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Research Summary

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Neighborhood Stabilization Team Web Application

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For a number of years, the Center on Urban Poverty and Community Development and its online neighborhood-level data tool, NEO CANDO, have served as resources for a wide variety of audiences; from grassroots community members looking to make change in their neighborhood, to social workers, community development corporations, and local governments. As the foreclosure crisis hit Northeast Ohio, funders, the county, and community development professionals in Cleveland saw an expanding need for local property-level data. The Poverty Center worked to expand its property data capacity, driven by the needs of these parties, and would often provide a wide array of small-scale technical assistance and individual property level research as well.

A combination of innovative partnerships and the increasing need for individual-level data led to the development of a new data application in the NEO CANDO suite of data products specifically targeted to community development practitioners. See Figure 1 below. The Neighborhood Stabilization Team Web Application, or the NST Web App, gives community development practitioners access to individual-level property information at their fingertips. The following research brief describes the NST Web App, its functionalities, development, and current partnerships.

THE NST WEB APP

Launched in September 2010 as part of the City of Cleveland's Operation Prevent Initiative, the Neighborhood Stabilization Team Web Application (NST Web App) is an online, interactive, regularly-updated property data interface developed by the Center on Urban Poverty and Community Development at Case Western Reserve University in partnership with the City of Cleveland, Neighborhood Progress Inc. (NPI), the Cuyahoga Land Bank, and Cuyahoga County. The NST Web App focuses exclusively on property and property related data, and presents data at the individual property-level. Data available in the NST Web App are described in **Table 1 on the next page**.

The data presented in the NST Web App represent a snapshot of the current status of each individual property—the result of combining the latest records from numerous sources. Many of the most time-sensitive data sources are updated weekly through various file formats and means: email attachments, DVDs/CDs, flash drives, and file sharing services such as Dropbox. One particularly useful method the NST Web App uses to receive

Figure 1: The NEO CANDO Suite of Applications

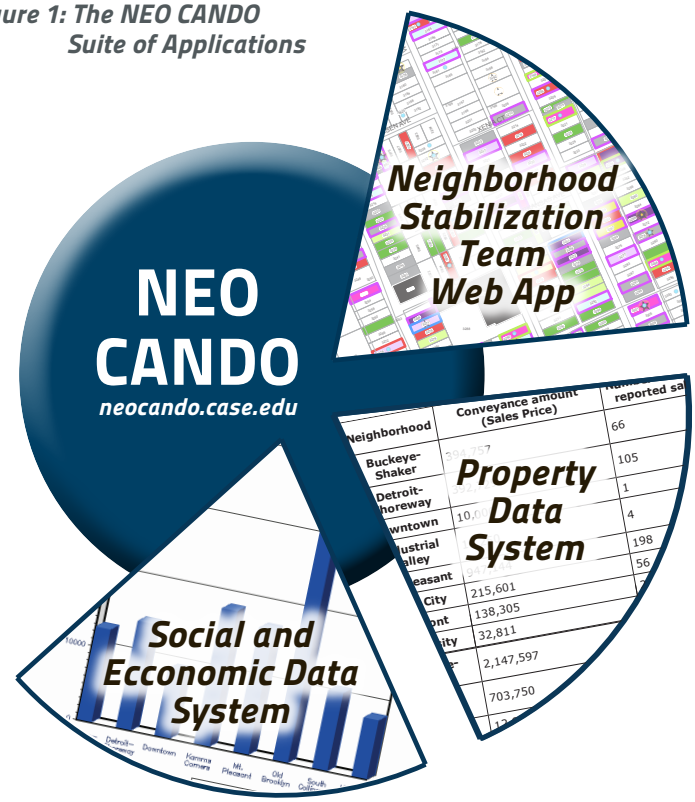

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Table 1: Data Sources of the NST Web App

