NEW YORK LAW SCHOOL

NYLS Law Review

Volume 54
Issue 2 *Submissions Issue*

Article 2

January 2009

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VOLUME 54 | 2009/10

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How PlaNYC Will Facilitate Brownfield Redevelopment

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PlaNYC, Mayor Michael R. Bloomberg's sustainability plan for New York City, proposes an ambitious overhaul of state and city brownfield policy to spur the cleanup of all contaminated land in New York City by 2030. Brownfields are real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of hazardous waste, petroleum, or both.[1] Brownfields are a high priority in Mayor Bloomberg's long-term plan because cleaning contaminated land is one of the most efficient ways to create the space needed for the city's anticipated growth. By 2030, the city's current population of 8.2 million is expected to add almost 1 million people to reach 9.1 million—the equivalent of adding the entire population of Boston and Miami to the already largely built-out five boroughs.[2]

PlaNYC is the mayor's vision to prevent the challenges of that growth from overwhelming the city's infrastructure, parks, streets, trains, and environment. The document is encyclopedic, with 127 proposals related to housing, open space, brownfields, water quality and reliability, transportation, energy, air quality, and climate change.[3] Regarding brownfields, the core of the mayor's plan is the creation of a city brownfield office with a broad mandate to advance sustainable cleanups and spur the city's economic development. PlaNYC recognizes that New York's Brownfield Cleanup Program ("BCP") does not address lightly to moderately contaminated sites with historic fill and petroleum, which represent most city brownfields. PlaNYC calls for a local brownfield cleanup program to accelerate the cleanup of an estimated 5500 acres of city brownfields that are either ineligible or unlikely to enter cleanup programs managed by the State Department of Environmental Conservation ("DEC"). Mayor Bloomberg has recently appointed Daniel C. Walsh, who previously ran the Brownfield and Superfund Programs for DEC's New York City office, as the first director of the new city brownfield office. Drawing on his experience in managing state cleanup programs, Walsh has designed an innovative local brownfield program that will offer developers speed and predictability if they enter sites into the new city program. The city program, which will be the first municipally run cleanup program in the nation, is scheduled to open in April 2010. Although the current financial crisis has stalled the city's economy, Walsh believes that when the economy stabilizes, the local program will attract many sites.

Cleaning all of the city's contaminated sites by 2030 strikes many in the field as an unattainable goal. But PlaNYC relies heavily on the private market to induce developers to undertake cleanups, and existing state institutions—particularly DEC—to oversee remediation of the most contaminated sites. The mayor also proposes a range of city initiatives to expand and redirect the city's brownfield efforts. Besides creating the nation's first municipal voluntary cleanup program, he has budgeted $11 million

1. *See* N.Y. Envtl. Conserv. § 27-1405(2) (McKinney 2007 & Supp. 2009); *see also id.* § 27-1405(7-a) (defining "contaminant" as "hazardous waste and/or petroleum").

2. *See* City of New York, Mayor Michael R. Bloomberg, PlaNYC, A Greener, Greater New York 4–6 (2007), *available at* http://www.nyc.gov/html/planyc2030/downloads/pdf/full_report.pdf [hereinafter PlaNYC].

3. *See id.* at 2, 141.

toward financial incentives to spur the development of brownfields, creation of an inventory of vacant contaminated land, technical training of community groups and small developers, and a partnership of local brownfield practitioners. The partnership will counsel communities about the merits of a cleanup proposed in their neighborhoods, as well as provide job training for unskilled workers in the brownfield industry; internships and scholarships for city students seeking careers as environmental professionals; and business opportunities for entrepreneurs.[4]

This article will first describe the extent and nature of city brownfields and the three ways to remediate them. Second, it will examine the state's BCP and the state's interest in providing oversight to more sites. Third, it will describe the new city brownfield office and the design of the city's local BCP. Fourth, the article will examine city efforts to promote brownfield development in city neighborhoods. Finally, the article will describe PlaNYC proposals for a list of vacant brownfields and a new method of site management.

I. BROWNFIELDS IN NEW YORK CITY AND THEIR REMEDIATION

A. An Inventory of New York City's Brownfields

According to PlaNYC, the city may have 7600 acres of brownfields, "an area over eight times the size of Central Park."[5] This figure represents several categories of sites, including known brownfields and estimates of potential brownfields. One-fourth of this total, or 1900 acres, are sites in various DEC remedial programs.[6] An additional 4000 acres are vacant manufacturing land.[7] A final 1700 acres are vacant residential and commercial land that contains historic fill consisting of ash and construction wastes historically dumped in low-lying areas to create building sites.[8] The full extent of city brownfields is not known because most of the city's 206,000 acres have not been characterized. Although not all vacant manufacturing land is contaminated, a portion of developed manufacturing land is presumably contaminated and underutilized.

