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The Effects of Foreclosure-driven Vacant Properties on Crime in Trenton

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Abstract

This paper explores the causal impact of foreclosure-driven vacant properties on criminal activity in Trenton, NJ, a city with high levels of both crime and property vacancies. We use spatial and temporal crime and foreclosure data from 2012 to 2014 to study the impact of urban vacancies on crime within the particular block the vacancy is located in. Results from the regression analysis show a significant relationship between incidences of robberies and foreclosure-driven vacancies providing strong evidence that vacant properties in Trenton drive up crime via increases in, specifically, violent crime.

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I. Introduction

Urban blight, particularly the kind which takes root within areas with high concentrations of vacant property, marks numerous neighborhoods across the country mainly in cities that share the common economic history elements of thriving manufacturing and industrial sectors. As the domestic economy increasingly moves towards establishing a strong service sector, the last five decades have brought about significant plant closures resulting in job loss and steep population reductions. As a result, urban neighborhoods in these cities have declined in both an economic and social sense, leaving once active residential and commercial properties abandoned. Moreover, the national spike in foreclosures following the burst of the housing bubble from 2008 to 2009 compounded the problem of vacancy rates in areas already struggling to revivify neighborhoods and embark on a trajectory of economic success.¹ Vacant and abandoned properties are a topic of concern because they impose many and varied costs upon communities: denying local governments of much needed tax revenues, eroding the value of nearby homes, posing health and safety risks and complicating already challenging neighborhood revitalization efforts.

According to Trenton city data compiled by Isles (Figure 1)—a local non-profit organization operating in community development—21 percent of all properties (or 1 in 5 properties) in the city are vacant altogether. In total, that amounts to 3,566 vacant buildings and 2,397 vacant lots in which 9 percent of vacant buildings and 38% of vacant lots are municipally

¹ *Vacant and Abandoned Properties: Turning Liabilities Into Assets*. U.S. Department of Housing and Urban Development. Secretary Julián Castro. 2014.

owned.² A 2015 report released by the Trenton Neighborhood Restoration Campaign further breaks down these statistics at the residential property level: since 2006, foreclosures have been filed on roughly 1 out of every 5 homes in Trenton and the overall housing vacancy level in Trenton has remained consistently high, anywhere from 13 percent to 15 percent.³ These statistics indicate that vacancies caused by home foreclosures make up a major component of total vacant property in Trenton. Vacancy-induced blight such as this represents not only lost economic opportunity, but also the contraction of the city's tax base and municipal budget. It is precisely this situation of local economic despair which gave rise to the city's iconic slogan: "Trenton makes, the world takes". In this area, physical and social disorder as well as crime rates are more than double those of the New Jersey state averages⁴. The aforementioned 2015 Trenton Neighborhood study shows that poverty and unemployment are at 26.6 percent and 17.9 percent, respectively, whereas New Jersey state statistics are around 10% for both unemployment and crime. The existing data suggests that vacant and abandoned properties are much more than just a symptom of larger economic forces at work in declining communities such as Trenton; their association with crime and rising municipal costs make them a city-wide issue to be promptly addressed in order to advance efforts to reverse recent economic downturn and disinvestment.

The existing literature approaches the phenomenon of urban blight and crime with empirical research from both sociological and economic perspectives. Urban economists—who inform policies designed to mitigate elevated urban crime rates—are particularly interested in the

² *Vacant Property Database*. The Trenton Neighborhood Restoration Campaign, Housing and Community Development Network of New Jersey. 2014-2015.

³ *Laying the Foundation for Strong Neighborhoods in Trenton, NJ*. New Jersey Community Capital. Pg. 17, 23. 2015.

⁴ *Trenton Crime Index*, USA.com (based on FBI & New Jersey State Police Crime Reports from 2005-2014).

relationship between neighborhood physical environment and social disorder which manifests through violent or property crime. According to the criminological “broken windows” theory⁵, derelict buildings and vacant lots, often with minimal police/security surveillance surrounding them, become a refuge for criminal and illegal activities in low-income, urban settings. Indeed, the evidence suggests that properties which remain vacant for prolonged periods lower the perceived cost of committing crime and provide safe havens for criminal activity such as theft, drug sales, and vandalism⁶. The main takeaway from these scholarly analyses is that blight is more than a mere eyesore; it hinders urban development by acting as a catchall for crime, vagrancy and litter which continue to proliferate and deteriorate property values as well as the vitality of communities.

