

# **An Economic Impact Analysis of Point of Sale Ordinances in Northeastern Ohio**

**December 18, 2024**

**Final Report**

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## Executive Summary

The Akron Cleveland Association of REALTORS (ACAR) engaged the Economics Center to analyze the impacts of point-of-sale (POS) inspections on the housing market in Ohio. Point-of-sale inspections require homeowners to obtain inspections and make necessary repairs before their property can be sold or ownership can change.

Data from the U.S. Census Bureau, the Ohio Department of Education, U.S. Department of Housing and Urban Development, Ohio Counties, and RedFin were collected for this analysis. The Akron Cleveland Association of REALTORS provided a list of municipalities with POS inspections. Using this list, the Economics Center accessed information from the Ohio Department of Education to match school districts in which the POS municipalities were located to other similar school districts without POS inspections. Municipalities were then derived from the comparison school districts to obtain the names of the comparison cities without POS inspections.

The Economics Center collected transaction-level housing data for single-family structures from various counties in the State of Ohio between 2007 and 2022, with most municipalities included.<sup>1</sup> Using these data, the Economics Center conducted a regression analysis to determine the effect of POS inspection ordinances on housing sale prices for homes with otherwise similar characteristics. Data for single-family residences were collected across municipalities represented by 27 school districts in the State of Ohio, as school districts were used as a proxy for neighborhood similarity when comparing municipalities with POS inspections to those without. Fourteen of the 27 school districts contained municipalities with POS inspection ordinances.

The data were also used in regression analysis to determine the effect of point-of-sale inspection ordinances on the total volume of housing transactions per month in a particular municipality and the impact of these ordinances on the median days spent on the market each month in a particular municipality.

The following bolded sections describe this report's key findings from the Economics Center's analysis of data provided by the U.S. Census Bureau and RedFin and the examination of county-level housing transaction data and regression analysis results.

### **Municipalities with POS inspections have higher vacancy rates than municipalities without inspections**

Weighted by the number of total households, municipalities with POS inspections had an average vacancy rate of 24.9 percent, compared to 7.1 percent for municipalities without inspections in 2022. This speaks to a dampened housing market in areas with POS inspections, as higher vacancy rates negatively impact surrounding property values and sale prices, increase crime, and result in less property tax revenue. The highest vacancy rate in these communities was 31.3 percent in East Cleveland.

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<sup>1</sup> Data for Franklin County was only available starting in 2020. However, these data was augmented with data used in a previous point-of-sale inspection study by the Economics Center for a portion of the analysis.

**Municipalities with POS inspections have lower percentages of individuals with a bachelor’s degree or higher, as well as higher unemployment rates, than those without POS inspections**

In 2022, approximately 29.7 percent of the population age 25 years and older in municipalities with POS inspections possessed a bachelor’s degree or higher, compared to 33.3 percent of municipalities without inspections.<sup>2</sup> Less than 20.0 percent of the over-25 populations of East Cleveland, Newburgh Heights, and Warrensville Heights had a bachelor’s degree or higher. Additionally, municipalities with inspections had higher unemployment rates for individuals aged 16 and older than non-POS municipalities, at 9.2 percent and 5.7 percent, respectively.<sup>3</sup> East Cleveland and Warrensville Heights had substantially higher rates of unemployment at 19.3 and 10.2 percent, respectively.

**Housing market data provided additional findings on the comparison of four pairs of municipalities in terms of median sales price, days on the market, and average sale-to-list percentage received by the property owner**

Data provided by RedFin allowed the comparison of four municipalities with POS inspections to four comparison cities without inspections from 2018 to 2022. For three of the four pairs, the municipality with POS inspections was found to have lower median sale prices than its comparison community each year. For the other pair, the municipality with POS inspections only had a higher median sale price in 2018. In three of the four pairs, municipalities with POS inspections were found to have higher numbers of days on the market than their comparison cities in three of the five years. In all four pairings, municipalities with POS inspections received a smaller percentage of the original listing price when the property was sold than in comparison cities for three of the five years of the analysis period.

**Municipalities with POS inspections have slower rates of housing transactions per 1,000 households, on average for the years 2015-2022**

When looking at the number of housing sales per 1,000 (total) households over 2015-2022, communities with POS ordinances had lower transaction rates than non-POS communities every year except for 2015. The overall average for POS municipalities was a rate of 45.6 transactions or sales per 1,000 households. Conversely, non-POS municipalities had a rate of approximately 52.0 sales per 1,000 households. This indicates a higher turnover for homes in municipalities without POS inspections than those with inspections. Slower housing sales rates indicate a depressed housing market in areas with POS inspections, as homes are not sold at the same rate as in non-POS municipalities. Some POS municipalities had exceptionally low annual sales per 1,000 households, such as East Cleveland, Newburgh Heights, and Warrensville Heights, which had 15.3, 26.9, and 23.2 sales per 1,000 households per year, respectively, from 2015-2022.

This may be because POS municipalities were found to have higher vacancy rates than non-POS municipalities. Selling a home in POS communities may prove more difficult, as higher

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<sup>2</sup> Percentages were weighted by the corresponding populations aged 25 years and older per municipality. Again, 2022 data from the U.S. Census Bureau were used.

<sup>3</sup> Weighted by the population in each municipality age 16 years and older; using 2022 data from the U.S. Census Bureau.

vacancy rates also increase crime and deflate surrounding property values, straining the housing market and the local government.

On the other hand, POS inspections may also deter potential home buyers. Buyers aware of the POS ordinances in these communities may look elsewhere for a home, perhaps in nearby neighboring communities that do not have inspection ordinances. Buyers may want to avoid purchasing a home in a municipality with a POS inspection, which comes with the additional hurdles of inspections and inspection fees to resell a home.

### **Point-of-sale inspections are associated with decreased sales prices**

A regression analysis was conducted using data retrieved from county auditor websites for the years 2007 to 2022. Results indicate that POS inspections are correlated with decreased sales prices even after controlling for other factors that influence the cost of a home, such as size, number of rooms, age, and quality of the school district. Point of sale ordinances are associated with a 13.0 percent decrease in transaction price.

### **Point-of-sale inspections did not reduce the volume of transactions in municipalities after controlling for other factors**

Regression analysis on the rate of transactions per 1,000 was performed using both transaction volumes calculated from the transaction level data and Redfin data on sales volume. With the aggregated transaction level data, there was a positive effect on transaction volume (0.55) that was small but statistically significant, while the regression using the sales volume from Redfin's data showed little impact (0.06) and was not statistically significant.

## Introduction

Throughout the Great Depression and post-WWII, as families moved to the suburbs from urban neighborhoods, urban areas in the United States accumulated more migrants from rural areas and the South. In response to the increasing urban populations, Congress provided aid for new federal programs in urban housing redevelopment and housing code/regulation improvements related to health, sanitation, and safety.<sup>4</sup> Most cities adopted housing codes throughout the 1960s. However, many also experienced poor code enforcement.<sup>5</sup> Since then, housing code enforcement and compliance in the United States have impacted the nation's housing stock. Additionally, federal funding for such programs declined in the early 1970s, further burdening local municipalities.<sup>6</sup> In response, some municipalities stopped or slowed their enforcement of housing codes due to this lack of funding. Others redesigned their code enforcement programs and established initiatives, such as point-of-sale ordinances, to prevent housing infrastructure decline in their communities.<sup>7</sup>

Point of sale (POS) ordinances require homeowners and landlords to inspect their houses or properties before selling or renting them.<sup>8</sup> Homeowners and landlords schedule the inspection when convenient, often for a fee that varies depending on the type of property and the municipality itself. Based on the inspection results, the homeowner or landlord may be required to make interior and/or exterior improvements before the property's title transfer or re-occupancy takes place. Point of Sale inspections may include interior and/or exterior improvements such as sidewalk or driveway repair and fixing plumbing or electrical issues.

Studies indicate that municipalities have adopted these POS ordinances to mediate the issue of distressed housing. However, a study published in October 2014 by the Cleveland Branch of the Federal Reserve Bank found that communities with POS ordinances had higher levels of foreclosed property and tax delinquency than those municipalities without a POS inspection requirement.<sup>9</sup>

While it is typical for the seller to make all improvements required from a POS inspection, a buyer may also assume part or all of the financial responsibility. To do this, either the buyer or the seller must establish an escrow account with a third-party entity or, in some cases, the municipality (a bank, broker, attorney, or the title company, for example) and deposit funds into the account to cover the costs of the repairs. The amount of escrowed funds depends on the extent of the required improvements and varies by municipality, ranging from 0 percent to 150 percent of the costs to correct the violations. The money is then released from the escrow account once all improvements have been made, or in some cases, in stages as work is performed. This allows the homeowner to sell the home and

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<sup>4</sup> (Barber 1978)

<sup>5</sup> (Barber 1978)

<sup>6</sup> (Hetzel 1989)

<sup>7</sup> (Hetzel 1989)

<sup>8</sup> In some cases, however, homeowners are able to sell the house and use those dollars to pay for the POS inspection repairs before the title of the house is transferred over to the buyer. (Hetzel 1989).

<sup>9</sup> Fitzpatrick, et. al (2014)

transfer the title to the buyer. An escrow account/agreement may also be necessary if the homeowner cannot physically or financially make the required repairs. In these situations, the property may be sold “as is,” and the buyer assumes full responsibility for making the improvements.

It is also important to note that failing to make the required improvements within the timeframe outlined in the POS inspection can be treated as a misdemeanor offense in many cities. Municipalities can, therefore, criminally charge the buyer or seller (depending on who is responsible for making the repairs) if the POS inspection requirements are not followed. Additionally, if the seller takes the home off the market and is therefore not sold, the necessary repairs discovered by the POS inspection must still be made.

Furthermore, POS inspections have received some criticism and were even declared unconstitutional, as warrantless POS interior inspections were viewed as an invasion of privacy and violated the Fourth Amendment of the U.S. Constitution. Additionally, it has been argued that given that POS inspections are required, and the threat of criminal charges exists if repairs are not made, the seller’s consent to search/inspect the home is not voluntary.<sup>10</sup>

Constitutionality aside, this report aims to examine and quantify the various impacts of point-of-sale inspections on communities and the housing market in the State of Ohio. Some municipalities in Ohio have adopted POS ordinances, primarily in Northeast Ohio. The Economics Center analyzed data provided by Ohio counties to examine and compare areas with and without POS ordinances. Additionally, the Economics Center quantified the impacts of POS inspections on housing sale prices, transaction volumes, and days spent on the market.

