BOLD
BALTIMORE CITY OPEN LAND DATA

Baltimore City Open Land Data (BOLD) Web Application

BNIA
BALTIMORE NEIGHBORHOOD INDICATORS ALLIANCE
Jacob France Institute

COMMUNITY LAW CENTER
LAWYERS FOR NEIGHBORHOODS AND NONPROFITS

Baltimore City Open Land Data (BOLD) Web Application

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About BNIA-JFI:

The goal and mission of the Baltimore Neighborhood Indicators Alliance – Jacob France Institute (BNIA-JFI) at the University of Baltimore is to provide accurate data and objective research to a wide range of groups, organizations, and agencies that result in positive policy change. BNIA-JFI strengthens the principle and practice of well-informed decision making to support stronger neighborhoods, an improved quality of life, and a thriving city. This is accomplished through providing accurate, reliable, and accessible and actionable data, indicators, and research in the annual publication of the Baltimore *Vital Signs* report that describes the social, economic and quality of life issues impacting the city and its neighborhoods. BNIA-JFI is the Baltimore partner of the Urban Institute's National Neighborhood Indicators Partnership, a network of partners in 36 cities dedicated to the democratization of data and to improving access to data and information.

About CLC:

Community Law Center (CLC) was founded in 1986 by a group of lawyers and community organizers who saw the need for residents in Baltimore City to band together and advocate effectively for their neighborhoods. CLC is Maryland's only legal services organization dedicated solely to strengthening neighborhoods and the nonprofit sector. With staff attorneys and over 590 volunteer attorneys, CLC provides representation to neighborhoods and nonprofits for their legal needs. In addition, CLC develops self-help publications, workshops, and training programs for pro bono attorneys, clients, and community leaders.

CLC's primary focus is to empower communities and nonprofits that cannot afford private legal representation and to use the law to overcome or mitigate many of the social, economic, and environmental problems that plague neighborhoods. Through their programs, they have assisted in the formation and growth of hundreds of community associations and nonprofits, facilitated the revitalization of blighted land and vacant structures, reduced crime and nuisance activities stemming from residential and commercial properties, and helped communities and nonprofits accomplish their goals and achieve their missions. CLC has galvanized reform around many issues including housing code enforcement, predatory real estate practices, and reform of the Baltimore City liquor board and Baltimore City tax sale procedures.

Contents

Executive Summary

This is the final report for the tax sale reform and BOLD development project that was created with support from the Abell Foundation. Community Law Center, in partnership with Baltimore Neighborhood Indicators Alliance and other community stakeholders, sought tax sale reform and the development of a web-based property research tool that puts data in a new public format to encourage researchers and policymakers to identify trends in property related data.

The development of BOLD was done in concert with efforts to advance tax sale reform in Baltimore City. Every year in Baltimore, 6,000 – 10,000 property liens are sold at the City's annual tax sale due to non-payment of property taxes or other municipal liens, including water bills. The average lien on properties included in the tax sale in 2017 was just under $3,000. Some of these properties later end up in tax foreclosure. There is evidence that tax lien sales and tax foreclosures play a role in neighborhood disinvestment and decline.

In order to address the effect of tax sales and tax foreclosures on properties and home owners, there is a robust and active local community of private and public entities working towards homeownership preservation, which has effected positive changes in state laws. In 2015, Community Law Center (CLC) founded the Baltimore City Tax Sale Work Group as a subcommittee of the Baltimore Homeownership Preservation Coalition (BHPC). The Tax Sale Work Group developed from CLC's Public Nuisance Project, funded by the Abell Foundation. That project involved CLC representation of six community associations in a lawsuit against a single property owner who acquired several hundred vacant, nuisance properties through tax sale foreclosure and then failed to maintain those properties. (see Coldstream-Homestead-Montebello Community Corporation, et al vs Scott Wizig, et al). The project highlighted the potential detrimental impact of an entire policy system like tax sale on the city.

CLC's previously funded Public Nuisance Project, demonstrated the power of community associations to bring code enforcement actions against the worst properties in their neighborhoods, but required nearly a full year of attorneys, law students, partners, staff, interns, and volunteers, to gather data on community associations, property ownership, and code enforcement status. The need for the Baltimore City Open Land Data (BOLD) web application rose out of the need to streamline data gathering, as well as the desire to put data into the hands of nonprofits, community development corporations, researchers, policymakers, and community stakeholders working to stabilize their communities, preserve homeownership, and break the cycle of vacant properties in Baltimore. This is the idea behind data-driven technology.

BOLD is currently in Beta form as some final coding is being done (https://bniajfi.org/bold/beta/). It is being prepared for its public debut at Data Day in July 2018. At that time, the first public training on the tool will be held as well as a hack-a-thon to further develop BOLD. BNIA-JFI and CLC recommend continued support for the management, evolution, and refinement of BOLD, and for outreach and training to the community. This will ensure the tool is both used and useful to its community of users.

A. Background on Vacancy and Tax Lien Sales

As one of the oldest cities in the United States, Baltimore City is home to real property that has spanned multiple generations. Over the years, most of the City's real property has gone through its own 'life-cycle' from initial construction to maintenance to change in ownership to (potentially) vacancy and demolition. Today, as a city that has lost more than 1/3 of its peak population from the 1950s, vacant and abandoned properties are some of the greatest challenges facing its neighborhoods. Based on vacant housing notices issued by the Department of Housing, Baltimore has over 16,000 vacant properties (Baltimore City Department of Housing and Community Development). However, that number does not reflect the full scale of the problem. The total number of vacant and abandoned buildings is likely closer to 30,000 properties, as according to the U.S. Postal Service, an additional 16,000 properties do not receive mail (Vital Signs 16, www.bniajfi.org/vital_signs). Baltimore, like other older industrial cities, experienced significant population loss, a declining tax base, disinvestment, and an aging infrastructure. The durable nature of housing stock means that as the population of the city shrunk, much of the excess housing was left vacant and abandoned rather than demolished or repurposed. The challenge that has faced Baltimore City, and other cities like it, has become how to deal with this excess housing stock and how to address widespread neighborhood blight (Dewar, Seymour, and Druţă, 2015).

Addressing blight is complicated because there are various additional mechanisms that operate within cities and neighborhoods to cause disinvestment and decline. Research on the systems that operate to impact neighborhood disinvestment shows evidence that tax lien sales and tax foreclosures play a role in the process (Dewar et al., 2015; Alexander, 2000). The time between tax or other property lien delinquency and foreclosure can lead to deterioration of a property,[1] and the lack of clear title after foreclosure can reduce a property's likelihood of being reused or redeveloped (Citizens Research Council of Michigan, 1999). The Abell Foundation report, *The Steep Price of Paying to Stay*, found that tax sales may lead to evictions and foreclosures, which can then lead to property vacancy and abandonment (Jacobson, 2014). Alexander and Powell (2011) noted that tax delinquency was "the most significant common denominator among vacant and abandoned properties." Additionally, the point in the tax sale process at which abandonment, vacancy, and disinvestment may occur is varied. It may begin at the time of non-payment of the property tax, after a tax lien sale, or after a tax foreclosure. In some cases, a tax sale purchaser may bring a foreclosure action on a property, receive a foreclosure judgment, but then fail to record a deed, causing confusion over the current property ownership and responsibility for the property's maintenance.

There are various causes for the non-payment of property taxes. Owners may not pay taxes in times of economic distress, when incomes fall, or when housing prices decline and the property taxes do not reflect the drop in actual value. In this case, property owners may lack the income to pay the taxes and

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[1] In Baltimore, this is a relatively short period of time, between 6 months to a year. However, once the foreclosure process has begun in the court system, it can take much longer before the outcome of the property's ownership is determined.

thus become tax delinquent (Alexander, 2000). Non-payment may also occur when the property owner dies and does not leave a will determining a specified beneficiary for the property. Lastly, property owners, usually investors, may forgo payment in order to maximize profit on a property which they intend to abandon. Unpaid taxes on a property, in addition to unpaid water and sewer charges, fines, and interest penalties, may accrue to the point where they equal or exceed the fair market value of the property. In cases such as this, there is no owner or third party that will pay the taxes or invest in the property, nor will the local government be able to find a purchaser for the tax lien. Properties may cycle through the tax sale year after year when there no purchaser of a lien. All of these scenarios can result in property abandonment and vacancy (Alexander, 2000).

According to Whitaker and Fitzpatrick (2012), it is not property tax delinquency itself that lowers property values, but the neglect that often accompanies tax delinquency. They hypothesize that forgiving property tax debt would not change the fact that the property owner is unable to maintain a property. However, as Dewar et al. (2015) point out, this does not take into account owner-occupants' difficulty in paying property taxes on properties whose value declined post-recession and have not been reassessed at the current market value. In this case, an accurate property assessment may result in improved property maintenance and tax payment by freeing up some of the property owner's debt burden.

A major concern with tax lien sales and foreclosures is the potential adverse impact that they have on particular groups of property owners, such as low-income or elderly owners (Alexander, 2000). Data collected by the Abell Foundation in 2014 showed that the majority of property owners affected by tax sale were African-Americans living below the poverty line, as well as many elderly, veteran, and disabled homeowners. These owner-occupants have lived in their homes for an average of 21 years (Jacobson, 2014), and may be eligible for tax credits or repayment plans. Allowing third parties to purchase tax liens may limit the ability of these and other programs to protect certain classes of disadvantaged owners and keep them in their homes (Alexander, 2000). And if the goal is to maintain properties and ensure future tax revenue, there is no guarantee that the new lien purchaser will pay future taxes, maintain the property, or put the property to productive use if the longtime owner has not done so. In that case, the sale of the property provides immediate revenue to the city, but may result in irresponsible property ownership, nuisance conditions, code violations, abandonment, and vacancy.

1. Tax Liens in Baltimore City

In 2018, 11,411 properties were included in the annual Baltimore City tax sale (BidBaltimore, 2018). Baltimore City sells approximately three times as many tax certificates as Anne Arundel, Baltimore County, Harford County, and Howard County combined[2]. Of these 11,411 properties in Baltimore City's tax sale, 1,690 were owner-occupied (however, 148 of these properties were listed as vacant). Investors

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[2] The number certificates sold at tax sale: Anne Arundel (2018): 918; Baltimore County (2017): 1,955; Harford County (2017): 404; Howard County (2018): 286.

purchased 1,411 (91.5%) of the tax lien certificates for the non-vacant, owner-occupied homes. Lien amounts on owner-occupied properties ranged from a low of $823.81 to a high of $462,536.66.[3] Tables 1 shows the number of liens that were purchased by bidders and the number transferred to the city.

Table 1. 2018 Tax Sale Purchaser Details

Total Certificates	11,411
Certificates Sold to Non-City Bidders	6,327
Certificates Sold/Transferred to City	5,084

Figure 1: Number of certificates sold to City and non-City bidders in 2018 (Source: BidBaltimore, 2018)

Properties that receive no bids during the Tax Certificate Sale are available for assignment by the City for the amount of the lien plus 12% per annum redemption interest for owner-occupied residences and 18% per annum redemption interest for non-owner-occupied properties to the date of purchase. Table 2 shows the distribution of liens sold at the Certificate Sale and the Assignment Sale in 2018.

