil rights movement for social justice and human rights than out of the environmental movement's concern for environmental protection.<sup>32</sup> Although issues that gave impetus to this meeting brewed around the country, many commentators identify the

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26. See *Brown v. Bd. of Educ.*, 347 U.S. 483 (1954).

27. See Civil Rights Act of 1964, Pub. L. No. 88-352, 78 Stat. 241 (codified as amended in scattered sections of 2 U.S.C., 28 U.S.C., and 42 U.S.C.).

28. See Voting Rights Act of 1965, 42 U.S.C. §§ 1973-1974e (2006).

29. The *Brown* court said

[w]e conclude that in the field of public education the doctrine of 'separate but equal' has no place. Separate educational facilities are inherently unequal. Therefore, we hold that the plaintiffs and others similarly situated for whom the actions have been brought are, by reason of the segregation complained of, deprived of the equal protection of the laws guaranteed by the Fourteenth Amendment.

347 U.S. at 495.

30. Civil Rights Act of 1964, 42 U.S.C. § 2000a(a) (2006) ("All persons shall be entitled to the full and equal enjoyment of the goods, services, facilities, privileges, advantages, and accommodations of any place of public accommodation, as defined in this section, without discrimination or segregation on the ground of race, color, religion, or national origin.").

31. Voting Rights Act of 1965 § 2, 42 U.S.C. § 1973 (2006) ("No voting qualification or prerequisite to voting, or standard, practice, or procedure shall be imposed or applied by any State or political subdivision to deny or abridge the right of any citizen of the United States to vote on account of race or color.").

32. JOAN MARTINEZ-ALIER, *THE ENVIRONMENTALISM OF THE POOR: A STUDY OF ECOLOGICAL CONFLICTS AND VALUATION* 169 (2002).

events that occurred in Warren County, North Carolina, in 1982 as the point that catalyzed the environmental justice movement.<sup>33</sup> Warren County became the proposed site for a toxic waste dump as the result of an environmental crime. Instead of properly disposing of hazardous waste, the hauler dumped it on roadsides near Raleigh, North Carolina.<sup>34</sup> The waste was a chemical called polychlorinated biphenyl (PCB), which is highly toxic<sup>35</sup> and persistent<sup>36</sup> but had been used in many industrial applications, including electric transformers.<sup>37</sup> When the crime was discovered, the state needed to find a suitable location to dispose of it properly. North Carolina settled on Warren County, concluding that it was most suitable because it was sparsely populated and close to the contamination area.<sup>38</sup> However, it was also among the poorest counties in the state, and had a majority African-American population in a state whose general population was 22 percent African-American.<sup>39</sup> In addition, most of the people living below the poverty level in Warren County were African-American.<sup>40</sup>

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33. Barry Hill documents earlier actions in other places around the country concerning environmental injustice, but concludes that the Warren County episode nationalized the issue. See BARRY E. HILL, *ENVIRONMENTAL JUSTICE: LEGAL THEORY AND PRACTICE* 9 (2009).

34. GENERAL ACCOUNTING OFFICE, GAO/RCED-83-166, *SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING* app. I, at 7 (June 1, 1983) [hereinafter *SITING OF HAZARDOUS WASTE LANDFILLS*].

35. In fact, the toxicity of PCBs was of such concern that they were the only substances that Congress specifically targeted for disposal criteria under the Toxic Substances and Control Act (TSCA). *Id.* app. II, at 11.

36. “Persistence” refers to the fact that PCBs stay in the environment and present human health hazards for an extended period of time. See C.L. Quinn et al., *Investigating Intergenerational Differences in Human PCB Exposure Due to Variable Emissions and Reproductive Behaviors*, 119 *ENVTL. HEALTH PERSP.* 641, 641 (May 2011).

37. See generally *Basic Information: Polychlorinated Biphenyl*, EPA, <http://www.epa.gov/wastes/hazard/tsd/pcbs/pubs/about.htm> (last visited Oct. 23, 2012).

38. *SITING OF HAZARDOUS WASTE LANDFILLS*, *supra* note 34, app. I at 9.

39. *Id.* at 7.

40. *Id.* at app. I. See also UNC EXCH. PROJECT, *REAL PEOPLE - REAL STORIES: AFTON, NC WARREN COUNTY* app. I, at 2 (2006).

But Warren County was not always poor and powerless; it was a relatively wealthy county in the nineteenth century.<sup>41</sup> It was not completely powerless in the 1980s, either. One Warren County native was the prominent national leader Floyd McKissick, the first African-American student at the University of North Carolina Law School and later leader of the Congress of Racial Equality.<sup>42</sup> Among the leaders of the toxic dump protest was a county resident who had been a member of the board of directors of the Southern Christian Leadership Conference, with connections to other civil rights leaders.<sup>43</sup> So when residents discovered the proposal, they protested vehemently, catching national attention. The protest continued for three years, culminating in a federal district court's denial of an injunction against opening the dump.<sup>44</sup> While the protests did not stop the toxic waste dump, they did ignite a movement.<sup>45</sup>

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41. In fact, Warren County was a center of wealth, education, and culture in the mid-nineteenth century. See CARY ASELAGE ET AL., WARRENTON, WARREN COUNTY, NORTH CAROLINA: AN ACTION ORIENTED COMMUNITY DIAGNOSIS INCLUDING SECONDARY DATA ANALYSIS AND QUALITATIVE DATA COLLECTION 15 (2001), available at <http://archives.hsl.unc.edu/cdpapers/Warrenton01.pdf>.

42. *Id.* at 16. Floyd McKissick also started Soul City in Warren County as a model city funded by the U.S. Department of Housing and Urban Development pursuant to the Urban Growth and New Community Development Act (renamed National Urban Policy and New Community Development Act of 1970, 42 U.S.C. §§ 4501-4532 (2006)).

43. Dollie Burwell & Luke Cole, *Environmental Justice Comes Full Circle: Warren County Before and After*, 1 GOLDEN GATE U. ENVTL. L.J. 9, 12 (2007).

44. SITING OF HAZARDOUS WASTE LANDFILLS, *supra* note 34, app. I at 10. The denial was in a case brought by the local chapter of the National Association for the Advancement of Colored People (NAACP) based on race discrimination. See James Helmer, Jr., *Title VI and the Warren County Protests*, 1 GOLDEN GATE U. ENVTL. L.J. 73, 73 (2007). The county itself had brought a prior unsuccessful action on other grounds, including nuisance, in *Warren Cnty. v. State*, 528 F. Supp. 276 (E.D.N.C. 1981) (seeking to prevent opening the dump).

45. See Burwell & Cole, *supra* note 43, at 27. A contribution to the beginning of the movement came about because the District of Columbia's congressional delegate, Walter Fauntroy, was among the protesters arrested for trying to stop the Warren County dump. Afterward, at his request the General Accounting Office prepared "Siting of Hazardous Waste Landfills and Their Correlation With Racial and Economic Status of Surrounding Communities," which documented information about toxic waste facilities in African-American communities around the country. *Id.* at 36. Despite the victory in engendering a nationwide movement, it took more than twenty years to get the toxic waste dump cleaned up. Cleanup of the Warren County site was completed in 2004. Political power helps explain the success of the cleanup, with Warren County

### B. The Environmental Justice Dynamic

Environmental justice is founded on concern for the basic inequity inherent in requiring lower-wealth and minority communities to live in places that have a lower level of environmental protection than other communities; however, the connection between wealth and power as it affects the environment is deeper than that. Not only is wealth implicated in consumption of resources, which is usually directly linked to environmental degradation like pollution, but also the wealthier the people the more they demand a clean and healthy environment in which to live.<sup>46</sup> This gives rise to an “out of sight, out of mind” mentality about the consequences of behaviors that adversely affect the environment. The richer a cohort is in society, the more it is able to insulate itself from being affected by or observing environmental degradation. A corollary to insulation from adverse environmental effects is the ability of richer people to create healthier environments in which to live, including healthier homes. The perverse consequence is that, on a per capita basis, the people who cause the least amount of pollution experience the worst environment in which to live.<sup>47</sup>

Some discussion about environmental justice questions whether evidence of inequity is misplaced. This line of thinking contends that in some contexts, such as toxic waste dumps, there is an issue of cause and effect. The question raised is whether toxic waste is placed in a particular location because it is a low-wealth minority community, or whether it is a low-wealth minority community because the toxic waste facility reduced land value nearby, making the community affordable.<sup>48</sup> However,

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residents U.S. Representative Eva Clayton and State Senator Frank Balance both in positions of influence at the time. *Id.* at 35.

46. James K. Boyce, *Inequality and Environmental Protection*, in *INEQUALITY, COOPERATION, AND ENVIRONMENTAL SUSTAINABILITY* 324 (Jean-Marie Baland et al. eds., 2007).

47. *Id.*

48. See Vicki Been, *Analyzing Evidence of Environmental Justice*, 11 J. LAND USE & ENVTL. L. 1 (1995); see also William M. Bowen & Michael V. Wells, *The Politics and Reality of Environmental Justice: A History and Considerations for Public Administrators and Policy Makers*, 62 PUB. ADMIN. REV. 688, 690 (Nov/Dec 2002) (discussing what the authors describe as a “weak empirical

close study of this suggestion has found it more likely that communities that host toxic waste facilities were made up primarily of African-Americans and Latinos with lower than average incomes before they became host communities.<sup>49</sup>

Even if the evidence did point to the converse, concluding that toxic waste facility sitings came first and that low-wealth minority communities sprang up around them, the central issues of environmental justice would still be implicated. The consequences of environmental degradation would still unduly burden these communities. Nor would this conclusion affect other contexts in which low-wealth minority communities are unduly burdened, such as exposure to criteria air pollutants or mercury.<sup>50</sup> It would not affect the basic power dynamic, which demonstrates that politically weak communities are less likely to enjoy the benefits of environmental protection.<sup>51</sup>

Benjamin Chavis is credited with originating the term “environmental racism” to describe the reason that minority

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foundation” demonstrating disproportionate impact of environmental hazards on low-wealth and minority communities).

49. Boyce, *supra* note 46, at 329 (citing Manuel Pastor et al., *Which Came First? Toxic Facilities, Minority Move-In, and Environmental Justice*, 23 J. URB. AFF. 1, 1-21 (2001)).

50. See, e.g., Devon Payne-Sturges & Gilbert Gee, *National Environmental Health Measures for Minority and Low-Income Populations: Tracking Social Disparities in Environmental Health*, 102 ENVTL. RES. 154, 160 (2006) (noting that “numerous reports have documented significant increases in asthma morbidity and mortality in US beginning in the 1970s, with African Americans disproportionately affected” and that “air pollution (PM, ozone) was associated with exacerbation of asthma symptoms” in African-American children).

51. Boyce, *supra* note 46, at 341. As the Warren County example showed, before the waste dump was sited “[n]ot only was Warren County predominantly Black and predominantly poor, but it was politically impotent. And that was just the recipe for dumping. So after that time a lot of African Americans were elected to different positions.” Burwell & Cole, *supra* note 43, at 39. However, not everyone agrees that political power is a factor in disparate treatment of communities. See JAMES P. LESTER ET AL., ENVIRONMENTAL INJUSTICE IN THE UNITED STATES: MYTHS AND REALITIES 149 (2001) (reporting that “[t]he most consistently null findings from the multilevel analysis indicates that there was either no relationship between political mobilization and environmental harms or that the relationship was opposite to the initial hypothesis for thirteen out of the fourteen dependent variables studied. This finding stands in stark contrast to the idea that politically mobilized communities capture the attention of decisionmakers and, thus increased political mobilization has the effect of minimizing environmental harms.”).

communities have borne the burden of environmental harms.<sup>52</sup> By this term, he apparently meant that the environment provided one more area where racism could be expressed. He subsequently elaborated on the definition of racism:

Racism is racial prejudice plus power. Racism is the intentional or unintentional use of power to isolate, separate and exploit others. This use of power is based on a belief in superior racial origin, identity or supposed racial characteristics. Racism confers certain privileges on and defends the dominant group, which in turn sustains and perpetuates racism. Both consciously and unconsciously, racism is enforced and maintained by the legal, cultural, religious, education, economic, political, environmental and military institutions of societies. Racism is more than just a personal attitude; it is the institutionalized form of that attitude.<sup>53</sup>

Studies continue to show racial and economic disparities not only in exposure to toxic waste, but also for other adverse environmental health effects.<sup>54</sup> In fact, scientists believe that exposure to pollutants is not linear in its health effects; rather, cumulative exposure creates a synergy among chemicals that induces disease.<sup>55</sup> Not only are these chemicals involved, but psychological factors may be as well—meaning that not only do toxic facilities and other pollutants lead to adverse health effects, but they combine with stressors like worry about the impact that those effects might have, cascading into higher risk of disease.<sup>56</sup>

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52. Burwell & Cole, *supra* note 43, at 24.

53. COMM'N FOR RACIAL JUSTICE, *supra* note 25, at ix-x.

54. See BENJAMIN A. GOLDMAN & LAURA FITTON, TOXIC WASTES AND RACE REVISITED: AN UPDATE ON THE 1987 REPORT ON THE RACIAL AND SOCIOECONOMIC CHARACTERISTICS OF COMMUNITIES WITH HAZARDOUS WASTE SITES (1994) (citing BENJAMIN A. GOLDMAN, NOT JUST PROSPERITY: ACHIEVING SUSTAINABILITY WITH ENVIRONMENTAL JUSTICE 13 (1994) (finding that a “recent review of the empirical literature found that 63 out of 64 studies documented various environmental disparities by race or income, including the location of noxious facilities, toxic releases and exposures, ambient levels of air pollution, and environmental health effects (the exception was a study funded by the largest waste management firm, WMX Technologies Inc.)”).

55. Catherine M. Cooney, *Stress-Pollution Interactions: An Emerging Issue in Children's Health Research*, 119 ENVTL. HEALTH PERSP. A430, A431 (2011).

56. *Id.* at A435.