Data Source	Data Type	Update Frequency	Method Obtained
Cuyahoga County Fiscal Office	Property characteristics	Yearly	Cleveland State Levin College of Urban Affairs- transferred through CD
	Deed, mortgage, and other lien recordings	Weekly	Email transfer from Fiscal Office
	Tax billing file (tax delinquency, property values, tax abatements)	Monthly	USB drive transfer from Cuyahoga Planning Commission
	Deed transfers	Weekly	Email from Cuyahoga Planning Commission
City of Cleveland Department of Building and Housing	City of Cleveland condemnations, violations, permits, and demolitions	Weekly	Dropbox file transfer
	City of Cleveland rental registry	Irregular	USB drive
Cuyahoga County Court of Common Pleas	Foreclosure filings and court docket entries	Weekly	Screen Scraping
Cuyahoga County Sheriff's Department	Sheriff's sale information	Weekly	Screen Scraping
United States Postal Service	Vacancy	Every other month	DVD purchase from USPS data vendor
City of Cleveland Department of Community Development	Vacant and blighted survey	As conducted	Email
Cuyahoga Metropolitan Housing Authority	Section 8 vouchers (City of Cleveland only)	Irregular	Email from City of Cleveland Department of Building and Housing
Cuyahoga Land Bank	Programmatic data	Weekly	Email transfer
Neighborhood Progress, Inc. (NPI)	Programmatic data	Irregular	Various forms
Cuyahoga County Suburbs	Programmatic data	Irregular	Various forms
City of Cleveland community development corporations	Programmatic and vacancy data	Irregular	Various forms

data is through a practice known as screen scraping. A screen scraper, in essence, is a computer program that automatically clicks through various government websites and writes the content of each page to a database. Screen scraping is beneficial because it relieves our partners of the burden of providing weekly data updates.

Aside from collecting and presenting a multitude of detailed information in one place, the NST Web App adds value to the data through a number of data proxies calculated using the existing data. For example, it is difficult for community development corporations (CDCs) to get a comprehensive list of vacant lots, so NST Web App programmers, data holders, and community development professionals identified ways to use data to estimate this information. In the NST Web App, a lot is considered to be a vacant lot if one of the following is true: the property has no building value and is not tax abated according to the fiscal office, has been demolished by the City of Cleveland, has been demolished by a suburb, has been demolished by the Cuyahoga Land Bank, or has been observed to be a vacant lot by the Cuyahoga Land Bank during tax foreclosure due diligence. Vacant structures are indicated by a combination of postal service data, the City of Cleveland's vacant and blighted structure survey, properties currently in the Cuyahoga Land Bank's inventory, or properties that have been observed to be a vacant structure by the Cuyahoga Land Bank during tax foreclosure due diligence.

Another unique indicator in the NST Web App derived from multiple sources is the "Destabilization Indicator." This column tracks where the property is in relation to the foreclosure process. Categories range from at-risk mortgage, to foreclosure filing, to Sheriff's sale, to bank ownership, and then to sale from the bank to the next party. This indicator helps neighborhood groups to rapidly triage properties.

The NST Web App adds further value through text mining. The Common Pleas Court Docket contains rich detailed information about each foreclosure step. However, the key information mentioned above is entered into long text field descriptions. When preparing the data for the NST Web App, key phrases like "confirmation of sale" and "decree of foreclosure" are searched to indicate whether or not a certain milestone in a foreclosure case has been met.

Many key target geographic areas are coded into the NST Web App to aid partners in their programs and activities. These include, but are not limited to:

Neighborhood Stabilization Program (NSP2) target areas, zip code, cities, Cleveland wards, neighborhoods, CDC service areas, NPI Strategic Investment Initiative areas, Cuyahoga County council districts, and historic districts.

KEY FUNCTIONALITY

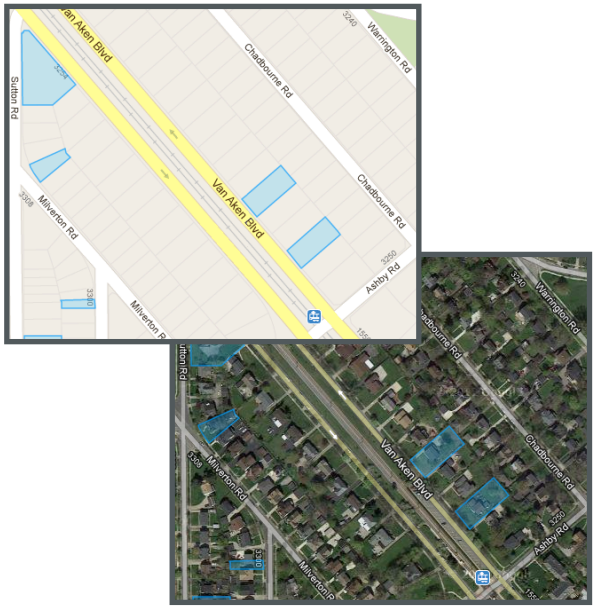
Information in the Web App is searchable and filterable, allowing the user to either look at a multitude of information for one property, or examine a set of properties by a number of characteristics of interest. For example, a user can look up ownership information and tax delinquency information of a particular address, or can generate a list of all tax delinquent properties in Cuyahoga County owned by a certain party.

