

Case Study (from Promoting Healthy Public Policy through Community Based Participatory Research Report published by PolicyLink, School of Public Health at University of California Berkeley, and W.K. Kellogg Foundation , p.16-18)

Addressing diesel bus pollution and its health consequences in Northern Manhattan, New York: West Harlem Environmental Action, Inc., and the Columbia Center for Children's Environmental Health

Asthma morbidity and mortality rates in the Northern Manhattan neighborhoods of Harlem and Washington Heights are among the highest in the nation, with one in four children in Central Harlem suffering from this disease (1). With its rich cultural history, Northern Manhattan is home to about 1.5 million mostly low-income African American and Latino residents. This densely populated 7.4-square-mile area also housed six of the city's eight diesel bus depots and 650 Port Authority buses when this project began. Residents had long believed that the diesel bus problem played a significant role in their high asthma rates (2–4).

Their fears were well-founded. Diesel engines emit 30 to 100 times more particles than gasoline engines that have emission control devices (5); research has shown a significant association between high levels of diesel exhaust and elevated rates of respiratory ailments and asthma (5, 6). These studies also show that the largest contributor to area pollution is excessive bus idling in lots and in the streets around bus depots.

The Partnership: In 1996, West Harlem Environmental Action (WE ACT), a nonprofit organization that uses community-based action to advance environmental health policy, public health, and quality of life, formed a partnership with the Columbia Center for Children's Environmental Health (CCCEH) at the Mailman School of Public Health, Columbia University, to explore the possibility of excess pollution exposure in Northern Manhattan (2, 3) and to craft appropriate policy responses to their findings. The partnership was funded by an initial environmental justice grant from the National Institute of Environmental Health Sciences (NIEHS) and has continued to receive funding from this source and others, with some of the more recent grant support directed to WE ACT as the lead agency. This powerful community-academic collaboration has continued more than a dozen years, deepening its focus on air pollution as well as taking on additional areas of shared concern in the broad arena of place and health (3).

Research Methods: In the mid-1990s, the WE ACT partnership undertook detailed GIS mapping that graphically portrayed the disproportionate burden of asthma hospitalizations in Northern Manhattan, as well as the location of bus depots and other emission sources in relation to the public schools, hospitals, and other key sites. The signature aspect of the partnership's research, though, involved training high-school-aged youth to participate in investigations of exposure rates to fine particulate matter (PM_{2.5}) commonly found in vehicle exhaust. In July 1996, WE ACT staff and summer interns (called "Earth Crew") identified neighborhood "hot spots" near the depots where

vehicular and pedestrian traffic were particularly heavy, as well as possible confounders such as indoor smoking. The partnership's epidemiologist then trained the youth to do traffic and pedestrian counts in these areas and to calibrate and use backpack air monitors to test their personal exposures. CCCEH staff also used ambient air monitors in these locations to gather additional data (2, 7).

Findings: The study found that variations in concentration of fine particulate matter appeared to be related to the magnitude of local diesel sources. This reinforced community concerns about the disproportionate burden of diesel traffic and bus depots in Harlem. Results also showed that PM_{2.5} concentrations ranged from 22 to 69 $\mu\text{g}/\text{m}^3$ in eight hours (7)—well above the Environmental Protection Agency's (EPA) safety threshold, which at the time was 15.1 $\mu\text{g}/\text{m}^3$ (7)

Getting to Action: WE ACT helped raise broad public awareness of the high exposure rates through a multilevel educational and advocacy campaign featuring the tag line, "If you live uptown, breathe at your own risk." The organization also experienced a deliberate planning process. In the words of a key community partner, "We would literally unfold charts of paper and start mapping the key actors: who is responsible for decision making, who is making policy, and what is the policy? □ ... □ How does it play out in terms of impacting our community, our organization, and our allies?"

WE ACT also considered various potential policies and how they would have an impact on "our potential to establish policy goals" (e.g., obtaining 300 new buses powered by compressed natural gas (CNG) and having all new Metropolitan Transit Authority (MTA) depots converted for CNG). With its partners, sometimes including allies at the EPA, WE ACT also discussed how to use the study findings and the community's experience to effect its proposed policy and practice changes (4). In one instance, residents sent more than 10,000 postcards featuring a picture of two children in gas masks to two key policy targets: the governor and the head of the MTA. Dozens of bus shelter ads, widely distributed print media, and an effective media advocacy campaign were among the efforts undertaken to spread awareness. Despite this careful advance work, WE ACT often had difficulty getting a hearing with relevant officials, and it joined in filing a legal complaint against the U. S. Department of Transportation. Although the latter action was not expected to result in a win and did not, it was an important move politically in increasing the visibility of the issue and the community's commitment to seeking redress.

