

# Housing Insights: Bringing Open Data to Affordable Housing Decisionmakers

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**From 2014 to 2018, the Civic Tech and Data Collaborative brought together local government officials, civic technologists, and community data organizations across seven communities to explore how to harness data and technology to benefit low-income residents. Three national organizations with local networks—Living Cities, Code for America, and the National Neighborhood Indicators Partnership—guided the initiative. To provide real-world examples and lessons for the field, local collaboratives in Boston, St. Louis, and Washington, DC, created products that use data and technology in new ways to improve services or programs in their cities.**

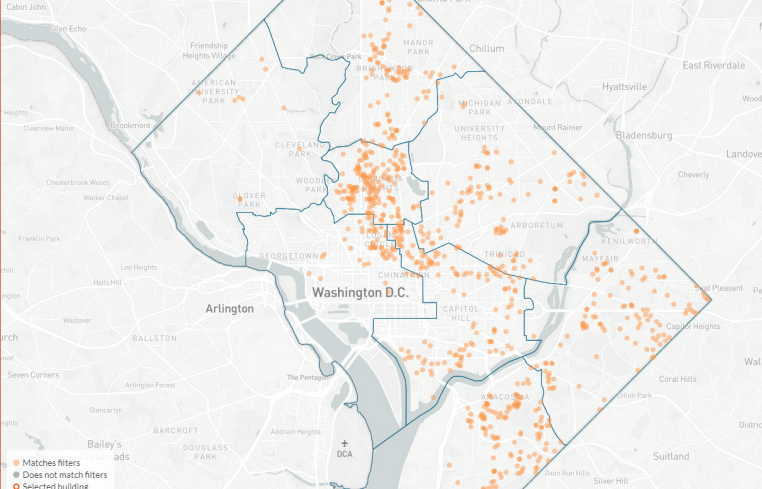
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**For more information on the Civic Tech & Data Collaborative visit [livingcities.org/CTDC](https://livingcities.org/CTDC).**

Washington, DC, is experiencing the rapid expansion of new development in previously affordable neighborhoods. The city's rising rents disproportionately affect low-income households; almost 70 percent of these residents pay more than 30 percent of their income on housing.<sup>1</sup> Preserving publicly subsidized housing units for low-income households can help maintain the supply of affordable housing stock, but the subsidy agreements for private properties are generally time limited. At contract expiration, owners may opt out of the programs and put the properties back in the private market because of rapidly rising home values or the cost of long-deferred maintenance. The DC Department of Housing and Community Development (DHCD) estimates that between 2006 and 2014, 1,000 subsidized units were lost, with many more at risk.<sup>2</sup>

In the face of this challenge, a team of local government staff, affordable housing advocates, and civic technologists developed [Housing Insights](#), an open-source tool that uses data and technology to help government and community development staff make better investments in affordable housing.<sup>3</sup> The tool compiles diverse data sources to help stakeholders identify projects that are at risk or difficult to replace, understand neighborhood demographic trends, and access information on individual projects needed for action.



## Building A Strong Foundation

Housing Insights grew out of work by the DC Preservation Network, a long-standing initiative led by the Coalition for Nonprofit Housing and Economic Development (CNHED) and Urban-Greater DC (formerly NeighborhoodInfo DC) at the Urban Institute, a member of the National Neighborhood Indicators Partnership. The Network consists of government agencies, including DHCD, and community-based organizations working to preserve affordable housing in the District.

Since 2011, the network has maintained the DC Preservation Catalog, a comprehensive database of publicly subsidized residential properties.<sup>4</sup> The Network uses the catalog to discuss priorities and strategies for preserving at-risk buildings. Because the need far outstrips the available resources, the Network recognized the imperative for a more comprehensive approach and produced a report in 2014 that outlined a framework for a citywide preservation strategy (PSWG 2014).

The report emphasized using data on properties and neighborhood factors to prioritize preservation efforts.

In addition, the mayor launched the DC Housing Preservation Strike Force, a group of government officials and staff and community members, which in 2015 reinforced the need for a multipronged approach to preservation<sup>5</sup> Chaired by the director of DHCD, the Strike Force's final report included recommendations to strengthen affordable housing preservation, including creating a dedicated unit and expanding preservation resources.

Even with city and community alignment, a more strategic approach to preservation still required neighborhood data to contextualize properties and better coverage of local subsidies to supplement the Preservation Catalog's data on federally-assisted properties. The Network and city agencies had the data skills, policy knowledge, and connections to decisionmakers, but wanted to explore alternative models for creating a tool that pulled the necessary information together. Following the Civic Tech and Data Collaborative model, the group approached the local volunteer-led Code for America brigade, Code for DC, which had an established process for taking on projects and developing tools with nonprofits and government agencies.

## Assembling Local Talent to Preserve Affordable Housing

The national project funded a small planning grant for these partners to think through the structure of the project. The final design emphasized each of their talents to guide the tool's development. CNHED provided knowledge about how local government and nonprofit staff made decisions about subsidized housing properties. It also hired and managed the project manager. Urban-Greater DC lent its expertise and resources on neighborhood and housing data, and Code for DC adopted the project and provided a platform for volunteer recruitment. DHCD staff participated in user interviews and prototype testing.

