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## A Message from The Executive Director



While the impacts of the 2008 foreclosure crisis were felt nationally and globally, the recession only exacerbated existing challenges with vacant and abandoned properties in Cook County. In 2005, there were an estimated 14,442 foreclosure cases pending in the Circuit Court of Cook County; in 2012, there were more than 85,000. That's why the Cook County Land Bank Authority (CCLBA) was created in 2013—as a direct response to the foreclosure crisis.

In the decade since CCLBA was established, the organization has made an indelible mark on the County. It has created more than \$195 million in community wealth and added \$20 million to the county's tax rolls. As 2023 comes to a close, we are approaching 2,000 rehabbed housing units put back into the hands of homeowners. Additionally, the Land Bank has opened up a once burdensome and opaque property

acquisition process to more than **500 community developers**—which include women and minorities—who have seized this opportunity to invest in their own communities, create jobs, boost homeownership, and return economic vibrancy to the neighborhoods where they live and work.

Over the last decade, the Land Bank has successfully partnered with many community development corporations, municipalities, residents and small business owners to increase property ownership in historically dis-invested communities. We have re-purposed properties for social service and faith-based organizations serving those same communities, enabling them to extend their reach and impact to more Cook County residents.

The Land Bank continues to demonstrate its mission that there is a robust market for naturally-occurring affordable housing in every community.

As I conclude my first year of leading this organization, I am pleased with our accomplishments in this fiscal year which are documented in this FY23 economic impact report. The report demonstrates how we have preserved and increased home values, returned approximately \$5 million annually in property tax revenue to Cook County, and induced upwards of \$14 million in private sector investment in tax-distressed properties. The result is an estimated \$10.02 to \$15.86 in economic impact in Cook County during FY 23, for every dollar from the Land Bank's budget.

I am deeply honored to serve as Executive Director of this transformative organization, and I am thrilled and humbled to continue to champion the many exciting plans we have for the future to build on our success. While our impact this past year has showed the strength and capacity of our team, we are just getting started.

Sincerely,

Jessica Caffrey

Executive Director, Cook County Land Bank Authority



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### **Executive Summary**

Griswold Consulting Group, LLC (GCG) was retained as an objective third-party to perform an economic impact analysis of the Cook County Land Bank Authority's (CCLBA) activity during its 2023 fiscal year (FY 2023). The study area for this analysis includes the entire CCLBA service area of Cook County, Illinois.

Analysis of Cook County and CCLBA data files, scholarly economic literature, and academically defensible applied economic modeling methods were leveraged to retain the specific economic impact estimates quantified herein. Several objective assumptions were applied to relevant impact estimation methods, and are explained throughout the report.

Estimates of CCLBA FY 2023 economic impact in this study include:

#### **DIRECT ECONOMIC IMPACTS<sup>1, 2</sup>**

- A. Estimated annual property tax revenue in Cook County from properties put back on the tax rolls by CCLBA as a result of their sales through the end of FY 2023
- B. The ripple effect on economic output and jobs from catalytic private investment in residential, commercial, and industrial structural rehabilitations and new construction that were sold and monitored by CCLBA and were completed during FY 2023

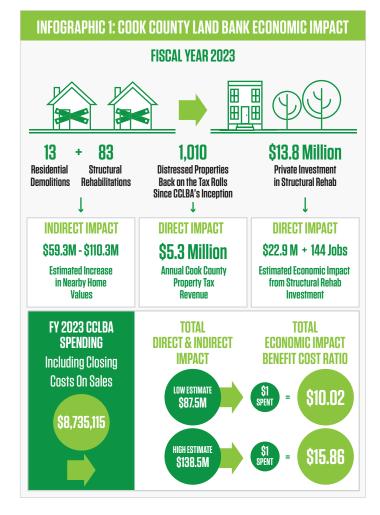
### **INDIRECT ECONOMIC IMPACTS**

- **A.** Impact of residential rehabilitation completed in FY 2023 on neighboring home values<sup>3</sup>
- **B.** Impact of residential demolition completed in FY 2023 on neighboring home values<sup>4</sup>

Final estimates of each applied economic impact typology quantified in this study can be found in Tables 1 and 2. Table 3 provides aggregated economic impact and a relevant total benefit-cost ratios (BCR) of impact from CCLBA activity during FY 2023.

All impact estimates are divided by CCLBA FY 2023 budget to arrive at BCR of economic impact for each CCLBA budget dollar spent.

Infographic 1, presented here, provides a visual representation of direct and indirect total impacts, as well as the BCR associated with each to provide a clear understanding of total economic impact the CCLBA has had during FY 2023.



## **Executive Summary**

TABLE 1: DIRECT ECONOMIC IMPACT ESTIMATES AND BENEFIT-COST RATIO FROM CCLBA ACTIVITY, FY 2023				
Estimated Annual Property Tax Revenue from CCLBA Activity	\$5,299,898			
Reported Total Private Investment in Structural Rehab (83 complete, 75 with data reported)	\$13,837,649			
Economic Output From Total Private Investment in Structural Rehab	\$22,919,790			
Jobs Impact from Total Private Investment in Structural Rehab	144			
FY 2023 CCLBA Spending (Including Closing Costs on Sales)	\$8,735,115			
DIRECT ECONOMIC IMPACT BENEFIT-COST RATIO FROM CCLBA ACTIVITY, FY 2023	\$3.23 IN DIRECT BENEFIT TO \$1 CCLBA SPENDING			

The direct and most tangible economic impacts include the estimated annual property tax revenue as a result of CCLBA tax distressed property sales as of FY 2023 ending, and the direct economic ripple effects from structural rehabilitation investments on jobs and economic output. These direct effects from CCLBA activity total an estimated \$28,219,688 in economic impact and create roughly 144 jobs during FY 2023. Thus, with CCLBA spending of \$8,735,115 in FY 2023, the BCR of direct economic impact is \$3.23 in tangible economic benefit for Cook County for each budget dollar spent at the CCLBA during FY 2023.