4. *See* City of New York, Mayor Michael R. Bloomberg, PlaNYC, Progress Report 2009 13–15 (2009), *available at* http://www.nyc.gov/html/planyc2030/downloads/pdf/planyc_progress_report_2009.pdf [hereinafter Progress Report].

5. PlaNYC, *supra* note 2, at 41.

6. As of March 2007, DEC managed 279 city sites covering 1908 acres including: Thirty-eight state Superfund sites consisting of 230 acres; sixty-eight manufactured gas plant sites covering 763 acres; two major oil spill sites covering fifty-five acres; fifty-six sites in the Brownfield Cleanup Program covering 190 acres; 111 sites in the Voluntary Cleanup Program covering 642 acres and four sites in the Environmental Restoration Program covering twenty-eight acres. DEC provided the acreage for the following site categories: state Superfund, manufactured gas plants, BCP, and ERP. OER IT analysis provided the acreage for two oil spills and VCP sites.

7. Div. of Applied Research and Planning, Steven L. Newman Real Estate Inst., Baruch College, City University of New York, Brownfields: 2005 13 (2005) [hereinafter Brownfields: 2005].

8. This figure was derived from an overlay of NYC Dept. of Finance vacant property information with Regional Plan Association's map of historic fill in New York City.

Historic fill is the city's most pervasive contaminant. "Historic landfills that occupy about 20% of the land area of New York City are identified."[9] Further, historic landfills occupy 185 km squared, which is more than twenty percent (23.4 percent) of the land of NYC (790 km squared).[10] Yet, PlaNYC counted less than five percent of vacant land with historic fill that is zoned for residences or commerce as potential brownfields. The nature of brownfields as vacant land underscores their economic development potential.

Most city brownfields are relatively small. For example, the 4000 acres of vacant manufacturing land is divided into more than 6800 parcels.[11] More than ninety percent of these parcels are smaller than one acre.[12] Almost 9000 parcels are less than one-tenth of an acre and constitute micro-parcels that may represent a development opportunity for adjacent owners.[13] The city has relatively few large brownfields, such as the former Phelps-Dodge site in Maspeth, Queens, which was once the location of a mammoth chemical manufacturer that operated on Newtown Creek.[14] Because of their size and the city's historically strong real estate market, large brownfields tend to attract investors and most have been cleaned up already.

Most city brownfields are outside Manhattan. They tend to be clustered in moderate-income neighborhoods that expanded when industry retreated from communities such as Port Morris and Hunts Point in the Bronx; Long Island City, Maspeth, and Jamaica in Queens; and Greenpoint, Williamsburg, East Williamsburg, and Sunset Park in Brooklyn. Beyond these clusters, brownfields are found along the waterfront, where historic fill was placed to reclaim low-lying marshland, and they are found scattered across the city, where a gas station, auto repair shop, or drycleaner may have done business. Brownfields are both clustered and scattered broadly across the city.

B. The Three Options for Cleaning a Brownfield in New York City

There are three ways to clean contaminated property in the city. One approach is for DEC to supervise the cleanup. An alternative, which is mandatory for parcels subject to city environmental review,[15] or those where a rezoning has generated an E-designation—known as E-sites, which provides notice of the presence of an environmental requirement pertaining to potential hazardous materials contamination, or noise or air quality impacts on a particular tax lot[16]—is for the New York City

9. Daniel C. Walsh, Geochemistry of Solid-Waste Landfills xix (May 1996) (unpublished Ph.D. dissertation, Rensselaer Polytechnic Institute) (on file with author).

10. *Id.* at 6, 17.

11. Brownfields: 2005, *supra* note 7, at 13.

12. *Id.* at 19.

13. *See id.*

14. Curtis Cravens, Copper on the Creek, Reclaiming an Industrial History 8–15 (2000).

15. N.Y. Comp. Codes R. & Regs. tit. 62, § 5-01 (McKinney 2009).

16. Zoning Resolution, City of N.Y. art. 1, ch. 1, § 11-15 (2001).

Department of Environmental Protection ("DEP") to oversee the cleanup. The third method, and by far the most common, is for a developer to oversee its own cleanup without regulatory oversight. These self-directed cleanups are also known as "at-risk" cleanups because the project owner would be liable to the state if the remedy is ever successfully challenged.[17]

Because at-risk cleanups are the fastest and cheapest way to address contaminated land, they account for the vast majority of all city cleanups.[18] Looking at the relative volume of sites under each of the three approaches, DEC has a total remedial workload of 279 city projects in five different programs over a period of approximately twenty years.[19] DEC's active workload, however, is far smaller, as many of these sites will be addressed in the future. Approximately forty brownfield sites have been remediated in the city under the state's brownfield program since 1994.[20] At the municipal level, DEP's hazardous materials staff reviews approximately 160 E-sites each year.[21]