## **Case Study Analysis and Literature Review**

The Economics Center conducted a literature review on the impacts of point-of-sale inspections and provided background information on POS inspections in the State of Ohio. Unfortunately, however, very little academic literature examines the impacts of these types of inspections on the housing market.

### **Point of Sale Inspections in Ohio**

Several municipalities in Northeast Ohio have established POS inspection ordinances, though the characteristics of inspections, fees, and escrow requirements vary by municipality. This analysis focuses on municipalities with POS ordinances in Cuyahoga and Summit counties. These 24 municipalities are shown in Table 1 below, with corresponding counties.

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<sup>10</sup> (Barber 1978)

**Table 1: List of Municipalities with POS Ordinances in this Study<sup>11</sup>**

<b>County</b>	<b>Municipality</b>
<b>Cuyahoga</b>	Bedford Heights
	Brooklyn Heights
	Brook Park
	Cleveland Heights
	Cuyahoga Heights Village
	East Cleveland
	Euclid
	Garfield Heights
	Gates Mills
	Hunting Valley
	Linndale
	Maple Heights
	Mayfield Heights
	Moreland Hills
	Newburgh Heights
	North Randall
	Oakwood Village
	Shaker Heights
	University Heights
	Warrensville Heights
Woodmere	
<b>Lake</b>	Willoughby <sup>12</sup>
<b>Summit</b>	Macedonia
	Northfield Village
	Twinsburg

*Source: Data provided and verified by ACAR*

Most municipalities with POS ordinances require interior and exterior inspections, with a few only requiring exterior inspections. Additionally, a few municipalities have opt-in interior inspections while still requiring exterior ones, and yet others only have sewer or septic system inspections. The Economics Center did not count sewer or septic system inspections as those serve a public health function. The Economics Center focused only on single-family property in this analysis. Inspection fees for single-family homes range between \$0 and \$250. Escrow amounts also vary, and POS inspection certificates typically expire within 6-to-12 months of issuance. Re-inspection fees are sometimes covered by

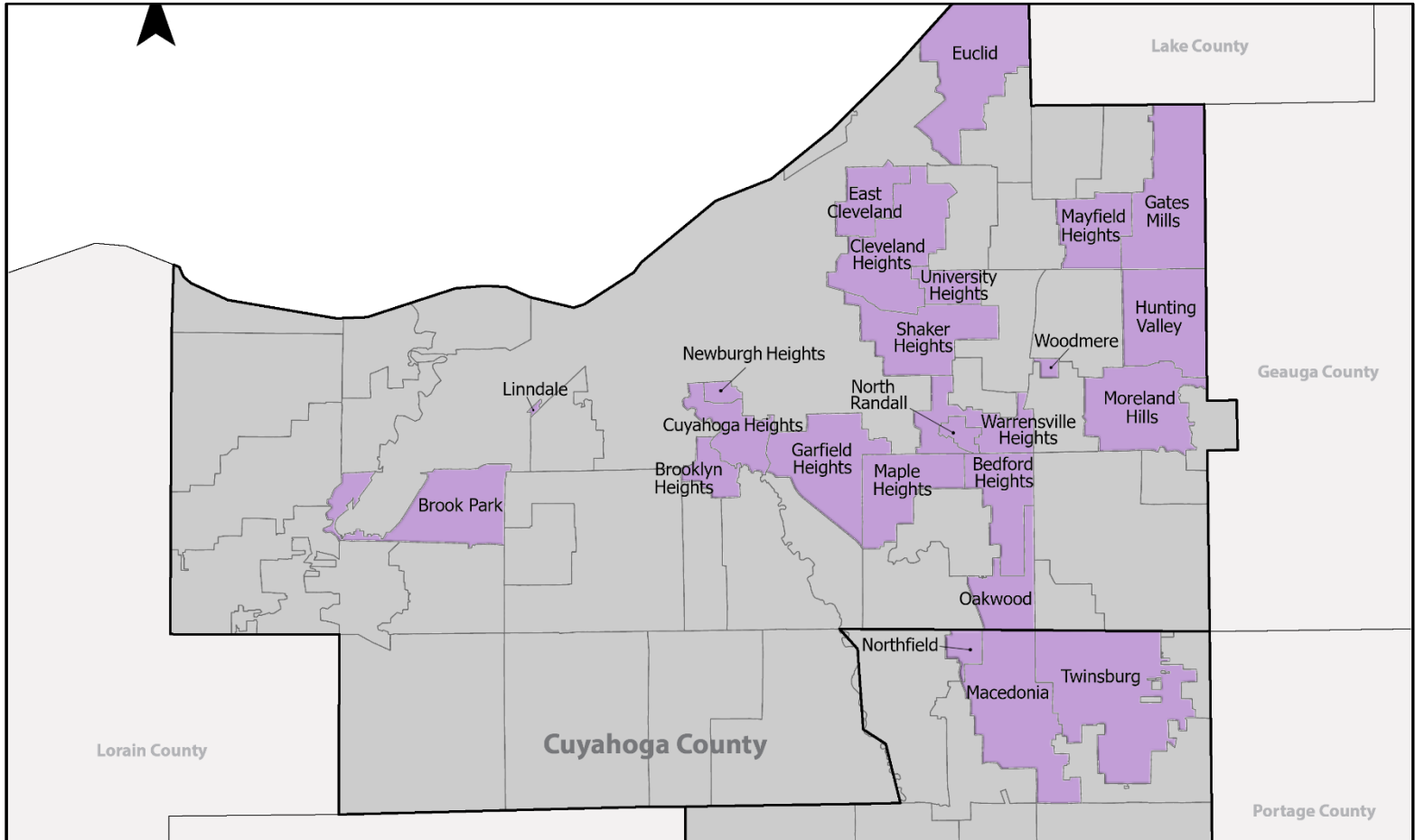
<sup>11</sup> Lakewood was omitted from this analysis as its POS inspections only apply to rental properties.

<sup>12</sup> Willoughby was included in the study because the Willoughby-Eastlake school district was identified as a similar district to the Berea school district.

the initial inspection fee, such as with East Cleveland and Shaker Heights. However, in other municipalities, re-inspection fees were necessary. The full summary of municipality point-of-sale inspection policies can be found in the Appendix in Table A 2.

Figure 1 below geographically displays the municipalities in Northeast Ohio with established point-of-sale ordinances. Areas in purple are municipalities with POS inspection ordinances, while municipalities in grey do not.<sup>13</sup>

**Figure 1: Municipalities with POS Ordinances in Northeast Ohio**



Source: Economics Center map created using data provided by ACAR and shapefiles provided by ArcGIS and TIGER.

<sup>13</sup> There are also a number of municipalities in other areas of the U.S. that have established POS inspection ordinances, such as in Illinois, California, Michigan, and Minnesota. Some municipalities in Illinois and Minnesota have inspections like those in Ohio; interior, exterior, or both. Other POS inspections, however, are specifically for septic systems or sidewalks, as in the States of Michigan and California, respectively. The few cities in California require only sidewalks to be repaired, if necessary, in order to be ADA compliant.

## The Impact of Point-of-Sale Inspections

The impact of POS inspections in the Cleveland area was examined by Fitzpatrick et al. (2016). The study analyzes vacancy registrations, POS inspections, and POS inspections with escrow requirements in Cuyahoga County, Ohio, on five measures related to housing market stability. These measures include foreclosures, selling below tax-assessed value, bulk sales, flipping, and tax delinquency. Homes that sold in 2004-2005 in cities with an ordinance in place were compared to homes that sold in other cities in 2004-2005 with no ordinance in place.<sup>14</sup>

The study found evidence that POS inspections with and without escrow increased the likelihood of foreclosures and tax delinquency.<sup>15</sup> Evidence was not found that POS inspections, with or without escrow, reduce foreclosures, bulk sales, or sales of homes below their assessed value.<sup>16</sup>

Regarding sidewalk repairs required for ADA compliance, Shoup (2009) examines the impacts of this specific type of POS inspection in Los Angeles, California. The study notes that Piedmont and Pasadena, California, also have similar inspections. The city inspects sidewalks in front of the property when it is on the market and notifies the owner if repairs are needed. However, the city allows the sale to occur so that the funds can be used for the repairs.<sup>17</sup> Sellers are only required to repair the sidewalk on their property. The study states that property turnover is similar throughout the city, and therefore, sidewalks are replaced at similar rates. Repairs can increase the home's property value and curb appeal while also achieving the goal of being accessible for individuals with disabilities.

In 2019, The Economics Center produced a report on the impact of point-of-sale inspections, which included some of the municipalities listed in this report and others. This report used data from 2000-2019 and concluded that communities with POS inspection laws experienced approximately 18.0 percent lower home sale prices, all else equal. The study also found that point-of-sale municipalities had 19.4 fewer transactions per 1,000 households, all else equal.

## Evolving Real Estate Market

One major difference between this study and the 2019 study is the time frame being considered. The 2019 study included data from 2000-2007, a time of a housing price bubble. Since the 2007-2009 recession that followed the housing bubble bursting, there

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<sup>14</sup> The analysis utilized propensity score matching and a probit regression in order to produce a measurement for each property, which was then used to match up the POS ordinance homes to non-ordinance homes across the cities.

<sup>15</sup> The study states one reason that the likelihood of foreclosure increases could be that "POS ordinances may prevent some homeowners who are delinquent on their mortgage from being able to sell out of delinquency. This could occur when owners do not have money for the repairs and cannot lower the home's sale price due to a mortgage debt that they were counting on the sale to cover. Tax delinquency may be elevated because, when property owners realize they cannot transfer/sell without making repairs, they decide to abandon the properties." (Fitzpatrick, Nelson, Richter, & Whitaker, 2016)

<sup>16</sup> (Fitzpatrick, et al. 2016)

<sup>17</sup> Sellers may wait until the sale goes through to use the funds for the repairs or not and pay for the repairs before the home is sold.

has been a significant structural change in the housing market, with more institutional investors buying single-family homes. Initially, these investors bought foreclosed homes in bulk but eventually transitioned to small-scale purchases. The end goal of these purchases was to rent the houses out instead.<sup>18</sup> A study by the U.S. Government Accountability Office published in May 2024 found that in 2011, no investors owned at least 1,000 single-family homes; by 2015, institutional investors collectively owned 170,000-300,000 homes, and by June of 2022, at least 32 institutional investors owned 1,000 or more single-family homes. Collectively, these institutions owned nearly 450,000 homes.

