

From Brownfields to Housing: Opportunities, Issues, and Answers

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Executive Summary

Brownfield redevelopment—the cleanup and reuse of abandoned properties with real or suspected contamination—offers communities a range of housing opportunities, especially where market factors or a property's size or location restrict possibilities for commercial and industrial reuse. In many areas, residential brownfield redevelopment mitigates environmental health risks while creating much needed affordable housing. However, to successfully develop housing on brownfield sites, project managers must address concerns about remediation costs, social justice, and stigma. At the federal level, more flexibility in awarding Federal Housing Administration mortgage insurance for residential brownfield redevelopment would remove a significant barrier to housing construction on remediated brownfield sites.

Benefits of Residential Brownfield Redevelopment

Housing has emerged as an important option for brownfield reuse that alleviates the need to develop new urban residential sites, especially for affordable housing. In fact, many brownfield sites are incompatible with industrial or commercial development due to market factors or their size, and the location of many brownfield sites near existing residential areas suggests that multifamily housing might be the most appropriate reuse.

Brownfield redevelopment also can be a strategy for preserving historic or locally significant structures while improving community morale. Many brownfields are old factories, train stations, schools, and hospitals that could be adaptively reused, and preserving such historic structures helps maintain a community's identity and unique architecture. Housing development on certain brownfield sites also can create optimism that the neighborhood is turning around, and even reduce crime in places where blight has signaled decline.

Concerns About Housing on Former Brownfield Sites

Despite its many benefits, residential brownfield redevelopment raises special concerns about costs, social justice, and stigma, creating barriers that complicate housing construction on a brownfield site. Vacant and abandoned structures in residential areas require special attention because there is no apparent economic market incentive driving their cleanup and reuse. Due to a potentially low profit margin, developing affordable housing often involves nonprofit leadership and the creative use of grants and tax credits to make a project feasible.

In addition, cleanup costs for a housing development may be higher than costs for cleanup at a site intended for commercial use because state voluntary cleanup programs require a higher standard of cleanup for residential use. Moreover, many private lending institutions refuse to lend money for brownfield projects. These institutions are much more likely to lend money for projects that are insured by the Federal Housing Administration (FHA), but FHA requires that remediation be complete before it will review a loan application.

Residential brownfield redevelopment also raises complex social policy issues. Siting affordable housing on former brownfields can trigger equity concerns because low-income people, if given a choice, might not wish to live there. Conversely, some argue that promoting residential reuse at market prices spurs gentrification, which pushes out existing residents who can no longer afford the rising taxes and rents in their community as property values increase.

The Federal Role in Housing Reuse

Since housing developments often generate lower revenue than commercial projects, a federal role can encourage, or at least should not inhibit, residential development on certain cleaned up brownfields. However, the policies of the Federal Housing Administration (FHA)—which has insured almost 30 million home mortgages and 38,000 multifamily project mortgages—do not support residential brownfield reuse.

Currently, FHA requires that remediation is complete before it will review an application for FHA insurance on a brownfield site, which means cleanup costs must be financed separately from the mortgage. Moreover, FHA also does not allow the use of engineering controls (physical barriers such as pavement), or institutional controls (legal limitations such as deed restrictions and covenants intended to limit human activities) to prevent exposure to residual hazardous contamination. This policy requires very costly cleanup that can make redevelopment prohibitively expensive.

These FHA policies have a chilling effect on infill development, because many developers cannot obtain financing without FHA mortgage insurance. In many cases, a brownfield developer does not own the site before the financing package is in place; property acquisition is a component of the project financing. Since FHA insurance cannot be secured until cleanup is complete, the developer has to clean up the site before obtaining title to it. Developers are very reluctant to begin cleanup before they have site control, due to the legal liability entailed.

To remove federal financing barriers to residential brownfield redevelopment, FHA could adopt a more flexible policy to:

- Allow residential development on certain sites.
- Allow the use of engineering and institutional controls on sites to demonstrate that human health exposure to contaminants can be eliminated.
- Allow the inclusion of remediation costs in the overall financing package and evaluate the various studies and remediation plan.

Such a policy would better serve its mission of providing affordable housing and promoting healthy neighborhoods.

Introduction

Brownfield redevelopment—the cleanup and reuse of abandoned properties with real or suspected contamination—offers communities a range of housing opportunities, especially where market factors or a property’s size or location restrict possibilities for commercial and industrial reuse. In many areas, residential brownfield redevelopment mitigates environmental health risks while creating much needed affordable housing. However, to successfully develop housing on brownfield sites, project managers must address concerns about remediation costs, social justice, and stigma. At the federal level, more flexibility in awarding Federal Housing Administration mortgage insurance for residential brownfield redevelopment would remove a significant barrier to housing construction on remediated brownfield sites.

Federal and state brownfield policy emerged from the concern that lightly contaminated land was being subjected to the strict, joint, and several liability scheme created by the Comprehensive Environmental Response, Compensation, Liability Act (Superfund). Superfund aimed to identify the nation’s most contaminated sites and clean them up, holding past and present landowners liable for the cleanup costs. However, strict judicial interpretations of Superfund cast a wide liability net that hindered real estate transactions and the development of land with low levels of contamination.

Superfund’s most significant impact on the U.S. Department of Housing and Urban Development (HUD) involves the Federal Housing Administration (FHA). FHA is the only HUD program by which the department might be in the position of taking ownership of a property, which may occur when an owner defaults on an FHA-insured mortgage. Because under Superfund HUD might assume the liability for contamination on such properties, FHA adopted a conservative policy regarding contamination in its Multifamily Accelerated Processing (MAP) Guide. The guide requires cleanup before FHA will make a firm commitment to a property and prohibits the use of engineering or institutional controls to control residual risk of exposure at a remediated site.