Statistics on the number of at-risk cleanups do not exist, but the magnitude of these private, self-directed cleanups can be estimated by looking at city building permits. Between 2004 and 2007, the Department of Buildings issued permits for the construction of 24,595 new buildings.[22] Of these, 743 new buildings were erected on manufacturing land.[23] The number of new buildings erected on contaminated properties and the thoroughness of site cleanups is not known. But even if only a fraction were brownfields, the number of at-risk cleanups routinely conducted in the city dwarfs the number of cleanups overseen by state regulators.

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17. The Department of Environmental Conservation has broad authority to pursue parties that conduct inadequate cleanups. *See* N.Y. Envtl. Conserv. Law § 3-0301(1)(i) (McKinney 2005 & Supp. 2009); N.Y. Nav. Law § 181(1) (McKinney 2004 & Supp. 2009).

18. Statistics on the number of at-risk cleanups undertaken in the city do not exist. But the magnitude of such self-directed cleanups can be inferred from two circumstances. First, the city's tradition of as-of-right development, which allows a developer to build without any substantive government review or oversight if a project complies with zoning. Second, the number of New York City Department of Building permits for new construction in recent years dwarfs the number of cleanups overseen by state or city regulators. Building permits do not indicate if a project is proceeding on a brownfield, but even if only a fraction of new construction is built on brownfields, it is quite probable that these self-directed remedies exceed the number of cleanups overseen by state and city regulators.

19. Of the 279 sites, PlaNYC counted only two major oil spill sites whose size, in acres, could be measured. DEC's regional New York City office also manages a backlog of 4500 oil spills. The vast majority of these reported spills are leaks from individual tanks, which may delay the sale of property, but do not represent significant development opportunities.

20. Interview with Daniel C. Walsh, former Chief, Superfund and Brownfield Cleanup, New York City Reg'l Office of the N.Y. State Dep't. of Envtl. Conserv., in N.Y., N.Y. (Aug. 4, 2008).

21. Telephone Interview with Daniel Cole, Deputy Dir., Site Assessment Unit, Div. of Envtl. Planning and Assessment, New York City Dep't of Envtl. Prot. (Jan. 9, 2008).

22. E-mail from Helen Gitelson for Chung Hua Tang, Analyst, Program & Mgmt. Analysis, New York City Dep't of Bldgs., to Mark McIntyre, Gen. Counsel, Mayor's Office of Envtl. Remediation (Apr. 22, 2008, 10:10 EST) (on file with New York Law School Law Review).

23. *Id.*

Conducted outside of a regulatory program and without public notice, at-risk cleanups carry the downside risk that no one other than developers and their lenders know whether most development on contaminated city land eliminates the exposure of the public and the environment to contamination. Reducing the number of at-risk cleanups by attracting small and mid-sized developers into a new cleanup program is one of PlaNYC's most important objectives.

The brownfield challenges that New York City faces are unusual in extent and scope, but they are not unique. Self-directed cleanups are the most common method of remediation in the city and in the country. Historic fill is found across the city and in old industrial cities across New York. And an uncertain cleanup process and lack of liability protection limit the number of protective remedies in the city and in the nation. But the local cleanup program that PlaNYC proposes in order to address these challenges is unprecedented. When the local BCP opens in 2010, the Bloomberg administration will have created a fourth way to clean contaminated property in New York City.

II. NEW YORK STATE'S BROWNFIELD CLEANUP PROGRAM

The state plays the predominant role in regulating and encouraging the redevelopment of contaminated sites in New York. DEC has operated a voluntary cleanup program for developers to cleanup contaminated sites since 1994. Following passage of comprehensive brownfield legislation in 2003, DEC replaced its original voluntary cleanup program with BCP.[24] BCP offered lucrative, refundable tax credits and a state liability release.[25] The program's tangible property tax credit[26] soon attracted major developers whose dense, downstate projects became a significant cost burden to the state.[27] DEC responded with guidance that, in effect, limited the range of sites eligible for the program based on their level of contamination and economic distress.[28] DEC now restricts BCP to highly contaminated sites where the contamination more obviously complicates a property's redevelopment.[29] DEC guidance also excludes historic fill sites from the state program.

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24. N.Y. State Dep't of Envtl. Conservation, Voluntary Cleanup Program, http://www.dec.ny.gov/chemical/8442.html (last visited Sept. 29, 2009).

25. *See* N.Y. Tax Law § 21 (McKinney 2005 & Supp. 2009); N.Y. Envtl. Conserv. Law § 27-1421(1).

