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Jan G. Laitos

Teresa Helms Abel

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THE ROLE OF BROWNFIELDS AS SITES FOR MIXED USE DEVELOPMENT PROJECTS IN AMERICA AND BRITAIN

JAN G. LAITOS* AND TERESA HELMS ABEL**

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* John A. Carver, Jr. Professor of Law, University of Denver, Sturm College of Law.

** J.D. Candidate, 2013, University of Denver, Sturm College of Law.

INTRODUCTION

Traditional zoning is a form of land use planning that focuses on separating and segregating land according to residential, commercial, industrial, or agricultural uses. Such zoning often divides uses from each other, so that more intense uses are not located next to less intense uses.¹ For example, only residential uses may be allowed in residential districts, both residential and commercial uses may be allowed in commercial districts, and residential, commercial, and industrial uses may be allowed in industrial districts.² These exclusionary zoning practices help to avoid the kinds of problems that arise when industrial factories are located beside residential units. However, the segregation of uses created by traditional zoning has brought about ecological concerns, and a belief that those kinds of separated land use patterns are not consistent with resource sustainability and the integration with socio-economic classes.³

Sustainable development focuses on the wise use and conservation of resources to fulfill present and future needs. Unfortunately, traditional exclusionary zoning often prevents land from being put to its most efficient use. When local patterns emphasizing a non-integrated, use-separated approach to land development dominate growth management and regional planning programs, resource and energy consumption are accelerated and infrastructure costs are increased.⁴ Excluded development and prohibited uses are forced to relocate further from the urban core, resulting in suburban sprawl.⁵ Along with sprawl comes environmental harms, increased traffic, more fuel consumption, racial ghettos, and a disconnect between work and home. Low density, automobile-dependent regional sprawl is, in the long run, unsustainable.⁶

1. JOSEPH WILLIAM SINGER, PROPERTY 654 (3rd ed. 2010).

2. Often, further distinctions are made within each type of use area. Some municipalities and local governments have enacted elaborate plans to manage growth, as well as location of development. The goals of traditional zoning include the protection of the environment, the promotion of low-density development, and the preservation of the character of the community. *Id.* at 654-55.

3. See JULIE CAMPOLI, & ALEX S. MACLEAN, VISUALIZING DENSITY 2-12 (2007).

4. See Edward H. Ziegler, *The Case for Megapolitan Growth Management in the 21st Century: Regional Urban Planning and Sustainable Development in the United States*, 41 URB. LAW. 147, 158 (2009).

5. *Id.*

6. *Id.* at 164-67, 172; see also Jane E. Brody, *Communities Learn the Good Life Can Be a Killer*, N.Y. TIMES, Jan. 31, 2012, at D7 (discussing that, ironically, the “successful” development of expanded metropolitan and vehicle-dependent environments has fostered obesity, poor health, social isolation, excessive stress, depression, and become a leading cause of death and disability).

In light of a global economic downturn and a shortage of housing, many communities around the world are rethinking the future growth of metropolitan regions. Instead of creating land use regimes that bring about traditional segregated uses and spatially divided development patterns, urban zoning and planning can instead be deployed to promote resource sustainability by permitting and encouraging *integrated* uses. There is a growing awareness of the importance of coordinated, but diversified, urban planning policy at the metropolitan level.⁷ “Mixite,” or mixed use development, is a land use planning concept that focuses on creating urban core areas where people are not functionally separated from what they do; rather, these spaces are where the inhabitants can live, work, shop, and play, all without daily use of an automobile.

Urban planning that promotes mixed-use development is one antidote to the ills of traditional zoning. It reduces the spread of scattered development and minimizes automobile dependency.⁸ Higher density and functionally mixed urban spaces can be designed to reduce environmental impacts, consume fewer resources and energy, integrate social and economic classes, and provide for more economical and efficient infrastructure and public services, such as public transit. Mixite can accommodate a wide mix of housing types, social uses and amenities, and socio-economic classes.

The implementation of mixite themed planning requires urban space that is largely free of pre-existing uses. Such spaces exist in the form of brownfields, greenfields, greyfields, and redfields.⁹ Brownfields seem particularly suited to urban redevelopment. In the United Kingdom, “brownfield” land is generally defined as land that has the potential to be redeveloped, but that has been adversely affected by the prior uses of the land and surrounding land.¹⁰ The land may also be contaminated.¹¹ These sites are derelict or underused, mainly located in developed urban areas, and require intervention before they can be put to beneficial use.¹² In the United States, the Environmental Protection Agency defines brownfields as “abandoned, idled, or under used industrial and commercial sites where expansion or

7. See *id.* at 173. See also Christopher B. Leinberger, Op-Ed., *The Death of the Fringe Suburb*, N.Y. TIMES, Nov. 26, 2011, at A17.

8. *Id.* at 182.

9. See Jonathan Lerner, *Code Green, Turning Failed Commercial Properties into Park Networks Could Put People to Work, Raise Real Estate Values and Promote Wise Redevelopment*, MILLER-MCCUNE, Jan.-Feb. 2011, at 16, available at <http://www.miller-mccune.com/business-economics/turning-failed-commercial-properties-into-parks-26410/#>.

10. Jennifer Gray, *Brownfield Sites*, SUSTAINABLE BUILD (Nov. 10, 2010), <http://www.sustainablebuild.co.uk/BrownfieldSites.html>.

11. *Id.*

12. See *id.*

redevelopment is complicated by real or perceived environmental contamination that can add cost, time or uncertainty to a redevelopment project.”¹³ In both the United Kingdom and the United States, brownfield land is the result of economic factors that discourage development, create an inability to attract investment for redevelopment, and reflect market failure. However, when they are cleaned up, brownfields do supply a “space” where new mixed-use redevelopments can emerge.

Such spaces can also arise when there are greenfields, greyfields, and redfields. “Greenfields” are uncontaminated, rural, or suburban sites that are being considered for development.¹⁴ “Greyfields” generally include moribund shopping centers and vast, empty parking lots.¹⁵ “Redfields” consist of underperforming, financially underwater, and foreclosed commercial real estate, and can include brownfields and greyfields.¹⁶ Although greyfields and redfields supply space, these types of sites can present unique challenges in terms of being suitable locations for urban redevelopment. Greenfields, greyfields, and redfields that are not located in developed urban areas – such as failed subdivisions or vacant retail strips – may be better suited for parks and conservation areas, as opposed to dense urban cores.¹⁷ Mixed-use spaces seem most likely to arise in locations that previously had been considered brownfield sites.¹⁸

This article will consider how, in both the United Kingdom and the United States, brownfields are increasingly being transformed into sites where much needed, and more sustainable, integrated mixed-uses can emerge. Part I addresses the barriers to and benefits of brownfield development. Part II discusses the differing ways in which the United Kingdom and the United States have responded to the need for brownfield development. Part III analyzes the varying degrees of