Table 2. Certificates Sold at the Tax Certificate Sale and the Assignment Sale, 2018

Certificates sold at the Tax Certificate Sale	6,318
Certificates sold at the Assignment Sale	5,093

Figure 2: Number of Certificates sold in the Tax Certificate Sale and the Assignment Sale in 2018 (Source: BidBaltimore, 2018)

Though some tax lien purchasers may be individuals hoping to take possession of a property for their own use, or to rent or sell after redevelopment, many lien purchasers are investors or property speculators with no intent to restore the properties. Rather, they are seeking a high return on their investment; the interest rate investors receive in Baltimore City is 18% for non-owner-occupied properties, and 12% for owner-occupied properties (BidBaltimore, 2018; Dewar et al.,2015; National Vacant Properties Campaign, 2005). Dewar et al. (2015) noted that many of these properties become tax delinquent again. In many cases, after a tax foreclosure has taken place, the investor does not complete the deed transfer. This leaves it unclear as to who owns the property (Jacobson, 2014). Of these 11,411 properties in the 2018 tax sale, 6,179 had liens purchased by a limited liability company (LLC)[4]. Just six LLCs purchased 31.9% of all of the tax liens in 2018, including 7.6% purchased by Municipal Investments, LLC (BidBaltimore, 2018). Companies purchasing tax liens as investments are only interested in those liens that will produce a return on the investment – through redemption by the owner, through sale to another purchaser, or

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[3] The owner-occupied property with the highest lien amount, $462,536.66, had an assessed value of $3,000.00. This lien was transferred to Baltimore City.

[4] Not all LLCs purchasing liens at the tax sale are large investors in tax sale properties; there are some smaller construction companies or groups that purchase liens with the objective of rehabbing or redeveloping the properties, or otherwise keeping those properties in productive use.

through redevelopment. The current tax sale system which relies on sales of tax certificates to third party purchasers cannot effectively address vacant and other properties with low assessed values and high liens. Instead, it causes vacant properties to cycle through the speculative system year after year, as they decline in value and structural integrity, and sink further underwater and out of reach for redevelopment.
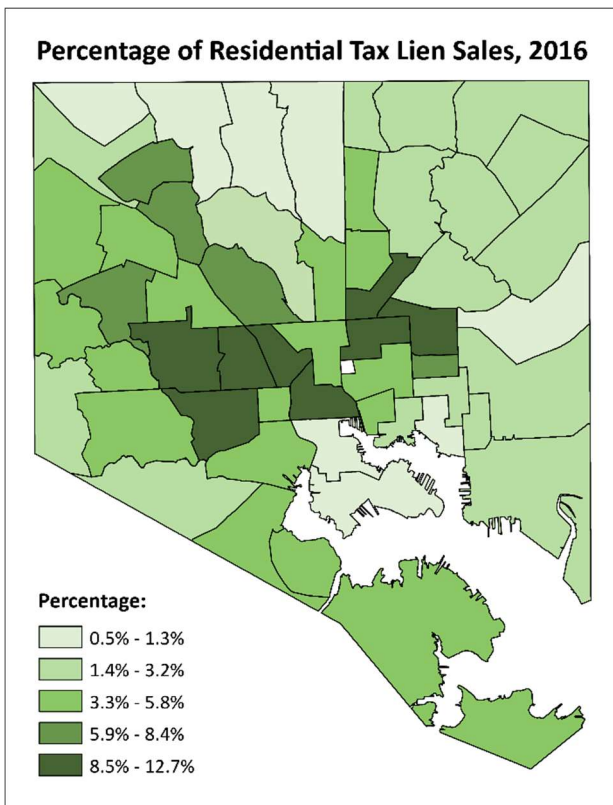
Dewar et al. (2015) noted that in cities that have lost population, such as Detroit and Baltimore, the tax sale process can result in city ownership of a large number of properties. Baltimore's 2018 tax auction resulted in the City obtaining 5,083 liens or 44.5% of the total properties in the tax auction (BidBaltimore, 2018). However, the city actually takes possession of very few properties through the foreclosure process because the city is required to maintain and insure any properties that it owns. Taking possession of all properties with outstanding liens would be very costly for the city. Instead, the city strategically forecloses on only those properties that they need to acquire for demolition, for the Vacants to Value program, or for anticipated large scale development projects.

There are approximately 3,000 tax lien foreclosure cases on properties in the Baltimore Circuit Court each year. However, based on court data alone, it is unknown how many of these properties are owner-occupied or what happened to the properties, or their owners, after the foreclosure process is complete. The Abell Foundation documented the potential impacts on owner-occupants of properties with liens sold at tax sales, but there is little information available about what happens to properties, particularly whether, after tax foreclosure, properties become vacant or are re-occupied by new owners or tenants, and whether existing vacants stay vacant or are put back to use (Jacobson, 2014).

Studies by various local and national experts highlight how collaborative policy working groups focused on vacant properties, tax sale foreclosure reform, and transparent and effective use of technology and data are all key pieces to addressing property abandonment to revitalize distressed neighborhoods (Lind, 2016). More data is needed to address key questions about the effects of Baltimore's tax sale system on property use and abandonment, and about how to improve the system for the benefit of property owners, neighborhoods, and the city as a whole.

Every spring, Baltimore City conducts an auction of delinquent tax, water, and other liens, selling these liens as tax sale certificates to private purchasers. The certificate purchasers pay off the outstanding debt to the City, and in turn acquire the right to collect the debt directly from the property owner – along with interest rates of 12%-18% and additional fees. If the property owner does not pay the debt, fees, and interest, the purchaser can initiate a process to foreclose on the property, becoming the new owner of the property for the amount of taxes and other liens due – which can be as little as $750.

Percentage of Residential Tax Lien Sales, 2016

Percentage:

- 0.5% - 1.3%
- 1.4% - 3.2%
- 3.3% - 5.8%
- 5.9% - 8.4%
- 8.5% - 12.7%

As the data indicates, the areas with the highest number of tax liens, like Clifton-Berea, Sandtown-Winchester/Harlem Park, Greater Rosemont, Madison/East End, and Southwest Baltimore, are also areas plagued by high numbers of vacant properties. This is no coincidence as tax sale certificate purchasers often realize during the tax lien foreclosure process that there is no value in the property or that the owner is unlikely to redeem the certificate, and they may choose to simply walk away without recording a deed, thus leaving a cloud on the property's title. Anyone who subsequently wishes to purchase the property must clear the title, which could cost more than the property's actual value. The property could then sit in limbo, as the previous owner may have also walked away during the foreclosure process, and the certificate purchaser who never recorded the deed may not take responsibility for maintaining the property, or for paying future taxes. Abandoned properties, especially those with low assessed values ($3,000 or less) but large liens (hundreds of thousands of dollars), will cycle through tax sale year after year, accumulating liens and continuing to deteriorate. No developer or prospective owner will dive underwater to save these properties, resulting in missed opportunities for redevelopment and neighborhood revitalization. These vacant properties become an eyesore to the community, reducing the property values of neighboring homes, incurring maintenance costs themselves and for nearby homes, attracting crime, inviting illegal dumping, creating a fire risk, and a hazard for passersby. They also incur significant costs to the City government in increased police, fire, and code enforcement service calls and the loss of tax revenue.

When a municipal tax sale process is well designed, it is an important tool for local governments in collecting delinquent tax revenue, and as part of a redevelopment strategy to return vacant properties to productive use. But

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[5] Originally appeared in Vital Signs 15 www.bniajfi.org/vital_signs

in Baltimore City, instead of clearing title, promoting reinvestment, and furthering productive reuse, speculation in the tax sale system perpetuates a vicious cycle of property vacancy and abandonment.

The Baltimore City Tax Sale Work Group brings together community and consumer advocates, lawyers, housing counselors, City employees, data experts, web developers, and others to address the negative impacts of Baltimore's current tax sale system on vulnerable homeowners and neighborhoods. Work Group members work with homeowners at risk of having their properties go to tax sale, organizing clinics staffed by volunteer attorneys and housing counselors; educating homeowners about tax credits they may be eligible for to help them stay in their homes; and advocating for tax sale reform at the Baltimore City Council and the Maryland General Assembly to reduce the interest rate to redeem tax sale certificates and to increase the lien threshold at which properties go to tax sale.

The Center for Community Progress assessed Baltimore's current tax sale system and provided recommendations to overhaul the system to one that is more equitable, efficient, and effective. The Work Group continues to advocate in support of essential changes to the tax sale system, to protect vulnerable Baltimoreans from losing their homes, and eliminate tax sale a contributor to vacancy.

From Vital Signs 16: Percent of Residential Tax Lien Sales

Measures the percentage of residential properties with liens in Baltimore City tax sale

Five Highest	Five Lowest
1. Clifton-Berea	1. North Baltimore/ Guilford/Homeland
2. Sandtown-Winchester/ Harlem Park	2. Harbor East/Little Italy
3. Greater Rosemont	3. South Baltimore
4. Madison/East End	4. Greater Roland Park/Poplar Hill
5. Southwest Baltimore	5. Mount Washington/Coldspring

SOURCE: BIDBALTIMORE

2. Tax Sale Reform

Because of Baltimore City's high rates of mortgage foreclosures, tax sales, and predatory lending, there is a robust and active local community of private and public entities working towards homeownership preservation (Jacobson, 2014) and efforts by these groups have led to recent positive changes in state laws. In 2015, Community Law Center founded the Baltimore City Tax Sale Work Group as a subcommittee of the Baltimore Homeownership Preservation Coalition (BHPC). BHPC works to preserve and strengthen homeownership and promote neighborhood stability by preventing foreclosures,

reducing abusive real estate practices, and increasing home ownership education. Inspiration to form the Tax Sale Work Group came from CLC's Public Nuisance Project, funded by the Abell Foundation. That project brought tax sale reform to the forefront because of CLC's representation of six community associations in a lawsuit against a single property owner who acquired several hundred vacant, nuisance properties through tax sale foreclosure and then failed to maintain those properties.

For a third party examination of Baltimore's tax sale system, the Work Group, in partnership with the Baltimore City Department of Finance, sought technical assistance from the Center for Community Progress. The Center for Community Progress published its assessment of Baltimore City's tax sale system in October 2016. The report made a number of recommendations for addressing tax enforcement in Baltimore, particularly in the areas of increasing City revenue, reducing expenses, reducing property vacancy and abandonment, and protecting vulnerable owner-occupants. In particular, the report recommended redesigning the system significantly, by eliminating the sale of tax certificates (which can cause confusion among property owners, title issues, and negative incentives for third party investors) and moving to a system in which the property itself is foreclosed on and sold if liens are not paid.

CLC supported the reforms recommended in the Center for Community Progress report. In preparation for the 2017 legislative session, tax sale reform advocates sought to refine the report's draft legislation for Judicial In Rem Property Tax Enforcement in Maryland. In addition, CLC explained why tax sale reform is necessary to address property vacancy and abandonment in Baltimore to tax sale reform advocates, the Department of Finance, and legislators. CLC and other Work Group members supported comprehensive tax sale reform, as recommended by the Center for Community Progress. Baltimore City opposed comprehensive reform in the 2017 session, and instead introduced HB 659/SB 823, a bill to create a Tax Sale Task Force to study the issue over the summer and make recommendations for the 2018 session. Although several studies had already recommended major tax sale reforms, CLC and other Work Group members saw the summer Task Force as an opportunity to further educate policy makers from around the state.