II. Research Question & Contribution

The media, government officials and researchers typically presume that foreclosures are necessarily associated with crime incidence. The purpose of this paper is to test the extant theory and empirical research in the social ecology of crime which posits that certain neighborhood ecological and structural factors, notably concentrated poverty, lead to high crime rates. Therefore, the research question I pose is: *do foreclosure-driven property vacancies in Trenton neighborhoods directly promote crime?* I will attempt to answer this question by estimating the causal relationship between changes in foreclosure-related vacant properties and increased neighborhood crime. My work will expand on Gould, Lacoé and Sharygin’s findings about the effect on crime from vacant residential properties—a distinguishing feature of my analysis is that it captures all properties which pay property tax so my results will be able to account for more

⁵ J. Q. Wilson and G. L. Kelling, “The police and neighborhood safety: broken windows,” *The Atlantic Monthly*

⁶ John Accordini and Gary T. Johnson. 2000. “Addressing the Vacant and Abandoned Property Problem,” *Journal of Urban Affairs*.

than just residential properties in the geographic region of interest. A major innovation in my study is that I will be able to analyze the impact of foreclosures on several different categories of crime including homicide, robbery, burglary and assault—understanding which types of crimes have stronger responses to neighborhood conditions could be beneficial for determining policy implications of my findings. Because both maintenance and demolition of vacant properties present huge financial burdens to city governments, this research will help inform how public policy should address the issue of vacant property in Trenton.

My hypothesis is that the causal relationship in this particular study between crime and foreclosures will be statistically significant because both crime rates and property vacancy rates in the city of Trenton at 36.12% and 21%, respectively, are higher than the New Jersey state average.⁷ On a crime index devised by Neighborhood Scout, Trenton scores a 15 out of 100 for overall safety with 11.21% rates of violent crimes in comparison to the 2.6% state average.⁸ Trenton makes for an interesting case study because it is one of many U.S. cities facing consistent economic decline since the prosperous industry era of iron, steel and pottery production in the 1800s. It will be worthwhile to compare the results of this study to similar studies conducted in major urban cities such as Detroit, Chicago and New York City to help identify the urban economic policies and legislative conditions under which this phenomenon has prevailed over the last fifty years.

III. Literature Review

There are a number of studies published that relate foreclosures to the level of crime under a defined geographic scope. Whereas some studies establish broader parameters with a

⁷ *Crime Rates for Trenton, NJ*. <http://www.neighborhoodscout.com/nj/trenton/crime/>

⁸ *Crime Rates for Trenton, NJ*.

focus on the relationship between crime and foreclosures on a national level, others examine this relationship using point-specific, longitudinal data within a specific urban area.

The Connection between Foreclosures & Crime

In a paper entitled “Fewer Vacants, Fewer Crimes?” researchers tested the idea that signs of physical disorder in Cleveland, Chicago and Denver invite social disorder, namely crime. The results of the study suggested that the rehabilitation or demolition of vacant properties significantly decreased theft and burglary incidences.⁹ In light of increasing concerns about the effects of foreclosed properties on their surrounding neighborhoods, this research is particularly valuable because it highlights a clear association between criminal activity and idle property by studying changes in crime in response to reformed vacant spaces. A similar study by Gould, Lacoë and Sharygin which used location-specific analysis techniques of foreclosures and other property data in New York City corroborated the previous paper’s finding that criminal activity is influenced by the concentration of foreclosures in one particular area. Most importantly, this study highlights the fact that the relationship between foreclosure and types of crime is strongest in regions of relatively high crimes and concentrated foreclosure activity.¹⁰ For the purposes of my research paper, this is a positive indicator that I will find a significant line of causation between my independent and dependent variable given that Trenton is both a high crime and high urban vacancy area.

⁹ Spader, Jonathan, Jenny Schuetz, and Alvaro Cortes (2015). “Fewer Vacants, Fewer Crimes? Impacts of Neighborhood Revitalization Policies on Crime,” Finance and Economics Discussion Series 2015-088.

¹⁰ Ingrid Gould Ellen, Johanna Lacoë, Claudia Ayanna Sharygin, Do foreclosures cause crime?, Journal of Urban Economics, Volume 74, March 2013, Pages 59-70.

