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A CONSERVATIVE ANALYSIS OF COSTS IMPOSED BY VACANT AND BLIGHTED PROPERTIES IN TOLEDO:

Conducted at the Invitation of the Junction Neighborhood

Center for Community Progress Report to the Lucas County Land Reutilization Corporation, a 2016 Technical Assistance Scholarship Program (TASP) Recipient

A Center for Community Progress TASP Final Report



This report was prepared for the Lucas County Land Reutilization Corporation, Junction Coalition, and City of Toledo by the Center for Community Progress (June 2016). For additional information, please contact the authors listed below or Kim Graziani, Vice President and Director of National Technical Assistance.

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ABOUT CENTER FOR COMMUNITY PROGRESS

Founded in 2010, the Center for Community Progress is the only national 501(c)(3) nonprofit organization solely dedicated to building a future in which entrenched, systemic blight no longer exists in American communities. The mission of Community Progress is to ensure that communities have the vision, knowledge, and systems to transform blighted, vacant, and other problem properties into assets supporting neighborhood vitality. As a national leader on solutions for blight and vacancy, Community Progress serves as the leading resource for local, state, and federal policies and best practices that address the full cycle of property revitalization. Major support for Community Progress is generously provided by the Charles Stewart Mott Foundation and the Ford Foundation.



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THE JUNCTION NEIGHBORHOOD: VACANCY AND VIBRANCY

The Junction neighborhood in Toledo, Ohio, is a special place. It is home to many small businesses like Mrs. Gilmore's Salon and Boutique and Mr. Liddell's Barbershop-open every day but Sunday and Monday for the last thirty years. Many of Junction's children attend Pickett Academy—surrounded by an educational rain garden, a bioswale project reflecting state-of-the-art urban environmentalism, and a number of historic churches. Community members can often be found looking for a word from leaders like Pastor Carter or Pastor Taylor, sweating it out at Mr. Scott's Soul City Boxing, coming together to invest in their community at the Frederick Douglass Center, or picking up a \$10 bike for their children to enjoy from the Junction Flea Market across from Liddell's. Families gather for movie nights and the annual Fried Chicken Festival at Padua Playground, and can count on tacos and fried fish every week at the Elks Lodge. And then there's the jazz. The Red Velvet Jazz Club and the mural dedicated to Mr. Art Tatum provide just a glimpse into the music, movement, and soul that animates Junction and its residents.

In addition to its diverse business and community programs, its thriving and passionate residents, and its legacy of African-American leadership and institutions in the heart of the Rust Belt, Junction, like many neighborhoods throughout the country, reflects the marks of systemic disinvestment. Urban renewal and other similar federal, state, and local programs in the latter half of the twentieth century separated Junction from its neighbors through strategically placed highways that decimated the once thriving African-American business district and the homesteads of many Junction families. This historic disinvestment—coupled with the more recent impacts of the Great Recession of the twenty-first century, the foreclosure crisis, and the



loss of major Toledo-based industry and its jobs—left a wake of physical vacancy and abandonment that Junction leaders are determined to address. Vacant lots and vacant, substandard properties are widespread throughout the Junction community and constitute a heavy weight on the backs of Junction residents seeking to (re)build a vibrant, thriving neighborhood. Out of the approximately 4,700 total parcels in the Junction neighborhood, 1,700 are vacant lots and over 400 are vacant structures—a combined total neighborhood vacancy rate of 45%.

In the face of this staggering vacancy rate, Junction leaders in partnership with the Lucas County Land Reutilization Corporation (the "Land Bank") see profound possibilities and hope for their community and for the entire City of Toledo. On July 29, 2015, over 300 Toledo community members, leaders, and organizers came together to hold a "Community Dialogue on Urban Revitalization through the Lenses of Peace and Justice" at the Frederick Douglass Community Center in Junction. Four key questions arose from that dialogue:

- How might we build and revitalize our communities in ways that assure the dignity of everyone?
- How might we revitalize our communities in ways that assure the economy is working for everyone?
- How might we revitalize our communities in ways that protect natural resources and promote healthy living?
- How can we work together in making our communities less violent? How might we empower our neighbors to take action?

The identification and implementation of strategies to address each of these key questions is a project that implicates every resident of Junction, every member of the Toledo community, and policy makers at every level of government. Vacancy and abandonment, however, are realities that must be confronted in order to form equitable responses to each question. A vacant lot filled with garbage, old tires, and trash dumped in the middle of the night is an offense to the dignity of the long-time, retired homeowner who lives next door and who takes pride in the home she and her family have cared for through generations. Vacant-burned-out structures next door to long term and brand new businesses discourage potential customers from making a visit. Children walking to and from Pickett Academy are entitled to a safe and peaceful walk—stopping at a park to play along the way—and the crime and dangerous pollutants that coalesce in vacant buildings threaten the security that all of Toledo's families are entitled to enjoy.



Vacancy and abandonment in Junction and throughout Toledo is a reality—both a liability and a potential asset—that must be confronted for each of these important questions. In order to address this reality, community members are seeking clarity on the costs imposed on Toledo residents by vacancy and abandonment. An examination of these costs may provide in the near term a baseline against which to measure progress, and may provide in the longer term a foundation for advocacy efforts to change the status-quo—to reduce vacancy and abandonment through processes guided by data, and to develop solutions and seek impacts that equitably serve all of Toledo's neighborhoods.

THE TOLEDO COST OF BLIGHT STUDY AND THE TASP AWARD

In the fall of 2015, Junction leaders and the Lucas County Land Bank applied for and received a scholarship from the Center for Community Progress' Technical Assistance Scholarship Program (TASP). Significant community leadership and organization, key questions related to equitable community development described above, and the 50% vacancy rate in the Junction neighborhood provided the backdrop for the scholarship award. With the support and guidance of Mayor Hicks-Hudson's team, Junction residents and the Lucas County Land Bank invited Community Progress to conduct a Cost of Blight study for the City of Toledo. The findings of this study will help to inform the second portion of the TASP award, a resident-driven Open Space Action Plan for Junction that will help prioritize and identify appropriate reuse strategies, inform programs and policies of the City and the Land Bank, and assist with securing funding for implementation efforts.¹

The invitation by Junction leaders to conduct a Cost of Blight Study for Toledo is instructive. The Junction neighborhood was left behind by federal, state, and local leadership over several decades in a series of policy decisions that decimated large sections of this community. Now, as Junction leaders seek to build on the hope and capacity that is present throughout the neighborhood, Junction leaders have sought a study that might serve all of Toledo. The report that follows contains analysis and recommendations on the costs of vacancy and abandonment

¹ The Open Space Action Plan for the Junction Neighborhood is available for download and review at Community Progress' website, <u>www.communityprogress.net</u>.



that very few communities throughout the country have even attempted to uncover. Mayor Hicks-Hudson and Junction leaders know that vacancy and abandonment is not only a threat to Junction, but also a cost to the entire Toledo community of neighborhoods. Junction leaders know that the leadership and partnership of the City administration in the fight against blight is critical—and might serve as an example to neighborhoods and cities all over Ohio, and indeed all over the country. Junction began its recent community organizing process by asking difficult and concrete questions. The City has followed that example with its willingness to ask similarly difficult and concrete questions about the cost of vacancy and abandonment to Toledo and its many citizens.

OVERVIEW AND KEY FINDINGS ON THE COST OF VACANCY AND ABANDONMENT

As Toledo leaders work to address vacancy and abandonment citywide, and to reach consensus on maintenance and reuse of vacant and abandoned structures and lots, this Cost of Blight Study was designed to answer several key questions:

- How is property data, as it relates to vacancy and abandonment, currently tracked in Toledo and how might tracking be improved moving forward?
- What is the cost to the Toledo taxpayer of the vacancy and abandonment status quo? That is, how much are Toledo taxpayers currently paying to cover police, fire, and code enforcement services associated with vacant property, and how much does vacancy and abandonment cost the City of Toledo in terms of lost tax revenues and lowered property values?
- What does this baseline cost of vacancy and abandonment mean for the Junction neighborhood, and how might it inform open space planning? That is, how might the baseline cost inform roles, responsibilities, and priorities of the Land Bank, the City, and Junction leaders in a new framework for owning, maintaining, and reusing vacant land in such a distressed neighborhood?



This report and analysis provides quantitative evidence that whether or not the City of Toledo owns the vacant and abandoned structures and land throughout the City, it certainly owns the *costs* of vacancy and abandonment, including:

- \$3.8 Million in Annual Direct Costs: Toledo incurs a conservative estimate of approximately \$3.8 million dollars per year in simple direct code enforcement, police, and fire costs associated with vacant properties, including approximately \$2 million associated with vacant structures, and \$1.8 million associated with vacant land. These amounts do not include the millions of dollars in federal Hardest Hit Funds invested in strategic demolitions over the last few years, nor the millions of dollars in planned investment with the newest infusion of Hardest Hit Funds.
- \$2.71 Million in Annual Lost Tax Revenue from Delinquency: Toledo is home to an estimated 13,000 taxable vacant parcels (structures and lots), and approximately 4,500 of those parcels are property tax-delinquent resulting in an estimated annual loss of property tax revenue of \$2.71 million dollars.
- \$98.7 Million in Cumulative Lost Residential Property Value, and \$2.68 Million in Associated Annual Lost Tax Revenues for Properties within 500 feet of Vacant Properties. Hedonic modeling and analysis of Toledo data in conjunction with the best current scholarship available revealed that vacant Toledo properties lower the property values of all surrounding properties by an estimated \$98.7 million dollars—resulting in the additional cost of an estimated \$2.68 million in lost annual tax revenues.