13. JOHN S. APPLGATE, JAN G. LAITOS, JEFFREY M. GABA, & NOAH M. SACHS, *THE REGULATION OF TOXIC SUBSTANCES AND HAZARDOUS WASTES* 615 (2d ed. 2011); EPA, *REVITALIZING SOUTHEASTERN COMMUNITIES: A BROWNFIELDS TOOLKIT*, available at <http://epa.gov/region4/brownfieldstoolkit/brownfields/brownfieldsbackground.pdf> (last visited Sept. 27, 2011) [hereinafter A BROWNFIELDS TOOLKIT]. There are an estimated 500,000 to 1 million brownfields in the United States. *Id.*

14. See James Murray-White, *Greenfield Sites*, SUSTAINABLE BUILD (Dec. 20, 2010), <http://www.sustainablebuild.co.uk/GreenfieldSites.html>; see also APPLGATE ET AL., *supra* note 13 (discussing the proposition that, to avoid potential liability under CERCLA in the United States, developers often prefer to develop greenfields over brownfields). In the UK, the amount of land available for development is split between greenfield and brownfield sites. Murray-White, *supra*.

15. Lerner, *supra* note 9, at 16.

16. *Id.*

17. *Id.*; see also Murray-White, *supra* note 14 (discussing potential negative effects on greenfield sites and surrounding areas when the sites are used for building development).

18. See Lerner, *supra* note 9, at 16.

success each country has experienced in actually creating mixed-use spaces from brownfield sites. The article concludes with three case studies of mixed-use development sites in the United States, where each has experienced differing degrees of success in implementing mixite.

I. BARRIERS TO AND BENEFITS OF BROWNFIELD DEVELOPMENT

Brownfield development can be economically practical only if the financial benefits of reclamation outweigh the physical and financial costs of preparing the land for reuse. The economic rationale behind the financial feasibility of such development depends on several factors, including governmental regulations imposed on development, which either inhibit or encourage mixite, the overall marketability of the reclaimed site, and the physical characteristics of the land.¹⁹ Each of these factors must be taken into account when assessing the viability of brownfield development for mixed-use.²⁰

A. Regulatory, Financial, and Physical Barriers to Brownfield Development

Governmental regulations and policies may inadvertently impede brownfield development.²¹ Hazardous waste rules and other environmental laws often impose stringent liability and strict clean-up standards on those seeking to transform these otherwise useless sites into mixite locations.²² Such laws may discourage brownfield development.²³ Planning applications for differing uses can be time consuming, and progress can be further slowed due to a lack of certainty and predictability regarding applicable waste remediation

19. See CHARLES BARTSCH, GETTING STARTED WITH BROWNFIELDS -- KEY ISSUES AND OPPORTUNITIES: WHAT COMMUNITIES NEED TO KNOW 2, 9-11 (2006), http://www.stateinnovation.org/Research/Transportation.-Infrastructure.-Smart-Growth/Brownfield-Development/nemwi_2006.aspx. For a detailed discussion on brownfields redevelopment practice, see TODD S. DAVIS & SCOTT A. SHERMAN, BROWNFIELDS: A COMPREHENSIVE GUIDE TO REDEVELOPING CONTAMINATED PROPERTY (3rd ed. 2010).

20. See *id.* at 3-4 (discussing the obstacles to development of brownfields).

21. Tracy A. Hudak, Addressing Barriers to Brownfield Redevelopment: An Analysis of CERCLA and the Voluntary Cleanup Programs of Ohio, Pennsylvania and Michigan 6 (Apr. 19, 2002) (unpublished Major Paper, Virginia Polytechnic Institute and State University) (on file with Digital Library Archives, Virginia Tech); Gray, *supra* note 10; see also INTERNATIONAL ECONOMIC DEVELOPMENT COUNCIL, BROWNFIELDS REDEVELOPMENT MANUAL 40 ("The potential liability attached to brownfield sites can be a significant barrier to the reuse of these properties.").

22. Hudak, *supra* note 21, at 6-8.

23. *Id.* at 6-7. For example, the EPA and some states require an initial evaluation of each contaminated site, which may force parties to begin a clean-up before they have a complete understanding of the costs associated with development. *Id.* at 7.

policies and regulations.²⁴ Time requirements and associated costs for obtaining project consent from government officials can make development less desirable. Receipt of government funding can actually reduce the likelihood of success in some situations by imposing conditions that remove the flexibility of the project's scope or timescale.²⁵ Additional impediments to development may stem from public opposition, licensing mandates, and legislative requirements.²⁶

Unfavorable market conditions can also affect the feasibility of brownfield development. The cost of buying land at fair market value can cause financial problems, as can a general lack of demand for mixed-use housing or commercial buildings. Preparatory costs may be high for contaminated brownfield sites because the myriad of costs are difficult to assess before development commences; the cleanup and development of these sites may be considered risky investments. In a hostile or down-market environment, the risk of subsequent liability for environmental harms can deter prospective developers. Many site owners may not thereby be able to acquire affordable financing.²⁷

The environmental conditions of brownfield land can significantly affect the financial practicality of development. The history of any particular brownfield may include one primary use, or many prior uses, ranging from being a major industrial site to being a location where there were many local dry cleaning businesses or gas stations.²⁸ One of the first steps in any brownfield development project is to therefore perform an environmental assessment of the site.²⁹ This assessment in itself can be expensive, but it is necessary to do in order to minimize the inherent risks and uncertainties associated with transforming brownfield sites into usable space.³⁰ Other physical factors, such as size, location, and topography, must also be taken into account.³¹ For

24. See *id.* at 11-12, 51-53. For example, in *29 Flatbush Ave. Assocs., LLC v. N.Y. State Dep't of Env'tl. Conservation*, No. 21827/09 2011 N.Y. Misc. LEXIS 1108, at *1 (N.Y. Sup. Ct. Mar. 22, 2011), the Supreme Court of New York found that the Department of Environmental Conservation improperly applied the "complication of development" test when it denied a contaminated site's application for inclusion in the brownfields cleanup program. The Department did not consider underutilization of the site, blight of the surrounding area, or the owner's inability to obtain financing without the program.

25. See *id.* at 12-14.

26. The development plan for the Gates Rubber factory, discussed in Part II of this Article, faced opposition by a group of community activists who demanded that the developers agree to invest in area neighborhoods. Mark P. Couch, *Invest in Area, Group Urges Gates Redevelopers*, DENV. POST, Apr. 18, 2003, at C3.

27. BARTSCH, *supra* note 19, at 3.

28. APPLGATE ET AL., *supra* note 13.

29. H. WADE VANLANDIGHAM, THE STORMSTOWN GROUP, & PETER B. MEYER, PUBLIC STRATEGIES FOR COST-EFFECTIVE COMMUNITY BROWNFIELD REDEVELOPMENT 12 (2002).