The idea of environmental racism began to expand toward a broader notion than could be defined under the rubric of environmental justice.<sup>57</sup> There are many definitions for the term “environmental justice,”<sup>58</sup> but one useful definition is “the 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.”<sup>59</sup> Because this is the definition developed by the United States Environmental Protection Agency (EPA), the agency’s goal of achieving environmental justice “when everyone 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”<sup>60</sup> carries some weight. It is notable that the term encompasses race as well as income. The term therefore deals both with environmental racism and environmental classism, acknowledging that both race and economic status are

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57. In fact, the notion has expanded beyond environmental justice to a concept of environmental protection and participation in decisionmaking as a human right. See Rebecca M. Bratspies, *Sustainability: Can Law Meet the Challenge?*, 34 SUFFOLK TRANSNAT’L. L. REV. 283 (2011).

58. Environmental equity is another term, although not all commentators agree that it has the same meaning as environmental justice. See RHODES, *supra* note 23, at 16-17.

59. This refers to the definition developed by the U.S. Environmental Protection Agency. *Environmental Justice*, EPA, <http://www.epa.gov/environmentaljustice/index.html> (last updated Oct. 15, 2012). Other definitions include the American Bar Association’s, which says environmental justice is “the principle that all people have the right to clean air, water and land, and that those potentially affected by environmental decisions should have a meaningful say in the decision making process, regardless of race, income or ethnicity.” *Preface* to ENVIRONMENTAL JUSTICE FOR ALL: A FIFTY STATE SURVEY OF LEGISLATION, POLICIES AND CASES v (Steven Bonorris ed., 4th ed. 2010). The U.S. Department of Housing and Urban Development says “Environmental Justice (EJ) means ensuring that the environment and human health are fairly protected for all people regardless of race, color, national origin, or income. EJ is an integral part of the Department’s mission. HUD’s EJ Program works with states, tribes, local communities, other grantees, and staff at other federal agencies to seamlessly incorporate EJ awareness and planning considerations into program activities.” *Environmental Justice*, HUD, [http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/comm\\_planning/environment/review/justice](http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/environment/review/justice) (last visited Oct. 24, 2012).

60. *Environmental Justice*, EPA, <http://www.epa.gov/environmentaljustice/index.html> (last updated Oct. 15, 2012).

predictors of environmental discrimination.<sup>61</sup> Furthermore, it implies that environmental justice can be pursued through not only substantive rights embodied in environmental laws and regulations, but also through procedural rights by ensuring meaningful involvement.<sup>62</sup>

If justice is to be achieved in the realm of environmental benefits and burdens, the variety of responses should revolve around the notion that justice in this context means equality. The more equal the benefits and burdens, the more just the outcome.<sup>63</sup> But considering the lack of environmental justice as part of the original fabric of environmentalism, and the continuing debate about what it is and whether it even exists, it is likely that it will take a long time for institutions and government agencies to fully embrace tools to address disparate environmental effects on low-wealth and minority communities.<sup>64</sup> Efforts to address environmental justice begin with the

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61. Pezzullo & Sandler, *supra* note 24, at 8.

62. Both substance and procedure include, for example, “toxics use reduction, community revitalization, and community participation in decision making.” GOLDMAN & FITTON, *supra* note 54, at 1. EPA’s definition is made pursuant to its obligation, like all federal agencies, to consider environmental justice as part of all decisions. President Clinton issued Executive Order 12898 in 1994, requiring each federal agency 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 . . . .” Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations, Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994). This is a potentially difficult endeavor for an agency like EPA, which generally deals in quantifiable terms, such as the level of a particular pollutant in the ambient air.

63. See Peter Wenz, *Does Environmentalism Promote Injustice for the Poor?*, in Sandler & Pezzullo, *supra* note 2, at 58. One way to test the notion of whether allocating equal benefits and burdens is possible is through taking seriously the stated goal of the Pollution Prevention Act of 1990. 42 U.S.C. § 13101 (2006). That law sets a policy of first reducing the quantity of pollution, and only when reduction is impossible, then choosing what communities will accept what quantity of a pollutant. If all communities were at risk of receiving hazardous waste, then waste reduction at the outset might be very effective. *Id.* at § 13101(b). As to what constitutes “fair treatment” in the EPA definition, the term may or may not mean equal treatment. The procedural requirement of meaningful involvement presumes that communities could make an informed choice to be treated unequally.

64. See RHODES, *supra* note 23, at 70.

proposition that environmental benefits accrue disproportionately to the wealthy and environmental burdens devolve disproportionately on low-wealth people.

### C. Socioeconomic Factors in Environmental Risk

Not everyone accepts the idea that there is disparate risk to health from environmental factors based on social factors. Critics of the environmental justice movement contend that there is no evidence to support its signal claims, and it is actually nothing more than a movement to gain political advantage.<sup>65</sup> However, this ignores extensive evidence that the less wealthy an American is, the more likely she is to get sick, the more likely she is to suffer psychological problems, and the more likely she is to die.<sup>66</sup> For children in less wealthy households, the adverse health effects continue into adulthood, no matter how wealthy they later become.<sup>67</sup>

One environmental risk to health is air pollution, which can impair heart and lung functions.<sup>68</sup> However, air pollution is not uniform in all areas of the country or even in all areas of a city. In fact, among the most insidious of air pollutants are fine particles,<sup>69</sup> which are found at elevated concentrations closer to traffic sources.<sup>70</sup> This means that people living in urban areas close to heavily traveled roads have a higher risk of exposure to these pollutants than other people.<sup>71</sup> Further evidence demonstrates that African-Americans are more likely than the

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65. See Bowen & Wells, *supra* note 48.

66. Marie S. O'Neill et al., *Health, Wealth, and Air Pollution: Advancing Theory and Methods*, 111 ENVTL. HEALTH PERSP. 1861, 1861 (2003).

67. *Id.* at 1862.

68. *Id.* at 1861.

69. These fine particles are regulated under the Clean Air Act as criteria pollutants known as “particulate matter.” EPA considers them more harmful the smaller they are because they more easily penetrate the lungs and enter the bloodstream. See *Particulate Matter*, EPA, <http://www.epa.gov/pm> (last updated June 28, 2012).

70. O'Neill et al., *supra* note 66, at 1864.

71. See Wen Qi Gan et al., *Long-Term Exposure to Traffic-Related Air Pollution and the Risk of Coronary Heart Disease Hospitalization and Mortality*, 119 ENVTL. HEALTH PERSP. 501 (2011); see also Alicia Amigou et al., *Road Traffic and Childhood Leukemia: The ESCALE Study (SFCE)*, 119 ENVTL. HEALTH PERSP. 566 (2011).

general population to be exposed to harmful air pollutants like nitrogen oxide and sulfur dioxide.<sup>72</sup> Adding to the problem, people who suffer ill effects from outside air pollution may be more likely to experience co-exposure to indoor air pollutants, which makes them less able to deal with the health consequences of either exposure.<sup>73</sup> Clearly, where someone lives, including the home and neighborhood she lives in, affects both her current and future health.

The unequal burden of air pollution is demonstrated by the incidence of asthma. African-American children suffer from asthma at about twice the rate of white children, and die from it at more than four times the rate.<sup>74</sup> Another housing-related health hazard is lead poisoning in children. Lead exposure, which is caused both by indoor and outdoor factors, causes cognitive deficits that can also include behavioral problems.<sup>75</sup> Although lead exposure is declining nationally, its prevalence based on race and income (it is higher among African American children and children living below the poverty line), both currently and historically, is indicative of the health consequences that can result from exposure to hazards within an individual home.<sup>76</sup>

Although the environmental justice movement grew out of concerns about the inequity of imposing environmental burdens most heavily on low-wealth and minority communities, it has evolved beyond that. Now it is a movement that recognizes the need for ensuring that environmental benefits are also fairly

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72. LESTER ET AL., *supra* note 51, at 152.

73. O'Neill et al., *supra* note 66, at 1865.

74. Fatemeh Shafiei, *Reducing Health Disparity Through Healthy Housing*, in *HEALTHY & SAFE HOMES: RESEARCH, PRACTICE, AND POLICY* 76 (Rebecca L. Morley et al. eds., 2011). Nationally, according to the American Lung Association, nine million children have asthma. Stockton Williams & Dana Bourland, *Green Affordable Housing: Enterprise's Green Communities Initiative*, in *GREENING OUR BUILT WORLD: COSTS, BENEFITS, AND STRATEGIES* 43 (Greg Kats et al. eds., 2010).

75. JG Schwemberger et al., *Blood Lead Levels – United States, 1999 – 2002*, 54 *MORBIDITY & MORTALITY WKLY. REP.* 513 (May 27, 2005).

76. *Fast Facts on Children's Environmental Health*, EPA, <http://yosemite.epa.gov/ochp/ochpweb.nsf/content/fastfacts.htm> (last updated Oct. 24, 2012).

allocated.<sup>77</sup> Today, affected communities and environmental justice advocates are interested not only in alleviating environmental burdens, but also in the equitable distribution of environmental and economic benefits. One way to do this is to consider where people live, and to make adjustments to homes and neighborhoods so that where people live is part of delivering environmental benefits fairly.

Environmental justice is not a foreign concept to housing. In fact, health has long been a driver in how cities grow, where housing is built, and the kinds of neighborhoods that develop. In the nineteenth century, as a result of increasing pollution from industrial development, city planning grew in tandem with the movement for better public health.<sup>78</sup> The kinds of environmental problems that people encountered during that time were related to substandard or nonexistent clean water and sanitary sewage systems, inadequate garbage disposal systems, and ineffective pest control.<sup>79</sup> One way to deal with these adverse conditions was to segregate activities—keeping residences away from factories. Efforts to isolate activities that were considered harmful to human health were the force behind the origin of modern zoning, which continues to separate land uses by function and seeks to keep industrial activities away from housing.<sup>80</sup> But keeping housing away from industry is not the only concern in the modern context. As a matter of environmental justice, land use planning with the goal of improving public health requires that affordable housing be considered as a component of broader goals to overcome market forces and resist power structures that perpetuate unhealthy housing for low-income and minority populations.<sup>81</sup> How this can be done requires an analysis of the history of affordable housing.

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77. Charles Lee, *Warren County's Legacy for the Quest to Eliminate Health Disparities*, 1 GOLDEN GATE U. ENVTL. L.J. 53, 56 (2007).

78. Jason Corburn, *Confronting the Challenges in Reconnecting Urban Planning and Public Health*, 94 AM. J. PUB. HEALTH 541, 541 (2004).

79. *Id.*

80. *Id.* at 542.

81. *Id.* at 543.

### III. AFFORDABLE HOUSING

Housing costs are a major expense for most households.<sup>82</sup> What makes housing affordable is a relative matter since affordability is based on diverse factors including household income, housing market prices, household size, and personal factors like household debt or other demands on financial resources.<sup>83</sup> Nevertheless, housing is generally considered affordable if its cost is not more than thirty percent of the annual household income.<sup>84</sup> This percentage includes utilities, taxes, insurance, and similar costs associated with the housing. Any household may choose to spend more than thirty percent of its annual income on housing, which would make that housing unaffordable by definition. To capture the concept of affordable housing, the definition must expand so that allocation of income is based not solely on choice but also on housing availability. The evidence is that the lower a household's income, the less likely it is that there will be any housing available that consumes thirty percent or less of that household's annual income, which means the household is forced to spend more than is affordable.<sup>85</sup> It is this lack of housing availability to people with low or very-low incomes that drives demand for affordable housing.

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82. J. Rosie Tighe, *Public Opinion and Affordable Housing: A Review of the Literature*, 25 J. PLAN. LITERATURE 3, 3 (2010).

83. Bradshaw et al., *supra* note 4, at 16.

84. See ENVIRONMENTAL JUSTICE FOR ALL, *supra* note 59; see also *Housing & Affordability Index*, CTR. FOR NEIGHBORHOOD TECH., <http://htaindex.cnt.org/> (last visited Oct. 25, 2012). There can be other measures of what constitutes affordable housing, such as the National Association of Realtors' Housing Affordability Index. That index "is based on the relationship between median home price, median family income[,] and average mortgage interest rate." *Housing Affordability Index*, NAT'L ASS'N OF REALTORS, <http://www.realtor.org/topics/housing-affordability-index/data> (last visited Oct. 25, 2012). "Housing" refers to a residence that is a house, an apartment, or a manufactured home. A "household" refers to all the people who occupy specific housing. Jaime Raymond et al., *Inadequate and Unhealthy Housing, 2007 and 2009*, 60 MORBIDITY & MORTALITY WKLY. REP. 21 (Jan. 14, 2011).

85. According to HUD, "[a]n estimated 12 million renter and homeowner households now pay more than 50 percent of their annual incomes for housing, and a family with one full-time worker earning the minimum wage cannot afford the local fair-market rent for a two-bedroom apartment anywhere in the United States." *Affordable Housing*, HUD, <http://www.hud.gov/offices/cpd/affordablehousing/> (last visited Oct. 25, 2012).

An estimated ten percent of American households spend more than fifty percent of their annual income on housing.<sup>86</sup> A refinement of that measure indicates that a much larger percentage—almost a quarter—of “working households” spend more than half of their income on housing.<sup>87</sup> This phenomenon is a trend, with housing affordability decreasing since 2008.<sup>88</sup> As the stock of affordable housing decreases, the need for it increases.<sup>89</sup> This need is nationwide, not just in expensive cities, states, or regions,<sup>90</sup> although it is most acute in metropolitan areas rather than rural areas.<sup>91</sup> It is probable that demand for an increase in available affordable housing will expand over the coming years, especially given the lingering effects of the U.S. housing crisis that began in 2008. This prediction is implied in part by the rate of foreclosure among minority and low-income homeowners. Foreclosure rates for these groups have been higher than foreclosure rates for white and higher-income homeowners, and new lending guidelines may have the effect of reducing the availability of financing for low-income borrowers.<sup>92</sup>

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86. There are about 114 million households in the United States, according to the U.S. Census Bureau. *Projections of Households by Type*, CENSUS, <http://www.census.gov/population/projections/nation/hh-fam/table1n.txt>. Twelve million households spend more than 50 percent of their annual income on housing. *Affordable Housing*, HUD, [http://www.hud.gov/offices/cpd/affordable\\_housing/](http://www.hud.gov/offices/cpd/affordable_housing/) (last visited Oct. 25, 2012).