26. A developer is eligible for a tangible property tax credit worth ten to twenty-two percent of a project's value. N.Y. Tax Law §§ 21(a)(3), (a)(5).

27. *See* David J. Freeman & Laura Karvosky, *Case Law Develops for Site Eligibility Under New York State's Brownfield Cleanup Program*, 19-10 Envtl. L. in N.Y. 1, n.15, Oct. 1, 2008 (DEC estimated that the first twenty-five sites that qualified for tax credits under the Brownfield Cleanup Program would cost the state $1 billion in tax credits.).

28. *Id*. at 1.

29. *See id.* In March 2005, DEC issued eligibility criteria related to levels of contamination and economic distress to determine whether a site was eligible for the Brownfield Cleanup Program. *See id.* DEC has used the criteria to reject marginally contaminated sites from the BCP and restrict entry to significantly contaminated sites where it is reasonable that the extent of contamination is likely to complicate the site's redevelopment. *See id.*

Exclusion from BCP means that developers who want a state liability release, but do not want tax credits or do not want to enter the state program, cannot obtain a state liability release. The limited availability of state liability protection limits project financing. Lenders and investors strongly prefer projects on track to earn a liability release because the risk of a state enforcement action challenging the remedy is essentially eliminated.

In the first five years, only eighteen city sites in BCP were cleaned up.[30] DEC's expertise in managing complex cleanups was clearly needed at these badly contaminated sites. Yet the current BCP is a slow process. From point of entry into the program until state approval of a remedy often takes twelve to eighteen months.

The state's objective is to provide oversight of more sites outside BCP through a new voluntary program, which DEC proposed in 2006,[31] but withdrew after its proposal attracted opposition. DEC wants to target sites whose owners do not require tax credits but who seek a state liability release to satisfy their lenders. DEC seeks to spread its staff and financial resources over more sites and to provide an alternate cleanup program for projects rejected from BCP.

PlaNYC recognizes the limitations of the current state brownfield program. The city, in partnership with DEC, seeks to build a local voluntary program for New York City that produces quality cleanups that earn a state liability release. The city's program represents a significant effort to improve and expand the voluntary cleanup process in New York.

III. PLANYC'S CREATION OF AN OFFICE OF ENVIRONMENTAL REMEDIATION AND A NEW LOCAL VOLUNTARY CLEANUP PROGRAM

A. The Office of Environmental Remediation

PlaNYC looks to the state to oversee the cleanup of the city's most contaminated sites. DEC's technical staff is the foremost expert in guiding cleanup of seriously contaminated property. But most contaminated land in New York City is not dealt with by any state program. To address the city's cleanup challenges—thousands of acres of land with historic fill, petroleum spills, E-designations and other moderate forms of contamination—PlaNYC calls for the creation of a new city brownfield office and a new voluntary cleanup program. In May 2008, Mayor Bloomberg hired Daniel Walsh, one of DEC's top brownfield managers, to open the Office of Environmental Remediation ("OER") and to design and implement the nation's first municipally run cleanup program. As director of DEC's Brownfield and Superfund Programs[32] in New York City for the past five years, Walsh earned a reputation as a

30. E-mail from Andrew English, Bureau Chief, Bureau of Technical Support, Div. of Envtl. Remediation, N.Y. State Dep't of Envtl. Conservation, to Mark McIntyre, Gen. Counsel, N.Y.C. Mayor's Office of Envtl. Remediation, (Oct. 23, 2008, 09:30 EST) (on file with New York Law School Law Review).

31. Remediation Stipulation Program, 28 N.Y. Reg. 22 (proposed July 12, 2006) (to be codified at N.Y. Comp. Codes R. & Regs. tit. 6, § 375-5).

32. The state's Superfund Program addresses inactive hazardous waste sites, particularly those that pose a "[s]ignificant threat to the public health or environment . . . ." N.Y. Envtl. Conserv. Law § 27-1305(2)(b)(2).

flexible regulator, focused on working with environmental consultants to move sites through the state programs. Walsh created templates to provide consultants with clear guidance on what site information DEC requires to move sites through its programs. As a result, the number of completed projects in New York City, compared to the rest of the state, soared.[33] Almost forty percent of all BCP projects completed statewide in 2006 to 2007 originated in DEC's New York City office, one of DEC's nine regional offices.[34] Walsh attributes the sharp jump in completed projects to the templates and other streamlined methods.