Policy Change Outcomes: WE ACT and its partners have been widely credited with playing a major role in securing the conversion of existing city buses to clean diesel. Although not yet reaching a key policy goal—getting 300 buses converted to compressed natural gas and requiring all new buses to use this technology—the partnership helped bring about tighter air quality standards that have withstood all legal appeals. EPA officials also cited WE ACT as the major force responsible for pressuring the agency to establish permanent air monitoring stations in Harlem and other "hot spots" locally and nationally (4).

WE ACT's policy advocacy has expanded since the seminal Earth Crew study. Continuing its campaign to get the MTA to convert the city's buses to CNG, WE ACT now works closely with the Natural Resources Defense Council. It also played a key role in developing a statewide environmental justice policy: the organization's executive director, Peggy Shepard, chaired the task force that crafted the new policy and helped secure its adoption. Of equal importance, WE ACT has continued to build local capacity and amplify the community's voice through its role in spearheading the Environmental Leadership/Mental Health Leadership Training Program and in co-chairing the Northeast Environmental Justice Network. The scientists associated with the partnership have continued to see their work benefit from community partner perspectives.

Barriers and Success Factors: Several factors appeared to play a role in the partnership's effectiveness. Among them are WE ACT's strong community base, the scientific credibility of the partnership's research, strong policy and other organizational alliances, and the careful background work and strategic planning in which WE ACT is engaged. The deep mutual respect and trust among partnership members and WE ACT's strategic use of the mass media also appeared to contribute to its effectiveness and policy impacts. At the same time, the partnership struggled with different timetables and resource allocations as well as varying levels of commitment to the advocacy aspects of the work. Difficulties with simply getting meetings with key decision makers, especially in the early days of the project, were also a source of frustration.

New Directions: WE ACT sits on the steering committee of a new citywide coalition, the Campaign for New York's Future, which is working to ensure a sustainable, "greener" New York for all residents. The partnership between WE ACT and the CCCEH also has moved in new directions, with the partners collaborating on a citywide campaign, "Our Housing is Our Health," focused on indoor air quality. Together with nearly 30 organizational members, including tenant associations, housing groups, and community-based organizations, WE ACT is particularly focused on changing the city's policy on mold. Their goal: banning building materials that promote the growth of mold, and possibly even making mold a household violation. With the city's Public Advocate, they are now working to change the NYC Building Construction Code.

Summary Reflections: For more than a dozen years, the partnership between WE ACT and the Columbia Center for Children's Environmental Health has been characterized by mutual respect, trust, and a strong commitment to rigorous science and effective policy advocacy. Policymakers and others continue to point to the partnership's landmark Earth Crew study (7) as having provided key ammunition in the successful fight for tighter air quality standards and permanent air monitoring in hot spots in Harlem and similarly impacted neighborhoods around the country (4, 8). WE ACT continues to devote considerable effort to building individual and community capacity. And its continuing partnership with CCCEH and their allies demonstrates the power of CBPR and related policy advocacy to study and address problems at the intersection of place and health.

Contact Information:

Peggy Shepard, Executive Director WE ACT, Inc. 271 West 125th Street Suite 308 New York, NY 10027 212.961.1000 peggy@weact.org	Patrick Kinney, ScD Associate Professor of Clinical Public Health Columbia University Mailman School of Public Health Center for Children's Environmental Health 60 Haven Avenue, B-116 New York, NY 10032 212.305.3663 plk3@columbia.edu
---	---

For Further Reading:

- Breckwich Vásquez, V., M. Minkler, and P. Shepard. 2006. Promoting environmental health policy through community-based participatory research: A case study from Harlem, New York. *Journal of Urban Health* 83(1):101–10.
- Brown, P., B. Mayer, S. Zavestoski et al. 2003. The health politics of asthma: Environmental justice and collective illness experience in the United States. *Social Science & Medicine* 57:453–64.
- Kinney, P. L., M. Aggarwal, M. E. Northridge et al. 2000. Airborne concentrations of PM_{2.5} and diesel exhaust particles on Harlem sidewalks: A community-based pilot study. *Environmental Health Perspectives* 108:213–18.
- Shepard, P., V. Breckwich Vásquez, and M. Minkler. 2008. Using CBPR to promote environmental justice policy: A case study from Harlem, New York. In *Community-Based Participatory Research for Health: From Process to Outcomes, 2nd Edition*, eds. M. Minkler and N. Wallerstein. San Francisco: Jossey-Bass.