Particularly relevant to this study is the possibility that POS inspection laws may not dissuade institutional investors from buying homes in the same ways they might influence an owner-occupant looking to buy a house. The Urban Institute suggests that institutional investors have a comparative advantage over owner-occupants in buying homes that need repairs.<sup>19</sup> These comparative advantages come from economies of scale due to the volume of homes needing repairs these investors purchase and their advantages in financing.<sup>20</sup>

These results are supported by research by Oosthuizen in 2023. Oosthuizen finds that the institutional investor share of the house rental market increased from 17.0 percent in 2001 to 28.0 percent in 2018. Additionally, the operating cost ratio between institutional investors and owner occupants fell from 48.0 percent in 2001 to 28.0 percent in 2015. Finally in a structural model Oosthuizen finds that the increased participation of institutional investors in the market for single-family homes caused housing prices to fall less than they would have otherwise.<sup>21</sup>

## Methodology & Data

Using the list of municipalities with POS inspections (shown in Table 1), the Economics Center determined the school districts in which the municipalities are located. For example, the municipality of Bedford Heights is located within Bedford CSD. The school districts serving municipalities with POS ordinances were matched to municipalities in school districts without POS ordinances, using school district matching information from the Ohio Department of Education (ODE) (the POS to non-POS matchings are shown in Table 2).<sup>22</sup> The Economics Center used the Ohio Department of Education school district matching system, which matches school districts based on various educational and demographic characteristics, allowing for comparisons in this analysis.

Demographic and socioeconomic data on vacancy, poverty, education, and unemployment rates were acquired from the municipality's U.S. Census Bureau 2022 5-year estimates. The occupancy and vacancy rates percentages, as well as median household income, were

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<sup>18</sup> (U.S. Government Accountability Office 2024)

<sup>19</sup> (Goodman and Golding 2021)

<sup>20</sup> The economies of scale come from negotiating favorable prices with local vendors due to the volume of repairs they order. The authors used annual reports from institutional investors to back up this conjecture. Institutional investors are usually able to pay cash up front and then finance the purchase later through securitization markets. Owner-occupants, on the other hand, usually need to obtain specific rehabilitation mortgages.

<sup>21</sup> (Oosthuizen 2023)

<sup>22</sup> (The Ohio Department of Education 2017)

weighted by the number of total households in each respective municipality. Education (percentage with a bachelor's degree or higher for those age 25 and older) was weighted by the population aged 25 and older. The unemployment rate was weighted by the respective populations aged 16 and older.

Housing market data, including the number of days on the market, average sale-to-list price ratio, and median sale price, was also included for select POS and non-POS municipalities in Ohio.<sup>23</sup> Four pairs of POS and non-POS municipalities were matched and included in tables in this analysis. The POS municipalities included Cleveland Heights, OH, and its comparison municipality, Gahanna, OH; Euclid, OH, with Whitehall, OH; Northfield, OH, with North Royalton, OH; and Willoughby, OH, with Middleburg Heights, OH. The data included monthly data from January 2015 to June 2019. Due to data limitations, the Economics Center interpolated two months of missing data using seasonal adjustments.

The Economics Center collected transaction-level data from Ohio Counties for single-family homes from 2007 to 2022. However, it is important to note that Franklin County's transaction data did not start until 2020. To address this, the Economics Center used Franklin County data from a previous study on POS inspections, which covered the same municipalities. However, these data do not indicate the municipality in each sale, so the additional Franklin County data was omitted from the transaction volume regressions as the unit of observation was the municipality.

Data collected included information on bedroom and bathroom count, year of construction/age of the property, type of property, parcel number, school district, County name, and municipality name. Data on sales prices and the dates of transactions were also collected from counties. All sales prices were adjusted for inflation and expressed in 2022 dollars using the Consumer Price Index (CPI).<sup>24</sup> In a previous report, The Economics Center excluded transactions with sales prices above \$3.0 million and below \$25,000 from the analysis. For this report, the Economics Center calculated the real price per square foot for each sale and removed the bottom and top 0.5 percent of observations to remove potential outliers.<sup>25</sup> Other variables included whether the structure was located in an area with a POS inspection ordinance, whether the sale occurred during a recession year, the numerical grade for the school district where the structure is located, county-level unemployment, and the Case Shiller National Home Price Index.

The number of transactions was calculated by adding up the number of sales in each municipality in each month. These were then augmented with ACS data on the total number of households to calculate the number of transactions per 1,000 households. Not all municipalities in the data have data available through the American Community Survey (Census Bureau), so those were omitted. The rates shown in Table 9 were averages across

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<sup>23</sup> (RedFin 2019)

<sup>24</sup> The historical sales prices were adjusted for inflation to be expressed in 2022 dollars, using the year at the time of sale. In other words, if a home was sold in 2007, the sales price for that transaction in 2007 dollars was adjusted to 2022 dollars. The CPI data was accessed from the St. Louis Federal Reserve (FREDs).

<sup>25</sup> For the low end this removed any observation with a real price per square foot of \$1.23 and for the top end this removed any observation with a real price per square foot of \$472. This led to 2,057 of 205,686 observations to be dropped.

the POS municipalities, compared to the average across non-POS municipalities, by year. This data was augmented with housing market data from Redfin, which included the number of months of housing supply, the total housing inventory at the start of the month, an alternative measure of sales per month, and the median days on the market. Building permit data from HUD was also used.

The Economics Center used these data to conduct regression analysis to determine the impact of POS ordinances on home sale prices, transaction volume, and the median days on the market.

## **Housing Analysis and Home Sales Transaction Analysis**

Table 2 below details the school districts' matchings used in this analysis, using information from the Ohio Department of Education. The 23 municipalities with POS inspections in Ohio are listed in the first column, and their respective counties are listed in the second column. The school district in which the municipality with the POS inspection ordinance resides is shown in column three.

The 25 municipalities with POS inspections were located across 14 school districts in the State. The fourth column shows the name of the matched school district in jurisdictions without POS inspections. The final column lists the county where the comparison school district is located.

**Table 2: School District Comparisons**

<b>POS Communities</b>	<b>County</b>	<b>School District</b>	<b>Comparison School District</b>	<b>Comparison County</b>
Bedford Heights <sup>26</sup>	Cuyahoga	Bedford CSD	Winton Woods CSD	Hamilton
Brooklyn Heights	Cuyahoga	Cuyahoga Heights LSD	Huron CSD	Erie
Brook Park	Cuyahoga	Berea CSD <sup>27</sup>	Willoughby-Eastlake CSD <sup>28</sup>	Lake
Cleveland Heights	Cuyahoga	Cleveland Heights-University Heights CSD	South Euclid-Lyndhurst CSD	Cuyahoga
Cuyahoga Heights Village	Cuyahoga	Cleveland Heights-University Heights CSD	South Euclid-Lyndhurst CSD	Cuyahoga
East Cleveland	Cuyahoga	East Cleveland CSD	Campbell CSD	Mahoning
Euclid	Cuyahoga	Euclid CSD	Mt Healthy CSD	Hamilton
Garfield Heights	Cuyahoga	Garfield Heights CSD	Whitehall CSD	Franklin
Gates Mills <sup>29</sup>	Cuyahoga	Mayfield CSD	Canal Winchester LSD	Franklin
Hunting Valley	Cuyahoga	Orange CSD <sup>30</sup>	Indian Hill EVSD	Hamilton
Linndale	Cuyahoga	Cleveland Municipal SD	Akron CSD	Summit
Maple Heights	Cuyahoga	Maple Heights CSD	Whitehall CSD	Franklin
Mayfield Heights	Cuyahoga	Mayfield CSD	Canal Winchester LSD	Franklin
Moreland Hills	Cuyahoga	Orange CSD <sup>30</sup>	Indian Hill EVSD	Hamilton
Newburgh Heights <sup>31</sup>	Cuyahoga	Cuyahoga Heights LSD	Huron CSD	Erie
North Randall	Cuyahoga	Warrensville Heights CSD	Campbell CSD	Mahoning
Oakwood Village	Cuyahoga	Bedford CSD	Winton Woods CSD	Hamilton
Shaker Heights	Cuyahoga	Shaker Heights CSD	Gahanna-Jefferson CSD	Franklin
University Heights	Cuyahoga	Cleveland Heights-University Heights CSD	South Euclid-Lyndhurst CSD	Cuyahoga
Warrensville Heights	Cuyahoga	Warrensville Heights CSD	Campbell CSD	Mahoning
Woodmere	Cuyahoga	Orange CSD	Indian Hill EVSD	Hamilton
Macedonia	Summit	Nordonia Hills CSD	North Royalton CSD	Cuyahoga
Northfield Village	Summit	Nordonia Hills CSD	North Royalton CSD	Cuyahoga
Twinsburg	Summit	Twinsburg CSD	Copley-Fairlawn CSD	Summit

*Source: Table created using data from the Ohio Department of Education Fiscal Year 2023 Similar Districts Grouping*

<sup>26</sup> Bedford Heights did not have a POS requirement until May 13, 2016.

<sup>27</sup> Berea CSD also includes Middleburgh Heights, a municipality that does not require POS inspections.

<sup>28</sup> While Eastlake does not have POS inspections, Willoughby does.

<sup>29</sup> Gates Mills did not have a POS requirement until 2014.

<sup>30</sup> Orange Village, part of Orange CSD does not have a POS requirement.

<sup>31</sup> Newburgh Heights did not have a POS requirement until 2014.

