Putting Data to Work:
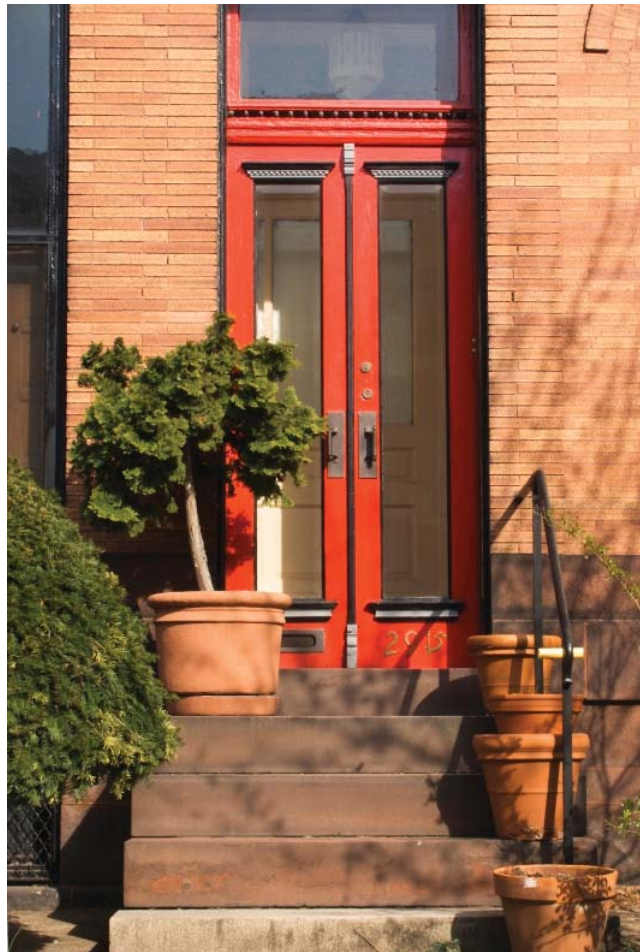# Data-Driven Approaches to Strengthening Neighborhoods

A publication of the Board of Governors of the Federal Reserve System

December 2011

Putting Data to Work:

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Foreword

Across the nation, communities have identified promising ways to target increasingly scarce resources to jumpstart and sustain neighborhood investment, and thereby help to promote economic recovery. The most innovative communities have deployed new sources of data, new ways of using data, new technologies, and new partnerships to maximize the impact of their work. In this way, they have built a data infrastructure that can inform public and private investment to stabilize neighborhoods hard hit by population loss, foreclosure, unemployment, and loss of revenue.

The purpose of this publication is to share examples of the innovative ways in which communities are building data systems to improve knowledge of local demographic trends and then to target their limited resources to most effective use. This compilation of work offers case studies and best practices for municipalities, universities, nonprofits, funders, and other local partners who want to increase their capacity to gather, analyze, disseminate, and use data to inform and support neighborhood stabilization decisions and activities. It provides replicable information on how cities and other jurisdictions are building coalitions to develop a local data infrastructure and how they are using information from these systems to analyze trends and make key investment decisions.

This project is part of a larger effort by the Federal Reserve System, in partnership with the Urban Institute, The Reinvestment Fund, the Local Initiatives Support Corporation, and others who have been working on the local level, to help communities develop the infrastructure and data sources they need to make strategic policy decisions with respect to neighborhood stabilization.

Through the Federal Reserve's network of 12 Reserve Banks across the country, the partners in this project are sharing their expertise and experience with community leaders who want to expand their use of data. This publication highlights a number of communities where this has been done well.

The Federal Reserve System continues to respond to the foreclosure crisis on "Main Street" by leveraging the System's research, community affairs, and supervision functions to support innovative foreclosure prevention and neighborhood stabilization strategies at a local level. Over the past three years, the Reserve Banks and the Board of Governors of the Federal Reserve System have collaborated to inform and engage policymakers, community organizations, financial institutions, and the public on possible solutions. This publication is one of many Federal Reserve projects designed to share best practices with local communities that are working to improve the conditions of neighborhoods affected by the foreclosure crisis. (For more information about the Board's efforts and links to Systemwide foreclosure prevention and stabilization resources, see www.federalreserve.gov/consumerinfo/foreclosure.htm or visit the Reserve Banks' websites.)

We are pleased to present this volume as part of a broader effort to promote neighborhood recovery. We hope you find this publication useful and pass on its lessons.

Elizabeth A. Duke
Governor
Board of Governors of the Federal Reserve System

Framework: The New Potential for Data in Managing Neighborhood Change

Kathryn L.S. Pettit and G. Thomas Kingsley, *The Urban Institute*

Since its launch in 2008, the federal Neighborhood Stabilization Program (NSP) has been providing substantial funding to local governments to address neighborhood problems arising from the foreclosure crisis. While local officials have been urged to use hard data on neighborhood conditions to devise smart and efficient stabilization strategies, in reality few local agencies have been able to mobilize much relevant data for this purpose so far. In fact, looking back at efforts to address problems of deterioration and abandonment over the past three decades, it is hard to argue that data have played much of a role.

In this article:

- Key elements in a data-driven environment
- Data to manage neighborhood change
- Five ways to influence change
- Using data at different experience levels
- Complementing our framework

Nonetheless, there are indications that we may now be on the cusp of transformational change in using hard data on neighborhood conditions to devise smart, efficient revitalization strategies. Underlying the transformation are the remarkable recent advances that have been made in web technology and Geographic Information Systems (GIS) capacity. But arguably more important is what has begun to happen inside many city and county governments. Advancing technology is permitting dramatic improvements in the development and integration of local parcel-level data systems, whose costs are also decreasing. In addition, new university- and nonprofit-based data intermediaries have been established in many cities by organizations that have been able to

assemble substantial relevant neighborhood-level information from across agencies and levels of government. Groups like these in 35 cities, along with the Urban Institute, have formed a network, the National Neighborhood Indicators Partnership (NNIP), to expand such capacities in other localities and advance the state of the art in the field (www.neighborhoodindicators.org).

Finally, officials and practitioners are increasingly using the data and systems in innovative ways, both for analysis to support strategic planning and for facilitating program implementation. We believe that even these early examples suggest that data-driven decisionmaking in neighborhood stabilization can markedly improve the effectiveness of such programs.

Key Elements in a Data-Driven Environment

In this article, we introduce the three key elements of this emerging data-driven environment that provide context for the other five articles in this publication:

- *Data to manage neighborhood change.* This section describes the types of data useful in neighborhood stabilization efforts that are becoming more available in American cities.

- *Five ways to influence change.* This section illustrates five ways in which the newly available data can be used to influence change in neighborhood real estate markets, specifically in planning and implementing neighborhood stabilization.

- *Using data at different experience levels.* This section then offers ideas about how administrators in communities whose data systems are in various stages of evolution can use available data productively in their neighborhood stabilization programs.

Local governments will continue to face challenges in revitalizing their neighborhoods for many years in the future. Accordingly, we assume a definition of neighborhood stabilization broader than that used by the federal NSP—that is, a definition that assumes a wider range of response strategies and a longer time horizon. It should be useful to be thinking about creative uses of data to assist in the full array of activities localities may undertake to influence neighborhood real estate markets over the longer term.

Data to Manage Neighborhood Change

In providing data to improve neighborhood stabilization, the most valuable contribution has been the automation of computer-based administrative records on properties already maintained by local governments. In this section, we review data from those sources first, and then note data from other sources that can benefit the stabilization process.

Property Data Systems from Local Government Records

All local governments (cities or counties, depending on the place) maintain basic records on land parcels in order to control land ownership and operate property tax systems. These records, including information on each of the individual land-ownership parcels in the jurisdiction (summarized in **table 1**), are updated at various intervals. Most localities also maintain some minimal data on mortgages, primarily because these data are pertinent to clarifying property titles (and not because of any potential role in stabilization planning). Other local agencies with responsibility for, say, building safety and related functions, also keep records on activities that are linked to land-parcel identification numbers (e.g., building permits, code enforcement violations, and condemnations).[1]

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[1] For a detailed listing of data sources and technical guidance for analysis, see Kathryn L.S. Pettit, Barika Williams, Peter Tatian, G. Thomas Kingsley, and Leah Hendey (2011), *Using Property Databases for Community Action* (Washington, DC: The Urban Institute).

TABLE 1
Property data relevant for managing neighborhood change

Local governments	**Auditor/treasurer/assessor** ■ Basic property characteristics (lot size, building size, number of housing units, building age, land use) ■ Ownership (owner name/address, owner occupied or not, owner type) ■ Financial (assessed value, tax arrears) ■ Tax exemptions (e.g., for owner occupancy, elderly occupancy) ■ Property transfers (date, sales price, buyer and seller, type of deed, history of transfers) **Recorder or registrar of deeds/clerk of courts** ■ Property transfers (date, sales price, buyer and seller, type of deed, history of transfers) ■ Mortgages and other liens (mortgagor/mortgagee, amount, date) ■ Foreclosure filings (dates and status, type of foreclosure, defendant/plaintiff) **Building/housing departments/code enforcement** ■ Building permits (rehab vs. new, number of units, value, dates) ■ Complaints (type, status, dates) ■ Code violations (type of violation, status, dates) ■ Condemnations (type, status, dates) ■ Demolitions (status, dates) **Water/utilities department** ■ Level of usage (status, dates) ■ Water and other utilities shutoff (status, dates) **Other departments and agencies** ■ Calls for service by fire department (status, dates, location of burned out buildings) ■ Parcels owned/controlled by other agencies (characteristics, use, plans)
Other institutions involved in neighborhood revitalization	**CDCs and other housing nonprofits** ■ Plans (parcels to be acquired, rehabbed, etc.) ■ Parcels owned/controlled (characteristics, use, plans)
Other sources for property data	**Special surveys** ■ Vacancy and abandonment surveys ■ Surveys of neighborhood and property condition **Proprietary datasets on mortgage lending** ■ Foreclosure filings and sales ■ Commercial products based on U.S. Postal Service address data

Note: Department/agency names and functions differ among cities.

Before these records were automated, updating and using them for anything but basic recordkeeping was arduous. For example, a developer trying to assemble parcels to build a new project had to spend substantial time looking up and copying information from paper files one by one. Now, such tasks are much easier. As of 2008, 80 of the largest 100 cities provided web access to some parcel-level data from assessor's records, and in many cases, users could click on individual parcels on a map to automatically bring up tables identifying owners and property characteristics.[2]

In addition, advanced GIS software allows parcel boundaries and other geographic features to be identified more precisely in space (by coordinates) and linked with other engineering information (e.g., locations of fire hydrants, pumping stations, street repairs, breaks in water pipes, etc.—data not shown in table 1). Many localities also have automated crosswalks between postal addresses and parcel numbers, so that address-based data added to the system can be linked directly to existing parcel records. And a number of cities have established formal plans to integrate all of their jurisdiction's location-based information to form Enterprise GIS systems.[3]

We know of no overall surveys showing how many cities have reached various levels of GIS development. Our impression, based on numerous anecdotes, is that most medium- and larger-sized cities have automated the local government data identified in table 1, but that very few have what could be considered truly comprehensive Enterprise GIS systems.[4] The fifth article in

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[2] Arnold Chandler, Josh Kirschenbaum, G. Thomas Kingsley, and Kathryn L.S. Pettit (2007), *The Potential of Parcel-Based GIS in Community Development and Urban Land Management*, Working Paper (Cambridge, MA: Lincoln Institute of Land Policy).

[3] ESRI (2003), *Enterprise GIS for Municipal Government: An ESRI White Paper* (Redlands, CA: ESRI Press); and Cory Fleming (2005), The *GIS Guide for Local Government Officials* (Redlands, CA: ESRI Press).

[4] Good examples of well-developed property information systems are those in Baltimore, Maryland; Portland, Oregon; and Washington, DC. See District of Columbia Office of the Chief Technology Officer (2005), Federated Geospatial Data Model (Washington, DC: District of Columbia Government).

this compilation (by Janes and Davis) describes the Baltimore systems and the variety of ways they are being used to further neighborhood revitalization objectives. We also believe that comparatively few cities, even when the data are available, have taken what turn out to be two critical steps for neighborhood stabilization planning: systematically linking the records of different system components to each other and using the data proactively. (See the section "Using Data at Different Levels of Experience" for a progression of use).

Availability of Other Relevant Data

Table 1 lists data sources for parcel-level data about properties, including local government, housing, and community development nonprofits as well as other sources. As to data from nonprofits, for example, community development corporations (CDCs) and other nonprofits may be willing to share information on properties they are developing or primary data such as surveys on property conditions and vacancies that might be collected by a neighborhood organization. In addition, proprietary sources such as RealtyTrac and LPS Analytics can provide valuable data on mortgage delinquency and foreclosure, although the costs are often prohibitive for community work.

In addition to property data, socioeconomic indicator data at the neighborhood level can help stabilization planners better understand the people and the dynamics of the neighborhoods in which they are working. Examples include crime rates; birth rates (by age, race, and other characteristics of the mother); Temporary Assistance to Needy Families (public assistance) and Food Stamp enrollment; child care locations and quality ratings; school enrollment and proficiency scores; and other indicators that reflect quality of life. These data are typically not keyed to individual parcels but are instead aggregated to the census tract[5] or perhaps even the zip code; nevertheless,

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[5] Census tracts are small geographies normally with populations in the 3,000–6,000 range. They were originally defined by the Bureau of the Census with an effort to recognize important geographic features (such as major highways) and socioeconomic homogeneity. The bureau provides considerable data at the tract level, which is considered by many as at least an approximation of "neighborhood" scale.

this aggregated data offers useful context within which to design environment-specific stabilization interventions. The availability of such data has expanded dramatically in many cities due to the work of local data intermediaries like the partners in NNIP.

Other data for small areas has become easier to access through a number of national files prepared not only by the Census Bureau but by other government data collection efforts. A good example is the annually updated data on mortgage lending at the census tract level, mandated by the Home Mortgage Disclosure Act (HMDA).[6] These files include information on denied mortgage applications as well as originations, such as mortgage amounts and race, gender, income level, and type (owner-occupant vs. investor) of the borrowers. Data on vacancies from the U.S. Postal Service are now available by tract, and information from Internal Revenue Service (IRS) returns on incomes by source are available at the zip-code level. The U.S. Department of Housing and Urban Development (HUD) also periodically makes tract-level data available on the projects it assists by program type, as well as an address-level file on HUD-assisted, privately owned multifamily properties with expiration dates.[7] These files provide characteristics of assisted families as well as information on the size and locations of the projects themselves.

Five Ways to Influence Change

In this section, we describe how data can be used to further the objectives of neighborhood stabilization. As noted earlier, we define neighborhood sta-

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[6] These files are explained in Kathryn L.S. Pettit and Audrey Droesch (2008), *A Guide to Home Mortgage Disclosure Act Data* (Washington, DC: Fannie Mae Foundation).

[7] Other national files provide data for small areas on summaries of income tax filings (Internal Revenue Service), on trends in characteristics of businesses and employment (Department of Commerce surveys), and on characteristics of public schools (National Center for Educational Statistics). The Urban Institute regularly cleans and streamlines these files to make them easier to use. Recent versions are now available to the public at www.MetroTrends.org/natdata/ under "UI National Data Depository."

bilization to include all activities that localities may undertake to influence neighborhood real estate markets over the longer term, not just those that are allowed under the federal NSP.

Our definition of neighborhood stabilization includes five processes that influence change:

1. Strengthening citywide laws, regulations, and enforcement capacities
2. Selecting particular neighborhoods for prioritized action and designing context-appropriate strategies for selected neighborhoods
3. Designing strategies for individual properties within selected neighborhoods
4. Carrying out selected stabilization strategies within neighborhoods
5. Managing ongoing stabilization programs using neighborhood data to track performance

All of these strategies are carried out by local government agencies and housing nonprofits, but these entities often do not have the capacity to perform the necessary data analysis unassisted. Local data intermediaries like those in NNIP play an important role in this regard. They are formed not only to assemble data from a variety of local agencies but also to make it available to users and help them apply it productively. Several NNIP partners have been at the forefront of applying data creatively in neighborhood stabilization planning (as we highlight below in our discussion of the stabilization processes).

Strengthening Citywide Laws, Regulations, and Enforcement Capacities
Stabilization efforts within neighborhoods can be facilitated or frustrated by the framework of laws, regulations, and enforcement capacities that exist in a city. The processes described in the following examples involve the use of data to help decisionmakers better understand the nature of the problems they face and the options for addressing them. In this way, data are critical to helping administrators make better-informed decisions in a citywide policy environment.

Our first example is a citywide initiative in Cleveland that was motivated by the work of Case Western Reserve University's Center on Urban Poverty and Community Development. The center developed NEO CANDO, Northeast Ohio Community and Neighborhood Data for Organizing, a free online data system that allows users to access neighborhood-level data on a variety of social, economic, housing, and health-related conditions. Since 2005, the NEO CANDO site (http://neocando.case.edu/cando/index.jsp) has incorporated parcel-level data, including lot characteristics, assessed values, tax billing information, and property transfers. In the past few years, the center has been able to add to the system considerable valuable information pertaining to foreclosures.

How has it been used? In 2006, for instance, NEO CANDO supported analysis of the circumstances of real-estate-owned (REO) properties owned by different banks. These data served as the basis for a preliminary injunction against one major bank that owned many REOs but was not adequately maintaining them. The resulting court-ordered injunction calls for the bank to keep its properties up to code and prevents it from selling properties with violations at distressed prices.

This success prompted the City of Cleveland to initiate Operation Prevent, which aims to hold all banks and investors accountable for the condition of the properties they own. To support the project, the city and the center's team developed an interface and data algorithms for NEO CANDO that flag, and then alert stakeholders such as code enforcement staff, housing agency staff, and CDCs to, the presence of foreclosed properties that appear abandoned or are entering and leaving REO status at distressed prices.[8] The center is also developing an online portal that allows local CDCs to directly

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[8] See Cleveland City Council (2009), "Another Step Taken toward Breaking the Cycle of Abandonment," press release, February 4, www.clevelandcitycouncil.org/Home/News/February42009/tabid/619/Default.aspx.

input information on code violations and vacant homes, supplementing the resources of the city's stretched staff.[9]

Another example of how data can be used in the interests of neighborhood stabilization at the city level is in the realm of policy analysis of investor purchases of distressed properties. Walker and Mallach discuss this case further in the second article of this compilation.

Selecting Particular Neighborhoods for Prioritized Action and Designing Context-Appropriate Strategies for Selected Neighborhoods

Even the most amply funded neighborhood stabilization programs cannot afford to operate full-scale programs in all neighborhoods. Priorities must be set. Clearly, to warrant government intervention, a neighborhood must have a substantial level of foreclosure activity. However, a "worst-first" approach often does not make sense. Many administrators are now urging priority for neighborhoods that are more near the middle of the distribution—areas that have substantial foreclosures, but also enough existing market strength that a reasonable amount of investment might restore healthy private market conditions. These are places where investment will be most highly leveraged. In cities where administrators legitimately choose to invest in those places that are more troubled, tools such as demolition and land banking may have to be more prominent in neighborhood stabilization efforts in the short term.

Making these kinds of decisions well obviously depends on considerable information. The Foreclosure-Response.org website provides some relevant data for all U.S. metro areas. The site features indexes developed by the Local Initiatives Support Corporation (LISC) of both comparative foreclosure risk and market

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[9] See further discussion in Claudia Coulton, Michael Schramm, and April Hirsch (2010), "REO and Beyond: The Aftermath of the Foreclosure Crisis in Cuyahoga County, Ohio," in Prabal Chakrabarti, Matthew Lambert, and Mary Ellen Petrus, eds., *REO and Vacant Properties: Strategies for Neighborhood Stabilization* (Washington, DC: Federal Reserve Bank of Boston, Federal Reserve Bank of Cleveland, and Federal Reserve Board of Governors).

strength for all census tracts nationally, along with a guidebook to help local analysts use them.[10] That guidebook emphasizes, however, that these data must be supplemented by local data and understanding of market dynamics to identify key thresholds in any specific place.

How best to lead practitioners through a process using such data to make sound decisions is still much more of an art than a science, but various groups are working on tools to improve results. Perhaps the best example at this point is an approach developed by The Reinvestment Fund (TRF) in Philadelphia. As part of a project originally undertaken to provide a basis for the Mayor's Neighborhood Transformation Initiative in Philadelphia, TRF analyzed a vast amount of parcel-level data, identified six distinct types of neighborhood real estate markets, and classified all city neighborhoods according to that typology. Each market type was associated with a package of appropriate public interventions (that is, the typology pointed out where it appeared most sensible to give priority to cleaning up vacant lots, demolishing versus rehabilitating row houses, subsidizing new construction, improving roads and other city infrastructure, etc.).[11]

TRF's approach, which enriches understanding of the interaction of market conditions and foreclosure trends, is clearly ready-made to support the kind of thinking and analysis suggested above for neighborhood stabilization strate-

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[10] See G. Thomas Kingsley, Leah Hendey, and David Price (2011), *Setting Priorities for Neighborhood Stabilization: A Guide to Using Foreclosure-Response.org Indexes* (Washington, DC: Foreclosure-Response.org), www.foreclosure-response.org/assets/maps&data/SettingPriorities forNeighborhoodStabilization.pdf. The indexes are documented in Chris Walker and Francisca Winston (2010) "A HMDA-Based Housing Market Index to Track Neighborhood Change," and (2009) "Zip-Code Foreclosure Risk Score Methodology Appendix" (Washington, DC: Local Initiatives Support Corporation).