Annual Direct Costs and Lost Tax Revenue from Vacancy and Abandonment in Toledo: **\$9,200,000**

Cumulative Lost Residential Property Values Imposed by Vacancy and Abandonment in Toledo: **\$98,700,000**



Estimated Costs Due to Distressed, Vacant Properties in the City of Toledo²

	ANNUAL COST ESTIMATES			ONE-TIME PROPERTY VALUE LOSS	
	Vacant Vacant Total V Land Buildings Prope		Total Vacant Properties	Best Reasonable	Very Conservative
Service Costs					
Code Enforcement (Inspections/Enforcement)	\$134,224	\$858,460	\$992,683		
Beautification Action Team (BAT)	\$489,653	\$306,033	\$795,686		
Police Department Dispatch Costs	\$293,185	\$319,335	\$612,520		
Fire Department Dispatch Costs	\$925,502	\$494,097	\$1,419,599		
Tax Delinquency Costs					
Annualized, Estimated Tax Delinquency	1,542,259	\$1,167,642	\$2,709,901		
Spillover Costs					
One-Time Loss in Residential Property Values				\$98,721,606	\$35,101,016
Annual Decline in Property Tax Revenues	N/A	\$2,678,295	\$2,678,295		
TOTAL ESTIMATED COSTS	\$3,384,823	\$5,823,862	\$9,208,685	\$98,721,606	\$35,101,016

Our hope is that this analysis will help raise awareness of the economic costs of vacancy and abandonment in Toledo, and will help build consensus toward a more strategic and effective approach toward public ownership, maintenance, and reuse of abandoned residential vacant land in Toledo's neighborhoods, including Junction. The recommendations and observations contained in this study are offered from our outside perspective, are informed by our experience working on similar issues in communities throughout the country, and are provided for consideration by the wide range of leaders and stakeholders throughout Toledo.

² These costs are not comprehensive. They do not include some service costs to the City of Toledo, including "cleaning and cutting" costs incurred by the Department of Public Works for yard maintenance or court costs (solicitor's office, public defender's office, and municipal court), or costs incurred by the Economic Development Department or the Toledo City Land Bank. Costs (other than loss of tax revenue) associated with tax delinquency and enforcement on vacant/abandoned properties are also not included.



WHAT KINDS OF ECONOMIC COSTS DO VACANCY AND ABANDONMENT IMPOSE ON COMMUNITIES?

The problems of distressed vacant properties and the blight that accompanies them have been a continual concern in community development and neighborhood planning in the U.S. (Accordino and Johnson, 2000; Mallach, 2006; Sternlieb and Indik, 1969). The roots of vacancy and abandonment at the neighborhood level have ranged from declining employment and population, to metropolitan sprawl, to—in more recent years—subprime lending and its accompanying foreclosures.

Vacant properties, especially those in poor condition, have negative impacts on neighborhoods and cities. For example, a variety of studies have found negative impacts of vacant and/or abandoned homes on neighboring property values. In a study of Columbus, Ohio, Mikelbank (2008) found that vacant properties reduced the price of nearby homes by more than \$4,000. In a similar study of Flint, Michigan, Griswold and Norris (2007) determined that each vacant structure within 500 feet a home reduced the home value by over 2%. In a study of Baltimore, Maryland, Han (2014) also found that vacant homes had a negative effect on nearby property values. Vacant properties are also associated with higher crime rates. Cui (2010) analyzed crime and foreclosure data in Pittsburgh, Pennsylvania and found that violent crimes within 250 feet of a foreclosed home increased by more than 1% once the foreclosed home became vacant, with similar effects on property crime. Branas, Rubin, and Guo (2012) found that vacant property is among the strongest predictors of assault among a dozen demographic and socioeconomic variables.

The negative effects of vacant properties tend to take three general forms. First, vacant properties, especially those in poor condition, impose direct service costs on code enforcement units, police departments, fire departments, court systems, and other governmental agencies. Second, when owners stop paying property taxes on vacant properties, this tax delinquency imposes another cost on cities. Third, vacant properties, especially poorly maintained ones, can impose negative "spillover" costs on nearby neighborhoods, including lower property values and higher crime rates.



HOW IS DATA RELATED TO VACANCY AND ABANDONMENT CURRENTLY TRACKED IN TOLEDO AND HOW MIGHT TRACKING BE IMPROVED MOVING FORWARD?

Determining the cost of vacancy and abandonment to the taxpayer is a complex endeavor that requires a level of intergovernmental collaboration and data collection very few municipalities have even attempted to achieve. Under the leadership of Mayor Hicks-Hudson, Toledo city staff provided Community Progress with access to public data organized within multiple city departments. City staff engaged in the data-gathering process with transparency, attentiveness, and a plain commitment to going above and beyond in service of Toledo residents.

Data sets throughout Toledo were in varying forms and of varying quality, and the data gathering and analysis led to several observations and recommendations for consideration by Toledo leadership moving forward to more effectively tackle vacancy and abandonment. While these recommendations will require time, an openness to reform and innovation, and monetary investments in some instances, the benefits of improving data management practices can result in more efficient, effective, and affordable outcomes in Toledo's fight against vacancy and abandonment. More importantly, as financial and human resources are limited, a real-time and accurate understanding of parcel conditions, indicators of blight, and neighborhood market trends will help Toledo leaders and key stakeholders formulate sound, transparent, and policy-driven decisions when it comes to which neighborhood investments should be made and where.

TOLEDO DATA TRACKING OBSERVATIONS AND RECOMMENDATIONS

Observation 1: Intergovernmental collaboration and data-tracking is critical to establish baseline costs, to ensure comprehensive and coordinated tracking of data points related to vacancy, abandonment, and blight, and to track improvements and cost savings over time.

1a. The Lucas County Land Bank and various City departments have established an excellent collaborative relationship and meet on a recurring basis to coordinate efforts to



fight blight. Consider instituting more frequent, monthly meetings between Toledo city department heads and Land Bank representatives.

1b. Consider expanding monthly meeting invitations to representatives from police, fire, public works, economic development and IT departments to provide updates on key data points from these departments, and to coordinate uniformity of data tracking efforts across departments where possible.

1c. Consider integrating layers of City department data into the Toledo Survey online map, and utilize Toledo Survey data as a central forum to brainstorm strategies and troubleshoot in monthly meetings.

1d. Identify staff from City Information Communication and Technology (ICT) department with expertise in data tracking, analysis, and geocoding to provide guidance and assistance in tracking multiple datasets from multiple departments in a cohesive fashion.

1e. With improved data tracking (described in more detail below), recalculate direct costs of vacancy and abandonment on a yearly basis to track any decreases in police, fire, and code enforcement costs in response to strategic demolition and other investments.

1f. Consider integrating all procurement requests for information management/information technology systems into the annual Toledo Budget Process, and turning over management of those systems to the ITC Department, who should be given discretion to make final decisions over IT purchases with an eye toward integration across departments.

1g. Consider requiring Toledo water meter readers to report vacant properties by snapping a photo and reporting through SeeClickFix app on routine readings. SeeClickFix reports and data could then be uploaded into the Cityworks platform and overlaid, where possible, with Toledo Survey data to help refine occupancy status throughout the City.

1h. Begin tracking "success" stories across departments including, for example, vacant substandard structures that are home to multiple police and fire calls, for which service costs are drastically reduced upon demolition or remediation.



1i. Consider highlighting both data tracked in summary form and success stories on a dedicated page on the City website, or via links within the online Toledo Survey map.

Observation 2: The Toledo Survey data gathered and housed by the Lucas County Land Bank provide a critical baseline of descriptions for every parcel in the City of Toledo, offering easy integration, visualization, and analysis.

2a. Toledo Survey data should continue to be updated and tracked in real time. Integration of data from Cityworks database and Toledo Survey should be explored.

2b. Where possible, updated data from various City departments including Code Enforcement, Police, Fire, and Public Works should be provided for inclusion and overlay within the Toledo Survey platform to enable tracking of improvement and change over time.

Observation 3: Toledo Code Enforcement and Beautification Action Team (BAT) Data were provided by the Code Enforcement Division, which is leading key departmental information management reforms that offer lessons and a model for citywide, enterprise reforms.

3a. Although code enforcement data is now populated and tracked in the Cityworks platform, available data pre-2015 should be uploaded to Cityworks where possible.

3b. Code Enforcement should identify and track the parcel identification numbers (PINs) for each property involved in an incident. While street addresses can be useful, the recording of street addresses is prone to error and subject occasionally to interpretation ("corner lot"), which make the precise location of a property difficult. Misspellings and other forms of human error can also erode data integrity and usefulness. The use of PINs as "universal identifiers" will allow for easier integration of property and incident data across different agencies.

3c. The Division of Code Enforcement should track hours spent inspecting and dealing with properties by case number, together with the associated parcel number. Also included should be costs due to abatement activity, such as boarding, mowing, and demolition.

3d. Any recovery or lack of recovery of code enforcement costs should be tracked in an easily accessible format. Where Code Enforcement or BAT crews expend resources remediating or addressing any properties owned by private parties, enforcement of those



fines and costs (collected or not collected) should be tracked and reviewed on a yearly basis to allow for development of improved collection techniques, or the institution of hardship programs for those owner-occupants without adequate means to perform needed repairs.

3e. Datasets (and incident reports) should include complete and accurate information on the physical condition of the property where an incident occurs. At a minimum, the occupancy/vacancy status of each property should be recorded. Beyond vacancy, useful data would include an estimate of the condition of the building, similar to the typology used for the Toledo Survey (good, fair, poor, deteriorated, hazardous).

Observation 4: Police and fire data were provided by key police and fire analysts and, though powerful, the police and fire data are not integrated into any comprehensive database or stored in a uniform easily accessible or mappable format.