TABLE 2: INDIRECT ECONOMIC IMPACT ESTIMATES AND BENEFIT-COST RATIOS FROM CCLBA ACTIVITY, FY 2023					
	LOW-END ESTIMATE (50 HOMES) HIGH-END ESTIMATE (~100 HOMES)				
Impact On All Home Values Within 500 Feet from FY 2023 CCLBA Demolition Activity (13 Residential Demolitions)	\$4,914,242	\$8,851,712			
Impact On All Home Values Within 500 Feet from FY 2023 CCLBA Structural Rehabilitation Activity (66 Residential Rehabs)	\$54,381,254	\$101,437,844			
FY 2023 CCLBA Spending (Including Closing Costs on Sales)	\$8,735,115				
INDIRECT ECONOMIC IMPACT BENEFIT-COST RATIO FROM CCLBA ACTIVITY, FY 2023	\$6.79 INDIRECT BENEFIT To \$1 CCLBA SPENDING	\$12.63 INDIRECT BENEFIT To \$1 CCLBA SPENDING			

As shown in Table 2, the indirect impact of CCLBA FY 2023 residential demolition and structural rehabilitation activity is expressed by the increased and preserved market value of thousands of homes near CCLBA activity.<sup>5</sup> These indirect impacts are well documented in academic and public policy literature,<sup>6</sup> and measure the change in neighborhood home values when distressed residential structures are transformed by demolition and rehabilitation. Applied research suggests these neighborhood impacts will primarily occur within 500 feet of CCLBA activity, as well as impacting these nearby homes differently depending on the housing market the activity occurs within.

Modeling used to quantify these neighborhood home value impacts estimate that roughly 50 to 100 homes fall within 500 feet of CCLBA activity.

Thus, Table 2 suggests that the indirect aggregate economic impact on neighboring home values near CCLBA residential demolition and rehabilitation ranges between \$59,295,496 and \$110,289,556 in home value impact on the thousands of occupied homes near those activities. When considered in the context of BCR, the indirect economic impact BCR is estimated between \$6.79 and \$12.63 in preserved and increased home value near CCLBA activity for each budget dollar spent during FY 2023.

## **Executive Summary (continued)**

TABLE 3: TOTAL ECONOMIC IMPACT ESTIMATES AND BENEFIT-COST RATIOS FROM CCLBA ACTIVITY, FY 2023				
Total Direct Economic Impact Estimate from FY 2023 CCLBA Activity	\$28,219,688			
	LOW-END ESTIMATE (50 HOMES) HIGH-END ESTIMATE (~100 HOMES)			
Total Indirect Economic Impact Estimate from FY 2023 CCLBA Activity	\$59,295,496	\$110,289,557		
Total Direct + Indirect Economic Impact Estimate from FY 2023 CCLBA Activity	\$87,515,184	\$138,509,245		
FY 2023 CCLBA Spending (Including Closing Costs on Sales)	\$8,735,115			
TOTAL ECONOMIC IMPACT BENEFIT-COST RATIO FROM FY 2023 CCLBA ACTIVITY	\$10.02 TOTAL BENEFIT Per \$1 CCLBA SPENDING	\$15.86 TOTAL BENEFIT Per \$1 CCLBA SPENDING		

Table 3 combines the direct and indirect economic impacts estimated from CCLBA activity to arrive at an aggregated range of economic impacts and total BCR for each CCLBA budget dollar spent during FY 2023. Results suggest that the total economic impact of the CCLBA on Cook County during FY 2023 ranges from \$87,515,184 to \$138,509,245. With budget spending in FY 2023 of \$8,735,115, the aggregated BCR is a range from \$10.02 to \$15.86 of positive economic impact in Cook County for every \$1.00 spent on the CCLBA budget.

A key takeaway from the FY 2023 economic impact analysis is that the CCLBA is shown to be a property tax revenue generator for Cook County. As an institution within Cook County government, CCLBA is responsible for putting distressed non-revenue producing properties that would otherwise be sitting vacant, abandoned, or deteriorated back into production. It delivers these benefits primarily through its flagship rehab program that gains private rehabilitation investment, leading to these properties becoming property tax paying assets to Cook County once again. Beyond creating County property tax revenue, CCLBA action is shown to simultaneously protect and increase neighborhood property values, create jobs and profitable local businesses, and induce private investment that has ripple effects on the Cook County economy. Thus, the CCLBA rehabilitation program can be viewed as a quadruple bottom line for the County, and deserves significant consideration for increased capacity assuming there is demand for increased private rehab activity upon increased investment in the CCLBA rehab program.



o courtesy of the Cook County Land Bank Authority

### **Introduction & Approach**

In partnership with CCLBA, GCG captured all relevant and necessary data for this analysis from CCLBA staff and Cook County government offices. All data is fitted to the FY 2023 (December 1st, 2022 - November 30, 2023) timeframe and the Cook County, IL study area to estimate the total economic impact of the CCLBA during this timeframe on Cook County, IL. The economic impact of CCLBA actions that were initiated prior to FY 2023 but culminated in FY 2023 (property tax revenue estimates and completed structural rehabilitations), as well as those actions that were initiated and culminated during FY 2023 (demolition) are included in the approach. Three specific economic impact quantification methods are deployed:

- Analysis of Cook County Treasurer data to identify the annual estimated property tax revenue from all tax delinquent properties sold and put back on the tax rolls by CCLBA.
- **2.** Applied input-output modeling to translate the economic impact of sectoral investment (inputs) on jobs and economic output (outputs)<sup>7</sup>;
- 3. Applied hedonic price modeling to capture property value impacts on nearby home values as a result of residential demolition and rehabilitation completed during FY 2023<sup>8</sup>;

The applied economic models and data analytics methods have been integrated into a multi-pronged approach that considers the study area as the CCLBA service area - Cook County, IL. Each economic impact typology is independently estimated with respective data requirements and assumptions, and has its own respective section within this report. Both direct and indirect economic impact quantification methods are deployed and then combined to quantify an aggregate economic impact estimate of the CCLBA during FY 2023.

Direct impacts include immediately tangible benefits such as property tax revenue and catalytic private-sector investment in rehabilitation of property. Indirect impacts include positive externalities of increased and preserved home values of nearby homeowners from the reduction in distressed properties via CCLBA residential demolition and rehabilitation.

Findings, interpretations, and additional considerations associated with each component of the economic impact analysis can be found in the sections below. A closing section provides an overall impression of the CCLBA's FY 2023 performance, as well as limitations and considerations for the future.

### **INFOGRAPHIC 2: OUR PRINCIPLES**



OPERATE IN A MANNER CONSISTENT WITH PLANS AND PRIORITIES DEVELOPED BY LOCAL AND MUNICIPAL OFFICIALS, OTHER MUNICIPAL BODIES AND COMMUNITY STAKEHOLDERS;



ESTABLISH AN EFFICIENT PROPERTY DISPOSITION PROCESS FOR TRANSFERRING PROPERTIES TO RESPONSIBLE PARTIES, WHO WILL RETURN THEM TO PRODUCTIVE USE IN A TIMELY MANNER AND CONSISTENT WITH THE MISSION;



TO THE EXTENT POSSIBLE, STRIVE TO INCREASE AFFORDABLE HOUSING, GENERATE JOBS, PROMOTE ECONOMIC DEVELOPMENT, AND PROMOTE SUSTAINABLE COMMUNITIES.