At OER, Walsh has authority to hire an initial technical staff of twelve geoscientists and engineers to review all work plans and reports. The office will manage two city cleanup programs: the new local brownfield cleanup program and the E-designation program,[35] formerly run by the city's DEP. OER will provide engineering and public health oversight and consistent procedures for sites in both programs. Over time, it will create a single remediation process for city sites and bring it into conformity with state practice. Working with state agencies, OER will also develop presumptive remedies[36] for historic fill and other common contaminant conditions. OER will also study and map vacant city land that may be contaminated and promote the development of these vacant sites.

In addition to its regulatory role, OER will serve as the focal point for city outreach to community groups, local development corporations, and less-sophisticated developers, helping them navigate the complicated process of developing city brownfields. Under Walsh's direction, OER seeks to create partnerships between the private cleanup industry and communities that will provide the public with technical advice on remedies, city students seeking careers in the cleanup industry with scholarships and internships, unskilled workers with job training at brownfield sites, and local entrepreneurs with business opportunities in the site cleanup process.

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33. *See* e-mail from Andrew English, Bureau Chief, Bureau of Technical Support, Div. of Envtl. Remediation, N.Y. State Dep't of Envtl. Conservation, to Mark McIntyre, Gen. Counsel, N.Y.C. Mayor's Office of Envtl. Remediation (Apr. 1, 2009, 08:52 EST) (on file with New York Law School Law Review) (The number of completed BCP projects in Region 2 climbed from one in 2005 and five in 2006 to ten in 2007.).

34. *See id.* (Fifteen of the thirty-nine BCP projects completed across the state in 2006–2007 were in DEC's New York City office.).

35. An E-designation for hazardous materials on an individual lot blocks a property owner from obtaining Department of Buildings permits until he or she investigates and, if necessary, remediates to the satisfaction of Mayor's Office of Environmental Remediation. As of April 1, 2009, 3929 city tax lots contained E-designations for hazardous materials, or .004 percent of the city's 998,415 tax lots. E-mail from Maksim Kleban, IT Director, Office of Environmental Remediation, to Mark McIntyre, Gen. Counsel, N.Y.C. Mayor's Office of Envtl. Remediation (Apr. 2, 2009, 23:48 EST) (on file with New York Law School Law Review).

36. Presumptive remedies are techniques for managing site contamination that past experience has shown to be effective. *See* Federal Remediation Technologies Roundtable, Remediation Technologies Screening Matrix and Reference Guide § 2.1 (Version 4.0) (2009), *available at* http://www.frtr.gov/matrix2/section2/2_1.html.

Finally, the new office will advise city agencies on site investigations and remedies. OER will also serve as the principal city liaison to DEC and the State Department of Health for city agencies with important brownfield functions.

B. PlaNYC's Local Brownfield Cleanup Program

The city has obtained authority from the New York City Council to establish the nation's first local brownfield cleanup program. The program will be open to sites that are either ineligible or unlikely to enter the state brownfield program: sites with historic fill, petroleum, or E-designations; sites with contaminants that exceed state soil standards;[37] and sites denied entry to the state BCP. The program will address lightly to moderately contaminated sites where significant contamination has not spread beyond a site's boundaries. OER will focus on sites where contamination can be addressed through onsite remedies.

Walsh is committed to delivering remedies that protect public health and the environment. The city's Department of Health and Mental Hygiene will review site investigations and proposed remedies to ensure that sites are thoroughly investigated and that remedies protect workers and residents from exposure to residual contamination allowed to remain at a site. Sites admitted to the city program will be subject to the procedural requirements of BCP. A party must thoroughly characterize site contamination, select one of the state's four cleanup tracks[38] in attainment of state soil standards, submit an alternate remedy, open a document repository, and provide notice to the public of site information and the opportunity to request a public meeting at specified milestones during the remedial process.

The city program will also achieve faster cleanups. First, Walsh will postpone entry of sites into the city program until a thorough site investigation, known as a remedial investigation, has been completed. Second, Walsh has created new templates that explain the site-specific information OER will require for sites entering the city program. A developer with a proposed remedy and a satisfactory remedial investigation can expect OER to approve a remedy in four months.

37. N.Y. Comp. Codes. R. & Regs. tit. 6, § 375-6.8 (1995–2008).

38. Parties cleaning contaminated land to New York's soil cleanup standards can select one of four cleanup tracks to remediate a site. *See* N.Y. Comp. Codes R. & Regs. tit. 6, § 375-6.1; N.Y. Envtl. Conserv. Law § 27-1415(4). Each track is equally protective of public health. Under Track 1, a developer can build any use on a site if its soil complies with the state's generic soil standards, also known as look-up tables. *See* N.Y. Envtl. Conserv. Law § 27-1415(4). Under Track 2, a developer agrees to a deed restriction on real property that limits its use in return for leaving slightly more contaminants at a site, if the site's soil meets state generic soil standards. *See id.* Track 3 restricts remediated land to a specific use if its soil complies with modified standards that a developer persuades the State Departments of Environmental Conservation and Health to apply to an individual site. *See id.* Under Track 4, which is most common track used in New York City cleanups, a developer can leave some contamination behind at a remediated site if its soil complies with site-specific standards achieved through engineering controls (physical barriers) and/or institutional controls (legal barriers) that limit the exposure of parties to safe levels of residual contamination. *See id.*