## Demographic and Socioeconomic Data of POS and Comparison Non-POS Municipalities

Table 3 shows vacancy/occupancy rates, median household income, educational attainment, and unemployment rates for municipalities with POS inspections compared to those without POS inspections.<sup>32</sup> Statistics in the table were calculated as weighted averages using the number of total households, as well as populations above 25-years old and populations above 16-years old, per municipality. The occupancy and vacancy percentages, homeowner and renter vacancy rates, and median household income were weighted using the total number of households by municipality. The percentages of the population age 25 and older with a bachelor's degree or higher were weighted by the municipalities' respective populations age 25 and older. The unemployment rates were also weighted, this time by the populations age 16 and older.

This demographic and socioeconomic data analysis found that municipalities with POS inspections had higher (weighted average) vacancy rates than municipalities without inspections. Municipalities with POS inspections were found to have lower median household income than those without inspection requirements when weighted by the total number of households. Point of Sale municipalities were also found to have lower educational attainment rates regarding bachelor's degree holders and above, a difference of 3.7 percentage points compared to municipalities without POS inspections.<sup>33</sup> When weighted by the population above 16 years old, municipalities with POS inspections were found to have higher unemployment rates than non-POS municipalities, at approximately 9.2 percent and 5.7 percent, respectively.

**Table 3: Weighted Averages of Demographic and Socioeconomic Data, POS Municipalities compared to Non-POS Municipalities, 2022**

	<b>% Occupied</b>	<b>% Vacant</b>	<b>Median Household Income</b>	<b>% with Bachelor's Degree or Higher, Age 25+</b>	<b>Unemployment Rate, Age 16+</b>
<b>With POS inspections</b>	75.1%	24.9%	\$38,021	29.7%	9.2%
<b>Without POS inspections</b>	92.9%	7.1%	\$68,812	33.3%	5.7%

*Source: Table created using U.S. Census Bureau and Ohio Department of Education data.*

Higher vacancies in POS communities speak to a constrained housing market, as higher vacancy rates negatively impact surrounding property values and the property's listing and

<sup>32</sup> 2022 5-year estimates on municipalities were provided by the U.S. Census Bureau.

<sup>33</sup> Percentages were weighted on the number of individuals above the age of 25 years old.

sale price.<sup>34</sup> Further, vacant houses tend to attract crime,<sup>35, 36, 37</sup> as well as reduce the amount of property tax revenue generated and collected by municipalities.<sup>38, 39</sup>

Reduced property tax revenue for municipalities, in turn, leads to local government entities cutting services typically funded by property taxes, such as police, fire, and education. However, these police and fire services are ever more critical due to increasing crime rates and higher vacancies than non-POS communities. Increasing crime rates strain local jurisdictions and increase demand for police and fire services, further compounding the negative fiscal impacts for these areas.<sup>40</sup>

The racial demographics of the POS inspection communities are presented in Table 4. For reference, the 2022 ACS 5-Year data show Ohio as 78.8 percent white, 12.3 percent black, 4.2 percent Hispanic/Latino, and 2.4 percent Asian. The Point-of-Sale communities were typically less white (15 of 24) and more black (13 of 24). Some notable outliers compared to the state overall are Bedford Heights (16.2% white, 75.2% black), East Cleveland (7.7% white, 88.0% black), Highland Hills (14.0% white, 79.4% black), Linndale (48.9% Hispanic/Latino), and Warnesville Heights (3.1% white, 94.0% black). Cleveland Heights is a very diverse community with a nearly equal black/white split (47.5%/41.7%). A community like Newburg Heights is more in line with Ohio, with 73.7 percent white people. Still, it does have a relatively high population of Hispanic/Latino individuals (7.6%). Shaker Heights is a middle point between the two, with 54.3 percent white and 35.6 percent black people.

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<sup>34</sup> (Immergluck and Smith, The Impact of Single-family Mortgage Foreclosures on Neighborhood Crime 2006)

<sup>35</sup> (Goodstein and Lee 2010)

<sup>36</sup> (Katz, Wallace and Hedberg 2013)

<sup>37</sup> (Cui and Walsh 2015)

<sup>38</sup> (Apgar, et al. 2005)

<sup>39</sup> (Immergluck, Toering, et al. 2016)

<sup>40</sup> (Apgar, et al. 2005)

**Table 4: 2022 Demographics of Point-of-Sale Communities**

<b>Municipality</b>	<b>Population</b>	<b>Total Households</b>	<b>% White</b>	<b>% Black</b>	<b>% Hispanic/Latino</b>	<b>% Asian</b>
<b>Ohio</b>	<b>11,774,683</b>	<b>4,917,309</b>	<b>78.8</b>	<b>12.3</b>	<b>4.2</b>	<b>2.4</b>
Bedford Heights	10,933	6,116	16.2	75.2	5.6	0.3
Brooklyn Heights	1,500	575	94.8	2.2	2.4	1.9
Brook Park	18,509	7,809	83.3	5.3	6.7	3.4
Cleveland Heights	45,002	19,462	47.5	41.7	2.7	5.3
Cuyahoga Heights	627	255	93.3	0.0	1.6	4.0
East Cleveland	13,926	6,576	7.7	88.0	1.0	1.3
Euclid	49,279	22,706	28.6	66.3	1.6	0.5
Garfield Heights	29,497	11,974	35.1	56.6	5.0	0.2
Gates Mills	2,158	779	90.5	0.1	2.5	4.4
Highland Hills	699	218	14.0	79.4	4.7	0.0
Hunting Valley	800	307	89.0	1.0	4.8	4.9
Linndale	276	68	46.0	5.1	48.9	0.0
Maple Heights	23,473	10,144	23.2	73.0	1.5	0.7
Mayfield Heights	20,127	10,057	67.7	16.7	5.5	6.1
Moreland Hills	3,440	1,425	93.6	0.9	1.1	3.6
Newburgh Heights	1,760	856	73.7	15.4	7.6	0.9
North Randall	1,113	570	23.1	72.1	0.3	0.0
Shaker Heights	29,157	12,826	54.3	35.6	3.4	3.5
University Heights	13,649	4,851	72.1	23.2	2.1	2.0
Warrensville Heights	13,659	6,158	3.1	94.0	0.6	0.1
Willoughby	23,823	11,520	91.3	5.0	1.8	0.6
Woodmere	683	287	23.9	44.2	17.9	3.1

Source: Table created using U.S. Census Bureau data

The housing tenure characteristics for the POS communities are presented in Table 5. For reference, Ohio has a statewide vacancy rate of 8.8 percent. The vacancy rates of the POS communities varied greatly. Brooklyn Heights had a 2.2 percent vacancy rate at the low end, while East Cleveland had a 21.8 percent vacancy rate at the high end. At the state level, housing occupancy is 64.8 percent owner-occupied and 35.2 percent renter-

occupied. Most of the communities have less owner-occupied housing and more renter-occupied housing than the state overall (16 out of 24).

Cleveland Heights vacancy rate is higher than the state overall at 10.3 percent and have a higher rate of renter-occupied housing at 41.4 percent. East Cleveland's remarkably high vacancy rate was noted previously, but the community also has an particularly high share of renter-occupied housing at 69.1 percent, which is nearly twice as high as the statewide rate of 35.2 percent. Newburgh Heights has an elevated vacancy rate at 12.9 percent and a relatively high share of renter-occupied housing at 54.2 percent. Shaker Heights' vacancy rate is in line with the rest of the state at 8.6 percent, although its renter share of occupied housing is higher at 40.5 percent. Warrensville Heights has a slightly higher vacancy rate (10.2%) and a high share of renter-occupied housing at 61.5 percent.

**Table 5: 2022 Housing Tenure in Point-of-Sale Communities**

<b>Municipality</b>	<b>Total Housing Stock</b>	<b>Vacancy Rate</b>	<b>Owner Occupied Rate</b>	<b>Renter Occupied Rate</b>
<b>Ohio</b>	<b>5,251,209</b>	<b>8.8</b>	<b>64.8</b>	<b>35.2</b>
Bedford Heights	6,451	5.2	43.6	56.4
Brooklyn Heights	588	2.2	94.8	5.2
Brook Park	8,099	3.6	80.2	19.8
Cleveland Heights	21,693	10.3	58.6	41.4
Cuyahoga Heights	268	4.9	70.6	29.4
East Cleveland	9,566	31.3	30.9	69.1
Euclid	25,617	11.4	43.7	56.3
Garfield Heights	13,073	8.4	57.2	42.8
Gates Mills	849	8.2	92.8	7.2
Highland Hills	233	6.4	28.9	71.1
Hunting Valley	352	12.8	95.1	4.9
Linndale	87	21.8	38.2	61.8
Maple Heights	11,133	8.9	62.9	37.1
Mayfield Heights	10,726	6.2	45.3	54.7
Moreland Hills	1,557	8.5	94.4	5.6
Newburgh Heights	983	12.9	45.8	54.2
North Randall	595	4.2	25.3	74.7
Shaker Heights	14,037	8.6	59.5	40.5
University Heights	5,124	5.3	65.2	34.8
Warrensville Heights	6,854	10.2	38.5	61.5
Willoughby	12,208	5.6	62.3	37.7
Woodmere	348	17.5	26.8	73.2

Source: Table created using U.S. Census Bureau data

The labor market characteristics of POS communities are presented in Table 6. The median income for the State of Ohio is \$66,990, and approximately half of these POS communities have median incomes below that of the State median. Notably, some communities had median incomes which exceed the State median, such as Gates Mills, Hunting Valley, and Moreland Hills. Gates Mills did drop its POS inspection ordinance in 2014. Educational attainment varied widely in these communities, with Highland Hills only having 5.9 percent of its 25 and older population having a bachelor's degree or higher and Gates Mills, on the other hand, having 75.0 percent of its population having a bachelor's degree or higher. Statewide, 30.4 percent of the population aged 25 or older held a bachelor's degree or higher in 2022. The state-level unemployment rate in the 2022 ACS 5-Year Sample for the population aged 16 and older was 5.0 percent, and most POS communities were above this (17 out of 24). The highest unemployment rate in these communities was 19.3 percent in East Cleveland. The state-wide labor force participation rate was 63.2 percent. While only eleven of the twenty-four POS communities had lower labor force participation rates, some had extremely low labor force participation rates. Highland Hills had a labor force participation rate of 29.2 percent, and six communities had labor force participation rates below 60.0 percent.