[11] TRF has since applied the approach in other cities. The process is documented on The Reinvestment Fund's website in the "Real Estate Market Analysis" section (www.trfund.com/policysolutions/ remarketvalue.html). Also see Ira Goldstein (2010), "Maximizing the Impact of Federal NSP Investments through the Strategic Use of Market Data," in Prabal Chakrabarti, Matthew Lambert, and Mary Ellen Petrus, eds., *REO and Vacant Properties: Strategies for Neighborhood Stabilization* (Washington DC: Federal Reserve Bank of Boston, Federal Reserve Bank of Cleveland, and Federal Reserve Board of Governors).

gies at the neighborhood level. This approach has been applied for that purpose in Philadelphia and elsewhere. The third article in this compilation (by Goldstein) provides a full description of its application in Baltimore (also see the discussion of this approach in the article by Janes and Davis).

**Designing Strategies for Individual Properties
within Selected Neighborhoods**

Once a neighborhood has been selected for intervention, the next step is to design strategies that make sense for individual properties within the neighborhood. These, of course, can range widely: steps to prevent foreclosure and keep residents in their homes, intensive code enforcement and other actions to assure ongoing maintenance, subsidizing or facilitating private or nonprofit repurchase and rehab, direct public acquisition with or without rehab, etc.

Deciding which mix of actions is appropriate for which properties and what priorities to give to each may be one of the most challenging assignments neighborhood planners have ever had to face. Without substantial updated information about specific properties in the targeted neighborhood, they would largely be shooting blind.

Probably the best example of bringing data to bear in an environment like this is again the work of NEO CANDO in Cleveland. As noted, that system has incorporated and regularly updates a very rich set of parcel-level data, including almost all of the indicators listed in table 1 as well as others. The system is one of the most complete property-by-property information repositories on mortgage status and foreclosures in the country.

The NEO CANDO approach evolved from an experience that began in 2005 when the Center on Urban Poverty and Community Development staff began to work directly with Neighborhood Progress Inc. (NPI), Cleveland's primary community development intermediary, in developing strategies for neighbor-

hood improvement. The joint team met regularly to identify potential properties for new development and to consider remedial actions for problem properties showing signs of blight. They relied heavily on information drawn from the NEO CANDO system for all of the properties in a given neighborhood; this information included maps and tables that provided a host of relevant facts about properties, such as existing development plans, vacancy status, and various problem indicators. The process was interactive. Community development practitioners on NPI's team could conceptualize various courses of action and then, with help of the center's staff, test them against the data in NEO CANDO.

After the foreclosure crisis hit, this same data-driven mode of operation was applied to the task of neighborhood stabilization planning. The process has won considerable acclaim as a (perhaps "the") model for effective data use in NSP.[12] Community developers have always faced difficult decisions in trying to choose the most sensible interventions for individual properties (or clusters of properties). Historically, they gathered some information about the properties in question ahead of time, but collecting useful data on a few properties at a time was always onerous. In contrast, what the Cleveland example shows is that NEO CANDO makes an extraordinary amount of relevant information available directly to users at no cost and in formats that are easy to understand and work with.

At the outset, the teams included neighborhood residents and staff from the center and NPI. In later stages, the participant list was broadened to include housing counselors and some city officials. The data serve to provide early warnings of imminent problems. Team members can be dispatched to help owners prevent foreclosures as well as to initiate actions on other proper-

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[12] The process is documented in Peggy Sand and Phillip Bush (2011), *Market Data-Driven Stabilization: A Case Study of Cleveland's NEO CANDO Data System* (Washington, DC: Enterprise Community Partners, Inc.) and Coulton and others, "REO and Beyond: The Aftermath of the Foreclosure Crisis," in note 9.

ties in deeper trouble (code enforcement, acquisition, rehab), and they are equipped to do so in a much more timely and informed manner than had been possible before. A Federal Reserve Board video on the NEO CANDO process (www.federalreserve.gov/communitydev/stablecommunities.htm) succinctly shows how these data-review sessions work.

NEO CANDO and its partners have developed what is probably the most advanced approach to using data to manage neighborhood change that now exists. However, other cities are part-way there. The fourth article in this publication (by Wascalus, Matson, and Grover) explains the expanding data resources of the University of Minnesota's Center for Urban and Regional Affairs and how they are beginning to be used in a similar process to select strategies for individual properties in distressed neighborhoods in Minneapolis.

Implementing Prioritized Stabilization Strategies across Neighborhoods

As discussed above, using a data system like NEO CANDO involves making decisions about properties based on a comprehensive review of data in a specific neighborhood. In this section, we point to processes where citywide data sets are used to spur actions affecting properties in many neighborhoods.

An application in Washington, DC, illustrates the approach. Until a few years ago, tenants living in rental properties that were in foreclosure often had no knowledge the process was under way until a new owner acquired the property and eviction was imminent. Recognizing this as a serious problem, the local NNIP partner (NeighborhoodInfo DC) is now regularly retrieving information on foreclosure notices soon after they are filed with the city and releasing the data to housing counseling groups. These groups can then visit the buildings that have entered foreclosure to inform tenants in those properties of the situation, their rights, and their options at an early stage.

Another type of application in this category involves using information to improve the efficiency of local-level government stabilization activities. A good example is the property acquisition process in Baltimore. In the early 2000s, the mayor pledged to do something about the city's massive stock of vacant, derelict rowhouses. The first step in his response, called Project 5000 because of the number of affected properties, was to ramp up the city's property acquisitions to an unprecedented level. To accomplish this, city staff and contractors developed a new information system with considerable details about each property, ranging from physical condition and financial data to schedules for specific actions to be accomplished. The system automatically generated frequent reports that supported city leaders' strategic thinking about more effective acquisition techniques (varying depending on the characteristics of different types of properties) and a rigorous management process. Results included the hoped-for major expansion of throughput along with marked reductions in both acquisition time and cost. (Janes and Davis explain this experience in more detail later in this compilation.[13])

Managing Ongoing Stabilization Programs Using Neighborhood Data to Track Performance

Building off the last example is the idea of using similar linked information systems to manage the broader process of neighborhood stabilization. This approach is being supported by the NSP requirement that automated property-by-property records be maintained in relation to all program outlays. With today's information technology, storing needed information at the property level is no longer an expensive proposition. Categories of information include expenditures by type (detailed categories), responsible parties, key events (like property purchases and other private investments), schedule dates, and other data relevant to each type of program.

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[13] Also see William Ballard and G. Thomas Kingsley (2009), *Systems to Improve the Management of City-Owned Land in Baltimore*, report prepared for the Annie E. Casey Foundation (Washington, DC: The Urban Institute).

Once such data are in the system, it becomes possible to operate a quite sophisticated process of performance management. This is particularly true when data on program activities and costs (acquisitions, rehabs, resales, etc.) can be related to data on broader outcomes for the same neighborhood—data noted in table 1, like property sales volumes and prices and foreclosure rates, along with demographic and social data such as crime rates, etc. Reports on all these topics should be reviewed regularly (perhaps quarterly) by an inter-sectoral stabilization team, like the one in Cleveland. To be sure, one purpose of such meetings would be basic accountability: Is planned work getting done on time and on budget? But, more important, these reviews should offer the team valuable insights on what is working, what is not, and why—a formidable basis for making smarter mid-course corrections.

Ongoing learning like this should naturally feed back into a much stronger neighborhood planning and management process over the longer term. The same data sets can be used to generate early warning indicators that let neighborhood revitalization teams get on top of new problems more quickly as they emerge.

The teams should also be able to develop new computer-based tools to facilitate decisionmaking. An example of this is a web-based tool developed in Providence, Rhode Island, that allows users to create listings of properties according to any criteria they choose (for example, characteristics that might identify good candidates for rehabilitation, demolition, or some other intervention) and then sort the listings any way they want (for example, by number of code violations or recent change in assessed value) to create priority sequences for different programmatic responses. They can then pull down screens showing detailed data (including photographs) for individual properties. Two other features of this tool have proven valuable: (1) a comments box, to enable users to write in their own observations about the property,

and (2) a "surrounding properties display" showing a map and characteristics of properties surrounding the one selected.[14]

This article, and most of the others in this publication, focuses on the use of property-related data to inform the design and implementation of neighborhood stabilization strategies. It is important to keep in mind, however, that there are other indicators of neighborhood well-being that are ultimately more important to neighborhood stability than the status of the real estate market. In the last article, Zielenbach and Sivak illustrate innovative uses of data from the records of a community development lender and credit union in monitoring and furthering broader goals related to employment and wealth-building.

Using Data at Different Levels of Experience

NEO CANDO and the other efforts cited earlier offer exemplary applications of data toward neighborhood stabilization. In most instances, however, these applications represent more than a decade of data development and coalition building. Communities without this infrastructure in place may be intimidated by the long-term investment in time and money, and, at worst, might be discouraged from even considering using data to guide their planning and policy-making. That would relegate communities to ill-informed decisions during this era of increasing demands for scarce resources. Building a data system and partnerships that contribute to sound decisionmaking may not be simple, but it is an achievable goal that will provide lasting benefits to justify the effort.

In this section, we demonstrate how any community can use data to make more informed planning and operational decisions. Following are suggested

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[14] G. Thomas Kingsley and Kathryn L.S. Pettit (2008), *Data and Decisions: Parcel-Level Information Changing the Way Business Gets Done* (Washington, DC: Metropolitan Policy Program, Brookings Institution).

steps that cities with various levels of experience using data can take to move toward more-informed decisionmaking and greater neighborhood stabilization.

While this section describes actions in defined stages, in reality this work is an iterative process. Organizations will use imperfect data that are immediately accessible, improve the quality of the data in hand, and gather more data as they become available. Practitioners likely already have experience using data on a property-by-property basis. Over time, the practitioners will become more sophisticated and systematic consumers of data and will ask new questions that will call for additional kinds of information.

Beginning Level: Foundations for Data Collection and Use

Communities getting started should first identify who should be engaged in the process. Involving staff from agencies that address abandonment and other symptoms of distress on the ground is essential for moving from information to action. In addition, practitioners can bring knowledge to the table about the local foreclosure process, community stakeholders, and neighborhood context. The needs of this audience should always be the primary focus for data collection and analysis. Governmental and nonprofit agencies that collect data related to neighborhood stabilization represent a second group that should be consulted. While assembling the list of relevant players, organizers should compile a list of existing programs and data sources that will provide a baseline picture of neighborhood stabilization efforts and inform their strategies about coalition building and data acquisition.[15]

Communities will also need to identify a group inside or outside of government that has the capacity to manipulate data files, identify what questions

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[15] Examples of such a scan for Atlanta and Chicago were produced for the NNIP cross-site project on foreclosures; see, respectively, Michael Rich, Michael Carnathan, and Dan Immergluck (2009), *Addressing the Foreclosure Crisis: Action Oriented Research in Metropolitan Atlanta* (Atlanta, GA: NeighborhoodNexus) and Anne Cole (2009), *Housing Counseling Research in Chicago* (Chicago, IL: Metropolitan Chicago Information Center).

the data can appropriately answer, and produce charts and maps accessible to non-technical audiences. It's also a good idea to involve potential funders, such as local foundations or banks, early in the discussions. City or university staff may not need external funding for analytic work right away, but they will likely need additional resources as the work moves from exploratory analysis to an essential part of stabilization operations.

With the initial buy-in of both the programmatic and analytic organizations, the next step is to acquire relevant data. As mentioned earlier, electronic records of property ownership, assessed values, and sales do exist in most places. Unfortunately, this does not mean that these data are accessible to stabilization teams in a usable format. For example, the most common city online systems only allow for viewing property information one-by-one. Some stabilization teams may not have access to any parcel-level data files at all.

Groups starting out should learn about the status of property data in their area and initiate efforts to obtain files from their local government agencies. The most common situation organizations encounter is that the local agency has the data in an organized, electronic form, but will not share the entire file on a regular basis. There are usually a variety of reasons for restricting access to the data, one being that the government is selling the data directly or has an exclusive distribution agreement with a commercial firm. Hopefully this frustrating situation will become less and less common as more local governments embrace the principles of open data. In the meantime, NNIP's Data Sharing Guide at www.neighborhoodindicators.org/library/guides/nnip-lessons-local-data-sharing offers practical advice on how to negotiate with agency staff for data access based on the decade-long experience of local data intermediaries. Groups can also try a combination of Freedom of Information Act requests and advocacy for free data access for public benefit uses.

Depending on the place, negotiations to acquire local data could proceed quickly or take several months. In the meantime, communities can tap into national data available from federal, nonprofit, or commercial sources to help understand their neighborhood housing markets. **Table 2** illustrates specific questions related to neighborhood stabilization that national and commercial data sources can help answer. Data from national sources are typically free—for example, as mentioned previously, Foreclosure-Response.org offers free census tract-level indicators on housing market and foreclosure risk and guidance on how to use the data. Commercial data, on the other hand, are often costly and have restrictions on dissemination, but they can provide key information and are generally more current than national data. And, publicly minded commercial firms may give grassroots groups complimentary or discounted data.

TABLE 2
Sample indicators for cities getting started

Question	Data source
How did the volume of home purchase mortgages vary across city neighborhoods last year?	HMDA (www.ffiec.org/hmda/ or www.metrotrends.org/natdata/index.cfm)
What was the mix of income levels of borrowers or of owner-occupants who bought homes last year?	HMDA
Which zip codes in my metropolitan area have the highest foreclosure inventory? Mortgage delinquencies?	LISC Foreclosure Risk Scores (Foreclosure-Response.org)
Has the number of vacant addresses been increasing or decreasing in my target neighborhood?	U.S. Postal Service vacancy data (tract-level from HUD, address-level from commercial firms)
Where are concentrations of real-estate-owned properties in the city?	Commercial address-level data on properties that foreclosed and are now owned by banks (RealtyTrac, etc.)
What have been the quarterly trends in home sales and median sales prices?	Commercial property sales data (local realtor association or Boxwood-Means, available through PolicyMap at www.PolicyMap.org)

Despite limitations to national and commercial data, analysis based on these easily available sources is a good starting point to help organizations get accustomed to using data and to build their appetite for more. Individual organizations can use the data in their long-term planning or in their day-to-day work. The analysis can also be the impetus for a convening of the various groups working on the neighborhood stabilization. As with the interactive sessions in Cleveland, information needs to be portrayed in accessible maps and charts and related to the interests of practitioners and policymakers. As proven in meetings around the country, presenting a well-crafted package of analysis builds a common understanding about the patterns and trends of neighborhood health, sparks new conversations, and spurs new working re-lationships. Inevitably, these meetings raise more questions that will suggest the next priorities for analysis.

Intermediate Level: Expanding to Local Data

Cities at a more advanced stage of using data will have collected a few lo-cal property-level data files. Local data provide the geographic detail of the commercial data above, and are generally more financially feasible to obtain recurrently, rather than a one-time purchase. Local data are also more likely to be address- or parcel-level, which allows better identification of issues of quality and of outliers. Some of the questions about foreclosures and home sales listed in table 2 can be answered in more detail using local data com-pared to national data; more important, local data also opens up many ques-tions and more possibilities for analysis. As illustrated in **table 3**, the analysis can examine indicators individually (as in the code violation example below) or might combine indicators from two sources laid side-by-side (looking at 911 calls in high-foreclosure areas, for example). Users can also derive new indicators, such as comparing the property address to the owner address to identify owner-occupancy or calculating the length of residence from the last sale date. Finally, local groups can begin straightforward linking of files with the same identifier (either address or parcel). This process is often necessary

to learn more about properties entering foreclosure. By linking the record of the filing, which lists only a parcel identifier, parties involved, and date, to the assessor's file, neighborhood planners can learn about the property structure type, assessed value, owner-occupancy, and date of last sale.

TABLE 3
Sample indicators for cities with some local data

Question	Data source
Where are the properties with repeated code violations?	Code violation data
Which high-foreclosure neighborhoods also have rising numbers of 911 calls?	Foreclosure filings, police calls
What's the ratio of foreclosure sales to market sales in the neighborhoods?	Property deed data
What are the trends in owner-occupancy in a specific neighborhood?	Assessor's file with ownership status derived
What percentage of the properties entering foreclosure are single-family homes?	Foreclosure filings linked to assessor's file

Local users should be prepared to receive data with little or no documentation and in need of cleaning. The organization responsible for analyzing the data can identify some indicators that are reliable in the short term, and work on improving the data collection and their understanding of the file in the long term. The NNIP experience shows that applied use improves data quality by motivating improvements in collection and documentation.

Another option for getting started or expanding the use of local data is community- or public-sector-driven primary data collection. While in many cities this happens on an ad hoc basis in a few neighborhoods, a rigorous collection protocol is far more valuable. As one example, a broad coalition in Memphis, with the leadership of the Center for Community Building and Neighborhood Action (CBANA) at the University of Memphis, implemented a citywide Neighborhood Survey and Problem Property Audit from 2008 to 2010. Authorized

and funded by the city's Division of Housing and Community Development, the effort included trained volunteers from numerous neighborhood organizations and block clubs (organized and working together as part of the local foundation-supported "Problem Properties Collaborative," which was staffed by CBANA and the Community Development Council of Greater Memphis) as well as other volunteer organizations. The effort also received coordinated logistical support from the Memphis Police Department whenever a survey team was working in the field, with more intensive arrangements for neighborhoods with higher crime.

Using handheld computers with GIS software, preloaded parcel maps, and drop-down menus for recording on-site observations, CBANA-trained volunteers evaluated more than 200,000 residential properties in the city of Memphis, documenting problems. They ranked the seriousness of conditions, such as structural problems and trash on the lots, for each property based on the anti-blight housing code. Additionally, they linked the condition of every parcel that entered foreclosure in 2007 and 2008 with administrative data on its status in the foreclosure and resale process (**figure 1** provides an example from the Mendenhall Estates neighborhood).[16] With this information, the city and neighborhood groups—and ultimately the CDCs and others working with Neighborhood Stabilization Program funding—could target properties for enhanced code enforcement, identify abandoned homes and demolition candidates, and inform property-acquisition plans. The system has also been used to identify city- and private foundation-sponsored acquisition actions against problem properties and the selection of the new community development intermediary's (Memphis Community LIFT) targeted neighborhood areas. Primary data collection such as the Memphis "Neighborhood by Neighbor" survey also has the advantage of grassroots involvement and support for

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[16] Tk Buchanan, Phyllis G. Betts, Jackson Gilman, and Robert Brimhall (2010), *Neighborhood-by-Neighbor: A Citywide Problem Property Audit* (Memphis, TN: University of Memphis, April), http://cbana.memphis.edu/GenResearch/NxN_SUMMARY_FINAL_REVISION_8_30_2010.pdf.