With the passage of HB 659/SB 823 in 2017, a Tax Sale Task Force was created to study tax sale statewide. The Task Force met several times over the fall and winter of 2017, and included several Work Group advocates, a representative from the Center for Community Progress, and municipal officials, as well as representatives of the tax sale purchaser and rental housing industries. CLC testified before the Task Force on the need for reform of the tax sale system, and how the current system creates title issues, incentivizes property abandonment, and cycles vacant properties through tax sale year after year, without addressing underlying issues. The Task Force produced a report which included many recommendations from the 2016 Center for Community Progress report, such as creating a process for judicial in rem foreclosure; improving notice to homeowners about tax sale and including referrals to legal services providers; improving payment plan options; and opposing increased tax sale fees for homeowners seeking to redeem their properties. CLC supported recommendations for significant reform along with

Task Force members including the representative of the Maryland State Bar Association (MSBA), through the Delivery of Legal Services Section Council.

During this time, CLC, with other Work Group members, addressed some of the arguments against reform made by tax sale purchasers. In this process, CLC identified the need for, and sought, additional technical assistance from the Center for Community Progress to provide data analysis on the cost of vacant properties to Baltimore City, the cost of having a "shadow inventory" of vacant properties that cycle through tax sale year after year, and the costs of implementing the recommendations in the Center for Community Progress report. Although we were not successful with our application for additional technical assistance, the process of applying clarified some of the areas that needed more data to bolster arguments for tax sale reform.

Several of the Tax Sale Task Force's recommendations were introduced as legislation during the 2018 session and were supported by CLC and other Workgroup members. The following bills passed during the 2018 session:

- CH 714/SB 1098 *(Baltimore City – Tax Sales – Water Liens)* will remove residential properties from 2019 Baltimore City tax sale if the only lien on the property is for unpaid water bills. This bill passed and will protect some homeowners from going to tax sale next year. However, it is a one-year bill, so we will work next year to pass a longer-term bill to address water issues.
  - HB 1409 would remove water bills from tax sale. This bill did not pass.
  - Mayor Pugh's pledge in Dec. 2017 to remove water bills from the 2018 tax sale if they are the only debt on a property, shows that there is real support for addressing the issues that arise where Baltimore's current water billing and tax sale systems intersect.
- HB 556/SB 466 *(Estates and Trusts – Administration of Estates – Waiver of Fees)* will require Registers of Wills to waive fees to open estates in tax sale cases. This bill passed and should lower some barriers for homeowners to keep family ownership of properties.
- HB 1073/SB 468 *(Landlord and Tenant – Residential Leases – Water and Sewer Bills)* will require landlords to provide a copy of the water bill to tenants (if tenants are required to pay the bill), when requested by the tenant. This bill passed and should help address some issues with water bills in Baltimore City.
- HB 923/SB 709 *(Environment – Water and Sewer Service)* dealt with several water bill issues, including providing access to affordability programs for homeowners, providing for water bill payment plans, and allowing for water shut off if a property is vacant. This bill passed and should help address some issues of water affordability in Baltimore City.
- HB1112/SB 951 *(Tax Sales – Vacant and Abandoned Property)* provided statewide tools for addressing vacant properties: the ability to release liens to transfer clean title; to remove properties from tax sale for redevelopment; and to allow expediting of foreclosure on tax sale properties. This bill passed and will provide important tools that were previously available only in Baltimore City for addressing vacant and abandoned properties.
- HB 1465/SB 952 *(Tax Sales – Homeowner Protections)* provided additional protections for homeowners, including authorizing tax collectors to withhold certain properties from tax sale, and to provide information to owners about accessing services and programs. This bill passed and

should reduce the number of properties that go to tax sale and assist homeowners with avoiding tax sale.

This Bill did not pass during the 2018 session:

- HB 1246/SB 954 *(Property Tax – In Rem Foreclosure and Sale – Vacant and Abandoned Property)* would have implemented the Center for Community Progress recommendation for judicial in rem foreclosure of properties for which liens are not paid, as an alternative to the current sale of tax certificates. It would only have applied to vacant properties and would have been especially useful for quickly transferring ownership of vacant lots. Unfortunately, the bill did not pass; similar legislation will be a priority for the 2019 session.

The 2019 session is likely to include pushing another bill for judicial in rem foreclosure (HB 1246/SB 954 this year), which passed the Senate but not the House. We also expect a more permanent and inclusive solution for water bill issues in tax sale next year (CH 714/SB 1098 this year).

The Tax Sale Work Group will continue to convene client and consumer advocates, attorneys, housing counselors, City and state officials, data scientists, neighborhood leaders, and others to address tax sale issues. Advocates for homeowners are continuing to push forward conversations with the Baltimore City Department of Public Works and the Department of Finance about water billing issues, and with the Circuit Court judge who hears tax sale foreclosure cases.

Consumer advocates are also working to increase awareness about available property tax credits which may help homeowners avoid tax sale. The Pro Bono Resource Center (PBRC) and Maryland Volunteer Lawyers Service (MVLS) continue to provide legal clinics and representation to individual homeowners in tax sale every year. Advocates report that legislative reforms and outreach seem to be paying off for homeowners – there were fewer people behind on water bills, and fewer people needing assistance with tax sale issues.

CLC has also built on the efforts of PBRC and MVLS to serve clients facing tax sale, as we increasingly hear from nonprofits and churches facing tax sale for properties they own – in some cases due to incorrect water bills or issues leading to loss of real property tax exemption. CLC has sought to reach these nonprofit clients about available legal services through our Pro Bono Program. As part of PBRC's 2017 tax sale training for volunteer attorneys and housing counselors, a CLC attorney presented information on representing nonprofit clients and how they differ from individual clients, as well as information on nonprofit legal entities and their formation and maintenance. CLC seeks to reach out to nonprofits and churches that may be facing tax sale. We have fielded questions from churches and other nonprofits whose properties are in tax sale, advocates who work with them, elected officials, and other legal services providers.

While the Tax Sale Work Group offers these tax sale clinics, education and training opportunities, and advocacy for legal policy reforms, the need for an easier data gathering tool is growing.

B. Need for Streamlined Access to Data

CLC's Public Nuisance Project, which demonstrated the power of community associations to bring code enforcement actions against the worst properties in their neighborhoods, required nearly a full year by CLC attorneys, University of Maryland law students, other partners, staff, interns, and volunteers to gather data on community associations, property ownership, and code enforcement status. The information is held by different sources: the judiciary, the state, and the city, in formats that are not easy to navigate or compile. Even after all the data gathering, there was no easy way to map or regularly update the information without attorneys inputting all of the data themselves.

Finding comprehensive information about a property in Baltimore City has long been a very time-intensive, inefficient process that involves complicated searches of multiple web-based data sources. The process becomes increasingly difficult when information about multiple properties is sought, to gather a clear picture of a neighborhood, examine the impact of a single property owner, or to study the impact of a municipal procedure like tax sale or water billing.

The current process of data compilation about one or more properties involves searching for and cleaning data from a variety of sources. A search for information on a property might involve visiting some or all of the following websites:

- Property ownership: Property research generally begins with the State Department of Assessments and Taxation (SDAT) Real Property Search,[6] for current ownership information. If the current owner is a business entity, like a corporation or limited liability company, the next site to search is the SDAT Business Entity Search.[7] Additional property ownership research might involve visiting the Maryland Land Records website,[8] which requires a login and password, to obtain past ownership information and recorded documents.

- Potential property transfer information: The Maryland Judiciary Case Search[9] has information on mortgage foreclosure, tax sale foreclosure, and other legal cases related to a property. BidBaltimore,[10] which requires a login and password, has information on tax sale auctions, bids, and certificate purchases.

- Code enforcement status: Baltimore Housing's website provides a search tool for Code violations and citations,[11] as well as for construction/demolition permits.[12] Information on 311 calls for

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[6] http://sdat.dat.maryland.gov/RealProperty/Pages/default.aspx
[7] https://egov.maryland.gov/BusinessExpress/EntitySearch
[8] https://mdlandrec.net/main/index.cfm
[9] http://casesearch.courts.state.md.us
[10] https://www.bidbaltimore.com/main
[11] http://cels.baltimorehousing.org/Search_On_Map.aspx
[12] http://cels.baltimorehousing.org/Search_TM_MAP.aspx

service at properties can be found on both the City's website[13] and OpenBaltimore.[14] Other municipal information can be found by searching the City's Real Property Tax Records site,[15] Water Bill Search site,[16] License Search for Multi-Family Dwellings, Rooming Houses and Property Registration,[17] the Board of Municipal Zoning Appeals site,[18] CodeMap,[19] and Vacants to Value site.[20]

- Neighborhood and political representation: To find information about the community association which represents a particular property, a searcher could visit either the City's Community Association Directory[21] or CityView.[22] Contacts for City services could be found by searching for City Council representatives,[23] the Department of Housing's Code Enforcement Districts,[24] the Mayor's Office of Constituent Services,[25] and the Department of Planning's districts.[26]

Once these searches are completed for each individual property, multiple properties within a neighborhood or across the city must then be mapped using Google maps, and the data about the properties compiled in a standardized format. After gathering this data, there is no easy way to regularly update the information without completing the searches again. Throughout the Public Nuisance Project, updating the status of each of the 57 properties in the case with code enforcement, permit, and ownership information was extremely time-consuming for the two attorneys, numerous law students and legal interns, and a paralegal.

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[13] http://www.baltimorecity.gov/311-services
[14] https://data.baltimorecity.gov/
[15] http://cityservices.baltimorecity.gov/realproperty/
[16] http://cityservices.baltimorecity.gov/water/
[17] http://cels.baltimorehousing.org/reg/Reg_MFD_Search.aspx
[18] http://cels.baltimorehousing.org/Search_BMZA_Map.aspx
[19] http://cels.baltimorehousing.org/codemap/codeMap.html
[20] http://www.vacantstovalue.org/PropertySearch.aspx
[21] http://cityservices.baltimorecity.gov/cad/Home.aspx
[22] http://cityview.baltimorecity.gov/
[23] http://www.baltimorecitycouncil.com/members.htm ; http://www.baltimorecitycouncil.com/council-district-map
[24] http://cels.baltimorehousing.org/DistInfo.aspx
[25] https://mayor.baltimorecity.gov/help
[26] http://planning.baltimorecity.gov/sites/default/files/planning%20districts%20June2016.pdf

C. The Baltimore City Open Land Data tool

The idea for the Baltimore City Open Land Data (BOLD) web application rose out of the need to streamline the process for accessing information, as well as the desire to put data into the hands of nonprofits, community development corporations, researchers, policymakers, and community stakeholders that are working to stabilize their communities, preserve homeownership, and break the cycle of vacant properties in Baltimore.

Although data in general has become more plentiful and open, the integration of datasets, either across city agencies or between city agencies and other data providers, has not kept up with the technological advances of allowing open access to data. This is due to administrative, time, or cost barriers. Furthermore, community groups often struggle to make sense of events taking place within their neighborhoods without access to parcel-level property information. In its role as a data intermediary, which involves both acquiring and providing data, BNIA-JFI was able to take on the task of integrating these multiple property related datasets.