30. *Id.*

31. See Hudak, *supra* note 21.

example, a lack of access to local roads can impact the foreseeable costs and likely long-term benefits of development.³²

Environmental contamination of the land by extremely toxic substances is a common and potentially serious impediment to brownfield development. As Charles Bartsch reports in his discussion of the problems posed by contamination of brownfield sites in the United States:

The actual number of underused or abandoned industrial complexes is difficult to tally, but the problem is significant and pervasive. Some experts have suggested that nearly 1 million sites nationwide — ranging from obsolete manufacturing complexes to abandoned corner gas stations — show evidence of at least some contamination which could trigger regulatory concerns and ultimately inhibit their owners from selling the site, securing financing, or proceeding with reuse. This situation has posed a major challenge for localities seeking to revitalize distressed neighborhoods and attract new investment to sites with prior uses.³³

Contaminated brownfield land can include both surface terrain and underground resources; the degree of contamination may range from slightly affected to severely contaminated. Contamination is usually caused by one dominant use or multiple prior uses of the land. If the former, there are typically one to two environmental contaminants that must be removed; if the latter, there may be multiple different toxic pollutants that need to be remediated. Before any mixite development can begin, an environmental analysis of the soil, groundwater, and surface water should be performed by an environmental consultant to ensure that appropriate steps are taken to reduce risks and liabilities.³⁴ Environmental contamination not only poses cleanup problems and costs associated with remediation and waste removal, but it can also significantly extend the amount of time required for eventual development.³⁵ Sometimes, brownfield developers may attempt to procure payment for the clean up of the site from the parties responsible for the contamination.³⁶ However, responsible parties may be insolvent, bankrupt, dissolved, or impossible to find.³⁷ In the United States, the federal hazardous waste cleanup law, CERCLA, encourages parties subject to waste-removal liability to seek contribution from potentially responsible parties.³⁸

32. *See id.*

33. BARTSCH, *supra* note 19, at 2.

34. Gray, *supra* note 10.

35. *See* VANLANDIGHAM ET AL., *supra* note 29, at 4.

36. *See* APPLGATE ET AL., *supra* note 13, at 616.

37. *Id.* at 629.

38. Comprehensive Environmental Response Compensation and Liability Act, 42 U.S.C. § 9607 (2002); APPLGATE ET AL., *supra* note 13, at 511.

B. Challenges to Communities Where Brownfields are Left Undeveloped

When the costs associated with brownfield reclamation are difficult to estimate, development of these sites for mixed-use can pose considerable risks for investors. Uncertainties regarding contamination and liability may deter developers from investing in otherwise beneficial and profitable future brownfield development projects.³⁹ The result is more than an urban eyesore. Brownfield sites that are not transformed into useful sites and that remain undeveloped can themselves pose problems for the communities in which they are located. Contamination of brownfield soil and water may pose health and environmental risks to the surrounding population.⁴⁰ Lost jobs and a diminished tax base are often the result of the visual blight and depressed property values associated with these neglected and abandoned brownfields.⁴¹ Perhaps the most significant costs to communities where undeveloped brownfield sites are located come from the unrealized benefits of revitalization, and the opportunity costs of lands not yet changed into productive components of the local economy.

C. Benefits of Brownfield Redevelopment

The restoration of brownfields is a worthy goal, because the cleanup and reuse of these areas often result in numerous environmental, economic, and community benefits.⁴² When contaminated brownfields are cleaned up, the contamination no longer threatens the health of the surrounding people and environment.⁴³ Additional environmental and community benefits of reclamation include the ability to reuse existing infrastructure, the lessened need to build on undeveloped land, and the reduced continued degradation and contamination of the natural environment.⁴⁴ Old industrial and commercial buildings in urban areas can provide prime locations for offices, small businesses, and residential units. The architectural history and character of these sites can become an anchor for distinctive redevelopment efforts.⁴⁵ In communities that lack large spaces of empty land, building on brownfields can reduce the pressure to develop and pay for greenfields.

39. EPA, REGIONAL BROWNFIELDS ASSESSMENT PILOT: SIOUX FALLS, SD (May 1997), <http://nepis.epa.gov/Adobe/PDF/P1000N78.pdf> [hereinafter REGIONAL BROWNFIELDS ASSESSMENT PILOT].

40. A BROWNFIELDS TOOLKIT, *supra* note 13.

41. See REGIONAL BROWNFIELDS ASSESSMENT PILOT, *supra* note 39.

42. A BROWNFIELDS TOOLKIT, *supra* note 13.

43. *Id.*

44. EPA, *Grant Proposal Guide FAQ*, 44, www.epa.gov/brownfields/proposal_guides/FY11_FAQs.pdf (last visited Oct. 14, 2011) [hereinafter *Grant Proposal Guide FAQ*].

45. BARTSCH, *supra* note 19, at 2.

When there are economic downturns, communities experience a surplus of vacant urban property. Although cities may ultimately benefit from developing these vacant lots, efforts to rebuild are often forestalled by reduced demands and limited funds. Although immediate development may not be a feasible option, community organizations have expressed a growing desire to see these derelict lots be put to beneficial use in other ways.⁴⁶

Urban agriculture is one common theme that has emerged. Urban agriculture combats the detrimental impact that abandoned land can have on a community. For example, there are more than 400 community gardens and farms operating throughout the city of Detroit, Michigan. Although Detroit's zoning ordinance does not recognize agriculture as a permitted use, for now, the city has chosen not to enforce its existing zoning laws because it recognizes urban agriculture as a beneficial use of vacant land that may otherwise result in blighted blocks and high maintenance costs.⁴⁷ Urban agriculture offers a myriad of benefits to urban residents, including bringing fresh produce to inner-city neighborhoods, building a sense of community, and creating environmental benefits, such as saving fuel and reducing air pollution.⁴⁸

United States cities such as Cleveland, Detroit, Youngstown, and others that have experienced extensive population decline are focusing on economic development in key areas and the transformation of blighted areas or brownfields to innovative green uses.⁴⁹ Cleveland, Ohio envisions "a city with densely-built mixed-use walkable neighborhoods connected by greenways and contemplated by urban gardens and open space amenities."⁵⁰ It is unlikely that all of the surplus land in Cleveland can be reused for real estate development in the foreseeable future. But Cleveland and other cities with similar problems have embraced the use of vacant land as a green resource to enhance a sense of community, grow crops for residents, mitigate urban runoff, and remediate soil contamination. Some of the challenges to making productive use of vacant land include gaining legal control over the property, addressing tax delinquency, and researching clouded title.⁵¹

46. Kristin Choo, *Plowing Over*, A.B.A. J., Aug. 2011, at 43, 46 (2011).

47. *Id.* at 49.