FIGURE 1
Foreclosures and problem properties in Mendenhall Estates, Memphis, 2007
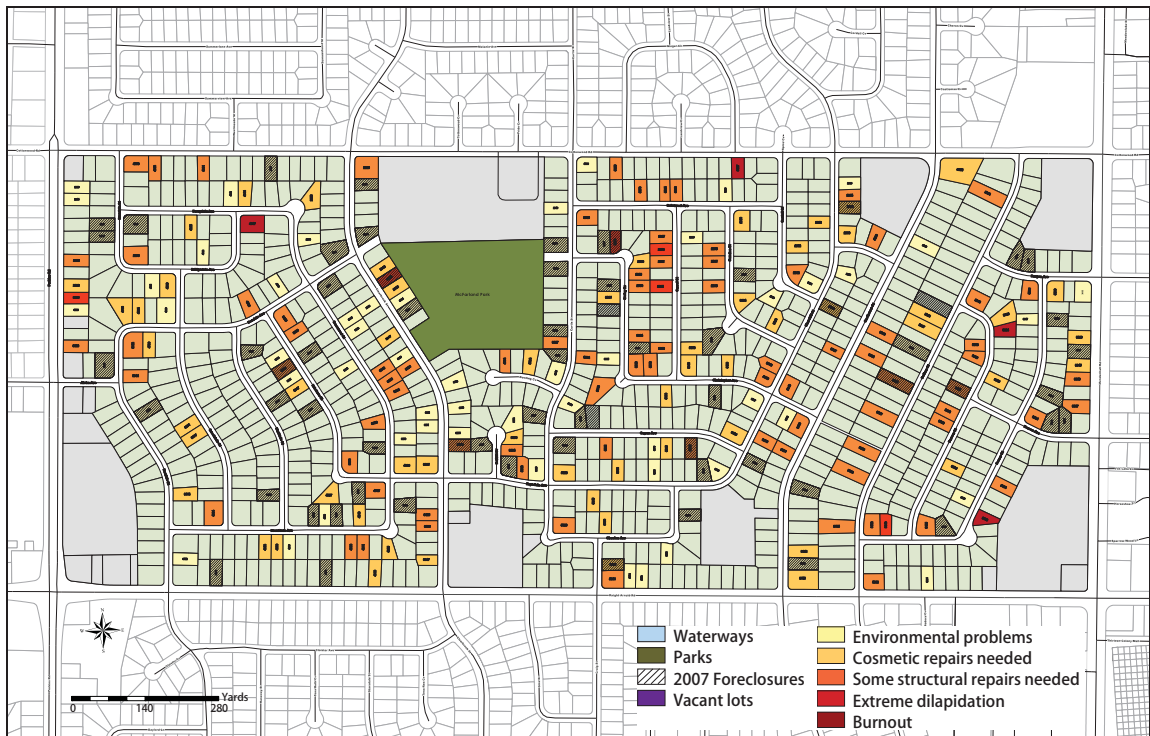
Source: University of Memphis, Center for Community Building and Neighborhood Action (CBANA).

local data systems—a good way to build momentum at early stages of system building. For more details on the project and to learn about potentials for replicating it in other cities, visit CBANA's website at http://cbana.memphis. edu/community.php.[17]

With either local administrative or property survey data, analysts can prepare hot-spot maps to show patterns across the city, charts with trends over time for target neighborhoods, and zoomed-in maps of individual parcels. Each application will reinforce the value of locally driven analysis using adminis-

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[17] The Detroit Residential Parcel Survey (http://datadrivendetroit.org/projects/detroit-residential-parcel-survey/) offers another example of how cities can expand the use of local data to inform their neighborhood stabilization efforts.

trative data. Beyond the individual analysis tasks, building relationships and identifying new opportunities for data acquisition and partnership should be a continuing focus.

Advanced Level: Analyzing Local Data In-Depth

From here, groups can move on to more in-depth analysis and innovative measures using property-level data. Analysts in Cleveland using data from NEO CANDO and in other cities with similar data systems have created property history files by linking transactions for each property over time. This enables a better understanding of the different stages of the foreclosure process (such as how many months on average between a foreclosure notice and sale) and the identification of foreclosure outcomes, such as completion rates and short sales (see **table 4**). It also is the first step to identifying investors flipping homes through the short time frame of resale and ratio of original sales price to the next one. Other complex, derived variables include analysis of the text fields, such as grouping properties owned by one investor using different shell companies with the same owner address.

TABLE 4
Sample indicators for cities moving toward advanced parcel systems

Question	Data source
How many months on average is the foreclosure process?	Foreclosure filings matched with deed data
How many properties are in the foreclosure pipeline by neighborhood?	Foreclosure filings matched with deed and sales data
Where are the REO properties concentrated? Which banks own the most properties?	Assessor's data with ownership classified by name
How long has a property been in REO?	Assessor's data over time with ownership classified by name

Figure 2 illustrates the type of housing market analysis that an advanced parcel system makes possible. To create these indicators for Washington, DC, political wards, the local data intermediary NeighborhoodInfo DC links

four sources of data—property characteristics (to exclude commercial and multifamily properties), foreclosure filings, deeds from foreclosure sales, and home sales. Properties are identified as real-estate owned through automated searching of the text in the owner field for names of banks and servicers. The results demonstrate where foreclosure-related activity dominates the residential real estate market, as in Ward 8 where 60 percent of all sales are classified as non-market sales.

FIGURE 2
Percent of single-family home and condominium sales by type for non-market sales in the District of Columbia by ward, 4th quarter 2010
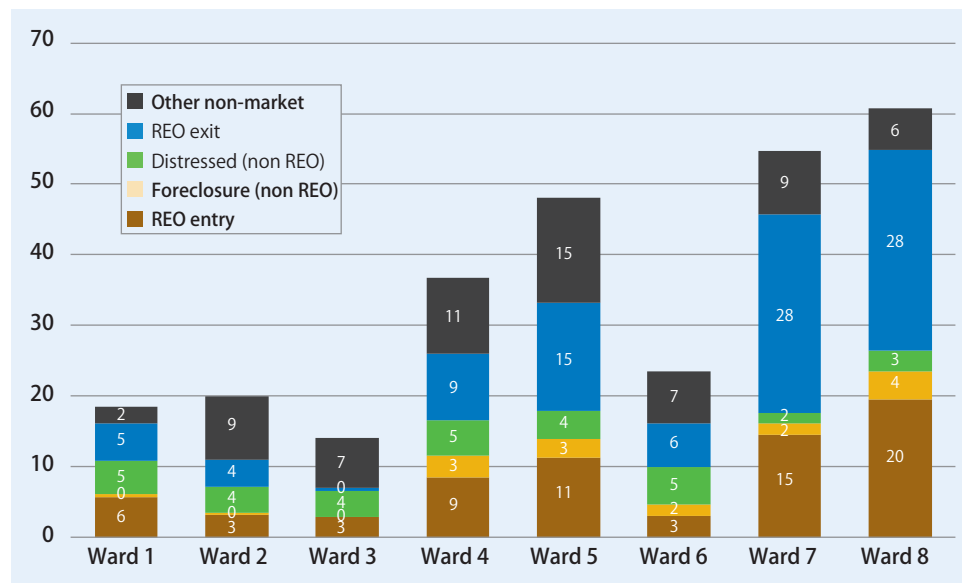
Source: DC Recorder of Deeds and Office of Tax and Revenue data tabulated by Neighborhoodinfo DC.

They also calculate the indicators for individual neighborhoods to better serve practitioners' interests. CDC directors considering acquiring a particular foreclosed property can take into account what the potential demand might be for a rehabbed home. The analysis will be repeated over time to show shifts in the composition of the housing market. For example, nonprofit organizations working on marketing a certain neighborhood to first-time

homebuyers could see progress in the number of properties that are "exiting REO"—that is, transferring from bank ownership to a private owner. (For more ideas from NeighborhoodInfo DC about how to analyze and present parcel data, visit www.neighborhoodinfodc.org/Foreclosure/index.html.)

Organizations can also tackle linking address-level records with those with parcel identifiers. A parcel is a legally defined piece of land that can have many addresses (such as an apartment building). Some local governments publish an official parcel-to-address crosswalk, but if not, researchers outside of government will need to build one. This crosswalk opens up new avenues of analysis, such as identifying the individual REO properties that were locations of reported crimes. Users can also combine data sources to create indices of distressed properties, layering incidents of code enforcements, tax liens, fire calls, etc. in order to prioritize the most troubled properties.

Groups with successful parcel-based data systems never consider their work "finished." Even places with advanced data systems continue with the tasks described for cities just starting out—securing and renewing data agreements, nurturing relationships among differing organizations, and endeavoring to provide accessible analysis relevant to program planning and implementation.

All Levels: Moving to a Culture of Informed Decisionmaking

Communities at all levels of sophistication in using data must work to discern the practical implications of analytic findings and to form collaborations to design, implement, and refine interventions. Ideally, what will shift over time is that stakeholders will become more experienced consumers of data, enabling practitioners to have a more grounded program of work and residents a more informed and influential voice—both in terms of the questions asked and consensus-building on priorities and strategies. When civic players have regular opportunities to review and become more comfortable with parcel and neighborhood data, a common understanding of neighborhood

issues is most likely to emerge; relationships across nonprofit and govern-ment agencies are strengthened; and efforts across agencies, neighborhoods, and stakeholders can become more coordinated. Systematic use of data to guide neighborhood stabilization programs will eventually lead to a culture shift where well-informed decisions help communities make full use of scarce resources to improve their neighborhoods.

Complementing Our Framework: Five Approaches to Stabilization

The remaining articles in this compilation illustrate and expand on the themes offered in this framework, as noted earlier.

- Walker and Mallach examine issues and policies related to investor pur-chases and illustrate how data can be used in our first process: strength-ening citywide laws, regulations, and enforcement capacities.

- Goldstein discusses how The Reinvestment Fund's Market Value Analysis approach is being applied in Baltimore and offers an excellent illustration of the use of data in our second process: selecting particular neighbor-hoods for prioritized action and designing context-appropriate strategies for selected neighborhoods.

- Wascalus, Matson, and Grover review the development and use of prop-erty-level data in Minneapolis in our third process: designing strategies for individual properties within neighborhoods. As such, this article is a useful complement to our story of how the same process has been carried out by NEO CANDO in Cleveland.

- Janes and Davis explain many aspects of the development and use of property data systems in Baltimore and, as such, the article provides a good example of the overall approach we suggest. Moreover, its discus-sion of system applications offers particularly good illustrations of our

fourth and fifth processes: implementing prioritized stabilization strate-
gies across neighborhoods and managing ongoing stabilization programs
using neighborhood data to track performance, respectively.

- Zielenbach and Sivak reach beyond our framework, using work by the
  HOPE family of organizations (which operates in four states) as an ex-
  ample to illustrate the development of data related to underlying funda-
  mentals: employment and wealth building.

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Using Data to Address the Challenge of Irresponsible Investors in Neighborhoods

Chris Walker, *Local Initiatives Support Corporation*
Alan Mallach, *Brookings Institution*

Most of the housing stock in America's low- and moderate-income neighborhoods is owned by investors.[1] As the foreclosure crisis and its after-effects continue and more homeowners lose their homes, many of these neighborhoods are seeing increases—sometimes dramatic ones—in the number of investor-owned properties. Many of these are

> **In this article:**
>
> - How investors' actions can affect neighborhood stability
> - Identifying problem properties and owners
> - Addressing the negative effects of investors
> - Discouraging irresponsible activities

multifamily buildings that are rented out to tenants. Investor activity can be an asset to a neighborhood, helping to revitalize and stabilize communities when properties are rehabilitated and returned to productive (re)use. However, the rise in investor purchases has also led to an increase in the number of investor-owners whose decisions about property repair and tenant selection can harm community well-being.

Investor Actions Can Affect Neighborhood Stability

The "challenge" of dealing with property investors, as this article's title has it, is not with investors per se. Rental units are the most frequently encountered

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[1] Census 2010 SF1 estimates aggregated by Local Initiatives Support Corporation Research and Assessment.

housing solution in lower-income neighborhoods, and most of these units were produced for the market by investors responding to market incentives. Although there are many areas of the country where rental units are unaffordable, for the most part, the low-income rental housing stock in the United States meets minimum quality standards.[2]

However, some investor behaviors do in fact pose a challenge and a risk to already destabilized communities. We consider irresponsible investors those who "milk" properties—buying them with no intention of maintaining them—or "flip" properties by selling them immediately after purchase and some cosmetic repairs to disguise defects. Addressing the problem of irresponsible investor behaviors is vastly complicated by the dispersed nature of rental property. In the typical low-income neighborhood, most rental units are in small buildings—more often than not, single-family homes. The U.S. Census shows that 51 percent of rental units are in single-family buildings (those with four units or fewer); 40 percent are in buildings with only one or two units.[3]

Not only are rental housing units relatively dispersed, but most investors own relatively few units. In addition, investors who purchase single-family rental units in low-income neighborhoods typically have lower incomes than their counterparts in higher-income neighborhoods, just as their tenants do. In other words, community and city officials' efforts to "manage" this marketplace for community benefit must contend with large numbers of rental properties owned typically by small-scale investors with presumably limited resources. Efforts to confront this issue are also complicated by the lack of

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[2] A new measure of housing inadequacy puts an estimated 89 percent of rental households in units that are physically adequate. See Paul Emrath and Heather Taylor (2011), "Housing Value, Costs, and Measures of Physical Adequacy," prepared for the American Housing Survey User Conference, Washington, DC, March 8, www.huduser.org/portal/pdf/Emrath.pdf.

[3] U.S. Census Bureau, American FactFinder; generated on October 17, 2011, by Local Initiatives Support Corporation from "2005–2009 American Community Survey 5-Year Estimates," available at http://factfinder.census.gov.

good data on the volume of investor purchases, patterns of property owner-
ship, and assessments of property condition.

Identifying Problem Properties and Owners

But there are sources of information that can be used to identify problem
rental properties and their owners. This article highlights several of those
sources and examines how the data they provide can be used to help shape
regulatory and financial penalties and rewards that discourage irresponsible
investors and encourage responsible ones, and thereby help to foster healthy,
stable neighborhoods.

Sources of Data to Track Investor Activity Volume

Any given property is owned by an investor or a homeowner and occupied by
a renter or the homeowner. (By definition, investors do not reside in the unit
they own, but rent it to others; homeowners, also called owner-occupants, re-
side in the unit they own. In certain instances, a homeowner may be an inves-
tor as well, as when single-family owners who reside on the premises rent out
one to three units of a single-family dwelling.) The basic data collection and
analysis task is to identify which units are owned by investors and which are
not. And any given property can change its occupancy status with a change
in ownership. Often in rising markets, rental properties are bought by buyers
who choose to live in the unit (or units—sometimes buyers combine two or
more units to create a single larger one). Often in declining markets, owner-
occupied properties are bought by investors who aim to rent the unit, and
who often divide large single-family homes into smaller units.

The shift toward more investors and fewer homeowners—characteristic of
declining markets—appears to have accelerated with the rapid increase in
the numbers of foreclosed homes for sale. In March of 2011, according to

the National Association of Realtors, investors made 17 percent of all home purchases;[4] however, this figure appears to be much higher at the lower end of the housing market, where distressed properties make up a large part of the market. Nationally, distressed properties—foreclosures and short sales—accounted for 40 percent of all sales, and strong home sales at the lower end of the market reflect all-cash transactions by investors: the share of investment property sales that involved all-cash purchases jumped from 17 percent in 2004 to 59 percent in 2011. (Conversely, fewer than 20 percent of homeowner purchases were all-cash sales.) One source put the all-cash share of investor *distressed-property* purchases at 98 percent.[5]

Legal Records

Basic figures on investor and homeowner transactions are generally rough estimates when reported at the county or city level; they are even more difficult to produce at the neighborhood level. Similarly, surveys that produce data at national and countywide geographies do not resolve to small areas, like neighborhoods. But policymakers and practitioners have a strong interest in knowing whether neighborhood housing markets are shifting dramatically toward rental housing. They are even more concerned about who these new property owners might be, a topic covered in the next section of this article. One way to get a good handle on the level of investor activity at the neighborhood level—although it cannot be used to identify individual transactions—is by comparing total sales transactions with mortgages. These data are available at the census tract level, an area that typically contains between 600 and 2,000 housing units. Most neighborhoods comprise at least several census tracts. Both types of data—sales data from Boxwood Means and Home

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[4] National Association of Realtors Investment and Vacation Home Buyers Survey, 2011; and National Association of Realtors (2011), "Existing-Home Sales Rise in March," press release, April 20, www.realtor.org/press_room/news_releases/2011/04/rise_march.

[5] Guy Cecala, publisher of *Inside Mortgage Finance*, as reported in the *Seattle Times*, January 24, 2010. Note that some homebuyers intending to live in their units do, in fact, pay cash; Neighborhood Stabilization Program buyers may be considered "cash" buyers as may those engaged in non-arms-length transactions.

Mortgage Disclosure Act (HMDA) data on purchase mortgages—can be procured from PolicyMap, a web-based data source.[6]

This comparison works because, as mentioned, the great majority of homebuyers obtain a mortgage, which is recorded in HMDA data, but only a very small percentage of investor-buyers obtain a HMDA-recorded mortgage.[7] As a result, the ratio between the two, although not a precise measure, is a highly reliable approximation of the extent to which buying in a particular area is being done by homebuyers or investors. As a rule of thumb, a ratio of two sales or fewer for every mortgage suggests that the greater part of buying is by homebuyers, while ratios significantly higher than three sales for every mortgage indicate increasing investor activity. Many inner-city neighborhoods will show sales-to-mortgage ratios of 10 to 1 or higher, indicating that in those areas—for all practical purposes—the only buyers in the market are investors.

The sales/mortgage comparison offers researchers a quick way of identifying overall trends and directions in investor activity at the census tract level. To develop a more refined analysis using locality-specific data, users can turn to the sources of data available to track the volume of investor activity, presented in **table 1**.[8] But it's important to state: all of these measures are imprecise. Nevertheless, they can be creatively combined to enable administrators, prac-

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[6] PolicyMap (www.policymap.com), owned and maintained by The Reinvestment Fund, a Philadelphia-based community development financial institution, is a valuable source of data on cities and neighborhoods. Although access to their data is by subscription, the costs are reasonable enough to be within the means of many local governments or community development corporations.

[7] According to data from Campbell/Inside Mortgage Finance *HousingPulse Tracking Survey* for February 2011, 75 percent of investor home purchases are all-cash transactions. Federal Housing Administration, Fannie Mae/Freddie Mac, and Veterans Administration mortgages *in toto* amount to only 7 percent of investor purchases, while 18 percent of transactions use some other type of financing, most of which is unlikely to be subject to reporting under HMDA.

[8] See the compendium of indicators and data sources compiled under the auspices of the National Neighborhood Indicators Partnership. See also Claudia J. Coulton (2008), *Catalog of Administrative Data Sources for Neighborhood Indicators* (Washington, DC: The Urban Institute, January), www.urban.org/UploadedPDF/411605_administrative_data_sources.pdf.

titioners, and planners to make more strategic decisions about neighborhood investments.

The sources below are linked to the purposes for which the data are collected. Records from the recorder of deeds, for example, are designed to track legal ownership of property; however, any recorded intended use of the property, as reported by the buyer, is often incomplete or in error. Records from the tax assessor's office are designed to enable efficient collection of property taxes owed, but because rental property is often taxed at a higher rate than owner-occupied properties, investors have an incentive to misreport. But together with one or more other indicators often (but not completely) associated with investor purchases—a distressed property, an all-cash purchase (without a lien), an owner of multiple properties—researchers can usually back into an estimate of the number of investor purchases.

TABLE 1
Possible measures of the volume of investor activity

Type of record	Indicators of possible investor activity	Public source
Legal	■ Self-reported intended use of property ■ Sale type (e.g., third-party trustee sale) ■ Purchaser name and address match to other records ■ Purchase without recorded mortgage lien	Recorder of deeds
Tax	■ Tax address different from property address ■ No claim for homestead exemption	Tax assessor's office, office of the city auditor, department of finance
Regulatory	■ Rental registration for address ■ Certificate(s) of occupancy for address	Department of regulatory affairs

Tax Records

Because real estate is typically the largest source of local government revenue, tax records are a high-quality source of property information—though again, they must be used in conjunction with other data to produce good

estimates. For example, investors usually live at a different address from their rental unit; therefore, a tax bill mailed to an address that differs from the sub-ject property's is a potential sign that the property is owned by an investor. A failure to claim the homestead exemption that lowers an owner-occupant's tax rate or caps his or her property's assessed value may also indicate inves-tor ownership. (That said, examples are legion of investors who fraudulently claim the exemption and have the tax bill sent to their rental property.)

Regulatory Records

Some jurisdictions require landlords to register their rental properties. Those that do are, presumably, investors. Most jurisdictions require a certificate of occupancy for any unit that is rented. Those landlords that obtain such certificates are, presumably, also investors. But again, many rental property owners fail to register as required or bother with getting a certificate of oc-cupancy. Some city officials interviewed for this article estimate that as few as one-third of the rental properties in their cities are registered.

Analyzing Linked Volume Indicators

Because no single indicator is definitive, there is a real payoff to linking data from various sources, then creating an algorithm to determine whether any given property is, in fact, owned by an investor. For example, the legal re-cords may not signal an investor purchase, but the regulatory agency records may show a certificate of occupancy. Considered together, these data could lead one to safely conclude the property was a rental. Alternatively, a prop-erty that has no certificate of occupancy, but the tax address differs from the home address, a homestead exemption was not claimed, and the property was purchased with all cash is, very likely, a rental property.

Fortunately, many jurisdictions have created systems where parcel numbers can be matched across databases, or where parcel-to-address correspondence files can be used to link records from different municipal sources. In addi-

tion, data warehouses in a growing number of cities link these databases and make their contents available to researchers and others. Some of these systems, such as the Northeast Ohio Community and Neighborhood Data for Organizing (commonly known as NEO CANDO) in Cleveland, the Pittsburgh Neighborhood and Community Information System, and the Providence Property Mapper in Rhode Island, have become quite sophisticated.[9]

Data on Characteristic Market Responses and Investor Behaviors

Different markets produce different investor behaviors. In markets where rental property owners make money—because rents are strong or properties are likely to appreciate in value—owners generally behave responsibly, trying to select good tenants and maintaining their properties in good condition. If they do not act responsibly, they are still likely to respond to local pressures to do so: in the final analysis, they want to hold onto their property and protect the value of their investment. In markets where rents are soft and property values have declined, investors may be less likely to check tenant references or take other actions to ensure that renters will be good neighbors. They may also forgo investments in property maintenance and fail to pay property taxes. One of the authors of this article has constructed a typology of investor responses to varying market conditions.[10] These types are summarized in **table 2**. Our concern is with Investor Types B and C.