If a tool like BOLD had existed during the lawsuit, the timeline in the Public Nuisance Project, and future lawsuits and initiatives of this size and complexity, could be reduced significantly. Similarly, regular calls to Community Law Center from neighbors of vacant properties, seeking information about the nuisance next door, can take up to an hour to resolve, and could be more efficiently resolved by pointing the caller to this resource, allowing them to utilize the information without requiring an attorney, and freeing attorney time to dedicate to providing more direct legal services.

The BOLD web application complements other recent work BNIA-JFI has undertaken to provide communities, organizations, and researchers with actionable data about their communities in the form of user-friendly mapping and data tools, including the GEOLOOM co>map and the Green Patterns Mapping Tool Project.

Figure 3: BOLD Data Activities, Data Gathering and Data Provision.

GEOLOOM (www.geoloom.org) is tool that fosters creative placemaking through capturing the broad range of arts and culture in Baltimore, Maryland. This tool is designed to provide users with information illustrating the value of creative placemaking and measure the impact of arts and culture in Baltimore's neighborhoods. Users can explore data and add their own. The Green Patterns Project (www.bniajfi.org/greenpatterns/beta) is an interactive resource tool that serves as a Green Registry for urban water quality measurements and community-based efforts that address vacant and abandoned

urban land to improve water quality. This online, interactive resource allows all stakeholders to view, analyze, and generate maps and reports based on information pertaining to the Green Pattern Book Typology which outlines seven strategies for communities to implement to reconfigure vacant and abandoned urban land into spaces that improve quality of life as well as the quality of urban waters.

D. Web Tool Design and Development Process

To learn more about the needs of the potential users of BOLD, CLC and BNIA-JFI had multiple meetings with a larger stakeholder group, web developers and organizations using similar types of web applications, and individual users. The objectives of these meetings were to (1) research the data needs and technology skills of the different types of users that would be accessing BOLD, (2) survey similar types of web applications and tools in use in other cities and municipalities, and (3) tailor the user experience to those specific data needs and technology skills.

1. Stakeholder Meetings

The web tool design process began with the idea to focus on the kinds of questions users are asking to create something that was interactive and simple to use. CLC chairs the Tax Sale Work Group's Data and Vacants Committee, which has been focused on providing feedback during the development of the web tool. Committee meetings, as well as one-on-one sessions with community leaders, neighbors of properties impacted by tax sale, advocates whose clients are impacted by tax sale, funders, and others were convened to learn how various data users seek information about properties, and what tools they need to improve access to data.

The Data and Vacants Committee members serve as the 'steering committee' for the tool's development. This group represents the diversity of the different types of users that would want to use BOLD, and they have varied levels of data and technology expertise. CLC and BNIA-JFI staff spoke with committee members about how they engage with property-related data and information and what kinds of data they would like to have access to in their specific roles as community organizers, neighborhood ambassadors, concerned neighbors, city workers, community lawyers, etc. These conversations revealed some common challenges and needs. It was clear that the group saw a critical need to have timely, accurate, property-level data that could be easily accessed in a central location and that could give a complete picture of events related to a single property and the surrounding neighborhood.

Representatives from community and neighborhood groups were primarily concerned with accessing actionable information related to properties, which would allow them to be more involved with breaking the cycle of property decline, and thus work to improve homeownership and stability within their communities. This included citation and violation data, data on vacant homes, and 311 calls for service. Nonprofit groups, including CLC, had a need for a central repository where data from various sources could be accessed more efficiently. Their data needs included property ownership information, data on liquor licenses, and data that could help in determining the occupancy status of properties.

2. Comparison and Evaluation of Similar Web Applications

Studies by various local and national experts highlight how collaborative policy working groups focused on vacant properties, tax sale foreclosure reform, and transparent and effective use of technology and data, are all key pieces to addressing property abandonment and revitalizing distressed neighborhoods (Lind and Schilling, 2016). There are several examples of information technologies currently in use around the country for these purposes, including Neo Cando, created by the Center on Urban Poverty and Community Development at Case Western University (http://neocando.case.edu/nst/); LOVELAND Technologies (https://makeloveland.com/); and the Building Blocks application at Opportunity Space (Company is now known as Tolemi, www.tolemi.com).

BNIA-JFI and CLC evaluated each of these applications to enhance our understanding of potential website design options, including the sites' functionality, data availability, and ease of use by diverse groups. During this evaluation process we also considered utilizing one of these platforms for BOLD. Each platform was presented to the Data and Vacants Committee for feedback.

- Neo Cando is one of the most established systems in the country. The platform links diverse property-related datasets in Cuyahoga County, OH and makes the data available on a user-friendly platform where users can search and filter property addresses or property attributes, produce reports from queried data, and visualize data on a map. The committee found the drawback of the site to be that the mapping feature was only available for the data queried and did not allow users to see neighborhood or contextual data or search for properties from the map. In addition, it was somewhat difficult to navigate for users who are not already comfortable using data and online tools.

- LOVELAND is a national property mapping software that allows users with little mapping experience to create parcel maps. The product has more than 137 million parcels preloaded with basic property assessment information and allows users to add more data to the map. Data can then be queried and exported into excel files. LOVELAND has been used in Detroit to provide information to people in battling tax foreclosures and in keeping Detroit's city-wide property condition map up to date. The committee preferred the map searching capabilities of this web application and the ability to easily query data. However, from a technical standpoint, one of the issues with the application was that data could only be added if it contained the correct parcel account ID matching field used by LOVELAND. That parcel ID is different from the block and lot IDs used by Baltimore City agencies to identify properties, and therefore what is recorded in most of the data provided to BNIA-JFI. This meant that to use LOVELAND, the parcel account ID would have to be added to all of BNIA-JFI's datasets; a very time-consuming process.

- Opportunity Space is an online software and mapping utility that is licensed primarily by municipal governments. Administrative data can be visualized on a map and filtered in customizable ways. The utility also seamlessly integrates disparate datasets. Opportunity Space's interface was user

friendly and the design was visually appealing. Despite positive feedback from the committee, the annual cost to operate and maintain the application was not sustainable over time.

The feedback gathered through this evaluation processes informed our decision to develop BOLD internally and to combine the best-liked features from these sites to meet the unique needs BOLD users.

3. Refining the User Experience: Prototyping and Wire Frame Development

Based on the feedback received during the stakeholder meetings and web tool evaluation process, a graduate student from the University of Baltimore, under the supervision of BNIA-JFI staff, constructed a paper-based prototype of the BOLD web application. The design was refined through two rounds of paper prototype testing in consultation with the Data and Vacants Committee. The student interviewed members of the committee to gain perspective of the different types of users that would be accessing the BOLD web application. He then used these interviews to decide which participants he would use to test prototype iterations. A range of participants, including those with data expertise as well as those with little data experience, were used to test the prototypes. This group included lawyers, academic professionals, community members, and city government officials.

Paper prototypes round 1: The goal of this round was to see if it was feasible to use a filtering system for individuals searching and retrieving data across different parts of the database. For this round of testing we selected two lawyers and a community leader.

This round of prototype testing revealed that more data filtering was necessary to allow users to be able to search for precisely the information that they wanted about a property. Other suggested changes were implemented such as adding different colors to the map points to reflect different types of data (i.e., citations are blue, vacant properties are red), and removing a log-in screen for publicly accessible data.

Figure 4: Paper Prototype Test 1 (Credit: Joel Stevenson)

Taking the design recommendations from round 1, we implemented and subtracted features for the second round of prototyping. For this round of testing we selected one lawyer, a representative from the city's Department of Housing, a community development professional, and a community leader.
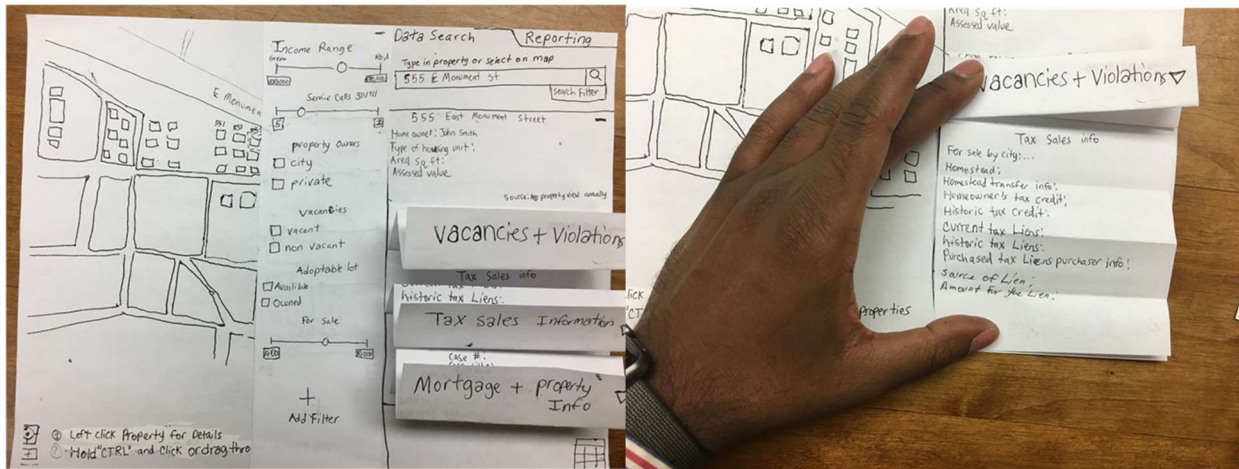
Figure 5: Paper Prototype Test 2 (Credit: Joel Stevenson)

The feedback from the second round of testing showed that users wanted information about the block or neighborhood surrounding a property, such as 311 calls for service nearby. There were requests for additional types of data such as energy assistance and transportation as well as the ability to report problems directly to 311. Users requested minor alterations to the way that data is displayed and additional help information for users who may not be familiar with how to use the website.
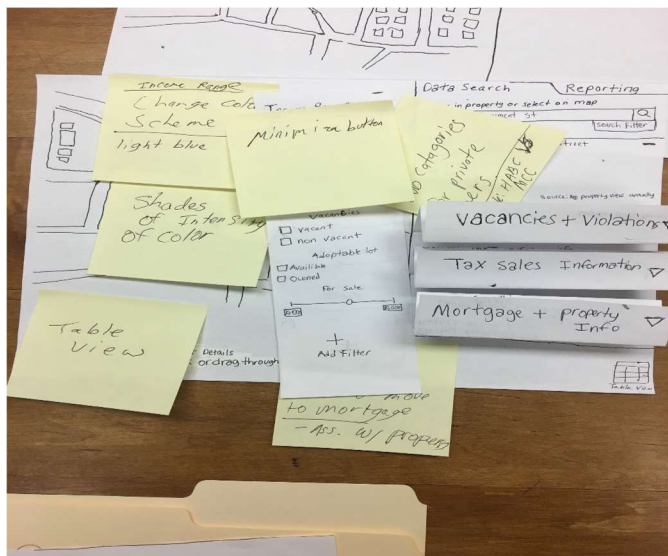
Figure 6: Paper Prototype Test 2, User Feedback (Credit: Joel Stevenson)

From the feedback received in rounds one and two of the paper prototype testing, we developed a wireframe for the website. A wireframe, also called a screen blueprint, is a visual guide that represents

the framework of a website. Web designers use this wireframe to build the website (see wireframe design in Appendix A).