The emergence of brownfield policy recognized the need to differentiate between the severely contaminated land targeted by Superfund (with about 1200 properties so designated) and other abandoned, slightly contaminated sites that are more suitable for reuse. There are an estimated 450,000 to 600,000 brownfields nationwide, including former dry cleaners, gas stations, and sites of other commercial industries that used contaminants. States took the initiative on brownfields by creating voluntary cleanup programs, through which participating landowners could be released from further liability under state laws. The federal Small Business Liability Relief and Brownfields Revitalization Act of 2002 reflects the important role of states by granting federal liability relief to developers of sites that have successfully participated in an approved state voluntary cleanup program.

Brownfield redevelopment adds local tax revenue, attracts businesses and jobs, and removes blight. It also contributes to sustainable development and smart growth by recycling land and using existing infrastructure. Increasing awareness of the financial and ecological costs of sprawl has prompted many states and communities to implement policies that encourage compact development and redevelopment in urban cores and town centers. These policies may include developing housing on brownfields, which in many cases are situated near existing infrastructure and services.

This paper examines the reasons why housing should be an option for brownfield reuse, as well as the concerns about residential development on cleaned-up brownfield sites. It also explores the role of FHA mortgage insurance in developing housing on brownfield sites. While

some of HUD's programs have become more flexible in using grants to remediate brownfields, FHA policy on brownfields has remained unchanged.

Benefits of Residential Brownfield Redevelopment

Housing has emerged as an important option for brownfield reuse that alleviates the need to develop new urban residential sites, especially for affordable housing. Recent studies indicate a burgeoning urban population, but the amount of available housing stock has not kept up. Sixteen of the twenty largest U.S. cities gained population from 1990 to 2000.

The shortage of affordable housing is especially dire. As growing numbers of young professionals and empty nesters—older adults with grown children—return to the city, existing residents are subject to increasing housing costs. Many of them are being pushed out by rising rents and taxes. The National Housing Conference reports that in 2000, over 14 million families either spent more than 50 percent of their income on housing or lived in a seriously substandard unit.

Since market factors and lot size and location can make many brownfield sites incompatible with industrial or commercial development, housing can be the most appropriate form of reuse. A recent survey found that on average, 15 percent of city land is deemed vacant. Vacancy most often was attributed to the size, shape, and location of the land. “[M]ore than four in five Midwest cities reported that their vacant land parcels were not large enough for development purposes.”¹ In a field investigation of over 100 brownfield sites in 12 New Jersey municipalities, 28 percent of the plots covered less than half an acre.² These small lots make residential reuse an attractive development option.

Housing Construction Restores a Small Residential Site Lynn, Massachusetts: Myrtle Street

On a 36,000 square-foot brownfield site in Lynn, Massachusetts, five single-family homes for low- and moderate-income first-time homebuyers were built. The community fully supported residential redevelopment of the heavily contaminated, abandoned Empire Laundry site, and neighbors were involved throughout the four-year development process.

Several groups have partnered in the project, including the City of Lynn, the Economic Development Industrial Corporation (EDIC), the Conservation Law Foundation, and the Lynn Community Development Housing Corporation. EDIC/Lynn received a \$200,000 grant from U.S. EPA's Brownfields Assessment Demonstration Pilot Project, and EPA initiated an emergency response cleanup after discovering hazardous materials above and in the ground. In 1999, EPA awarded EDIC/Lynn \$420,000 to establish the Brownfields Cleanup Revolving Loan Fund. Demolition of the building began in July 2000, and the following month EDIC/Lynn received an additional \$100,000 from EPA for the pilot program. Construction began in August 2002 and was completed in March 2003.

The location of many brownfield sites near existing residential areas suggests that multifamily housing might be a more appropriate reuse than commercial development. According to the New Jersey field investigation, “80 percent of the brownfields were within a quarter mile of the nearest residence, and many were in residential neighborhoods.”³ A site-by-site, neighborhood-by-neighborhood review concluded that the most likely use of many of the

sites was housing for poor and lower-middle-income populations. Moreover, a survey of a New Jersey community with more than a dozen brownfields found that community residents support housing development on brownfields: 90 percent of the neighbors wanted parks and play areas, about half wanted housing, and less than 25 percent preferred factories, stores, and warehouses.⁴ In addition, many urban infill sites are close to public transportation and are ideally situated for mixed-use development.

**Transportation Amenities Bolster Mixed-Use Development
Atlanta, Georgia: Atlantic Station**

The 138-acre Atlantic Station site, former home of the Atlantic Steel Mill, is in midtown Atlanta on the western boundary of a 14-lane interstate highway. When the complex is completed in 2012, it will provide 5 million square feet of office space, 1.2 million square feet of retail space, 2,400 housing units, and a bridge connecting the complex to the Downtown Connector and the Arts Center MARTA Station—part of Atlanta's mass transit rail system.

This enormous project had two major environmental challenges: remediation of past contamination and air quality compliance. Because Atlanta is not in compliance with the National Ambient Air Quality Standards for ground-level ozone, the Clean Air Act prohibited construction of new transportation projects that use federal funds or require federal approval. To overcome this barrier, a 1999 agreement between the site developers and U.S. EPA classified the entire redevelopment project as a Transportation Control Measure (TCM), which provides an air quality benefit. This was based on analysis demonstrating that by absorbing a larger portion of Atlanta's growth, the Atlantic Steel site would create lower transportation emissions than would be created by comparable development at alternative greenfield sites outside Atlanta. The TCM designation allowed the construction of the connecting bridge, providing the access to public transportation that was critical to the brownfield project's viability and success.

The project's TCM status will allow for the construction of the bridge that will connect the complex to the MARTA station. The bridge will include two lanes in each direction for general use traffic; two 16-foot dedicated bicycle and transit lanes; and a 24-foot wide pedestrian park and thoroughfare. The structural steel for the bridge was put into place in April 2003, and it is expected to open in January 2004.