Past Research: Methods & Modernized Approaches to Empirical Analyses

The key difficulties with drawing causal conclusions from empirical studies of the foreclosures-crime relationship are endogeneity and well as unobserved heterogeneity in the model—these two barriers keep researchers from being able to identify a clear line of causality between the two separate urban phenomena of interest. Fortunately, past research studies have employed increasingly intricate statistical models to overcome such obstacles of analysis. The first study which attempted to tackle this problem was conducted in 2006 and implemented a multivariate quantitative analysis to examine the cross-sectional relationship between the annual rate of foreclosed properties listed and crime activity in Chicago while controlling for key socioeconomic and demographic characteristics of the population which could also be associated with crime¹¹. This study found that higher foreclosure levels do contribute to higher levels of violent crime although the measured effects on property crime are not statistically significant according to the authors.

A widely cited country-level study covering the period from 2002 to 2007 by Goodstein & Lee identified the mechanism by which increased foreclosures sparked increases in neighborhood crime as the diminished informal policing by residents and overall neighborhood collective efficacy. Although the authors found a robust association between foreclosures and burglary¹², no strong positive associations could be drawn for other types of crime such as larceny, assault and robbery. This is likely due to the large geographic scale under which the study was conducted which fails to capture small-scale effects on crime that can only be found at

¹¹ Immergluck, D. & Smith, G. (2006b) The impact of single-family mortgage foreclosures on neighbourhood crime, *Housing Studies*, 21(6)

¹² Goodstein, R. & Lee, Y. (2010). Do Foreclosures Increase Crime? (Washington, DC: Federal Deposit Insurance Corp. Center for Financial Research Working Paper 2010-05).

a more narrowly focused spatial level. A related research study at Florida State University entitled “The Contemporary Foreclosure Crisis and US crime rates” did comprehensive neighborhood-level analysis of the influence of property foreclosure on crime patterns using multiplicative models. This work differs from the previous one primarily because its multivariate regression models account for spatial autocorrelation of crime rates and other endogeneity such as high crime activity around recently foreclosed properties relative to more mature foreclosed properties that could lead to faulty conclusions. As a result of the meticulous statistical modeling, the results of this particular study were far more wide-reaching and the relationship between key variables suggested that crime rates nationwide spiked as foreclosure rates rose from historically average levels as a result of the 2008 housing bubble and financial crisis.¹³

Because of the clear problem of endogeneity and lack of spatial-level analysis that arises from analyzing the relationship between vacant property and neighborhood crime activity at an aggregated level, a review of studies focused in a singular city prove more useful for my research purposes and interest. We have seen that much scholarly work has been done towards establishing a connection between foreclosure and crime, however, one 2015 paper by Cui and Walsh stands out because the researchers adopt a highly developed and modern econometric approach towards identifying the operating mechanisms which drive this relationship. The authors—employing geo-coding of point-data to match proximate foreclosures and crimes from 2006 to 2009—examine the impact of residential foreclosures and vacancies on violent and property crime in Pittsburgh, Pennsylvania. They found that foreclosure as a whole had little

¹³ Ashley N. Arnio, Eric P. Baumer, Kevin T. Wolff, The contemporary foreclosure crisis and US crime rates, *Social Science Research*, Volume 41, Issue 6, November 2012, Pages 1598-1614.

impact on crime, however, foreclosure-driven property vacancies have a significant impact on crime in the nearby neighborhoods specifically on violent crime rather than property crime. In this study, the measured impact of residential foreclosures and vacancies on violent and property crime revealed that violent crimes within 250 feet of foreclosed homes increase by roughly 19% once the foreclosed home becomes vacant.¹⁴ This particular finding has the most impact upon my research study as I will only be using vacant property which arose from foreclosures in my dataset in an attempt to garner greater empirical support for the claims of Cui and Walsh. In addition to their innovative methods of statistical analyses, the authors of this paper are the first to provide evidence of the impact of vacancy length on crime by concluding that longer terms of vacancy have a stronger effect on crime than do shorter terms of vacancy.