48. *Id.* at 46.

49. Catherine J. LaCroix, *Urban Green Uses: The New Renewal*, PLAN. & ENVTL. L., May 2011, at 3.

50. *Id.* at 4 (citing presentation of Robert N. Brown, Cleveland City Planning Commission, at the 2010 Reclaiming Vacant Properties conference in Cleveland, Oct. 13-15, 2010, <http://www.communityprogress.net/2010-reclaiming-vacant-properties-conference-pages82.php>).

51. *Id.*

Reclaimed brownfields also create new space — previously unavailable urban land that now can be planned for mixed-use. Not only can these areas contribute to sustainability by increasing population density in cities that reduce the atmospheric emissions of driving to work, they may also permit energy efficient residential layouts and commercial building. In addition, a mixed-use site may stimulate new forms of economic and social growth.⁵² Development of brownfield sites in desirable locations can put this prime real estate back to beneficial use, thereby increasing the local tax base and job market.⁵³ These mixite areas can emerge with local directives in mind, such as job training, childcare provision, affordable housing, transport, education, and greenspace leisure.⁵⁴

II. BROWNFIELD DEVELOPMENTS: A COMPARISON BETWEEN THE UNITED KINGDOM AND THE UNITED STATES

Many of the problems associated with brownfield development can be overcome with education, resources, and public and private partnerships.⁵⁵ In the case of brownfields, both the United Kingdom and the United States have responded to the potential of their development in similar, yet differing ways. Each provides lessons for how a community might identify and redeem brownfield sites so as to make them ready for a mixed-use redevelopment.

A. Responses of the Government and the Private Sector in the United Kingdom

The United Kingdom recognizes the development of brownfield sites as a way to benefit the economy and the environment, and to relieve pressure on the creation of greenfield sites. The Office of the

52. The EPA has reported that, as of September 2011, 72,250 jobs have been leveraged through its Brownfields Program. The Brownfields Program has found that redeveloped brownfield sites have resulted in a 32 to 57 percent reduction in vehicle miles traveled associated with these sites, as well as a reduction in air pollution emissions. An EPA study of redeveloped brownfields shows that the value of surrounding residential property increased between 2 and 3 percent upon reclamation of nearby brownfields. The studies also show that cleaning up a brownfield can increase nearby property values by \$0.5 to \$1.5 million. EPA, *The EPA Brownfields Program Produces Widespread Environmental and Economic Benefits* (Sept. 2011), <http://epa.gov/brownfields/overview/Brownfields-Benefits-postcard.pdf>.

53. See A BROWNFIELDS TOOLKIT, *supra* note 13; *Grant Proposal Guide FAQ*, *supra* note 44, at 43-44.

54. See Mike Raco & Steven Henderson, *Sustainable Urban Planning and the Brownfield Development Process in the United Kingdom: Lessons from the Thames Gateway*, 11 LOC. ENV'T 499, 509 (2006), available at <http://www.tandfonline.com/doi/full/10.1080/13549830600853098#preview>.

55. A BROWNFIELDS TOOLKIT, *supra* note 13.

Deputy Prime Minister (ODPM) controls brownfield policy in England, and it is advised by English Partnerships.⁵⁶ Local authorities work with regional planning agencies to promote regeneration of their respective areas. The policies governing brownfield development have evolved in the past several years through a series of key policy statements and an independent task force.⁵⁷ Wales and Scotland have similar arrangements.⁵⁸ Government policy in the United Kingdom focuses on redeveloping brownfield sites primarily for the creation of new housing, although appropriate uses may vary with the circumstances.⁵⁹ Local authorities, however, frequently encourage a more mixed-use scheme as a response that can perhaps offer the most economic and social benefits.⁶⁰

The United Kingdom supports sustainable communities as places where people want to “live and work now and in the future.”⁶¹ The inclusion of affordable housing as a part of mixite themed planning is a way to address housing shortages and to develop mixed communities that are more efficient and sustainable. Brownfield development sites that include sufficient, desegregated affordable housing ensure social sustainability by fostering interaction between different social classes, attracting higher levels of social services, and creating additional employment opportunities.⁶² Residential use of land within an urban infrastructure also minimizes homelessness and reduces the impact of high shelter costs.⁶³

In response to pressure for housing development, the ODPM has published several Public Service Agreement aims and objectives. In February of 1998, it released an Agreement setting forth a national goal to have 60 percent of all new development take place on brownfield sites

56. EUGRIS: Portal for Soil and Water Management in Europe, *Policy and Regulation:- United Kingdom Brownfields*, <http://www.eugris.info/Policy.asp?e=457&Ca=1&Cy=1&T=Brownfields> (last visited Oct. 14, 2011) [hereinafter *Policy and Regulation:- United Kingdom*].

57. *Id.*

58. *Id.*

59. EUGRIS: Portal for Soil and Water Management in Europe, *Further Description:- United Kingdom Brownfields*, <http://www.eugris.info/FurtherDescription.asp?e=457&Ca=1&Cy=1&T=Brownfields> (last visited Oct. 4, 2011) [hereinafter *Further Description:- United Kingdom Brownfield*].

60. *Id.*

61. See Juli Ponce, *Affordable Housing as Urban Infrastructure*, 42-4/43-1, THE URBAN LAWYER 223, 230 (2010/2011) (citing *Social Infrastructure, ATLAS*, http://www.atlasplanning.com/page/topic/index.cfm?coArticleTopic_articleId=47&coSitenavigation_articleId=47).

62. *Id.* at 236-37.

63. *Id.* at 241.

by 2008.⁶⁴ This designation was intended to relieve pressure on greenfield sites, which were the next logical location for mixed-use development, in order to preserve the countryside.⁶⁵ That year, England created a National Land Use Database (NLUD) that has since been working to identify previously developed land that might be suitable for redevelopment.⁶⁶ In the United Kingdom, sites often become unexpectedly available for redevelopment when their previous use comes to an end.⁶⁷ The Homes & Communities Agency (HCA) of England manages the NLUD database of land and buildings, and updates the list annually.⁶⁸ The HCA has stated, “Developing [b]rownfield land for housing, industrial, commercial, and leisure use protects [g]reenfield areas and contributes to community well-being by tackling visual and economic issues.”⁶⁹

The HCA works with other organizations and groups to foster local investment planning for housing and urban regeneration.⁷⁰ Its key partners include local authorities, central government agencies, housing associations, private sector builders, developers and contractors, lenders and investors, and voluntary and community sectors.⁷¹ It also works with regional development agencies and professional and industry bodies such as the Local Government Association (LGA) and the Department for Communities and Local Government. The HCA has reached an agreement with the LGA under which the central government will set national policy backed by funding

64. *Brownfield Development*, POLITICS.CO.UK (June 29, 2010), [http://www.politics.co.uk/briefings-guides/issue-briefs/housing-and-planning/brownfielddevelopment\\$366654.htm](http://www.politics.co.uk/briefings-guides/issue-briefs/housing-and-planning/brownfielddevelopment$366654.htm); *Policy and Regulation*:- *United Kingdom*, *supra* note 56.