Today, Atlantic Station's first 20-story office building is being constructed for the future home of Arnall, Golden & Gregory Attorneys and the Atlanta headquarters for SouthTrust Bank. The first 30 townhomes already are sold, and Lane Company has committed to building 1,150 mid-rise apartments with a value of over \$150 million. Atlantic Station is well on its way to creating a 24-hour community by attracting entertainment establishments, including restaurants and a 16-screen movie theatre. Ultimately, Atlantic Station will provide homes for 10,000 people, employment opportunities for 30,000, with shopping and entertainment for millions more.

Brownfield redevelopment also can be a strategy for preserving historic or locally significant structures. According to a Brookings Institution study of the Northeast region, cities report an average of 7.47 abandoned structures per 1000 inhabitants.⁵ Many are old factories, train stations, schools and hospitals that could be adaptively reused. Preserving such historic structures helps maintain a community's identity and unique architecture, and converting factories and warehouses into loft apartments is a trend that has proven to be profitable.

Housing Development Preserves Historic Mill Amesbury, Massachusetts: Upper Millyard

A 1979 study in Amesbury, Massachusetts, identified the eight-building Upper Millyard as integral to the city's central business district and market square. Constructed in the 1850s, the long-abandoned buildings served as a woolen carding and weaving mill. Under plans by Edward A. Fish Associates of Boston—which has extensive experience in affordable housing, creation of artists' live/work space, and historic renovation—the site will include 46 loft-style condominiums as live/work space for artists; space for Amesbury's Carriage Museum; and a lobby with gallery space for artists to display their work. Nine of the 46 condominiums will provide affordable housing, to be allocated by lottery.

In the early 1980s, the town renovated four of the buildings and purchased a fifth, but the poor economy stalled negotiations to acquire the three remaining buildings. In the absence of developer interest, in 1995 the town took control of a sixth building through the tax foreclosure process. A 1996 pre-development study, funded through the Massachusetts Development Financing Authority and the Alliance for Amesbury, identified the most appropriate building reuse program, including artisan living space, a continuing education center, offices, and a visitor/cultural center. As momentum built for converting the buildings to artisan live/work space, the town recognized that the remaining properties would be critical to a comprehensive revitalization of the area and addressing parking issues.

The city acquired the remaining buildings in 2002, using a portion of its HUD Community Development Block Grant Program allocation. The acquisition was complicated because of lead contamination, and so the town and the property owner began a series of brownfield assessments. In 2001, the property owner removed underground storage tanks and contracted with a licensed site professional for a more detailed analysis. The town was concerned that contamination levels would preclude the site from residential use, and obtained \$171,000 from Mass Development to clean it up. The cleanup effort removed the site's activity and use limitations, and in June 2002 a zoning overlay district was approved to allow artisan live/work space in this area of town.

Perhaps the most compelling reason to promote housing development on certain brownfield sites is to improve community morale and provide optimism that the neighborhood is turning around. Abandoned buildings and vacant land contribute to the perception that a neighborhood is deteriorating; redeveloping them attracts neighborhood investment. In addition, by removing blight and eyesore, brownfield redevelopment often reduces crime, which is the most significant factor that people cite in deciding to move into or move out of a neighborhood.

Mixed-Use Development Alleviates Blight and Fears of Crime Dallas, Texas: South Side on Lamar

In the early 1990s, the neighborhood along South Lamar in Dallas, Texas, was deteriorating. Boarded up buildings dominated the neighborhood and few people lived in the area, perceived as suffering high crime. The area's largest property, a Sears Catalog Store, closed in 1993, with five buildings, over 1 million square feet of space, and 1,500 parking spaces. Matthews Southwest saw the potential to reuse the property and committed \$65 million to the project.

Matthews took advantage of the area's federal Enterprise Zone status and tax credits for renovating the historic Sears structure. The perception of high crime activity prompted Matthews to donate land to the city for a new police headquarters across the street, bringing 1,500 police department employees in the neighborhood.

Today South Side on Lamar is a nine-story building with over 1 million square feet containing 455 residential loft apartments, just one block from a municipal rail station. A former docking area in the building has been converted to a retail/entertainment promenade with brownstone façade. A row of artists' lofts along the promenade allow artists to display and sell their work.



The lofts feature fluted columns, natural ceilings, sliding panels, over-sized bathrooms, exposed brick walls, and original maple flooring. Amenities include a pool and jogging track on the roof, as well as a fitness center, movie theater, and business center. The loft apartments range from 1,000 to 3,300 square feet and lease for \$800 to \$3,500 a month.

Concerns About Housing on Former Brownfield Sites

Residential brownfield redevelopment raises special concerns about costs, social justice, and stigma, creating barriers that complicate housing construction on a brownfield site. Because early brownfield initiatives focused on removing barriers so that land could be reused for industrial or commercial purposes, they often did not address concerns about residential reuse.

Costs

Vacant and abandoned structures in residential areas require special attention because there is no apparent economic market incentive driving their cleanup and reuse. Residential reuse often does not produce the same income as commercial reuse, and so the relatively uncertain and potentially low profit margins for housing development place added stress on properly estimating costs and keeping them reasonable. Without potential for commercial development, there is a weakened economic incentive to develop a property. For that reason,

developing affordable housing often involves nonprofit leadership and creative use of grants and tax credits to make a project feasible.