87. “Working households” are households where someone in the household worked at least twenty hours per week and the household income did not exceed 120 percent of the area’s average median income. This constituted about 45 million households, meaning that about 22.5 million households spend more than 50 percent of their income on housing. LAURA WILLIAMS, CTR. FOR HOUS. POL’Y, AN ANNUAL LOOK AT THE HOUSING AFFORDABILITY CHALLENGES OF AMERICA’S WORKING HOUSEHOLDS, HOUSING LANDSCAPE 2012 1 (Feb. 2012).

88. *Id.* at 2. In calculating housing demand, the homeless population is not included. HUD, AFFORDABLE HOUSING NEEDS: A REPORT TO CONGRESS ON THE SIGNIFICANT NEED FOR HOUSING 4 (2003).

89. Michael Diamond, *Shared Equity Housing: Cultural Understanding and the Meaning of Ownership* 3 (Geo. L. & Econ., Res. Paper No. 11-22, 2011), available at <http://ssrn.com/abstract=1931017>.

90. KIMBERLY BURNET ET AL., RESEARCH ON STATE AND LOCAL MEANS OF INCREASING AFFORDABLE HOUSING 4 (2008).

91. JOINT CTR. FOR HOUS. STUDIES OF HARV. UNIV., THE STATE OF THE NATION’S HOUSING 2012 28 (2012).

92. ROBERT G. QUERCI ET AL., BALANCING RISK AND ACCESS: UNDERWRITING STANDARDS FOR QUALIFIED RESIDENTIAL MORTGAGES 7 (2012). In addition, although the claim has been disproven, some commentators blamed affordable

Households that formerly qualified for market-rate housing may therefore begin competing for affordable housing.

### A. The Benefits of Affordable Housing

As a legal matter, although housing as shelter is a fundamental necessity of human existence, it is not guaranteed by the Constitution.<sup>93</sup> But the hesitancy of the Supreme Court to identify housing as a constitutional right is not dispositive of society's interest in ensuring housing availability. The social order is maintained and enhanced when members have access to basic needs, and shelter competes with other basic needs, like food and health care. An interest in preserving the social order justifies investing in affordable housing when the market fails to provide it.<sup>94</sup> In addition, Americans view the lack of affordable housing, especially for children and working people, as a social problem that merits government involvement.<sup>95</sup> As an abstract matter, an overwhelming majority of Americans say they would

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housing financing for subprime lending that contributed to economic instability beginning in 2008. See RUBEN HERNANDEZ-MURILLO ET AL., DID AFFORDABLE HOUSING LEGISLATION CONTRIBUTE TO THE SUBPRIME SECURITIES BOOM? (Fed. Reserve Bank of St. Louis, 2012).

93. Justice Byron White set forth the Supreme Court's disposition of the matter, writing:

We do not denigrate the importance of decent, safe, and sanitary housing. But the Constitution does not provide judicial remedies for every social and economic ill. We are unable to perceive in that document any constitutional guarantee of access to dwellings of a particular quality, or any recognition of the right of a tenant to occupy the real property of his landlord beyond the term of his lease without the payment of rent or otherwise contrary to the terms of the relevant agreement. Absent constitutional mandate, the assurance of adequate housing and the definition of landlord-tenant relationships are legislative, not judicial, functions.

Lindsey v. Normet, 405 U.S. 56, 74 (1972).

94. J. Peter Byrne & Michael Diamond, *Affordable Housing, Land Tenure and Urban Policy: The Matrix Revealed*, 34 FORDHAM URB. L.J. 527, 530 (2007).

95. THE CAMPAIGN FOR AFFORDABLE HOUSING, WHAT WE KNOW ABOUT PUBLIC ATTITUDES ON AFFORDABLE HOUSING: A REVIEW OF EXISTING PUBLIC OPINION RESEARCH 51-52 (2004). There is, however, a caveat. People tend to judge who is worthy of assistance in finding housing and who is not, with children and working people seen as more worthy than minorities generally. See Tighe, *supra* note 82, at 8.

support affordable housing next door.<sup>96</sup> This might be partly explained by what is referred to as the “American Dream,” a shared social notion that every family should have a good home in a good neighborhood, at a cost that it can afford.<sup>97</sup> This sentiment might also represent an expression of the egalitarian strain in American values, which dates to Lockean concepts of natural rights embedded in the country’s founding documents.<sup>98</sup>

Americans have invested in housing as a social good at least for the past hundred years, beginning with President Theodore Roosevelt’s 1908 Housing Commission and Congress’s 1918 authorization to construct five thousand federally financed homes.<sup>99</sup> Although the first government funds were allocated to build homes for defense workers involved in World War I, twenty years later in passing the Wagner-Steagall Act of 1937, Congress declared its intention to “provide financial assistance to the States and political subdivisions thereof for the elimination of unsafe and unsanitary housing conditions, for the eradication of slums, for the provision of decent, safe, and sanitary dwelling for families of low income . . . .”<sup>100</sup> Government involvement in providing housing evolved over time, and the 1937 Act created what subsequently came to be known as public housing. As a result, as investment continued in government-owned housing, that housing started to become more associated with the poor. The image of public housing deteriorated in the 1960s as these facilities came to be associated with crime, blight, and other

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96. See Tighe, *supra* note 82, at 10 (citing surveys that demonstrate “widespread acknowledgment of a considerable need for affordable housing [that] show strong support for policies that promote affordable housing . . . . [S]upport is strongest for vague, value-laden statements . . . [with] 65 percent of Americans say[ing] they would support affordable housing next door . . .”).

97. See Thomas H. Kean & Thomas L. Ashley, *Letter to Hon. Jack Kemp, Secretary of Housing and Urban Development, July 8, 1991*, in ADVISORY COMM’N ON REGULATORY BARRIERS TO AFFORDABLE HOUS., U.S. HUD, HUD-5806, NOT IN MY BACKYARD: REMOVING BARRIERS TO AFFORDABLE HOUSING (1991).

98. See generally JOHN LOCKE, SECOND TREATISE OF GOVERNMENT (C.B. Macpherson ed., Hackett Publishing 1980) (1690).

99. Charles L. Edson, *Affordable Housing – An Intimate History*, 20 J. OF AFFORDABLE HOUS. & COMTY. DEV. L. 193, 194 (2011).

100. Wagner-Steagall Act of 1937, Pub. L. No. 75–412, 50 Stat. 888, 888-99 (referred to as the Housing Act of 1937).

social ills.<sup>101</sup> Because of this history of affordable housing, public perceptions about it became rooted in class and race.<sup>102</sup> Public housing came to be seen by many people not as a public good and a community asset, but as government interference in the marketplace to redistribute wealth.<sup>103</sup>

These broad generalities about crime and neighborhood deterioration correlating with housing affordability in a neighborhood are not true. When affordable housing is done right, in terms of design, planning, and resident acclimation, there is no evidence that it adversely affects property values or that it causes consequences for public safety or other issues that is in any degree different from those that market-rate housing cause.<sup>104</sup> Instead affordable housing, especially when it is knit into the community, can be a force for economic vitality.<sup>105</sup> Of course, knitting affordable housing into a community is complex. It requires thoughtful design of the housing structures themselves, stable financing for either ownership or rental models, and careful integration of new residents.<sup>106</sup>

## **B. Resources for Making Housing Affordable**

When the marketplace offers an insufficient supply of affordable housing, either housing will remain unavailable to lower-income earners or there must be a mechanism that intervenes in the market to make it affordable. There are many such mechanisms, all of which constitute a subsidy of some sort. A grant or loan, for example, can constitute a direct subsidy. Grants serve to lower the cost of housing; loans can serve the

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101. THE CAMPAIGN FOR AFFORDABLE HOUSING, *supra* note 95, at 39.

102. Tim Iglesias, *Our Pluralist Housing Ethics and Public-Private Partnerships for Affordable Housing*, in AFFORDABLE HOUSING AND PUBLIC-PRIVATE PARTNERSHIPS 22 (Nestor M. Davison & Robin P. Malloy eds., 2009).

103. *Id.* at 23.

104. Tighe, *supra* note 82, at 9.

105. Byrne & Diamond, *supra* note 94, at 569. People from different socioeconomic groups who live in close proximity add texture and diverse cultural perspectives to the community, ultimately building a basis on which the whole group flourishes. *Id.* at 573.

106. There is merit, therefore, to investing not just in what the housing looks like but in investing in educating new homeowners about how to be effective members of the community. *Id.* at 581-94.

same purpose, such as when the lender takes second position behind the primary financing.<sup>107</sup> This type of second mortgage can be offered as a way to supplement the financing when a home buyer cannot qualify for the full amount necessary to purchase the home. A loan subsidy can also be in the form of a lower interest rate than market rates, thereby making financing more affordable.<sup>108</sup>

Some approaches to subsidizing housing are national in scope, involving the federal government.<sup>109</sup> Some are modeled on cooperative federalism, which means that the states either administer federal programs in conjunction with federal agencies or states accept federal funds, with the requirement that they be used to achieve federally articulated goals.<sup>110</sup> Other approaches are more local, either at the state or municipal level. States, for example, may require that every political subdivision within the state provide some quantity of affordable housing.<sup>111</sup> At the local level, governments can choose to use land use authority, sometimes in conjunction with direct funding, to promote affordable housing.<sup>112</sup> There are also strategies that encourage

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107. Diamond, *supra* note 89, at 17.

108. Another vehicle for subsidizing housing is a shared-appreciation agreement, which exchanges interest rate subsidies by the lender for part of the appreciation of the property over time. See LEE A. FENNEL, *THE UNBOUNDED HOME: PROPERTY VALUES BEYOND PROPERTY LINES* 177 (2009). For a detailed discussion of how shared appreciation mortgages work, see ANDREW CAPLIN ET AL., *FACILITATING SHARED APPRECIATION MORTGAGES TO PREVENT HOUSING CRASHES AND AFFORDABILITY CRISES* (2008).

109. For example, the federal government provides federal tax credits. See discussion *infra* Resources for Making Housing Affordable.

110. For example, the Department of Housing and Urban Development runs the HOME Program, which provides grants to state and local governments to work with local nonprofit agencies to provide affordable housing. See *HOME Investment Partnership Program*, HUD, <http://www.hud.gov/offices/cpd/affordablehousing/programs/home/> (last visited Oct. 25, 2012).

111. New Jersey, for example, has required municipalities to provide affordable housing pursuant to the *Mount Laurel* decisions. See discussion *infra* Part III.C.

112. Land use authority has historically fallen within the purview of local governments, through their police power, in the form of zoning. See Kevin C. Foy, *Complexities of Urban Sustainability: Using Local Land-Use Authority to Achieve Environmental Goals*, 3 CHARLOTTE L. REV. 23, 51 (2011).

private development of affordable housing.<sup>113</sup> In addition, there are hybrid efforts, known as “public-private partnerships,” that involve both the public and the private sector collaborating to develop affordable housing.<sup>114</sup>

Under most of these scenarios, it is the private sector, not the government, that builds and manages sale or rental of the housing.<sup>115</sup> The term “affordable housing” does not have a universally accepted definition, but it generally is used to describe housing that is affordable to “moderate income

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113. For example, local governments may offer “density bonuses” to developers who provide affordable housing. This means that the number of houses that can be built in a particular zoning district is increased, thereby lowering the cost of development and effectively providing a subsidy for the affordable housing. *Inclusionary Zoning*, MASS. GOV., [http://www.mass.gov/envir/smart\\_growth\\_toolkit/pages/mod-iz.html](http://www.mass.gov/envir/smart_growth_toolkit/pages/mod-iz.html) (last visited Oct. 25, 2012).

114. TIM IGLESIAS, *AFFORDABLE HOUSING AND PUBLIC-PRIVATE PARTNERSHIPS* 18 (Nestor M. Davison & Robin P. Malloy eds., 2009). Public-private partnerships (PPPs) are efforts where private parties, such as for-profit real estate developers or builders, provide affordable housing using some kind of government subsidy. A more formal definition defines the partnership as “cross-sectoral collaboration involving shared allocation of resources, risk, and/or other activities/roles and responsibilities usually based upon relative skills, competencies or other circumstances to achieve a combination of public and private goals.” *Id.* at 18. Essentially this means that public and private entities both contribute resources and share responsibilities. PPPs can range from the Federal Home Loan Banks’ Affordable Housing Program to the Capital Magnet Fund, established under the Housing and Economic Recovery Act of 2008, which establishes a competitive grant program that is designed to attract private investment in affordable housing. Housing and Economic Recovery Act of 2008, Pub. L. No. 110-289, § 1339, 122 Stat. 2654 (to be codified at 12 U.S.C. §1131); *Affordable Housing Program*, FHLBANKS, [http://www.fhlbanks.com/programs\\_affordhousing.htm](http://www.fhlbanks.com/programs_affordhousing.htm) (last visited Oct. 25, 2012).