4a. The current police regional informational management system is complicated and limiting, and Toledo leadership might consider working with a consortium of cities to compel the software vendor to update the system and add fields to accommodate Toledo's wishes to pursue some of the recommendations in this report.

4b. To the extent possible, police and fire departments moving forward should also identify the PIN for each property involved in an incident. For police and fire, identification of a PIN will likely need to be done based on GPS coordinates or based on a street address, or both, but matching to a PIN is generally feasible if the coordinates or addresses are recorded accurately.

4c. If PINs are not possible, every effort should be made to at least track the latitude and longitude of every incident and to standardize address formatting across and within agencies.

4d. Similarly, fire and police data systems (and accompanying incident reports) should include a "location type" field to identify easily whether the location is a real estate parcel or not. Other location types might include "expressway," "arterial street," "side street," etc. Together with data on the type of property (commercial, industrial, multifamily residential, single-family residential, etc.), this field will be helpful in identifying the nature of the location.



4e. Police and fire datasets should include complete and accurate information on the physical condition of the property where an incident occurs. At a minimum, the occupancy/vacancy status of each property should be recorded. The Toledo Fire Department is the only agency that makes any attempt to track whether a property where an incident occurs is vacant or not, and even here, the field is incomplete for the bulk of incidents. Beyond vacancy, useful data would include an estimate of the condition of the building, similar to the typology used for the Toledo Survey (good, fair, poor, deteriorated, hazardous).

WHAT IS THE COST TO THE TOLEDO TAXPAYER OF THE VACANCY AND ABANDONMENT STATUS QUO?

In this analysis, we formulate conservative measures of some of the chief costs imposed by vacant properties in the City of Toledo. The analysis is organized into three main sections. Section 1 addresses direct service costs in terms of code enforcement, beautification, police, and fire costs. Section 2 then estimates the annual lost property tax revenue due to long-term, unpaid property taxes on vacant properties.

Finally, Section 3 estimates the spillover costs of distressed vacant residential buildings on residential property values, and associated property tax revenues. In Sections 1 and 2, the costs of vacant lots versus vacant buildings are disaggregated. In Section 3, only the cost impacts of vacant residential buildings are considered.

The analysis in this report yields an estimate of \$9.2 million in annual code enforcement, beautification, fire, and police service costs incurred by the City of Toledo related to vacant properties. Of these, approximately \$5.8 million is associated with vacant buildings and the remainder is associated with vacant land. In addition, the analysis yields a best, reasonable estimate of losses in residential property values in the City due to distressed, vacant properties of \$98.7 million, with a very conservative, lower bound of \$35.1 million. The decline in values translates into a best, reasonable estimate of property tax revenue decline of \$2.7 million per year, with a very conservative lower bound of \$952,000 per year.



This analysis is not comprehensive and offers a conservative estimate of the costs of blight in the City. For example, the spillover costs of distressed commercial properties on local property values and the effects of distressed residential properties on commercial values are not examined because there are no reliable estimates of such effects available.

This study is also conservative because, in each step of the analysis, estimates were calculated in a conservative fashion. For example, in the spillover estimates, only spillover effects out to 500 feet from a distressed vacant property were considered, even though some research finds small effects out to 1,000 feet or more. Moreover, only the spillover costs of properties in hazardous or deteriorated condition were included in the cost estimates in Section 2, despite the fact that even vacant properties in better condition are expected to have some (albeit smaller) negative impact on property values.

A Note on Timing of the Data

Due to data availability issues, the analyses in this study were not all conducted for the most recent year (2015). In some cases, analyses used data from 2013 and 2014.

SECTION 1. SERVICE COSTS: CODE ENFORCEMENT, POLICE, AND FIRE

1.1 Cost Estimates for Code Enforcement and the Beautification Action Team (BAT)

In Toledo, costs within the Division of Code Enforcement consist of two main components: 1) inspection and enforcement activities; and 2) beautification activities. The latter are carried out by BAT, which handles property clean up services. These include the following activities:

- ✓ Clean-ups
- ✓ Mowing
- ✓ Removing graffiti
- ✓ Boarding up buildings
- ✓ Removing and disposing of tires
- ✓ Removing and disposing of junk and debris



The 2015 budget for BAT was just over \$1.2 million, with a large portion of this going to contracted services. The Division of Code Enforcement, in which BAT lies, estimates that 40% of BAT services are associated with vacant land, and another 25% are associated with vacant buildings. Using these figures yields the estimates in Table 1.1.1.

Table 1.1.1 Beautification Action Team Activities, 2015

	TOTAL BUDGET	ESTIMATED PORTION Associated with vacant land	ESTIMATED PORTION ASSOCIATED WITH VACANT BUILDINGS
BAT Expenses	\$1,224,132	\$489,653	\$306,033

The second area of activity in Code Enforcement is inspection and enforcement activity. The Division provided its database of all code enforcement cases up until approximately mid-August 2014. To analyze one full year of data, the period from August 1, 2013 through July 31, 2014 was utilized. During this period, there were 5,717 code enforcement cases. Unfortunately, the Division does not track the structure and vacancy status of its cases in a manner that is comprehensive and easily analyzed. In order to identify cases involving vacant properties, we utilized two sources of data on occupancy status. The first is the Toledo Survey, which indicates vacant structures and vacant land.³ The second comes from the code enforcement database itself and indicates whether a property is on the City's vacant property registry. If a property was indicated as vacant in either of these sources, it is considered vacant here.

Table 1.1.2 Known Property Characteristics for 2015 Code Enforcement Cases

PROPERTY TYPE	NUMBER OF CASES	% OF CASES
Known Vacant Land	476	8.3%
Known Vacant Building	1,938	33.9%
Known Occupied Building	1,691	29.6%
Unknown Structure/Occupancy Status	1,612	28.2%
TOTAL	5,717	100.0%

³ The Code Enforcement data were matched by address (text matching) to the Toledo Survey data. Exact text matching performed well and there was no need to use any probabilistic matching.



Table 1.1.2 provides a breakdown of the 5,717 cases by type of property. Approximately 28% of the cases are associated with structures where the structure/occupancy status is not known. These cases are then allocated as being associated with "likely vacant land," "likely vacant building," or a "likely occupied building" categories based on the relative prevalence of cases among three "known" categories ("known vacant land," "known vacant building," and "known occupied building"). The result of reallocating the unknown cases to these categories is provided in Table 1.1.3.

PROPERTY TYPE	NUMBER OF CASES	% OF CASES
Known + Likely Vacant Land	663	11.6%
Known + Likely Vacant Building	2,699	47.2%
Known + Likely Occupied Building	2,355	41.2%
TOTAL	5,717	100.0%

Table 1.1.3 Estimated Property Characteristics for 2015 Code Enforcement Cases

As shown in Table 1.1.3, 2,699 code enforcement cases in this one-year period were associated with known and likely vacant buildings. Another 663 cases were associated with known and likely vacant land.

Table 1.1.4 provides estimates for Code Enforcement costs associated with inspection and enforcement based on the results in Table 1.1.3. Based on documents provided by the Division of Code Enforcement, there are 12 code enforcement inspectors. Given 5,717 cases in 2015, this yields an average number of hours per case of 4.2. However, vacant building cases are assumed to consume 50% more time than other types of cases. Thus, the number of hours of a vacant building case is estimated at 5.1 hours, versus 3.4 hours for other types of cases. Table 1.1.4 uses these times to estimate total person-hours expended on vacant building and vacant land cases.

The direct costs of inspections are equal to the number of inspector hours on a certain type of case times the average hourly rate for code-enforcement officers, which equals \$40.63 including salary and fringe benefits.⁴ In order to determine an estimated indirect cost charge for code-enforcement activities, it is necessary to identify the associated costs of non-field-inspector personnel associated with code enforcement activity. To do this, the budget for the Division of

⁴ The \$40.63 per hour costs is based on an annual budget for total salary plus fringe benefits for 12 code enforcement officers per the 2015 Division of Code Enforcement budget.



Code Enforcement was obtained. A loading factor was developed to reflect the indirect costs of non-field personnel as well as equipment, supplies, and other miscellaneous expenses. This indirect cost rate was estimated to be 54% and is reflected in the fully loaded costs column of Table 1.1.4.

Table 1.1.4. Annual Code Inspection and Enforcement Costs for Vacant Properties, 2015

PROPERTY TYPE	INSPECTIONS	HOURS⁵	DIRECT COSTS⁴	FULLY LOADED COSTS ⁶
Known + Likely Vacant Land	633	2,150	\$87,347	\$134,224
Known + Likely Vacant Buildings	2,699	13,750	\$558,645	\$858,460
Known + Likely Vacant Properties	3,362	15,900	\$645,992	\$992,683

Table 1.1.5 then sums the costs in Table 1.1.1 with those in Table 1.1.4, and provides the total costs associated with Code Enforcement and BAT activities for a period of one year.

Table 1.1.5. Total Code Enforcement Plus Beautification Action Team (BAT) Costs Associated with Vacant Properties

PROPERTY TYPE	ESTIMATED BAT Expenses	ESTIMATED CODE INSPECTION AND ENFORCEMENT COSTS	TOTAL IN Division of Ce
Known + Likely Vacant Land	\$489,653	\$134,224	\$623,877
Known + Likely Vacant Buildings	\$306,033	\$858,460	\$1,164,493
Known + Likely Vacant Properties	\$795,686	\$992,683	\$1,788,370

Therefore, the Division of Code Enforcement spends approximately \$1.8 million on vacant properties annually, with about \$1.2 million of that going towards vacant buildings and the remainder towards vacant land.

