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Editorial

Public Health and Brownfields: Reviving the Past to Protect the Future

Public health, city planning, and civil engineering in the United States evolved together as a consequence of the late-19th-century effort to reduce the harmful impacts of rapid industrialization and urbanization. Reformers recognized that poor housing, inadequate sanitation and ventilation, and dangerous working conditions helped cause devastating outbreaks of cholera and typhoid as well as worker morbidity and unrest. In Buffalo, NY, New York, NY, Pittsburgh, Pa, and other US cities, elected officials and experts joined together to learn more about the interrelationships among economic development, land use, education, environmental protection, and public health. The reformers' legacy includes parks (e.g., New York's Central Park), zoning (a legal device, developed to separate dangerous industries from residences), and a clear sense of the link between economic development and public health.^{1,2}

The bonds between public health, civil engineering, and city planning gradually weakened as each field formed its own professional identity.^{3,4} Many environmental health problems of the late 20th century—for example, sick-building syndrome and groundwater contamination—can be at least partly attributed to overspecialization. These and other issues prompt strong consideration of closer cooperation among specialists. Today, an even greater challenge looms in integrating public health, environmental quality, economic redevelopment, and protection of civil rights. The deterioration and contamination of buildings and properties has left up to 450 000 so-called "brownfield" properties in tens of thousands of American neighborhoods, mostly in poor communities of color.

Brownfields are usually eyesores, lowering nearby property values, driving away investors, and requiring local governments to cordon them off to protect the public. In the worst cases, brownfields are the neighborhood equivalent of cancer: abandoned properties become the center of illegal drug-related activities and dumping grounds for all sorts of haz-

ardous products. Some brownfields are so distressing that nearby residents with any viable options leave the neighborhood; this process escalates and leads to more property abandonment and brownfield formation. Brownfields hurt local economies because mothballed properties do not collect sufficient tax revenues. Abandonment of properties is exacerbated by a reduction in police, fire, sanitation, and other services. In neighborhoods dominated by brownfields, AIDS, homicide, infant mortality, teenage pregnancy, and tuberculosis are high because only the poorest and sickest remain in these communities.

Brownfields should be remediated. But what should replace them, and what kind of cleanup is required to ensure that those living nearby are protected? Answers to these questions require the kind of interaction among public health, city planning, and civil engineering that existed a century ago. A further challenge is to accomplish this remediation and redevelopment with the input of the surrounding communities. Local residents not only want brownfields remediated, but they want the eyesores replaced with uses that upgrade neighborhood quality. The American Society on Testing of Materials protocol for "Sustainable Brownfields Redevelopment" embraces the principle of consultation with and full participation by impacted communities in development decisions.

Embracing community involvement addresses environmental justice.⁵ In 1998, the US Environmental Protection Agency (EPA) made public a policy based on the application of Title VI of the Civil Rights Act of 1964. Title VI bars agencies receiving federal money from engaging in actions that cause a discriminatory impact in terms of "race, color, or national origin." Thus, EPA began to

Editor's Note. See related articles by Morgan et al. (p 1761), Farrell et al. (p 1837), Macpherson et al. (p 1840), Needleman (p 1871), and Brauer and Mannelje (p 1834) in this article.

address an area that was neglected for the first 28 years of its existence. Many in local government, including members of chambers of commerce, mayors, and other elected officials, have argued that this policy will hamstring urban governments' efforts to revitalize contaminated brownfields, redevelop adjoining neighborhoods, and attract jobs.⁶ These fears will not be realized if experts in health, city planning, and civil engineering work closely with mayors and local residents to create a holistic neighborhood vision.

Some cities, such as East Palo Alto, Calif, have passed ordinances that are designed to zone out locally unwanted land uses (LULUs), such as junkyards in the middle of residential neighborhoods, by the year 2002. As a result, neighborhoods would have some choice regarding land uses.

Certain neighborhoods with brownfields have only attracted interest from waste management facilities and other LULUs. In Chester, Pa, for example, residents sued the State of Pennsylvania under Title VI for granting a permit to another waste management facility in a neighborhood that already has 4 major waste management facilities. Residents of this neighborhood have just cause to question whether they will receive any significant economic benefit from the planned LULU. In December 1997, the plaintiffs were granted standing by the federal courts, the first time standing has been granted to a nongovernment plaintiff under Title VI.

Invariably, disputes like this one raise moral and legal issues, such as federal vs state and local rights and market-driven vs government planning and regulation. Ideological arguments and political rhetoric should not be allowed to obscure the reality that the public health, economic, engineering, and other information required to make good policy decisions about brownfield sites is deficient. Public health researchers and practitioners can make critical contributions in overcoming this lack of information. Furthermore, close collaboration among city planners, civil engineers, and neighborhood residents, as well as public health officials is required to address the following key brownfields issues:

1. *Hazards and risk.* How can the risks of new LULUs built on old brownfield sites be assessed and then weighed as part of arriving at the cumulative risk of a neighborhood? Residents of neighborhoods with brownfields fear that new LULUs will poison and stigmatize their already overburdened environments. They are concerned about cumulative risk and want to know how different cleanup standards, brownfield redevelopment projects, and changes in neighborhood infrastructure will affect their own health, not the health of the hypothetical average American. Current risk

assessment databases and methods are inadequate to answer this question.

2. *Alternative futures.* What are the public health, neighborhood quality, and economic implications of alternative cleanup levels and land use options? As mentioned previously, some brownfield neighborhoods attract only waste-handling and manufacturing facilities. Other opportunities have not been fully explored. Instead, neighborhoods are written off as marginal sacrifice zones. Affected residents resent settling for cleanup standards that are lower for their neighborhoods than for others. They want to consider options other than waiting for an application from a waste-handling facility.

3. *Community leadership development.* How can the brownfield redevelopment process help create neighborhood leaders and long-term community involvement? Cleaning up brownfield sites is only an initial step in improving neighborhood quality. Communities and their public health will deteriorate unless brownfield redevelopment is part of an integrated effort to help local leaders build community pride; attract private, government, and nonprofit investments; improve transportation and employment opportunities; and focus on health promotion opportunities.

The US Conference of Mayors made brownfields its prime legislative priority at its 1998 annual meeting, producing the first new federal urban policy for many years.⁷ Mayors urgently need scientific evidence upon which to base cleanup standards and liability. They need to know which tax-delinquent properties are likely to yield the most jobs and pose the least risk. Mayors also need to know what economic development opportunities offer the best public health outcomes. As was emphasized during a recent meeting with EPA Administrator Carol Browner, mayors, too, are firmly opposed to environmental injustice.

Papers in this issue, including those by Morgan et al.,⁸ Farrell et al.,⁹ Macpherson et al.,¹⁰ Needleman,¹¹ and Brauer and Mannetje,¹² demonstrate that public health scientists are already engaged in fundamental risk issues prevalent in neighborhoods with brownfields.

Opportunities for environmental health research in urban areas are increasing because of brownfield initiatives. Still, these opportunities have little chance of success unless public health researchers choose initiatives that are directly responsive to the key questions of mayors and communities. Environmental health research has focused too much on toxins and effluvia on contaminated sites and too little on the substantial public health benefits of neighborhood development. Public health researchers can best address questions critical to distressed neighborhoods by working

with city planners and civil engineers—as it did 100 years ago—and by including affected populations in the process. As professionals sensitive to the complex needs of low-income neighborhoods of color, public health researchers can help facilitate closer integration of environmental protection, economic sustainability, and civil rights. This is an important contribution with historic precedent and accumulated evidence to back up its effectiveness in improving public health. □

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