Median incomes vary greatly, with East Cleveland at the low end (\$23,004), Cleveland Heights, Newburgh Heights, and Warrensville Heights in the middle (\$69,155, \$53,661, and \$43,848 respectively), and Shaker Heights at the high end (\$96,494). East Cleveland, Newburgh Heights, and Warrensville Heights all have low levels of educational attainment (14.9%, 15.0%, and 19.6% with a bachelor's or higher, respectively). In comparison, Cleveland Heights and Shaker Heights have higher levels of educational attainment (56.5% and 70.1% with a bachelor's or higher, respectively). East Cleveland has particularly low labor force participation rate at 53.7 percent.

**Table 6: 2022 Labor Market Characteristics of Point-of-Sale Municipalities**

<b>Municipality</b>	<b>Median Income</b>	<b>% With Bachelor's Degree or Higher</b>	<b>Unemployment Rate</b>	<b>Labor Force Participation Rate</b>
<b>Ohio</b>	<b>\$66,990</b>	<b>30.4</b>	<b>5.0</b>	<b>63.2</b>
Bedford Heights	\$47,528	17.8	6.2	59.9
Brooklyn Heights	\$96,458	32.0	1.4	65.7
Brook Park	\$64,046	15.4	5.3	62.9
Cleveland Heights	\$69,155	56.5	7.5	65.5
Cuyahoga Heights	\$73,229	18.0	8.5	66.3
East Cleveland	\$23,004	14.9	19.3	53.7
Euclid	\$45,018	21.0	8.5	62.8
Garfield Heights	\$49,864	15.0	9.8	63.9
Gates Mills	\$214,219	75.0	4.6	61.7
Highland Hills	\$25,500	5.9	2.0	29.2
Hunting Valley	\$176,875	73.9	1.4	45.4
Linndale	\$71,786	31.1	8.8	78.6
Maple Heights	\$49,877	15.7	8.3	61.9
Mayfield Heights	\$59,423	37.5	5.7	70.0
Moreland Hills	\$199,279	74.1	5.4	59.3
Newburgh Heights	\$53,661	15.0	7.7	67.4
North Randall	\$40,976	8.2	20.8	52.7
Shaker Heights	\$96,494	70.1	5.1	66.2
University Heights	\$91,960	65.1	5.5	69.1
Warrensville Heights	\$43,848	19.6	10.2	61.4
Willoughby	\$70,807	33.8	4.2	64.2
Woodmere	\$49,609	38.0	11.7	71.6

Source: Table created using U.S. Census Bureau data

The demographics are broken out between owner-occupied and renter-occupied housing in the POS communities in Table A 2 and Table A 3 in the Appendix. In the POS communities, black households are significantly more likely to be renters than owners. Renters are also less likely to have a bachelor's degree or higher.

## Housing Market Data Trends

Table 7 shows each year's average monthly median sales prices for selected POS and non-POS communities. Sale prices were adjusted for inflation and are expressed in 2022 dollars.<sup>41</sup> Properties sold each year in Bedford Heights were found to have lower median sales prices than their comparison municipality of Forest Park. The same is true when comparing the POS municipalities of Euclid and Northfield to the non-POS municipalities of Mt Healthy and North Royalton, respectively. East Cleveland, a POS municipality, does have a higher average monthly median sale price in 2018 compared to Campbell; however, from 2019 onwards, Campbell has higher sales prices. These lower sale prices are typical of POS communities like Cleveland Heights, Newburgh Heights, and Warrensville Heights.

**Table 7: Average Monthly Median Sales Price of Selected Municipalities (2018-2022), 2022\$<sup>42</sup>**

Municipality	2018	2019	2020	2021	2022
Bedford Heights, OH	\$131,352	\$141,827	\$154,101	\$180,803	\$177,959
Forest Park, OH	\$154,448	\$160,297	\$184,679	\$208,619	\$213,354
Euclid, OH	\$86,535	\$96,639	\$112,442	\$131,949	\$131,473
Mt Healthy, OH	\$121,808	\$111,390	\$140,007	\$167,885	\$172,110
Northfield, OH	\$192,083	\$191,475	\$198,712	\$217,848	\$197,442
North Royalton, OH	\$276,775	\$278,534	\$315,421	\$330,187	\$331,844
East Cleveland, OH	\$47,818	\$35,662	\$34,459	\$116,780	\$72,153
Campbell, OH	\$47,002	\$73,351	\$73,141	\$125,795	\$94,785

Source: Redfin Data

Table 8 details each municipality's average number of days on the market by year. Municipalities with POS inspections for three pairs had more days on the market than their comparison cities. This indicates that properties in these selected municipalities with POS inspections take longer to sell than in their comparison areas without POS inspections. The exception to this is Mount Healthy, which had a higher average number of days on the market than Euclid in four out of five years. Another POS community that has had homes stay on the market for quite a long time is Newburgh Heights, which saw homes remain on the market an average of 95.4 days in 2018 and only fell to 58.3 days in 2022. Other communities had high average days on the market in 2018 (67.7 days for Cleveland Heights, 78.7 days for Shaker Heights, and 86.2 days for Warrensville Heights). Still, they saw the time on the market fall substantially by 2022 (30.6 days for Cleveland Heights, 31.5 days for Shaker Heights, and 32.8 days for Warrensville Heights).

<sup>41</sup> CPI for Urban Consumers was used to adjust for inflation.

<sup>42</sup> All real values calculated using December 2022 as the base period.

**Table 8: Average Days on Market of Selected Municipalities (2018- 2022)**

<b>Municipality</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Bedford Heights, OH	83.6	74.3	58.2	40.6	37.4
Forest Park, OH	60.4	54.5	49.3	45.4	43.3
Euclid, OH	61.9	59.6	51.8	36.8	34.0
Mt Healthy, OH	56.9	63.2	50.3	45.1	43.9
Northfield, OH	69.4	68.8	32.3	31.1	25.8
North Royalton, OH	50.2	52.3	38.3	22.3	23.9
East Cleveland, OH	95.9	101.2	90.3	62.4	92.7
Campbell, OH	63.8	80.5	42.3	35.1	50.9

Source: RedFin Data

Table 9 shows the average sale-to-list price by municipality and year. Other than in 2018 and 2019, municipalities with POS inspections received a smaller percentage of the property's list price. In 2018, Northfield and East Cleveland had higher sale-to-list price ratios than their non-POS counterparts. In 2019, Northfield was slightly above North Royalton, and Willoughby was slightly above Middleburg Heights. Looking at other communities, Newburgh Heights had a low average sale-to-list price ratio in 2018 at 93.2 percent, and it reached as low as 91.2 percent in 2020 but has risen to 101.3 percent in 2022.

**Table 9: Average Sale-to-List Price Ratio of Selected Municipalities (2018-2022)**

<b>Municipality</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Bedford Heights, OH	97.4%	95.9%	99.4%	100.8%	99.8%
Forest Park, OH	98.4%	98.2%	99.6%	101.7%	101.3%
Euclid, OH	96.1%	96.7%	97.5%	100.1%	99.0%
Mt Healthy, OH	97.7%	97.3%	99.8%	102.8%	102.2%
Northfield, OH	97.7%	98.0%	98.6%	100.9%	99.7%
North Royalton, OH	97.2%	97.5%	99.3%	101.0%	101.1%
East Cleveland, OH	91.5%	81.4%	93.8%	99.0%	94.7%
Campbell, OH	91.3%	93.9%	94.0%	99.6%	98.0%

Source: RedFin Data

## Transaction Level Data

Overall, data were gathered across a 16-year period, from 2007 to 2022, and on housing characteristics for nearly 205,000 transactions across the counties. Franklin county areas, however, had transaction data starting in 2020. However, because the data did not include municipality information, it could not be included in the transaction volume regression. The overall average sale price was \$158,578 (\$2022) and the median sale price was \$106,488.<sup>43</sup> As shown in Table 10, the overall average sale price for areas with POS inspections was lower than the overall average sale price for areas without. The average sale price for transactions occurring under a POS inspection was \$149,622, while the average sale price for all other transactions without inspections was \$163,893; a difference

<sup>43</sup> With Outliers removed.

of \$14,271. The median sale price for areas with POS inspections was also lower than that for homes without inspection ordinances, at \$100,895 for POS and \$110,194 for non-POS.

**Table 10: Average and Median Sales Prices (2022\$) for POS and Non-POS Municipalities, 2007-2022**

<b>Municipalities</b>	<b>Average Sale Price (2022\$)</b>	<b>Median Sale Price (2022\$)</b>
<b>With POS Inspections</b>	\$149,622	\$100,895
<b>Without POS Inspections</b>	\$163,893	\$110,194

*Source: Economics Center Calculations using data provided by Ohio counties.*

Lower average and median sales prices in municipalities with POS inspections indicate these areas have lower home values compared to the matched municipalities without POS inspections. If POS inspections lower home sale prices, then the impact of POS inspections is even more burdening to lower-income individuals, who typically reside in areas with lower home values. Therefore, point-of-sale ordinances can be viewed as an implicit regressive tax on these neighborhoods and homeowners.

Table 11 details transaction-level data between 2007 and 2022 by county. For each county, the school districts included in the study are listed. The Economics Center obtained transaction-level data for all counties from 2007-2022. However, Franklin County data for 2007-2019 did not identify the municipality and was left out for the transaction volume analysis. There is significant variability across the counties in terms of average number of transactions per year. This is for two reasons. The first is population density differences. Second is the number of communities in those counties included in the analysis. Most of Summit and Cuyahoga counties were included in the study; both are densely populated. Only parts of Franklin and Hamilton counties were included, yet they still have a high average number of transactions per year because they are densely populated. Lake, Erie, and Mahoning are both only partially included and not densely populated, so the average number of transactions per year is low.