⁵ The following assumptions were used based on an analysis of the Code Enforcement annual budget, and information from the Division of Code Enforcement. A total of 12 code enforcement inspectors at an hourly cost (salary plus fringe) of \$40.62. An average case consumed 4.19 hours (total cases/12 inspectors at 2000 hours/year), but an average vacant building case consume 50% more time than other types of cases.

⁶ Indirect cost rate of 54%. Of an annual \$1,556,000 budget, approximately \$975,000 was inspector salaries plus fringe benefits, with \$523,000 in indirect expenses. Allocating these to inspector costs yields an indirect cost rate of 54%.



1.2 Cost Estimates for Police Department Dispatches Associated with Vacant Properties

Data on police incidents were obtained from the Toledo Police Department (TPD). There were over 255,000 911 calls in 2015. To be conservative and eliminate those calls that might be viewed as less than substantive, all incidents where the duration was less than 10 minutes were dropped. This left 190,297 calls. Unfortunately, the TPD records do not indicate whether a location affiliated with an incident involved a vacant property. The Toledo Survey file, however, does indicate property vacancy status during the 2014-2015 survey period. Therefore, records from the 911 dataset were matched to the survey data to the extent possible.

Two methods were used to identify whether a 911 call was associated with a vacant property. First, addresses from the 911 incidents were matched with addresses with those in the Toledo Survey. Matching addresses from two different databases maintained by two different agencies is often a challenging task. This is because the address fields are organized differently (e.g., having the entire address in one field vs. having the number, street name, and suffix in separate fields), because some databases include suffixes and others do not, or due to random spelling errors in one or both datasets. To conduct this address matching between databases, first records were matched by "exact" matching, so that a perfect match existed between the address fields in the two databases.

The exact matching process resulted in over 75,000 records in the 911 data being matched to an address in the Toledo Survey file. In order to identify additional matching records where misspellings or different suffixes do not allow for a perfect match, record linkage software was used to identify additional, "inexact" matching records. The software identified more than 1,000 additional matching records.⁷ A total of 77,683 (40.8%) records in the 911 data were matched to records in the Toledo Survey file, which identifies building vacancy status for most properties.

In order to increase the number of 911 calls matched to the Toledo Survey file, the unmatched addresses from the 911 call data were geocoded and given latitude and longitude coordinates.⁸ This allowed them to be mapped. ArcGIS was then used to spatially match these addresses to

⁷ The software used was Fine-grained Record Linkage (FRIL) available at <u>http://fril.sourceforge.net/</u>. A Jaro-Winkler linkage methodology was used.

⁸ Before doing this, those incidents associated with traffic violations, vehicles, and a few other smaller categories not associated with residential or commercial properties were omitted from the 911 call data. The Lucas County Land Bank performed the geocoding of the addresses not able to be matched via text matching.



the Toledo Survey data.⁹ This increased the number of 911 calls that were successfully matched to the Toledo Survey file by just over 24,000 incidents.

Table 1.2.1 shows that roughly half of the 911 calls were able to be associated with a property type. The remaining cases were then allocated as being likely vacant land, a likely vacant building, or a likely occupied building based on the corresponding ratios of the three "known" categories (known vacant land, known vacant building, and known occupied building). The result of this reallocation yields Table 1.2.2 below.

Table 1.2.1. Known Property Characteristics for August 2013-July 2014 911 Dispatches

PROPERTY TYPE	NUMBER OF INCIDENTS	% OF INCIDENTS
Known Vacant Land	2,669	1.7%
Known Vacant Building	2,907	1.9%
Known Occupied Building	70,033	45.7%
Unknown Structure/Occupancy Status	77,482	50.6%
Total 911 Dispatches ¹⁰	153,091	100.0%

Table 1.2.2. Estimated Property Characteristics for August 2013-July 2014 911 Dispatches

PROPERTY TYPE	NUMBER OF INCIDENTS	% OF INCIDENTS
Known + Likely Vacant Land	5,404	3.5%
Known + Likely Vacant Building	5,886	3.8%
Known + Likely Occupied Building	141,801	92.6%
Total 911 Dispatches9	153,091	100.0%

Estimating Dollar Costs Associated with Police Calls Related to Vacant Properties

In order to estimate the costs associated with the incident hours associated with vacant properties, the number of officer hours for each type of property must be estimated. Assuming that a typical incident requires one officer, Table 1.2.3 estimates the costs associated with 911 calls for known and likely vacant buildings, and for known and likely vacant land. The data on 911 calls shows that the average call (after excluding calls lasting less than 10 minutes) averages

⁹ Addresses and records in the 911 dataset were matched with those in the Toledo Survey if the locations of the addresses overlapped (via a point-to-polygon spatial join).

¹⁰ Excludes dispatches lasting less than 10 minutes, calls associated with traffic incidents or vehicles, and other less common incidents not associated with residential or commercial properties. These calls occurred between August 2013 and July 2014.



one hour, and that this average does not vary significantly by property type. Thus, assuming one officer per call, the total number of officer hours is simply equal to the number of incidents, as shown in the second column of Table 1.2.3.

City budget documents give an average rate, for salary plus fringe benefits, for police officers of \$42.99 per hour. So, direct staff costs are estimated by multiplying the number of incident hours by this hourly cost. This yields annual police staffing costs of \$232,318 for vacant and likely vacant land, and \$253,039 for vacant buildings.

These costs do not include overhead, or indirect, costs associated with police staffing. Fully loaded per-staff-hour costs are calculated using the Toledo city budget for 2015, which also includes salary and fringe benefit data for police officers. After excluding support and administrative staff, the total salary and fringe for all police officers (of all rank) in the Department likely to work in the field was estimated at \$60 million compared to a total budget of \$75.7 million. The ratio of the latter to the former is 1.262. This loading factor is applied to the personnel costs associated with vacant land and vacant buildings to arrive at fully loaded police costs associated with such properties. The result is that fully loaded costs for vacant-property-related police incidents in the August 2013 to July 2014 period were \$612,521, with slightly more than half of this amount associated with vacant buildings.

Table 1.2.3. Annual	Police Response	Costs Associated	l with Vacant	Properties,	August
2013-July 2014					

PROPERTY TYPE	911 CALLS	HOURS	DIRECT COSTS ¹¹	FULLY LOADED COSTS ¹²
Known and Likely Vacant Land	5,404	5,404	\$232,318	\$293,185
Known + Likely Vacant Buildings	5,886	5,886	\$253,039	\$319,335
Known + Likely Vacant Properties	11,290	11,290	\$485,357	\$612,521

It is important to note that there is no attempt here to account for any injuries or fatalities resulting from any incidents included in this analysis, including any associated health care, lost

¹¹ The following assumptions were use. One police officer per call. Wages and fringe benefits based on police officer at salary and fringe at \$42.99 per hour, per the 2015 City budget.

¹² Indirect cost rate of 26.2%. Of an annual \$75.7 million budget, approximately \$60 million was police officer (of all rank) salaries plus fringe benefits, with \$15.7 million in indirect expenses. Allocating these to officer costs yields and indirect cost rate of 26.2%



productivity, or emotional costs. There is also no attempt made to include any costs associated with actions subsequent to the dispatch period, including any court or incarceration costs.

1.3 Cost Estimates for Fire Department Services Associated with Vacant Properties

The costs imposed on the City of Toledo in terms of Fire Department costs were analyzed through close examination of the Fire Departments' incident report data, which tracks Fire Department dispatches, including the number of personnel involved, the number of apparatus involved, and the duration of the dispatch. The Fire Department's data included a field intended to describe whether a building was occupied or vacant. However, this field was left blank in 90% of dispatches. In order to better identify whether incidents occurred at vacant buildings or on vacant land, the Fire dispatch data was geocoded.¹³ It was then spatially matched via GIS to the Toledo Survey file, which contains data on property characteristics, including vacancy status. This enabled a much larger percentage of dispatches to be identified by property type (land/building) and vacancy status. Table 1.3.1 provides this information on the Fire Department dispatches for 2014. Unfortunately, even after this matching process, the vacancy status of most (74%) Fire dispatches remained unknown. These dispatches were then allocated as being associated with likely vacant land, likely vacant building, or a likely occupied building based on the corresponding ratios of the three "known" categories (known vacant land, known vacant building, and known occupied building). The result of this reallocation yields Table 1.3.2.

PROPERTY TYPE	NUMBER OF DISPATCHES	%	# PERSONNEL HOURS ¹⁴	%	# APPARATUS Deployed	%
Known Vacant Land	187	2.8%	1,868	2.0%	499	3.2%
Known Vacant Buildings	94	1.4%	962	1.0%	297	1.9%
Known Occupied Buildings	1,472	21.9%	12,604	13.6%	3,633	23.3%
Unknown Structure/Occupancy	4,970	73.9%	77,230	83.3%	11,188	71.6%
TOTAL	6,723	100.0%	92,663	100.0%	15,617	100.0%

Table 1.3.1 Summary Statistics on Fire Incidents Concerning Residential and Commercial Buildings 2014

¹³ Text matching, as was used with the Police and Code Enforcement data, did not prove successful.

¹⁴ Personnel hours were equal to the number of personnel on the dispatch times the duration of the dispatch.



Table 1.3.2. Estimates of Dispatches by Property Type to Account for UnknownOccupancy/Structure Status, 2014

PROPERTY TYPE	NUMBER OF DISPATCHES	%	# PERSONNEL HOURS	%	# APPARATUS DEPLOYED	%
Known + Likely Vacant Land	717	10.7%	11,217	2.0%	1,760	3.2%
Known + Likely Vacant Buildings	361	5.4%	5,774	1.0%	1,047	1.9%
Known + Likely Occupied Buildings	5,645	84.0%	75,672	13.6%	12,810	23.3%
TOTAL	6,723	100.0%	92,663	100.0%	15,617	100.0%

Estimating the Service Costs of Vacant Building Fires

The hourly labor costs for dispatches were based on a scenario provided by the Fire Department involving a mix of firefighters of different ranks. From this, the average staffing costs per hour (salary plus fringe benefits) were estimated to be \$47.87 per hour. The Department estimates equipment/apparatus costs at a rate of \$125 per apparatus per incident. Therefore, the data from Table 1.3.2 can be combined with these cost figures to estimate the costs of fire services associated with vacant land and vacant buildings. This is done in Table 1.3.3.