65. *Further Description*:- *United Kingdom Brownfields*, *supra* note 59.

66. *Id.* England had previously performed several surveys to identify “derelict land,” but the land included in this category is incongruent with the notion of brownfield land. *Id.*

67. *Further Description*:- *United Kingdom Brownfields*, *supra* note 59. Spatial planners in the United Kingdom refer to these sites as “windfall” sites. *Id.*

68. Home & Communities Agency, *National Land Use Database*, <http://www.homesandcommunities.co.uk/NLUD> (last updated Mar. 21, 2011) [hereinafter *National Land Use Database*].

69. *Brownfield Development*, *supra* note 64. The HCA classifies brownfield land into five main subdivisions: previously developed land now vacant, vacant buildings, derelict land and buildings, previously developed land or buildings currently in use and allocated in local plan or with planning permission, and previously developed land or buildings currently in use with redevelopment potential, but no planning allocation or permission. *National Land Use Database*, *supra* note 68.

70. Home & Communities Agency, *Land Supply*, <http://www.homesandcommunities.co.uk/ourwork/land-supply> (last visited Oct. 4, 2011).

71. Home & Communities Agency, *Our Partners*, <http://www.homesandcommunities.co.uk/keypartners> (last updated Mar. 9, 2011).

for brownfield sites, and the HCA will serve to connect these national priorities with local directives.⁷²

Some sources of public funding for brownfield development are available through the ODPM, the Scottish Executive, and the Welsh Assembly, but most funding comes from the private sector.⁷³ Despite national and local public support, regeneration projects in the United Kingdom are in large part led by the private sector, and public bodies are generally not directly involved with brownfield reclamation.⁷⁴ As a result, private developers must be convinced that the long-term economic payoffs make it worth the cost of reclamation and the investment in a mixite site.

B. United States Response to Brownfields and Their Development

In the United States, the Environmental Protection Agency (EPA) cooperates with the U.S. Department of Housing and Urban Development (HUD) and the U.S. Department of Transportation (DOT) to support urban sustainable development projects.⁷⁵ In 2009, these entities formed a Partnership for Sustainable Communities to ensure that federal action does not subsidize sprawl.⁷⁶ The Partnership aims to support efficient and sustainable development of brownfields. However, it is the EPA that has played a leading role in the promotion of sustainable brownfield development sites for more than two decades.

In the early 1990s, the EPA developed a Brownfields Program designed to “empower states, communities, and other stakeholders in economic redevelopment to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse brownfields.”⁷⁷

72. See Homes & Communities Agency; *HCA-LGA Agreement*, <http://www.homesandcommunities.co.uk/hca-lga-agreement> (last updated Apr. 11, 2011) (discussing the Central Local Agreement on Housing and Regeneration).

73. *Further Description: United Kingdom Brownfields*, *supra* note 59.

74. *Id.* This focus on the private sector may be the result of several factors, including the fact that most of the brownfield sites are already privately owned, the demand for the land in the areas, and conscious political choice by the national government. *Id.*

75. EPA, *Partnership for Sustainable Communities: Brownfields Pilots* (Feb. 2010) (hereinafter *Partnership for Sustainable Communities: Brownfields Pilots*), <http://www.epa.gov/nscep/index.html> (search publications for “560F10002”; then follow “Partnership for Sustainable Communities: Brownfields Pilots” hyperlink).

76. Press Release, EPA, EPA Administrator Lisa Jackson, DOT Secretary Ray LaHood and HUD Secretary Shaun Donovan Announce Interagency Partnership for Sustainable Communities, Partnership sets forth 6 ‘livability principles’ to coordinate policy (June 16, 2009), <http://yosemite.epa.gov/opa/admpress.nsf/0/F500561FBB8D5A08852575D700501350>.

77. EPA, *Brownfields Program Activities Under the Recovery Act*, <http://www.epa.gov/brownfields/eparecovery/> (last updated Sept. 9, 2010) [hereinafter *Brownfield Program Activities Under the Recovery Act*]; EPA, *Introduction to Brownfields*,

The Brownfields Program uses cooperative agreements to provide funding to pay for brownfield redevelopment projects.⁷⁸ Direct funding that is made available through the EPA's Brownfields Program includes assessment grants, revolving loan fund grants, job training grants, and cleanup grants. The EPA also provides other opportunities for funding, as well as technical information regarding the financing of brownfield matters.⁷⁹ In 1997, the United States Congress authorized a Brownfields National Partnership program that allocated \$300 million in federal funds for brownfields revitalization. The Partnership brought public and private entities together to redevelop 5,000 brownfield sites. Five years later, the Small Business Liability Relief and Brownfields Revitalization Act was enacted, which again increased funding for sustainable brownfield development.⁸⁰

The EPA runs a Sustainability Pilot program that promotes environmentally friendly urban growth at a local level. The EPA provides funding for these pilot projects and works with communities to create sites that are consistent with environmental health and sustainable development, and that can serve as an example for other communities across the country.⁸¹ Funding is provided to local governments to encourage recycling, green building and infrastructure design, energy efficiency, resource conservation, development of renewable energy, and environmentally beneficial landscaping.⁸² The EPA Brownfields Program is supported by other governmental initiatives, such as the American Recovery and Reinvestment Act of 2009, which was enacted in response to a deteriorating private housing market and overall economic recession. The Recovery Act will ultimately provide the EPA's Brownfield Program with \$100 million, to be awarded to eligible entities seeking to change hazardous waste sites into mixed-use urban areas that promote sustainable urban growth.⁸³

In addition to providing funding for brownfield development, federal and state laws have also been enacted in the United States to combat some of the other barriers to the revitalization of brownfields.⁸⁴ Legislation has been passed to protect brownfield sites from hazardous materials by promoting or requiring cleanup, and then motivating

<http://www.epa.gov/region7/cleanup/brownfields/index.htm> (last updated May 9, 2011) [hereinafter *Introduction to Brownfields*].

78. *Introduction to Brownfields*, *supra* note 77.

79. EPA, *Grants and Funding*, http://epa.gov/brownfields/grant_info/index.htm (last updated Jan. 5, 2011).

80. JOHN S. APPLGATE & JAN G. LAITOS, ENVIRONMENTAL LAW: RCRA, CERCLA, AND THE MANAGEMENT OF HAZARDOUS WASTE 285 (2006).

81. See Press Release, EPA, *EPA Funds Greener Brownfields Projects* (July 29, 2008), http://epa.gov/brownfields/sustain_plts/index.htm.