115. Public housing is a subset of affordable housing, limited to federally funded rental housing operated by local governments and available primarily to very-low-income households. There are approximately 1.2 million public housing units in operation, but no new public housing has been built since 1965. *See generally* Peter W. Salsich, Jr., *Does America Need Public Housing?*, 19 GEO. MASON L. REV. 689, 700-01 (2012). According to some sources, about 1 percent of U.S. households live in public housing. Robert C. Ellickson, *The False Promise of the Mixed-Income Housing Project*, 57 UCLA L. REV. 983, 986 (2010). As a general rule, to be eligible for public housing, household income may not exceed 50 percent of area median income. Seventy-five percent of public housing must go to applicants whose income does not exceed 30 percent of area median income. *See Housing Vouchers Fact Sheet*, HUD, [http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/public\\_indian\\_housing/programs/hcv/about/fact\\_sheet#4](http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/programs/hcv/about/fact_sheet#4) (last visited Oct. 25, 2012).

households” (households at or below 80 percent of area median income) or “low-income households” (households with incomes at or below 50 percent of area median income).<sup>116</sup> It may include owner-occupied or rental housing and is not usually government owned. Affordable housing is also sometimes called “workforce housing,” a term that attempts to capture the people in the income range for which the housing generally is designed.<sup>117</sup> People who work as school teachers, police officers, sanitation workers, bus drivers, firefighters, and nurses are often cited as working people unable to find housing because it is outside the reach of their income.<sup>118</sup> National policy has moved steadily toward public subsidies, rather than direct government involvement, so that today the private sector builds most affordable housing.<sup>119</sup>

There are several subsidies for affordable housing that are based on a strategy of tax credits, grants, and other financing.<sup>120</sup>

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116. Rochelle E. Lento & Danielle Graceffa, *Federal Sources of Financing*, in THE LEGAL GUIDE TO AFFORDABLE HOUSING DEVELOPMENT 249 (Tim Iglesias & Rochelle E. Lento eds., 2d ed. 2011). Area median income (AMI) is a calculation for a given area determined by dividing same-sized households into two equal parts, with half the households having incomes higher than the other half of households. The number in the middle is the median. HUD uses median income figures to categorize households and establish eligibility for assistance. See *HUD Estimated Median Family Incomes*, HUD, <http://www.hud.gov/local/shared/working/r10/emas/medianinc.cfm?state=wa> (last visited Oct. 25, 2012) (stating that extremely low-income is the category for households at or below thirty percent of area median income).

117. WHY NOT IN OUR COMMUNITY? REMOVING BARRIERS TO AFFORDABLE HOUSING 1 (2004) [hereinafter WHY NOT IN OUR COMMUNITY?].

118. *Id.*

119. Lento & Graceffa, *supra* note 116, at 249. Most subsidies come from the federal government, either through tax-based subsidies or rent subsidies. *Id.* at 250.

120. For example, the New Market Tax Credits were part of the Community Renewal Tax Relief Act of 2000. Community Renewal Tax Relief Act of 2000, Pub. L. No. 106-554, 114 Stat. 2763 (codified in scattered sections of 26 U.S.C.). These credits target projects in low-income areas based either on the poverty rate or on census tracts that do not exceed 80 percent of statewide median income. See I.R.C. §45D. There are many other programs, including HOME block grants under the Cranston-Gonzalez National Affordable Housing Act, Family Self-Sufficiency Funds, and the Self-Help Homeownership Opportunity Program (SHOP). See ANDREW CAPLIN ET AL., SHARED-EQUITY MORTGAGES, HOUSING AFFORDABILITY, AND HOMEOWNERSHIP 7 (2007). Another successful mechanism for subsidizing affordable housing is the Housing Choice Voucher

It is not the goal of this paper to review the many financing options, but it is instructive to look briefly at one successful strategy because it can be used to help green the stock of affordable housing. The most successful source of financing for affordable housing is the Low Income Housing Tax Credit (LIHTC), developed as part of the tax code under the Tax Reform Act of 1986.<sup>121</sup> This tax credit creates an incentive for private investors to participate in financing affordable housing by allowing them to deduct the credit from their federal income tax liability.<sup>122</sup> Credits are distributed annually to each state, based on population, and investors who comply with the rules are permitted to use the credits for up to ten years, although the subject project must remain affordable for at least thirty years.<sup>123</sup> LIHTC has been a source of funding for about 1.3 million affordable housing units.<sup>124</sup> States also offer tax credits for affordable housing, usually modeled on the LIHTC.<sup>125</sup> One distinction with state tax credits is that they can increase the holder's federal tax and therefore their value is diminished.<sup>126</sup>

Although the LIHTC has been successful, it has been criticized. One criticism is that the program is sustained by banks that are subject to the terms of the Community Reinvestment Act.<sup>127</sup> This law requires bank investment in low-

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Program (formerly known as "Section 8"), but it is limited to the rental market and is not designed to increase the supply of affordable housing. For a discussion of this program, see Byrne & Diamond, *supra* note 94, at 605. The Housing Choice Voucher Program is the largest subsidy program, helping to provide housing for more than two million households. Ellickson, *supra* note 115, at 991.

121. 26 U.S.C. § 42 (2006).

122. Lento & Graceffa, *supra* note 116, at 251. Developers do not have to devote the entire project to affordable housing. For example, a project can provide 20 percent of the housing units to families earning 50 percent of area median income (AMI) and still qualify for the tax credits. *Id.*

123. *Id.* at 254.

124. Byrne & Diamond, *supra* note 94, at 539.

125. BURNETT ET AL., *supra* note 90, at 178.

126. *Id.* at 179. One state, North Carolina, has avoided this problem by devising a program that returns the full value of the credit through a mechanism that permits pass-through entities (such as limited liability companies) to receive the credit and then sell it. *Id.*

127. 12 U.S.C. § 2901 (2006). The Act, passed in 1977, is intended to ensure that lending institutions meet the needs of the entire community in which they

wealth communities, and LIHTC provides a good vehicle for banks to meet their obligations. The result is that capital from major banks tends to concentrate in major urban areas, particularly on the east and west coasts, meaning there is an unequal distribution of the capital necessary to build affordable housing.<sup>128</sup> While this uneven geographic distribution may be a limitation to some goals of affordable housing, it also presents an opportunity for garnering these funds in support of greening the housing stock. These are areas of the country that are heavily urbanized and therefore able to take advantage of aspects of green affordable housing like transportation efficiencies, which may be unavailable in other areas.

Congress continues to have confidence in the efficacy of LIHTC. When purchases of the credits fell dramatically in 2008, Congress responded with changes designed to increase investor incentives, make compliance easier, and encourage greater financial feasibility for funded projects.<sup>129</sup> In addition, it established the Capital Magnet Fund to spur capital flows. This fund is administered through the Treasury Department and is designed to “attract private capital for and increase investment in Affordable Housing Activities . . . .”<sup>130</sup> The goal is to increase

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operate, including low-income residents and neighborhoods. Its necessity was based on concern that lending institutions discriminated based on race, among other factors, and that this discrimination adversely affected low-income communities. See Ben S. Bernanke, Chairman, Fed. Reserve, Speech at the Community Affairs Research Conference: The Community Reinvestment Act: Its Evolution and New Challenges (Mar. 30, 2007), available at <http://www.federalreserve.gov/newsevents/speech/Bernanke20070330a.htm>.

128. Andre F. Shashaty, *Tax Credit Investment Roars Back*, 1 SUSTAINABLE COMMUNITIES 22, 40 (2011) (According to Shashaty, “[I]nvestors not motivated by [the Community Reinvestment Act] are paying 85 to 87 cents, on average, for every dollar of tax credit generated by a project. CRA-motivated investors are paying \$1 or more for every \$1 of tax credits their projects generate.”).

129. Glenn A. Graff, *Federal Stimulus Legislation Promoting Affordable Housing*, in THE LEGAL GUIDE TO AFFORDABLE HOUSING DEVELOPMENT, *supra* note 116, at 181 (referring to the Housing and Economic Recovery Act of 2008 (HERA) (H.R. 3221)).

130. Capital Magnet Fund, 12 C.F.R. § 1807.100 (2006).

bank lending for affordable housing, especially in underserved markets.<sup>131</sup>

### C. Land Use & Affordable Housing

Housing policy is basically social policy, but it intersects with land use policy because its effects are specific to place.<sup>132</sup> Choices about how land is used are local decisions, falling to municipalities, counties, or other state political subdivisions. The primary tool that local governments use to control land use is zoning.<sup>133</sup> Zoning is the method by which governments designate which uses are permitted in a given area—such as residential or commercial—and other specifics—such as building setbacks from lot lines and minimum lot sizes.<sup>134</sup> Zoning is inherently exclusionary, in that by its nature it permits some uses and it excludes other uses in designated places. Zoning may therefore be a vehicle for keeping affordable housing out of a municipality, using regulatory mechanisms that do not overtly exclude affordable housing but do so in fact by requiring certain lot sizes, certain building sizes, or other factors that render housing more expensive.<sup>135</sup> The rules might also forbid duplexes or other multi-family residential units, which are typically less expensive than single-family homes. These regulations may be for legitimate purposes, but “exclusionary zoning” is a pejorative term for regulations that are implemented primarily to exclude people on impermissible grounds from living in an area. Whether the zoning rules are based on permissible considerations or whether the rules are a pretext for excluding people is fact

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131. See *Catalog of Federal Domestic Assistance*, U.S. GOV'T ACCOUNTABILITY OFFICE, <https://www.cfda.gov/?s=program&mode=form&tab=step1&id=051a47b0d45a68d4fddc8c43ef1d926c> (last visited Oct. 25, 2012).

132. Tighe, *supra* note 82, at 9.

133. The U.S. Supreme Court approved the constitutionality of zoning in *Village of Euclid*. *Village of Euclid v. Ambler Realty Co.*, 272 U.S. 365 (1926).

134. *What is Zoning?*, MONTGOMERY CNTY. DEP'T OF PERMITTING, permitting.services.montgomerycountymd.gov/DPS/zoning/WhatIsZoning.aspx (last visited Oct. 25, 2012). Zoning can be a potential impediment to affordable housing. Other barriers might include regressive impact fees instead of impact taxes (which are more equitable), complex or outdated building codes, and restrictive rehabilitation codes. See *WHY NOT IN OUR COMMUNITY?*, *supra* note 117, at 5.

135. *Id.*

specific, but courts might strike zoning that is deemed exclusionary. Land use law is state-specific, but the way a municipality in New Jersey used its regulatory authority to keep out affordable housing illuminates the concept of exclusionary zoning. The practice was challenged, leading to judicial review.

The seminal New Jersey case resulted in two state Supreme Court decisions, referred to as the Mount Laurel decisions.<sup>136</sup> The case originated when a local chapter of the National Association for the Advancement of Colored People (NAACP) brought an action claiming that the city of Mount Laurel abused its regulatory authority for the purpose of unlawfully excluding affordable housing from the city.<sup>137</sup> The city did this by permitting only homes of a certain size, on building lots of a certain size, which resulted in houses priced at a level that required “at least middle income.”<sup>138</sup> The New Jersey Supreme Court concluded that this was not a valid use of regulatory authority and municipalities have an affirmative duty to make a variety of housing available so that people of diverse economic means can reside in the community.<sup>139</sup>

Some commentators have drawn the conclusion that the solution to exclusionary zoning is to create a regional governing structure, thereby avoiding what is colloquially known as “Not-in-My-Backyard” syndrome, an insulting reference to

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136. S. Burlington Cnty. NAACP v. Twp. Of Mt. Laurel (*Mount Laurel I*), 336 A.2d 713 (N.J. 1975); S. Burlington Cnty. NAACP v. Twp. of Mt. Laurel (*Mount Laurel II*), 456 A.2d 390, 490 (N.J. 1983). For a fuller discussion of the Mount Laurel decisions, see David N. Kinsey, *The Growth Share Approach to Mount Laurel Housing Obligations: Origins, Hijacking, and Future*, 63 RUTGERS L. REV. 867 (2011).

137. *Mount Laurel I*, 336 A.2d. at 716. The court noted that the plaintiffs represented African American and Hispanic people who had been excluded, but that other groups who were unable to find affordable housing in the municipality included young families and senior citizens. *Id.* at 717.

138. *Id.* at 719.

139. *Id.* at 724. The decisions provide guidance on the issue of exclusionary zoning. However, implementation of the decisions has proven difficult. For example, the court has permitted municipalities to pay each other to accept what would otherwise be their “fair share” of affordable housing; and it has permitted municipalities to let developers pay to be excused from building affordable housing. See Alan Mallach, *The Mount Laurel Doctrine and the Uncertainties of Social Policy in a Time of Retrenchment*, 63 RUTGERS L. REV. 849 (2011) (discussing the aftermath of the decisions).

neighborhoods' concerns about development proposals that assumes all such resistance is narrow-minded.<sup>140</sup> But this is not necessarily the best route, since some local governments have used the public process to create zoning that explicitly requires the inclusion of affordable housing, in a way that seeks to achieve an equitable housing stock.<sup>141</sup> Inclusionary zoning is the term used to describe rules that mandate affordable housing be interspersed with market-rate housing within a particular zoning classification.<sup>142</sup> Inclusionary zoning can be used in conjunction with other tools, such as density bonuses,<sup>143</sup> to provide incentives to developers to build affordable housing, and often to incorporate that housing into neighborhoods along with market-rate housing. Inclusionary zoning can also be a component of what is referred to as "smart growth," the idea that cities should limit sprawl and concentrate urban services in a compact area.<sup>144</sup> Ordinances that

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140. See Thomas A. Brown, *Democratizing the American Dream: The Role of a Regional Housing Legislature in the Production of Affordable Housing*, 37 U. MICH. J.L. REFORM 599 (2004).

141. Patrick Maier, *Inclusionary Housing: A Critical Step Toward Equity*, SHELTERFORCE, Mar. 24, 2011, [http://www.shelterforce.org/article/sidebar/2172/inclusionary\\_housing\\_a\\_critical\\_step\\_toward\\_equity/](http://www.shelterforce.org/article/sidebar/2172/inclusionary_housing_a_critical_step_toward_equity/).

142. BURNETT ET AL., *supra* note 90, at 51. One definition identifies inclusionary zoning as being "mixed-income" projects, where "(1) a government subsidizes rents (or sales prices) in only a fraction of the project's dwelling units; and (2) the aid is project-based – that is, an aided household forfeits the benefit of the rent (or ownership) subsidy upon moving out." Ellickson, *supra* note 115, at 992.

143. Density bonuses let developers build more units on a parcel of land than the regular zoning permits, as a way to increase the value of the property and indirectly subsidize the housing. See BURNETT ET AL., *supra* note 90, at 60.