### **INFOGRAPHIC 3: OUR MISSION**

THE LAND BANK WILL ACQUIRE, HOLD, AND TRANSFER INTEREST IN REAL PROPERTY THROUGHOUT COOK COUNTY TO: PROMOTE REDEVELOPMENT AND REUSE OF VACANT, ABANDONED, FORECLOSED OR TAX-DELINQUENT PROPERTIES; SUPPORT TARGETED EFFORTS TO STABILIZE NEIGHBORHOODS; STIMULATE RESIDENTIAL, COMMERCIAL AND INDUSTRIAL DEVELOPMENT—ALL IN WAYS THAT ARE CONSISTENT WITH GOALS AND PRIORITIES ESTABLISHED BY LOCAL GOVERNMENT PARTNERS AND OTHER COMMUNITY STAKEHOLDERS.



## Direct Impact: Increased Property Tax Revenue & Catalytic Private Investment

Quantifying direct economic impact is significantly more straightforward and tangible than indirect economic impact quantification because it is tied to direct spending, revenue, and the ripple effects in a local economy on output and jobs as a result of that spending.

Several regional impact models exist in the literature to quantify and estimate direct economic impact of local spending.<sup>9</sup> The input-output and social accounting matrix of IMPLAN regional economic analysis software application was used for all FY 2023 CCLBA spending in the Cook County economy.<sup>10</sup> For direct tax revenue estimates attributable to the CCLBA, a comprehensive dataset of all tax billings and payments from 2012 through 2022 for every CCLBA property was acquired and utilized to glean key data.

## IMPACT OF ESTIMATED PROPERTY TAX REVENUE FROM CCLBA DISPOSITION

A core function of the CCLBA is to revitalize abandoned property through the identification of severely tax-delinquent parcels that are experiencing distress and undesired by the private market with an aim to put these unproductive properties back into productive use, thus back onto the Cook County tax rolls to produce property tax revenue once again.

This section provides an estimate of the property tax revenue expected to be captured annually by Cook County as a result of all tax distressed properties sold by CCLBA through the end of FY 2023. This section does not provide an estimate of property redemption payments of back taxes owed, penalties, and fees paid by property owners induced by CCLBA administrative action in which the land bank held a tax certificate from the biennial Cook County scavenger sale or the taxes and penalties paid by any buyers of CCLBA properties required for buyers to purchase CCLBA property. See endnotes 1 and 2 for a deeper explanation of these unmeasured property tax benefits of the CCLBA.

Using a dataset gleaned from the Cook County Treasurer's office that has payment and billed amounts for every property the CCLBA has ever held title to between 2012 - 2022, the following constraints were imposed upon the data set to capture two sets of property tax revenue information:

- Properties that the CCLBA has returned to the tax rolls and the annual tax billing amount is known with certainty (CCLBA properties sold before the end of 2021):
  - Properties must have been acquired via some form of tax distress - primarily the biennial Cook County scavenger sale.<sup>11</sup>
  - Properties must be acquired via tax distress and subsequently sold by CCLBA by the end of 2021<sup>12</sup>;
  - Properties must have received a tax bill in the 2022 tax billing cycle that is due by December of 2023.

Applying these constraints to the Cook County Treasurer's dataset on all CCLBA properties acquired since inception derived a total of 468 CCLBA property sales meeting these requirements. The total 2022 billed amount of these 468 properties the CCLBA put back on the tax rolls is \$2,438,741. Thus, \$2,438,741 is an estimate of the annualized property tax revenue CCLBA is responsible for putting back on the tax rolls each year with certainty.

2. Properties that the CCLBA has returned to the tax rolls and the annual tax billing amount is estimated due to an unknown amount of actual tax billing since its sale (CCLBA properties sold during 2022 and FY 2023)

A total of 542 CCLBA property sales that were sold in 2022 and FY 2023 were acquired as a result of tax distress. These properties deliver an estimated additional annual property tax revenue put back on the tax rolls by CCLBA of up to \$2,861,157.<sup>13</sup> Taken together, the CCLBA is responsible for an estimated \$5.3 million in property tax revenue annually for Cook County.

## **Direct Impact: Increased Property Tax Revenue & Catalytic Private Investment**

### IMPACT OF CATALYTIC INVESTMENT IN STRUCTURAL REHABILITATION

A total of 83 structural rehabs were completed by the purchasers of CCLBA property during FY 2023.14 Of these 83, a total of 75 of them had the necessary reported investment data accessible to perform impact measurement analysis for this study. Table 4, below, summarizes the counts of rehabs completed in 2023 by typology, the total estimated private investment put into the 75 completed rehabs<sup>15</sup>, as well as averaged per rehab investment, purchase price, and post-rehab market value.



TABLE 4: SUMMARY OF CCLBA REHABILITATED STRUCTURES COMPLETED, FISCAL YEAR 2023						
REHAB TYPOLOGY	COUNT	ESTIMATED TOTAL Rehab investment (\$)	AVERAGE PRIVATE REHAB Investment (\$)	AVERAGE PURCHASE Amount (\$) From CCLBA	AVERAGE MARKET VALUE Post-rehab (\$)	
Single Family Building - Rehab	36	\$4,018,313	\$111,620	\$50,698	\$280,071	
Single Family Building - New Construction	7	\$1,451,867	\$207,410	\$14,038	\$368,100	
Multi-Family Building - Rehab	9	\$1,515,586	\$168,398	\$28,000	\$401,500	
Multi-Family Building - New Construction	14	\$5,742,631	\$410,188	\$6,929	\$752,431	
Commercial + Mixed-Use Building - Rehab	7	\$790,732	\$112,962	\$77,357	\$265,833	
Industrial Building - Rehab	2	\$318,520	\$159,260	\$73,500	\$650,000	
TOTALS	75	\$13,837,649	\$184,502	\$39,479	\$399,568	

With a total reported investment of \$13,837,649 from CCLBA private buyers, the CCLBA rehab programs are shown to inject significant private investment into the Cook County economy, creating both jobs and economic ripple effects on total economic output. The CCLBA rehab program requires buyers to accept deed restrictions that are monitored by the CCLBA until buyers complete

their property rehab investment, and then CCLBA signs off and releases title restrictions on purchasers. This program approach forces buyers to either follow through on their promise to invest in CCLBA purchased property or risk losing the property back to CCLBA. Thus CCLBA catalyzes and induces investment through these transactions.