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[9] Descriptions of these systems can be found on the corresponding websites at www.neocando. org, www.ucsur.pitt.edu/pncis.php, and http://provplan.org/data-and-information/interactive-data-portals-entry/legacy-mappers. These data systems can also be accessed through the Urban Institute's National Neighborhood Indicators Partnership website at www.urban.org/NNIP.

[10] Alan Mallach (2010), *Meeting the Challenge of Distressed Property Investors in America's Neighborhoods* (New York: Local Initiatives Support Corporation, November.)

TABLE 2
Typology of distressed-property investors' responses to market conditions

Category	Strategy	Investment goal	Time horizon
Investor Type A ("Rehabber")	Buy properties in poor condition, rehabilitate them, and sell them in good condition to home buyers or other investors	Appreciation generated through ability to realize greater increase in value than the cost of rehab	Short (usually 1 year or less)
Investor Type B ("Flipper")	Buy properties in poor condition and sell quickly (flip) to buyers in as-is or similar condition, perhaps using unethical or illegal practices	Appreciation generated by taking advantage of buyer ignorance, providing misleading information or misrepresentation, or collusion with others	Short (usually 1 year or less)
Investor Type C ("Milker")	Buy properties in poor condition for very low prices and rent them out in as-is or similar condition with minimal maintenance, perhaps to problem tenants	Cash flow generated through disparity between low acquisition and maintenance costs and relatively high market rents; no expectation of property appreciation	Short to medium (usually 1 to 3 years)
Investor Type D ("Holder")	Buy properties and rent them out in fair to good condition, usually following responsible maintenance and tenant-selection practices	Sum of cash flow during holding period from rental income combined with long-term property appreciation	Medium to long (usually 5 to 8 years)

Source: Mallach, *Meeting the Challenge.*

Market Response Indicators

If we assume that investors respond to markets in predictable ways, one (relatively) easy way to address investor activity and distinguish neighborhoods where policy interventions make the most sense is to first identify distressed markets—those where values are falling and, in particular, foreclosures are rising—and then isolate those where a substantial amount of activity appears to be investor-driven, using the methods already described.

Researchers at the Local Initiatives Support Corporation (LISC) and the Urban Institute have created a neighborhood stabilization analysis methodology that enables policymakers and practitioners to diagnose neighborhood housing market health. Visitors to Foreclosure-Response.org can find a neighborhood market-analysis matrix, which matches degrees of foreclosure distress with degrees of housing market strength.[11] (The data used to power the matrix can be downloaded.) Once users have identified the combinations of foreclosure distress and housing market strength that are of most interest to them, they can further screen for those neighborhoods where investor activity is either low or high, using the sales to mortgages comparison as a starting point, along with the data found in table 1.

This method works best at the high and low ends of the market. At the high end, investors face strong economic incentives to behave responsibly; at the low end, they face incentives to behave less than responsibly. But the "battleground" markets—where investors of both types may be encountered—lie somewhere in between. These are markets where rents are soft (but not collapsed) and their future direction somewhat in doubt. One way to identify these in-between markets is to screen for neighborhoods that fall in the middle ranges of market strength in the matrix just described.

Investor Behavior Indicators

Another method is to use data that describe actual investor behaviors. **Table 3** suggests a method for doing this, based on post-purchase evidence of property sale, rehabilitation activity, and evidence of compliance or noncompli-

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[11] Foreclosure distress is measured by an index constructed from the number and percent of mortgages that are 30 days delinquent, the number and percent of mortgages in foreclosure, and the vacancy rate; data are from Applied Analytics, a proprietary data provider, as adjusted by LISC for estimated loan undercount. Housing strength is measured by first-lien mortgage values, the ratio of owner mortgages to investor mortgages, the ratio of owner mortgages to single-family units, the ratio of investor mortgages to single-family units and the percent of loans that are high cost; data are reported under HMDA. See Center for Housing Policy, LISC, and Urban Institute partnership at www.foreclosure-response.org.

ance with legal requirements pertaining to certificates of occupancy, building condition, resident behaviors, or tax payments. Several of these indicators use cut-off points that are somewhat arbitrary, but they can be pegged at whatever value makes sense locally. In the table, property resale within 12 months is one marker of a "flipper," or Investor Type B, as is a resale price that is more than 50 percent higher than the previous purchase price.

TABLE 3
Possible indicators of investor activity, by type of investor

Investor type	Market calculus	Possible indicators
Investor Type A ("Rehabber")	Buy low, upgrade, and sell high in relatively short time frame	■ Property resale less than 12 months after purchase ■ Resale price is greater than or equal to 1.5 times the original purchase price ■ Evidence of building permit for major systems (or high dollar value of permitted work) ■ May or may not have certificate of occupancy
Investor Type B ("Flipper")	Buy low and sell high to unwary buyers	■ Property resale less than 12 months after purchase ■ Resale price is greater than or equal to 1.5 times original purchase price ■ No evidence of building permit or certificate of occupancy
Investor Type C ("Milker")	Buy low and extract maximum rent in shortest period of time before property abandonment	■ No property resale ■ No evidence of building permits for major systems ■ Evidence of property tax delinquency, code violation, multiple emergency-response calls, and/or citizen complaints
Investor Type D ("Holder")	Earn positive rates of return on equity invested in rental property over medium- to long-term based on cash flow and appreciation	■ No property resale within 3 years after purchase ■ Possible building permit for major systems (or high dollar value of permitted work) ■ No or rare tax delinquency, code violation, multiple emergency-response calls, and/or citizen complaints

Most of the indicators used in table 3 have already been described in conjunction with table 1. **Table 4** shows additional indicators—in this case, pertaining to certain legal requirements—which can be found in a variety of places. These data sources, while they exist in virtually every local government, are often not available online. In some instances, they may be available only in files on individual properties, either electronically or in hard copy, thus requiring a prospective user to gain physical access to the data itself from the agency responsible for maintaining it.

TABLE 4
Sources of information on investor compliance with legal requirements

Indicator	Public source
Evidence of building permit for major systems	Municipal housing, neighborhood services, or inspection department
Certificate of occupancy	Department of regulatory affairs or building department
Evidence of code violation	Building inspection department, court records
Multiple emergency-response calls Evidence of citizen complaints	Police department, 911, and 311 records
Evidence of tax delinquency	Tax collector's office, city auditor, or department of finance

Note: While these functions are common to nearly all local governments, the names of the departments or agencies where this information can be found varies widely. The table illustrates some of the commonly found names.

Strategies to Address the Negative Effects of Investors

States, cities, and counties throughout the United States have devised programs and policies to deter investors from engaging in irresponsible behaviors and to punish those who do. Most of these strategies pre-date the advent of the foreclosure crisis, although many have been adapted or strengthened to meet the extraordinary demands of the housing market collapse.

The strategies listed in **table 5** form a rough sequence of steps from simple identification of investor-owned properties and those entering and exiting the foreclosure process, to establishing standards for property condition and tenant behavior, to imposition of penalties for noncompliance with property registration and property standards. Space limits preclude a full description of these strategies, which are amply described in the literature.

TABLE 5
Principal regulatory strategies to deter irresponsible investor behaviors

Category	Strategy	Description
Keep track of landlords and properties	Rental registration	Landlords register with city and provide contact information
	Notice requirements during foreclosure	Foreclosing entities provide city with notice when initiating foreclosure, taking property at foreclosure sale, and conveying properties
	Finding rental properties	City works with citizens and other entities to identify unregistered properties
	Identifying "bad apples"	City establishes systems to identify and target remedies toward problem landlords and properties
Establish minimum property standards	Rental licensing	Combine registration with health and safety inspection at regular intervals
	Certificate of occupancy inspections	Require inspection and certificate of occupancy on change of ownership/ occupancy
	Disclosure of findings	Require disclosure of repair needs and code violations prior to conveyance of property taken through foreclosure
	Code enforcement	Target code-enforcement resources and work with community groups to identify violations
	Nuisance abatement	Establish program to abate nuisance conditions and recapture funds
	Landlord security deposit	Landlords provide city with security deposit used for emergency repairs
Impose penalties		Impose penalty on owners for failure to comply with notice or substantive regulations

Source: Mallach, *Meeting the Challenge.*

Three recent developments in the application of these strategies are worth emphasizing. First is the increasing prominence of efforts to engage community organizations and residents in the strategy implementation, primarily to monitor property code violations and nuisance conditions. Second is the role of data intermediaries as important participants in neighborhood stabilization response, especially as it pertains to identification of neighborhood concentrations of specific problem properties or those at high risk of vacancy and abandonment. Third is the introduction of new judicial venues such as housing courts, or the creation of administrative remedies, to increase and expedite sanctions against problem properties.

Strategies to Discourage Irresponsible Investor Activity

The best solution to the challenge of irresponsible investors is to prevent problems from arising in the first place. There are essentially two kinds of preventive strategies. The first strategy involves increasing the costs and consequences of problem investor behaviors and reducing the costs of responsible ownership; the second involves either reducing the number of tenure shifts from owner to renter as properties change hands, or keeping previous owners in their units.

Several of the strategies identified in table 5 are, in fact, preventive as well as responsive. For example, landlords that expect periodic rental property inspections, coupled with penalties for failure to maintain housing to code, have an incentive to behave responsibly. Indeed, cities that establish a clear and consistently enforced regulatory regime that includes many of these response strategies can create a climate of responsible behavior that discourages more problematic actions.

Many communities also have established incentive programs to encourage responsible investment-property ownership. A range of these is shown in table 6.[12]

TABLE 6
Incentive strategies to encourage responsible investor behaviors

Category	Strategy	Description
Support for responsible property management	Training programs	Training on property management and legal compliance
	Crime-reduction programs	■ Crime-Free Rental Housing Program through police departments ■ Provisions of Utah Good Landlord Program ■ Reduced violation penalties for crime-program participation
	Financial incentives	■ Discount on disproportionate impact fee ■ Program to guarantee tenant security deposits
	Multifaceted programs	Programs that (1) require multiple landlord actions and (2) offer "package" of incentives or rewards
Incentives for property acquisition and improvement	Direct financial assistance	Financial assistance to investors for purchase and rehabilitation of properties
	Tax incentives	Tax abatements for rental property improvements

Source: Mallach, *Meeting the Challenge.*

Of particular note are incentives for property acquisition and improvement. Some cities have created programs that couple increased and more aggressive enforcement of building codes with broadened availability of financial subsidies or other incentives to assist with property repairs and rehabilita-

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[12] For further details on these and other investor programs and strategies, see Mallach, *Meeting the Challenge*, where they are described in detail, along with information on how to access additional materials if desired.

tion. Baltimore's Vacants to Value program, described by Janes and Davis in the fifth article in this publication, is an example of this, whereby aggressive code enforcement on targeted blocks with multiple vacants in "transitional" markets is linked to prearranged bulk purchases by private developers. As currently envisioned, these purchases will not require subsidy. But in markets where future rents do not cover the added costs of bringing properties up to par, pairing of enforcement and financial incentives is crucial. Programs that encourage and reward investors who act responsibly with the right incentives will help crowd out investors with less salutary motives.

Availability of financial incentives for homeowners to buy and rehabilitate properties can have a similar crowding-out effect, reducing the influx of investors likely to "flip" or "milk" properties. These incentives work best where markets have some prospect of recovery—the same markets where responsible investors can operate profitably—and where government agencies or community organizations play a role in acquiring at-risk properties and marketing them to prospective buyers.

Use of data and information on investor behaviors to prevent or respond to problem properties is best embedded within an overall public-private strategy for neighborhood stabilization; that is, in conjunction with many of the other strategies described in this compilation. There is no substitute for a well-organized and cooperative framework for community consultation and action. Success depends on marshalling the political leadership to meet these challenges with a long-term strategy (not a one-term election strategy) to achieve measurable outcomes, and a willingness to chart a course in accordance with what the data show. Data providers and analysts should be core participants in this effort.

About the Authors

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Market Value Analysis: A Data-Based Approach to Understanding Urban Housing Markets

Ira Goldstein, *The Reinvestment Fund*

A major challenge that cities across the country face in their efforts to stabilize—and revitalize—neighborhoods is determining where and how to invest limited resources. The Market Value Analysis (MVA) approach, which provides an accurate, accessible, and in-depth portrayal of market data in urban areas, is one tool cities are using to help make

In this article:

- Overview of the Market Value Analysis (MVA) approach
- Preparing an MVA
- Baltimore's experience: uncovering market vitality and distress
- How Baltimore is using the MVA to aid revitalization

decisions about resource allocation, set priorities for service delivery, and tailor intervention strategies for specific market types. The MVA approach practiced by The Reinvestment Fund (TRF) is unique in its use of cluster analysis, its spatial context (i.e., the need to not only understand what the conditions are in a given place but what they are in adjacent areas), and in its extensive field validation. Although preparing an MVA is modestly data- and labor-intensive, as the experiences of Baltimore and other cities suggest, many municipalities are finding that it is an undertaking well worth the effort.

This article provides an overview of TRF's MVA approach, discusses the process it uses to prepare an MVA and, using Baltimore as an example, highlights how the MVA approach can inform citywide strategies and decisionmaking related to neighborhood stabilization.

Overview of the MVA Approach

The MVA approach was born from former Philadelphia Mayor John Street's charge to TRF to create a data-based analysis of the city's housing market. TRF created the MVA to give public officials the basis for making informed, objective decisions about how to prioritize resources and services. By 2000, Philadelphia's population had fallen from its 1950 peak of over 2 million to just under 1.52 million.[1] That population loss left Philadelphia with an estimated 30,000 vacant lots and 25,000 vacant homes, as well as 9,000 residential structures in danger of falling under their own weight.[2]

Many of Philadelphia's neighborhoods were scarred with decades of blight, while some showed just the beginnings of decline. Other areas manifested market strength: well-maintained homes, strong prices, a healthy mixture of residential and commercial uses, and no signs of vacancy or abandonment. Mayor Street recognized that to bring the downtown vitality to the neighborhoods, which then housed more than 95 percent of the city's population, he needed a current assessment of the relative economic health of the neighborhoods in the form of comprehensive, data-based profiles. Because city agencies did not have the data or capacity to prepare the needed profiles, Mayor Street turned to TRF to design and conduct the necessary statistical and spatial analysis. Not only would this analysis help guide the level and nature of municipal services delivered throughout the city (e.g., residential and commercial demolition, acquisition of vacant land, streetscape upgrades, housing

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[1] Annual estimates of the population of Philadelphia prepared by the U.S. Census Bureau show that Philadelphia's population stabilized at 1.51 million in 2002 and grew slowly throughout the rest of the decade. See www.census.gov/popest/eval-estimates/eval-est2010.html.

[2] See Rob Gurwitt (2002), "Betting on the Bulldozer," *Governing Magazine* (July), www.governing.com/topics/transportation-infrastructure/Betting-Bulldozer.html.

rehabilitation), but it also would provide the basis for underwriting a $295 million bond issuance.[3]

Underlying the MVA is a perspective that residents of all of a city's markets are its customers—of its programs, resources, and services. Moreover, public resources are generally scarce and cannot be singularly relied upon to create a housing market where none exists. Thus, locating and building on local market strength is fundamental. Scarce public resources should be used to prepare a market for the infusion of private capital; public investment should be invested in a way that leverages private capital. Also important is the recognition that *neighborhoods*—the concept that many community and economic development practitioners use to describe an area—are typically not uniform districts. In fact, most neighborhoods comprise a variety of market types; therefore, governmental activity and resources should be related to the extant conditions in each of the market types, not "the neighborhood."

Since that 2001 analysis, TRF conducted two more MVAs in Philadelphia. TRF also prepared MVAs in Pittsburgh, Pennsylvania; Baltimore, Maryland; Newark and Camden, New Jersey, as well as a set of small towns throughout southern New Jersey; San Antonio, Texas; Washington, DC; Wilmington, Delaware; and most recently, Detroit, Michigan. Funding for these MVAs came from both government and philanthropy (in tandem with the public funding). In addition to their initial purposes for preparing these MVAs, many of these cities used the MVA approach as a means of targeting their federal Neighborhood Stabilization Program activities.

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[3] Many articles and reviews document the history and accomplishments of Mayor Street's effort. Gurwitt (see note 2) provides a good overview and comment on the plan by a variety of local and national community and economic development experts. For some perspective on the early results of the program, see Stephen J. McGovern (2006), "Philadelphia's Neighborhood Transformation Initiative: A Case Study of Mayoral Leadership, Bold Planning, and Conflict," *Housing Policy Debate*, vol. 17 (3).

Preparing a Market Value Analysis

The MVA approach uses a variety of market indicators to analyze, validate, and understand the nature and conditions of existing housing market types throughout a city. Cities can then use this information to better target re-sources and services as well as tailor development and investment strategies for specific market types.

Indicators

The package of indicators for an MVA includes administrative elements and other secondary data sources. In general, these market indicators were selected because they reflect the conditions that any developer might observe when evaluating areas for investment or intervention. With some variation from city to city, the following indicators are used:

- median and variability of housing sale prices

- housing and land vacancy

- mortgage foreclosures as a percent of units (or sales)

- rate of owner occupancy

- presence of commercial land uses

- share of the rental stock that receives a subsidy

- density

Cities have wide variation in the depth and scope of their administrative data-bases. Some cities, like Baltimore, can provide a high-quality dataset for each indicator.

Level of Analysis

Although census tracts and census block groups both provide data by fixed geographic area, the block group—the entity into which a census tract is divided—is the most appropriate level for this analysis. Census tracts are spa-

tially much larger than block groups and their populations range from 2,500 to 8,000 people, whereas block group populations range from only 600 to 3,000.[4] Thus, the census block group is small enough that the differences that may be observed as you walk through a community can be detected, while large enough that the estimates are reasonably stable because they are based on larger numbers of data points (e.g., housing units, foreclosures, residential sale transactions).

Process

The MVA process requires acquiring and evaluating each indicator's accuracy, which is usually accomplished by preparing block group maps of each indicator. The maps are then subjected to an on-site inspection and vetted through interviews and/or focus groups with local subject-matter experts (SMEs).[5]

Once the variables are deemed acceptable, they are subjected to a cluster analysis, which is a statistical procedure that creates homogeneous groupings of cases (i.e., block groups). Each group shares a common constellation of characteristics. The groupings are generally designed to maximize the similarity of cases within groups and maximize the differences across groups. Indicators are put on the same scale, typically through a transformation (e.g., z-score). The cluster analysis does not require an a priori decision about what level of any indicator is more or less desirable (e.g., owner occupancy is good and rental occupancy is bad). It is the constellation of characteristics as revealed by the statistical analysis that helps to define the market categories.

The results of the cluster analysis are then mapped and subject to field inspection and SME review. Typically, the field inspection is accomplished

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[4] For a fuller discussion of census tracts and block groups, see the U.S. Census Bureau's *Geographic Areas Reference Manual*, www.census.gov/geo/www/garm.html.

[5] Subject matter experts in the MVA process are usually representatives of the local housing department or planning commission. Oftentimes, TRF will rely on the review of local real estate professionals or community development practitioners.

by preparing maps and then driving throughout the city with an eye toward understanding whether the map comports with what is observed in the field. Observations focus on whether the appearance of any given market type is similar, regardless of where in the city that given market type is found. Additionally, the degree to which any changes observed from block to block are appropriately reflected on the map are also noted. Experience suggests that field validation takes anywhere from three to five (or more) days depending upon the city's size and complexity of its markets.[6]

TRF's experience is that the validation and modeling process is iterative. Typically, the first statistical solutions do not adequately match with field observations or the review of local SMEs, and this makes some re-modeling, re-mapping, and re-inspection necessary. Some cities have taken the added step of preparing a set of overlays of data reflecting a variety of things like (1) local assets (e.g., large employers, colleges, hospitals, transportation hubs); (2) crime hot spots; (3) social and human service need indicia; (4) history of the city's housing or infrastructure investments; and (5) demographic characteristics and changes.

The Baltimore Experience: Uncovering the Dimensions of Market Vitality and Distress

TRF completed two MVAs (2005 and 2008) for Baltimore and is now working on a third for the city.[7] The 2008 MVA was based on the following indicators: (1) median sale price; (2) housing density; (3) tenure; (4) foreclosure filings as a percent of owner-occupied properties; (5) vacant lots and vacant

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[6] Some things are more easily observed during fieldwork than others. For example, deferred maintenance is easily observed. High levels of foreclosure, however, are not always easily observed.