In addition, cleanup costs for a housing development may be higher than costs for cleanup at a site intended for commercial use. State voluntary cleanup programs set cleanup standards based on the future reuse of the site, because soil at a site that will be retained as a factory does not need to be clean enough to eat. By contrast, sites destined for residential reuse require much more stringent clean up standards, since children playing outside can and do ingest dirt in hand-to-mouth contact. The potential costs of meeting cleanup levels for residential reuse can create a formidable barrier to housing development. However, the impact of these costs may be exaggerated, since recent studies have determined that for a majority of brownfields (including those employing engineering and institutional controls), the cost of remediation is just 7 to 8 percent of the total development costs.

Finally, many private lending institutions refuse to lend money for brownfield projects. These institutions are much more likely to lend money for projects that are FHA insured, but FHA requires that remediation be complete before reviewing a loan application. Furthermore, because FHA does not permit the use of institutional or engineering controls to prevent exposure, the entire property must be completely cleaned before the FHA will insure the mortgage. In addition, FHA does not allow remediation costs as a mortgagable expense—an exclusion that makes a deal less attractive by reducing the normally high FHA loan to value ratio and dramatically decreasing the return on investment.

Social Justice

Residential brownfield redevelopment raises complex social policy issues. Siting affordable housing on former brownfields can trigger equity concerns because low-income people, if given a choice, might not wish to live there. However, cleaning up and redeveloping vacant property as affordable housing can create an asset for low-income communities and encourage other commercial and residential investment there.

Redevelopment Effort Targets Affordable Housing Needs Houston, Texas: Washington Courtyards

In 1996, the Avenue Community Development Corporation (ACDC) in Houston, Texas, conducted a door-to-door survey of the Washington Avenue area that identified affordable housing as a critical need. In response, ACDC contracted to purchase a 2.76-acre brownfield at 2505 Washington Avenue for housing development in December 1997. Three years later, a ribbon-cutting ceremony commemorated the development of Washington Courtyards, a 74-unit, mixed-income building.

The site previously housed a municipal greenhouse, automobile sale/repair shop, truck parts storage, and a used car dealership. ACDC used a U.S. EPA Brownfields Program grant to conduct a Phase I and Phase II environmental site assessment, and identified four areas within a quarter mile of the site where leaking petroleum storage tanks and contaminated soil had been removed in 1989. In 1998, tests from on-site monitoring wells revealed low levels of lead, arsenic, and chromium contamination in the soil and groundwater, but they were below the action levels for residential land use under the Texas Risk Reduction Program. The state issued a final certificate of completion for the site, enabling site development to proceed through numerous alliances of private, public, and community agencies.



2505 Washington Avenue before redevelopment



Washington Courtyards after redevelopment

Promoting residential reuse at market prices raises still other concerns about contributing to gentrification, which can push out existing residents who can no longer afford the rising taxes and rents in their community as property values increase. Such social justice concerns are particularly strong where market-priced housing projects have been sited on brownfields near highly desirable waterfront areas.

Stigma

The stigma of living on a former brownfield site is an often cited but poorly understood and ambiguous barrier to housing redevelopment. Because the practice of residential brownfield redevelopment is relatively new, concerns about uncertain safety and property values that may deter people from buying a house on a cleaned-up brownfield site have not yet been dispelled.

Some case studies demonstrate that people are willing to move into a house that is on a former brownfield and the property values have increased. They indicate that the two most important factors that determine the willingness of people to live on a brownfield site is assurance that the land is safe and an attractive location with a view of parks and water.⁶ In a 2001 survey of New Jersey residents of a brownfield pilot community, of the 280 people who said they are likely to move in the next five years, 171 said they would be willing to live in a house on a remediated brownfield.⁷

Property Values Soar at Redeveloped Waterfront Site Pittsburgh, Pennsylvania: Washington's Landing

Washington's Landing has successfully transformed an island of urban waste to a premiere residential community. The seven-acre residential development includes 93 townhouses, a public park, tennis courts, a jogging and bike trail, a fitness and rowing center, a 150-slip marina with dry dock, three office buildings, and a light-industrial manufacturer. Today, homes on the island that originally sold for \$50,000 now sell for more than \$650,000, and the island generates over \$700,000 in annual tax revenue for Pittsburgh.

Located in the Allegheny River within sight of Pittsburgh, Pennsylvania, Washington's Landing has a long industrial heritage of oil refining and storage, tube works, soap works, stockyards and a rendering plant, and scrap metal recycling. Contaminants included PCBs, heavy metals, and organic waste. The Pittsburgh Urban Redevelopment Authority (URA) began to purchase parcels of land on the island in 1979 and began cleanup in 1983. URA made its final purchase, acquiring the entire island, in 1989.

The Federal Role in Housing Reuse

Urban revitalization and infill development can curb suburban sprawl, but federal programs historically have created incentives for the reverse. The federal government has encouraged the creation of suburbs through subsidized highway construction and low-interest home loans. To realize the environmental and financial benefits of urban infill development, federal programs need to revisit policies that discourage sustainable development, including brownfield reuse.

Promoting non-commercial reuse of brownfields is necessary for a comprehensive approach to urban planning, because in certain cases housing may be the best redevelopment option. Since housing developments often generate lower revenue than commercial projects, a federal role can encourage, or at least should not inhibit, residential development on certain cleaned up brownfields.

FHA Policies on Brownfield Redevelopment

The Federal Housing Administration (FHA) plays a critical role in promoting home ownership in the United States. Created in 1934 to help spur economic recovery and provide housing loans at reduced rates with longer amortization periods, FHA has insured almost 30 million home mortgages and 38,000 multifamily-project mortgages.

Currently, FHA requires that remediation is complete before it will review an application for FHA insurance on a brownfield site, which means cleanup costs must be financed separately from the mortgage. The process for obtaining an FHA-insured mortgage begins with an approved lender submitting an application to FHA. In response, appraisers from the U.S. Department of Housing and Urban Development (HUD) evaluate the site using the Multifamily Accelerated Processing (MAP) Guide and prepare a review under 24 CFR Part 50, which stipulates that a site must be "free of hazardous materials, contamination, toxic chemicals and gasses, and radioactive substances, where a hazard could affect the health and safety of occupants or conflict with the intended utilization of the property." If contamination cannot be completely removed, the field office rejects the site.