# Direct Impact: Increased Property Tax Revenue & Catalytic Private Investment

TABLE 5: AVERAGE CCLBA AND PRIVATE BUYER RETURNS FROM STRUCTURAL REHAB, FISCAL YEAR 2023					
REHAB TYPOLOGY COUNT AVERAGE PROFIT/HOME EQUITY PER REHAB (\$) AVERAGE PRIVATE BUYER ROI					
Single Family Building - Rehab	36	\$117,753	\$1.73		
Single Family Building - New Construction	7	\$146,652	\$1.66		
Multi-Family Building - Rehab	9	\$205,102	\$2.04		
Multi-Family Building - New Construction	14	\$335,314	\$1.80		
Commercial + Mixed-Use Building - Rehab	7	\$75,514	\$1.40		
Industrial Building - Rehab	2	\$417,240	\$2.79		

As shown in Table 5 above, strong financial returns are bestowed upon homeowners and investors (equity for homeowners and profit for investors) after buying CCLBA properties. While estimated return on investment (ROI)

varies based on the type of structural rehab private buyers perform, the range of ROI is all positive - ranging from \$1.40 to \$2.79 return on each dollar invested in CCLBA structures being privately purchased and rehabbed.

TABLE 6: ECONOMIC IMPACT FROM REHAB INVESTMENT, FY 2023 <sup>16</sup>						
ECONOMIC IMPACT TYPE EMPLOYMENT LABOR INCOME VALUE ADDED OUTPUT						
Direct	96	\$7,043,306	\$8,877,065	\$13,837,649		
Indirect	17	\$1,240,079	\$2,193,278	\$3,550,179		
Induced	31	\$1,986,928	\$3,538,688	\$5,531,962		
TOTALS	144	\$10,270,313	\$14,609,031	\$22,919,790		

Private sector returns for small businesses and homeowners' equity are one of several significant returns from CCLBA's rehab program shown in Table 5. Further, as Table 6 above shows, the ripple effect of jobs and economic output in Cook County from these investments are significant as well.

As shown above, the \$13,837,649 in direct economic output in the relevant Cook County construction industries associated with rehab create an estimated 144 jobs and total economic output of \$22,919,790. The IMPLAN regional input-out model and social accounting matrix deliver results in the following form associated with Table 6<sup>17</sup>:

- **Direct effects** are the initial changes that result from the economic activity.
- Roughly 96 jobs from the initial \$13,837,649 rehab investment.
- Indirect effects are the impact of local industries buying goods and services from other local industries as a result of the initial economic activity.
  - Roughly 17.5 jobs and an additional \$3,550,179 in economic output.
- Induced effects are the impact response in the Cook County economy induced by the initial economic activity through the spending of income by wage earners.
  - Roughly supporting 31 jobs and \$5,531,962 in economic output.

# Direct Impact: Increased Property Tax Revenue & Catalytic Private Investment

TABLE 7: TAX REVENUE IMPACT FROM REHAB INVESTMENT, FY 2023						
TAX IMPACT TYPE	SUB COUNTY General	SUB COUNTY Special districts	COUNTY	STATE	FEDERAL	TOTAL
Direct	\$45,107	\$70,660	\$14,633	\$204,139	\$1,224,652	\$1,559,191
Indirect	\$70,754	\$111,314	\$23,020	\$118,101	\$251,435	\$574,624
Induced	\$68,370	\$107,526	\$22,239	\$135,224	\$399,402	\$732,761
TOTALS	\$184,232	\$289,500	\$59,892	\$457,464	\$1,875,489	\$2,866,576

Other effects occurring as a result of jobs and economic output from direct rehab investment and the ripple effects into the Cook County economy are the taxes paid by wage earners and businesses. Table 7 provides insight into County, State, and Federal taxes captured as a result of CCLBA-driven private sector rehab investments.

A key component to each rehab investment aside from the annual property taxes paid on the property going forward, is that the jobs and economic output effects of these investments are an economic "one shot deal".

This means that jobs and economic ripple effects from these investments into the Cook County economy occur while the construction and rehab is occurring and until completed only - namely FY 2023.

These benefits do not sustain over time. Annual rehab investment impacts are much different from the property tax revenue impacts that CCLBA has put back into productivity. Property tax revenue behaves much more like an annuity, meaning long-term durable and annualized revenue is occurring as a result of CCLBA via the renewed property tax revenue for which they are responsible.



noto courtesy of the Cook County Land Bank Authority

## Indirect Impact: Estimated Effect on Nearby Home Values from Distressed Property Reduction

In addition to direct economic impacts, there is deep academic and public policy literature on econometric methods that quantify indirect neighborhood home value effects from positive and negative externalities.<sup>18</sup> Positive neighborhood externalities include amenities like parks, good neighbors, and community gardens, while negative neighborhood externalities include disamenties like blighted abandoned homes as neighbors or noise from nearby airports.19 In the situation of land banking and specifically the efforts of the CCLBA to demolish blight, rebuild new homes, and rehab distressed homes in Cook County, neighborhood disamenities are being ameliorated, turning neighborhood disamenity into neighborhood amenity. The property value effect of this neighborhood change is measurable, and underlies findings in this section.

This section quantifies these indirect neighborhood home value effects from two specific cases of FY 2023 CCLBA activity well documented in the economic literature. Specifically, the neighborhood effect of increased and preserved home values near residential demolition and residential rehabilitation performed by the CCLBA during FY 2023 is quantified here.<sup>20</sup>

## IMPACT OF RESIDENTIAL REHABILITATION ON NEARBY HOMES VALUES

A total of 66 single- and multi-unit residential rehabs were completed during FY 2023.<sup>21</sup> Utilizing the Neighborhood Intel software application<sup>22</sup>, each of the 66 rehabbed residential properties were provided with: (1) a U.S. Census Block Group-level geo location, (2) median home value, (3) a derived housing submarket<sup>23</sup>, (4) an estimated number of properties within 500 feet, and, (5) an associated derived dollar estimate of the economic impact on nearby home values as a result of residential rehab.