[7] Baltimore had previously created its own typology, but found it less than fully optimal for its purposes. The city approached TRF to create its MVA because it was based on a larger and more appropriate set of market indicators and used more sophisticated spatial and statistical techniques.

housing; (6) percent of rental units with a subsidy; (7) mixture of commercial and residential uses; and (8) density. Representatives of Baltimore's Housing and Planning departments were the main SMEs, and those who would be responsible for implementing programs based on the MVA. The resulting 2008 Baltimore MVA is displayed in **figure 1**. The constellation of characteristics for each market type is displayed in **table 1**.

FIGURE 1
Baltimore market value analysis, 2008
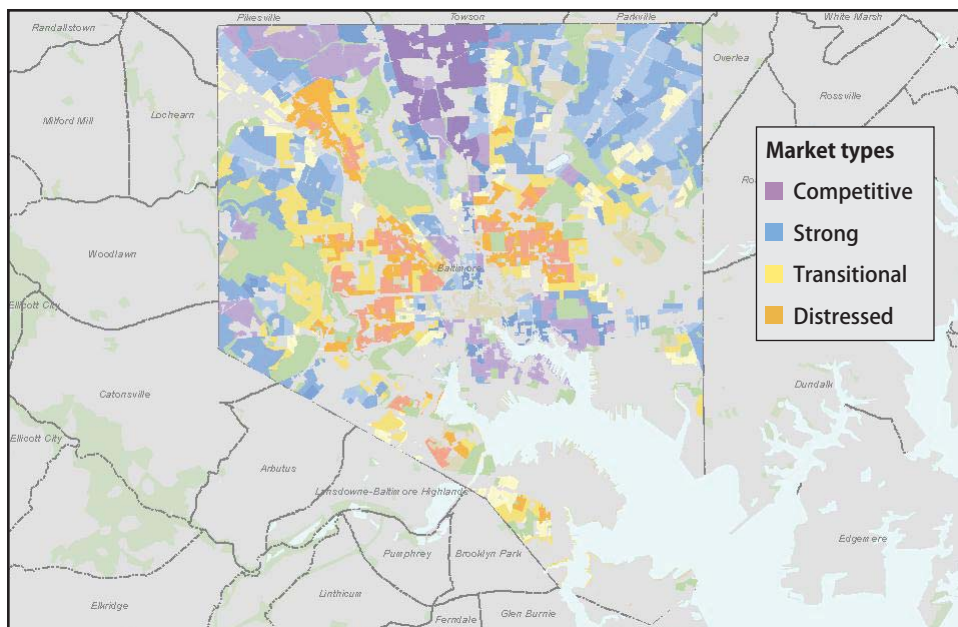
Source: The Reinvestment Fund.

What the City's 2008 MVA Revealed

One of the 2008 MVA's key contributions to Baltimore's strategy development was the recognition of the spatial arrangement of market types:

■ Stronger markets, displayed in the blue and purple ranges, can often operate as nodes of strength upon which interventions in markets that manifest early signs of blight can be based.

- Large areas of distress dictate larger-scale interventions because the degree of blighting influences is so great that minor interventions (e.g., a small number of scattered site housing rehabilitations) are not likely to promote market change.

- Yellow markets (labeled in some cities as "transitional markets") draw attention, especially when adjacent to more stable (blue) markets because, in Baltimore, they may be being undermined by high levels of financial distress as evidenced by elevated foreclosure levels. That which is destabilizing the yellow markets may threaten the blue areas.

Baltimore is also unique, compared to some other cities, in the degree to which it has made the data and results of its MVAs available to the public.[8] One of Baltimore's efforts to inform the public describes the MVA as follows:

> *Baltimore's housing market typology was developed to assist the City strategically match available public resources to neighborhood housing market conditions; the housing market typology was a key tool used in LIVE EARN PLAY LEARN, the City's 2006 Comprehensive Master Plan. The typology informs neighborhood planning efforts by helping neighborhood residents understand the housing market forces impacting their communities. The financial and resource tools the City uses to intervene in the housing market are applied appropriately to the conditions in the neighborhoods. Some tools, such as demolition, may be necessary in distressed markets to bring about change in whole blocks yet may be applied more selectively in stable markets on properties that may lead to destabilization in the future.*[9]

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[8] See www.baltimorecity.gov/LinkClick.aspx?fileticket=_ezq6oAMe6M%3d&tabid=1039&mid=1838.

[9] See www.baltimorecity.gov/Government/AgenciesDepartments/Planning/MasterPlansMapsPublications/HousingMarketTypology.aspx.

TABLE 1

Baltimore MVA category characteristics, 2008

Market	Block groups	Housing units	% of city housing	Fore-closures 2006–07 as % of all owner-occupied units	Owner-occupied housing units, %	Vacant housing notices as % of all housing units	Vacant lots as % of all parcels	Occupied single-family units as % of all	Housing units per acre	Commer-cial land use area as % total block group area	Section 8 units 2008 as % of all rental units	Median 2006–07 sales price
A	12	7,071	2.40	0.87	67.42	0.01	0.00	98.65	6.22	2.05	4.10	$615,915
B	63	33,584	11.41	1.98	51.21	0.92	0.04	93.90	19.43	0.36	1.56	$293,598
C	30	16,261	5.52	3.37	45.19	2.45	0.48	91.93	17.19	18.77	2.22	$244,309
D	117	51,865	17.61	4.50	58.60	1.69	0.46	93.91	11.31	0.00	8.51	$161,447
E	72	37,488	12.73	4.33	54.30	1.68	0.25	93.57	10.86	4.71	7.55	$153,311
F	59	24,700	8.39	5.45	50.09	5.72	0.75	87.54	14.63	18.79	16.37	$97,409
G	118	45,714	15.53	5.75	51.93	6.09	1.01	87.63	15.52	0.07	17.37	$80,315
H	89	29,374	9.98	6.53	34.84	24.01	5.24	66.85	15.91	8.50	11.07	$40,409
I	85	25,786	8.76	6.72	33.40	27.28	4.91	63.18	18.56	0.00	10.30	$36,119
Block group average				5.03	48.02	9.69	2.10	83.87	14.89	4.35	10.26	$130,712

Source: The Reinvestment Fund.

How Baltimore Is Using the MVA to Aid Revitalization Efforts

Encouraging Collaborative Solutions

According to current and former officials of the City of Baltimore,[10] the MVA approach is an accurate and useful diagnostic of localized market conditions. A diagnostic is not an answer, but it provides the basis for government and nongovernment experts to collaborate to create a set of solutions tailored for

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[10] Reports on how the city is using the MVA approach come from interviews with current and former city officials as well as a review of numerous city documents (as referenced herein). We wish to especially thank former Baltimore City Planning Department officials Peter G. Conrad (director, Local Planning Assistance, Maryland Department of Planning) and Seema Iyer (associate director, Jacob France Institute at the University of Baltimore Merrick School of Business). We also thank Kurt Sommer (director, Baltimore Integration Partnership and former Baltimore city official).

Baltimore. Thus, to inform local discourse and municipal action, Baltimore made its MVAs available to the public.[11] The city also took steps to share the information more broadly—for example, by submitting its 2005 MVA for publication in the ESRI Map Book Gallery, a tool intended for use primarily by GIS professionals around the world.[12]

Informing Planning and Development

In addition, the MVA approach helped change the city's development mindset, which had previously been targeted based on level of need. As time passed and resources became increasingly scarce, MVA helped the city to understand government resources as a catalyst to be targeted where there was market strength upon which to build. As a result, targeting resources to market conditions became a critical component of the city's effort.[13]

That mindset was affirmed in city's comprehensive and area master plans. The first Baltimore MVA, completed in 2005, formed a critical information overlay in those plans. Planners and other government officials created a set of responses to each of the different market types and conditions.

The MVA served as the information base for multiple city agencies, nonprofit housing and community development organizations, and foundations to develop a unified set of strategies for Baltimore's neighborhoods. For example,

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[11] For example, information from the 2008 MVA is available at www.baltimorecity.gov/LinkClick. aspx?fileticket=i-Vzm72_LZU%3d&tabid=1039&mid=1838.

[12] See *ESRI Map Book*, vol. 23, at www.esri.com/mapmuseum/mapbook_gallery/volume23/ sustainabledev2.html.

[13] Targeting municipal resources is not a totally unique idea. For example, the City of Richmond developed its Neighborhoods in Bloom (NIB) program in which CDBG resources were targeted based on a variety of objective housing and social criteria. Reviews of NIB demonstrated that the approach yielded significantly better outcomes than the more typical approach to dividing resources evenly across a city in a manner that was never sufficient to bring forth positive change. A program description of NIB, prepared by Carolina Reid (2006), can be found on the Federal Reserve Bank of San Francisco's website at www.frbsf.org/publications/community/ investments/0602/neighborhoods.pdf. A systematic analysis of NIB's accomplishments, prepared by John Accordino, George Galster, and Peter Tatian (2005), can be found at www.community- wealth.org/_pdfs/articles-publications/cdcs/report-accordino-et-al2.pdf.

Baltimore's Vacants to Value program, designed to encourage the rehabilitation of more than 1,000 vacant housing units across the city, had targeting and resource prescriptions tied to the MVA market conditions (the Vacants to Value program is described elsewhere in this compilation in the article by Janes and Davis).[14]

Additionally, Baltimore used the MVA as a measure of market demand in its cooperative forecast for transportation planning. For the same reason, the city also used it in much of its transit-oriented development strategic planning efforts.

Moreover, city departments including Planning and Housing adopted the MVA approach in order to tailor the level and nature of municipal action, zoning, code enforcement, demolition, and other interventions. These departments also began incorporating the MVA in their Notices of Funding Availability.

Lastly, as testament to the MVA's value to its housing and community development efforts, one former city official noted that during transition discussions between Mayors O'Malley, Dixon, and Rawlings-Blake, the transition committees encouraged continued use of the MVA as a tool to assist city efforts.

Although Baltimore, like many cities, will still face challenges in revitalizing its neighborhoods for years to come, data from the MVAs have already made valuable contributions to the city's efforts. In addition to helping the city better understand the unique dynamics of its real estate markets, the MVA approach has helped Baltimore set priorities for service delivery and intervention according to market type as well as design strategies that are tailored for specifically for those markets.

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[14] See Housing Authority of Baltimore (2010), "Mayor Announces 'Vacants to Value' Plan to Reduce Blight," press release, November 3, www.baltimorehousing.org/wgo_detail.aspx?id=417.

About the Author

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Assembly and Uses of a Data-Sharing Network in Minneapolis

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Jeff Matson, *Center for Urban and Regional Affairs*

Michael Grover, *Federal Reserve Bank of Minneapolis*

Like many cities across the country caught up in the previous decade's housing boom and bust, Minneapolis is experiencing mortgage-default problems on a scale not seen since the Great Depression. Foreclosed properties and vacant homes are dotted across the city, with concentrations in some particularly hard-hit lower-income areas. In dealing with the slew of direct and indirect consequences, Minneapolis has benefited from a history of openness and information sharing among local nonprofits, neighborhood organizations, city and county agencies, and academic institutions. This broad coalition of partners has developed a strong, data-driven network to help identify vacant properties for remediation and guide neighborhood stabilization efforts. Fortunately, other cities can replicate this model and build a coalition of data providers to meet any number of needs.

In this article:

- Market conditions in Minneapolis
- Formation of Vacant House Project (VHP) Coalition
- Data sets to aid remediation
- Using data to inform policies
- Next steps in the VHP
- Strategies for creating data-sharing models

This article provides a snapshot of the housing situation in Minneapolis in recent years and highlights how the city created and used a data-sharing network to develop stabilization strategies that focus on individual properties within neighborhoods.

Market Conditions in Minneapolis: High Levels of Foreclosures and Vacancies

Since 2005, Minneapolis has experienced a wave of foreclosures that has touched every neighborhood in the city. The citywide foreclosure rate crested in 2008 at 3.1 percent of residential parcels, and while this number pales in comparison to cities like Las Vegas and Phoenix, the percentage of foreclosures reached nearly 11 percent in some Minneapolis neighborhoods. The North Minneapolis neighborhood, where approximately 17 percent of the city's residential parcels are located, had the dubious distinction of containing nearly 4 in 10 of Minneapolis's foreclosures in 2010.

Vacancies provide an even starker indicator of an area's economic and social health, with North Minneapolis leading the city in vacancies. The city's official Vacant Building Registration (VBR) program,[1] which tracks vacant buildings and assesses fees to property owners, recognizes nearly 500 North Minneapolis family residences as being vacant. But other data—discussed later in this article—suggest a number closer to 1,600. The recently elevated level of vacant properties in North Minneapolis—on the heels of a housing market surge stoked by speculation, mortgage fraud, subprime lending, and rental property investment—has contributed to an increase in property crimes.

Formation of the Vacant House Project Coalition: Addressing Safety and Liveability

The 4th Precinct Community and Resource Exchange (CARE) Task Force responded. Active since 1998, the CARE Task Force is an assembly of city,

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[1] The Vacant Building Registration program is Minneapolis's primary tool for tracking, monitoring, and managing nuisance vacant properties, and all owners of vacant properties must register and pay an annual fee. For more information about the program, including conditions under which properties may be required to be registered as vacant, see www.ci.minneapolis.mn.us/inspections/ch249list.asp.

county, and community representatives, including many long-time North Minneapolis neighborhood residents, that promotes safety and livability in Minneapolis's 4th police precinct through crime prevention and alerts. The CARE Task Force convened a group of stakeholders to initiate the Vacant House Project (VHP). The task force began by strategizing with a representative of the Minneapolis Police Department on solutions to the growth in property crime, including copper theft. According to the police department, thieves were entering primarily vacant homes and stripping them of copper, causing substantial damage that ranged from flooded basements to torn-up floor boards to smashed walls. Conversations with real estate investors, developers, and general contractors indicated that, in many cases, the damage to these residences was so severe that the cost of buying and repairing these homes was too steep to justify financially. In addition, the demand for owner-occupied housing on the north side is weak. As a result, the task force advocated a comprehensive approach that would include a portfolio of options, such as land banking, strategic demolition, and well-managed rentals. The first priority, however, was to identify which houses were vacant. For this, they needed to enlist additional partners to aid in the VHP.

In January 2011, the group reached out to the University of Minnesota's Center for Urban and Regional Affairs (CURA) to help lead the effort to identify vacant houses for protection from vandals and thieves and for assessment of appropriate disposition options (e.g., rehabilitation, demolition, land bank, rental, etc.). For more than 40 years, CURA has operated as an applied research and technical assistance center that connects the resources of the University of Minnesota with the interests and needs of urban communities and the broader Twin Cities region. CURA maintains working relationships with scores of municipal offices and nonprofits, which has enabled it to gather and synthesize data streams from disparate sources for hundreds of projects. CURA was thus well positioned as a trusted broker of information to lead a data collection effort to create a database of indicators of housing vacancy and distress.

Box 1
**Data Elements Used to Identify Vacant
and Distressed Properties**

After consulting with partners of the Vacant House
Project (VHP) about useful and—importantly—avail-
able data, the Center for Urban and Regional Affairs
(CURA) assembled the following data sets to help iden-
tify vacant and distressed properties:

Vacancy Indicator
- Zero or low water usage
- Copper theft
- REO properties
- Official Vacant Building Registration
- Windshield survey of vacant properties
- Properties slated for demolition
- U.S. Postal Service tract-level vacancy data

Legal Judgment
- Foreclosure filings
- Tax delinquency
- Sheriff sales
- Mortgage delinquency rates

Other Tools
- Parcel data[1]
- Multiple Listing Service data
- NSP-First Look data

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[1] Includes sale date, estimated market value, owner name, lot size, and
property tax assessments, among other categories pertinent to the
legal status of land and the structure on it.

Other partners affected by the housing conditions in North Minneapolis were invited to join this effort, with the goal of establishing fact-based, data-driven strategies to address the ailing housing market in North Minneapolis. The roster of participating parties grew to include the following:

■ various offices and departments within the City of Minneapolis, which provided water-meter data, properties slated for demolition, the official list of vacant buildings, and guidance on remediation strategies

■ Hennepin County, which provided parcel data, foreclosure listings, REO properties, tax delinquency and forfeitures, and sheriff sale dates

■ the Minneapolis Police Department, 4th Precinct, which provided a listing of properties that encountered copper theft

■ the Federal Reserve Bank of Minneapolis, Community Development Department, which provided technical assistance and statistics on mortgage originations and mortgage foreclosure and delinquency rates

■ Pohlad Family Foundation, which provided funding and project guidance

■ Folwell Neighborhood Association and Webber Camden Neighborhood Association, whose members provided on-the-ground visual reports of homes that appeared to be vacant (referred to as "windshield surveys") and local Multiple Listing Service data

■ Twin Cities Community Land Trust, which provided information on properties available through the NSP First Look Program[2]

■ CURA, which acted as technical lead and central partner in data collection and analysis

Together, the partners created a list of data elements that could be used to help identify vacant and distressed properties (see **box 1**).

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[2] For information on the First Look Program, see www.stabilizationtrust.com/partnerships/hud.

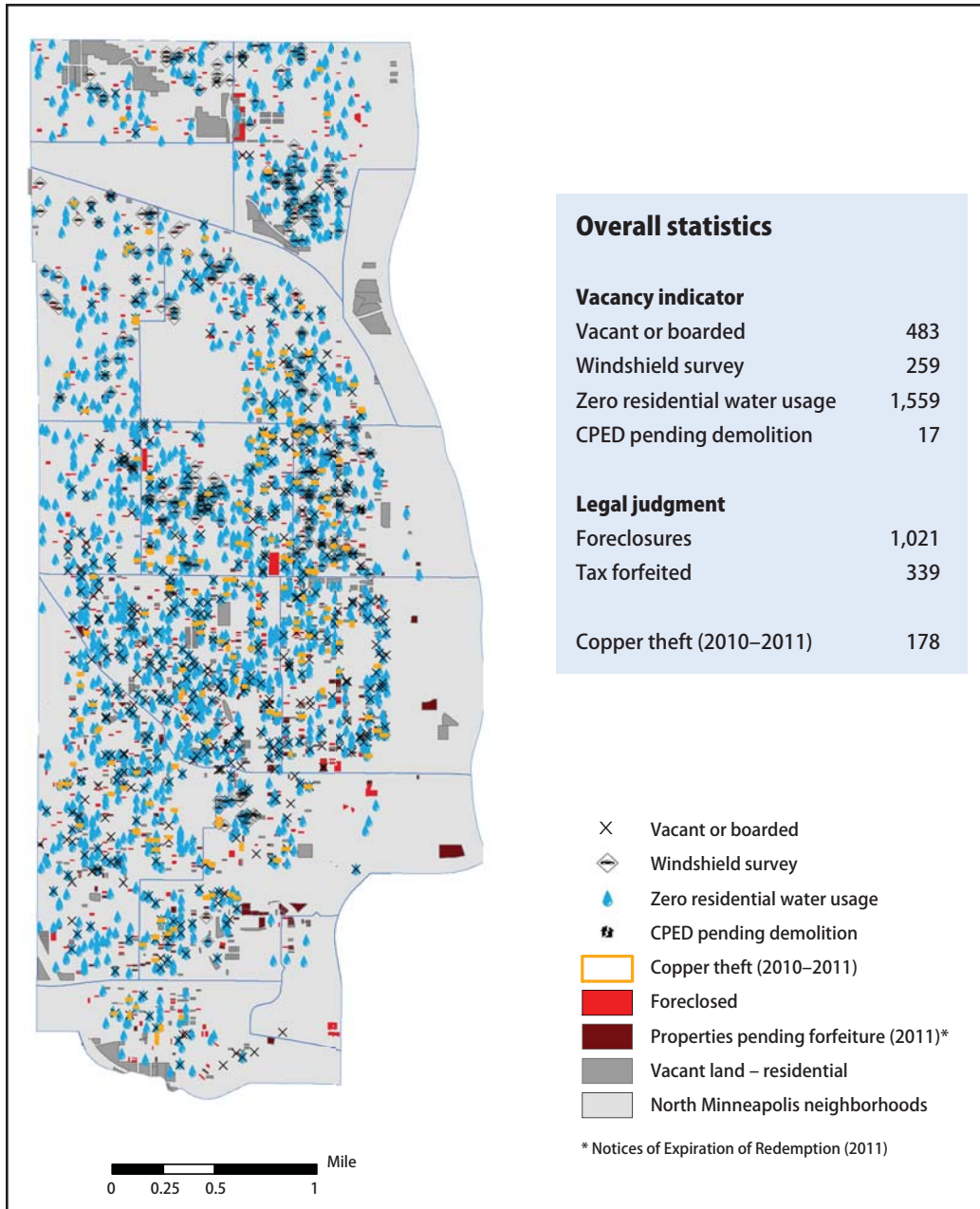## Developing Data Sets to Inform Remediation Strategies

Based on its knowledge of neighborhood-level data[3] and extensive experience assisting neighborhood organizations and local governments with the use of these data to identify issues and problems, CURA gathered a roster of data sets that was not only useful in identifying vacant and distressed properties but also helpful in developing strategies for remediation. In fact, CURA already possessed several data elements needed to create this database, including parcel data, foreclosures, sheriff sales, and the city's official VBR list. Obtaining most of the remaining information required little more than contacting those officials who had access to the pertinent data, many of whom had worked with CURA and members of the coalition in the past. There were few administrative or legal barriers preventing the acquisition of data in a timely matter, and CURA was able to assemble the bulk of the indicator data in spreadsheets and mapping files in just a few weeks, with no cost other than staff time. At that point, CURA was able to provide statistics, tables, and maps to the city, county, and community decisionmakers in the VHP.[4]

Ultimately, when all of these data elements were mapped using Geographic Information System software (GIS)—an essential tool in determining the accuracy of the data and extent of the vacancy problem—a composite picture of Minneapolis's north side emerged that revealed clear areas of concern (see **figure 1**).