A few additional tools aid users in visualizing and sharing data. The NST Web App can generate instant maps of any properties, searches, or filters done in the NST Web App, in conjunction with Google Maps. **See Figure 2 below**. This allows CDCs to instantly view spatial patterns or geographic information. All of the information is downloadable so that it can be more easily communicated or analyzed further.

With a goal of aiding communication, the NST Web App also allows community development corporation (CDC) users to enter their own data in specially designed fields. This functionality is discussed in more depth in the following section on partnerships.

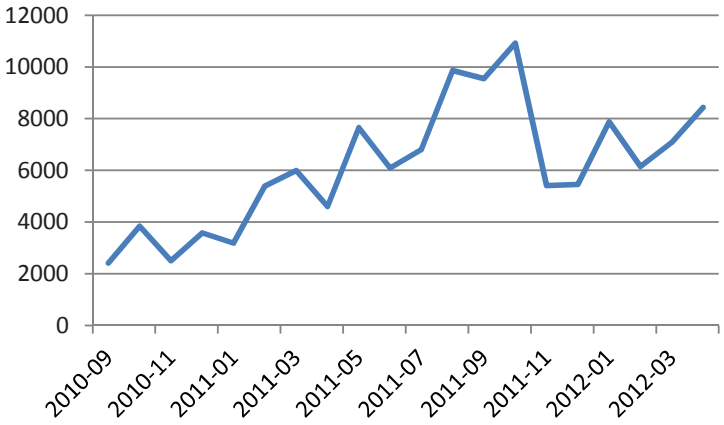
Our in-depth partnership with community development users helps us to create the tool around their needs. Partners report to us that the NST Web App has impacted their work by:

Figure 2: Screen Captures of the NST Web App



- Making property research quicker and easier and adding value to data through the linkage of multiple sources, greatly increasing data availability and decreasing time spent searching for data.
- Increasing the ability of community development professionals to make informed, data-driven decisions, both in short-term acquisition and planning, and in long-term programming and planning.
- Increasing capacity to informally investigate emerging issues in the areas of foreclosure, vacant land, and housing program and policy.
- Increasing capacity for CDCs to conduct on-the-ground, quantitative research to inform foreclosure policy and other property related laws and policies.

Figure 3: NST Web App Queries per Month



GROWTH AND USAGE OF THE NST WEB APP

The NST Web App has experienced a growing user base, and an increase in data queries since its launch in September 2010. **Figure 3 above** shows the number of queries submitted to the Web App per month. NST Web App usage has grown steadily since its launch, seeing its peak usage so far in October of 2011, with almost 5 times as many queries as its launch.

The average NST user logs in and uses the system about four times a day.

The true value of the NST Web App is how useful it is to community development practitioners in their everyday professional needs. For example, when the NST Web App aids in a key property acquisition or foreclosure prevention, we consider this a success. This information comes to us from our partners, usually anecdotally.

As one user put it:

"The web app is an invaluable resource that I use on a daily basis. It helps make me more effective in my day-

to-day professional activities. Just as carpenters use a measuring tape, a hammer and nails to do their job, I use the NST web app to do mine, it is a priceless resource."

PARTNERSHIPS OF THE NST WEB APP

Community development practitioners use the NST Web App for both everyday activity and through a couple of formal partnerships. The partnerships between these agencies and the NST Web App have been crucial to its success; they've helped to continually inform development improvements, raise awareness, and promote and support its use. The NST Web App is not simply a data-for-data's-sake project; what makes it so powerful and successful is that it plugs directly into numerous on the ground programs and initiatives.

The NST Web App was introduced first to the 20 areas receiving NSP2 funds in Cuyahoga County through a partnership between the Cuyahoga Land Bank, NPI, the Center on Urban Poverty and Community Development, and Empowering and Strengthening Ohio's People (ESOP) called the Neighborhood Stabilization Team. (Because it was first introduced to the Neighborhood Stabilization Team, the NST Web App took the group's name as its moniker, and eventually as its formal name).