As shown in Table 8 below, a range of impact on nearby home values was estimated by varying the number of homes within 500 feet of each rehab to 50 up to an average of 94 homes. This range was quantified due to limitations of the Neighborhood Intel application to properly quantify the count of nearby occupied homes, and thus provides a strong estimate of a low- and high-end range of probable impact as a result of CCLBA rehabs completed in FY 2023 based on urban density identified in spatial urban research.<sup>24</sup>

TABLE 8: ESTIMATED HOME VALUE IMPACT FROM CCLBA RESIDENTIAL REHABS COMPLETED IN FY 2023				
	LOW-END IMPACT ESTIMATE	HIGH-END IMPACT ESTIMATE		
Residential Single- and Multi-Unit Rehabilitations Completed in FY 2023	66	66		
Average Median Home Value Near Residential Rehabilitation Activity	\$165,150	\$165,150		
Estimated Average Number of Occupied Homes Near Each Residential Rehabilitation	50	94		
Estimated Total Home Value Impact on Nearby Homes from Resdiential Rehabs Completed During FY 2023	\$54,381,254	\$101,437,844		
Estimated Average Nearby Home Value Impact Per Residential Rehabilitation	\$16,479	\$16,350		
Estimated Average Percent Increase in Each Nearby Home's Value Per Residential Rehabilitation	9.98%	9.90%		
Benefit Cost Ratio (BCR) of Estimated Property Value Increase for Each Private Residential Rehabilitation Investment Dollar Spent	\$3.63	\$6.76		

# Indirect Impact: Estimated Effect on Nearby Home Values from Distressed Property Reduction

Within the Neighborhood Intel tool, housing submarkets are rated from one to ten, with a submarket value of one being the weakest housing submarket and ten being the strongest housing submarket. Literature on the impacts of distressed property rehab strongly suggest that home value impacts vary greatly across housing submarkets.<sup>26</sup>

CCLBA rehabs were performed in housing submarkets one, two, and three, with corresponding impact rates on each nearby home value within 500 feet of roughly 2%, 8.5%, and 18%, respectively. Economic intuition suggests that nicer housing markets provide greater returns when distressed structures are rehabilitated, thus explaining this diminishing effect in impact as housing markets grow weaker. Statistically significant property value impact is shown to evaporate beyond submarket three, as distressed properties tend to evaporate in stronger markets and enough nice property exists that any measurable effect subsides. Nearly half of CCLBA rehabs were complete in submarket two, causing the average percent increase in nearby homes to land right around 10%, as shown in Table 8.

CCLBA residential property value impact from rehab is an interesting case because public benefit via home value increase is driven by CCLBA mandated private sector investment that drives business profit and home equity for CCLBA buyers as well as increased jobs and economic output from those investments. Thus, a triple-bottom line of economic impact begins to show in terms of output from the CCLBA rehab program, a quadruple bottom-line for Cook County if the return to property tax productivity is considered.

These estimated private investments and purchase prices are considered when quantifying the public benefiting property value impact BCRs in Table 8 as well as the direct return on investment (ROI) ratios expressed in Table 9, below. An extremely valuable component of CCLBA rehabs is that they spur private sector investments that are profitable to the tune of an estimated \$1.83 return on each \$1 invested, while simultaneously creating positive indirect economic impact of \$3.63 - \$6.76 in increased and preserved nearby home values for each of those invested private dollars as well.

TABLE 9: CATALYTIC PRIVATE INVESTMENT SUMMARY STATISTICS FROM CCLBA RESIDENTIAL REHAR	SS COMPLETED DURING FY 2023
Estimated Total Catalytic Private Investment from CCLBA FY 2023 Rehabilitation on Nearby Residential Property Values	\$12,728,397
Total Purchase Amount of 66 CCLBA Properties Where Resdiential Rehabilitations Were Completed During FY 2023	\$2,272,395
Estimated Average Total Private Investment Per Residential Rehab Completed During FY 2023	\$227,285
Estimated Average Sales Price or Market Value of CCLBA Residential Rehabs Completed During FY 2023	\$414,915
Estimated Catalytic Private Investment ROI Captured from CCLBA Residential Rehabs Completed During FY 2023	\$1.83

## Indirect Impact: Estimated Effect on Nearby Home Values from Distressed Property Reduction

## IMPACT OF RESIDENTIAL DEMOLITION ON NEARBY HOMES VALUES

A total of 13 residential demolitions were completed during FY 2023. Utilizing the Neighborhood Intel software application<sup>27</sup>, each of the 13 residential demolitions were provided with: (1) a U.S. Census Block Group-level geo location, (2) median home value, (3) a derived housing submarket<sup>28</sup>, (4) an estimated number of properties within 500 feet, and, (5) an associated derived dollar estimate of the economic impact on nearby home values as a result of each residential demolition.

As shown in Table 10 below, a range of impact on nearby home values was estimated by varying the number of homes within 500 feet of each demolition to 50 up to an average of 92 homes. This range was quantified due to limitations of the Neighborhood Intel application to properly quantify the count of nearby occupied homes, and thus provides a strong estimate of a low- and highend range of probable impact as a result of CCLBA demolitions completed in FY 2023 based on urban density identified in spatial urban research.<sup>29</sup>

TABLE 10: ESTIMATED HOME VALUE IMPACT FROM CCLBA RESIDENTIAL DEMOLITIONS COMPLETED DURING FY 2023					
LOW-END IMPACT ESTIMATE HIGH-END IMPACT EST					
Demolitions Performed	13	13			
Average Median Home Value Near Demolition	\$113,300.61	\$113,300.61			
Estimated Average Number of Occupied Homes Near Each Demolition	50	92			
Estimated Total Home Value Impact on Nearby Homes from FY 2023 Demolition	\$4,914,242	\$8,851,712			
Estimated Average Nearby Home Value Impact Per Demolition	\$7,560	\$7,370			
Estimated Average Percent Increase in Nearby Home Values Per Demolition	6.67%	6.51%			
Benefit Cost Ratio (BCR) of Estimated Property Value Increase for Each Demolition Dollar Spent	\$11.01	\$19.84			

Within the Neighborhood Intel tool, housing submarkets are rated from one to ten, with a submarket value of one being the weakest housing submarket and ten being the strongest housing submarket. Literature on the impacts of distressed property demolition strongly suggest that home value impacts vary greatly across housing submarkets. CCLBA demolitions were performed in housing submarkets one, two, and three, with corresponding impact rates on nearby home values of roughly 2%, 8.5%, and 18%, respectively. Economic intuition suggests that nicer housing markets provide greater returns when distressed structures are demolished, thus explaining this diminishing effect in impact as housing markets grow weaker.

Total demolition spending came in at \$446,249, and thus the estimated home value impact range from residential demolition of \$4,914,242 - \$8,851,712 from CCLBA's 13 demolitions deliver a BCR ranging from \$11.01 - \$19.84. While these BCRs are much larger than those delivered from rehab investments they do not suggest that demolition is a better financial decision than rehab by any means. Rehabbed properties have much more market value than vacant lots, thus drawing much larger property tax revenue returns over the long term unless a vacant lot delivers new construction. Demolition of properties is an action to be carefully considered based on structural integrity, market demand, and availability of potential property buyers or investors in new builds or side lots. As shown here, when the decision to demolish distressed residential structures does unfold, significant market value is preserved and nearby homes experience increased home values as a result.