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[3] For example, CURA participates in the National Neighborhood Indicators Partnership (www2.urban.org/nnip/) coordinated by the Urban Institute.

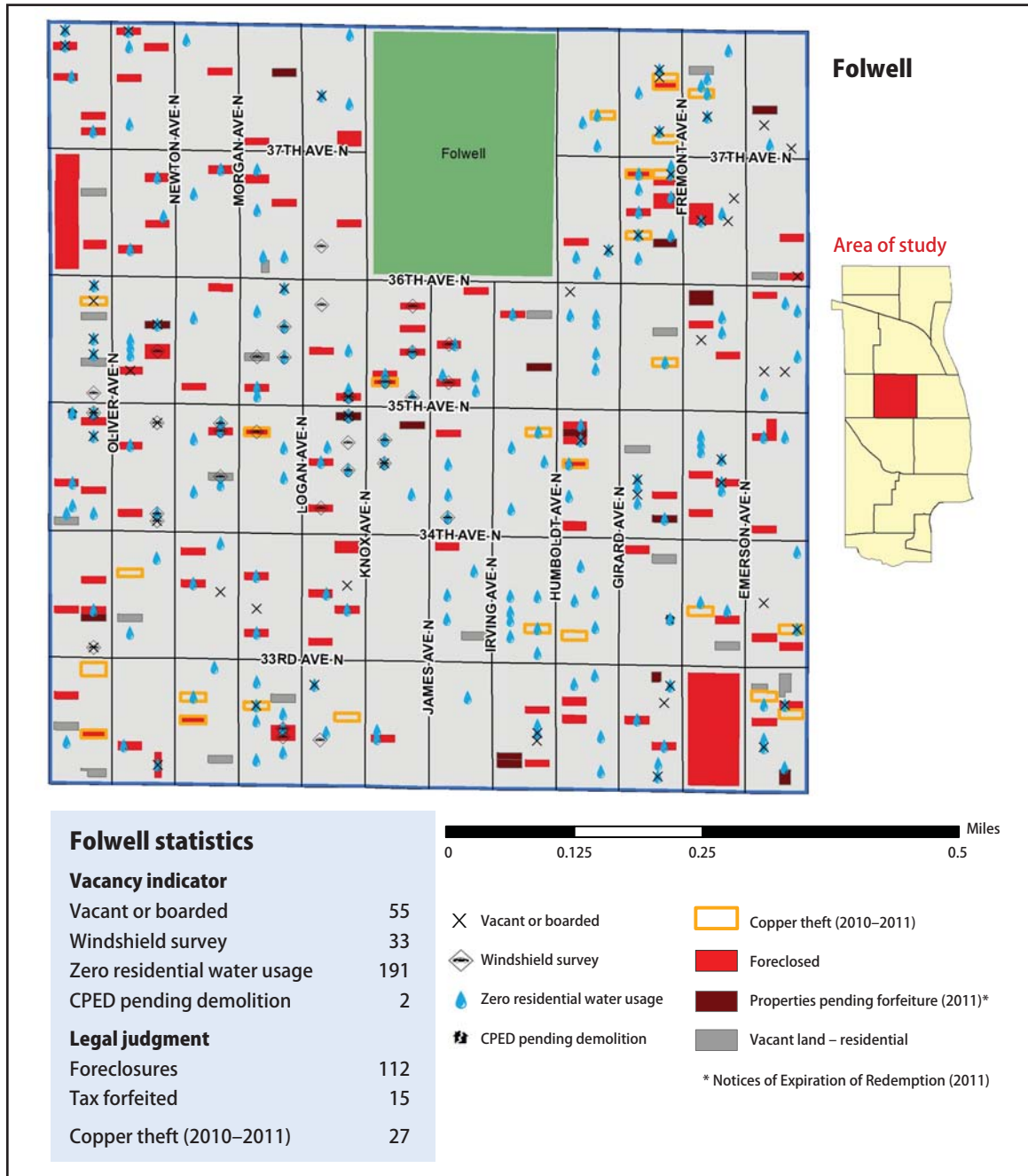[4] Currently, only CURA staff access the VHP spreadsheets and mapping files, and so far the government agencies and neighborhood organizations involved have been satisfied to receive maps, tables, and statistics from CURA upon request. As a result, there are no current plans to create a more interactive or publicly accessible version of the VHP data, but this matter may be reassessed as the users' needs evolve.

FIGURE 1
Composite of residential vacancy indicators for North Minneapolis, as of July 2011

Overall statistics

Vacancy indicator

Vacant or boarded	483
Windshield survey	259
Zero residential water usage	1,559
CPED pending demolition	17

Legal judgment

Foreclosures	1,021
Tax forfeited	339
Copper theft (2010–2011)	178

✕   Vacant or boarded
◈   Windshield survey
💧   Zero residential water usage
   CPED pending demolition
▭   Copper theft (2010–2011)
▮   Foreclosed
▮   Properties pending forfeiture (2011)*
▮   Vacant land – residential
▯   North Minneapolis neighborhoods

* Notices of Expiration of Redemption (2011)

Mile
0   0.25   0.5   1

Source: Hennepin County; City of Minneapolis; Folwell Neighborhood Association; CURA. Data compiled by CURA as part of the 4th Police Precinct Vacant Properties Project.

FIGURE 2
Residential vacancy indicators for Folwell neighborhood in North Minneapolis, as of July 2011

Folwell statistics

Vacancy indicator

Vacant or boarded	55
Windshield survey	33
Zero residential water usage	191
CPED pending demolition	2

Legal judgment

Foreclosures	112
Tax forfeited	15
Copper theft (2010–2011)	27

✕ Vacant or boarded

◈ Windshield survey

💧 Zero residential water usage

🏚 CPED pending demolition

▭ Copper theft (2010–2011)

■ Foreclosed

■ Properties pending forfeiture (2011)*

■ Vacant land – residential
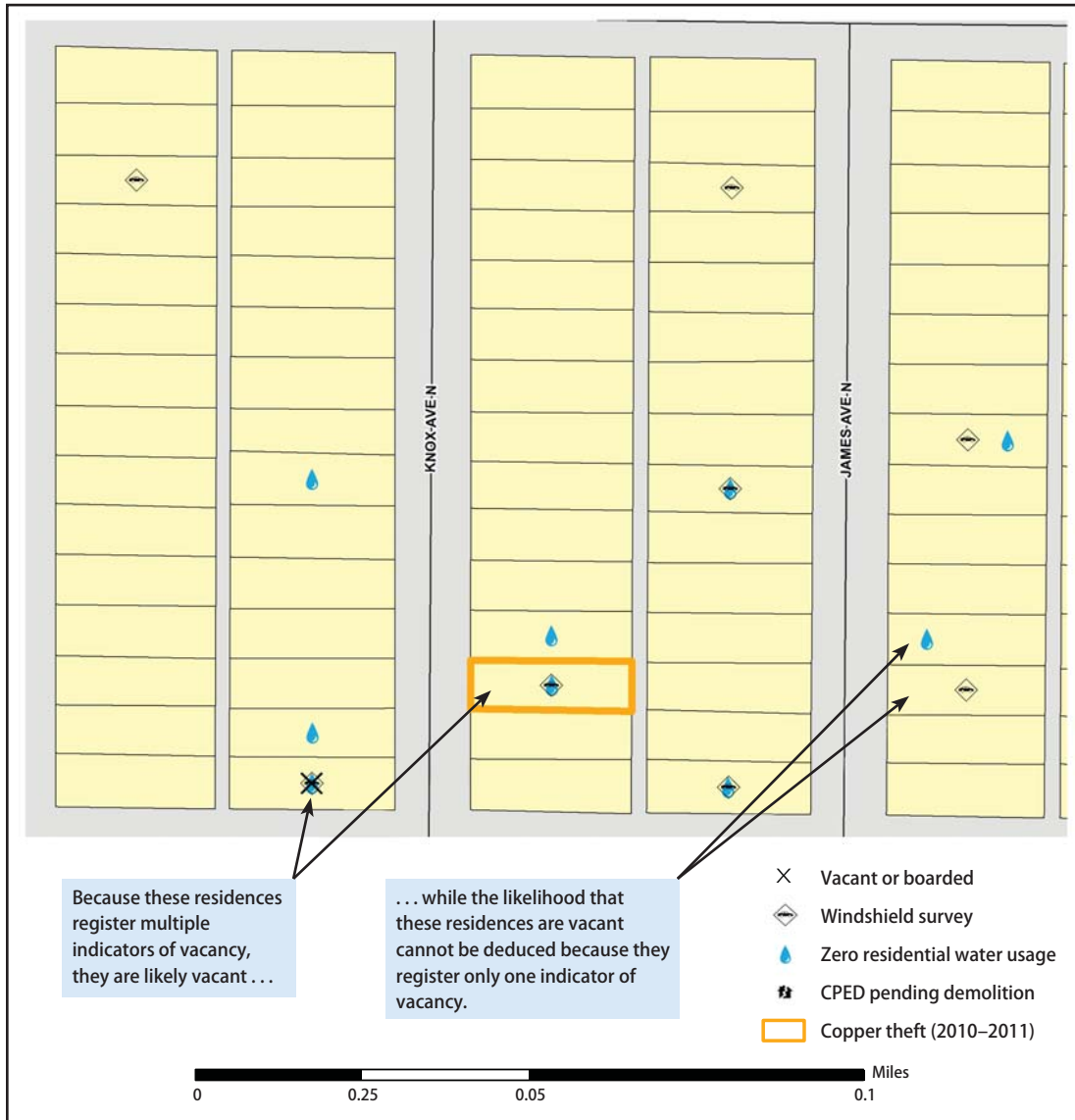
* Notices of Expiration of Redemption (2011)

Source: Hennepin County; City of Minneapolis; Folwell Neighborhood Association; CURA. Data compiled by CURA as part of the 4th Police Precinct Vacant Properties Project.

FIGURE 3
Parcel-level view of residential vacancy indicators in Folwell neighborhood,
as of July 2011

Because these residences register multiple indicators of vacancy, they are likely vacant . . .

. . . while the likelihood that these residences are vacant cannot be deduced because they register only one indicator of vacancy.

×	Vacant or boarded
◈	Windshield survey
💧	Zero residential water usage
⚒	CPED pending demolition
▭	Copper theft (2010–2011)

Miles
0   0.25   0.05   0.1

Source: Hennepin County; City of Minneapolis; Folwell Neighborhood Association; CURA.

The splash of data points that dot the parcel map in figure 1 represents a snapshot of the housing situation in North Minneapolis in mid-2011. Visibly, this much is clear: some areas appear more stable while others appear dis-

tressed. At a finer scale, however, the picture is sometimes still fuzzy. While a single indicator does not necessarily mean that a house is vacant, the likelihood of vacancy increases as multiple indicators begin to stack up on a single parcel (see **figure** 2 and **figure** 3). In short, though the status of individual properties can remain uncertain, the coalition now has a much-improved picture of the scope of its vacant property problem and the areas most severely affected.

Using Data to Inform Policy Options

By the spring of 2011, the coalition had begun to put its new database to use as a neighborhood stabilization tool, using the data to sketch out a range of options to address crime prevention and reinhabitation, summarized in **table 1**:

TABLE 1
Policy strategies to prevent crime and promote reinhabitation in Minneapolis

Preventing property damage	Reinhabiting and selling vacant homes	
Ongoing	Temporary	Long-term
Require water shut-off as soon as home is vacant	Rent homes to individuals on Section 8 (if subsidies are available)	Target down-payment assistance to homes on "quick sales possible" list
Train and pay neighbors, via neighborhood organizations, a small stipend to maintain and watch homes (e.g., cut grass, pick up trash, etc.)	House families on nonprofit waiting lists (e.g., Urban Homeworks)	Determine which homes can be sold quickly; use network of North Minneapolis realtors and targeted subsidies to put homes back in service
Create local, private report system for use by neighbors to report changes in vacant homes	Allow use of homes as transitional housing for families leaving shelters	Create incentive fund for North Minneapolis realtors working together to share potential buyers who are willing/able to purchase homes
Train local U.S. Postal workers to "check in" with reporting system above	Create list of college students willing to rent vacant homes	Reduce city regulatory barriers to home improvement (e.g., lead abatement, number of residents per home)

The new data also raised significant questions about the accuracy of the data that policymakers rely on. Since the VBR list accounts for only about a quarter of the properties believed to be vacant (as mentioned earlier), the city could be losing millions of dollars in vacant property fees as well as failing to adequately address vacant property issues.[5] In addition, the vacancy maps reveal that the number of parcels with little or no reported water usage far exceeds other indicators of vacancy, raising the previously unrecognized prospect that many thousands of the city's residential water meters may be broken or malfunctioning.

Next Steps in the Vacant House Project

The coalition is continuing to work with CURA to enhance the database, even as it is beginning to apply it to neighborhood stabilization issues. One potential avenue for enhancing the database is using the methodology of the Foreclosure Risk and Housing Market Indexes developed by the Local Initiatives Support Corporation (LISC) in conjunction with the local data at CURA's disposal. Recognizing that most municipalities have finite financial and human resources, LISC created indexes based on foreclosure risk and housing market strength to help policymakers identify the areas in their jurisdictions that would respond best to specific remediation and stabilization efforts. While the indexes provided by LISC produce census-tract-level maps, CURA could use data from the VHP database to produce census-block-level maps of Minneapolis's north side that could help policymakers prioritize their resources on certain areas and specific properties.

The accuracy of the maps developed using this approach would depend greatly on the type and quality of the data that CURA collects. While many of

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[5] At $6,746 per year, Minneapolis levies one of the nation's largest fees on properties that sit vacant for extended periods of time.

the indicators that CURA has so far collected to identify vacant or distressed houses are similar or identical to those used by NEO CANDO (whose efforts are discussed in more detail in the first article of this compilation), the VHP also utilizes information on the location of copper pipe theft, the city's official VBR list, and the city's list of houses slated for demolition. Using additional indicators not just to detect vacancy but also to determine the foreclosure risk and housing market strength of each block could add even more richness to the database, though fees for the data and privacy issues still need to be considered. For instance, every four years assessors for the city rate the condition of every structure in Minneapolis, and the city is willing to provide this information to the VHP for free. Adding this information could help refine the remediation and stabilization measures taken for each structure. For example, if a vacant house that is assessed as being in poor physical condition is located on a block with a weak housing market and high foreclosure risk, the city may be more inclined to demolish the property rather than attempt to rehabilitate it. On the other hand, CURA is exploring the possibility of adding more utility information—such as zero electricity and gas usage, as well as garbage removal—to help determine the likelihood of vacancy, but the costs and the availability of these datasets are still unknown, as is the usefulness of the information.

Strategies Other Communities Can Use to Establish Data-Sharing Models

The data from the VHP—and, more importantly, the network supplying the data—are likely to play central roles in many additional neighborhood stabilization initiatives going forward (**box 2** offers an unusual but critical example

Box 2
Sharing Data to Aid a Tornado Recovery Effort

A tornado with winds topping 110 miles per hour ripped through North Minneapolis May 22, 2011, leaving a scar nearly four miles long and damaging nearly 1,900 properties. The damage assessments, which were conducted by the Federal Emergency Management Agency (FEMA), found that 274 properties sustained major damage (i.e., homes had structural or significant damages, were uninhabitable, and required extensive repairs) and that 1,608 properties sustained minor damage (i.e., homes were damaged and uninhabitable, but may be made habitable in a short period of time). Because of the large loss of viable housing, hundreds of people were left without homes. This heightened the urgency to act.

Partly due to cross-organizational relationships developed in the VHP, officials from the City of Minneapolis and various nonprofit groups quickly turned to CURA for help in understanding the extent and location of the tornado damage. Using data gathered from the VHP and other projects, CURA promptly provided maps that indicated—at the parcel level—FEMA's assessment of structural damage, official ownership status (legal rental property or owner-occupied home), and specific repair needs. CURA also provided maps that indicated which of the damaged properties had emergency contact information available. These maps aided the city in prioritizing its outreach efforts and helped nonprofit groups plan their recovery services.

Such a data-mapping request was fulfilled not just because of the relationships CURA had nurtured with various organizations and city and county agencies, but also because of the reputation it had developed as a reliable and trustworthy source of information. Without its history of cooperation and networking, CURA would not have been able to respond in such a constructive way.

of this).[6] In fact, the coalition that formed around the VHP represents just a cross-section of sources that CURA regularly calls on for information. As an active participant in civic and neighborhood affairs for more than four decades, CURA has developed productive relationships with municipal departments and other nonprofits across the Twin Cities. And although not all areas of the country have a prominent organization like CURA to act as data and information facilitators, it takes only a proactive neighborhood organization, nonprofit, or even municipal agency to begin the process of establishing one.

Finding and Nurturing Data Sources

Of all of the data sets used in the VHP, the most difficult to obtain is current parcel data, which includes geographic, legal, and zoning information of land and the structures on it. Most municipalities nationwide are beginning to capture this information, and some are even making it available in databases that are accessible to the public, sometimes for a nominal fee but other times for free. Conducting a web search for "parcel data" and a specific geography will typically produce results that can help data seekers identify which government department has the information they require. Parcel data, as well as other data types similar to the indicators above, are available if reciprocal connections are made and nurtured: utility companies have water, electric, and gas information; police have crime reports, including property damage; counties typically have foreclosure data; and detailed MLS data on houses currently on the market are available through a licensed real estate agent. In addition, volunteer-derived data, such as the windshield surveys mentioned earlier, can be created with a little bit of organizing.

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[6] Already the new database was put to an unexpected but vital purpose after a tornado struck North Minneapolis in May 2011. As described in box 2, city and county officials, some of whom were involved in the Vacant House Project, turned to CURA and the database to help in organizing and targeting a rapid response to this disaster. Several weeks after the event, other organizations that had previously established relationships with CURA requested information to help in understanding the extent of the damage and to aid in planning their future outreach activities.

Using Data Transparently to Build Trust

To gain regular access to public information without resistance or pushback from those agencies that hold the data, requesting agencies must be up front about their intentions. CURA's role as the go-to place for neighborhood-level data and analysis did not happen overnight; rather, CURA achieved this distinction by continually demonstrating the wide application of data, by maintaining political support for its programs, and by disseminating its research findings to as broad an audience as possible. A key component to this formula is the strong connection of trust that must be built over time, whereby the organization requesting the information must demonstrate that administrative data have a value beyond the simple requirements for which they are collected. That was the case with the water-usage utility data obtained from the city for the VHP: data collected primarily for administrative purposes (i.e., billing residents for water usage) provided valuable secondary benefits as well. These data have not only helped identify vacant houses but have also revealed that a significant portion of water meters are likely malfunctioning—valuable information for city officials. By demonstrating data's usefulness, CURA has established a network of partners that willingly shares data in a reciprocal system that benefits all parties involved.[7]

Collaborating with Like-Minded Groups

Finally, connecting with other like-minded organizations will greatly expand opportunities and highlight and improve data acquisition and analysis strategies. One particularly powerful resource is the National Neighborhood Indicators Partnership (NNIP), "a collaborative effort by the Urban Institute

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[7] Another data-sharing success story occurred a decade earlier when CURA had developed a database and information-sharing structure that assisted Minneapolis neighborhood organizations in detecting properties that were susceptible of abandonment by owners. This early warning system required the collaboration and cooperation of numerous city agencies and neighborhood groups, and it ultimately proved useful to city itself, because the neighborhood residents who had access to the information not only provided feedback on data inaccuracies but relied less on city personnel for information requests. Although the work to create this database of early warning indicators occurred more than 10 years ago, the city continues to use it in a modified form.

and local partners to further the development and use of neighborhood-level information systems in local policymaking and community building."[8] As previously mentioned, since joining NNIP, CURA staff have connected with and learned from the more than 40 CURA-like centers across the country. These connections have resulted not only in an increased awareness of potential data sources but also of the multiple uses that different data sets can have—educational insights that await anyone who reaches out to other organizations with similar or complementary interests.

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[8] See the NNIP website at www2.urban.org/nnip/.