FHA also does not allow the use of engineering controls (physical barriers such as pavement), or institutional controls (legal limitations such as deed restrictions and covenants intended to limit human activities) to prevent exposure to residual hazardous contamination. According to the MAP Guide, “HUD will not accept property for firm commitment where a site contamination problem has been capped or paved over,” and “a property with testing, flushing, or monitoring wells in operation will not be considered for mortgage insurance.” This strict prohibition on engineering and institutional controls goes beyond the policies of states and federal regulators. Many state voluntary cleanup programs will approve remediation plans for residential sites that include engineering and institutional controls. A Northeast-Midwest Institute survey found that of 47 states that provided data, 44 allow engineering and institutional controls under certain circumstances. For example, at sites where contaminated drinking water is not used or contaminated soil is covered by construction, a complete cleanup is not needed to protect human health at residential developments.

FHA’s policy requires very costly cleanup that can make redevelopment for housing prohibitively expensive. For example, for a proposed development in Chicago, the MAP Guide’s requirement that all contamination be removed would cost an estimated \$100 million to \$155 million, while cleanup to the Illinois Environmental Protection Agency’s standards for residential reuse at the same site would cost between \$9 million and \$15 million. The MAP Guide would require removal of contamination to a depth of 12 feet, while Illinois would require removal and replacement of just three feet of soil, and only in places with no engineering barriers such as buildings or paved parking lots.

Although the MAP Guide reflects the policy of HUD headquarters, each Multifamily Hub director has ultimate authority to approve or reject mortgage insurance applications; there is no way to ensure that the MAP Guide is followed. In fact, in specific instances some HUB directors have permitted the use of engineering and institutional controls by encouraging the lender to follow an older policy, TAP (Traditional Application Processing), which does not specifically prohibit the use of engineering or institutional controls. However, in cases where the MAP Guide is not followed, there is no procedure for HUD to review the project’s environmental and financial risks beyond a standard environmental review.

These FHA policies discourage urban housing development on remediated brownfields, causing a chilling effect on infill development, because many developers cannot obtain financing without FHA mortgage insurance. In many cases, a brownfield developer does not own the site before the financing package is in place; property acquisition is a component of the project financing. Since FHA insurance cannot be secured until cleanup is complete, the developer has to cleanup the site before obtaining title to it. Developers are very reluctant to begin cleanup before they have site control, due to the legal liability entailed.

FHA has the opportunity to fulfill its mission, support smart growth, and mitigate public health risks by promoting urban infill on remediated sites. Although the private market will develop the waterfront sites where scenic developments can yield high profits, the sites that plague urban neighborhoods are not likely to be developed without government support or removal of government-imposed barriers. It is these vacant lots in distressed neighborhoods that remain vacant under the current FHA practices. They offer opportunities to provide affordable housing, revitalize neighborhoods, and enhance public health.

Recommendations for Removing FHA Barriers

To remove federal financing barriers to residential brownfield redevelopment, FHA could adopt a more flexible policy to:

- Allow residential development on certain sites.
- Allow the use of engineering and institutional controls on sites to demonstrate that human health exposure to contaminants can be eliminated.
- Allow the inclusion of remediation costs in the overall financing package and evaluate the various studies and remediation plan.

Implementing these recommendations may be difficult, but not impossible. Private lending institutions, such as Bank of America and PNC Financial Services, have adopted flexible policies for brownfield projects that recognize that no two brownfield projects are the same. Their financial and environmental risk experts analyze each project and make case-by-case decisions about including remediation costs in the financial package and allowing the use of engineering and institutional controls in certifying site cleanup. In some instances, the bank requires that the developer/borrower obtain environmental insurance.

To adopt a comprehensive, flexible policy that analyzes projects individually, FHA needs to employ experts in environmental and financial risk. Environmental insurance to provide extra assurance may be well suited to this policy transition. Environmental insurance available on the market includes property transfer insurance, cleanup cost cap/stop loss insurance, and owner-controlled insurance.

- Property transfer insurance protects an insured against on-site cleanup costs of unknown, preexisting, or new conditions and against third-party claims for off-site cleanup costs that result from migrating pollution.
- Cleanup cost cap/stop loss insurance protects an insured against a cleanup project that is significantly over budget.
- Owner-controlled insurance allows an owner or prime contractor undertaking cleanup to determine the desired scope of insurance protection against the acts or omissions of other parties involved in the cleanup.

A project's environmental insurance policy blends different protections that are appropriate for the individual project. The use of the environmental insurance market likely will continue to increase, as the insurance sector becomes more capable of assessing environmental risk. Increased knowledge of risk has lengthened the insurances' maximum term from five years to ten years, and the premiums for policies have continued to drop.

A drawback to using environmental insurance for residential brownfield development is its high underwriting costs, which make it difficult to obtain for small projects that involve less than \$200,000 in cleanup costs. However, small projects can obtain environmental insurance through portfolio policies, which can be pulled together by municipalities, nonprofit groups, or quasi-public entities, as well as private companies.

FHA could require that some borrowers obtain environmental insurance to assure that risks are managed. If FHA mandates environmental insurance for a project, it is recommended that FHA require that the environmental insurance term coincide with the mortgage term.

Conclusion

Developing housing on remediated brownfields and protecting public health are compatible objectives. Housing is one of many uses for sites, and it is appropriate for some sites due to size, location, and community preference. There are numerous examples of successful residential projects on former brownfields, where property values have increased and no public health problems have been reported.