82. *Id.*

83. *Brownfields Program Activities Under the Recovery Act*, *supra* note 77.

84. See BROWNFIELDS REDEVELOPMENT MANUAL, *supra* note 21.

redevelopment, despite liability fears.⁸⁵ As discussed in Part I of this Article, the potential for liability can significantly hinder the reclamation of brownfields. Two federal laws that have negatively impacted brownfield redevelopment by fostering a fear of liability are the Resource Conservation and Recovery Act (RCRA),⁸⁶ and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).⁸⁷ RCRA addresses threats to public health and the environment from the active misuse of hazardous waste disposal.⁸⁸ CERCLA identifies the parties responsible for creating hazardous waste sites, and imposes liability on them for the costs of cleaning up the contamination.⁸⁹ While RCRA prevents, in theory, "midnight dumpers" from disposing of hazardous waste in a brownfield, CERCLA deters cleanup efforts by imposing strict liability on any operator-developer who affects a hazardous waste site, like a brownfield.

The United States has responded to such liability concerns by clarifying defenses to claims for liability, and by providing exemptions from liability for some owners and recent purchasers of brownfields.⁹⁰ For example, in 1995 the EPA responded to the unintended consequences of CERCLA liability by announcing reforms that incentivize the development of brownfields by lessening the severity of CERCLA.⁹¹ The EPA now encourages the use of "comfort letters" to spur voluntary cleanup. The letters assure brownfield owners and prospective brownfield purchasers that CERCLA enforcement action will not be taken against their properties if they either initiate voluntary cleanup or agree to perform a portion of the cleanup. The Taxpayer Relief Act of 1977 enables development companies to deduct the costs of cleaning up brownfields. The United States government encourages the EPA to cooperate with states and local entities to clarify potential liabilities of prospective purchasers, lenders, and brownfield owners, and to coordinate enforcement priorities so that brownfield redevelopment can occur.⁹²

In the United States, environmental insurance is also available to help protect against the liabilities and risks associated with

85. *Id.*

86. 42 U.S.C. §§ 6901-6908A (1976).

87. 42 U.S.C. §§ 9601-75 (1980).

88. *Id.*; APPELATE ET AL., *supra* note 13, at 316.

89. APPELATE ET AL., *supra* note 13, at 481.

90. BROWNFIELDS REDEVELOPMENT MANUAL, *supra* note 21, at 72.

91. See Robert Abrams, *Superfund and the Evaluation of Brownfields*, 21 WM. & MARY ENVTL. L. & POL'Y REV. 265, 275 (1997); William Buzbee, *Brownfields, Environmental Federalism, and Institutional Determinism*, 21 WM. & MARY ENVTL. L. & POL'Y REV. 1, 13 (1997).

92. APPELATE & LAITOS, *supra* note 80, at 267-68.

development of contaminated land.⁹³ Environmental insurance comes in various forms, including professional liability insurance, remediation cost overrun insurance, and pollution legal liability or environmental impairment liability insurance. These types of insurance policies help to ease lenders' fears that, in the event of foreclosure, they ultimately will be exposed to liability as the effective owners of the contaminated property.

III. VARYING SUCCESS IN TWO COUNTRIES WISHING TO CREATE MIXED-USE SPACES FROM BROWNFIELD SITES

Both the United States and the United Kingdom have experienced differing levels of success in actually creating mixed-use spaces from brownfields sites. Each country has relied on and implemented distinct techniques to convert an otherwise useless urban area into a vital, thriving, and ultimately sustainable mixture of residential-commercial-greenspace land. The United States seems to have a critical mass of such sites, and it will therefore be useful to examine several case studies from America of successful and mixed-success brownfield development projects.

A. Implementation of Brownfield Redevelopment in the United Kingdom

The United Kingdom government has promoted brownfield development since the 1970s.⁹⁴ In the United Kingdom, the primary focus seems to be on encouraging development of brownfields for one use residential projects. However, even with public policy supporting brownfield development, greenfield development in the United Kingdom is usually more feasible from an economic perspective. Private investors often are hesitant about developing brownfield sites because of the expenses involved in clearing and cleaning the usually contaminated sites.⁹⁵ Some brownfields are not suitable for parks, open spaces, or gardening, even though they may be suitable for city apartments and residential units.⁹⁶ Moreover, if an investor wishes to expand the size of re-development in the future, such a prudent

93. BROWNFIELDS REDEVELOPMENT MANUAL, *supra* note 21, at 66. Environmental insurance encourages brownfield development by assuring the buyer and lender that they will not be accountable if additional or different contamination is found at the site, by capping costs and helping to manage budgets, and by covering legal defense costs. *Id.* at 67.

94. Andrew R. Harrison, *Monitoring and Re-use of Brownfield Land in England and Wales*, 1 (2004), <http://www.ecologic-events.de/bodenschutz-bayern/de/documents/HarrisOnAndrewRLandInformLtd.pdf>.

95. *Brownfield Development*, *supra* note 64.

96. *Id.*

entrepreneur may be discouraged from building on brownfield land that can only offer limited space.

The United Kingdom has exceeded its target of having at least 60 percent of new homes be built on brownfield sites. In 2008, 80 percent of new homes were built on brownfields, up from 56 percent in 1997.⁹⁷ However, the Center for Cities, an independent research institute that studies the economic performance of United Kingdom cities, claims that this policy has actually slowed residential development and restricted growth. It argues that the 60 percent target has caused land and house prices to increase substantially, because of decreases in supply.⁹⁸ Housing supply has decreased in general because governmental initiatives that discourage development on greenfields have not adequately addressed the underlying problems and potential liabilities associated with brownfield development. The result – that many builders choose not to build at all – has led to the diminished housing supply.

This unforeseen secondary effect of the United Kingdom's policy of promoting brownfield development by restricting greenfield development is similar to the United States' problems associated with its CERCLA and RCRA regulations. The United Kingdom uses a comprehensive system of regulations to control how brownfield development takes place. These regulations attempt to promote the development of brownfields by withholding permission to build on greenfields. At the same time, governmental policies identify brownfields and make such land available for development. However, these policies may not provide a strong enough incentive for developers to risk building on brownfields. Instead, they may discourage development in general by inhibiting the development of greenfields, but not correspondingly making development on brownfields a feasible investment. To avoid this problem, the United Kingdom should provide more comprehensive incentives for building on brownfields, in addition to the identification of land that is suitable for redevelopment.