A 2012 study by Williams *et al.* also took into account the time-sensitive nature of the foreclosure-crime relationship and advanced the existing scholarship on the subject by utilizing Granger causality tests and multilevel growth modeling with data from Chicago neighborhoods. This paper, which was published before the urban economics contributions by Cui and Walsh in 2015, found that completed foreclosure temporally lead property crime, however, this was not the case vice versa¹⁵. In other words, an increase in the number of completed foreclosures both increases the level of property crime and slows its decline in subsequent years. Next, Katz *et al.* assessed temporal lags in the impact of foreclosure on neighborhood levels of crime using longitudinal data from Glendale, Arizona. The model in this paper revealed that for every additional foreclosure there was a cumulative impact of 12 more property crime and 3 more

¹⁴ Lin Cui, Randall Walsh. *Foreclosure, vacancy and crime*. Journal of Urban Economics, Volume 87, May 2015, Pages 72–84

¹⁵ George Galster, Nandita Verma and Sonya Williams. "Home Foreclosures and Neighborhood Crime Dynamics". Housing Studies, 2014.

violent crime (per thousand population).¹⁶ The authors concluded that the time period for which crime increased considerably in response to a newly foreclosed home in the vicinity was 4 months for drug crimes and 3 months for other categories. In sum, the literature approaches the relationship between foreclosure and crime using diverse and increasingly complex econometric methods from which I will pull techniques in the analysis of the data I have compiled on the city of Trenton, New Jersey.

IV. Summary of Data & Model Determination

The state of New Jersey follows a judicial foreclosure process whereby a borrower's default on mortgage would require the lender to go to court in order to repossess the property in question.¹⁷ The New Jersey Foreclosure Fairness Act, enacted in 2009, was implemented for greater uniformity in procedural requirements for the conduct of all foreclosures of residential real estate property within New Jersey. Thirty days prior to filing a complaint in foreclosure, the mortgage lender must send the homeowner a notice of intention to foreclose also known as a "grace period". If no action is taken to remedy the mortgage default, the lender files a formal complaint, known as a *lis pendens*, with the Office of Foreclosure which is a part of the Superior Court of New Jersey. If the borrower does not respond to this complaint within 35 days, the Court reserves the right to make a ruling against the borrower in which case a sale date/public auction of the property will be scheduled. In some cases, bank foreclosures can become government foreclosures if the loan is backed by a government agency such as the Department of Housing and Urban Development (HUD) or the Department of Veterans Affairs (VA). In such a situation, the

¹⁶ Katz, C., Wallace, D. & Hedburg, E. C. (2011) A longitudinal assessment of the impact of foreclosure on neighborhood crime, *Journal of Research in Crime and Delinquency*.

¹⁷ New Jersey (State). Legislature. Assembly. *New Jersey Foreclosure Fairness Act*. §§1-3,6 - C.2A:50-69 to 2A:50-72 §2 - Note P.L. 2009, CHAPTER 296, approved January 17, 2010 Assembly, No. 4063 (Third Reprint)

government agency would be responsible for selling the property which formally becomes known as an REO (real-estate owned).¹⁸

In the foreclosure dataset we obtain from RealtyTrac.com of foreclosed Trenton properties from 2008 to 2015, we define foreclosures as all properties listed as *Lis Pendens* or real-estate owned. Due to the nature of property data management and recordkeeping within the city of Trenton, we have no definitive way of ascertaining whether foreclosure listings coded as Notice of Sale, Notice of Trustee Sales or Notice of Default—all of which are intermediate phases in the New Jersey judicial foreclosure proceedings—are presently vacant properties or have since been occupied. Any property record types not listed as “REO” or “LIS” were excluded from the analysis because they do not reliably reflect vacancies. On the other hand, however, we expect REO properties to be vacant for relatively longer periods than others and therefore attract higher levels of criminal activity because, by definition, real-estate owned properties are the final stage in the lengthy foreclosure process. *Lis Pendens* properties, conversely, are in the beginning stage of the foreclosure process whereby the foreclosed property has not been vacant for a significant period of time. Because a rise in *Lis Pendens* notifications sent to home owners indicate an economic downturn (indeed there was an uptick in foreclosure filings during 2008 to 2009, these properties are more likely to reflect evictions, therefore, we have reason to believe these particular properties are vacancies.

We obtain shapefiles containing each crime incidence from 2010 to the present from the Trenton Police Department and Isles. Dividing total crime in the city into the following six categories: assault, theft, sexual assault, burglary, robbery and homicide, we are able to utilize

¹⁸ Realty Trac. *Real Estate Guides: Foreclosure Process*. <<http://www.realtytrac.com/real-estate-guides/foreclosure/foreclosure-process/>> Accessed: March 16, 2016.

geocoding techniques to formulate a Trenton crime map by crime type by overlaying incidences of crime over vacant property addresses (Figure 2). Although we have condensed the crime data into six simple categories for our research purposes, to get an idea of how vast the raw crime data set is, state-wide Uniform Crime Reporting techniques employed by Trenton city police recorded over 29,000 crimes over the observed time period and assigned each crime into 92 unique groupings in a designated crime by parcel file. Theft, burglary and robbery compose large components of the total crimes data and, accordingly, we expect these variables to have stronger correlations to foreclosure-driven vacancies than others. My analysis, constrained by the availability of foreclosure and vacant property data, is to be conducted on a longitudinal reported crime dataset, broken down into specific crime types, containing almost 10,000 data points from 2012 to 2014 (Table 2).