144. Sprawl is defined as "low-density development beyond the edge of service and employment, which separates where people live from where they shop, work, recreate and educate – thus requiring cars to move between zones." *Sprawl: The Dark Side of the American Dream*, SIERRA CLUB, <http://www.sierraclub.org/sprawl/report98/> (last visited Oct. 25, 2012). Sprawl has been bad for low-wealth communities because it has not only encouraged higher wealth households to move farther away from urban centers, it has also meant higher transportation costs to employment centers. In fact, there is an argument that "sprawl is not simply a problem that warrants cursory attention" but is central to addressing the "broad aspirations of the civil rights movement." John A. Powell, *Race, Poverty, and Urban Sprawl*, in GROWING SMARTER: ACHIEVING LIVABLE COMMUNITIES, ENVIRONMENTAL JUSTICE, AND REGIONAL EQUITY 52 (Robert D. Bullard ed., 2007). Atlanta provides an example of the connection between poor public transportation and sprawl. In 2000, only 34 percent of the region's jobs were within one-hour on public transit. Robert D. Bullard et al.,

require inclusion of affordable housing can be written to accommodate local housing needs, with different jurisdictions taking different approaches to income requirements, duration of affordability, and definition of affordability.<sup>145</sup> Inclusionary zoning as a tool for encouraging the development of affordable housing is growing even in the face of legal opposition, although inclusionary zoning is still not as prevalent as stand-alone density bonuses.<sup>146</sup> Legal objections to inclusionary zoning differ from the legal challenges to exclusionary zoning. Land owners and developers who challenge inclusionary zoning ordinances usually do so on the basis of a takings claim, contending that the ordinance constitutes a taking of private property without just compensation.<sup>147</sup> Well-constructed inclusionary zoning ordinances, however, when they have been challenged have been held valid under the same principle on which zoning is generally founded: the police power of local governments.<sup>148</sup>

Inclusionary zoning has been implemented by various jurisdictions since the 1970s.<sup>149</sup> An example of a municipality that recently adopted an inclusionary zoning ordinance is Chapel Hill, North Carolina.<sup>150</sup> In justifying the ordinance, which

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*Confronting Transportation Sprawl in Metro Atlanta*, in GROWING SMARTER: ACHIEVING LIVABLE COMMUNITIES, ENVIRONMENTAL JUSTICE, AND REGIONAL EQUITY 52 (Robert D. Bullard ed., 2007) (citing M. Lewyn, *Suburban Sprawl: Not Just an Environmental Issue*, 84 MARQUETTE L. REV. 301 (2000)).

145. Jenny Schuetz et al., *31 Flavors of Inclusionary Zoning: Comparing Policies from San Francisco, Washington, D.C., and Suburban Boston*, 75 J. AM. PLAN. ASS'N 441 (2009).

146. ROLF PENDALL, FROM HURDLES TO BRIDGES: LOCAL LAND-USE REGULATIONS AND THE PURSUIT OF AFFORDABLE RENTAL HOUSING 36 (2007).

147. Cecily T. Talbert & Nadia L. Costa, *Inclusionary Zoning*, in CURRENT TRENDS AND PRACTICAL STRATEGIES IN LAND USE LAW AND ZONING 147 (Patricia E. Salkin ed., 2004). Developers have generally opposed inclusionary zoning ordinances. See Rolf Pendall et al., *Bringing Equity to Transit-Oriented Development: Stations, Systems, and Regional Resilience*, in URBAN AND REGIONAL POLICY AND ITS EFFECTS 153 (Margaret Weir et al. eds., 2012).

148. Talbert & Costa, *supra* note 147, at 150.

149. See, e.g., Moderately Priced Housing Law, MONTGOMERY, MD. CODE, ch. 25A (2005). Nationwide there are hundreds of inclusionary zoning ordinances. See Talbert & Costa, *supra* note 147, at 146.

150. Chapel Hill adopted the ordinance after ten successful years of using a different strategy. That strategy involved using the city council's leverage of discretion in granting permits (called "special use permits") only to developments that agreed to provide at least 15 percent of their residential

became effective in 2011, the city declared its goals to include aggressively increasing the availability of affordable housing by providing both mandates and incentives to builders.<sup>151</sup> The city was specifically concerned that continued growth, without this intervention, would continue a trend toward “an increasingly inadequate supply of affordable housing” that would “have a negative impact upon the ability of local employers to maintain an adequate local work force”<sup>152</sup> so it developed a detailed ordinance that requires between ten percent and fifteen percent of the residential units in every new development be affordable.<sup>153</sup> In return, the rules facilitate compliance by offering a density bonus that permits either smaller lot sizes for single-family projects or more units in multi-family developments.<sup>154</sup> The city also waives some development fees, including permitting, inspection, and other review fees that would otherwise be applicable.<sup>155</sup> At the discretion of the city council, a project can be excused from actually building the units by making a direct payment instead. This payment goes toward other affordable housing.<sup>156</sup> The housing built pursuant to this ordinance must be permanently affordable,<sup>157</sup> and it should be “sited in multiple locations” within the neighborhood.<sup>158</sup> The ordinance specifically addresses what constitutes affordability. It mandates that some units must be affordable to households with annual incomes at or below 65 percent of area median income,

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units as affordable. However, since not all developments required special use permits, the Council decided to institutionalize and expand its affordable housing policy with the inclusionary zoning ordinance. *See, e.g.*, Chapel Hill Town Council Res., File No. 9798-34-3837, 2009-05-18/R-2 (N.C. Town of Chapel Hill 2009), *available at* <http://townhall.townofchapelhill.org/agendas/2009/05/18/4a/4aResolution.pdf>. As to special use permit requirements, see CHAPEL HILL, N.C. CODE OF ORDINANCES app. A § 4.5 (2002).

151. CHAPEL HILL, N.C. CODE OF ORDINANCES § 3.10 (2011).

152. *Id.*

153. *See id.* § 3.10.2(a), tbl. 3.10-1.

154. *See id.* § 3.10.2(d).

155. *See id.* § 3.10.6.

156. *See id.* § 3.10.3(d)(4).

157. *See id.* § 3.10.5(a); *see generally id.* § 3.10.10 (“permanent” under the ordinance means at least 99 years or “as long as permissible by law.”).

158. *See id.* § 3.10.7.

and the balance must be affordable to households earning 80 percent of area median income.<sup>159</sup>

The effectiveness of inclusionary zoning has been questioned, with the contention that it delivers neither social benefits nor economic efficiency.<sup>160</sup> The basis of this criticism is a claim that most municipalities that have such ordinances have included only housing that benefits the middle class, since the zoning ordinances primarily make housing available to people with incomes between 80 percent and 120 percent of area median income.<sup>161</sup>

Whether a community pursues exclusionary or inclusionary zoning is a result of the political process. Most Americans do not view the lack of affordable housing as a major problem, so it is unlikely that people give the matter much thought unless it affects them directly.<sup>162</sup> This often means that an affected neighborhood—a neighborhood where affordable housing is planned within or nearby—becomes politically active. Public participation is a core value in good planning, with civic engagement seen as part of the democratic process that leads to better outcomes.<sup>163</sup> But while Americans generally support public policy choices to increase the stock of affordable housing, they do not necessarily support that housing in their own communities.<sup>164</sup> In fact, efforts to include affordable housing in communities can meet with significant resistance from neighbors. For example, a recent study found that over a twenty-year period, more than seventy-five percent of affordable housing built in Texas was confined to minority neighborhoods—a strong indicator of exclusionary practices.<sup>165</sup> Some research shows that people object to affordable housing nearby because they think it will lower their property values and their quality of life, through run-

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159. *See id.* § 3.10.8(a).

160. Ellickson, *supra* note 115, at 985.

161. *See id.* at 1006.

162. THE CAMPAIGN FOR AFFORDABLE HOUSING, *supra* note 95, at 14.

163. Tighe, *supra* note 82, at 4.

164. THE CAMPAIGN FOR AFFORDABLE HOUSING, *supra* note 95, at 34.

165. Karisa King & Ryan Murphy, *Program for Low-Income Housing Compels Building in Poor Neighborhoods*, N.Y. TIMES, April 22, 2012, at A23.

down houses and increased risk to public safety.<sup>166</sup> Other people have suggested that these concerns are really just a pretext for racial prejudice.<sup>167</sup> Racial and economic integration is often subject to strong resistance, which builds on other potential barriers to affordable housing like financing and exclusionary zoning.<sup>168</sup> But countering the concerns of worried neighbors requires both education and leadership. Fear of increased crime or other negative aspects of affordable housing results from an assumption that low-income households are associated with criminal activity.<sup>169</sup> The evidence does not support this assumption.<sup>170</sup> Greater integration of affordable housing into diverse communities could yield benefits because of the opportunity for social interaction. In addition, some measure of environmental justice is likely to be achieved because neighborhood cohesion will exert greater political power and resist a lack of meaningful participation in decisions about environmental issues of concern to the community.<sup>171</sup>

#### IV. GREENING THE BUILT ENVIRONMENT

As the world population grows, pressure on the environment increases because of escalating demand for natural resources and the resulting increased pollution.<sup>172</sup> It is not inevitable that more people will need more resources and will generate more waste,<sup>173</sup>

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166. THE CAMPAIGN FOR AFFORDABLE HOUSING, *supra* note 95, at 46. *See also* Tighe, *supra* note 82, at 8 (“the introduction of poor and minority households into otherwise homogenous neighborhoods often produces concern that the urban problems associated with concentrated poverty and racial minorities will be transferred to middle-class and affluent communities.”).

167. Tighe, *supra* note 82, at 4.

168. *Id.* at 3.

169. INGRID GOULD ELLEN ET AL., AMERICAN MURDER MYSTERY REVISITED: DO HOUSING VOUCHER HOUSEHOLDS CAUSE CRIME? 7 (2011).

170. *Id.* at 23.

171. This is a two-way street, with strong cultural attributes existing both in low-income communities and wealthier communities. *See* Lisa T. Alexander, *Hip-Hop and Housing: Revisiting Culture, Urban Space, Power, and Law*, 63 HASTINGS L.J. 803, 830 (2012).

172. THOMAS L. FRIEDMAN, HOT, FLAT, AND CROWDED: WHY WE NEED A GREEN REVOLUTION AND HOW IT CAN RENEW AMERICA 27 (2008).

173. *Id.* at 55 (“[B]oth Europe and Japan have demonstrated that it is possible to live a middle-class lifestyle with much less consumption.”).

but without changes in lifestyle, including changes to the built environment, pressure will continue.

A fundamental notion about how human interaction with a world of limited resources can thrive is that actions should be based on an ethic of sustainability.<sup>174</sup> This ethic demands that people not take more from the environment than they contribute—so that future generations can enjoy the benefits of a healthy ecosystem.<sup>175</sup> This ethic is sometimes at odds with the modern economy, which is not always concerned with long-term sustainability and does not necessarily seek to optimize social benefits.<sup>176</sup>

“Greening” the built environment is a colloquial way to describe the effort to create human living space that consumes fewer natural resources, contributes to human health and safety, and generates less waste.<sup>177</sup> In this context, the built environment refers to structures and infrastructure that people create to live in. It is distinguished from the natural environment because of the degree to which humans act to create it. The built environment includes structures such as residences and commercial buildings, but also includes parks, roads, and utility delivery systems for water and electricity. Greening the built environment functions in a free market system, so if green

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174. U.N. Rep. of the World Comm’n on Env’t & Dev., *Our Common Future*, ch. 2, U.N. Doc. A/42/427, available at <http://www.un-documents.net/ocf-02.htm> (last visited Oct. 25, 2012) (defining sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”).

175. Bratspies, *supra* note 57, at 17 (“Sustainability is about passing a world on to our children’s children that supports life and health, with drinkable water, breathable air and beautiful vistas, with healthy populations of fauna and flora, rather than remnant populations of charismatic macrofauna preserved wholly in zoos.”).

176. Nathalie J. Chalifour, *Ecological Economics, Sustainable Land Use, and Policy Choices*, in *LAND USE LAW FOR SUSTAINABLE DEVELOPMENT* 528 (Nathalie J. Chalifour et al. eds., 2007).

177. JERRY YUDELSON, *THE GREEN BUILDING REVOLUTION* 13 (2008) (explaining that green buildings use less water and energy but also have fewer deleterious environmental effects because of the materials used in construction, how the building is constructed, maintained, and operated, and what is done with construction waste.). See also *BLUEPRINT FOR GREENING AFFORDABLE HOUSING* 6 (Walker Wells et al. eds., 2007) (“safe” living space means not just physical security but space that is safe from adverse health effects.).

practices impose higher costs than they are not competitive and are unlikely to thrive.<sup>178</sup> Some observers have suggested that market value should attach to ecological and social benefits, but in the absence of monetizing these benefits green attributes must either compete or be subsidized.<sup>179</sup> In addition, the marketplace is somewhat distorted for other reasons. One is that capital outlay for green features is immediate, while the payout in terms of economic and health benefits is long-term.<sup>180</sup> Another reason is that some of the costs associated with poor quality housing are shifted to the health care system, and therefore are not recognized in calculating housing cost.<sup>181</sup> Also, some of the concern about increased cost associated with environmental benefits might be either outdated or merely anecdotal.<sup>182</sup> In any case, market demand has not been sufficient to drive green building in the residential sector.<sup>183</sup>

Buildings, including residential buildings, are a major component of the built environment and have a big impact on the natural environment. According to the U.S. Department of

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178. Bradshaw et al., *supra* note 4, at 10 (study suggests there is what it describes as a “green premium” of about 2.5 percent in development costs for green residences.).

179. Chalifour, *supra* note 176, at 528.

180. BLUEPRINT FOR GREENING AFFORDABLE HOUSING, *supra* note 177, at 171.

181. Felicia Wu et al., *Improving Indoor Environmental Quality for Public Health: Impediments and Policy Recommendations*, 115 ENVTL. HEALTH PERSP. 953, 955 (2007).

182. See ARTHUR C. NELSON ET AL., ENVIRONMENTAL REGULATIONS AND HOUSING COSTS (2009).

Much of the literature on the effects of environmental regulations advances a tacit assumption that environmental quality is often achieved at the expense of economic development and that costs for environmental quality divert resources and increase costs for development and social well-being. However, there is little research that objectively quantifies those effects, especially the effects on housing affordability.