### **Summary of Findings**

All results demonstrate that the Cook County Land Bank is a property tax generator for Cook County. Findings also show that CCLBA is a driver of private investment and small business profitability, a jobs creator, and a stabilizer of the property tax base near its activity by protecting and increasing home values from relieving neighborhood distress and transforming it into neighborhood amenity. Providing stable and consistent property tax revenue from Cook County properties that would otherwise sit dormant and drain services and home values from neighborhoods is arguably the most critical key performance indicator (KPI) of CCLBA activity, and thus the key bottom line outcome and thus the most important KPI outcome of this economic analysis.

#### **KEY PERFORMANCE INDICATORS OF ECONOMIC IMPACT:**

#### 1. ANNUAL PROPERTY TAX REVENUE.

Since inception through FY 2023 ending, the annual property tax revenue the CCLBA is responsible for has accrued to an estimated \$5.3 million each year. This reliable Cook County revenue is paid to the Cook County Treasurer on an annual basis, and is expected to grow each year with the continuation of CCLBA rehab programming that delivers more properties back to the tax rolls each year.

#### 2. PRIVATE INVESTMENT IN DISTRESSED PROPERTIES.

The CCLBA rehab program requires buyers to commit to investing in the properties they purchase, and they cannot have a clean title until these monitored investments are complete. The worst property on a block becomes a nice property again. These investments of nearly \$14 million that completed work in FY 2023 brought an estimated 144 jobs and nearly \$23 million in economic impact in Cook County.

#### 3. BUSINESS AND HOME EQUITY GROWTH.

Private rehab investment analysis shows that small businesses and home owners buying these properties are starting out with equity in their homes (owners) or making profit on sales (businesses) post-rehab. These buyers are getting returns estimated at \$1.40 - \$2.80 for each dollar they invest in CCLBA purchased properties. This finding suggests CCLBA is supporting sustained growth of small businesses and homeowner wealth creation, in addition to the jobs and economic output from original investments.

#### 4. STABILIZATION OF THE TAX BASE.

The indirect impact of CCLBA property stabilization programs that demolish and rehabilitate distressed properties preserves and increases neighboring homes values. The stabilization and increase in home values that occurs as a result of making investments in the weakest homes in a neighborhood create a broad stabilization of the property tax base in the neighborhoods where CCLBA is doing its work. Home values are estimated to have increased from \$60 - \$110 million near CCLBA activity in FY 2023 alone.

Taken together, an estimated \$10 - \$16 of economic impact is quantified from each dollar of CCLBA budget expenditure. That said, given that the CCLBA is a publiclyfunded institution of Cook County government, this quadruple bottom-line economic impact must also be viewed through the lens of hard-lined public finance: what income came into Cook County specifically as a result of CCLBA activity during FY 2023, and how much did it spend? CCLBA's FY 2023 operating revenue from sales and other transactions was \$5,288,950. This CCLBA operating revenue, along with the property tax revenue the CCLBA has secured for Cook County during FY 2023 sums to roughly \$10.6 million in total direct Cook County revenue attributable to the CCLBA this fiscal year (this income does NOT include additional revenue sources driven by CCLBA administrative activity unpacked in endnotes 1 and 2). With \$8.735,115 in spending, there is nearly \$1.9 million in direct surplus for Cook County as a result of CCLBA this fiscal year.

The key takeaway is that the CCLBA has built a strong base of annual property tax revenue to support the financing of its core function of further growing the Cook County tax base. If there is opportunity to increase capacity of the CCLBA rehab program, and its overall operations, it is well-deserved and will benefit Cook County both in the short- and long-term. Key limitations to be addressed in future analysis include creating a clear data set of all property tax related revenue driven by the CCLBA, including all back-payments and penalties that get paid during redemption processes as well as by potential buyers of CCLBA land.

### **Bibliography**

- Anselin, Luc. 1988. Spatial Econometrics: Methods and Models. Vol. 4. Studies in Operational Regional Science. Dordrecht: Springer Netherlands.
- Anselin, Luc. 1990. "SPATIAL DEPENDENCE AND SPATIAL STRUCTURAL INSTABILITY IN APPLIED REGRESSION ANALYSIS." Journal of Regional Science 30(2): 185.
- Anselin, Luc, and Daniel Arribas-Bel. 2013. "Spatial Fixed Effects and Spatial Dependence in a Single Cross-Section." Papers in Regional Science 92(1): 3-17.
- Biswas, Arnab. 2012. "Housing Submarkets and the Impacts of Foreclosures on Property Prices." Journal of Housing Economics 21 (3): 235-45.
- Champ, Patricia A., Kevin J. Boyle, and Thomas C. Brown, eds. A Primer on Non-market Valuation. Vol. 3. The Economics of Non-Market Goods and Resources. Dordrecht: Springer Netherlands, 2003. See page 445.
- Ding, Chengri, Robert Simons, and Esmail Baku. 2000. "The Effect of Residential Investment on Nearby Property Values: Evidence from Cleveland, Ohio." Journal of Real Estate Research 19 (1): 23-48.
- Dynamo Metrics. 2015. "Estimating Home Equity Impacts from Rapid, Targeted Residential Demolition in Detroit, MI: Application of a Spatially-Dynamic Data System for Decision Support." A Publication of The Skillman Foundation and Rock Ventures.
- Dynamo Metrics. 2016a. "Decision Support for Property Intervention: Rehab Impacts in Greater Cleveland, 2009-2015." A Publication of Cleveland Neighborhood Progress, Inc.
- Dynamo Metrics. 2016b. "Estimating Demolition Impacts in Ohio: Mid-Program Analysis of the Ohio Housing Finance Agency's Neighborhood Initiative Program." A Publication of the Ohio Housing Finance Agency.
- Dynamo Metrics. 2017. "Preserving Home Values: Demolition Impacts for Jackson, Mi, 2012-2016." A Publication of the City of Jackson, MI.
- Dynamo Metrics. 2018. "Quantitative & Qualitative Impact Assessment of Land Bank Activity in Michigan: With Case Study Applications in Benzie, Calhoun and Kalamazoo Counties." A publication of the Michigan Association of Land Banks.
- Dynamo Metrics. 2019. "Cuyahoga Land Bank: 10-year Economic Impact Analysis." A Publication of the Cuyahoga County Land Reutilization Corporation.
- Dynamo Metrics. 2021. "Quantifying the Placemaking Effect: Evaluating the Effect of Sustained Place-based Economic Development Incentives on Michigan's Neighborhoods and Commercial Corridors, 2008 2019. A Publication of the Michigan Economic Development Corporation.
- Griswold, Nigel G. 2006. "The Impacts of Tax-Foreclosed Properties and Land Bank Programs on Residential Housing Values in Flint, Michigan."