Using the same geocoding techniques we used to map crime on the foreclosure data, we were able to create a spatial image of properties distributed across Trenton in order to get a rough visualization of how particular types of vacant properties are spread across the city scape (Figure 3). Table 1, displaying descriptive statistics, indicates that almost 4,000 vacant properties are included in the analysis from 2012 to 2014 which we divide into eight quarterly time periods. We organize property data by dividing it into 1,369 geographical tax blocks—predetermined by the municipal government for property tax rate purposes— which are similar in size and act as the primary unit of analysis in this study. Summary statistics in Table 3 show that, on average, there are roughly two incidences of crime per block, per quarter in the time period of interest— this converts to about eight crimes annually per block, per quarter.

V. Empirical Framework

The final dataset used for regression analysis is generated via matched data from crime shapefiles linked with city foreclosure/vacancy data. Using the joint dataset, we spatially organize close to 10,000 crime incidences over approximately 4,000 unique foreclosed vacant property GPS coordinates. Data points are grouped into large “chunks” or blocks to allow the spatial analysis to capture up to ten types of Trenton properties as shown in Figure 3. The mapped image in Figure 3 was generated using geocoding techniques on the city’s foreclosures and vacant property data; this method broadens the scope of the study to include more than just residential properties. For example, if a given block contains no foreclosed and vacant residential properties, the model would still be able to calculate changes in crime around vacant parking lots, abandoned shops, derelict public parks or municipally owned property, etc. The analysis functions in this manner because the tax block is identified as the primary unit of analysis. The use of eight quarterly time periods in the analysis joins temporal data with spatial data. During the studied 2012 to 2014 time period, overall crime rates and foreclosure filing rates in the city have decreased significantly—due to economic and real estate readjustment—since the 2008 mortgage foreclosure crisis.

In the model formulation, we employ lagged foreclosure measures as well as block and time quarterly fixed effects as a method to control for time trends and to eliminate reverse causality. By lagging the REO and *Lis Pendens* foreclosure measures, we eliminate any confounding variables which lead to higher crime in the current quarter or elevated foreclosures in prior quarters. Block fixed effects capture baseline crime rates for each block and so the analysis focuses on changes in foreclosures and crime over time within a block. Controlling for quarter fixed effects rules out the influence of city-wide time trends in foreclosures and crime. We estimate

two regression models in order to compare which type of vacant properties, on average, have stronger effects on crime:

1. $\text{Crimes}_{bq} = \alpha_b + \alpha_q + \beta \text{REO}_{bq-1} + \varepsilon_{bq}$
2. $\text{Crimes}_{bq} = \alpha_b + \alpha_q + \gamma \text{Lis Pendens}_{bq-1} + \varepsilon_{bq}$

where α_b represents block fixed effects, α_q represents quarterly (time) fixed effects, βREO_{bq-1} measures the change in total crimes associated with an *additional* REO property appearing in the previous quarter within that block and, similarly, βY_{bq-1} measures the change in total crimes associated with an *additional* Foreclosure Notice property appearing in the previous quarter within that block. The dependent variable in the two regression models is total crimes per block, per quarter. Based on the existing literature, specifically the work by Gould et. al., we predict real-estate owned properties to have a stronger relationship with crime than *Lis Pendens* properties.

VI. Results and Analysis

Table 4 and 5 show a regression with quarter fixed effects of crime against REO foreclosure-driven vacant properties and a regression with quarter fixed effects of crime against *Lis Pendens* vacant properties, respectively. Table 4 shows a statistically significant relationship between REO vacancies and robbery at the 95% confidence level; for each additional REO vacant property in the previous quarter on a particular block, incidences of robbery at a block-by-quarter level increase by 0.0795. Relative to the mean (Table 3 shows that there are, on average, two crimes per quarter per block), the coefficient estimate on robbery can also be interpreted as: the addition of one REO property on a particular block from the previous quarter increases robberies by about 3.9 percent. With similar results to the previous time quarter fixed effects

regression, Table 5 shows a statistically significant relationship between *Lis Pendens* vacancies and robbery at the 99% confidence level. Thus, for each additional *Lis Pendens* vacant property from the previous time quarter in a specific block, incidences of robbery at a block-by-quarter level increase by 1.03 percent relative to the mean.