Developing affordable housing can be more difficult and complex than developing - market housing because the profits are lower. For affordable housing projects, typically a nonprofit organization structures financing through the creative use of various tax credits and grants.

A major barrier to developing affordable housing is FHA's strict policy requiring that remediation is complete before FHA will review a mortgage application and prohibiting any form of engineering and institutional controls to certify completion. These policies restrict financing options for developers who need FHA-insured loans, creating a chilling effect that can prevent housing development on urban infill sites. Because urban infill development will curb urban sprawl, revitalize neighborhoods, and mitigate public health risks, FHA should adopt a more flexible policy to support residential brownfield development in certain cases. This would better serve its mission of providing affordable housing and promoting healthy neighborhoods.

Appendix: Case Studies

Amesbury, Massachusetts: Upper Millyard

Constructed in the mid-1850s, the eight buildings that comprise Upper Millyard served as a woolen carding and weaving mill. Upper Millyard was abandoned over time and became an eyesore and blight in the community, but a 1979 study identified the site as an integral part of Amesbury, Massachusetts' central business district and market square, the center of downtown Amesbury.

The town wanted to revitalize all eight buildings at the same time, but due to difficulties in acquiring the properties from their various owners, the town acquired and rehabilitated the buildings on a piece-meal basis. In the early 1980s, four buildings were renovated and negotiations were taking place to acquire the remaining four buildings. A fifth building was purchased during this time, but due to the poor economy in the 1980s, negotiations for the three remaining buildings were unsuccessful. There was no developer interest in the buildings, but in 1995, the town took control of a sixth building through the tax foreclosure process.

In 1996, the Massachusetts Development Financing Authority and the Alliance for Amesbury funded a pre-development study to determine the most appropriate building-reuse program. The reuse options included artisan living space, a continuing education center, offices, and a visitor/cultural center. As momentum built for converting the buildings to artisan live/work space, the town recognized that the remaining properties would be critical to a comprehensive revitalization of the area and would address parking issues.

The acquisition of one building on 25 Pond Street was complicated by contamination. The town and the property owner conducted environmental assessments at the site and in the nearby Powow River, and in 2001 the owner removed on-site underground storage tanks and contracted with a licensed site professional (LSP) for a more detailed analysis. Concerned that the contamination would preclude using the site for residential use, the town requested funding from Mass Development to clean it up. Mass Development agreed to fund a \$171,000-cleanup effort, which removed activity and use limitations. In June 2002, a zoning overlay district was approved to allow artisan live/work space in the area, and the town acquired the last of the buildings on June 14, 2003, with funding from Amesbury's Community Block Grant (CDBG) program allocation.

After 25 years of study, planning, and continued effort, the redevelopment of Upper Millyard is within sight. The mayor, in consultation with a selection committee, received proposals from developers and chose the proposal by Edward A. Fish Associates of Boston, which had extensive experience in affordable housing, creation of artists' live/work space, and historic renovation. The proposal includes plans for 46 loft-style condominiums as live/work space of artists, space for Amesbury's Carriage Museum, and a lobby with gallery space for artists to display their work. Nine of the 46 units will be affordable housing and allocation will be determined through a lottery.

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Atlanta, Georgia: Atlantic Station

Atlantic Station originated in 1901 as Atlantic Steel Hoop Company, a manufacturer of wire for binding cotton bales and hoops for wooden barrels. Atlantic Steel continued to grow steadily through World War I and World War II, reaching its peak in the 1960s with 2000 employees and annual production of more than 750,000 tons of steel. As the steel industry struggled throughout the 1980s and into the 1990s, Atlantic Steel closed down some of its operations until rolling its last piece of steel in 1998.

As the steel industry declined, Jacoby Development, Inc., offered to purchase the Atlantic Steel site, eager to take advantage of the site's infrastructure and mid-town location beside a 14-lane highway to create a mixed-use development. However, nearly 100 years of steel production had left areas of contaminated metal, slag, and lead. Moreover, because Atlanta is not in compliance with the National Ambient Air Quality Standards (NAAQS) for ground-level ozone, the Clean Air Act (CAA) precluded construction of a pedestrian bridge that was essential to the site development plan.

In 1999, Jacoby and U.S. EPA signed an agreement under a pilot program called Project XL to test regulatory, policy, and procedural improvements. The Atlantic Steel project tests whether a combined brownfield and transportation project can revitalize a community while improving air quality. Under the project, EPA classified the redevelopment project as a Transportation Control Measure (TCM) under the CAA. A TCM is a transportation project that demonstrates an air quality benefit; the designation allows a project to receive federal funding and federal approval in noncompliance areas.

The Atlantic Steel project incorporates many activities that qualify individually as a TCM, such as improved public transit, pedestrian and bicycle paths, and the requirement that employers at the site join or form a transportation management association. EPA went beyond the standard TCM definition by combining the individual activities at Atlantic Steel, allowing the entire project to qualify as a TCM. This is based on analysis of the air quality benefits of Atlantic Steel, which demonstrated that by absorbing a larger portion of Atlanta's growth, the Atlantic Steel site would cause lower volatile organic compounds (VOC) and nitrogen oxide (NOx) emissions than would be created by comparable development at alternative greenfield sites outside Atlanta. The project's TCM status will allow for the construction of the bridge that will connect the complex to the MARTA station. The bridge will include two lanes in each direction for general use traffic; two 16-foot dedicated bicycle and transit lanes; and a 24-foot wide pedestrian park and thoroughfare. The structural steel for the bridge was put into place in 2003, and the bridge is expected to open in January 2004.

Georgia's Environmental Protection Division (EPD) approved a site remediation plan in December 1999, and cleanup began in January 2000. The most contaminated soils and an existing small RCRA facility required excavation and disposal at off-site landfills. The slag that remains on site requires at least two feet of clean fill material. A long-term groundwater collection and monitoring system was constructed to divert groundwater to on-site pretreatment facilities prior to discharge. Remediation of the soil was completed in December 2001, when the development received a no further action letter from the EPD.