Then, fully loaded per-staff-hour costs were calculated using the City of Toledo's 2015 budget. The total salary and fringe costs for firefighting personnel (at all ranks) were estimated at \$52.1 million. The total department budget was \$68.5 million. The ratio of the latter to the former is 1.314. This loading factor is then applied to the personnel costs associated with vacant land and vacant buildings to give fully loaded personnel costs. Finally, the apparatus cost is added to the fully loaded personnel costs to yield the total cost figure in the right-hand column of Table 1.3.3.



Table 1.3.3. Estimates of Annual Fire Service Costs Associated with Vacant Properties

PROPERTY TYPE	PERSONNEL HOURS	DIRECT PERSONNEL COSTS ¹⁵	LOADED PERSONNEL COSTS ¹⁶	APPARATUS COST ¹⁷	TOTAL COSTS
Known and Likely Vacant Land	11,217	\$536,958	\$705,563	\$219,939	\$925,502
Known + Likely Vacant Buildings	5,774	\$276,401	\$363,191	\$130,906	\$494,097
Known + Likely Vacant Properties	16,991	\$813,359	\$1,068,754	\$350,845	\$1,419,599

Again, as in the case of police costs, is important to point out that these costs do not include any costs or harm associated with fatalities or injuries (and associated emotional costs, lost productivity, or health care costs) and do not include any damage to the properties. No attempt is made here to calculate what could be sizeable monetary and non-monetary costs from such outcomes.

¹⁵ The following assumptions were used. Wages and fringe benefits based on mix of Fire personnel at levels specified in typical scenario provided by Fire Department.

¹⁶ Indirect cost rate of 31.4%. Of an annual \$68.5 million budget, approximately \$52 million was firefighter and senior line personnel (of all rank) salaries plus fringe benefits, with \$15.5 million in indirect expenses. Allocating these to firefighter costs yields and indirect cost rate of 31.4%

¹⁷ An apparatus cost estimate for each dispatch was provided in the Fire Department dispatch data.



SECTION 2. TAX DELINQUENCY ASSOCIATED WITH VACANT PROPERTIES

A significant portion of parcels in the City of Toledo are property tax-delinquent each year. While a substantial portion of these are short-term delinquencies where owners will catch up on their property taxes, many other properties carry property tax arrearages over several years. Some owners pay a portion of their taxes but leave remaining balances outstanding. In order to estimate the annual costs of tax delinquency (as of the end of 2015) associated with vacant properties in the City, data from Lucas County's real estate information systems was obtained. The data provided the delinquent balance due on property taxes, as well as the year in which the property tax delinquency began.

In order to be conservative and to recognize that many owners catch up on their delinquencies within the first year of the delinquency, properties are not considered tax-delinquent here unless the delinquency began in 2014 or prior.¹⁸ Table 2.1 details the number of taxable properties by property type, as well as the number of tax-delinquent properties and the annualized tax delinquency for each category. The latter figure is calculated for each delinquent property by taking the cumulative unpaid taxes and dividing it by the number of years in the delinquency spell began in 2011, then the annualized tax delinquency is simply 5,000/(2016-2011) = 1,000 per year.

	NUMBER OF Taxable Properties	%	NUMBER OF TAX-DELINQUENT PROPERTIES (DELINQUENT PRE- 2015)	%	Annualized Tax Delinquency	%
Known Vacant Land	3,258	5.0%	1,418	14.5%	\$1,322,404	19.6%
Known Vacant Buildings	7,832	12.0%	2,422	24.8%	\$1,001,190	14.8%
Known Occupied Buildings	43,628	66.6%	4,450	45.5%	\$3,472,568	51.4%
Unknown Occupancy	10,816	16.5%	1,489	15.2%	\$963,635	14.3%
TOTAL	65,534	100.0%	9,779	100.0%	\$6,759,797	100.0%

Table 21	Tax-Delinquen	t Parcels hv	Type of F	Pronerty Fnd	of 2015
	Tux Domiguon	c i ui oolo by	1900011	Toporty, End	

¹⁸ As of the data provided by the County Treasurer in early 2016, over 6,800 taxable parcels were tax-delinquent beginning in 2015, but fewer than 1,600 were delinquent beginning in 2014.



Because the County's data includes a parcel number, it is easily linked to the Toledo Survey, and so the vacancy status of the bulk (85%) of tax-delinquent properties is known. The remaining 15% of tax-delinquent properties were allocated to a "known and likely vacant land," "known and likely vacant building," or "known and likely occupied" category, in the same fashion as the earlier data sets.

Table 2.1 then provides the estimated counts of taxable properties and tax-delinquent properties for the two categories of vacant property. It also provides estimates for the annualized tax delinquency associated with each of these categories. Together, these two categories of vacant properties account for an estimated \$2.7 million in unpaid taxes annually, with \$1.54 million of this delinquency associated with vacant land and \$1.17 million associated with vacant buildings.

	NUMBER OF Taxable Properties	ESTIMATED NUMBER OF TAX-DELINQUENT PROPERTIES (DELINQUENT PRE-2015)	ESTIMATED Annualized Tax delinquency
Known + Likely Vacant Land	3,902	1,673	\$1,542,259
Known + Likely Vacant Buildings	9,380	2,857	\$1,167,642
Known + Likely Vacant Properties	13 282	4 539	\$2 709 901

Table 2.1 Estimated Annual Tax Delinquency Associated with Vacant Land and Vacant Buildings, End of 2015



SECTION 3. ESTIMATING THE SPILLOVER COSTS OF DISTRESSED VACANT PROPERTIES ON RESIDENTIAL PROPERTY VALUES AND PROPERTY TAX REVENUE IN TOLEDO

In this third part of the study, the costs that are imposed upon neighborhoods and taxpayers in the form of reduced property values and the associated decline in property tax revenue are estimated. These costs are typically referred to as "spillover" costs in the research literature.

The approach here is to utilize the significant number of recent studies from other cities, combined with local data on vacant properties in different conditions, to develop estimates of these spillover costs. The data and time required to directly measure the percentage effect of vacant properties on nearby property values using primary real estate data is quite substantial, and any particular measurement of such effects is subject to the limits of the available data. The approach used here takes advantage of a now substantial literature on the effect of vacant and distressed properties on property values. This study conducts a meta-analysis of the high-quality studies that have been done across different cities and different years, and estimates the spillover costs on nearby property values due to distressed vacant properties, using the central tendencies of these findings.

Then, actual data on vacant properties, broken out by their physical condition, were combined with these spillover effect percentages to estimate the cumulative effects of vacant properties in Toledo on property values. These, in turn, were used to estimate property tax revenue effects. Sensitivity analysis was performed using especially conservative estimates from the literature in order to develop a lower bound on the likely property value impacts.

What Do Existing Studies Say about the Effect of Vacant Properties on Nearby Home Values?

A good deal of research has examined the spillover costs of various types of distressed housing on nearby home values, including the effects of foreclosed properties, the effects of vacant properties, and the effects of tax-delinquent properties. The precise definitions of vacancy, foreclosure, and tax delinquency vary across studies due to the nature of the data available and differences in local definitions of these terms.¹⁹ In recent years, the greatest volume of such work has concerned the impact of foreclosures on nearby home values. However, while foreclosures

¹⁹ Essentially no recent literature has examined the effect of vacant nonresidential property on home values, or the effect of vacant properties on nonresidential values. Thus, any such effects are not accounted for in this study.



may catalyze an increase in vacant or physically neglected homes, most of these studies do not directly measure the impact of the vacancy or physical condition of nearby values. (A few of these studies do separately measure the impact of vacant, mortgage-distressed properties, and they are considered here.)

The focus here is on studies that measure the effect of different sorts of vacant, residential properties on nearby home values. While many cost of blight studies claim to include the spillover effects of vacancy or blighted properties on nearby home values, a set of 8 studies conducted over the last 10 years were identified that were viewed as sufficiently strong to include in this meta-analysis of spillover impacts. Some other studies examined the effects of only vacant lots on nearby properties, or did not distinguish between vacant structures and vacant lots. Others examined the effects of particular interventions, such as targeted code enforcement or the greening of lots, that did not directly identify the spillover costs of vacancy or blight. (Some of these studies may be referenced in other parts of this report where their implications are relevant.)

Not surprisingly, some of the studies examined here occurred in the same cities. This is partly because some cities have developed better sets of data on distressed properties, home values, and other relevant information, that are needed to conduct strong studies. While the precise magnitudes of the spillover effects are expected to vary somewhat based on the location of the study, the generally consistent findings among the studies and the studies in other cities suggest that these effects are similar across different types of cities. Moreover, one of the studies is carried out across fifteen metropolitan areas.²⁰

For the purposes here, the key finding of interest in these studies is the extent to which nearby distressed vacant properties affect home values. The studies generally measure the degree to which a distressed property within a certain radius of a home reduces the value of the home. The radii at which these analyses are done tend to range between 250 and 1,000 feet, with all of the strong studies identified here including a measurement in the range of 500 to 660 feet (about 1/10th to 1/8th of a mile). While some studies find negative effects as far out as 1,000 feet or more, the effects tend to get quite small beyond the 500-660 foot distance and are ignored here. Thus, any spillover costs estimated in this analysis will be conservatively measured by ignoring effects beyond this range. For simplicity, we will consider all estimates in the 500-660 foot range as 500-foot estimates, another conservative assumption.