Third, like DEC,[39] OER will encourage developers to propose presumptive remedies in their remedial plans. If a party proposes a presumptive remedy based on well-characterized site conditions, the applicant can be confident that OER will approve the remedy, thus reducing uncertainty about the cost of a site cleanup. Fourth, OER will assist parties in obtaining city permits for the remedial activities their sites require. And for sites in the city program with petroleum issues, Walsh seeks to explore ways OER, working for DEC, can advance petroleum cleanups.[40] Each of these steps addresses the major uncertainty that developers face: the time an agency requires to review and approve projects.

Walsh has modeled the city program on the state cleanup program because the city needs DEC's support and approval of its program for the city program to be effective and permanent. Moreover, to attract applicants to its program, the city needs to offer developers a state liability release. Liability protection assures developers and lenders that DEC will not challenge the remedies OER oversees. By incorporating the state cleanup process into the city's program, OER seeks to deliver the liability release applicants require.

When a site is cleaned up in the city program, OER will issue the project's owner a New York City Clean Property Certificate. Similar to a Leadership in Energy and Environmental Design ("LEED") certificate for green building design,[41] the city Clean Property Certificates will add value to a remediated property. OER intends to issue certificates to all New York City projects that complete site cleanups under the city program.

C. Community Benefits and Sustainable Remedies

Besides working with developers, OER's local cleanup program will also benefit communities and deliver sustainable remedies. For residents who are uncertain about the quality of cleanup proposed in their neighborhood, the public can request that a cleanup industry professional with no ties to the project or its developer provide citizens with its assessment of the remedy. OER will ask a member of the Partnership of Brownfield Practitioners ("Partnership"), a new association of cleanup industry firms, to review a remedy plan and share its opinion confidentially with the public. The assessment will be offered at no cost to the community.

Partnership members will also provide job training to unskilled workers. Workers will be given hazardous materials training and may be hired by Partnership firms at brownfield remediation sites. Partnership members will also subcontract with local

39. *See* Carl Johnson, N.Y. State Dep't of Envtl. Conservation, *DER-15: Presumptive/Proven Remedial Technologies*, Feb. 27, 2007, http://www.dec.ny.gov/docs/remediation_hudson_pdf/der15.pdf.

40. The state has sole authority to select remedies to abate petroleum contamination and close petroleum spills. *See* N.Y. Nav. Law § 170 (McKinney 2004 & Supp. 2009).

41. The Leadership in Energy and Environmental Design ("LEED") Green Building Rating System, developed by the U.S. Green Building Council ("USGBC"), provides standards for environmentally sustainable construction. *See* U.S. Green Building Council, LEED Rating Systems, http://www.usgbc.org/DisplayPage.aspx?CMSPageID=222 (last visited Nov. 16, 2009).

entrepreneurs for the performance of tasks that are part of the cleanup process, such as stocking public repositories with site documents that consulting firms may not perform efficiently. Finally, the Partnership will offer internships and scholarships to city high school and college students seeking careers as environmental professionals.

Communities will also benefit from a Community Protection Plan—a plainly written summary of all safeguards taken to minimize the impact of an ongoing construction project on neighborhood residents. The Community Protection Plan will appear in the executive summary of a site's remedial action report and will include such measures as community air monitoring, dust suppression, odor control measures, and use of dedicated truck routes.

In addition, OER will require site management plans[42] for all remedies where residual contamination will remain at a site. A professional engineer retained by the project owner must periodically certify to OER that caps and other physical barriers blocking the public's exposure to residual contamination remain intact.

Finally, OER will promote sustainable remedies. Consistent with a voluntary program, OER will encourage, but not require, all parties in the city program to consider sustainable practices in their remedies. These include, for example, the use of solar power to operate fans that control soil vapors, onsite retention of storm water, and the use of local recycled concrete aggregate as backfill to fill in the holes left at a site after pollution has been excavated.

OER will administer one of the first brownfield programs in the nation to include sustainability as a remedial selection criterion. Additionally, OER will require parties who complete remedies to include a Sustainability Statement and Report that catalogues the sustainable features of a site remedy and measures the reduction in the project's carbon emissions.