4. Functional Requirements of the Website

The BOLD web tool has been developed using open-source programming and is a single page application built for Mobile and Desktop. The website was written in Javascript. The source code will be available on Github. This application has been fully abstracted from the code itself and can be managed at any time by staff using a custom built back-end. This means that datasets can be added and reconfigured without having to involve a programmer.

The site was constructed to aggregate, query, and visualize remote datasets as per the specifications of the site owners and constraints of the data. Engagement with visualized data allows users to browse additional related records. Property information is revealed when a user searches an address or when they click on a point on the map. The majority of the parcel-level property data are stored on a MySQL server and pulled to the website via an internal API. Data will also be pulled directly from the OpenBaltimore API (311 and 911 data) in the next iteration of the website. Boundary layers are displayed on the map using our Esri Online server.

E. Data Collection & Inventory

1. Data Inventory

The first step in understanding the project's data needs was to make an inventory of the data BNIA-JFI had in-house and what was needed. In a series of stakeholder meetings, BNIA-JFI complied a comprehensive list of the data requirements for the project that would meet the needs of our diverse users (see Appendix B). The following provides a description of each dataset within the inventory by data source and the frequency with which the data is collected by BNIA-JFI.

Maryland Department of Planning: Parcel/Property Information

The Maryland Department of Planning releases the *MDProperty View* on an annual basis.[27] *MD Property View* offers free, online, downloadable maps and data layers for Maryland's 23 counties and Baltimore City. The data provides parcel-level information on every property including parcel ownership, basic information about the land use and structure (such as year built), parcel valuation information, and sales data from the State Department of Assessments and Taxation (SDAT), including last transfer of the parcel and the name of the person who last sold the house. This dataset also includes a unique parcel identification number for every property, the block and lot and parcel map number. BNIA-JFI uses this data annually for the calculation of many of its housing indicators.

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[27] The last two updates to this data occurred in 2014 and 2017 (partial update).

Baltimore City Department of Housing & Community Development

Baltimore City Department of Housing & Community Development (DHCD) provides BNIA-JFI either directly or through Open Baltimore (the City's open data portal), various property event data:

- **Property Violations** – This dataset includes residential properties receiving housing code violations from the Baltimore City Department of Housing & Community Development (DHCD). Properties may have multiple violations in a single year and may have multiple violations over time. DHCD's Code Enforcement Division enforces the city's housing, zoning, building and related codes. This data is provided to BNIA-JFI annually.

- **Property Citations** - This dataset includes residential properties issued citations from DHCD. DHCD's Code Enforcement Division enforces the city's housing, zoning, building and related codes. This data is available on Open Baltimore.

- **Vacant Building Notices** - This dataset includes properties that have been classified as being vacant and abandoned by the Baltimore City Department of Housing. Properties are classified as being vacant and abandoned if: the property is not habitable and appears boarded up or open to the elements; the property was designated as being vacant prior to the current year and remains vacant; and the property is a multi-family structure where all units are considered to be vacant. This data is provided to BNIA-JFI annually.

- **Permits** - This dataset contains three different types of property permits: 1) DEM permits are issued for structural demolitions. This may be a demolition of the entire property or a room/space within the property. The cost of the demolition can be a clue to which type of demolition permit it is. 2) USE permits are issued to use the property in a particular manner (for example, use premises as a single-family dwelling, or use premises as a grocery store). 3) COM permits are issued for work on a property that may include installing something onto or into the property, or non-structural demolition and repairs. This data is available through Open Baltimore.

- **Receiverships** - The City has petitioned the court to appoint a third party (Receiver) to take control of a vacant property and auction it to a buyer who can then rehab it. The buyer takes on the Vacant Building Notice and MUST abate the Vacant Building Notice, generally, within one year of settlement. This dataset lists properties that have entered into this process and the resolution with respect to the property. This data is provided to BNIA-JFI upon request.

- **Vacants to Value Properties** - Vacants to Value (V2V) is Baltimore City's initiative to get designated vacant and abandoned properties cleaned up and redeveloped more quickly, efficiently, and economically. V2V streamlines government processes, targets resources, and leverages private investment to maximize the repair and rehabilitation of blighted property. This dataset lists available properties and vacant lots in the V2V program.

<u>Maryland Department of Finance</u>

- **Historic Tax Credits** - This dataset includes properties with historic tax credits, which are financial incentives for residential or commercial rehabilitation projects that require property owners to follow certain preservation standards. The Baltimore City Commission on Historic and Architectural Preservation administers the 10-year comprehensive property tax credit granted on the increased assessment directly resulting from qualifying improvements to historic properties. The duration of the credit is for 10 years and is applicable to properties located in designated areas of significant historical value. Both residential and commercial properties are eligible for this tax credit. This data is provided to BNIA-JFI annually.
- **Homestead Tax Credits** - To help homeowners deal with large assessment increases on their principal residence, state law has established the Homestead Property Tax Credit. The Homestead Credit limits the increase in taxable assessments each year to a fixed percentage. Every county and municipality in Maryland is required to limit taxable assessment increases to 10% or less each year. The cap for Baltimore City is 4%. Properties in this data set are those with the homestead tax credit applied to them. This data is provided to BNIA-JFI annually.

<u>BidBaltimore</u>

A Tax Lien Certificate Sale is a public sale of lien interests on properties. The sale is used as a method to collect delinquent real estate taxes and/or other unpaid municipal fees and charges owed to the City of Baltimore, all of which are liens against the real property address. The Mayor and City Council of Baltimore generally holds this sale once each year in May. The winning bidder does not purchase the deed to the property but purchases a Tax Lien Certificate. In order to acquire the deed, the law requires the purchaser to file a Complaint in the Circuit Court for Baltimore City to foreclose the right of redemption. The foreclosure procedure includes obtaining a decree from the Circuit Court for Baltimore City, preparing a deed, paying all liens that have accrued from the date of the Tax Lien Certificate Sale, paying any excess funds (bid amount less lien amounts), and recording the deed in the Land Records of Baltimore City.

This dataset lists all properties with city liens sold as tax certificates at the annual tax sale held in May. The data include the amount of the lien, the assessed value of the property, and winning bidder information. This dataset is collected annually at the conclusion of the auction.

<u>Maryland Judiciary Case Search</u>

This dataset includes properties that have a "Foreclosure Rights of Redemption" (tax foreclosure) or "Foreclosure" (mortgage foreclosure) filed against the owners in the Baltimore City Circuit Court. Properties listed in this dataset are recorded when a case is filed. It should be noted that not all filed cases result in a foreclosure. Information on the results of a specific case can be further investigated by

going to the Maryland Judiciary Case Search System at: http://casesearch.courts.state.md.us/casesearch/ and searching by "Case Number".

In past years, BNIA-JFI tracked mortgage foreclosure data by manually searching though court records on the Maryland Judiciary Case Search system website. This method of collecting data was time-consuming and required additional personnel to complete. To streamline this data collection process, BNIA-JFI worked with a computer science student from The University of Maryland, Baltimore County to develop a web scraper that would automate the collection and formatting of information in court documents from the Maryland Judiciary Case Search system. The web scraper collects and formats information in court documents, including the case number, property address, and plaintiff and defendant data, into an electronic database. This newly developed tool has improved collection methods over previous manual case searching, and it can be used to scrape both mortgage and tax foreclosure cases. The tool allows for frequent updating of these two datasets, ensuring the most recently available data will be provided on the BOLD website. These data can be updated as frequently as needed.

Baltimore City Liquor Board

This dataset provides information about properties that have been granted liquor licenses.

Open Baltimore

This dataset provides details on 311 calls for service related to a property, and 911 calls for fires at specific properties. 311 data can be filtered by type of service call and will initially include calls related to graffiti removal; dirty street or alley; trash, high grass or weeds; exterior water leaks; waterway pollution investigations; aggressive animals; dead animal pickups; food quality complaints; liquor and adult entertainment complaints; snow/icy conditions; and other. This data can be added to BOLD via the OpenBaltimore API.

Other Requested Data

Stakeholders requested additional data from various sources that could not be obtained for the project in its current state. We will continue to search for ways to provide these data in the future where possible through building relationships with these data providers and illustrating how additional data would enhance the BOLD web application. These include:

- Department of Public Works water shut-off notices and BGE utility shut-off notices. This data would be useful in helping to identify properties that may be vacant or abandoned.
- Property-level undeliverable mail. This data is available but must be purchased annually.
- Resident agent and principal office information for properties owned by a business or LLC. This data is currently available on Maryland Business Express (https://egov.maryland.gov/businessexpress/entitysearch), but the process of acquiring this information can be time consuming when the data is needed for a large number of properties.

- Property deed information. This data is currently available through the Maryland Land Records Database (https://mdlandrec.net/), but the process of acquiring this information can be time consuming when the data is needed for a large number of properties.
- Photographs that are attached to citation information. Citation data is available for download via OpenBaltimore, but the data does not include photographs associated with the citations. Users must currently search the Department of Housing and Community Development code enforcement website for these photographs (http://cels.baltimorehousing.org/Search_ECBPhoto_Map.aspx).

2. Data Cleaning, Organization, and Integration

Organization of the data was key to the success of this project. One of the challenges faced was creating a way for datasets from various city and state agencies to be linked so that information on properties could be displayed at one time. Each of these agencies uses its own system of organization, which makes it difficult to use different datasets for a single property. The project required a way to link the data using common, standardized fields so that users could not only retrieve data about a property from multiple databases, but also look at that data historically.

One issue with administrative datasets from public agencies is that they often require a lot of data cleaning to allow for standardization and linking. Addresses and other key fields are not always formatted in a standard way. Sometimes there are multiple individuals entering information into a dataset, for example, multiple clerks at the Circuit Court. This can result in data entry errors including misspelling of address names or omitted information. All of the datasets were cleaned so that fields would have standardized field names, addresses, dates, and numbers. Once the content of the key fields were standardized, datasets were organized with common field names across agencies and across different time periods.

Real property in Baltimore is officially recorded on the city's plat map and identified by the block and lot or a unique parcel identification number. However, most data related to a property is generally referred to by the property address. BOLD uses a parcel identification number as unique identifier for all of the datasets rather than a property address. This is key to integrating multiple datasets and follows the best practices used in other similar web applications (such as Neo Cando). A parcel identification number, such as a block and lot, represents a distinct property with a given parcel. A parcel may contain a building with multiple units, such as a condo. All of the units will reside on the same parcel, but each until will have a unique block and lot number. Additionally, some parcels will have a block and lot but no address (for example, a property that was demolished and is now a vacant lot). Therefore the block and lot was the best choice for creating a primary key that would connect each database.