²⁰ Most of these studies occur within one city or one county because the sort of data required on vacant properties is often highly localized and not generally available across counties or metropolitan areas in a consistent fashion.



Table 3.1. Findings on Negative Spillover Price Effects within 500 Feet of DistressedResidential Structures in Urban Markets, 2007-2015 (1)

			EFFECTS OUT TO 500 FEET				
		City	Tax Foreclosed or Delinquent		Vacant		
	Whitaker & Fitzpatrick, 2014	Cleveland	-5.20%				
	Alm et al., 2014	Chicago	-3.40%				
	Griswold and Norris, 2007	Cleveland	-2.26%				
	Whitaker & Fitzpatrick, 2013	Cleveland	-1.80%		-1.80%		
	Griswold et al. 2014	Cleveland	-3.07%	(2)	-0.83%	(2)	
	Mikelbank, 2008	Columbus			-1.35%	(3)	
	Han, 2014	Baltimore			-0.32%	(3)	
	Gerardi et al., 2012	15 Metros			-1.30%	(4)	
	Mean		-3.15%		-1.12%		
	Range		-1.8% to -5.2%		-0.32% to -1.8%		
Notes:							
(1)	A few of these findings are actually m	easured out to dista	nces of 660 feet, so that the effe	cts here a	re conservative estimates a	at 500	
(2)	 teet. (2) These factors are averages of the effects found in 3 of the 4 submarkets used in this study: extremely weak, weak, and moderately functioning; these are the sorts of neighborhoods where most tax-delinquent properties exist in Toledo. The effect in highly functioning markets is substantially larger in magnitude (more negative) and is excluded here for the sake of being conservative in estimating spillover costs. 						
(3)	This is a spatially weighted average o 250-foot effect is given ¼ weight, and surrounding the distressed property.	f the magnitude of th I the 251-500-foot e	ne effect found within 250 feet ar ffect is given ¾ weight, reflecting	the differ	nd from 251 to 500 feet. The need in spatial areas	те	
(4)	This is an average of the magnitude o	f the effect found for	r vacant homes with seriously de	linquent n	nortgages and lender-owne)d	

Table 3.1 summarizes the spillover estimates from the eight strong studies identified. These studies used strong econometric methods to identify the magnitudes of spillover effects. Most of them used what are called "spatial hedonic" methods, using advanced econometric methods to control for differences among properties and property locations other than the number of nearby distressed properties. These studies control for differences in the size, structure, number of bathrooms and bedrooms, and other quality characteristics among different houses. They also control for differences in neighborhood and location characteristics. Some used a hybrid



hedonic method utilizing the change in sale price as the dependent variable ("repeat sales").²¹ While no study is perfect, the studies here go to significant lengths to isolate the spillover effects of distressed properties to the greatest extent possible using high-quality and detailed data.

Table 3.1 distinguishes findings across the eight studies between those pertaining to vacant properties and those pertaining to tax-delinquent or tax-foreclosed properties, with this latter category often representing primarily vacant properties. Tax-delinquent or tax-foreclosed vacant properties are expected to be, on average, more distressed than the average vacant, non-delinquent property, because owners of vacant properties who are current on their taxes are more likely to maintain the properties. Conversely, tax-delinquent owners may be in the process of abandoning their properties. Figure 3.1 illustrates the range of these spillover effects at 500 feet. For vacant (non-tax-delinquent) properties they range from -0.32% in one study to -1.8%, with an average of -1.12%. For tax-distressed properties, the spillover effects range from -1.8% to -5.2%, with a mean of -3.15%. Thus, the distressed, tax-delinquent properties have a markedly larger, negative effect on nearby property values, which is expected because these properties, on average, are more likely to be physically distressed.



Figure 3.1. Range of Negative Spillover Effects (as % of Property Value) to 1/8 mile

²¹ The studies utilizing hybrid repeat sales approaches include Han (2014) and Gerardi et al. (2012). The repeat sales approach suffers from potential bias due to a lack of information on improvements to properties between subsequent sales (the Han study attempts to omit properties that may have been "flipped" but may be limited in its ability to do so). The spatial hedonic methods suffer from potential omitted variable bias as well, although of a different sort, although the small-area spatial controls minimize this problem.



These ranges of impact are conservative in at least two ways. First, as explained above, some studies find negative effects of vacancy or neglect beyond the 500-foot radius. But these measures are less common and the magnitudes are quite small, so while they may be material in nature (especially because more properties lie within 1,000 feet of a vacant structure than within the 500-foot radius), they are not counted for the sake of reliability and conservatism in estimates of spillover costs. Second, some of the largest estimates of negative impact (in the Griswold et al. 2014 study) were not included in the meta-analysis here due to their occurrence only in "highly functioning," (that is, lower-poverty and higher-property-value) neighborhoods. Because the great majority of distressed properties in Toledo are located in lower-income and lower-value neighborhoods, including such large-magnitude spillover measures here would not be appropriate and risk overestimating the spillover costs of blight.

Using this analysis, in order to provide for a reasonable range of sensitivity analysis, the spillover costs of distressed vacant properties on home values will be estimated using two different magnitudes of spillover cost effects. GIS techniques will be used to identify the number of distressed vacant properties that lie within 500 feet of each home in the City of Toledo. Then using the spillover effect estimates and the appraised values of the homes (from county property tax assessors), the decrease in values of all homes within 500 feet of a vacant home will be calculated and summed.²² This will yield the aggregate decreases in value due to vacant homes. Then, using estimates of assessed value and mileage rates for the City from Lucas County, losses in marginal tax revenue will be estimated.

Identifying the Number of Vacant Properties within 500 Feet of Homes in Toledo

In order to identify the number of vacant properties within 500 feet of residential properties, data from a survey of residential parcels in the City of Toledo, which was conducted in 2014 and 2015, was utilized. The Toledo Survey not only indicated the vacancy status of residential buildings, it also indicated the condition of residential buildings. The survey classified buildings as "hazardous," "deteriorated," "fair," "good," or "very good" condition. For the purposes here, vacant properties classified in the survey as "deteriorated" or "hazardous" are considered "distressed, vacant" homes. Table 3.2 provides the distribution of occupied and vacant residential properties are in a distressed condition, almost 40% of vacant properties are distressed, with another 30% are in fair condition, compared to just over 7% of occupied properties.

²² The tax-appraised values of homes may be higher or lower than the homes' true market values and are generated on an annual basis. These values are generally created with the use of a computerized automated mass appraisal (CAMA) systems utilized by county tax assessors.



The focus in this analysis is on the spillover effects of vacant buildings in distressed condition. The survey classifies 1,950 vacant residential buildings as deteriorated or hazardous, and so they are considered "distressed, vacant properties.

CONDITION	OCCUPIED	%	VACANT	%	UNKNOWN	%	TOTAL
Very-Good	61,950	69.3%	566	11.5%	505	48.1%	63,021
Good	20,437	22.8%	949	19.3%	354	33.7%	21,740
Fair	6,341	7.1%	1,452	29.5%	155	14.8%	7,948
Deteriorated	612	0.7%	1,190	24.2%	27	2.6%	1,829
Hazardous	96	0.1%	760	15.4%	8	0.8%	864
Unknown	5	0.0%	6	0.1%		0.0%	11
TOTAL	89,441	100.0%	4,923	100.0%	1,049	100.0%	95,413

Table 3.2. Toledo Survey Data on Residential Building Condition by Occupancy

The locations of the distressed, vacant residential properties were plotted using their parcel numbers and a parcel map shape file for the City of Toledo. Using ArcGIS, 500-foot buffers around each of the distressed vacant properties were calculated. These buffers are plotted against a parcel map for the City in Figure 3.2. Below this figure, Figure 3.3 plots residential property values throughout the City. By overlaying the buffers around the distressed, vacant residential properties on top of the parcel data, which includes property values, we can identify how many distressed properties lie within 500 feet of each residential property in the City, and then estimate negative impacts on those property values.

By using a spatial join in ArcGIS, the 500-foot buffers were intersected with all residential parcels in the City. In this way, the number of buffers touching each residential property in the City of Toledo was calculated. This calculation provided the number of distressed vacant properties located within 500 feet of each home. Due to the spatial clustering of these properties, these numbers vary significantly, as might be expected.





Figure 3.2. 500-foot Buffers around Distressed, Vacant Residential Buildings

Figure 3.3. Appraised Value of Residential Properties in Toledo, 2014-2015





Table 3.3 shows the distribution of residential properties according to the number of distressed, vacant buildings that are within 500 feet. Almost two out of three (65%) properties have no distressed vacant properties within 500 feet. Another 20% have between 1 and 4 distressed vacant properties within a 500-foot radius. Finally, 15.5% of residential properties have 5 or more distressed, vacant properties within 500 feet.