Regression model 1 and 2 yielded statistically significant relationships between robbery and the dependent variable, total crimes, at a block-by-quarter level, although not between the dependent variable and burglary or theft despite the high incidence rates of these particular crime types in Trenton. It is worth noting, however, that the relationship between REOs and robbery is stronger than the relationship between *Lis Pendens* and robbery—this is consistent with our prediction that elevated crime activity occurs around properties that have remained vacant for longer periods of time. Table 4 shows that for each additional REO property in the previous quarter on a given block, incidences of robbery at a block-by-quarter level increase by 0.0795 while Table 5 suggested a 0.0206 increase. Interestingly enough, as Tables 6 and 7 suggest, these coefficient estimates and their standard errors do not differ significantly when we use season and year fixed effects—in an effort to minimize the total number of variables in the regression—in lieu of quarter fixed effects. Given that the fundamental difference between robbery and burglary is that the former classifies as violent crime whereas the latter classifies as property crime, there is strong evidence to believe that foreclosure-driven vacancies are driving total crimes through an increased number of violent crimes in Trenton.

VII. Conclusion & Policy Implications

Despite the relatively shorter time frame and a smaller number of foreclosure/vacancy data points in comparison to similar analyses from the literature cited, this study was able to find a causal relationship between the variables of interest. In sum, the results reported in the previous

sections are fairly consistent with the hypotheses claimed at the outset of this research study and various other findings from related studies. These results have policy implications at both the local and state-level which suggest that policies directly aiming at foreclosure- driven vacancy reduction may need to be devised and implemented in concert with existing economic development initiatives to effectively address the prevalence of crime as well as urban blight in Trenton. At the local level, vacant properties must be more closely monitored because they essentially deprive the city government of thousands of dollars in tax revenue. In addition to monitoring and more stringent regulation of vacant properties, there must be a decision made regarding whether these abandoned properties should be destroyed or used as some sort of public good in order to deter crime (specifically robberies) and pursue economic development. Moving forward, it would be worthwhile to perform further research to see whether our results could be generalizable to New Jersey cities in similar economic situations such as Newark and Camden. If the relationship between foreclosure-driven vacancies and total crimes in these cities are similar to the relationships observed in Trenton, state-wide legislative measures may need to be considered.

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APPENDIX

Figure 1. Various Concentrations of Vacant Properties in Trenton, NJ

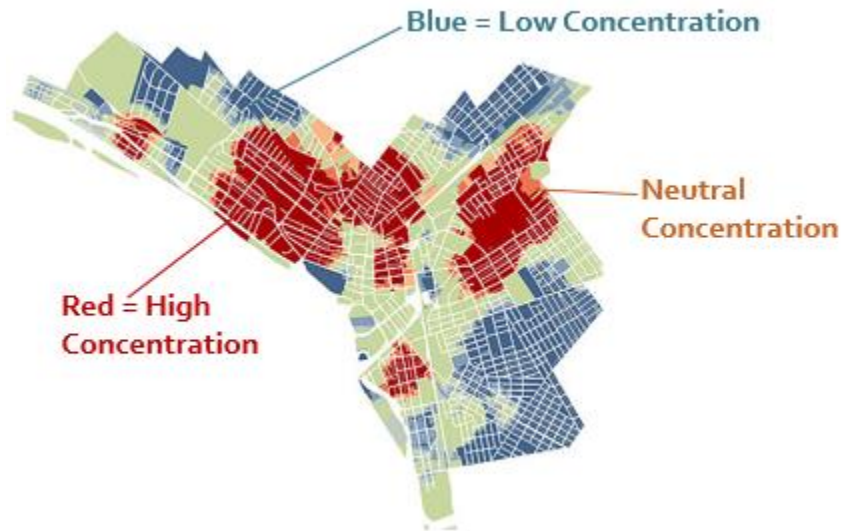
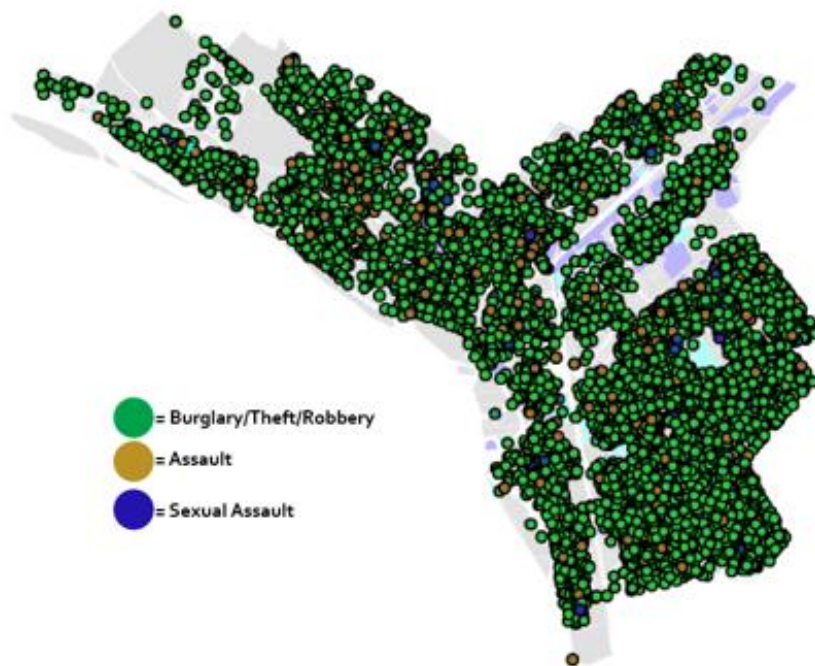