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Vacants to Value: Baltimore's Market-Based Approach to Vacant Property Redevelopment

Ellen Janes and Sandra Davis, *Federal Reserve Bank of Richmond*

Baltimore City has 16,000 vacant and abandoned buildings.[1] These properties are a highly visible and potent symbol of disinvestment, and they represent one of the worst drags on Baltimore's social and economic vitality. Redeveloping these properties in a way that targets scarce resources and investment to build on local market strengths has become a critical aspect of Baltimore's efforts to stabilize and revitalize its neighborhoods.

In this article:

- **Baltimore's prior efforts to address vacant properties**
- **Moving toward market-based redevelopment**
- **The Vacants to Value (V2V) initiative**
- **Components of V2V's data infrastructure**
- **Data creators and managers**

Last winter—despite a depressed homeownership market, declining public subsidy, and limited capital availability—more than 600 people packed a Baltimore auditorium to hear about a new, market-based approach to redeveloping vacant and uninhabitable buildings in the city. Mayor Stephanie Rawlings-Blake, Housing Commissioner Paul Graziano, and senior housing officials had expected to introduce their new initiative—Vacants to Value (V2V)—to a small group of developers and community partners. Instead, they met with an overflow audience that responded to their plans with optimism and a sense of readiness.

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[1] Baltimore City is an independent city, distinctly separate from the surrounding Baltimore County; data from Baltimore City Vacant Property File, September 2011.

This article discusses Baltimore's new initiative, which relies heavily on targeted housing code enforcement to foster redevelopment of vacant properties in areas where there is private investment interest in housing and uses streamlined disposition processes to transfer properties to private developers. It also examines the city's creation and use of a data infrastructure that makes possible a nuanced but ambitious approach to vacant property redevelopment. This approach requires accurate, real-time assessments of the condition of and market for individual houses and their surrounding properties.

Baltimore's Prior Efforts to Address Vacant Properties

Over the last 50 years, Baltimore has lost nearly one-third of its population.[2] The exodus has left the city with roughly 16,000 vacant buildings, about 25 percent of which are city-owned.[3]

Vacant and abandoned buildings are a blight on neighborhoods that invite crime, pose risks to public health and safety, and, of course, reduce property values. In short, these properties hurt the stability and vitality of neighborhoods, and their presence can make neighborhoods that are already struggling less appealing to prospective homeowners and investors.

Baltimore has tried various approaches over the years to address vacant properties and, in the process, has developed some critical data tools (see **box 1**) to inform its strategies. But like other cities, Baltimore—and the state of Maryland—had focused local, state, federal, and private resources on the city's lowest-income communities.

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[2] 1960 and 2010 U.S. Census.

[3] Baltimore City (2010), "Mayor Announces 'Vacants to Value' Plan to Reduce Blight," press release, November 3,   www.baltimorecity.gov/OfficeoftheMayor/NewsPressReleases/tabid/66/ID/691/ Mayor_Announces_Vacants_to_Value_Plan_to_Reduce_Blight.aspx.

Although the city had achieved some impressive successes, particularly with respect to the redevelopment of public housing and the creation of hundreds of new homes for very low-income renters and homeowners, those results had come at an enormous cost in taxpayers' dollars. Moreover, these approaches could not be replicated at a scale needed to address the city's thousands of vacant houses. And, because they were targeted to areas where there was ongoing population loss and steeply declining housing values, the achievements of these approaches were eclipsed by ongoing housing abandonment. Thus, despite the use of federal and state tools to leverage private investment, the income-restricted, project-based approach had failed to stimulate new residential markets.

The Move toward Market-Based Redevelopment

Increasingly, public and private community development advocates and funders began to turn their attention to "transitional," mixed-income communities where, it seemed, with modest public investment, housing and commercial markets could be stabilized and private funds could and would sustain redevelopment activity. Market-driven redevelopment yielded impressive results in several neighborhoods. It seemed clear to advocates that different neighborhoods—whose residential markets could vary block by block—needed different reinvestment tools to maximize their potential.

The city had data that could be used to assess residential market conditions, but it lacked both a framework for aggregating and applying the data and an analytic tool to compare conditions in neighborhoods across the city.[4] City housing and planning staff worked with The Reinvestment Fund (TRF), which had developed an analytic and spatial residential-market profile in Phila-

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[4] Bill Ballard (president, LocationAge LLC), interview, August 4, 2011.

Box 1
Early Data Tools in Baltimore's Fight Against Vacant Properties

Over the years, Baltimore has made significant strides in its efforts to understand the scope of the vacancy problem. Early on, it recognized the need for data to inform its approach to redeveloping vacant and abandoned properties, and two data tools provided critical resources that helped the city develop a strong data infrastructure.

The Vacant House File

Since the 1970s, the number and geographic location of Baltimore's vacant houses have been tracked using the city's "Vacant House File," a database ancillary to the city's real property database. This file was an inventory of every vacant property identified by the city's Code Enforcement office.

The data was maintained on a mainframe computer and informed city planning and redevelopment efforts. A single data programmer manipulated the data for analysis and use by other city staff. By the late 1980s, Vacant House File data could be downloaded to disks and was more readily and widely available to city agencies. However, information was not real-time—the file was updated monthly but relied on the paper records of the Code Enforcement office.[1]

CityStat

In 1999, newly elected Mayor Martin O'Malley brought ComStat to Baltimore. ComStat is an innovative crime-analysis system pioneered in New York City. Baltimore's mayor quickly recognized that it could be used to profile virtually every city dynamic that demands a response from government—from the dumping of bulk trash to housing conditions. He named his entire framework CityStat.

CityStat made collecting and analyzing data a citywide priority. City agencies were compelled to quickly identify sources of existing data or collect new data, quantify their services, measure results, and track trends.[2]

CityStat moved Baltimore forward in its use of data to inform policy and program decisions. Because agencies relied largely on internal data sources and the city's existing Geographic Information Systems (GIS) capacity, costs were minimal. CityStat has now been used by three mayors. It has evolved from a tool that forced a new way of doing business on public agencies to a tool for interagency collaboration and tracking complex issues and city services now and over time.[3]

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[1] Steve Janes (assistant commissioner, Research and Compliance, Baltimore Department of Housing and Community Development), interview, August 27, 2011.

[2] Bill Ballard (president, LocationAge LLC), interview, August 4, 2011.

[3] Ballard interview, August 4, 2011.

delphia (TRF's Market Value Analysis approach is detailed elsewhere in this compilation in the article by Goldstein).

Creation of a Neighborhood Typology

Baltimore's work with TRF resulted in the city's "Neighborhood Typology"—a categorization of city residential markets at the census block-group level—in 2005. This typology defined five market categories: competitive, emerging, stable, transitional, and distressed. A second, updated typology was completed in 2008, and a third is expected to be finished in 2011.

The third typology will define similar market categories and be based on the same area characteristics as the previous iteration: house sales, foreclosures, concentrations of subsidized housing, percentage of commercial land, single family homes, homeownership rates, vacant homes, and vacant lots.

Typology and the Market-Based Approach

The typology enables the city to distinguish market conditions and investment potential by neighborhood, and even block by block. By mapping vacant properties across the typology, the city can assess the capacity of a given vacant property or group of properties to attract private investment. The city then uses this assessment to determine if and how V2V might restore the property to active use.

The Vacants to Value Initiative

V2V presents a blueprint for redeveloping the many thousands of vacant properties located in areas the city has determined have viable real estate markets that, with limited public activity, can attract private investment, be rehabbed, and re-occupied. In these areas, the city expects a private property

owner to be able either to sell his property unimproved or, after investing to make it habitable, be able to rent or sell it.[5]

V2V also emphasizes using private market forces, rather than public capital, to target approximately 700 vacant properties located in weak market areas. Investments in these areas will be on a large enough scale—encompassing at least a city block—to catalyze additional private investment. These projects will incorporate mixed-income housing development. V2V acknowledges that it cannot rid Baltimore of all its vacant houses. Instead, it targets investment to clusters of vacant property near functioning markets or seeks to leverage substantial resources that will lead to sustainable improvements.

The idea is that by targeting a reasonable amount of investment to real estate markets that have some existing strengths, the city might be more likely to restore healthy market conditions than by following a "worst-first" approach that simply allocates resources to the areas with the highest vacant property rates (for a fuller discussion of this concept, see the Pettit and Kingsley article in this publication as well as the Goldstein article).

Targeted, Citation-Based Code Enforcement

V2V's central strategy is the use of targeted code enforcement in areas of the city identified as having relatively strong investment markets. Efforts to nego-tiate with property owners to achieve housing code compliance are followed by the issuance of rapidly escalating citations for noncompliance. The initia-tive uses citations to compel owners of vacant properties in these areas to make them habitable or sell them to buyers who will do so.[6]

By switching code enforcement in areas with market strength from a litigious to a citation-based process, V2V expects more immediate action from non-

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[5] Michael Braverman (deputy commissioner, Code Enforcement, Baltimore Department of Housing and Community Development), interview, September 8, 2011.

[6] Braverman interview, September 8, 2011.

compliant property owners. With a litigation model, to correct a violation as simple as peeling paint could take several months, and in the interim, a nuisance property would continue to contribute to neighborhood decay. With targeted citation, coupled with automated systems and new performance-based personnel practices, Baltimore Housing's Code Enforcement Division has dramatically increased the number of citations it issues and expedited owner actions to address long-vacant, blighted properties (see **figure 1**). Because code enforcement is most aggressive in areas with functioning housing markets, owners should be able to support the cost of property improvements, and in cases when they cannot, the markets are stable enough to support the sale of the property.[7]

FIGURE 1
Inspections completed by Baltimore Housing Code Enforcement versus number of inspectors
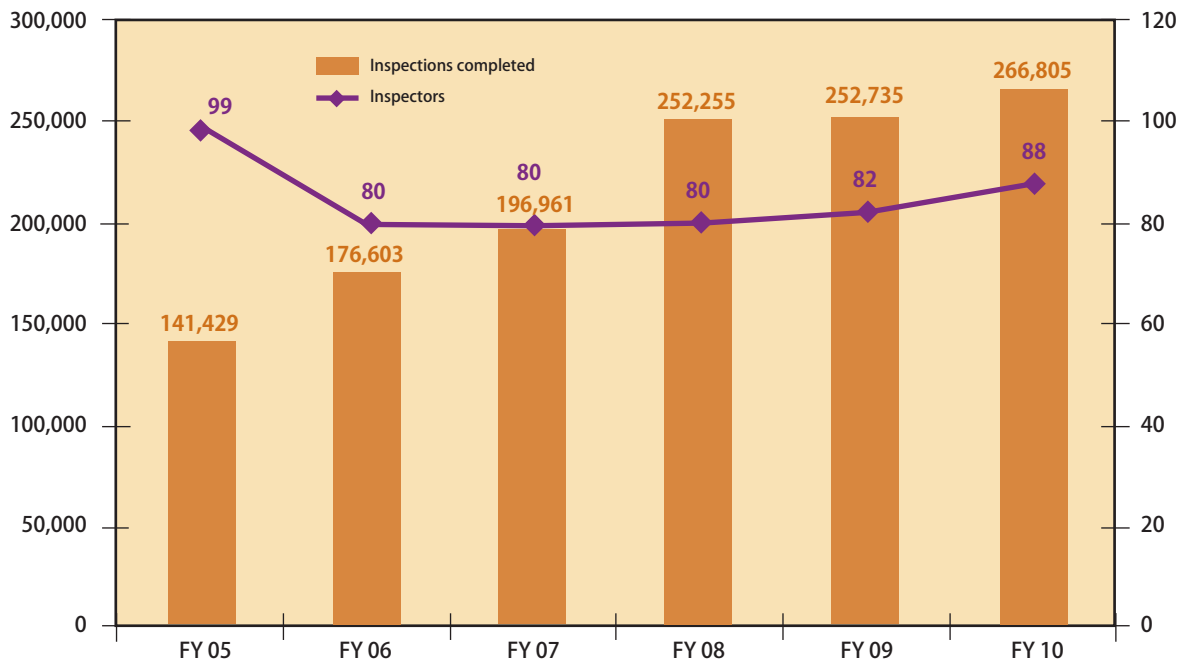
Source: Baltimore Department of Housing and Community Development, Code Enforcement Division, 2011.

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[7] Braverman interview, September 8, 2011.

Redevelopment Strategies Based on Property and Market Traits

Depending on the characteristics of a property or parcel and the market strength of the area—whether the market comprises a city block or an entire neighborhood—V2V deploys one or more of the following redevelopment strategies:[8]

- Using new code enforcement processes to trigger rehabilitation where there are small numbers of vacant properties and abandonment is minimal

- Facilitating "development clusters" and "whole block" solutions by coordinating city investment and services for committed, capitalized developers in areas with market strength

- Targeting homebuyer and developer incentives

- Supporting large-scale development in distressed areas

- Maintaining, demolishing, holding, and promoting non-housing uses for properties unlikely to be redeveloped in the near-term

Streamlined Processes for Property Disposition

One key barrier that has plagued past city efforts to redevelop vacant properties has been a slow and cumbersome property-disposition process. To overcome this hurdle, the city streamlined the process of disposing of vacant properties. It also strengthened its efforts to market vacant properties, which now include use of a dedicated website and Facebook page.[9]

Components of V2V's Data Infrastructure

The salient aspects of the V2V initiative—real-time tracking of vacant properties, categorization of markets, establishment of new city policies and proce-

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[8] See "Nuts and Bolts of V2V" at http://static.baltimorehousing.org/pdf/V2VNutsBolts1.pdf.

[9] Julia Day (deputy commissioner, Land Resources, Baltimore Department of Housing and Community Development), interview, August 10, 2011. The website and Facebook page can be found at www.baltimorehousing.org/vacants_to_value and www.facebook.com/pages/Baltimore-Housing-Vacants-to-Value-Initiative/174594812563039, respectively.

dures, and identification of specific investment activity at a block or neighborhood level—all depend on a constant flow of data from a wide range of sources, ongoing data analysis, and the management resources and technology necessary to organize, maintain, and use the data. Accurate, up-to-date, and usable data give the city an important tool to redevelop vacant, uninhabitable properties using strategies nimble enough to respond to the discrete geographies and markets of individual properties. Baltimore uses a variety of data and imaging resources to make V2V possible.

Code Enforcement Database

In Baltimore, housing code inspectors are the first to officially identify and record vacant properties. Once they deem a property "vacant and uninhabitable," they record it in the housing department's code enforcement database. Each of the city's approximately 8,000 blocks is numbered, as is each parcel on every block. The blocklot number is the property's unique identifier and provides a simple way to integrate and map data from many sources.[10]

The Code Enforcement Division's internally created Computerized Housing Inspection Process (CHIP) thoroughly documents the status of a vacant house and includes inspection dates, descriptions of the building's condition, photographs, citations, and ownership information.[11]

Real Property File

The Real Property File is the backbone of Baltimore's vacant property data system.[12] The Real Property File is not a file per se but a massive compilation of multiple databases, largely related to the management of property taxation—the largest single source of city revenue. The Real Property File contains comprehensive information about a specific property parcel, rang-

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[10] Braverman interview, September 8, 2011.

[11] Braverman interview, September 8, 2011.

[12] Steve Janes (assistant commissioner, Research and Compliance, Baltimore Department of Housing and Community Development), interview, August 27, 2011.

ing from where the property tax bill is sent to the square footage of the lot. Because it underlies the city's property tax system, it is well-maintained and up-to-date. Its data come from disparate sources and include the legal, geographical, zoning, assessment, and tax-billing characteristics of each parcel.[13]

Land Acquisition Database

Created to manage the city's purchase of vacant properties, the City of Baltimore Land Asset Manager (CoBLAM) organizes the elements of property acquisition and disposition processes and exports them to Excel spreadsheets, which helps make analyzing and using the data easier. Some elements of CoBLAM are autopopulated from the Real Property File, which increases the standardization of information. CoBLAM tracks the several thousand properties the city owns as well as those it is likely to acquire through condemnation, tax sale foreclosure, or for future development. It also generates and populates legal documents needed to acquire or dispose of property.[14]

GIS: HousingView and CityView

City government has assembled two GIS-based management tools that allow a user a look at a wide array of variables on any city block. HousingView is posted on the city's intranet and includes tenancy status, assessments, house sales, public or private ownership, inspection districts, and other housing-related attributes for every property parcel in the city (for example, see **figure 2**, which plots the location of vacant buildings in the city's Reservoir Hill neighborhood). It is used often to look at block and neighborhood development conditions and opportunities.[15]

CityView is modeled after a tool developed in Boston and has both an internal and public version. Like HousingView, it stores a great deal of information

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[13] Ballard interview, August 4, 2011.

[14] Day interview, August 10, 2011.

[15] Day interview, August 10, 2011.

that can be easily accessed at the parcel, block, and neighborhood levels. Using web-based mapping, Baltimore employees can access housing-related information on the city's intranet, as well as information from myriad city agencies pertaining to city services and local assets.

FIGURE 2
GIS map of vacant buildings in Baltimore's Reservoir Hill neighborhood
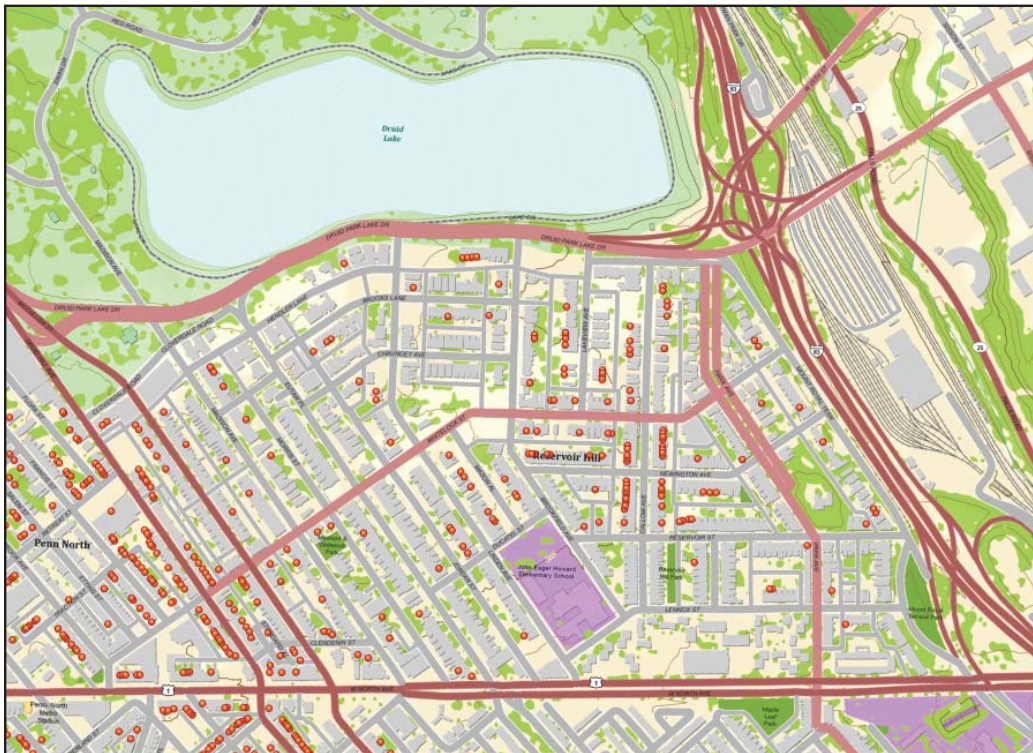
Source: Baltimore City Enterprise Geographic Information Services.

The public version of CityView is available via the city's government website at http://cityview.baltimorecity.gov/CityView. Although not as comprehensive as the internal version, the public CityView provides easy access to city information for residents, visitors, researchers, and individuals doing business in Baltimore.[16]

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[16] Day interview, August 10, 2011.

Aerial Photography

City staff frequently use aerial photography to complement and verify data and other property characteristics. The city has purchased Pictometry, which provides oblique imagery—showing building faces and sides as well as roofs and footprints—and supplements its visual images with key information, including parcel measurements. Pictometry's multiple dimensions are especially useful for vacant property acquisition and disposition decisions because they allow staff to see the current conditions of properties from their offices, eliminating the need for lengthy trips to the field. City staff also use free web-based aerial photography sources as a supplemental way to verify information.[17]

Census Data

Like their counterparts across the United States, Baltimore's Housing and Planning agencies make frequent use of census data—especially to map demographic and economic data at the block group and tract levels. The challenge of using census data is often the disconnect between tract and block group boundaries and the boundaries a city relies upon—such as neighborhoods, natural boundaries, and councilmanic districts—to organize and disseminate data. To improve the usability of the 2000 census, the city and other local institutions contracted with the Census Bureau to provide a wide range of census indices corresponding to the boundaries of Baltimore's 272 neighborhoods.[18]

Data Reconciliation

In a large city like Baltimore, the vacant house inventory changes every day, and achieving real-time data requires concerted effort. In addition, the use of a single, comprehensive database—versus using multiple, loosely connected databases—decreases the likelihood of inaccuracies.