Table 3.3. Residential Pr	operties by Number	r of Distressed \	/ acant Residential	Buildings
within 500 Feet, 2014-2	015			-

NUMBER OF DISTRESSED, VACANT RESIDENTIAL PROPERTIES WITHIN 500 FT	NUMBER OF RESIDENTIAL PROPERTIES	PERCENT OF RESIDENTIAL PROPERTIES
0	61,683	64.6%
1	6,615	6.9%
2	4,577	4.8%
3	4,154	4.4%
4	3,656	3.8%
5+	14,752	15.5%
TOTAL	95,437	100.0%

The literature reviewed for this study suggests that the spillover effects of additional nearby vacant properties on property values are not entirely linear. In particular, as more and more distressed vacant properties exist near a home, the negative effects on home value will eventually decline and reach a limit. For example, if having one distressed vacant property within 500 feet has a -3% effect on a home's value, then having three such properties nearby may accumulate to a -9% cumulative effect. However, it is less likely that going from 3 nearby distressed vacant homes to 9 nearby distressed vacant homes will increase the effect by another threefold, from - 9% to -27%. While the research on such nonlinear effects is somewhat scarce, some work in the foreclosure literature suggests that these effects will tend to hit a plateau after reaching somewhere around 10 distressed, vacant homes. To be conservative, we limit the negative effects of distressed vacant properties to that of 5 vacant homes. For example, if the effect of having one distressed vacant home within 500 feet is -3%, then the effect of having 5 is estimated as -15%, but the effect of having 6 is also estimated at -15%, as is the effect of having 10 vacant homes within 500 feet.²³

²³ In a previous study (Immergluck, 2015), the spillover costs were re-estimated assuming that the limit of the effects is not reached until the number of nearby vacancies reaches 10, instead of 5. The size of the cumulative spillover effects was not substantially larger because homes surrounded by higher levels of vacant properties tend to have relatively low values, so that the cumulative dollar effect of increasing the limit on nearby distressed properties from 5 to 10 was not very large.



Summing Up the Spillover Costs on Residential Values in Toledo Due to Distressed, Vacant Residential Properties

In order to estimate the cumulative impact of distressed vacant residential properties on housing values, the magnitude of the spillover effect (expressed as a percent of value per vacant home within 500 feet, up to a limit of 5 vacant homes) must first be identified. To do this, we draw on the results of the meta-analysis summarized in Table 3.1 and Figure 3.1 above.

Table 3.4. Estimates of Cumulative Spillover Effects on Residential Property Values andProperty Taxes Due to Distressed Vacant Residential Buildings

ASSUMPTIONS	EFFECT OF DISTRESSED VACANT PROPERTIES WITHIN 500 FEET ON RESIDENTIAL VALUES (1)	CUMULATIVE EFFECT OF DISTRESSED VACANT PROPERTIES ON SF VALUES	AVERAGE EFFECT PER DISTRESSED VACANT PROPERTY	POTENTIAL CUMULATIVE IMPACT ON ANNUAL PROPERTY TAX REVENUE (2)
Best				
Reasonable				
Estimate	-3.15% per vacant bldg	- \$98,721,606	- \$50,627	-\$2,678,295
Very				
Conservative	-1.12% per vacant bldg	- \$35,101,016	- \$18,000	-\$952,283

(1) All estimates assume no further effect when count of properties within 500 feet exceed 5. (Sensitivity analysis with limit of 10 showed only marginally larger total effects.)

(2) Estimated as -3.15%, or -1.12% X 35% (assessment rate) X decline in value X 0.077513644 (mileage rate); ignores exemption effects that may result in smaller or zero on taxes on some low-value properties. Tax rate from <u>https://www.co.lucas.oh.us/DocumentCenter/View/56883</u>.

The first row in Table 3.4 presents, based on the literature review above, the best, reasonable estimate of cumulative spillover costs on residential property values due to distressed vacant properties. This effect is -3.15% for each distressed vacant property within 500 feet, which is the average of the results from the studies estimating the effects of tax-delinquent properties. Again, we have only considered the effects of vacant properties classified in the Toledo Survey as "hazardous" or "deteriorated" so it is appropriate to use the median for the spillover coefficients from studies looking at more deleterious properties, rather than simply vacant ones.

The second row in Table 3.4 presents a much more conservative set of assumptions, which lead to smaller spillover cost estimates. This row assumes that distressed vacant properties have only a -1.12% effect on home values within 500 feet. This magnitude is the average from the studies in Table 3.1 that estimate the impact of vacant (but not tax-delinquent) properties on home values.



The best reasonable assumption results in estimated cumulative spillover costs of distressed, vacant residential properties on residential values in the City of Toledo of \$98,721,606. Such a loss in value, in turn, could lead to a decline in \$2.68 million in annual property tax revenues, although this effect may be mitigated in those cases where some very low values may not exceed exemption levels. On a per-property basis, this estimate means that each of the 1,950 distressed vacant properties reduces the aggregate value of homes within 500 feet by a total of \$50,627.

A more conservative assumption is used in the second row of Table 3.4. Here, the average of the findings on vacant (as opposed to tax-delinquent) properties is used, with the spillover estimate of -1.12% per distressed vacancy. Under this assumption, the cumulative effect on home values is -\$35,101,016, with an effect of -\$18,000 per distressed, vacant property, and a cumulative estimated effect on annual property taxes of -\$952,000.

The results of this analysis, summarized in Table 3.4, indicate that the total costs of distressed vacant properties in the City of Toledo are likely to be approximately \$98 million in lost property values. This translates into lost property tax revenues on the order of \$2.68 million annually. At an average property value cost ranging from \$50,000 per troubled property, a benefit-cost perspective suggests that based on these costs alone, substantial investment in remediation or demolition of such properties may be warranted. Combining these costs with the substantial cost savings that might be obtained by reducing the service and tax delinquency costs detailed in Sections 1 and 2, the argument for public investment in remediating or demolishing distressed vacant homes becomes even stronger.

A Caveat: Mitigating Any Negative Effects of Poorly Maintained Vacant Lots Following Demolition

A number of recent studies (Griswold and Norris, 2005; Griswold et al, 2014; Whitaker and Fitzpatrick, 2014) have found that demolition programs in Flint, Michigan, and Cleveland, Ohio, have resulted in significant reductions in spillover costs on local property values. Yet the experience of some cities suggests that if the vacant lots resulting from demolition are not addressed adequately, they can create their own set of spillover costs. The City of Philadelphia, in particular, after engaging in major demolition campaigns in earlier years, has found that large numbers of poorly maintained vacant lots create their own set of problems for communities (Econsult and University of Pennsylvania, 2010). Moreover, recent research on greening programs aimed at greening and maintaining these lots show large positive impacts on neighboring property values (Buchianeri, G., K. Gillen, and S. Wachter, 2012). These effects are due both to the elimination of the negative impacts on the neighborhood of a neglected vacant lot, but also due to the positive amenities provided by well-maintained greenspace.



Therefore, if the City of Toledo increases its efforts towards demolishing distressed, vacant homes, it should plan for greening and maintenance activities and costs going forward. Otherwise, the investment in demolition may not result in a substantial rate of return in terms of increased property values and tax revenues.

CONCLUSION: AGGREGATING THE SERVICE, TAX DELINQUENCY, AND SPILLOVER COSTS DUE TO VACANT PROPERTIES IN TOLEDO

The purpose of this study was to estimate the costs imposed by vacant properties in the City of Toledo on the public and on the City of Toledo. Section 1 gathered and analyzed data on costs to the City in terms of service costs in dealing with vacant properties through code enforcement, public safety, and fire protection services. Section 2 estimated the annual lost revenue due to long-term tax delinquency on vacant land and vacant buildings. Section 3 identified the spillover costs of distressed vacant residential properties on residential values in the City, and on associated property tax revenues.

It is important to point out that costs identified in this study are by no means comprehensive. Some likely costs are not included in the study. For example, because there is little-to-no research on the effects of vacant properties on commercial property values, these effects are not captured here. Moreover, whenever we encountered uncertainty of costs, we made an effort to be conservative. Therefore, the findings here should be viewed as a lower bound on the costs imposed by vacant properties on the City, and on local government.

We described this lower bound on the costs of vacant properties across Section 1 and 2 of this study in Table C.1. We conservatively estimate the quantifiable, known *annual* costs associated with vacant properties in the City at \$9.2 million, with \$5.8 million of this associated with vacant buildings, and the remainder associated with vacant land. These figures do not include some unmeasured costs, such as injuries from fires and lost tax revenue from decreased commercial building values.

Beyond annual costs, our best, reasonable estimate of one-time decline in value of residential property values is \$98.7 million. We base this estimate on the studies that appear most appropriate for approximating the impact of physically distressed and disinvested properties on nearby home values. For the purposes of providing a minimum estimate of the magnitude of



these impacts, Table C.1 also provides a much more conservative estimate, based on studies that examine the impact of vacant – and not just distressed or tax-delinquent properties – on nearby property values. While these costs accrue mostly to property owners (including homeowners) and not directly to local government (other than the property tax portion), they should be considered as part of the overall costs of vacancy and blight.

	ANNUAL COST ESTIMATES			ONE-TIME PROPERTY VALUE LOSS	
	Vacant Land	Vacant Buildings	Total Vacant Properties	Best Reasonable	Very Conservative
Service Costs					
Code Enforcement (Inspections/Enforcement)	\$134,224	\$858,460	\$992,683		
Beautification Action Team (BAT)	\$489,653	\$306,033	\$795,686		
Police Department Dispatch Costs	\$293,185	\$319,335	\$612,520		
Fire Department Dispatch Costs	\$925,502	\$494,097	\$1,419,599		
Tax Delinquency Costs					
Annualized, Estimated Tax Delinquency	\$1,542,259	\$1,167,642	\$2,709,901		
Spillover Costs					
One-Time Loss in Residential Property Values				\$98,721,606	\$35,101,016
Annual Decline in Property Tax Revenues	N/A	\$2.678.295	\$2,678,295		
TOTAL ESTIMATED COSTS	\$3,384,823	\$5,823,862	\$9,208,685	\$98,721,606	\$35,101,016

Table C.1. Estimated Costs Due to Distressed, Vacant Properties in the City of Toledo²⁴

²⁴ As mentioned earlier in this analysis, these costs are not comprehensive. They do not includes some service costs to the City of Toledo, including "cleaning and cutting" costs incurred by the Department of Public Works for yard maintenance or court costs (solicitor's office, public defender's office, and municipal court). Costs associated with tax delinquency and enforcement on vacant/abandoned properties are also not included.