Data Organization

Block and lot information is included in most of the data from Baltimore Housing (citations, violations, vacant building notices, permits) and included in the tax sale data from BidBaltimore. However, there is no block lot number in the data from the Baltimore Circuit Court (foreclosures), for liquor licenses, and for some of the other datasets used for BOLD. In cases where no block and lot information was included in the dataset, the address needed to be matched to a master list of address and block lots. This master list came from the Maryland Department of Planning's *MD Property View,* which contains all of the parcels in the city. We used an Access database to join the address fields from each dataset with the *MD Property View* master list. This process was not always 100% successful. Despite cleaning address fields as best as possible, some addresses in the datasets were missing critical information such as a directional identifier (North, East, South, West), the street type (Road, Lane, Street, etc.), or were simply misspelled. When no match was found, we manually looked up the block and lot information. This was a time-consuming process but it resulted in matching over 95% of the addresses to a block and lot in each of the datasets.

After all of the datasets were cleaned and had block and lot added, they were uploaded to the database. As new property data is generated, the same processes will be followed as described above, and the new data will be appended and uploaded to the database.

F. Implementation and Next Steps

We anticipate that BOLD will be useful in providing avenues for further research, as well as in advancing advocacy efforts. We will continue to build on the BOLD tool through community outreach and trainings, and by engaging with civic technologists.

1. Using BOLD to Further Research

A benefit of the BOLD web application is its usefulness for advancing research on the role that property events play in neighborhood disinvestment or stabilization. Until now, it has been difficult to obtain the history of single property or to understand how similar property events, like tax sales or foreclosures, impact multiple properties in a neighborhood. Researchers will be able to utilize BOLD to answer research questions on housing and communities.

2. Using BOLD to Advance Client and Community Advocacy

Community leaders and advocates can use the data they have accrued through BOLD to advance their advocacy efforts. One area in which we anticipate that data from BOLD will be useful is tax sale. Advocates can use BOLD data to focus tax sale prevention efforts, reach homeowners who do not currently receive tax credits, and identify areas to target for advance planning outreach and legal assistance, to ensure that properties stay within families and continue to accumulate generational wealth.

3.Community Trainings

The BOLD web application is not static with respect to both the backend databases that are continuously being updated to ensure the most recent data is available as well as the frontend user experience to enable community-based decision-making. To facilitate broader use of the BOLD application beyond the Tax Sale Work Group, attendees at Baltimore Data Day on July 13, 2018 and the Baltimore Learning Collaborative Community Association Capacity Building Event on Oct. 16, 2018 will be trained on the current version. Subsequent trainings in communities with significant tax liens issues will be a strategic outreach process over the course of the next year. As new users begin to use BOLD in their community efforts and property and housing data research, we will seek their feedback on the available data and the efficacy of the site. We hope to use this feedback to demonstrate the interest in and need for more available data and make the case to data providers and government agencies for more open, transparent, and useable data to be shared with the public. In particular, the community feedback will be used to advocate for increased access to the "Other Requested Data" discussed in Part F, Section 1, above.

A user guide to help get people started with the website is available on-line (see Appendix C).

4. Engaging with Civic Technologists

As mentioned previously, BOLD is an open-source application which lends itself to engagement with groups in Baltimore interested in both the topic (property information) as well as the technology. We will engage with organizations such as Code for Baltimore, Code for America, Legal Hackers, and other civic technologists that have digital experience and interest in helping citizens to improve BOLD and investigate new way to bring data to the web application.

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Appendix A: Wireframe Design Screenshots
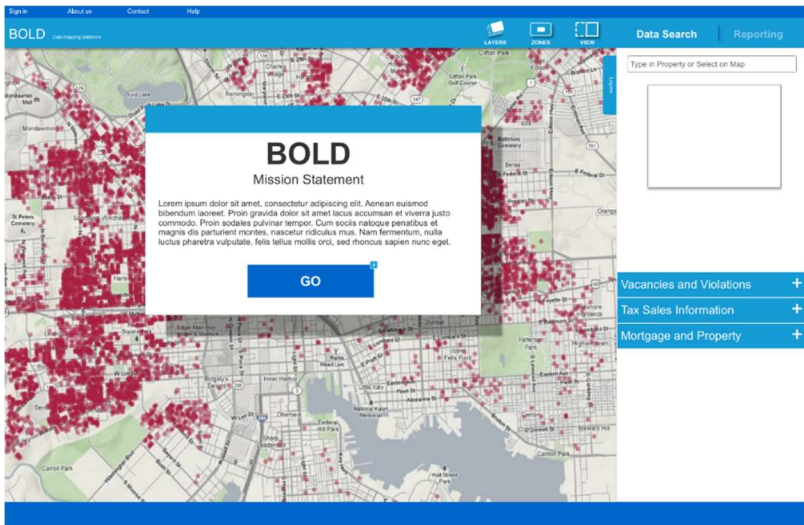
Figure 7: Wireframe Design Home Page (Credit: Joel Stevenson)
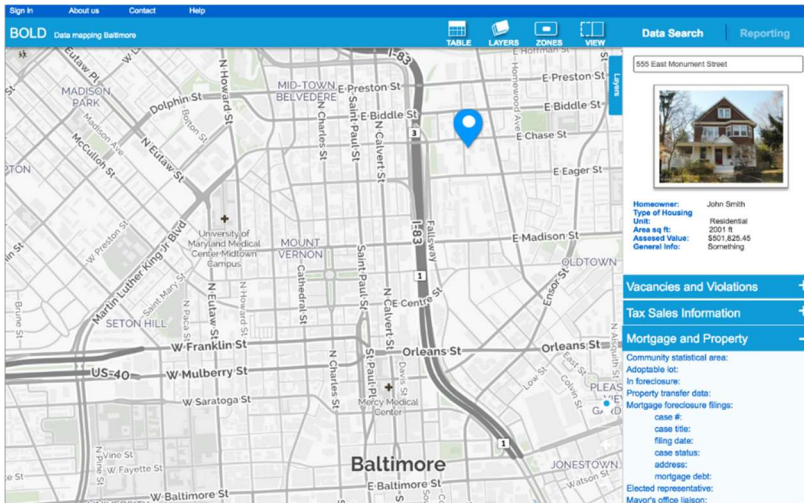
Figure 8: Wireframe Design Property Data View Example (Credit: Joel Stevenson)
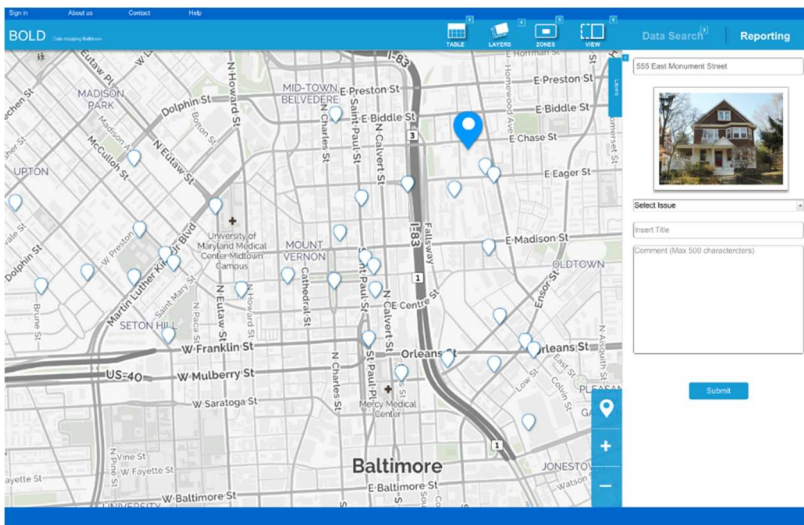
Figure 9: Wireframe Design Property Reporting Feature (Credit: Joel Stevenson)
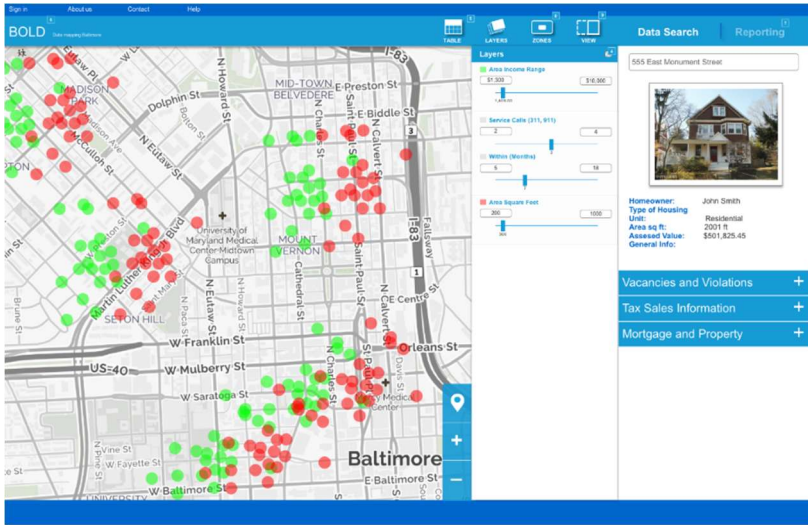
Figure 80: Wireframe Design Property Events Example with Data Filtering Sliders (Credit: Joel Stevenson)
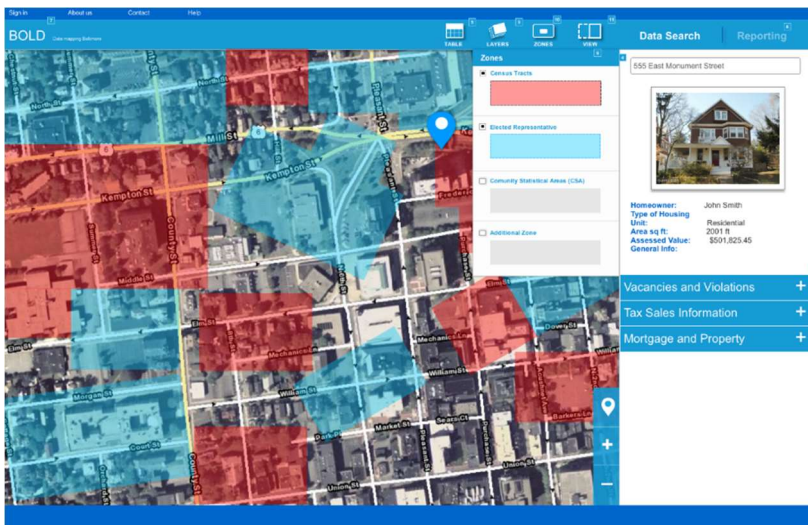
Figure 11: Wireframe Design Boundaries Example (Credit: Joel Stevenson)
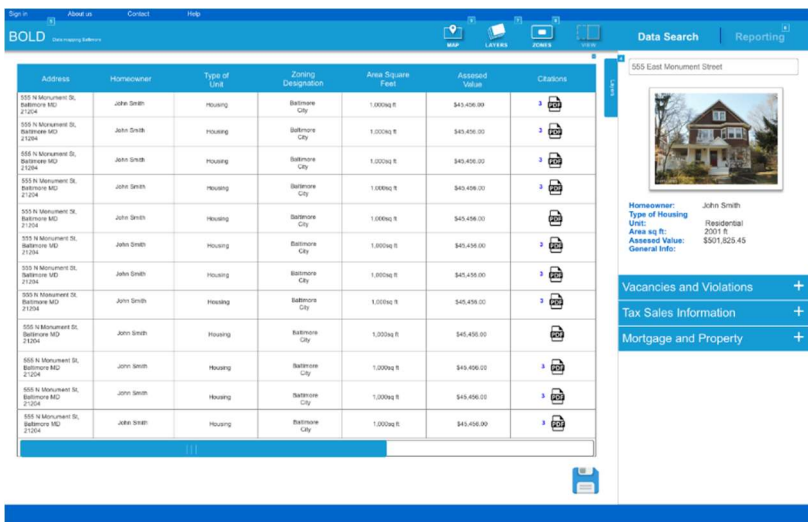
Figure 9: Wireframe Design Data Table Example (Credit: Joel Stevenson)