*Id.* at 19.

183. Mariel S. Dator, *Green Building Regulations: Extending Mandates to the Residential Sector*, 37 B.C. ENVTL. AFF. L. REV. 393, 404 (2010). *But see* YUDELSON, *supra* note 177, at 28 (describing that there is evidence that in the commercial sector green construction provides a higher return on investment than traditional buildings and is therefore market competitive, while simultaneously providing greater benefits in terms of occupant health and productivity).

Energy, buildings consume 41 percent of energy used in the United States, more than any other sector of the economy,<sup>184</sup> with residential buildings alone accounting for over half of the total.<sup>185</sup> This usage continues a trend over the past thirty years, with the energy consumption of buildings increasing almost 50 percent since 1980.<sup>186</sup> Most of this energy is generated using fossil fuels, such as coal and natural gas.<sup>187</sup> Use of these fuels has off-site impacts on the environment, including the effects of mining, air pollution, acid rain, and nuclear waste disposal.<sup>188</sup> In addition to energy, homes consume other resources, such as water and land. One analysis showed mean household water usage at 84,387 gallons annually.<sup>189</sup> Land is consumed by households not just as sites for residences, but also for other purposes, such as solid waste disposal.<sup>190</sup>

Consumption is not the only way in which the built environment affects the natural environment. Buildings also externalize costs by, for example, the way they affect water quality. That is because stormwater runoff—the water that is carried from building sites—is a major source of water pollution, carrying accumulated pollutants from land into surface waters.<sup>191</sup> The pollutants that stormwater carries can vary and may include pesticides, fertilizer, oil, and antifreeze leaked from vehicles, paint scraps, and pet waste.<sup>192</sup> The connection between buildings (and other parts of the built environment, like roads) and

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184. U.S. DEP'T OF ENERGY, 2011 BUILDINGS ENERGY DATA BOOK 1-1 (March 2012).

185. *Id.*

186. *Id.* at 1-2.

187. *Id.* (coal generates 35%; natural gas generates 24%. The use of both of these sources is projected to increase over the next twenty-five years.).

188. Trip Pollard, *Building Greener Communities: Smarter Growth and Green Building*, 27 VA. ENVTL. L.J. 125, 127 (2009).

189. Thomas Rockaway et al., *Residential Water Use Trends in North America*, 103 J. AM. WATER WORKS ASS'N 76, 80 (2011).

190. CYNTHIA NICKERSON ET AL., MAJOR USES OF LAND IN THE UNITED STATES, 2007 29 (2011) (the nation devotes about 164 million acres (7 percent of total land area) to urban land use and rural residential use).

191. EPA, NATIONAL MANAGEMENT MEASURE TO CONTROL NONPOINT SOURCE POLLUTION FROM URBAN AREAS 0-1 (2005).

192. Lynn Underwood & Daniel Morrison, *Green Building and the Code*, in HEALTHY & SAFE HOMES, *supra* note 74, at 159.

stormwater pollution is impervious surface. Impervious surface is land that water cannot penetrate, either because of natural factors such as rock formations or because of man-made materials such as building rooftops and asphalt on roads, driveways, and sidewalks.<sup>193</sup> Since these surfaces inhibit water penetration into the ground, they inhibit natural filtration and therefore carry pollutants either to pervious surfaces elsewhere or directly into waterways.<sup>194</sup> Rooftops and driveways are essential parts of most residences. Not only does this impervious surface contribute to water pollution through the contaminants that wash from it, but stormwater runoff also causes other destabilization in waterways since it contributes to increases in water volume and water temperature.<sup>195</sup>

### A. Green Housing

Various strands of environmental effects and how they can be managed converge in the realm of housing. Greening the housing stock combines strategies to achieve greater efficiency in the use of energy, water, and other natural resources in the building itself, but also an array of other considerations, such as the use and disposal of building materials and how the choice of location affects transportation options.<sup>196</sup> The effect of greening housing is not just to benefit the environment, but also to help reduce inequities in health outcomes based on race and

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193. EPA, NATIONAL MANAGEMENT MEASURES TO CONTROL NONPOINT SOURCE POLLUTION FROM URBAN AREAS, EPA 841-B-05-004, 0-16 (November 2005).

194. Craig Anthony Arnold, *Clean-Water Land Use: Connecting Scale and Function*, 23 PACE ENVTL. L. REV. 291, 298 (2006).

195. NATIONAL MANAGEMENT MEASURES TO CONTROL NONPOINT SOURCE POLLUTION, *supra* note 193, at 0-22. Roads and sidewalks do not affect the environment only because of their impact on water quality. They are part of the transportation infrastructure, a key component of the built environment. Transportation is closely connected to daily living, because of the way people use different systems (for example private vehicles vs. public transit) and also because of the effect that transportation systems have on the environment (quantity of impervious surface, air pollution emissions).

196. See BLUEPRINT FOR GREENING AFFORDABLE HOUSING, *supra* note 177, at 27 (discussing site selection, access to urban services, water quality, passive heating and cooling, and other considerations in designing green affordable housing).

economics.<sup>197</sup> In fact, “ecosocial epidemiology” looks directly at housing quality in the context of health disparities based on socioeconomic status, seeking to identify what is responsible for health inequalities associated with the particular housing people occupy.<sup>198</sup>

Although the perception persists that green housing costs more than conventional housing, perception might not track reality. Some affordable housing developers report that comprehensive planning can reduce overall costs, by properly sizing infrastructure and designing housing to minimize resource usage and waste generation.<sup>199</sup>

There are several established standards for assessing the green qualities of housing, but they are all based on similar assessment criteria of the structure’s attributes. One type of standard is modeled on building codes, but is an enhanced version that goes beyond the basics and establishes standards for energy efficiency, water efficiency, and other aspects of housing that address occupants’ health and diminish the structure’s environmental impact.<sup>200</sup> Another standard is the U.S. Green

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197. Shafiei, *supra* note 74, at 86.

198. Nancy Krieger, *Theories for Social Epidemiology in the 21<sup>st</sup> Century: An Ecosocial Perspective*, 30 INT’L J. EPIDEMIOLOGY 668, 673 (2001).

199. Williams & Bourland, *supra* note 74, at 41.

Certain green methods and materials have lower first costs than conventional construction practices and can help compensate for any incrementally higher costs associated with other green features in the project. For example, properly sized heating, ventilating, and air-conditioning (HVAC) systems may be smaller and less expensive; advanced framing techniques may use less lumber; and recycling construction waste may reduce tipping fees.

*Id.*

200. Ronald S. Javor & Michael Allen, *Federal, State, and Local Building and Housing Codes Affecting Affordable Housing*, in THE LEGAL GUIDE TO AFFORDABLE HOUSING DEVELOPMENT, *supra* note 116, at 152 (explaining that housing is subject to building codes in order to insure structural integrity and safety. These codes are minimum requirements, and can be based both on government rules and private requirements.). *See also* U.S. GREEN BUILDING COUNCIL, GREENING THE CODES 9 (2009) (noting that more than a green code is necessary in order to raise the sustainability level of buildings. One jurisdiction that has implemented green building codes is California (CAL. CODE OF REGS., tit. 24, pt. 11)).

Building Council's rating system called LEED for Homes.<sup>201</sup> LEED for Homes awards points based on housing design, water and energy efficiency ratings, location of the residence, whether the site is sustainable, materials and other resources used in building, indoor air quality, and resident education about how to maximize the benefits of the home's green attributes.<sup>202</sup> The more points a building accumulates under the system, the more highly ranked and therefore "green" it is.<sup>203</sup> Whatever system is used to rate how green a home is, green housing is a matter of environmental justice because of the emphasis it places on efficient use of resources. Efficiency, by its very nature, benefits people with lower incomes since they have both fewer and less access to resources than wealthier people to begin with.<sup>204</sup>

## B. Housing Design

Design is the first important step to incorporating green attributes in a residence because systems can be integrated at the planning stage in order to work together in a complementary way, optimizing their efficiency.<sup>205</sup> In addition, thoughtful design

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201. See generally U.S. GREEN BLDG. COUNCIL, LEED FOR HOMES RATING SYSTEM (2008), available at [www.usgbc.org/ShowFile.aspx?DocumentID=3638](http://www.usgbc.org/ShowFile.aspx?DocumentID=3638). "LEED" stands for "Leadership in Energy and Environmental Design." *What is LEED?*, U.S. GREEN BLDG. COUNCIL, <https://new.usgbc.org/leed> (last visited Oct. 26, 2012). See also *The 2030 Challenge*, ARCHITECTURE 2030, [http://architecture.2030.org/2030\\_challenge/the\\_2030\\_challenge](http://architecture.2030.org/2030_challenge/the_2030_challenge) (last visited Oct. 26, 2012).

202. LEED FOR HOMES RATING SYSTEM, *supra* note 201, at iv. See also *LEED for Homes Initiative for Affordable Housing*, U.S. GREEN BLDG. COUNCIL, [http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147#affordable\\_housing](http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147#affordable_housing) (last visited Oct. 26, 2012) (is being designed to promote sustainable building practices and guidelines for affordable housing).

203. LEED FOR HOMES RATING SYSTEM, *supra* note 201, at iv (describing that certification levels range from the highest (Platinum) in descending order to Gold, Silver, and Certified).

204. See Wenz, *supra* note 63, at 64.

205. An example of a housing design that can affect both affordability and green attributes is manufactured housing. Manufactured housing refers to housing that is built either in whole or primarily off-site at a manufacturing facility. This manufacturing process provides flexibility in the choice of construction materials, size, weatherization, and other components of the housing, and offers the possibility of strict, uniform construction quality. See SUSTAINABILITY IN MANUFACTURED HOME COMMUNITIES: COST-EFFECTIVE ENERGY, WATER AND COMMUNITY INFRASTRUCTURE STRATEGIES TO MAXIMIZE LONG-TERM VALUE (2012).

helps avoid using materials that themselves contribute to inefficiency because they come from unsustainable sources or require the energy to ship them long distances.<sup>206</sup> Beyond that, strategies such as optimum value engineering and window placement can maximize material usage.<sup>207</sup> At the outset, size should be considered. The size of a home affects everything from initial capital outlay for materials to site impact to energy usage, so designing to a manageable size helps reduce cost.<sup>208</sup>

Two primary goals of building green housing are to protect human health, at the individual and collective level, and to minimize resource use in building and maintenance of housing. Thoughtful design requires keeping in mind that people spend about ninety percent of their time indoors, mostly at home.<sup>209</sup> A poorly designed home can be a dangerous place. One reason is because the quality of indoor air can have as much or more of an impact on health than the quality of outdoor air.<sup>210</sup> The kinds of problems that indoor air pollution creates can affect eyesight, cause headaches, trigger asthma attacks, and contribute to mortality.<sup>211</sup> Among the contributors to poor indoor air quality is the release of volatile organic compounds (VOCs) from building materials, such as carpeting or paint. Another contributor is a heating, ventilation, and air conditioning (HVAC) system that fails to provide sufficient ventilation and circulation.<sup>212</sup> A potential chemical hazard is formaldehyde, a carcinogen used in insulation and some building products.<sup>213</sup> Controlling indoor air

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206. Underwood & Morrison, *supra* note 192, at 159.

207. *Id.*

208. ALISON LINDBURG, WHAT'S NEW IN ECO-AFFORDABLE HOUSING? COMBINING GREEN BUILDING INNOVATIONS WITH AFFORDABLE HOUSING NEEDS 4-5 (2007) (explaining that concern about overcrowding can be addressed by smart design, such as built-in cabinets, smaller appliances, and moveable room dividers).

209. Wu et al., *supra* note 181, at 953.

210. Gail Suchman & Lawrence P. Schnapf, *Controlling Residential Exposure*, in *THE LAW OF ENVIRONMENTAL JUSTICE: THEORIES AND PROCEDURES TO ADDRESS DISPROPORTIONATE RISKS* 619 (Michael B. Gerrard & Sheila R. Foster eds., 2d ed. 2008).

211. *Id.* at 620.

212. *Id.* at 621.

213. *Id.* Another reason that HVAC systems are important is because they introduce clean fresh air into a residence in order to compensate for the energy efficiency gained in insulated, tightly constructed buildings. David Jacobs &

quality can significantly lower disease and death from asthma, an incurable disease that has been linked to socioeconomic status.<sup>214</sup> Unlike outdoor air pollution, which is regulated under the Clean Air Act, indoor air pollution is not subject to regulation. However, one potential impact of indoor air pollution is tied to outdoor air pollution in an important way: people are routinely advised to remain indoors when outdoor air pollution is at high levels, as a way to avoid the negative health consequences that outdoor air pollution can cause.<sup>215</sup> This advice is based on the assumption that indoor air quality is superior to outdoor air quality. But this means that people whose indoor air quality is compromised may be more susceptible to adverse health effects from indoor air than the population at large. Low-income people and African-Americans are much more likely to be exposed to, and therefore suffer, the effects of poor indoor air quality than the general population.<sup>216</sup> So the advice to stay indoors might be good for the majority of people but bad for a minority: the same minority that tends to suffer other disparate environmental impacts. This problem goes to the heart of why green affordable housing is a matter of environmental justice. It demonstrates that there is a disproportionate impact of negative environmental effects on low-wealth people, and that the protections afforded to the majority in guarding against those negative environmental impacts may exacerbate the problem for the at-risk group.<sup>217</sup> The

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Jerry Hershovitz, *Principles of Healthy Housing: Dry, Ventilated, Contaminant-Free, Pest-Free, Clean, Maintained*, in *HEALTHY & SAFE HOMES*, *supra* note 74, at 31.