Initially, the policies in the United States were also narrowly focused on reducing the severity and effects of brownfield contamination. These policies inadvertently discouraged sustainable development of brownfields by increasing the risks associated with investment in such development.⁹⁹ As discussed in Part II of this Article, the United States has responded to these issues by revising the

97. *Brownfield Targets Slow Down House Building*, LAWSON FAIRBANK (Mar. 16, 2010), <http://www.lawsonfairbank.co.uk/brownfield-targets-slow-down-house-building.asp>.

98. *Id.*

99. Kris Wernstedt et al., *The Brownfields Phenomenon: Much Ado about Something or the Timing of the Shrewd?*, RESOURCES FOR THE FUTURE, 1 (2004), www.rff.org/documents/rff-dp-04-46.pdf.

problematic areas of its laws and policies so as to make more attractive brownfield sites.¹⁰⁰ These reforms seem to have had a positive effect on brownfield development in the United States. Under the current state of affairs in the United Kingdom, the choice not to build on a brownfield is often more attractive than the choice to build on a brownfield. If the United Kingdom wishes to further encourage development, it should consider expanding its policies to promote sustainable brownfield development by identifying and reducing the barriers to such development.

B. United States

In the United States, investment in the EPA's Brownfields Program has leveraged more than \$6.5 billion in public and private funding for brownfields cleanup and redevelopment. The EPA's initiatives have created approximately 25,000 new jobs.¹⁰¹ The EPA has reported numerous brownfield redevelopment success stories. This success in promoting sustainable brownfield development is largely because the EPA has prioritized the reduction of barriers to such development.¹⁰² The EPA in America has promoted aggressively the idea that the implementation of mixed-use development on urban brownfields can be beneficial for every party involved. As a result of its policies, there has been considerable interest and investment in brownfields.

The following case studies are three examples of brownfield development in the United States. The first is a terrific success story. The second might be a success several decades into the future. The third could have been a success, had economic conditions been better. In each of them, the planners had a goal of mixed-use development, where the formerly contaminated site would be transformed into a multi-purpose, multi-functional location where residents could live, play, shop, and work in one place, and where automobile transportation was minimized. These sites were intended to be sustainable environmentally, and efficient with respect to energy consumption. And, they held the promise of socio-economic integration as well.

C. Case Studies of Mixed-Use Brownfield Development

1. *Atlantic Station in Atlanta, Georgia*

"True to its motto 'Live, Work, Play,' the Atlantic Station redevelopment includes affordable housing and a host of new jobs in its

100. See also text accompanying *supra* notes 75-93.

101. *Introduction to Brownfields*, *supra* note 77.

102. See *Region 5 Brownfield Success Stories*, EPA, http://www.epa.gov/r5brownfields/htm/s_stories/index.html (last updated Mar. 3, 2011).

comprehensive approach to community development. But this kind of development doesn't just happen on its own. It takes vision and cooperation among many partners."¹⁰³

Atlantic Station is the United States' largest urban brownfield redevelopment project. It sits on 138 acres in Atlanta, Georgia, where a former steel mill was once located. The steel mill operated from 1901 to 1997.¹⁰⁴ During this time, the land became contaminated with PCBs and sulfates. In 1997, a private developer proposed a comprehensive redevelopment plan to transform the site into a mixed-use development. The site's central location and large size had significant development potential that could offset cleanup costs. After being decontaminated, cleaned and redeveloped, the site was opened in 2005 as Atlantic Station, where the land is currently being used for a variety of uses including residential, office, retail, and entertainment.¹⁰⁵

The idea for Atlantic Station began as a master's thesis on city planning by a student at the Georgia Institute of Technology.¹⁰⁶ The transformation of Atlantic Station from a brownfield to a mixite, which ultimately required an investment of over \$2 billion, was influenced by many factors. Two key elements to its success were the formation of numerous public-private partnerships, and the strategic implementation of the comprehensive redevelopment plan. Developers, bankers, architects, engineers, federal, state, and local governments, the local transit authority, local schools, and grassroots foundations all came together to create Atlantic Station. Funding for the project came from a combination of public and private sources. The site was issued "Tax Allocation Bonds" by the federal government. These bonds contributed up to \$170 million in cleanup and infrastructure costs. The U.S. Department of Transportation also provided funding to improve the sidewalks, streets, and traffic flow. The private sector paid for the office, commercial, and residential development.¹⁰⁷

Atlantic Station has been recognized as a national model for smart growth, mixed-use urban planning, and brownfield redevelopment.¹⁰⁸

103. Sibyl Howell & Wayne Smith, *Live, Work, Play: An Urban Innovation*, FED. RES. BANK OF ATLANTA, http://www.frbatlanta.org/pubs/partners/partners-vol_14_no_3vol_14_no_3-live_work_play_an_urban_innovation.cfm (last visited Sept. 23, 2011).

104. *Id.*

105. Case Study, Cooperative Conservation America, Atlantic Station Redevelopment: Using Smart Growth Strategies to Lower Emissions, <http://www.cooperativeconservation.org/viewproject.asp?pid=498>.

106. Kathy Morse, *A Better Way of Living*, PUBLIC HEALTH, Summer 2007, http://whsc.emory.edu/_pubs/ph/phsum07/pf_better_living.html. The student, Brian Leary, now serves as vice president, design and development, for Atlantic Station, LLC. *Id.*

107. Howell & Smith, *supra* note 103.

108. Press Release, EPA, *EPA Congratulates Atlanta on Smart Growth Success* (Nov. 18, 2005), <http://yosemite.epa.gov/opa/admpress.nsf/9f9e145a6a71391a852572a000657b5e/0e30c482fa56b3ac852570d00057768b!OpenDocument>.

Currently, over 50 percent of all blocks in Atlantic station contain a variety of different functions. More than 3,000 residents and 3,500 employees live and work in Atlantic Station. The community offers 11 acres of parks and greenspaces, bike trails, wide sidewalks, and numerous public transportation options.¹⁰⁹ Atlantic Station has helped reduce vehicle miles traveled in Atlanta, conserved fuel, and lessened air pollution. The Rollins School of Public Health is currently conducting a study of Atlantic Station to determine the social and physical characteristics of similar mixed-use communities. The three-year study is expected to quantify the quality of life benefits that were envisioned by the developers of the site. Developers are supporting the study with a grant, and are also providing access for nearly 200 participants to move to Atlantic Station for a year.¹¹⁰

2. Gowanus Canal in Brooklyn, New York

The Gowanus Canal empties into the New York Harbor, and was once a major transportation route for Brooklyn and New York City. Many facilities operated along the canal, including gas plants, mills, tanneries, and chemical plants. These facilities emptied toxic waste and raw sewage into the canal for over a century. The canal is now one of the most extensively polluted bodies of water in the United States.¹¹¹ The contamination threatens the health of nearby residents, who use the canal for fishing and recreation.