Jacoby has worked closely with Georgia EPD, U.S. EPA, and local stakeholders, including the Atlanta Planning Department, Georgia Department of Transportation, the Atlanta Regional Commission, MARTA, the Georgia Conservancy, nine neighborhood organizations, the Midtown Alliance, and Georgia Tech. In addition, an agreement between EPA and the Georgia State Historic Preservation Office calls for the establishment of a visitor's center,

publication of appropriate research material, development of an oral history of Atlantic Steel, and production of an educational video or other publications documenting the history of the site.

Critical to financing the project has been the establishment of a Tax Allocation District (TAD), also commonly referred to as tax increment financing, which uses the increased value of the redevelopment to pay for redevelopment costs or issue bonds. Total TAD contribution for the project is \$170,000,000.

Known as Atlantic Station, by 2012 the new development will provide 5 million square feet of office space, 1.2 million square feet of retail space, 2,400 housing units, and a bridge connecting the complex to the Downtown Connector and the Arts Center MARTA Station. Its first 20-story office building will be home to Arnall, Golden & Gregory Attorneys and the Atlanta headquarters for SouthTrust Bank. The first 30 townhomes developed by Beezer already are sold, and Lane Company has committed to building 1,150 mid-rise apartments with a value of over \$150 million. Atlantic Station also is well on its way to creating a 24-hour community by attracting entertainment establishments. Claddagh Irish Pub will occupy over 8,000 square feet on two levels, Mama Fu's Noodle House and Southwest Grill will each occupy over 2,000 square feet, and California Pizza Kitchen will occupy over 5,000 square feet. United Artists Theatre will develop a 16-screen theatre that will occupy two stories and over 100,000 square feet.

The development also will feature stores such as Dillard's, The Limited, a Virgin Records mega-store, and Barnes and Noble. The area will be transformed into a city within a city, where people can walk from home to work, shopping, and dining. Atlantic Station will provide homes for 10,000 people, employment opportunities for 30,000, with shopping and entertainment for millions more.

Atlantic Station is implementing strategies to prevent and minimize pollution by using construction materials and sustainable building practices that minimize pollution and energy use. More than 150,000 cubic yards of building material on site has been recycled. In addition, Atlantic Station has partnered with Southern Company Energy Solutions to develop the Southeast's largest, most environmentally friendly central cooling system that will save building owners more than \$35 million in construction costs, while operating 35 percent more efficiently than traditional built HVAC systems. Georgia Tech and the Southface Energy Station are working with Atlantic Station and EPA to identify and encourage future tenants and developers to participate in energy conservation programs.

Sources:

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Summary Report of the Atlantic Steel Redevelopment Project XL

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Atlantic Station Web Site

<http://www.atlanticstation.com>

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Brooklyn, New York: Rheingold Brewery

The Rheingold Brewery lies in the Bushwick neighborhood in northern Brooklyn, New York, formerly a center for American brewing. The brewery closed in 1976, and the following year the infamous New York blackout devastated the neighborhood—fires ensued, businesses closed, homes were abandoned, and people fled. By the 1980s, dilapidated buildings and population decline made the Bushwick neighborhood a shadow of its prosperous past.



In the 1990s, nonprofit groups and the federal government spearheaded efforts to revitalize Bushwick, focusing on reusing the Rheingold Brewery property for affordable housing. In October 2000, an international design workshop was organized by the Waterfront Regeneration Trust's International Brownfield Exchange Program and the New York City Department of Housing Preservation and Development, in association with the Ridgewood Bushwick Senior Citizens Council. The workshop brought together architects and urban planners from Germany, Northern Ireland, and Canada with local community leaders, elected officials, and city staff. A design concept emerged that reflected the community's desire for affordable housing while integrating green space and neighborhood retail. Following a site contamination study, a remediation plan was developed.

Bushwick Gardens is one phase of the multi-phase redevelopment of the 6.7-acre Rheingold Brewery site that will bring 40 affordable housing units and 18,000 square feet of commercial space. The mixed-use building will have retail space on the ground floor, with five stories of housing units above. Private equity, bank financing, and federal HOME funds finance the proposed housing component. A \$665,000 Brownfields Economic Development Initiative (BEDI) grant and \$3,265,000 in Section 108 loan funds finance the development of the ground floor commercial space component of the project. The total project costs are estimated to be \$11,900,000.

Sources:

New York City Department of Housing Preservation and Development

<http://home.nyc.gov/html/hpd/html/about-us/bushwick-walking-tour.html>

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[http://www.hud.gov/utilities/print/print2.cfm?page=80\\$^@http://www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/funding02/nyfunding.cfm](http://www.hud.gov/utilities/print/print2.cfm?page=80$^@http://www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/funding02/nyfunding.cfm)

West Bushwick International Design Workshop

<http://www.waterfronttrail.org/graphics/whatnew/ibenycharrette.pdf>

Dallas, Texas: South Side on Lamar

In the early 1990s, the deteriorating neighborhood along South Lamar in Dallas, Texas, was characterized by boarded up buildings and perceptions of high crime. The area's largest property, a Sears Catalog Store, closed in 1993 after more than 80 years. The Sears site has five buildings, over 1 million square feet of space, and 1,500 parking spaces. The potential environmental concerns at the site included underground storage tanks, asbestos, and lead-based paint. Matthews Southwest saw the potential to reuse the property and committed \$65 million to the project.

Matthews took advantage of the area's federal Enterprise Zone status and tax credits for renovating the historic Sears structure. The perception of high crime activity prompted Matthews to donate land to the city for a new police headquarters across the street, bringing 1,500 police department employees in the neighborhood.