214. Shafiei, *supra* note 74, at 77.

215. The federal government and other authoritative sources routinely give this advice. See *Asthma Triggers: Gain Control*, EPA, <http://www.epa.gov/asthma/outdoorair.html> (last visited Oct. 26, 2012) (“[s]tay inside with the windows closed on high pollen days and when pollutants are high”); see also *Health Tip: Protect Yourself from Air Pollution*, U.S. NEWS & WORLD REPORT, Dec. 28 2009, <http://health.usnews.com/health-news/family-health/articles/2009/12/28/health-tip-protect-yourself-from-air-pollution> (“[w]hen air pollution is high, stay inside for as much of the day as possible”).

216. Wu et al., *supra* note 181, at 954.

217. This problem is repeated in matters of environmental justice. See NAT'L ENVTL. JUSTICE ADVISORY COUNCIL, *FISH CONSUMPTION AND ENVIRONMENTAL JUSTICE 2* (2002). The report notes that low-income communities, tribes, and other indigenous people depend to a greater extent than the general population on fish consumption, so that contamination of fish has a disproportionate impact

solution is a green strategy for improving the quality of indoor air, through modifications and improvements to HVAC systems—including choosing the right size and the right delivery system—thereby reducing the likelihood that residents of affordable housing will be exposed to potentially harmful agents indoors.<sup>218</sup>

Two other factors to consider in designing a green indoor environment are lighting and noise.<sup>219</sup> Good indoor light, both natural and artificial, is essential both to physical and psychological health.<sup>220</sup> People function better, concentrate better, and have fewer psychological issues like mood disorders when they live in a home with good indoor lighting. Similarly, abatement of noise pollution contributes to healthy living conditions because noise tends to interfere with cognitive functions, sleep, and concentration.<sup>221</sup> These amenities, like other green features, can be practical additions to green affordable housing, which is demonstrated by projects that have successfully incorporated them.<sup>222</sup>

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on their health and general welfare. In addition, the report noted that recommendations to substitute sources of protein, as the EPA recommends, “when the fish on which they rely to put food on the table have become contaminated” is unrealistic. *Id.* at 6.

218. L.V. Giles et al., *From Good Intentions to Proven Interventions: Effectiveness of Actions to Reduce the Health Impacts of Air Pollution*, 119 ENVTL. HEALTH PERSP. 29, 29 (2011). An additional benefit of green HVAC systems is that older air conditioning units use coolant products that are thousands of times more potent greenhouse gas agents than carbon dioxide. See J. Cohen et al., *Bridging the Montreal-Kyoto Gap*, 326 (5955) SCIENCE 940, 940 (2009).

219. Wu et al., *supra* note 181, at 954. Other considerations may include biological and chemical agents. Biological agents include bacteria and molds; chemical agents include pesticides and tobacco smoke. *Id.*

220. HUD, HEALTHY HOUSING REFERENCE MANUAL 2-2 (2009). See also Underwood & Morrison, *supra* note 192, at 157 (citing A. Wilson, *Daylighting: Energy and Productivity Benefits*, 8:9 ENVTL BUILDING NEWS (Sept. 1999)).

221. HEALTHY HOUSING REFERENCE MANUAL, *supra* note 220, at 2-2. See also Douglas Quenqua, *How Well You Sleep May Hinge on Race*, N.Y. TIMES, Aug. 21, 2012, at D1 (discussing recent epidemiological studies showing that “sleep is not colorblind” and positing reasons for the connection between sleep disorders and race. Among the potential factors is lifelong exposure to noise throughout the night).

222. See *Residential Project Achieves High Standard for Green, Affordable Urban Development*, HORIZON SOLUTION SITE, <http://www.solutions-site.org/node/761> (last visited Oct. 26, 2012) (discussing Via Verde, a LEED Gold project in New York City). This is an example of green affordable multi-

The disparate impact of poor indoor environments is an issue of environmental justice because it has the same characteristics as other environmental justice concerns. Poor indoor environment implicates “fair treatment” under the EPA’s definition of environmental justice, in that the allocation of an environmental burden (poor air quality) is placed unevenly on one segment of society. Green affordable housing is a positive response to the environmental justice issue raised by the inequitable health effects of indoor environmental quality, including air quality.<sup>223</sup>

### C. Energy Efficiency

Home energy efficiency is critical to green housing because of the burden that energy consumption places on individual pocketbooks and on the environment. For one thing, there is a direct correlation between high cost for home energy and negative health effects for residents.<sup>224</sup> Green affordable housing offers a potentially significant financial benefit, with evidence that home energy costs can be reduced by up to three-quarters.<sup>225</sup> Home energy efficiency can be achieved through many strategies, the most basic of which are effective insulation and efficient

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family housing that incorporates features like day-lit stairs, so that people more readily use them for exercise, along with other green attributes often associated with expensive housing, such as rooftop gardens and motion sensors for lights.

223. One successful approach that reduces the inequitable burden is to build homes specifically for children with asthma, designed with features that keep indoor air healthy. This is the approach taken in a Seattle development of affordable housing, which includes thirty-five “breathe-easy” homes built for children who have asthma. These homes use positive-pressure ventilation to circulate dirty air from the residence, fans that remove moisture to reduce mold and other biological agents, foundation insulation to modulate interior temperatures, and paints, adhesives, and other materials that are less damaging to lungs. *See* Williams & Bourland, *supra* note 74, at 43.

224. These negative health effects may include malnutrition, heart disease, and heat stroke; other consequences include homelessness and family disintegration. CITIZENS ENERGY CORPORATION, *THE COLD FACTS: THE FIRST ANNUAL REPORT ON THE EFFECT OF HOME ENERGY COSTS ON LOW-INCOME AMERICANS* 5 (2001).

225. Williams & Bourland, *supra* note 74, at 142. The authors cite two projects that compare energy use with that of other affordable housing, one costing thirty-seven percent less and the other costing seventy-three percent less. *Id.*

appliances. Other choices include better windows,<sup>226</sup> solar panels,<sup>227</sup> geothermal wells, and other technology that allows a building to produce its own energy.<sup>228</sup>

#### D. Water Efficiency

Water is used in most residences without much thought. The reasons for this are due to economics, building design, and site design. The economic disincentive to conserve water is rooted in the pricing structure employed by most water utilities. This model reflects the pricing structure used in the sale of most goods and services: the more a customer purchases, the better the price. Pricing water this way provides not only a disincentive to use less water, but an incentive to use more water. An inverted model is wiser, but should be coupled with houses and sites designed to use less water, which until recently has not been a priority in

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226. The average benefit of energy-efficient windows when they replace existing windows exceeds the cost by more than 300 percent when health benefits are monetized along with reduced energy costs. Wu et al., *supra* note 181, at 956.

227. See, e.g., Jennifer Dockery, *St. Louis Housing Authority Installs More Than 2,600 Solar Panels*, NOVGRADAC J. TAX CREDITS 1 (Nov. 2011) (describing installation of solar panels at four affordable housing sites in St. Louis, Missouri).

228. See Karrie Jacobs, *Off the Grid In the City*, N.Y. TIMES, Feb. 12, 2012, at D1 (discussing “Solutions Oriented Living,” a project in Austin, Texas that strives “not just to be sustainable in its design and materials, but ‘net zero’—in other words, a housing development that would produce all the energy it consumed, with super-efficient homes outfitted with solar panels and geothermal wells.”). Even simple measures like the color of roofs can have an effect; for example, white rooftops reflect heat rather than absorb it, and rooftops can also serve as insulation. A green roof (the name does not refer to the color) is perhaps a more exotic strategy. Green roofs are rooftops that have vegetation on them, in order to insulate the residence, with an added benefit of providing additional living space. Green roofs can reduce a building’s impervious surface since the vegetation can absorb and filter water that would otherwise become runoff. Although initial capital cost for a green roof can be higher than for a traditional roof, cost can be recovered over time in energy savings. Not every green building practice is appropriate for specific projects, and green rooftops are an example. They are likely to be a strategy more suited to multi-family affordable housing than to single-family residences. See Alexandra Dapolito Dunn, *Water Use and Management in Buildings*, in THE LAW OF GREEN BUILDINGS: REGULATORY AND LEGAL ISSUES IN DESIGN, CONSTRUCTION, OPERATIONS, AND FINANCING 258 (J. Cullen Howe & Michael B. Gerrard eds., 2010).

building design.<sup>229</sup> Houses use less water when the plumbing and fixtures are properly sized; when low-flow toilets and low-flow shower heads are installed; and when other appliances use water efficiently. They also use less water when the landscaping is xeriscaped, and when water that falls on-site is contained on-site for reuse.<sup>230</sup>

### E. Transportation Efficiency

It is not just the home itself, or the land that it sits on, that is a measure of how green it is. Green infrastructure in the community, including stormwater management and open space, can improve health by providing cleaner streams, offsetting the effect of heat sinks in urban areas, and providing air filtering.<sup>231</sup> Measuring efficiency, sustainability, health effects, and equity requires looking at the larger context, and especially at transportation options.<sup>232</sup> Transportation is linked to green housing in several ways.<sup>233</sup> First, transportation costs can be a significant portion of a household budget, depending on what

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229. See Craig Anthony Arnold, *Is Wet Growth Smarter Than Smart Growth?: The Fragmentation and Integration of Land Use and Water*, 35 ENVTL. L. REP. 10152, 10155 (2005).

Smart growth has focused on the density, form, pattern, and location of land development as it relates primarily to issues of open space, traffic and pedestrian circulation, air quality, wildlife habitat conservation, aesthetics, integration of public and private infrastructure, development of community and quality of life in the built environment. There is a need for a concept of 'wet growth': integration of concerns about water quality and the availability of water supply into the density, form, pattern, and location of land development.

*Id.*

230. Dunn, *supra* note 228, at 249.

231. Alexandra Dapolito Dunn, *Siting Green Infrastructure: Legal and Policy Solutions to Alleviate Urban Poverty and Promote Healthy Communities*, 37 B.C. ENVTL. AFF. L. REV. 41, 47 (2010).

232. Pollard, *supra* note 188, at 126.

233. See *Housing & Transportation Affordability Index*, CTR. FOR NEIGHBORHOOD TECH., <http://htaindex.cnt.org/> (last visited Oct. 27, 2012). The index measures housing affordability based on location. *Id.*

options are available.<sup>234</sup> In fact, transportation expense is second only to the cost of housing itself in most American households,<sup>235</sup> and tends to be a significantly higher expense for lower-income households.<sup>236</sup> Second, transportation can have an effect on health either because of a home's location near pollution sources like roadways, or because of a home's lack of access to sidewalks or other bicycle and pedestrian amenities.

Ozone provides an example of one way housing and transportation are linked, and how health effects are thereby implicated. Ozone in the air can harm the lungs, with children and older adults being particularly susceptible.<sup>237</sup> Breathing ozone may exacerbate other conditions, like bronchitis, emphysema, and asthma, or it can cause coughing, throat irritation, and congestion. It is not a chemical that is emitted into the air, but instead is created as the result of reactions between other chemicals that are emitted into the air by, among other things, vehicles.<sup>238</sup> Ozone is most likely present on hot, sunny days—just the time when children are often playing outside. This demonstrates how housing can be more or less healthful depending on how close the housing is to traffic corridors.<sup>239</sup> In addition, housing located close to high-traffic

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234. Darby Minow Smith, *Out of Reach: How Sprawl Jacks Up the Price of Affordable Housing*, GRIST, Feb. 28, 2012, <http://grist.org/sprawl/out-of-reach-how-sprawl-jacks-up-the-cost-of-affordable-housing/>.

235. CTR. FOR NEIGHBORHOOD TECH, SAFE, DECENT, AND AFFORDABLE: THE TRANSPORTATION COSTS OF AFFORDABLE HOUSING IN THE CHICAGO REGION 7 (Jan. 2012). The average household spent eighteen percent of its income on transportation. *Id.*

236. Smith, *supra* 234, at 1. In the Chicago area, households at eighty percent of average median income spent almost a quarter of their income on transportation.

237. See *Ground Level Ozone: Health Effects*, EPA, <http://epa.gov/air/ozone/pollution/health.html> (last updated Oct. 27, 2012).

238. *Ground Level Ozone*, EPA (July 27, 2012), <http://epa.gov/air/ozone/pollution/>. The vehicle emissions chemicals that cause ozone are nitrogen oxides (NOx) and volatile organic compounds (VOC), when they are mixed together in the presence of sunlight. *Id.*

239. See Giles et al., *supra* note 218, at 29 (“land-use decisions typically do not consider air pollution-related health impacts and do not require minimum distances between sources and individuals”); see *id.* at 31 (“adults who moved away from residences in close proximity to traffic . . . had a lower risk of coronary heart disease mortality than did those remaining in locations close to traffic . . . .” Other research suggests that traffic-related air pollution can

corridors, if it is also housing with poor indoor air quality, can cause even more damage to health than either location or indoor air quality alone causes. This is because of what scientists call the synergistic effect that pollutants have, suggesting that reducing exposure to several pollutants (for example, through green housing) is much more effective in achieving public health goals than reducing single emission sources.<sup>240</sup>

A second way that housing and transportation are linked to each other and to health outcomes has to do with the ability of pedestrians or bicyclists to traverse safely. The health connection is physical activity. Neighborhoods that facilitate walking and bicycling have more residents, including children, who engage in physical activity.<sup>241</sup> Physical activity is directly connected to the built environment, and the characteristics of the built environment are dependent on where a home is located. A green home helps reduce the incidence of health problems like obesity and heart disease because it is located in a place that is designed to be walkable to commercial centers, employment, neighbors, transit stops, and for pleasure.<sup>242</sup>

Not only do residents of walkable communities gain health benefits, but they can also gain economic benefits in the form of

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adversely affect cognitive ability. See Melinda C. Power et al., *Traffic-Related Air Pollution and Cognitive Function in a Cohort of Older Men*, 119 ENVTL HEALTH PERSP, 682, 686 (2011).

240. See Giles et al., *supra* note 218 at 31 (“accumulating evidence of cardiopulmonary morbidity and mortality associated with traffic-related air pollution exposure”). *Id.* (“In combination, these pollutants may cause a greater additive effect on lung function, cytokine production, and cardiac output and stroke volume compared with the individual pollutants themselves.”). Reducing single-source emission is national policy under the Clean Air Act, not reducing the synergistic effects of air pollutants.