**Table 11: Summary Statistics of Transaction-Level Data**

County	School Districts	Years	Number of Years	Number of Total Transactions	Average number of transactions per year	Total Sales (\$M, 2022\$)	Average Sale Price per transaction (2022\$)
Franklin	Gahanna-Jefferson CSD <sup>44</sup> and Whitehall CSD	2007-2022 <sup>45</sup>	16	15,963	998	\$4,224	\$264,654
Lake	Willoughby-Eastlake CSD	2007-2022	16	112	7	\$6	\$53,299
Hamilton	Mount Healthy CSD, Indian Hills EVSD, and Winton Woods CSD	2007-2022	16	17,693	1,106	\$4,494	\$254,012
Erie	Huron CSD	2007-2022	16	2,373	148	\$544	\$229,571
Mahoning	Campbell CSD	2007-2022	16	328	21	\$22	\$65,586
Summit	Akron CSD, Copley-Fairlawn CSD, Nardon Hills CSD, Twinsburg CSD	2007-2022	16	76,398	4,775	\$8,239	\$107,849
Cuyahoga	Bedford CSD, Berea CSD, Cleveland/University Heights CSD, Cleveland Municipal SD, Cuyahoga Heights LSD, East Cleveland CSD, Euclid CSD, Garfield Heights CSD, Maple Heights CSD, Mayfield CSD, North Royalton CSD, Orange CSD, Shaker Heights CSD, South Euclid-Lyndhurst CSD, Warrensville Heights CSD	2007-2022	16	90,762	5,673	\$14,760	\$162,626
<b>Total</b>		<b>16 Years</b>		<b>203,629</b>	<b>12,727</b>	<b>\$32,290</b>	<b>\$158,577</b>

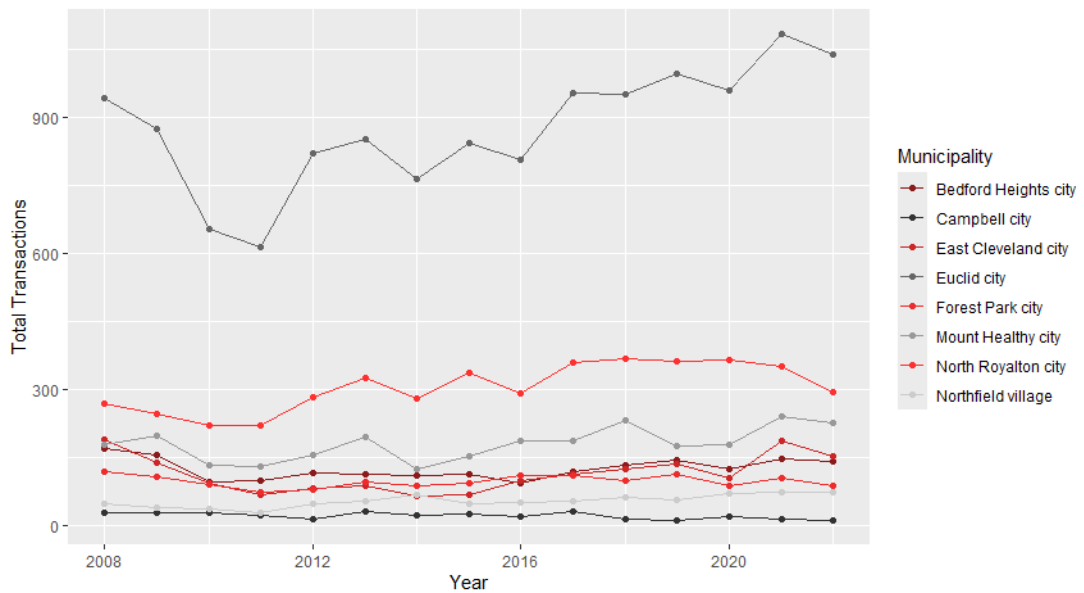
Source: Economics Center calculations

Figure 2 shows the number of transactions per year, over the years 2008 to 2022 for select comparison municipalities. These include the POS municipalities Bedford Heights, East Cleveland, Euclid, and Northfield as well as comparison non-POS municipalities Forest Park, Campbell, Mount Healthy, and North Royalton. The POS municipalities are in shades of red while the non-POS municipalities are in shades of grey. For most of the municipalities, transactions fall from 2008 to 2010, but then begin to rebound and increase through 2022.

<sup>44</sup> Parts of Columbus are in Gahanna-Jefferson school district. These were removed from the transaction level data.

<sup>45</sup> Franklin County data was only available going back to 2020. However, The Economics Center used the Franklin County data from the previous study to have a comparable set of data. This data was not available for the transaction volume study because the previous study's dataset did not include the municipality in the data.

**Figure 2: Number of Transactions by Municipality (2007-2022)**



Source: Economics Center graph created using data retrieved from County Auditors.

Table 12 shows the number of transactions per 1,000 households from 2015 to 2022 for municipalities with POS inspections compared to those without. Each year from 2016 to 2022, municipalities with inspections have lower sales rates per 1,000 households than those without inspections. However, in 2015, more transactions were made per 1,000 households in POS communities. Overall, municipalities with POS inspections have a rate of approximately 43.7 transactions or sales per 1,000 households; compared to 51.0 per 1,000 for municipalities without POS inspections. Slower rates of housing sales indicate depressed housing markets in communities with POS ordinances, as homes are not being sold at the same rate as in non-POS municipalities.

Many factors help explain this phenomenon. First, as POS municipalities were found to have higher vacancies than non-POS areas, selling a home or attracting a buyer to POS communities may prove a little more difficult. Higher vacancy rates increase crime and deflate surrounding property values, straining the housing market and local governments.

This may also indicate that POS inspections deter homeowners in these areas from selling their properties. Some lower-income homeowners may have an idea that inspection-mandated repairs may not be financially feasible for them to make and, thereby, choose not to sell their home or go through the inspection process. The criminal consequences of not making the inspection-mandated repairs may also be a deterrent in beginning the property-selling process.

On the other hand, POS inspections may also deter potential home buyers. Buyers aware of the POS ordinances in these communities may look elsewhere for a home, perhaps in nearby neighboring communities that do not have inspection ordinances. Buyers may not want to purchase a home in a municipality with a POS inspection, which comes with the additional hurdles of inspections and inspection fees to resell the house. Some POS

municipalities differ significantly from these averages, such as East Cleveland, Newburgh Heights, and Warrensville Heights, which only averaged 15.3, 26.9, and 23.2 transactions per 1,000 households, respectively.

**Table 12: Average Sales per 1,000 Total Households in POS and Non-POS Municipalities, 2015-2022**

Municipalities	2015	2016	2017	2018	2019	2020	2021	2022	Overall Average
<b>With POS Inspections</b>	38.3	41.8	45.5	45.6	46.5	45.3	54.6	46.8	45.6
<b>Without POS Inspections</b>	35.9	49.8	53.8	54.0	52.8	51.4	61.4	57.1	52.0

Source: Data provided by Ohio Counties and the U.S. Census Bureau.

### Housing Baseline Data

The Economics Center analyzed housing characteristic data from 2007 - 2022. Data included the year the property was built, the age at the sale, and the number of bedrooms and bathrooms. The average sale price was \$158,578 (2022\$), with a median of \$106,488 per property, as shown in Table 13. The average year of construction was 1951. The number of bedrooms averaged 2.5, and the number of bathrooms averaged 2.1.

It should be noted that communities with POS ordinances have homes that are, on average, older (average year built 1946) than communities without POS ordinances (average year built 1953). For some communities, these differences are particularly pronounced, such as Cleveland Heights, East Cleveland, Newburgh Heights, and Shaker Heights, where homes sold had an average year built of 1932, 1921, 1926, and 1939, respectively. Older homes are more likely to require extensive repairs, meaning POS inspections may become a more significant burden in these communities.

**Table 13: Summary Statistics of Aggregate Baseline Housing Characteristics and Transaction Level Data, 2007-2022<sup>46</sup>**

	Sale Price (2022\$)	Year Built	Square Footage	Bedrooms	Full Bathrooms
Average/Mean	\$158,578	1951	1,605	2.5	2.1
Standard Error	\$453	0.06	2.15	0	0
Median	\$106,488	1951	1,382	3	2
Mode	\$54,370	1956	1,402	3	1
Standard Deviation	\$204,582	26	969	1.2	1.1
Minimum	\$942	1800	288	0	0
Maximum	\$13,268,615	2022	157,318	11	12
Count	203,628	203,628	203,628	203,628	203,628

Source: Economics Center calculations based on housing transaction data provided by county.

<sup>46</sup> A few areas, however, had transaction data starting in 2002 (Sheffield/Sheffield Lake CSD in Lorain County; and the five included school districts in Hamilton County). Data began in 2011 for West Clermont CSD in Clermont County, while the included school districts in Montgomery County had data available for the years 2001-2002 and 2008-2018.

## Regression Analysis

The Economics Center conducted a regression analysis using the baseline housing data along with the transaction-level data from 2007 to 2022 to determine what factors significantly impact housing prices. The dataset included 203,628 transactions over the 16 years.

The regression analysis variables included the inflation-adjusted sale price, the Case Shiller House Price Index, the square footage of the house, the numerical grade of the school district the home is located in, the age of the house at the time of sale, the number of beds and baths, a dummy variable representing whether a point-of-sale ordinance was in place, the monthly change in the county unemployment rate, and a dummy variable for sales that occurred after March 1, 2020 to control for the effects of the COVID-19 pandemic. Additionally, the Economics Center controlled geography by including county dummy variables and controlled for seasonal patterns in the housing market by including month dummy variables.

The regression equation was expressed as:

$$\text{Logged Sale Price}_{it} = \beta_0 + \beta_1 \text{Logged Case Shiller Home Price Index}_t + \beta_2 \text{Logged Square Footage}_{it} + \beta_3 \text{Beds}_{it} + \beta_4 \text{Full Baths}_{it} + \beta_5 \text{Beds}_{it} * \text{Full Baths}_{it} + \beta_6 (\text{Beds}_{it})^2 + \beta_7 \text{Property Age}_{it} + \beta_8 \text{School District Grade}_{it} + \beta_9 \text{POS Dummy}_{it} + \beta_{10} \Delta \text{County Unemployment}_{it} + \beta_{11} \text{Post Covid Dummy}_{it} + \sum \alpha \text{County}_i + \sum \mu \text{Month}_t + \varepsilon$$

Where *Logged Sale Price* is equal to the logged CPI adjusted sales price (in 2011\$) for property *i* in time/day *t*<sup>47</sup>;  $\alpha$  (or alpha) is the constant term. *Logged Case Shiller Home Price Index* is the logged value of the Case Shiller Home Price Index, which captures general national trends in home prices. *Bedrooms* is the number of bedrooms in property *i*; *Full Baths* is the number of full bathrooms; *Bed\*Bath Interaction* is an interaction term between the number of bedrooms and bathrooms; and *Bedrooms Squared* is the number of bedrooms squared. The latter two are included to allow for nonlinearities in the effect of bedrooms on sale price. The variable *Property Age* represents the number of years old the property is at the time of sale, and *Age Squared* is the number of years (or age) squared.<sup>48</sup>  $\beta_8$  *School District Grade* is the numerical grade given at time *t* to the school district that property *i* is in. *POS Dummy* is the dummy variable that indicates whether or not the property is located in an area with a POS inspection ordinance.  $\Delta$  *County Unemployment* is the monthly change in the unemployment rate at time *t* for the county property is located in.