Appendix B: Data Inventory

Dataset Name	Types of information included in dataset	Source	Frequency
Violations	• Year of notice • Data notice posted • Notice identification number	Baltimore City DHCD	Irregular
Citations	• Year of notice • Citation notice identification number • Date notice issued • Fine amount (may be blank) • Short description of the violation- may be blank • Housing inspector's identification number	Baltimore City DHCD	Irregular
Vacant Properties	• Year of notice • Date notice posted • Notice identification number • Status of the notice	Baltimore City DHCD	Annually
Permits	• Year of permit • Number assigned to permit • Type of permit(COM, DEM, USE) • Date permit issued • Description of permit issued • Estimate cost of work • Date permit expires • Proposed use of building (may be blank) • Existing building use (may be blank)	Open Baltimore	Irregular
Tax Credits	• Year of data received by BNIA-JFI • If a property is in this dataset, a homestead tax credit or a historic tax credit has been filed for this property	Baltimore City Department of Finance	Annually
Receiverships	• Year • Attorney name • Date created • Date rejected • Date closed • Open tax (Y/N) • Vacant2Value (Y/N) • Recommended resolution • Court resolution • Final resolution	Baltimore City DHCD	Annually
Liquor Licenses	• License year • Corporation name • Trade name • License type	Baltimore City Liquor Board	Annually
311 / 911	• Calls to 311, 911 calls for fire, date created, description, resolution date	Open Baltimore	Daily
Vacants2Value & Adoptable lots	• Vacant lot or Vacant Building • Date available • Interest type • Adopt-A-Lot?	Open Baltimore	Annually

MD Property View	• Year of data release • Owner information • Last sale date • Property owner name(s) • Property owner address • Land use designation • Name of the person who last sold the house (or previous owners name) • Date the house was last sold • Amount of money paid for the property when last sold- may be zero • Land value plus improvement value- may be zero	MD Department of Planning	Annually
Mortgage and Tax Foreclosure	• Year of foreclosure filing • Date case filed in court • Case number • Mortgage or Tax foreclosure • Name of Plaintiff • Name of defendant • Partial cost of mortgage	MD Judiciary Case Search	Bi-annually
Tax sales	• Year of tax sale • Year that the tax was due • Face Amount • Assessed value of property • Does property currently have homestead tax credit applied? • Name of the winning bidder at tax auction • Business name of the winning bidder at tax auction • Resident Agent for LLC • Address of the winning bidder at tax auction • Zip code of the winning bidder at tax auction • Number of bids property received at tax auction	BidBaltimore	Annually
Boundaries	• Neighborhoods, CSA, Census Tracts, School, City Council Districts, zoning	Various Sources	When changes occur
Water Bills	• Property-level data on water bills, shut-offs, or shut-off notices to establish occupancy status	Not available	n/a
Utility Records	• Utility shutoff to establish occupancy status	Not available	n/a
Postal Records	• For undeliverable/stopped delivery of mail to establish occupancy status	Available for purchase	n/a

Appendix C: BOLD - Getting Started Guide

BOLD is an online, interactive, parcel-based data information system. You can access the website here: https://bniajfi.org/bold/. The following guide will help you get started with using BOLD.

- *Please note: This website has been optimized to work with Chrome and Firefox browsers. We do not recommend using Internet Explorer.*

1. Welcome

When the webpage has loaded, you will be greeted by a Welcome screen (See Figure 13). This screen provides some general information about who BOLD is for and where our data comes from. Click on "OK" or anywhere on the screen to close the welcome message and enter the homepage.
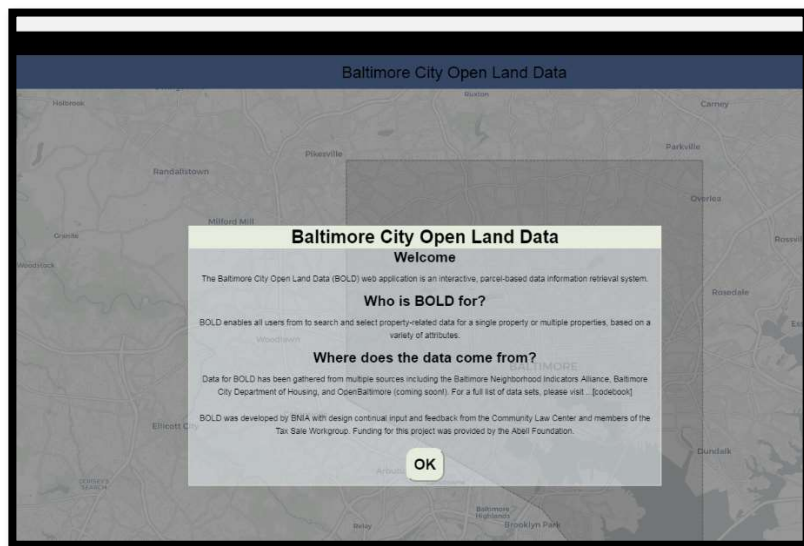
Figure 13

2. Menu

On the top, right-hand side of the screen, you will see a menu bar with the following options: Welcome, About, Contact, and Help (See Figure 14). You may click on any of these words for more information.
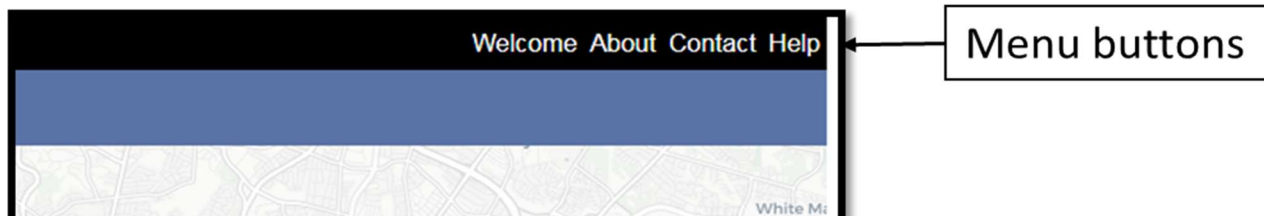
Figure 10: Menu buttons

- **Welcome** - Returns user back to the welcome screen pop-up box.
- **About** – Opens a pop-up box displaying information about the BOLD website.

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- **Contact -** Opens a pop-up box providing information about whom to contact if you need more information about the website, the data, or have any technical issues. It also provides information on whom to contact for legal assistance related to non-profit organizations, tax sales, and tax foreclosures.
- **Help –**Open the page where you can download this guide as well as other guides for using our website (other guides currently in development) and the Data Dictionary.

3. Left-hand Menu

On the left-hand side of the screen are boxes for searching different kinds of property data (See Figure 15). The search features of each button will be described below.
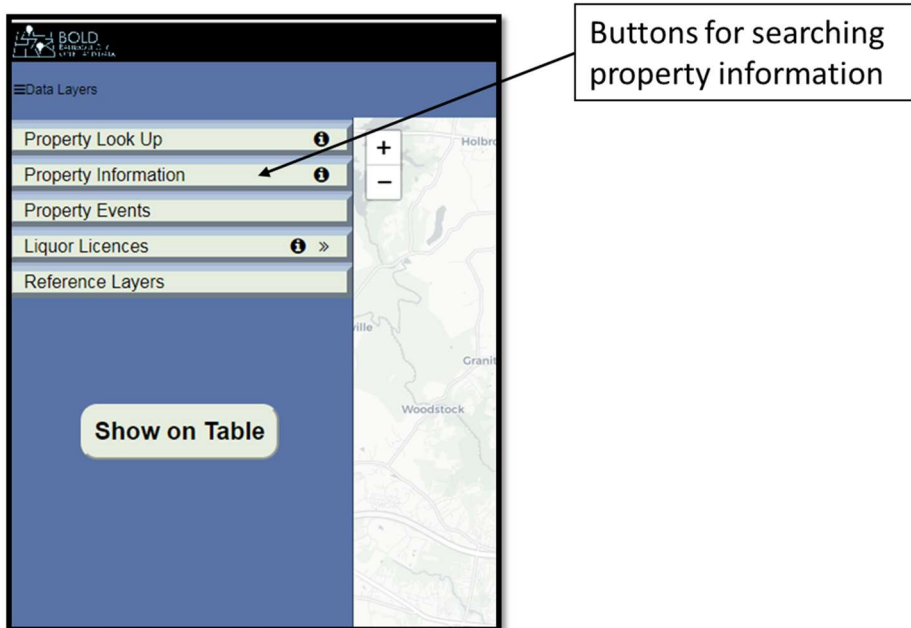
Figure 115: Left-hand menu

4. Property Look Up

Users can search an address, address and unit, or a block lot to look up information on a single property.

- Begin typing the address into the blank space below **Address**, beginning with the address number or the street name.

> *Example*: "I am searching for 1652 APPLETON ST"
> *Directions*:
> > (1) Type 1652. A dropdown will appear with suggestions that may match your search (See Figures 14 & 15).
> > (2) Click on the address that you want. (If there are any units associated with the address you must
> select a unit from the dropdown under **Unit**.)
> > (3) Click on the Search! Button (See Figures 16).
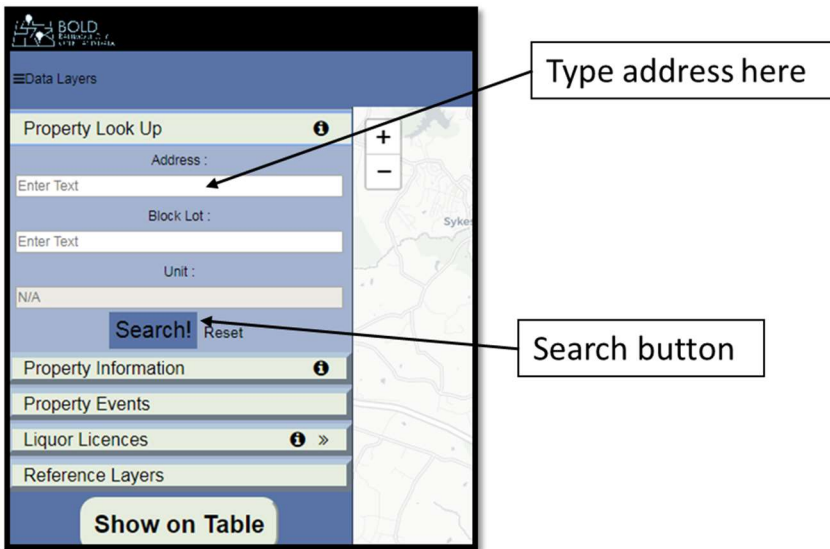
Figure 126: Property look up
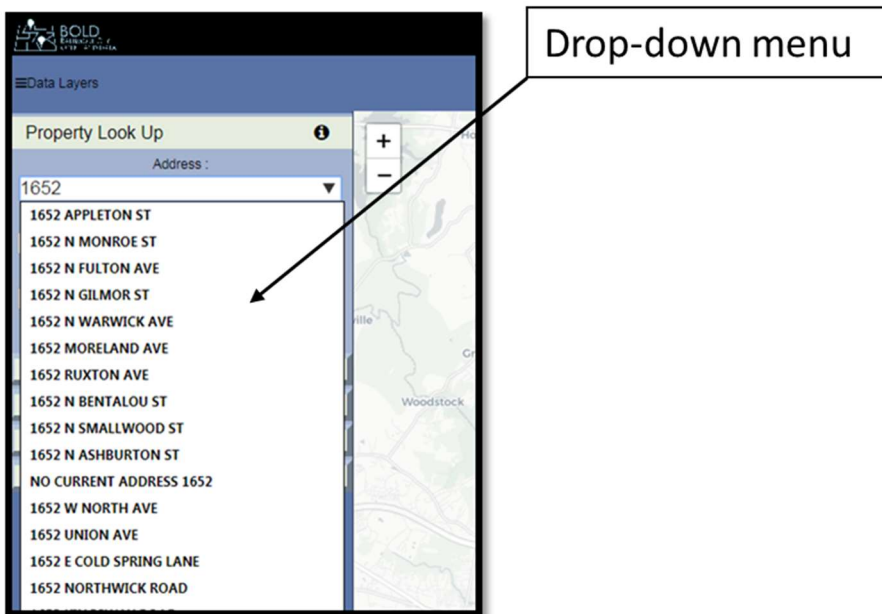
Figure 137: Propertry search drop-down menu