The Neighborhood Stabilization Team uses the NST Web App's up-to-date data as its foundation, the legal expertise and facilitative powers of NPI, and the organizing capabilities of ESOP to strategize neighborhood stabilization activities; usually focusing on the most troubled or complicated properties in an area. When an NSP2 group meets with the Neighborhood Stabilization Team, for example, the group uses the NST Web App to view new foreclosure filings in the NSP2 area and strategically targets foreclosure prevention strategies with ESOP. The Neighborhood Stabilization Team also uses NST Web App data to create maps of each NSP2 area on a weekly basis, allowing groups to visualize changes that are occurring in their neighborhood each week. A key ingredient to the Neighborhood Stabilization Team is that stabilization activities are prioritized in an asset based approach. The CDCs are able to enter information such as recent rehabs, pocket parks, schools, libraries, and other important neighborhood institutions into the NST Web App. Through mapping, it is easy to identify destabilization factors in close proximity to the assets, and strategically use scarce resources to fix these problems.

> *"The one-stop shopping for pertinent information. The more data in this format, the better."*

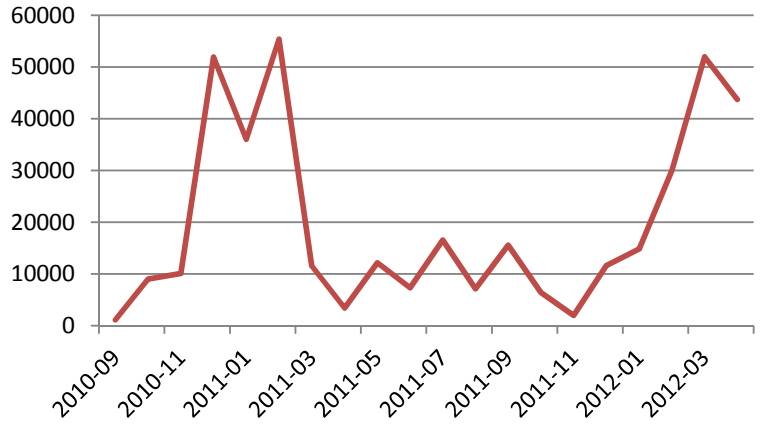
The Neighborhood Stabilization Team has also been a venue for further engaging community development professionals (outside of NSP2 areas), conducting trainings, creating training materials, and providing technical assistance in using NST Web App data.

> *"The mapping has been very helpful. Mapping vacant properties and foreclosures provides a birds-eye view of what is happening at any given point in time."*

In addition to its involvement with the Neighborhood Stabilization Team, the NST Web App is an important tool of the City of Cleveland's Code Enforcement Program. First, there was a desire by City Council and the City of Cleveland Administration to become more data-driven in its decision making through an effort dubbed Operation Prevent. This initiative called for an improved NEO CANDO parcel data interface coupled with parcel based data from the Department of Building and Housing. The Operation Prevent Initiative then grew and evolved to become the NST Web App. Second, the NST Web App is a common platform for the Code Enforcement Partnership. The NST Web App houses information about violations, condemnations, demolitions, and permits from the City of Cleveland's Department of Building and Housing, making them accessible to a wider audience. Housing this information in the NST Web App also makes the information filterable and instantly map-able. Code enforcement partners, CDCs that are contracted to conduct property code enforcement, can use the NST Web App to house information about their code enforcement activities (conducting inspections and working with homeowners to get compliance on minor housing code violations). The NST Web App is a useful communication line between parties involved with the Code Enforcement partnership; CDCs can see if properties they have referred to Building and Housing have entered the City's internal code enforcement process or not, and Building and Housing can see the code enforcement work of the CDCs.

The Center's aim is to improve the ability of community development practitioners to conduct their practice as driven by the needs of their neighborhoods, with the eventual goal of creating a culture of data-driven community development decision making. We believe that providing property data at the property-level can

Figure 4: User Edits per Month



aid practitioners in all types of practice: environmental, economic, and social. There are a number of projects that have benefitted from the NST Web App, all with ultimate goals of affecting Cleveland's environmental, economic, and social landscape. Since the NST Web App is web based, it is impossible to track all programs and initiatives that use the system. The examples below represent the tip of the iceberg of programmatic use of the NST Web App:

- The ReImagining a More Sustainable Cleveland sideyard project extensively used our data and technical assistance capabilities to strategically identify sideyard candidates based on their location next to a homeowner that met certain data-specific criteria available in the NST Web App (home value, tax delinquencies, status of mortgage loan, etc.). In addition, the NST Web App was used to organize and communicate program information to various program stakeholders at NPI, the City of Cleveland Department of Community Development, and the City of Cleveland Land Bank.
- The North East Ohio Regional Sewer district mapped and analyzed NST Web App data for sight selection of 20 green infrastructure projects to curb storm water from entering the combined sewer system.
- The Cuyahoga Land Bank consistently uses data from the NST Web App to aid in strategic land assembly decision making for both community and economic development activities. Also, the data assembled in the NST Web App directly flows into the Cuyahoga Land Bank's internal data system through an XML stream, eliminating the need for data entry.
- The City of Cleveland Department of Community Development, NPI and students from the Cleveland Urban Design Collaborative and Cleveland State University utilized the NST Web App for field survey data entry to develop scalable and implementable neighborhood plans for 15 target areas in the City of Cleveland.

Our eventual shared goal is to be able to measure and facilitate improvements in housing and economic conditions in neighborhoods across Cuyahoga County; currently we are still promoting community awareness of the NST Web App and training users. Some limited, preliminary figures of practice/engagement with the NST Web App show:

- Users have entered housing inspection information for 4,319 properties.
- Users have entered 111 notes for follow-up with Neighborhood Stabilization Team staff.
- In total, users have edited 449,485 pieces of data.

For more information, **see Figure 4 above**.

As you can see, the data collected and disseminated through the NST Web App have become the cornerstone for many community development and neighborhood stabilization projects in both Cleveland and the Inner Ring Suburbs.

A number of other agencies have also expressed interest in the NST Web App as a model for creating a searchable, editable database of linked data at a detailed geographic level. In the last two years, the Center or its partners have presented the NST Web App to the following audiences:

- Cleveland + Youngstown + Pittsburgh Regional Learning Network, Cleveland, OH
- Data Driven 11 – Strategically using data to navigate challenging times, Columbus, OH
- Strategic Data Conference, at the Federal Reserve in Baltimore, MD
- Housing California Conference, Sacramento, CA
- Enterprise Webinar, Using Market Data to Support Neighborhood Stabilization
- Reclaiming Vacant Properties Conference, Cleveland, OH
- Neighborworks America, Building Stable Communities: A Regional Forum, Baltimore, MD
- Reclaiming Vacant Properties Conference, New Orleans, LA

The NST Web App receives funding for development from the City of Cleveland, Neighborhood Progress Inc., the Cuyahoga Land Bank, Cuyahoga County (through its support of data sharing), and administrative support from the Mandel School of Applied Social Sciences at CWRU and the George Gund Foundation through general support to NEO CANDO.

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Research summaries from the Center on Urban Poverty and Community Development

Founded in 1988 as the Center on Urban Poverty and Social Change, the Center changed its name in 2006 to the Center on Urban Poverty and Community Development. The Center's commitment to addressing the issues of urban poverty remains at the core of its work, as does a commitment to social change. Through communicating with community governments, foundations, non-profits and change-agents the Center seeks to inform decision makers and to help determine action by providing objective neighborhood, social, and property indicators, and by evaluating programs on the ground that affect people's lives.

The Center on Urban Poverty and Community Development seeks to address the problems of persistent and concentrated urban poverty and is dedicated to understanding how social and economic changes affect low-income communities and their residents. Based in Cleveland at Case Western Reserve University's Mandel School of Applied Social Sciences, the Center views the city as both a laboratory for building communities and producing change locally, and as a representative urban center from which nationally relevant research and policy implications can be drawn.

A community resource for expertise and data analysis for over 20 years, the Center on Urban Poverty and Community Development created the groundbreaking community data system NEO CANDO (Northeast Ohio Community and Neighborhood Data for Organizing), a web-based tool that centralizes a broad array of indicators, making it easier to overlay and analyze disparate data. Community development corporations, foundation program officers, local governments, neighborhood activists and residents, students at the Mandel School and other institutions, the media, community reinvestment professionals and academic researchers are among those who have found NEO CANDO invaluable in their work. The Center conducts extensive training and maintains a listserv so NEO CANDO users can get the most out of its vast data collection. You can visit the NEO CANDO webpage at http://neocando.case.edu.

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