The Economics Center conducted the regression analysis of the equation above. The regression findings are presented in Table 14. Results show that all independent variables have a statistically significant relationship with logged sales price, with P-values less than one percent. Statistically significant p-values indicate that the respective variables have a relationship with the sale price that is discernable from zero. The coefficients are interpreted

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<sup>47</sup> The logged sales price was used as the un-adjusted sales price variable does not have a normal (bell-curve) distribution.

<sup>48</sup> *Property Age* was calculated by subtracting the year of construction from the sale year, to derive the age of the property at the time of sale.

differently because the dependent variable has been logged. For the independent logged variables, the coefficient tells us the percent change in the sale price due to a 1.0 percent increase in the variable. For example, a 1.0 percent increase in the Case Shiller Home Price Index would lead to a 1.36 percent increase in the sale price of a home, all else equal. For all other variables, a one-unit increase in the variable is associated with a  $100 \times \beta$  percent increase in the sale price, all else equal. For example, if the unemployment rate increased by one percentage point, the sale price would fall by one percent.

As shown in Table 14, The point-of-sale dummy has a coefficient of -0.13, indicating that properties in communities with point-of-sale ordinances sell for about 13.0 percent less than those with similar characteristics in communities without point-of-sale ordinances.

**Table 14: Housing Baseline and Transaction Level Regression Results**

	Estimate	Std. Error	P-Value
Intercept	-4.03	0.08	0.000
log(Case Shiller Home Price Index)	1.37	0.01	0.000
log(Square Footage)	1.03	0.01	0.000
Age at time of sale	0.00	0.00	0.000
Age squared	0.00	0.00	
Bedrooms	0.09	0.01	0.000
Full Bathrooms	-0.14	0.00	0.000
Bedrooms squared	-0.03	0.00	0.000
Bedrooms X Full Bathrooms	0.07	0.00	0.000
Point of Sale	-0.13	0.01	0.000
School District Grade	0.01	0.00	0.000
Change in County Unemployment	-0.01	0.00	0.000
Post-Covid Dummy	0.17	0.01	0.000

*Source: Economics Center calculations using data provided by Ohio Counties*

## Sales Per 1,000 Household Regression Analysis

The Economics Center conducted a regression analysis to examine municipalities with POS inspections and housing velocity. Using the number of transactions per 1,000 households by municipality, this regression equation included the number of building permits per 1,000 households, the POS dummy variable, the months of housing supply, and the housing inventory per 1,000 households.<sup>49,50,51</sup> County and month dummies were also included.

<sup>49</sup> Building permit data was acquired from the Department of Housing and Urban Development.

<sup>50</sup> Months of housing supply data comes from Redfin and is calculated by dividing the total inventory by the average monthly sales.

<sup>51</sup> Inventory data comes from Redfin; it is the total houses listed at the beginning of each month.

The regression equation was expressed as:

$$\text{Transactions Per 1000 Households}_{it} = \beta_0 + \beta_1 \text{Permits Per 1000 Households}_{it} + \beta_2 \text{POS Dummy}_{it} + \beta_3 \text{Months of Supply}_{it} + \beta_4 \text{Inventory per 1000}_{it} + \sum \alpha \text{County}_i + \sum \mu \text{Month}_t + \varepsilon$$

Table 15 details the regression analysis results and shows which variables significantly impact the number of transactions per 1,000 households across the municipalities. All variables were statistically significant, with p-values less than 1.0 percent. The POS variable is associated with 0.55. For context, the average monthly transactions per 1,000 households is 3.87, so this effect is roughly 25 percent of the average monthly sales. On the other hand, the building permits per capita have a standard deviation of 52.86, so a one-standard-deviation change in building permits would increase monthly transactions per 1,000 households by 1.58, or roughly three times bigger than the effect of the POS ordinances. Months of supply has a standard deviation of 5.89; a standard deviation increase in months of supply would reduce monthly transactions by -0.88. Finally, inventory per 1,000 households has a standard deviation of 10.41, and a one standard deviation increase in inventory per 1,000 households would increase transactions by 0.73. In context, the effect of the POS ordinances is a small factor compared to the other factors in the regression.

**Table 15: Monthly Transactions Per 1,000 Households Regression Results**

	Estimate	Std. Error	P-Value
Intercept	2.45	0.23	0.000
Point of Sale	0.55	0.15	0.000
Building Permits Per 1,000 Households	0.03	0.00	0.000
Months of Supply	-0.15	0.01	0.000
Inventory per 1,000 Households	0.07	0.01	0.000

*Source: Economics Center regression analysis using data provided by the U.S. Census Bureau, Redfin and Ohio counties.*

It should be noted that for all regressions in this report, the results should not be interpreted as causal, as there may be omitted variables that influence both the outcome variable and influence a municipality's decision to adopt point-of-sale ordinances. It could also be that the outcome variables themselves are influencing the communities' decisions to adopt point-of-sale ordinances. Additionally, lower prices in communities with the point-of-sale ordinances may counteract any negative effects of the point-of-sale ordinances.

The Redfin data also included monthly transactions sourced from multiple listing services and CoreLogic. The Economics Center used this in place of the monthly transactions calculated using county auditor data and the results of the regression analysis are presented below in Table 16. All variables have p-values less than 1.0 percent. In this regression, the effect of the POS dummy variable was significantly smaller and no longer statistically significant. Any effect point-of-sale ordinances have on transaction volume is likely small. It should be noted that the coefficients on the rest of the variables in the regression did not change significantly from the regression that used transaction volume based on auditor data.

**Table 16: Transactions Per 1,000 Households Regression Results**

	Estimate	Std. Error	P-Value
Intercept	1.84	0.08	0.000
Point of Sale	0.06	0.05	0.274
Building Permits Per 1,000 Households	0.01	0.00	0.000
Months of Supply	-0.17	0.00	0.000
Inventory per 1,000 Households	0.10	0.00	0.000

Source: Economics Center regression analysis using data provided by the U.S. Census Bureau and Redfin.

## Days on Market

While transaction volume may not be lower in municipalities with point-of-sale ordinances compared to similar municipalities without them, homeowners in these municipalities may find it takes longer to sell their homes due to the ordinances. The Economics Center performed linear regression analysis on the median days of the market. The explanatory variables were the median square footage of homes sold in a particular month, a point-of-sale ordinance dummy, the median age of homes sold in a particular month, a time trend, and dummy controls for the county and month of the year. The regression equation is as follows.

$$\text{Median Days on Market}_{it} = \beta_0 + \beta_1 \text{Median Square Footage}_{it} + \beta_2 \text{POS Dummy}_{it} + \beta_3 \text{Median Age}_{it} + \beta_4 t + \sum \alpha \text{County}_i + \sum \mu \text{Month}_t + \varepsilon$$

The results for this regression are presented in Table 17. All variables have p-values below 1.0 percent. The effect of a municipality having a point-of-sale ordinance, all else equal, is that the median number of days on the market increases by 8.5 days. This effect is almost as large as the year-to-year decline of 11.0 days and is the equivalent of increasing the size of the median house on the market that month by 212.5 square feet or increasing the age of the median house on the market by 22.4 years. These results may also indicate why prices are lower in point-of-sale communities, as the more time a house spends on the market the more reductions in asking price occur.

**Table 17: Median Days on Market Regression Results**

	Estimate	Std. Error	P-Value
Intercept	63.97	6.46	0.000
Point of Sale	8.50	3.16	0.007
Median Square Footage	0.04	0.00	0.000
Median Age	0.38	0.06	0.000
Time Trend	-11.00	0.35	0.000

Source: Economics Center regression analysis using data provided by Redfin.

## Conclusion

This analysis of various County-level housing transaction data, Census Bureau data, housing market data from RedFin, and regression analysis revealed vital information on municipalities with POS inspections, as well as the impact of the inspections themselves.

Census data revealed the municipalities with POS inspections, on (weighted) average, had higher vacancy rates than their comparison cities. Areas with POS inspections have higher unemployment rates for the population age 16 and older, and lower percentage of the population 25 and older with a bachelor's degree or higher. These are all indicative of communities with POS inspections being more economically disadvantaged. Higher vacancy rates in POS communities speaks to a constrained housing market, as vacant homes negatively impact surrounding homes' property values, and thereby, properties' listing and sale price. Further, vacant houses tend to attract crime, as well as reduce the amount of property tax revenue generated and collected by municipalities.

Housing market data provided by RedFin allowed the comparison of four pairs of municipalities, in terms of median sale price, days on market, and average sale to list percentage received across the years 2018- 2022. For all the four pairs, the municipality with POS inspections was found to have lower median sale prices than its comparison non-POS city, for four of the five years and for three of the four pairs this was true in all five years. In three of the four pairs, municipalities with POS inspections had higher numbers of days on the market than their comparison cities, in most years. And finally, in two of the pairings municipalities with POS inspections received a smaller percentage of the list price, than comparison cities in each year. In the other two pairings the municipalities with POS inspections had lower ratios of sale price to list price in most years.

Transaction or sale rates per 1,000 households over the years 2015-2012, were found to be lower in municipalities with POS inspections in every year except for 2015. This indicates that properties are being sold at slower rates in POS communities than in non-POS comparison municipalities. Higher vacancy rates in POS municipalities may contribute to slower transaction rates, as the neighborhoods' aesthetics are negatively impacted, which makes attracting home buyers more difficult.