After a property has been selected, the parcel will display on the map and the right-hand drawer will display on the screen (See Figure 18).
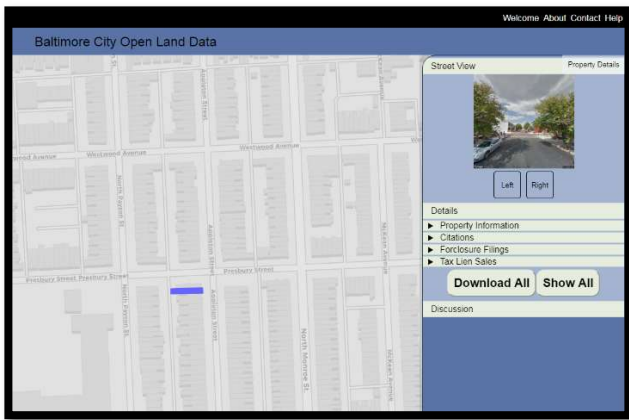
Figure 148: Parcel displayed on map with right-hand drawer open

The right-hand drawer displays a photo of the property. Under the photo are details about the property. Each tab displayed under details is expandable by clicking on it.

- In the example 1652 APPLETON ST there are four tabs under **Details:** Property Information, Citations, Foreclosure Filings, and Tax Lien Sales.
    - *Note: The database will display a tab for any property-event related to a property.*
    - *Note: If no event occurred at a property, only the Property Information tab would be displayed.*

When you click on a tab, it will expand with more detailed information (See Figure 19).
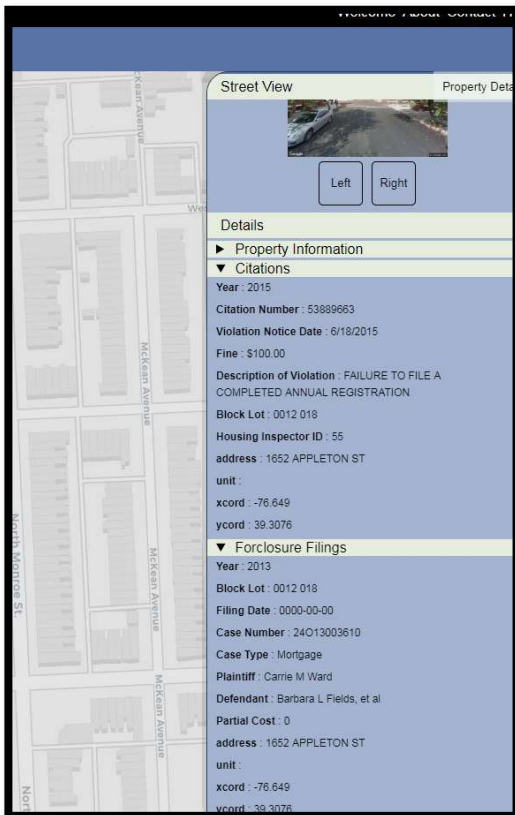
Figure 19: Right-hand drawer expanded

Property Information- This tab displays the owner name, owner address, land use type, the name of the person who last sold the house (or previous owner's name), the last recorded sale date and the amount of the last recorded sale, and the new total full market value for the property (*Note: this may not be the same as the assessed value)*.

Other Tabs Displayed- The other information that populates this right-hand drawer is the most recent data available for the property. For example, if the last citation this property received was in 2015, the 2015 citation information will be displayed when you click on the **Citations** tab.

If the property had a citation in 2013 and 2015, only the 2015 citation information will be displayed in the right-hand drawer. To see all of the citations you will need to select the **Show All** button. The same is true for foreclosure filings, tax lien sales, and any other property information that is displayed in the right-hand drawer.

6. Property Information

Expanding the **Property Information** tab on the left-hand side of the screen will reveal several search options. This tab is used for looking up information on multiple properties, such as an owner who may own more than one property, or properties built in a specific year.

- Begin typing some information into one of the blank spaces.

> *Example*: "I am searching for all of the properties owned by Maryland Restoration"
> *Directions*:
> > (1) Type Maryland Restoration into the blank box below **Owner Name**. A dropdown will appear with suggestions that may match your search (See Figure 20).
> > (2) Click on the name of the owner that you want.
> > (3) Click on the **Search!** Button (See Figure 20).
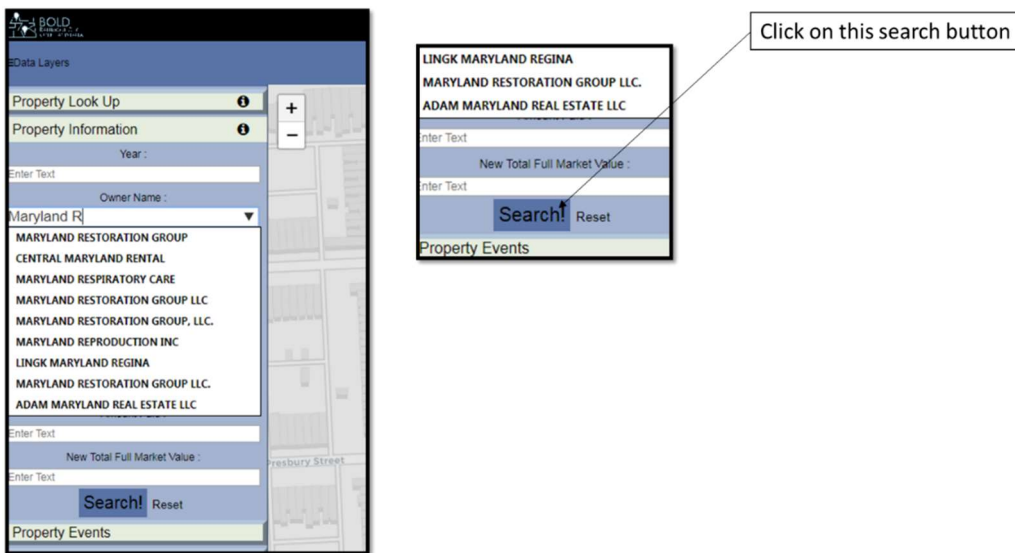
Figure 150: Searching by owner name

After you have clicked on the search button, the parcels owned by this owner will display on the map. To display this information on a table, click on the **Show On Table button** (See Figure 21).

- The map table view will display all of the property information including owner name, owner address, land use type, the name of the person who last sold the house (or previous owner's name), the last recorded sale date and the amount of the last recorded sale, and the new total full market value for the property (*Note: this may not be the same as the assessed value)*.
  - o *Note: **Show on Map** and **Show on Table** can be used to switch the view back and forth from map to table.*

Figure 161: Show on table feature

- If you would like more information about one of these properties, switch to the map view by clicking on **Show on Map** and then click on the property from the map. This will open up the right-hand drawer and display all of the information associated with that one property (see pages 5-7 for a description of what is included in the right-hand drawer)

7. Property Events

A property event is defined as a municipal record that has been generated on a property. There are many property events viewable on the BOLD website including: Citations, Violations, Foreclosure filings in the City Circuit Court (tax and mortgage), Receiverships, Vacant Building Notices, Tax Credits, and Vacants to Value properties available.

- It is possible to view all of the properties that had one of these events by using the Property Events look-up tab.

  Example: "I want to see all of the properties in the city with a citation"
  (1) Click on the **Property Events** tab to expand the search options.
  (2) Click on the double arrow to the right of **Citations**.
  (3) All of the citations will be displayed on the map and the legend will read Citations.

- Clicking on the **Show on Table button** will all of the information about these citations

- If you would like more information about one of these properties, switch to the map view by clicking on **Show on Map** and then click on the property from the map. This will open up the right hand drawer (See Figures 18 and 19) and display all of the information associated with that one property (see Figures 18 and 19 for a description of what is included in the right-hand drawer).
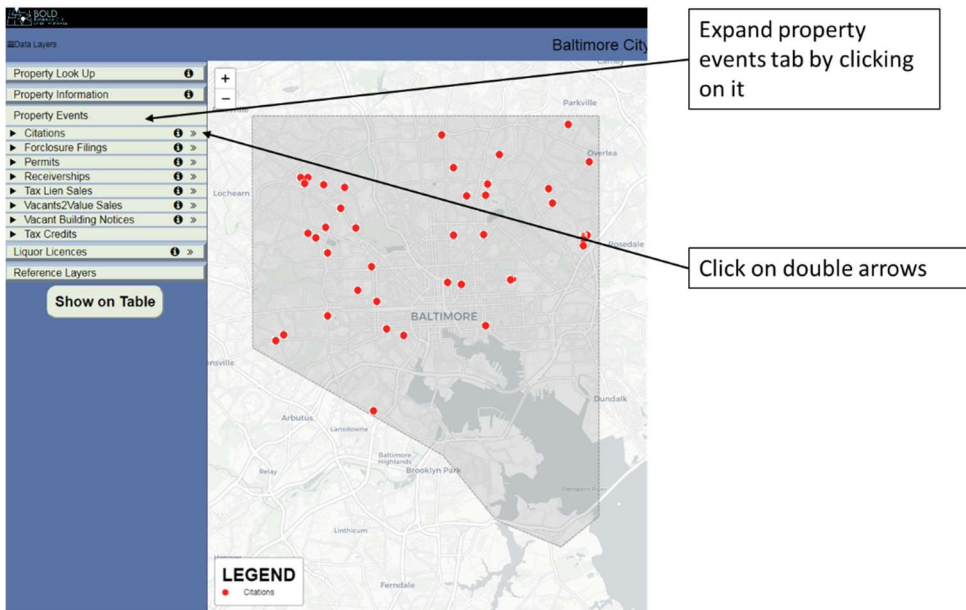

Figure 172: Viewing property events on the map