  Michigan State University. Department of Agricultural Economics Thesis.
- Griswold, Nigel G., and Patricia Norris. 2007. "Economic Impacts of Residential Property Abandonment and the Genesee County Land Bank in Flint, MI." 2007-05. A Publication of MSU Land Policy Institute.
- Griswold, Nigel G., Benjamin Calnin, Michael Schramm, Luc Anselin, and Paul Boehnlein. 2014. "Estimating the Effect of Demolishing Distressed Structures in Cleveland, OH, 2009-2013." A Publication of the Western Reserve Land Conservancy Thriving Communities Institute.
- IMPLAN\* model. 2019 Data. using inputs provided by the user and IMPLAN Group LLC, IMPLAN System (data and software), 16905 Northcross Dr., Suite 120, Huntersville, NC 28078 www.IMPLAN.com
- Ioannides, Yannis M. "Residential Neighborhood Effects." Regional Science and Urban Economics 32, no. 2 (March 1, 2002): 145-65.
- Li, Mingche M., and H. James Brown. "Micro-Neighborhood Externalities and Hedonic Housing Prices." Land Economics 56, no. 2 (1980): 125-41.
- Loveridge, Scott. 2004. A Typology and Assessment of Multi-sector Regional Economic Impact Models, Regional Studies, 38:3, 305-317, DOI: 10.1080/003434042000211051
- Rosen, Sherwin. "Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition." Journal of Political Economy 82, no. 1 (1974): 34–55.
- Simons, Robert A., Roberto G. Quercia, and Ivan Maric. "The Value Impact of New Residential Construction and Neighborhood Disinvestment on Residential Sales Price." The Journal of Real Estate Research; Sacramento 15, no. 1/2 (1998): 147-61.
- Voicu, Ioan, and Vicki Been. "The Effect of Community Gardens on Neighboring Property Values." Real Estate Economics 36, no. 2 (2008): 241–83.
- Whitaker, Stephan, and Thomas J. Fitzpatrick IV. "Deconstructing Distressed-Property Spillovers: The Effects of Vacant, Tax Delinquent, and Foreclosed Properties in Housing Submarkets." Journal of Housing Economics 22, no. 2 (June 2013): 79–91.

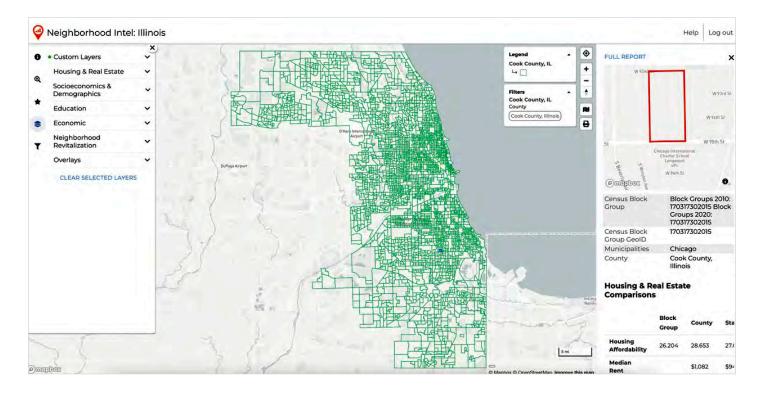
## **Appendix 1: Neighborhood Intel**

Neighborhood Intel is a software application delivered by Munetrix.<sup>31</sup> The application is designed as a decision support tool for the public sector focused on housing, land banking, economic development, and strategic planning.

The predictive economic impact tools utilized for this study were born out of the applied research of Dynamo Metrics and its founders and the comprehensive parcel data of about a dozen major Midwest cities, including Detroit, Grand Rapids, Lansing, Kalamazoo, and Battle Creek in Michigan, Cleveland and Toledo in Ohio and Gary, IN, amongst others.<sup>32</sup> The time-series parcel data from these cities was used to quantify an econometric model that delivers the predictive impact of land bankoriented activities, such as residential rehabilitation and demolition.

An additional component to the model includes a housing submarket approach that allows for the relative impacts of residential rehabilitation and demolition to vary across these submarket regimes.<sup>33</sup>

The image below is a view of Cook County within the statewide Illinois version of Neighborhood Intel. The address of each of the 13 residential demolitions and 75 residential structural rehabs was loaded into the software. The software delivers an estimated impact on the nearest 50-100 occupied median U.S. Census block group-level home values of each respective demolition or rehab by quantifying a relative percent of impact that is applied from the multi-city and multi-submarket model in Neighborhood Intel. This same quantification was derived and summed for all relevant FY 2023 CCLBA actions.



### **Appendix 2: IMPLAN**

IMPLAN is a regional economic analysis software application that is designed to estimate the impact or ripple effect (specifically backward linkages) of a given economic activity within a specific geographic area through the implementation of its Input-Output and Social Accounting Matrix model. Studies, results, and reports that rely on IMPLAN data or applications are limited by the researcher's assumptions concerning the subject or event being modeled. Studies such as this one are in no way endorsed or verified by IMPLAN Group, LLC unless otherwise stated by a representative of IMPLAN.

IMPLAN provides the estimated Indirect and Induced Effects of the given economic activity as defined by the user's inputs. Some Direct Effects may be estimated by IMPLAN when such information is not specified by the user. While IMPLAN is an excellent tool for its designed purposes, it is the responsibility of analysts using IMPLAN to be sure inputs are defined appropriately and to be aware of the following assumptions within any I-O and Social Accounting Matrix Model:

- Constant returns to scale
- Fixed input structure
- · Backward linked
- Industry technology assumption
- No supply constraints
- The model is static
- · Time Delineated
- Constant byproducts coefficients