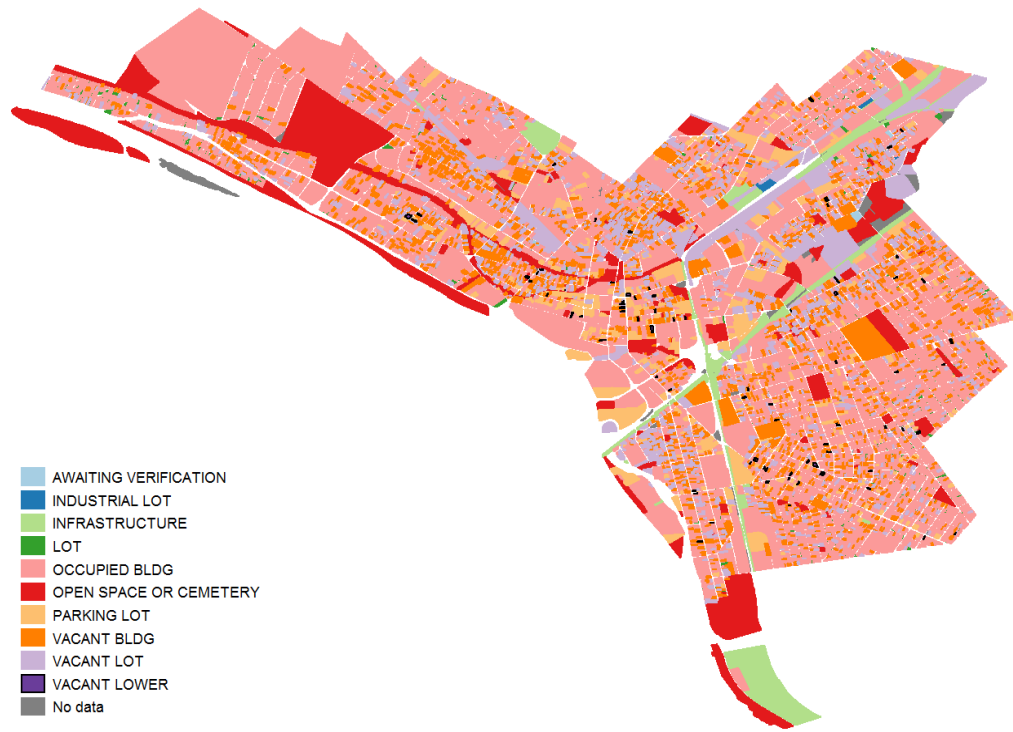
Image Courtesy of RestoringTrenton.org, Trenton Neighborhood Restoration Campaign & Isles, Inc.