The case of the Gowanus Canal is an example of how government regulations can slow progress at brownfields. Due to the health hazards posed by extensive pollution, the Gowanus Canal has been designated by the EPA as a site that is eligible for Superfund money.¹¹² It has been added to the EPA's list of the most severely contaminated sites in the nation, and the EPA will be either funding the cleanup or designating responsible parties to pay for it.

The Mayor of Brooklyn was disappointed with the designation of the Gowanus Canal as a superfund site. He and other city officials feared that the designation would prolong cleanup of the site, and would discourage developers from investing in the site due to the stigma associated with the superfund label. Originally, private developers who were interested in building mixite sites along the Canal were willing to pay for cleanup in their respective areas. Now that the

109. Morse, *supra* note 106.

110. *Id.*

111. EPA, *Region 2 Superfund: Gowanus Canal*, <http://www.epa.gov/region2/superfund/npl/gowanus> (last updated Sept. 22, 2011).

112. The "Superfund" is a CERCLA trust fund that finances cleanup of the worst hazardous waste sites in the country. See APPLIGATE & LAITOS, *supra* note 80, at 133-36. The EPA maintains a National Priorities List of the sites that it determines are worthy of Superfund dollars. *Id.*

EPA is in charge of funding the cleanup, the developers will have to wait for the responsible parties to be located and for liability to be assigned for cleanup. This could take years, and will likely precipitate legal battles among polluters responsible for cleanup. Local groups believe the Superfund site designation will ensure the most efficient and comprehensive cleanup. The city has agreed to cooperate with the EPA, which estimates that operations to remove pollution will continue until 2025, and will cost up to \$500 million.¹¹³

Assessment and cleanup of the site have already begun, and a full plan for the cleanup process, which could last over five years, is expected by 2014. The EPA has already identified several responsible parties, including the City of Brooklyn, the United States Navy, and seven other private companies. At least 20 additional potentially responsible companies are under investigation.¹¹⁴ Although preparation of the site for development may be prolonged for decades by the EPA's involvement and oversight, the parties interested in developing the Canal as a mixed-use location should ultimately benefit from the reforms to United States brownfield law and policy that encourage turning brownfields into mixite after cleanup is concluded.¹¹⁵

3. Gates Redevelopment in Denver, Colorado

The old Gates Rubber factory is conveniently located on a light-rail transit line near a major intersection in the center of Denver, Colorado. The Gates Rubber Company was founded in 1911, and eventually grew to become one of the largest employers in Denver. The 50-acre site was closed in 1995 after the Gates Company moved its plants overseas. Cherokee Denver, LLC, a private company in Denver, purchased the site in 2001.¹¹⁶

In 2004, a major trichloroethylene dump was discovered at the site. Trichloroethylene is a toxic solvent that is listed by the EPA as a possible carcinogen. The site was not designated as a Superfund site, but the EPA did participate in assessing the nature and degree of contamination at the site. After learning of the contamination,

113. Mireya Navarro, *Gowanus Canal Gets Superfund Status*, N.Y. TIMES, Mar. 3, 2010, at A1.

114. *Id.*

115. Brooklyn has already approved zoning changes that will allow Whole Foods to build a 52,000 square foot store on the cleaned up banks of the Gowanus canal. Erin Durkin, *Whole Foods Gets City Nod to Build First Brooklyn Store on the Banks of the Gowanus Canal*, N.Y. DAILY NEWS (Feb. 29, 2012), <http://www.nydailynews.com/new-york/foods-city-nod-build-brooklyn-store-banks-gowanus-canal-article-1.1030115>. The store's plans include a rooftop greenhouse that will be used to grow organic produce. *Id.*

116. Tory Read, *The Gates Cherokee Redevelopment Project: A Huge Step Forward for Low-Income People in Denver*, ANNIE E. CASEY FOUND., 12, <http://www.aecf.org/upload/publicationfiles/cc3622h1195.pdf>.

Cherokee became involved with the city and the local community in making efforts to fund and clean up the contamination. Local unions and community groups formed a coalition that pushed for responsible development. The coalition, which eventually included over 50 groups, convinced Cherokee to commit to providing quality jobs and affordable housing.

Development at the Gates Rubber site was seen as an opportunity to bring numerous benefits to the investors and to the community surrounding the site.

In exchange for public subsidies and tax increment financing to aid in cleanup and development, Cherokee agreed to comply with a long list of conditions stipulated by the local government and surrounding community. The development project was seen as a huge economic generator for Denver. It was set to provide 350 affordable housing units and up to 10,000 temporary and permanent jobs, with preference for residents of surrounding neighborhoods. The plan was to redevelop the Gates Rubber factory into a transit oriented, mixed-use, varied-income community that included residential, retail, office, and greenspace uses.¹¹⁷

The redevelopment plan for the Gates Rubber factory was never fully realized due to the collapse of the real estate market in 2008. The site remains both an eyesore and a glaring example of an opportunity cost – the loss of jobs in transforming the site, and the lack of benefits that would have followed, economically and environmentally, had the site been changed to the mixed-use plan. The Gates site is a reflection of what “could have happened” to a brownfield, had (1) adequate funding been available and (2) economic conditions been better.

CONCLUSION

The successful mixed-use development projects that have been planned and completed in the United States can serve as an example for future brownfield developments in the United States and the United Kingdom. Atlantic Station is one of the most successful brownfield redevelopments in the United States. The strategy used for development in Atlanta can be implemented in other brownfield projects as well. The Gowanus Canal development project, which is still in the early stages, should be examined when considering the potentially hindering effects of government involvement. Government cleanup requirements have caused redevelopment to be delayed by over a decade.

The Gates Rubber brownfield project is an outstanding example of the benefits that private-public partnerships can bring to mixed-use

117. *Id.* at 6.

brownfield development. The local coalitions, the private developer, and the city worked together to negotiate a development plan that was beneficial for every party involved, as well as the surrounding community. Many lessons can be learned by understanding the financial obstacles that eventually put this otherwise model redevelopment goal on hold.

Much of the United States' partial success in encouraging sustainable brownfield development can be attributed to its commitment to providing incentives for private investors to engage in the mixed-use development of brownfields. Another key factor is the effort the EPA has made to remove the unique legal obstacles to development that are inherent in contaminate properties. The United Kingdom is currently facing problems similar to those faced by the United States, such as the negative secondary effects of laws and policies regulating brownfield development. To remedy these problems, the United Kingdom should consider reforming its policies to provide incentives that convince investors of the unique social and economic benefits of sustainable brownfield development. This goal can be achieved by limiting liability, and promoting voluntary cleanup in order to reduce investment risks. In addition to promoting development objectives through written agreements, the United Kingdom government may benefit by playing a more active role in mixed-use development; it can provide job training and education, become more involved with encouraging local communities to embrace mixite, and reduce regulatory obstacles that inhibit the allocation of funding for cleanup and new infrastructure at brownfield sites.