## **Appendix 3: Direct, Indirect and Induced Economic Impacts Explained**



### **Endnotes**

- <sup>1</sup> There are some notable administrative policy functions CCLBA performs that deliver property tax revenue benefits to Cook County that are not measured in this study due to data constraints. Specifically, CCLBA has obtained 28,471 tax certificates at the Cook County scavenger sales since inception in an attempt to convert long-neglected and presumably abandoned property into a sustainable and productive use. One of the required statutory steps in that process involves reaching out to property owners of these severely tax delinquent properties. As a consequence of that notification, in many cases these owners redeem their property by paying back taxes owed plus penalties induced by threat of the CCLBA's imminent ownership. CCLBA has construed that quantity and amount according to what is publicly available, however this dataset is incomplete and knowingly under-reported. Estimates suggest that the redeemed property count since CCLBA's inception totals 1,355 parcels with a redemption revenue over \$20,817,265 back on the County's tax rolls, however that figure is most likely much higher. Quantifying this number on an annualized basis - specifically during FY 2023 for this analysis is not currently available. The hope is that this positive economic impact and revenue stream made possible by the CCLBA and its functions can be included in future economic impact reports by retaining data from the proper Cook County departmental databases.
- <sup>2</sup> There are some notable administrative policy functions CCLBA performs that deliver property tax revenue benefits to Cook County that are not measured in this study due to data constraints. Specifically, CCLBA requires buyers of CCLBA properties to be current on all property taxes within the County ahead of any purchase. This requirement produces Cook County property tax revenue but the amount captured by the County as a result of this CCLBA administrative action has not been captured. Moving forward, tracking the quantity of these payments will be a valuable addition to the CCLBA's property tax revenue impact.
- <sup>3</sup> See Li and Brown (1980), Simons, Quercia, and Maric (1998), Ding et al. (2000), Ioannides (2002), and Dynamo Metrics (2016a), (2018) and (2019) for scholarly reference and methodology related to impact of rehab on neighborhood property values.
- <sup>4</sup> See Griswold (2006), (2007), and (2014), Whitaker and Fitzpatrick (2013), and Dynamo Metrics (2016b), (2017), (2018), and (2019) for scholarly reference and methodology related to impact of demolition on neighborhood property values.
- $^{\rm 5}$  See Appendix 1 for overview of Neighborhood Intel software application used to quantify Table 2 results.
- $^{6}$  See Footnotes 3 and 4, above
- <sup>7</sup> The IMPLAN regional economic analysis software application was used to measure the economic ripple effects of investment and budgetary spending in this study. For more information on the IMPLAN modeling process, visit IMPLAN.com or Appendix 2.
- <sup>8</sup> Munetrix Neighborhood Intel software with predictive hedonic price modeling was relied upon to capture residential property value impact multipliers at the Census Block Group Level within the study area for home value impact estimates near CCLBA activity in this study. For further explanation of the Neighborhood Intel modeling process visit Appendix 1.
- <sup>9</sup> See Loveridge (2004).
- <sup>10</sup> See Appendix 2 and IMPLAN (2019 Data).
- <sup>11</sup> The primary purpose of choosing properties acquired by CCLBA as a result of tax distress is that properties acquired by CCLBA without tax distress, such as bank donations or HUD purchases bought with bank settlement resources after the mortgage foreclosure bank settlements, are assets that did not have disruptions in property tax payments on them suggesting that regardless of owner these properties had enough value to capture tax payment, thus suggesting whoever held title to them would've have paid taxes limiting tax payment attribution to the CCLBA in those instances.
- $^{12}$  Limiting the estimate of property tax revenue captured due to CCLBA activity with certainty to those sold by the end of 2021 is the reality of the data limitation onset by tax payments being due in arrears. The most up to date data available from the Treasurer's office is 2022 tax billing, which

- is not due until 2023. Thus, to be sure with certainty that the estimate is inclusive of all tax distressed properties acquired and sold by CCLBA requires the property to be sold by CCLBA by the end of 2021.
- <sup>13</sup> This estimated annual tax revenue potential from CCLBA sales in 2022 and 2023 was derived by looking at the earliest time frame in which all 542 of these sales last received a tax bill which was in tax billing year 2016. Thus, property tax revenue potential is an apt term since properties are likely deteriorated since they were taxed for their 2015 value, but all taken into consideration, it is fair to assume the potential of their property tax revenue value could be at least equivalent to 2016.
- <sup>14</sup> These 83 completed rehabs are a subset of the 586 completed rehabs during FY 2023. This subset was chosen because it is the group of completed rehabs where tangible physical construction completions were monitored and private sector investments in those structural rehabs completed was monitored by CCLBA.
- <sup>15</sup> Total private rehab investment is the reported amount because private investors are required to submit and receive approval on a proposed rehab investment by CCLBA, yet exact investment is not tracked for final release of deed restrictions on purchased properties. Deed restriction release is based on completion of proposed work, thus it is not known whether private investors exceeded or came in under budget on their proposed investment amount.
- $^{16}$  See Appendix 3 for full explanation of direct, indirect, and induced impacts derived from the IMPLAN model.
- $^{17}$  See Appendix 2 and 3 for full explanation of the IMPLAN software application used in this study.
- <sup>18</sup> See Rosen (1974), Li and Brown (1980).
- <sup>19</sup> See Voicu and Been (2008) and Griswold (2006).
- $^{20}$  See Griswold (2006, 2007, and 2014) and Dynamo Metrics (2015, 2016a, 2016b, 2017, 2018, 2019, and 2021).
- <sup>21</sup> Only 66 of the 83 structural rehabs considered in this study were used for this section, as the Neighborhood Intel tool and the neighborhood impact research only finds impact estimates on homes and neighborhoods, thus commercial and industrial rehabs completed by CCLBA during FY 2023 could not be used for this study.
- <sup>22</sup> See Appendix 1 for Neighborhood Intel software application overview.
- <sup>23</sup> See Appendix 1, page 19 of Dynamo Metrics (2019) for explanation of housing market delineation methods.
- <sup>24</sup> See Dynamo Metrics (2018).
- $^{\rm 25}$  Discuss the difference between total rehabs and the 66 rehabs that were measured here.
- <sup>26</sup> See Dynamo Metrics (2016a).
- <sup>27</sup> See Appendix 1 for Neighborhood Intel software application overview.
- <sup>28</sup> See Appendix 1, page 19 of Dynamo Metrics (2019) and Dynamo Metrics (2016b) for explanation of housing market delineation methods.
- <sup>29</sup> See Dynamo Metrics (2018) and Dynamo Metrics (2019) for common range of occupied residential structures within 500 feet in Battle Creek, MI, Kalamazoo, MI, and Cleveland, OH.
- <sup>30</sup> See Dynamo Metrics (2016a).
- 31 See https://munetrix.com/
- $^{32}$  See all Dynamo Metrics research (2015) through (2021) and Griswold (2006), (2007), and (2014).
- $^{33}$  See Anselin (1988) and (1990) and Anselin and Arribas-Bel (2013).





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