The first regression analysis in this report provided illuminating findings on the impact of POS inspections on sales prices. The analysis completed by the Economics Center has found that POS inspections reduce sales price by 13.0 percent reduction in sales price compared to home sales in municipalities without POS inspections.

The second set of regression analyses further examined POS inspections and transaction rates per 1,000 households. Municipalities with POS inspections were found to have a slightly higher rate or no difference in transactions, depending on the data source used. Price reductions may help to alleviate any adverse effects of POS inspection laws on transaction volume.

The final regression analysis looked at the impact of POS inspections on a home's time on the market. Point-of-sale inspection laws were associated with the median house spending

8.5 days longer on the market than a median house in a similar community without POS inspection laws.

Ultimately, this study's results have found that POS ordinances function similarly to an implicit tax, as markets with POS ordinances have lower sale prices and decreased velocity of home transactions compared to non-POS communities. These impacts additionally further burden low-income homeowners living in neighborhoods with POS ordinances.

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## Appendix

**Table 18: Point of Sale Inspection Fee Details**

Municipality	Interior/Exterior	Inspection Fees	Escrow	Inspection Expiration	Re-Inspection Fee
<b>Bedford Heights</b>	Both	\$100, \$50 for dye testing. Apartment buildings/complexes will be determined by square footage.	100%	6 months	If more than two (2) inspections are required to insure that necessary repairs are made as required by the Building Official, an additional fee of fifty dollars (\$50.00) will be due to complete the inspection. In addition a fee of fifty dollars (\$50.00) shall be imposed for sewer dye test(s) if one has not been done within one (1) year of occupancy inspection for each dwelling unit covered by the application.(Ord. 2019-046. Passed 5-21-19.) (b) An additional fee of twenty-five dollars (\$25.00) shall be paid for inspection of the premises upon the third inspection by the Building Commissioner or his assistant and for each inspection required thereafter to verify that violations of the Housing Code have been properly corrected.
<b>Brooklyn Heights</b>	Both	\$50	Data unavailable	12 months	\$25 for any subsequent inspections requested by the same owner within twelve (12) months from the date of issuance of the original certificate of inspection.
<b>Brook Park</b>	Exterior	\$60 for single-family homes; \$30 for all other residential structures.	Data unavailable	6 months	\$25
<b>Cleveland Heights</b>	Both	\$200 for single family unit; \$50 for each additional unit	If all Class A violations are not corrected, the seller must escrow no less than \$1,000 equal to 125% of the estimated cost of repairs.	12 months	\$50 for rental properties if violations are not completed after 18 months of original inspection date
<b>East Cleveland</b>	Both	\$150 for single-family, and \$50 for each additional unit	Data unavailable	6 months	\$25 for each re-inspection after the first two within the six (6) month period that the certificate is valid

<b>Euclid</b>	Yes, exterior only unless interior is requested by the property owner.	Single Family - \$225, Two-Family - \$260, Three-Family \$295, Multi-Family - \$225 per building + \$35 per suite. One suite per building not charged.	Investment property requires 50% Escrow hold, if it is going to be owner occupied and at least 20% will be put down on the house, you will need to submit a purchasing agreement indicating such and 25% Escrow will be held. A	6 months	\$112.50
<b>Garfield Heights</b>	Yes, exterior only. Interior is now opt-in.	\$125 first unit, \$40 for additional units.	Data unavailable	12 months	\$53 after two re-inspections
<b>Gates Mills</b>	Both	N/A	Data unavailable	90 days	Data unavailable
<b>Hunting Valley</b>	Both	None	Data unavailable	12 months	None
<b>Linndale</b>	Data unavailable	Data unavailable	Data unavailable	Data unavailable	Data unavailable
<b>Maple Heights</b>	Exterior, interior optional	Inspection Fee: Single-Family: \$110, Single-Condominium: \$110, Two-Family: \$160, Three-Family: \$210 ; Interior Inspection Fee: \$110 (Done if the owner signs consent)	100%	6 months	\$60 for first re-inspection
<b>Mayfield Heights</b>	Exterior only	\$100	Case-by-case basis	12 months	Data unavailable
<b>Moreland Hills</b>	Yes. Septic inspection also required. Well inspection required if property uses a private well for potable water	Point of Sale, occupied dwelling: \$50.00 Point of Sale, rental dwelling: \$100 Point of Sale, vacant dwelling: \$100	Data unavailable	Data unavailable	\$ 25.00 (if initial compliance date has passed)

<b>Newburgh Heights</b>	Both	\$150 for the first business unit in any building or structure, an additional \$50 for each additional business unit in such building or structure.	If all Class A violations listed on a Certificate of Inspection are not corrected prior to any transfer of title, an escrow account must be established and funds, in an amount equal to the greater of five hundred dollars (\$500.00) or the amount that is one hundred twenty percent (120%) of the estimated cost of repairs, must be deposited to pay to correct all violations.	1 year	None if requested by the same owner within one (1) year from the date of issuance of a certificate of inspection for the same property.
<b>North Randall</b>	Both	\$50 for residential properties	Data unavailable	90 days	N/A
<b>Orange Village</b>	Smoke alarms, septic tank, well water tested	\$50, \$75 paid to CCBH for septic tank and well water	Data unavailable	12 months	\$45 if the Fire Inspection fails and the Fire Department needs to return for an additional inspection
<b>Shaker Heights</b>	Both	\$200 for single-family, \$150 for condominium, \$300 for two-family, \$200 for the first apartment unit plus \$50 for each additional unit.	150%	12 months	\$25 after first two requested re-inspections
<b>University Heights</b>	Both	Single \$250, Double \$300	Data unavailable	12 months	N/A
<b>Warrensville Heights</b>	Both	\$200 for a single tenant building, \$200 for first unit in a multi-tenant building and \$90 for each additional unit, \$200 for commercial structures.	150%	12 months	No fee within 1 year
<b>Woodmere</b>	Both	\$100	Data unavailable	12 months	Data unavailable
<b>Macedonia</b>	Exterior	\$75 for residential	Data unavailable	Data unavailable	Data unavailable
<b>Northfield Village</b>	Exterior	\$100	Data unavailable	Data unavailable	Data unavailable
<b>Twinsburg</b>	Exterior	\$50	Data unavailable	Data unavailable	Data unavailable

**Table 19: Owner-Occupied Demographics**

<b>Municipality</b>	<b>% White</b>	<b>% Black</b>	<b>% Hispanic/ Latino</b>	<b>% Asian</b>	<b>% With Bachelor's Degree or Higher</b>
Bedford Heights	25.9	62.1	2.9	0.5	21.4
Brooklyn Heights	96.9	1.7	4.0	0.9	36.0
Brook Park	90.9	1.8	5.1	2.5	15.2
Cleveland Heights	58.7	34.6	2.3	2.2	66.4
Cuyahoga Heights	93.9	0.0	0.0	5.0	12.8
East Cleveland	4.6	91.4	1.2	1.4	25.6
Euclid	58.1	37.6	1.8	0.8	29.3
Garfield Heights	56.3	40.0	3.7	0.5	22.1
Gates Mills	89.6	0.0	1.2	5.9	77.5
Highland Hills	0.0	93.7	4.8	0.0	7.9
Hunting Valley	93.8	0.0	2.4	4.1	79.5
Linndale	57.7	26.9	7.7	0.0	50.0
Maple Heights	37.2	60.9	1.8	0.0	19.7
Mayfield Heights	88.0	3.6	5.4	2.3	41.6
Moreland Hills	94.3	1.5	0.6	3.6	82.5
Newburgh Heights	82.1	8.2	8.4	2.0	28.6
North Randall	56.9	42.4	0.0	0.0	16.0
Shaker Heights	65.1	26.1	1.3	2.6	83.4
University Heights	75.0	21.8	0.5	1.2	76.2
Warrensville Heights	3.2	94.6	1.0	0.0	28.0
Willoughby	94.3	2.6	1.2	1.1	38.7
Woodmere	20.8	75.3	3.9	3.9	59.7
<b>Ohio</b>	<b>88.2</b>	<b>6.7</b>	<b>2.3</b>	<b>1.7</b>	<b>36.5</b>
<b>POS Communities Overall</b>	<b>62.9</b>	<b>31.6</b>	<b>2.4</b>	<b>1.5</b>	<b>42.8</b>

**Table 20: Renter-Occupied Demographics**

Municipality	% White	% Black	% Hispanic/ Latino	% Asian	% With Bachelor's Degree or Higher
Bedford Heights	9.0	84.8	3.9	0.0	16.6
Brooklyn Heights	70.0	0.0	10.0	13.3	23.3
Brook Park	77.7	15.7	8.7	0.0	13.8
Cleveland Heights	41.5	42.2	4.2	10.1	53.7
Cuyahoga Heights	100.0	0.0	0.0	0.0	10.7
East Cleveland	10.4	83.7	0.5	1.0	14.3
Euclid	15.9	79.9	1.3	0.2	12.0
Garfield Heights	19.6	73.7	1.5	0.3	10.1
Gates Mills	91.1	0.0	8.9	0.0	55.4
Highland Hills	2.6	89.7	1.9	0.0	11.6
Hunting Valley	100.0	0.0	0.0	0.0	40.0
Linndale	61.9	7.1	47.6	0.0	16.7
Maple Heights	12.3	81.8	0.6	1.1	12.7
Mayfield Heights	57.8	29.7	3.4	6.7	40.7
Moreland Hills	100.0	0.0	0.0	0.0	50.0
Newburgh Heights	75.4	15.1	5.2	0.0	5.2
North Randall	9.9	87.3	0.7	0.0	7.0
Shaker Heights	37.4	55.1	4.4	3.9	53.2
University Heights	59.1	37.5	4.5	0.8	49.6
Warrensville Heights	3.5	95.5	0.0	0.1	13.6
Willoughby	87.7	9.3	0.7	0.7	30.7
Woodmere	32.9	37.6	23.3	3.3	33.8
<b>Ohio</b>	<b>66.7</b>	<b>23.8</b>	<b>4.9</b>	<b>2.7</b>	<b>23.1</b>
<b>POS Communities Overall</b>	<b>32.0</b>	<b>60.7</b>	<b>2.5</b>	<b>2.6</b>	<b>26.5</b>