IV. SPURRING BROWNFIELD REDEVELOPMENT IN CITY NEIGHBORHOODS

Through training and new financial incentives, OER seeks to engage community organizations and local developers across the city in the cleanup of brownfields. While DEC's brownfield program addresses major development projects across the state, OER seeks to operate at the neighborhood level in the city, energizing small developers and community organizations that are critical to the growth and renewal of city neighborhoods. These local players include community groups, such as those with state Brownfield Opportunity Area ("BOA") grants[43] and community development corporations ("CDC"). Many of these experienced developers have yet to build a project on contaminated land.

42. A site management plan includes the activities undertaken during the last phase of the remedial program at a site, which continue until the remedial action objectives for the project are met and the site can be closed out. Site management includes the management of the institutional and engineering controls required for a site, as well as the implementation of any necessary monitoring and/or operation and the maintenance of a remedy.

43. N.Y. Gen. Mun. Law § 970-r (McKinney 1999 & Supp. 2009).

OER will ask consultants and attorneys active in the cleanup industry to provide training to community organizations and developers on the basic steps involved in the investigation and cleanup of contaminated sites. OER will also discuss state grants and other financial assistance available for community brownfield projects. These include state BOA grants that provide for ninety percent of the eligible cost of studies of current market conditions and of an area's reuse potential.[44] Since 2004, the state has awarded $4.4 million in BOA grants to sixteen community consortiums in New York City to plan the redevelopment of contaminated sites in nineteen city neighborhoods.[45]

At the city level, OER has $11 million in incentive funds to stimulate and advance local brownfield projects. Beginning in 2010, small and mid-sized developers, developers of affordable housing, and developers of projects that are consistent with a community's BOA plan can apply to OER for $30,000 grants that can be spent for three different services, each of which advances brownfield projects.

First, developers can apply to OER for grants for a pre-development study of private parcels they seek to develop. If OER approves the developer's request, the developer can select one of several pre-qualified vendors to perform a zoning analysis, title search, Phase 1 site assessment,[46] and a pro forma financial analysis of the property's income-generating potential. When completed, the developer will share the study's conclusions with the property owner to determine if the owner wants to proceed with development.

Second, OER will provide developers who are ready to purchase contaminated sites with grants for Phase 1 and Phase 2 studies.[47] The $30,000 OER grants will entitle developers to a pre-qualified environmental consultant to perform a site investigation. Although $30,000 will not finance a complete remedial investigation, OER intends to offer projects early financial support before bank financing is available and steer them toward the state or city voluntary cleanup program.

Finally, parties in the city's cleanup program can obtain a $30,000 grant to offset project remediation costs. The grant can be spent on elements of an OER-approved remediation plan including soil removal, tank removal, and creation of a cover across a site. Walsh hopes that through training and the use of state and city grant funds, community developers will tackle contaminated sites in city neighborhoods.

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44. NYS DOS Div. of Coastal Resources, Brownfield Opportunity Areas Program Application and Guidance Package, http://www.nyswaterfronts.com/BOA_package.asp (last visited Nov. 16, 2009).

45. *See* Progress Report, *supra* note 4, at 14.

46. A Phase 1 site assessment analyzes a site's historical uses and reviews government databases of environmental spills and releases to determine if it is likely that the property contains recognized environmental conditions that need to be addressed in a subsurface investigation at a site.

47. A Phase 2-type study consists of relevant fieldwork and a report of the presence of hazardous substances and petroleum in soil, groundwater, and soil vapor at a site.

V. ADDITIONAL PLANYC BROWNFIELD PROPOSALS

A. A List of Vacant City Properties

Another PlaNYC tool to catalyze brownfield deals is the creation of a list of vacant property in New York City. OER will contract with a consultant and provide it with a file of 5100 vacant manufacturing and commercial properties. For each vacant parcel, the consultant will gather information on historic fill by using Sanborn fire insurance maps to compare the city's original eighteenth century waterfront with the contemporary shoreline, and on petroleum and E-designations from government databases. A list of vacant properties should be available to the public for digital searches in 2010. The list will serve brokers, investors, and site selectors in their search for developable land. It should also bring buyers to sellers and catalyze the development of brownfields.

B. Incorporation of "Triad" Procedure to Produce Faster and Less Expensive Cleanups

DEC is confident that the city's most contaminated land—including its sixty-eight former manufactured gas plant sites and thirty other significant state Superfund sites,[48] which account for almost 1000 acres of contaminated land—will be cleaned by 2030. However, as owners and developers test land in the next two decades, new brownfields will be discovered that will require cleanup as well. How can the city be confident that these yet-to-be discovered sites can also be cleaned by 2030? The answer lies in new methods of managing sites and new technology.