241. T. Rahman, R.A. Cushing & R.J. Jackson, *Contributions of Built Environment to Childhood Obesity*, 78(1) MT. SINAI J. MED. 49 (2011).

242. Giles et al., *supra* note 218, at 31. There are constraints on walkability that are a function not just of neighborhood design but also of city design. Less conducive to walkability and transportation efficiency is a pattern of development that is low-density and therefore locates buildings, services, and other amenities at greater distances from each other. This type of development, commonly referred to as “sprawl,” and which has been discussed earlier in this paper, has both social costs and costs to individuals. See John I. Carruthers & Gudmundur F. Úlfarsson, *Does “Smart Growth” Matter to Public Finance?* 3-5 (HUD, Working Paper No. REP 06-02, 2007).

lower transportation costs.<sup>243</sup> The more walkable a community, the more it correlates in general to positive indicators of economic vitality.<sup>244</sup> This points to an issue that affordable housing projects need to incorporate in planning: housing in walkable communities tends to become less affordable in areas with greater transportation benefits, unless its long-term affordability is protected.<sup>245</sup> However, the environmental and health benefits associated with walkable communities help demonstrate another essential point regarding the environmental justice aspect of green affordable housing, which is that in the absence of green affordable housing, less affluent people are deprived of the benefit of health-related environmental amenities. Currently, less-walkable communities are populated by people who are less affluent and less educated than people residing in walkable communities.<sup>246</sup>

## V. LEGAL AND POLICY CHOICES

Where people live affects not just their economic and social conditions, but their health. Low-wealth and minority populations are currently more likely to live in housing that, even if affordable in the traditional sense, does not necessarily take into account the health disparities to which housing contributes. Green affordable housing takes on this challenge, a challenge that is part of the concern expressed in the environmental justice movement. If environmental justice means that people have the right to a “safe, healthy, productive, and sustainable environment,” where environment includes physical and social surroundings, then healthy and safe housing is encompassed in those rights.<sup>247</sup> Lower-income and minority populations

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243. CHRISTOPHER B. LEINBERGER & MARIELA ALFONZO, WALK THIS WAY: THE ECONOMIC PROMISE OF WALKABLE PLACES IN METROPOLITAN WASHINGTON, D.C. 11 (May 2012). See also Christopher B. Leinberger, *The Death of the Fringe Suburb*, N.Y. TIMES, Nov. 26, 2011, at A17 (“Today, the most expensive housing is in the high-density, pedestrian friendly neighborhoods of the center city and inner suburbs.”).

244. LEINBERGER & ALFONZO, *supra* note 243, at 9.

245. Pendall et al., *supra* note 147, at 153.

246. LEINBERGER & ALFONZO, *supra* note 243, at 12.

247. *Environmental Justice*, NAT’L ASS’N OF CNTY & CITY HEALTH OFFICIALS, <http://www.naccho.org/topics/environmental/justice> (last visited Oct. 27, 2012).

experience higher incidents of asthma and other breathing disorders; green housing can reduce or eliminate the causes of these disorders. Lower-income and minority populations experience disproportionately adverse health effects from elevated ozone levels; green housing can reduce or eliminate this disproportionate effect. Lower-income and minority populations pay higher percentages of their annual income in energy and transportation costs; green housing can correct these inequities. Furthermore, green housing can provide these benefits in a fiscally responsible manner. Since green affordable housing can economically deliver demonstrable benefit to lower-income and minority populations, there is justification beyond the environmental benefit for greening the housing stock.<sup>248</sup> There is a compelling justice rationale.

Green affordable housing is already being built, but it is the exception. Law and policy are the vehicles that society uses for setting norms in establishing how justice is achieved and to what extent efficiency or cost must be taken into account.<sup>249</sup> So law and policy should be adjusted in the context of green affordable housing to achieve a just outcome, making green affordable housing the norm. Some lessons as to how to normalize green affordable housing may be gleaned from a success story: the removal of lead from the environment. For decades, lead posed a health threat to Americans through environmental exposure, including exposure in homes. It took years for the scientific basis, coupled with a cost-benefit analysis that included weighing health costs and benefits against the commercial costs of eliminating lead, to develop incremental policies that eliminated lead.<sup>250</sup> Greening the affordable housing stock, which also addresses indoor air quality, can be done in a comprehensive but incremental manner.<sup>251</sup> A comprehensive process would take a

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248. Williams & Bourland, *supra* note 74, at 41.

249. Bratspies, *supra* note 57, at 20.

250. David E. Jacobs et al., *Linking Public Health, Housing, and Indoor Environmental Policy: Successes and Challenges at Local and Federal Agencies in the United States*, 115 ENVTL. HEALTH PERSP. 976, 979 (2007).

251. Many advocates of sustainability in general have urged a methodical, incremental approach. See Scott Campbell, *Green Cities, Growing Cities, Just Cities?*, 62 J. AM. PLAN. ASS'N 296 (1996).

multi-pronged approach that includes education, incentives, and mandates.

### A. Education

Education is necessary in order for affordable housing providers to understand that, even with limited resources, green housing makes economic sense. Green housing provides environmental benefits, health benefits, and individual long-term economic benefits, not all of which are monetized, making it difficult to compare the cost of building green housing versus traditional housing.<sup>252</sup> But even excluding these, an economic analysis that balances the cost of traditional building against the cost of green building can demonstrate when green building is competitive, something about which many developers are unaware. Undertaking an awareness campaign is something that can be done at a federal level. EPA, HUD, and the Department of Transportation already formally collaborate to improve access to affordable housing.<sup>253</sup> Making green affordable housing a formal, explicit part of this collaboration, along with a broad national education campaign, is a policy choice that can be implemented relatively easily.

Education is not a one-way street. Education also means involving consumers of affordable housing in the planning and implementation of projects, so that both developers and residents interact and learn from each other.<sup>254</sup> While community input is essential to participatory democracy, scientists are also appropriating the idea. Community-based participatory research is a novel method developed in part by the National Institute of Environmental Health Science (NIEHS) for studying connections

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<sup>252</sup>. There is not much data beyond the anecdotal to support the contention that green building is more expensive than traditional building. See NELSON ET AL., *supra* note 182, at 171. However, even if it does increase costs, it also improves health.

<sup>253</sup>. See *Smart Growth*, EPA, <http://www.epa.gov/dced/> (last visited Oct. 27, 2012).

<sup>254</sup>. This is the philosophy of Green Development Zones, which emphasize community-based sustainable development. See Aaron Bartley, *Building a "Community Growth Model": The Green Development Zone as a Model for a New Neighborhood Economy*, 41(2) SOC. POL'Y 9 (2011).

between the built environment and human health, focusing both on gathering and disseminating information.<sup>255</sup> It is specifically designed to take a multidisciplinary, collaborative, information-based approach to addressing connections between housing and health disparities. This participatory approach to addressing health outcomes in the context of social factors is well-suited to finding how, where, and when best to green specific affordable housing because it links data on health with targeted green attributes. The NIEHS approach is also ripe for inclusion in the Partnership for Sustainable Communities effort.

## B. Incentives

The second prong is incentives. Incentives are already part of the affordable housing landscape. The most successful of these is the Low Income Housing Tax Credit. Because the benefits of many green attributes (such as long-term energy savings) are realized only over time, if these attributes are not economically competitive initially then there is no way for the developer to recoup the cost. Restructuring tax credits to incorporate incentives for green features is a method for achieving green affordable housing.<sup>256</sup> One way this might work is to increase the credit based on the number of points a project received in the LEED rating system. Another possibility is to design a system that explicitly monetizes health benefits by assigning a dollar value to anticipated reductions in emergency room trips, asthma attacks, cardiopulmonary problems, and other issues associated with diminished air quality. Such a system is fairer than the current practice, which distorts economic reality by failing to recognize hidden costs.<sup>257</sup> This kind of system could be modeled on the same concept as energy-efficient mortgages, which finance

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255. Ernie Hood, *Dwelling Disparities: How Poor Housing Leads to Poor Health*, 113 ENVTL. HEALTH PERSP. A311, A313 (2005).

256. GLOBAL GREEN USA, MAKING AFFORDABLE HOUSING TRULY AFFORDABLE 13 (2005). This nationwide study found that “green building practices in affordable housing are currently being rewarded to some degree through tax credit allocation.” However, state policies are inconsistent and not comprehensive, with minimal green building requirements in many states. *Id.* at 15

257. ROBERT C. PAEHLKE, DEMOCRACY’S DILEMMA: ENVIRONMENT, SOCIAL EQUITY, AND THE GLOBAL ECONOMY 132 (Sept. 2004).

higher-priced homes in anticipation of the long-term lower operating costs.<sup>258</sup>

Another way to alter incentives so that green features are the norm is to standardize what is currently innovative financing. Innovative financing for one energy-efficiency project included federal tax credits, state grants, accelerated depreciation, energy rebates, and a twenty-year time horizon involving both nonprofit and for-profit entities.<sup>259</sup> Structuring this kind of financing involves a combination of resources and sophistication that would be unnecessary if the process were standardized and analysts were familiar with risk assessment. This could make financing less expensive and more widely available.

### C. Government Mandates

Coupling education and incentives with mandates completes the effort. In this context, mandates primarily mean local government land use mandates, in the form of green building codes, inclusionary zoning requirements, and comprehensive plans. Local governments around the country already actively pursue sustainable development.<sup>260</sup> Some mandate energy efficiency or LEED standards as part of their land use ordinances,<sup>261</sup> but green affordable housing is not a priority. Although most local governments say they give high priority to economic development, energy conservation, and environmental protection in developing policies, most do not make affordable

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258. BLUEPRINT FOR GREENING AFFORDABLE HOUSING, *supra* note 177, at 179. See *Energy-Efficient Mortgage Home Owner Guide*, HUD, [http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/housing/sfh/eem/eemhog96/](http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/sfh/eem/eemhog96/) (last visited Oct. 27, 2012). Unlike with energy-efficient mortgages, the incentive would have to be embedded in the subsidy since the homeowner would not necessarily realize the added economic gain. This is because subsidizing health care is a social cost. Nevertheless, the principle is the same.

259. JESSE DEAN ET AL., INTEGRATING PHOTOVOLTAIC SYSTEMS INTO LOW-INCOME HOUSING DEVELOPMENTS: A CASE STUDY ON THE CREATION OF A NEW RESIDENTIAL FINANCING MODEL AND LOW-INCOME RESIDENT JOB TRAINING PROGRAM 3 (2011).

260. James Svava, *The Early Stage of Local Government Action to Promote Sustainability*, in MUNICIPAL YEAR BOOK 43 (2011).

261. Dator, *supra* note 183, at 414.

housing, much less green affordable housing, a high priority.<sup>262</sup> Green affordable housing should be a high priority because just as land use policies can have a negative impact on the availability of affordable housing, so can they reverse course and seek to include affordable green housing.<sup>263</sup> Green building codes, for example, can be coupled with inclusionary zoning to set minimum requirements for energy efficiency in exchange for density bonuses.<sup>264</sup>

In addition, many states require that local governments develop comprehensive plans.<sup>265</sup> Comprehensive plans are blueprints for the future of a community. When communities embark on these blueprints, they can go beyond setting land use priorities and establish other priorities as well, including expectations for affordable housing. In recognizing the need to include affordable housing as part of every community, comprehensive plans can acknowledge that what constitutes affordability is tied to green housing and what constitutes fairness in housing is also tied to green housing. So every community's blueprint for its future can map green affordable housing as a component.

While local governments might voluntarily use available tools to include green affordable housing, it is more likely that such mandates will be instituted in response to incentives. The Partnership for Sustainable Communities is a good vehicle for developing federal policies that can provide such incentives. For example, as this paper has demonstrated, there is a sound basis for tying transportation funding to green affordable housing. Collaborating with states and localities to develop policies that explicitly recognize the value that green affordable housing brings to local communities, and therefore encouraging institutionalizing its development with financial incentives, would encourage widespread adoption of inclusionary zoning and comprehensive planning that incorporate green affordable housing. Another possible federal mandate could tie federal

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262. Svara, *supra* note 260, at 48.

263. Ngai Pindell, *Planning for Housing Requirements*, in THE LEGAL GUIDE TO AFFORDABLE HOUSING DEVELOPMENT, *supra* note 116, at 36.

264. Underwood & Morrison, *supra* note 192, at 151.

265. PENDALL, *supra* note 146, at 7.

funding for affordable housing to indoor air quality. This could be done through extending the reach of the Clean Air Act beyond its current confines of regulating only outdoor air, and putting in place regulations for indoor air quality for all projects that receive federal funding of any kind. Virtually all affordable housing projects would be encompassed in such regulations.

## VI. CONCLUSION

Although at first glance green affordable housing may seem to be an oxymoron, it is not. The cost of green housing is no more than the cost of traditional housing, especially when non-monetized benefits like improved health are considered. Even if it were more expensive, the fact that housing without green attributes leads to unequal distribution of environmental burdens and environmental benefit means society has a moral responsibility to rectify the inequity without regard to a cost-benefit analysis. Affordable housing—or any housing—that is not green raises matters of fairness because adverse impacts associated with housing, including impacts both on health and economics, are more severe for low-wealth people and minorities. At a minimum, environmental justice means treating members of society fairly when it comes to distributing environmental detriments and benefits. It means providing the same protections from environmental health hazards for all members of society, which means that so long as there are both environmental detriments and environmental benefits, they be distributed equally.<sup>266</sup> Green affordable housing distributes benefits in ways that traditional affordable housing does not. Law and policy, not the free market, have a role and responsibility in advancing the greening of affordable housing and advancing environmental justice.

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266. Ideally, the environmental justice movement seeks to remove environmental burdens rather than merely redistribute them. *See generally* Robert D. Bullard, *Environmental Justice in the 21<sup>st</sup> Century*, ENVTL. JUST. RES. CTR., <http://www.ejrc.cau.edu/ejinthe21century.htm> (last visited Oct. 27, 2012).