WHAT DO THESE COSTS OF VACANCY AND ABANDONMENT MEAN FOR THE JUNCTION NEIGHBORHOOD, AND HOW MIGHT IT INFORM OPEN SPACE ACTION PLANNING MOVING FORWARD?

The staggering costs of vacancy and abandonment suggest the need to rethink current roles, operations, and responsibilities of both Toledo city departments and the Land Bank in ownership, maintenance, and reuse of vacant land, particularly in neighborhoods like the Junction where a high concentration of tax-delinquent, privately owned vacant lots presents a steep barrier to stabilization and revitalization efforts.

Based on preliminary analysis carried out for the Junction's Open Space Action Plan, of the 4,700 properties in the Junction, 1,543 were identified and mapped as current or pending vacant land—which is nearly one of every three properties in the Junction—that could potentially come under common ownership of a single public entity. Right now, there are multiple different ownership and maintenance frameworks running side-by-side throughout the city. With a focus just on the Junction, seasonal maintenance of vacant lots looks like this:

- 643 privately owned, chronically tax-delinquent (three years or more) lots are being cared for by the City's Beautification Action Team, as time and resources permit.
- 300 City-owned lots are being mowed once a month by either a local private landscaping firm or a faith-based community group pursuant to a contract with the City.
- 200 Land Bank-owned lots (including all current Hardest Hit Fund sites) are being mowed once a month by a local private landscaping firm pursuant to a contract with the Land Bank.



Consider a half-block stretch of properties between Blum Street and Nebraska Avenue in the Junction neighborhood (Figure E.1), which has a number of contiguous properties that will be maintained in different ways this summer. BAT will likely handle clean-ups and mows on the brown parcels (privately owned, tax-delinquent for three years or more), a City-hired contractor will mow the grass on the yellow parcels (City owned), and a Land Bank-hired contractor will mow the grass on the green parcels (Land Bank owned).



Figure E.1. Block in the Junction

All of these parcels could be brought under one public owner, allowing for a more streamlined approach to maintenance. Streamlined doesn't mean free, of course, and the sunk costs of vacant land maintenance will always present a resource challenge to the partners in Toledo. In addition to streamlining maintenance, moving all parcels under common ownership will also allow residents and partners to more easily and thoughtfully experiment with temporary, cost-effective treatments and other reuse concepts. Rather than finding ways to serve as better de facto property managers for abandoned privately owned lots, the City may want to consider how a coordinated framework for ownership and maintenance in partnership with the Land Bank can reduce service costs and open up opportunities to re-imagine vacant land consistent with resident priorities.

To be sure, the Toledo Division of Code Enforcement has implemented a number of creative and impressive measures to more effectively address nuisances on privately owned lots and complete routine maintenance on City owned lots—all of which are discussed in more detail in the Open Space Action Plan for the Junction neighborhood. However, the Land Bank has already secured \$11.5 million in Hardest Hit Fund (HHF) demolition awards, and the recent news of another significant demolition award under the federal program's fifth and final round of funding is expected to result in approximately 1,500 to 1,800 new vacant lots when all awards are fully expended—double the City's existing inventory of vacant lots.

What happens when this large inventory of HHF vacant lots is transferred to the City from the Land Bank in batches, starting with 2017, pursuant to an existing agreement between both parties? How will the City fill a seemingly impossible resource gap, at a time of financial pressures so severe that there are no funds to do even basic road maintenance?²⁵ Or should the agreement on the transfer of all HHF lots from the Land Bank to the City be reconsidered?

²⁵ Due to the recurring budget challenges stemming largely from cuts in revenue sharing from the state, Toledo has had to transfer about \$8 to 10 million a year (since 2010) from its Capital Improvement Program (CIP) Fund to fill the general fund budget gap. The City sought voters' approval for a .25% increase in the local income tax, which would have closed the general fund gap, paid off CIP debt, and generated approximately \$16 million a year for dedicated road repairs (income taxes currently account for about 66% of all general fund revenues, according to the City Finance Department). The ballot proposal was



Toledo is not unique nor alone in trying to grapple with these questions. Many communities, particularly those that have benefited from HHF demolition grants, are currently struggling with the maintenance challenges and reuse decisions of large inventories of vacant land in weak housing markets. The questions that consistently emerge can be grouped into three key themes:

- 1. Ownership. Who will own the land? Who is best positioned to access and assemble abandoned, unimproved land? Who is best positioned to efficiently dispose of vacant land pursuant to resident priorities and community goals?
- 2. Maintenance. Who will maintain the land, and who has the resources to do so effectively? Who can most effectively pilot, test, and improve maintenance practices and strategies? How practical is it to expect residents to maintain lots voluntarily, and to what degree?
- **3.** Funding Reuse Projects. How will community-driven reuse projects be funded? How will ongoing maintenance of these interventions be funded to ensure the repurposed lots remain neighborhood assets, or in the case of green stormwater infrastructure, continue to perform?

The Toledo Cost of Blight Study and the Junction Open Space Action Plan were not intended to directly answer these questions. Instead, the study and the action plan were meant to help set the parameters for discussion, share insights, and provide enough inspiring possibilities so that the Land Bank, City, Junction Coalition partners, and residents might reach consensus on a coordinated but flexible path forward regarding the ownership, maintenance and reuse of a large and growing inventory of vacant land.

As this study has shown, the costs of vacancy and abandonment in Toledo are staggering. However, the greatest costs come from doing nothing differently. Fortunately, there exists a remarkable coalition of thoughtful decision-makers, compassionate residents, and engaged stakeholders built around common values of equity and justice, a common commitment to change, and a common belief that vacancy can once again become vibrancy for the Junction neighborhood and beyond. We hope that this citywide Cost of Blight Study and the Junction Open Space Action Plan for can help inform this coalition's work in the years to come in building a healthier, safer, more vibrant Toledo for all.

defeated March 15, 2016, leaving the City's structural budget deficit unresolved and ensuring another year of no street maintenance in Toledo.



CITED AND RELEVANT LITERATURE

Accordino, J. and Johnson, G. 2000. Addressing the Vacant and Abandoned Property Problem. *Journal of Urban Affairs* 22: 301–315.

Ahrens, M. 2009. Vacant Building Fires. National Fire Protection Association.

Alm, J., Z. Hawley, J. Lee, and J. Miller. Property Tax Delinquency and its Spillover Benefits on Nearby Property Values (October 7, 2014). Available at SSRN: http://ssrn.com/abstract=2507049.

TPD Solutions. 2013. The Strategic Community Investment Report: A Report Presented to the City of Atlanta Department of Planning and Community Development Office of Housing. November.

Branas, C., D. Rubin, and W. Guo. Vacant Properties and Violence in Neighborhoods. International Scholarly Research Network: Public Health 2012: 5.

Buchianeri, G., K. Gillen, and S. Wachter. 2012. Valuing the Conversion of Urban Greenspace. Pennsylvania Horticultural Society.

Community Research Partners and Rebuild Ohio. \$60 Million and Counting: The Cost of Vacant and Abandoned Properties to Eight Ohio Cities. Rebuild Ohio.

Cui, L. 2010. Foreclosure, Vacancy and Crime. November 1. Available at SSRN: http://ssrn.com/abstract=1773706.



Delta Development Group. 2013. Financial Impact of Blight on the Tri-COG Communities. September. Available at http://svcog.org/wp-content/uploads/2014/08/BlightImpact FullReport.pdf.

Econsult and University of Pennsylvania. 2010. Vacant Land Management in Philadelphia.

Gerardi, K., E. Rosenblatt, P. Willen, and V. Yao, 2012. Foreclosure Externalities: Some New Evidence. Public Policy Discussion Papers Np. 12-5. Federal Reserve Bank of Boston. July 25.

Griswold, N., B. Calnin, M. Schramm, L. Anselin, and P. Boehnlein. 2014. Case Western University. February.

Griswold, N. and P. Norris. 2007. Economic Impacts of Residential Property Abandonment and the Genesee County Land Bank in Flint, Michigan. Report #2007-05. The MSU Land Policy Institute.

Han, H. 2014. The Impact of Abandoned Properties on Nearby Property Values. *Housing Policy Debate* 24: 311-334.

Heckert, M. and J. Mennis. 2012. The Economic Impact of Greening Urban Vacant Land. A Spatial Difference in difference analysis. *Environment and Planning A* 44: 3010-3027.

Immergluck, D. 2015. The Cost of Vacant and Blighted Properties in Atlanta:

A Conservative Analysis of Service and Spillover Costs. September 1.

Mallach, Alan. 2006. *Bringing Buildings Back: From Abandoned Properties to Community Assets.* Montclair, NJ: National Housing Institute.



Mikelbank, B. 2008. Spatial Analysis of the Impact of Vacant, Abandoned and Foreclosed Properties. Federal Reserve Bank of Cleveland.

Sternlieb, G. and Indik, B. 1969. Housing Vacancy Analysis. Land Economics: 45: 117–121.

The Reinvestment Fund. 2014. Strategic Property Code Enforcement and Its Impacts on Surrounding Markets. August.

Whitaker, S. and T. Fitzpatrick. 2014. Land Bank 2.0: An Empirical Evaluation. Working Paper 12-30R. Federal Reserve Bank of Cleveland.

Whitaker, S. and T. Fitzpatrick. 2013. Deconstructing Distressed Property Spillovers: The Effects of Vacant, Tax-Delinquent, and Foreclosed Properties in Housing Submarkets. *Journal of Housing Economics* 22:79-91.

Winthrop, B. and R. Herr. 2009. Determining the Cost of Vacancies in Baltimore. *Government Finance Review*. June.



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