Cleaning contaminated land with current methods can take two years at a minimum. Typically, an owner first hires an engineer to draft a work plan for an investigation, which DEC must approve. To hold down costs, a team of often inexperienced technicians mobilize to the site to collect samples, which are sent to a laboratory for analysis. The lab's findings form the basis of the engineer's report to DEC. Depending upon the site's importance and in what state program it is enrolled, the engineer can expect DEC's written comments on the site report in one to three months. Often, DEC requires additional testing because the report documents new contamination that raises fresh concerns. A second mobilization follows, and in rare cases, a third. When the engineer answers all of DEC's questions, the agency declares the investigation complete.

Remedy selection follows, which can take three to six months. Once DEC approves the remedy, the developer bids out the job and hires a contractor who proceeds to remove and/or contain the contamination. In the worst cases, where sites have been inadequately characterized, the contractor cuts open the site only to discover additional contamination. In such a case, DEC will require the developer to conduct another investigation, which may require changes to the remedy and construction delays. These delays often force a developer to secure more financing.

48. *See supra* notes 2, 6.

As part of PlaNYC, the city, with its state and federal partners, is testing an innovative method of managing contaminated land.[49] Known as "Triad," this approach, which has been tested nationally, but only twice in New York State, rigorously manages site uncertainties to produce faster cleanups that are thirty percent cheaper than current methods.[50] The city, DEC, and the U.S. Environmental Protection Agency seek to learn whether these faster, better, and cheaper cleanups can be replicated at city sites. If so, Triad practices can spread to other city and state sites.

In mid-2009, the city and state field tested the Triad approach at two city sites. The city targeted contamination that lies in a long, narrow plume beneath the Melrose Common urban renewal area in the Bronx. DEC used state Superfund money to remediate petroleum and polychlorinated biphenyls ("PCB") beneath the former BCF Oil Terminal, a privately owned East Williamsburg site that overlooks the English Kills, a tributary of Newtown Creek. The city investigation, consisting of a soil gas survey, determined that no major source of contamination exists beneath Melrose Commons and that local contamination can be addressed through state cleanup programs. The DEC investigation dispelled with significant confidence the notion that the BCF oil site was leaching PCBs. Investigators believe the site can be removed from the state Superfund list.

Triad represents lessons learned over the past twenty-five years from tackling some of the nation's most contaminated sites. A Triad project involves the creation of a project team of scientists, engineers, stakeholder representatives, and regulators to systematically plan a site investigation to produce the data that a redevelopment project requires. With DEC staff participating on the project team, communication between project representatives and the regulator is improved. Early on, regulators alert team members to relevant state requirements so project delays from sudden state demands for more site information are minimized. Once a work plan is approved, the site investigation, led by senior scientists, begins. They collect a far greater number of samples with inexpensive geoprobes and field test kits. Samples are analyzed overnight and results are shared with team members the next day, which allows the team to redirect the investigation based on the previous day's field results as many times as necessary until the site is thoroughly characterized. A Triad investigation can last three weeks instead of the three days that current field investigations require. The longer Triad investigation is still faster than current practice because it yields a high quality, comprehensive picture of site contamination, which minimizes the need for additional site investigations. It produces a vivid picture of buried site contamination, which facilitates early consensus on a site remedy.

The investigative technologies that Triad employs, such as field x-ray fluorescence to investigate metals, immunoassay kits to detect PCBs, laser-induced fluorescence to detect petroleum and polycyclic aromatic hydrocarbons, and software for real-time decision making during field investigations are tools not commonly found at city

49. *See* PLANYC, *supra* note 2, at 44.

50. For more information about the Triad method of site management see Triad Resource Center, http://www.triadcentral.org (last visited Nov. 16, 2009).

investigations. If the two Triad projects demonstrate the benefits of these new tools, they will be used on future city and DEC projects.

VI. CONCLUSION

The city has obtained local authority from the City Council to create a city brownfield office that will design and implement the nation's first municipally run voluntary cleanup program. Open to lightly to moderately contaminated sites that are ineligible for the New York State BCP, the local BCP will offer developers a streamlined review of cleanup plans and a state liability release.

Besides working with developers, the local program will deliver protective and sustainable remedies to communities. A partnership of brownfield practitioners will counsel communities on proposed remedies and will provide job training to unskilled workers, scholarships and internships for city students, and business opportunities to local entrepreneurs.

The city OER will train community organizations and local developers about the steps required to cleanup contaminated land. To promote brownfield deals and steer projects into cleanup programs, OER will offer local developers $30,000 grants for pre-development studies, site investigations, and remediation.

Finally, the city, with its state and federal partners, is testing an innovative method of managing contaminated land, which if successful, will be applied at other city sites. Through all of these efforts, OER seeks to spur economic development and in partnership with developers, the cleanup industry, communities, and the state DEC, to clean up all contaminated land in New York City by 2030.