Today the nine-story South Side on Lamar building has 455 residential loft apartments, just one block from a municipal rail station. The apartments feature fluted columns, over-sized bathrooms, exposed brick walls, and original maple flooring, and their amenities include a pool and jogging track on the roof, as well as a fitness center, movie theater, and business center. The loft apartments range from 1,000 to 3,300 square feet and lease for \$800 to \$3,500 a month. A former docking area in the building has been converted to a retail/entertainment promenade with brownstone façade, and a row of artists' lofts along the promenade allows artists to display and sell their work.

Sources:

U.S. Environmental Protection Agency Region 6
http://www.epa.gov/region6/6xa/brownfields_renewal.htm

Houston, Texas: Washington Courtyards



The site at 2505 Washington Avenue in Houston, Texas, previously was used for a municipal greenhouse, automobile sale/repair shop, truck parts storage, and a used-car dealership. Its redevelopment emanated from a 1996 door-to-door survey of the Washington Avenue area to identify community needs. Conducted by the Avenue Community Development Corporation (ACDC), the study identified affordable housing as a critical need and spurred ACDC to partner with the Texas Interfaith Housing Corporation in a search for an appropriate housing site. In December 1997, ACDC entered into a contract to purchase a 2.76-acre site situated at 2505 Washington Avenue.

Concerned about residual contamination, ACDC approached the City of Houston for assistance in obtaining an environmental site assessment through the Brownfields Redevelopment Program. A federal EPA brownfields grant financed the Phase I and Phase II environmental site assessment, which identified leaking underground storage tanks (USTs) on and around the site. In August 1989, five USTs on the site were removed, and 11,712 cubic yards of soil contaminated soil were excavated to a depth of 27 feet and transported for disposal. In 1998, tests from on-site monitoring wells detected low levels of lead, arsenic, and chromium contamination in the soil and groundwater. However, the Texas Voluntary Cleanup Program required no further cleanup because the levels were below the Texas Risk Reduction Program action levels for residential reuse of the land. The state issued a final certificate of completion for the site.

Today the site is home to Washington Courtyards, a 74-unit, mixed-income housing development. The project was completed through alliances and partnerships between private, public, and community agencies that include Adams Architects, Inc., Avenue Community Development Corporation, City of Houston Brownfields Redevelopment Program (which was funded by the U.S. Environmental Protection Agency), Community Design Assistance, Inc., ERM-Southwest, Inc., Hettig Construction Corp., Land Redevelopment Committee, MECA, Goodwill Industries of Houston, Southwest Bank of Texas, Boston Capital, Texas Department of Housing and Community Affairs Low Income Housing Tax Credit Program, and the Texas Natural Resource Conservation Commission's Voluntary Cleanup Program.

Sources:

Texas VCP News, Issue 8, April 2002, "Stand Up to the Challenge"

The Center for Brownfields Initiatives at the University of New Orleans
<http://www.brownfields.com/Feature/Feature-11-11-02.htm>

Lynn, Massachusetts: Myrtle Street

On Myrtle Street in Lynn, Massachusetts, Empire Laundry operated a laundering facility from the early 1900s until 1993, when the property was abandoned. The land was heavily contaminated by industrial waste. The City of Lynn, the Economic Development Industrial Corporation (EDIC), the Conservation Law Foundation, and the Lynn Community Development Housing Corporation launched a five-year process to build a housing development on the 36,000-square-foot site.

EDIC/Lynn received a \$200,000 grant from U.S. EPA's Brownfields Assessment Demonstration Pilot Project. After hazardous materials were discovered in 1998, EPA initiated an emergency response cleanup with funding secured with the help of U.S. Representative John Tierney. In 1999, EPA awarded EDIC/Lynn \$420,000 to establish a Brownfields Cleanup Revolving Loan Fund. Cleanup and demolition of the building began in July 2000, and in August EDIC/Lynn received an additional \$100,000 from EPA for the Pilot Program.

Construction of five single-family homes began in August 2002 and was completed in March 2003. The homes will be sold to low- and moderate-income first-time homebuyers.

Sources:

Lynn Office of Community Development
http://www.lynndevelopment.com/draft_03_edic_brownfields.htm

Pittsburgh, Pennsylvania: Washington's Landing

The Washington's Landing development is located on Herr Island in the Allegheny River within the city of Pittsburgh, Pennsylvania. Formerly well known for its foul odors and referred to as "Herrs' stink," the island has a long industrial heritage, hosting oil refining and storage, tube works, soap works, stockyards and a rendering plant, scrap metal recycling, hotels, and worker lodging houses. Contaminants included PCBs, heavy metals, and organic waste.

In 1979, the Urban Redevelopment Authority (URA) began to purchase parcels of land on the island and made its final purchase, acquiring the entire island, in 1989. In 1983, the URA and its participants began the long process of cleanup and redevelopment, creating an island that serves a variety of complementary light industrial, recreational, commercial, and residential uses. Today the island of urban waste has been transformed into a seven-acre residential development of 93 townhouses, a public park, tennis courts, a jogging and bike trail, a fitness and rowing center, a 150-slip marina with dry dock, three office buildings, and a light industrial manufacturer. Homes on the island that originally sold for \$50,000 are now being sold for \$650,000. The island has produced over 600 jobs and generates over \$700,000 in annual tax revenue for Pittsburgh.

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The Phoenix Awards

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Endnotes

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²Michael Greenberg and others, "Brownfield Redevelopment and Affordable Housing: A Case Study of New Jersey," *Housing Policy Debate*, Volume 12, Issue 3 (2001), 517.

³Ibid.

⁴Ibid.

⁵Pagano, 6.

⁶Greenburg, 530.

⁷Greenburg, 526.