Figure 2. Trenton Crime Map by Crime Type [Overlay of Crime Incidences on Vacant Properties]



Data Courtesy of Isles, Inc. and Trenton Police Department

Figure 3. Trenton Property Map [Showing Property Type Distributions]



1. Data Courtesy of Isles, Inc. and RealtyTrac.com

Table 1. Summary Statistics

Variable	Observations	Mean (per block, per quarter)	Std. Dev. (per block, per quarter)	Source
Real-estate Owned Vacant Property	847	0.020	0.145	RealtyTrac.com
Foreclosure Notice Vacant Property	3,567	0.090	0.332	RealtyTrac.com
Total Crimes	9,205	1.67	1.53	Isles, Inc. & TPD*
Burglary	1,816	0.402	0.700	"...."
Sexual Assault	20	0.003	0.060	"...."
Assault	697	0.159	0.417	"...."
Theft	3,073	0.809	0.975	"...."
Robbery	1,243	0.265	0.530	"...."
Homicide	66	0.012	0.116	"...."

* Trenton Police Department

Table 2. Categorical Breakdown of Total Crimes

Crimes	Total	Percent
Burglary	1,816	19.7%
Sexual Assault	20	0.20%
Assault	697	7.57%
Theft	3,073	33.3%
Robbery	1,243	13.50%
Homicide	66	0.71%
Total Crimes	9,205	--

Table 3. Average Incidences of Crime per Quarterly Time Period

Quarterly Time Period	Average Incidences of Crime (per quarter, per block)
July 2012	1.86
October 2012	1.95
January 2013	2.01
April 2013	2.32
July 2013	2.25
October 2013	2.22
January 2014	1.98
April 2014	2.11

Table 4. REO Vacant Properties Regression with Quarter Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	Crimes	Burglary	Sexual Assault	Assault	Theft	Robbery	Homicide
REO	-0.0175 (0.0937)	-0.0555 (0.0400)	-0.00252 (0.00466)	0.00363 (0.0201)	-0.0269 (0.0537)	0.0795*** (0.0290)	-0.00636 (0.00807)
Observations	10,952	10,952	10,952	10,952	10,952	10,952	10,952
R-squared	0.420	0.287	0.124	0.242	0.359	0.276	0.134

Notes: Standard errors clustered at the block level are reported in parentheses. Statistical significance levels of the coefficients are indicated as *** p<0.01, ** p<0.05, * p<0.1.

Table 5. *Lis Pendens* (Foreclosure Notice) Vacant Properties Regression with Quarter Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	Crimes	Burglary	Sexual Assault	Assault	Theft	Robbery	Homicide
<i>Lis Pendens</i>	0.0231 (0.0300)	-0.0115 (0.0134)	0.00122 (0.000873)	0.00139 (0.00682)	0.0132 (0.0181)	0.0206** (0.00955)	0.000845 (0.00301)
Observations	10,952	10,952	10,952	10,952	10,952	10,952	10,952
R-squared	0.420	0.287	0.124	0.242	0.359	0.275	0.134

Notes: Standard errors clustered at the block level are reported in parentheses. Statistical significance levels of the coefficients are indicated as *** p<0.01, ** p<0.05, * p<0.1.

Table 6. REO Vacant Properties Regression with Year and Season Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	Crimes	Burglary	Sexual Assault	Assault	Theft	Robbery	Homicide
REO	-0.0175 (0.0937)	-0.0565 (0.0400)	-0.00252 (0.00467)	0.00328 (0.0201)	-0.0269 (0.0537)	0.0800*** (0.0289)	-0.00636 (0.00807)
Observations	10,952	10,952	10,952	10,952	10,952	10,952	10,952
R-squared	0.420	0.288	0.124	0.242	0.359	0.276	0.134

Notes: Standard errors clustered at the block level are reported in parentheses. Statistical significance levels of the coefficients are indicated as *** p<0.01, ** p<0.05, * p<0.1.

Table 7. *Lis Pendens* (Foreclosure Notice) Vacant Properties Regression with Year and Season Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	Crimes	Burglary	Sexual Assault	Assault	Theft	Robbery	Homicide
<i>Lis Pendens</i>	0.0225 (0.0300)	-0.0115 (0.0134)	0.00121 (0.000876)	0.00132 (0.00683)	0.0128 (0.0181)	0.0204** (0.00954)	0.000832 (0.00301)
Observations	10,952	10,952	10,952	10,952	10,952	10,952	10,952
R-squared	0.420	0.287	0.124	0.242	0.359	0.276	0.134

Notes: Standard errors clustered at the block level are reported in parentheses. Statistical significance levels of the coefficients are indicated as *** p<0.01, ** p<0.05, * p<0.1.