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[17] Brenda Davies (social policy and program analyst, Baltimore Department of Housing and Community Development), interview, August 3, 2011.

[18] Davies interview, August 3, 2011; and Steve Janes, interview, August 3, 2011.

Baltimore Housing's research staff have found a variety of tools to test their data and to resolve discrepancies across disparate data sources. They rely heavily on creative ways of using quantitative data that the city already has access to via water bills and tax mailings, as well as qualitative on-the-ground knowledge of city staff. For example, staff have estimated a threshold of water use below which a property is deemed unoccupied, and they check the city's quarterly water bills over two quarters to help confirm long-term vacancies.[19] Pictometry and other aerial photography are also used to confirm what data indicate.[20]

Data Creators and Managers: The Foundation for a Sound Infrastructure

Baltimore has not quantified the costs of creating its data infrastructure, but staff and contractors alike agree it has been far lower than the cost of paying for the development of new software or hardware. In fact, beyond an early investment in GIS, the city has made only limited investment in technology, and, aside from the information provided by aerial photography, nearly all data collected already existed in a city database or file. The cost of developing the neighborhood typology framework was less than $150,000.[21] A small group of consultants provides most of the additional technical expertise the city needs.

The city has built its infrastructure on data and information that all cities maintain in some form. What sets Baltimore apart with respect to the use of data to wrestle with vacant properties is the work its staff have done to

■   determine the barriers to widespread vacant house redevelopment;

■   recognize the information needed to support widespread redevelopment;

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[19] Davies interview, August 3, 2011.

[20] Davies interview, August 3, 2011.

[21] Janes interview, August 27, 2011.

■ identify useable, practical information sources;

■ develop new frameworks to gather, aggregate, organize, and manage disparate information; and

■ dedicate efforts to assure information is up-to-date and accurate.

Baltimore has assembled a remarkable team of staff and contractors who have brought exceptional professionalism, discipline, and resourcefulness to the task of mitigating the city's vacant house problem. They work at various levels and in various units of the city bureaucracy. They have legal, planning, and other professional expertise; years of experience with urban housing issues; and many have a long tenure with the city. They know Baltimore well—from its administrative, policy, and development processes to the essential characteristics of every city neighborhood. V2V is undergirded by market-based principles and a well-utilized data infrastructure, but its success depends on the people who created and will maintain it.

About the Authors

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Generating and Assessing Community Stabilization Data: The Role of the Practitioner

Sean Zielenbach, *SZ Consulting, LLC*
Ed Sivak, *Hope Enterprise Corporation*

The other articles in this compilation focus principally on ways of using existing data to help shape and adapt strategies to stabilize neighborhoods that have been hit hard by foreclosures and other forms of economic disinvestment. Unfortunately, the availability and quality of neighborhood-level data vary widely across the country. Urban areas such

In this article:

- HOPE's revitalization efforts in the Mid-South
- Indicators of change HOPE tracks
- How HOPE uses data
- Data collection challenges
- Lessons for practitioners

as Chicago and Cleveland benefit from a rich array of information that can document changes on a sub-neighborhood level. In contrast, more rural areas may have data available only on a town or even a county level.

Even in areas where good public data are available, the information is frequently of limited usefulness in assessing the effectiveness of the entities engaged in the stabilization and revitalization of the subject communities. To assess their programmatic effectiveness, community development organizations frequently must determine the information they need and then collect it themselves. If done well, such data collection helps the practitioners refine their programs and activities to maximize their impacts. It can also build upon and enrich any existing neighborhood economic and social database.

This article focuses on ways in which organizations operating in less data-rich environments can track the effectiveness of their programs and their ability to stabilize and revitalize troubled neighborhoods in their markets. We use a case study of the HOPE family of organizations (the Hope Enterprise Corporation, Hope Credit Union, and Mississippi Economic Policy Center), which is working to promote economic development and community revitalization in the long-distressed Mid-South region of the country. Our case study examines how HOPE has relied on a mix of quantitative and qualitative data to track and understand local changes in employment, resident wealth, and investor perceptions—three critical components of sustainable community economic development. We highlight the critical role of thoughtful data collection on the part of a local or regional practitioner, both in assessing organizational effectiveness and in contributing to a broader understanding of community economic development and neighborhood improvement among policymakers.

HOPE Entities Target Revitalization in Mid-South

The Mid-South region of the country has long struggled to overcome the challenges of entrenched poverty. Consisting of Arkansas, west Tennessee, Louisiana, and Mississippi, the region has consistently lagged the rest of the nation on virtually all of the standard measures of social and economic well-being. Louisiana and Mississippi, for example, are almost invariably among the bottom five states with regard to poverty rates, median family income, and educational attainment. Conditions are particularly troubling for many of the region's African Americans, for whom good jobs and opportunities to build wealth remain elusive. One of the challenges in combating these problems is that much of the area is rural, with relatively few major areas with large employers.

One of the factors that hampered the region's development has been the inability of many lower-income individuals and small businesses to access

affordable capital—money they need for home purchase and rehabilitation, equipment and inventory purchase, and working capital. As a way of addressing that need, the Foundation for the Mid South established the Enterprise Corporation of the Delta (ECD) in 1994. Now called the Hope Enterprise Corporation (www.hope-ec.org), ECD started out as a small business loan fund serving companies in 58 counties and parishes throughout the Mississippi delta. A year later, ECD helped found the Hope Community Credit Union as a way of helping predominantly low-income individuals and families in the region access basic financial services, build savings, and access basic credit from an insured depository institution. Today, the two entities (together known as HOPE) collectively constitute a $200 million community development financial institution (CDFI), credit union, and policy center with 26,000 members and 20 locations in the four-state region. HOPE connects underserved entrepreneurs to start-up and expansion capital, families with limited savings to responsible mortgages, and individuals to affordable financial services in communities where only high-cost alternatives exist.

The Mid-South region has never had a particularly strong community development infrastructure. While certain municipalities collect a reasonable amount of potentially relevant data, there is a lack of consistency in the collection; a general dearth of timely, community-specific information; and no good information clearinghouse that makes the available information especially user-friendly. As a result, HOPE has consistently had to conduct its own primary data collection in order to assess the extent to which its activities have made a difference in the market.

Indicators of Change That HOPE Tracks

In measuring the effectiveness of its programs and the change that is taking place in its targeted communities, HOPE tracks a variety of indicators associated with its small business, mortgage, and consumer lending programs.

Nearly all of the tracked loan-level information is stored in the loan opera-tions databases for each respective area of lending. Additional impact data collected from surveys are input into a separate impact database. The data are linked through a unique loan-identification number.

Table 1 provides an overview of the community impact data HOPE collects and the methods it uses to do so. The second column of the table provides both a rationale for why certain programmatic activity was needed (i.e., the problem that HOPE sought to address) as well as the anticipated benefit that would accrue from successful implementation of the programmatic approach. The three major areas of change tracked by HOPE and the processes it uses to collect relevant data are discussed in more detail below.

Employment

With the Mid-South's high poverty rates and low household and family in-comes, HOPE recognized the importance of promoting business and employ-ment growth in the region. Indeed, the economic health and sustainability of any community depends in large part on the availability of good and sustain-able jobs for its residents. HOPE therefore requires each business that bor-rows money from one of its organizations (a "business borrower") to report annually on its current number of full-time and part-time employees. To the extent that the borrower is a developer or property manager, it is required to obtain such information from any commercial or nonprofit tenants in the development.

The simple availability of jobs in an area does not necessarily lead to an im-provement in conditions for local residents; job quality also matters. HOPE's surveys therefore ask each business borrower to provide information about the full-time workers' wages. HOPE then compares the reported wages to the local Self-Sufficiency Standard, defined as the amount a household must earn to cover all basic expenses without any public or private assistance. (Described

TABLE 1
Community impact data HOPE collects

Activity	Purpose/community benefits	Indicators	Collection methods/data sources
Small business lending	■ Increased access to capital among historically underserved populations ■ Asset development among minorities/ women	■ Number of jobs at assisted businesses ■ Wages associated with jobs ■ Benefits associated with jobs ■ Number of businesses in economically distressed areas ■ Number of businesses financed that were turned down by a bank ■ Business ownership demographics (minority/ women) ■ Conditions/changes in local market/community	■ Annual surveys of business and neighborhood conditions ■ Baseline surveys for all new small business loan customers ■ Community Reinvestment Act small business loan data ■ Geo-coding ■ Underwriting documents
Homeownership	■ Increased net worth among historically underserved populations ■ Asset development as a means to address generational poverty	■ Number of first time homeowners ■ Borrower credit score ■ Income of homeowner ■ Race/gender of homeowner ■ Number of homes purchased in areas of economic distress ■ Ability to make mortgage payments ■ Satisfaction with home/ community ■ Conditions/changes in community	■ Annual homeowner surveys ■ Mortgage loan application ■ Mortgage payment history ■ Geo-coding ■ Home Mortgage Disclosure Act data
Consumer lending	■ Access to affordable financial services in underserved communities	■ Borrower credit score ■ Number and amount of loans closed in distressed areas	■ Loan application ■ Geo-coding ■ Loan performance

in more detail below, the standard is calculated using publicly available data.) HOPE's surveys also ask for information about the number of full-time workers receiving various benefits, from paid vacation and sick days to employer-paid health insurance and matching 401(k) or 403(b) contributions.

Even though there may be good jobs in an area, it is difficult to determine the beneficiaries of those jobs. It would be helpful to know how many of the jobs were going to local residents and thus helping to enhance the surrounding community's economic well-being. Obtaining data on individual employees' addresses is both costly and impractical, however; among other things, employers and employees tend to balk at such requests out of privacy concerns. As a result, HOPE is currently developing ways to determine how much of a given assisted business's workforce resides locally or commutes long distances.

Wealth Building

Poverty alleviation and sustainable economic development ultimately depend on increasing the wealth of local residents and their communities. Tracking the increases requires an understanding of resident assets and the changes in those assets over time. As a credit union, HOPE has access to a range of financial information on its members. It can run reports that show aggregate changes in members' account balances, one indication of household wealth. When considering someone for a loan, the credit union pulls a credit report that includes the applicant's current credit score, another measure of an individual's economic health. Because many of its members take out multiple consumer loans, HOPE can track changes in credit scores over time. HOPE also surveys its credit union members about their current and prior relationships, if any, with other insured depository institutions—relationships that are critical for people to build and maintain financial assets. The survey questions on prior banking relationships allow HOPE to make inferences about how much members were spending on financial services before joining the credit union.

HOPE augments the information from its database with data gleaned from surveys. Each year, for example, HOPE surveys a subset of its residential borrowers. Beginning this fall, the survey will ask homeowners for information about their home's current value and improvements they have made to the property since purchasing it. The survey will also request information on the household's current level of non-house-related assets and debt. These data will be supplemented with repayment history and amortization schedules, helping HOPE estimate the extent of wealth accumulation among its borrowers.

HOPE also operates a foreclosure prevention program. During an initial counseling meeting, HOPE officials obtain information on the affected individual's financial condition and his or her desired outcome for the counseling engagement. HOPE defines success in the foreclosure mitigation program as facilitating the attainment of a client's desired outcome (avoiding a foreclosure, for example). By tracking participants over time, HOPE can measure the long-term effects of its counseling program on wealth accumulation.

Investor Perceptions

The stabilization and revitalization of a community does not happen overnight. Before committing to invest (or remain invested) in an area, people have to be convinced of the investment's likely positive return. Changing potential investors' perception of a troubled community is therefore a critical first step toward stabilizing the area.

Many of the measures of new investment in an area (housing starts, loans originated, building permits issued, and so forth) are actually lagging indicators. They reflect decisions of individuals and institutions that may have been years in the making. One of the keys in identifying and tracking local change is to determine when and why investors' perceptions of the area change.

To help understand these changes and frame the broader implications of its work, HOPE supplements its quantitative data collection with qualitative approaches. As part of its borrower surveys, HOPE asks about perceptions of the surrounding community and changes therein, including public safety, the quality and affordability of local housing, the extent of interpersonal trust, and the quality of local educational institutions. HOPE augments the survey data with more in-depth interviews and case studies on specific transactions, focusing on the particular project and community factors that contribute to success.

In pulling the qualitative information together, HOPE's evaluation team works hand in hand with its loan production staff. HOPE has found that loan officers often can obtain better information from the borrowers because of the existing relationships they have; in the absence of such relationships, borrowers tend to be more guarded in speaking with evaluators.

How HOPE Uses Data

The information that HOPE collects has multiple uses. It helps the organization quantify the need and demand for its programs and services, as well as assess the success of its efforts. HOPE's research team aggregates the data quarterly and annually for review by the organization's senior management, board of directors, and investors. HOPE has used the information to make changes in its program design, advocate for new resources, and educate individuals and policymakers about conditions throughout HOPE's market area. The following subsections provide examples of the various uses and benefits of the data.

Assessing Program Effectiveness

When HOPE was founded, it focused its commercial lending on the manufacturing sector. At the time, manufacturing jobs in the South offered relatively

higher wages than those in other sectors, and they frequently provided health insurance. After lending in the sector for a few years, HOPE analyzed internal loan data as well as regional business migration data. Interviews with production staff and actual business owners revealed two important trends. First, much of the work it was doing to support existing manufacturers was not enhancing access to capital for women- and minority-owned businesses; most of the money was going to companies owned by white males. Second, the effects of globalization were causing an increasing number of manufacturers to leave the region, reducing the number of potential deals and exacerbating weak market conditions for manufacturers in HOPE's portfolio. As a result, HOPE diversified its commercial lending to include other sectors and incorporated lending targets for women- and minority-owned businesses into its annual work plan. HOPE now works to target more than one-third of its loans each year to women- and minority-owned businesses.

Demonstrating Need and Attracting Additional Resources

Following Hurricane Katrina, the state of Mississippi designed a number of programs to support the rebuilding of homes on its Gulf Coast. One of the initial recovery programs (Phase I) provided up to $150,000 to single-family homeowners who suffered storm-surge damage but were not located in a flood zone and had homeowners insurance. However, as part of a subsequent recovery program (Phase II), the state initially indicated that it might only provide up to $50,000 to homeowners in the same situation as those in Phase I but who lacked insurance. Many of those prospective Phase II homeowners had low incomes. HOPE demonstrated that the proposed grant awards for Phase II would particularly disadvantage moderate- and middle-income families in the rebuilding process by creating gaps between recovery costs and awards. HOPE's analysis, in conjunction with the advocacy efforts of many local nonprofits, ultimately resulted in an increase in the maximum amount of Phase II awards to $100,000 per homeowner.

Educating Policymakers

HOPE's data, gleaned from its experience working in low-income communities, also can influence public policy and resource allocation decisions. For example, HOPE's data contributed to the development of a state New Markets Tax Credit (NMTC) in Mississippi.[1] HOPE has received multiple allocations of federal NMTCs and has used them to fund small business loan-fund pools and real estate projects. HOPE provided background on how NMTCs work and how they could be structured at the state level to the Ways and Means Committee of the Mississippi House of Representatives. HOPE was able to document the demand for credit and investment capital in the state's low-income markets, the number and quality of jobs that its borrower businesses were generating, and the companies' strong performance on their loans. Combined with specific examples of small business development in underserved communities, the data successfully made the case for a state-based NMTC program.

Self-Sufficiency Calculator

One of the HOPE organizations, the Mississippi Economic Policy Center (MEPC), focuses particularly on the advancement of public policies that support working families. Through public outreach and education efforts, it works to ensure that policy development and implementation takes into account the needs of low- and moderate-income Mississippians. MEPC was founded following Hurricane Katrina to track that recovery funds were equitably distributed and has since expanded its scope of work to address issues affecting state fiscal policy, workforce supports, and asset development.

One of MEPC's more noteworthy projects is the Self-Sufficiency Standard of Mississippi. Developed by Diana Pearce, then at Wider Opportunities for

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[1] The federal NMTC program, managed by the U.S. Treasury Department, is designed to catalyze private investment in low-income areas. Investors receive federal income tax credits for equity investments they make in competitively selected community development entities (CDE), which then use the capital to make loans to or investments in eligible businesses located in census tracts with low median incomes and/or high poverty rates.

Women and now at the University of Washington in Seattle, the standard calculates how much it costs a family to live without any public or private assistance. The standard uses publicly available data to measure basic expenses such as housing, child care, food, transportation, and health care, and it accounts for variations in costs by county, family size, and family type. To make the standard more accessible, MEPC created a web-based interactive Self-Sufficiency Calculator.

While many variations of the calculator exist in states around the country, MEPC has made its tool particularly useful by linking county-level expense data to county-level wage and occupation information, which is regularly updated by the Mississippi Department of Employment Security. The integration of the data enables users to determine the wage that allows for basic self-sufficiency in their county and for their family type, and then research whether particular occupations pay wages above self-sufficiency levels. The final output also informs the user of the education levels needed to compete for jobs paying self-sufficiency wages in their county.

MEPC's interactive calculator has many practical applications. For example, it enables practitioners and policymakers to assess whether businesses in different parts of the state are creating jobs that allow workers to support themselves and their families. The Self-Sufficiency Calculator also helps individuals assess their career and lifestyle decisions.

The standard has been widely adopted. MEPC partnered with the Mississippi Council on Economic Education to develop a curriculum for its "Master Teachers in Economics" course. The teachers completing the course are taught how to integrate the information into their instruction. MEPC has been successful in integrating the material into other training programs as well. For example, the Mississippi Counseling Association has approved a training session for counselors on how to use the calculator with their students; the

counselors earn continuing education credits for completing the session. In addition, MEPC has trained 500 high school freshmen in Lincoln County to use the standard to understand the importance of staying in school (there are no jobs in Mississippi for high school dropouts that pay self-sufficiency wages) and setting career goals that will lead to self-sufficiency in adulthood.

Data Collection Challenges

Although HOPE operates an effective data collection system, it has been limited thus far in the amount that it can do. Like most CDFIs and other practitioners, HOPE has limited staff resources to devote to data collection and analysis. At this point, only one-fourth of a senior-level employee's time and half of an analyst's time are earmarked for data work. Although HOPE works with some outside consultants, it has not yet been able to take on as many research and evaluation projects as it would like. For instance, it has been limited in its ability to conduct more in-depth case studies to assess the impact of some of its larger borrowers and projects.

A major challenge in data collection is integrating it within the organizations' lending and counseling programs. Ideally, loan officers and counselors are able to collect most of the necessary information and enter it into a database on a real-time basis; these individuals also have relationships with the borrowers and can provide some context to the reported data. While HOPE is moving in that direction—it has recently upgraded its database and overall information management system—the process has not been fully refined. Again, this is an issue quite common among practitioners and reflects a certain trade-off in resource allocation. Is it better to devote limited time and capital to enhancing and sustaining programmatic activities or enhancing data collection and tracking?

Lessons for Practitioners in the Field

Much of HOPE's data collection approach can be adapted and implemented by other organizations engaged in promoting neighborhood stabilization and revitalization. Surveys, benchmarking to public data, and contextualizing results all exhibit potential for replication. To that end, we offer three pieces of advice for those looking to develop and sustaining good measurement systems.

1. **Evaluation provides a return on investment.** Evaluation is expensive. Surveys, analysis, and interviews require economic and human resources and can take people away from more direct programmatic activities. More complex evaluation can require costly analytical software. At the same time, sound evaluation systems and the results they generate demonstrate organizational and community capacity to potential philanthropic and institutional investors. Quality information thus strengthens the case for investment.

2. **Collecting and understanding data requires the involvement of both researchers and practitioners.** Particularly in cases where organizations' resources are limited, program staff members play a key role not only in collecting data, but also in providing a context in which to assess it. The relationships that loan officers and other frontline staff have with business owners and homeowners can be critical in getting their participation in surveys and case studies, as well as in obtaining more candid responses.

3. **While much program-specific data may need to be collected, it is important to benchmark that data to public sources when possible.** As already mentioned, the Self-Sufficiency Standard offered a benchmark

against which to measure the job quality outcomes of HOPE's work in communities. It also served as a way of contextualizing HOPE's work on a broader public relations and public policy level. The Self-Sufficiency Calculator has potential for being replicated. There are now multiple measures of self-sufficiency available across the country, and state labor or employment security departments all have access to labor market information. Nonprofits in Maine, Rhode Island, and Texas have contacted MEPC staff members to assess the opportunity of creating similar tools for their communities.

About the Authors

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Ed Sivak is the senior vice president of policy and evaluation with the Hope Enterprise Corporation and the founding director of the Mississippi Economic Policy Center. Sivak manages the strategic planning, research, training, and advocacy agenda for MEPC and HOPE's evaluation activities. He holds a master of public policy from the Georgetown Public Policy Institute and is a former member of the Federal Reserve Board's Consumer Advisory Council, where he chaired the Community Affairs and Housing Committee.

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