On the advice of the national advisers, the DC team hired a paid project manager to lead the design and building of the tool and to manage volunteers and project partners. The project team selected a candidate who had previously run a software start-up and could channel his software development experience into effectively managing the work. The project manager found out about the opportunity from a Code for DC meet-up, so he was familiar with the brigade structure and leadership. The project marked the first time Code for DC executed a project with a paid project manager to oversee volunteers, coordinate with partners, and guide tool development.

The hybrid structure of volunteer developers and a part-time manager helped harness

the brigade's power while ensuring the project's completion. More than 100 brigade volunteers contributed an estimated \$84,000 worth of development time (2,200 hours). The early part of the project focused on volunteer recruitment, regularly onboarding new project contributors and expanding the team of regular contributors. As the project launch drew closer, to make best use of volunteer and project manager time, the focus shifted to executing with the existing volunteer team. The project manager incorporated coding that was straightforward to make ongoing volunteer participation easier and make revising code in the future more efficient. He also compartmentalized the tool's development to allow volunteers with different skills to move forward with work in parallel.<sup>6</sup>

**“[The CTDC project] provided a model for how brigades can ensure accountability and consistency in their work with partners. Without proper resourcing, it can be difficult for volunteers alone to complete a high-impact project. Having a paid project manager can help oversee the staffing of projects, distribution of work, serve as a point of contact for outside organizations, and help reduce burnout for volunteer leaders.”**

**— Christopher Whitaker,  
Brigade Program Manager**

Code for America



## **Visualizing National and Local Data for Decisionmaking**

Housing Insights combines curated and linked data from disparate national and local sources into a single useful tool. The DC Preservation Catalog provided the property-level data, and the District's well-developed open data portal published other relevant data sources, such as building permits, crime reports, a master address list, and ward and neighborhood boundaries. The city publishes these data through application programming interfaces (APIs), which allows for automatic updates to the tool when the source data are updated. Although available, these data were still difficult for lay audiences to access and not linked to the subsidized housing data. Housing Insights could focus on aligning and linking data sources rather than acquiring data from the city.

Housing Insights demonstrated the payoff from the city's and nonprofits' long-term investments in curating and publishing data. Having a real-life use case for the city's open data prompted valuable feedback the city would not have received otherwise. For example, the Housing Insights team recommended breaking down housing units by income level in the city's dataset on affordable housing projects published on Open Data DC.<sup>7</sup> Agency staff revised the data posted on the public portal. Additionally, integrating diverse government data into the tool shows the potential benefits of standardizing data across agencies.

Just having the data would not be sufficient to deliver the information in a useful way to staff making decisions about housing preservation. Developers used user-centered design to ensure the tool would help its intended audience of government agencies and community organizations. The development team conducted user interviews and involved project partners and other local stakeholders in the ongoing construction of the tool through user testing. The team also encouraged feedback on prototypes to further refine functionality.

The final Housing Insights design allows users to visualize the spatial distribution of DC's affordable housing and filter by characteristics of subsidized properties, such as number of units and subsidy end dates. The tool allows users to overlay data on neighborhood conditions, such as crime rates, income levels, median rent, and public transit access, and to filter projects based on those neighborhood characteristics. Having these diverse datasets in a single place, linked together with data visualization and querying tools, provides a more complete context for affordable housing preservation in the District.

## Planning for Sustainability

Throughout the project, the development team structured the tool for sustainability, including using open-source technologies and creating well-documented and easily updatable code. Because having current data for decisionmaking is critical and new sources may emerge, the project manager structured the tool's back-end design to easily add and update datasets.

Following Housing Insights' public release in November 2017, the site established a technical leadership board composed of three project volunteers tasked with tool updates, additional testing, and potential future site developments. To gather information from users, the current site requests feedback on the tool and suggestions for additional data. In addition, the Housing Insights partners formed an advisory committee to oversee the tool's future technical development and to conduct outreach and trainings on how to use the tool.

Housing Insights is part of a larger conversation about addressing DC's affordable housing crisis. Its creation capitalizes on the cross-sector momentum for addressing preservation in new ways. Bringing in civic technologists resulted in a well-designed open-source website with features based on user input that public and nonprofit staff should find valuable as they face difficult decisions about how to

spend their limited resources. But convincing decisionmakers to adopt a new tool and use the information it contains is challenging. Through the leadership board and advisory committee, the team intends to continue engaging users to raise awareness of Housing Insights and gather feedback for improvements. The volunteers' commitment to continuing work on the project and the appointment of the city's first Housing Preservation Officer are two factors that could support the tool's continuation. But it remains to be seen whether Housing Insights can be sustained without additional resources, which have not yet been identified.



## Lessons Learned

The partnership in DC offers lessons for other places implementing civic tech projects like Housing Insights. Collaboratives should recognize the importance of local commitment and capacity to implement a project. The mayor's prioritizing affordable housing preservation created an opportunity for buy-in around a civic tech tool to assist decisionmaking. This project also had strong civic participation through the DC Preservation Network. The project structure relied on easy-to-mobilize volunteer capacity available from a strong local Code for America brigade and other technology meet-ups in the DC area. The capable project manager was also critical to provide consistency and accountability.

When designing a project, collaboratives should consider whether the project is conducive to volunteer work. Housing Insights was not replacing any system core to city operations. Volunteers had the time to design the tool, build a prototype, and test it before its use. If the project failed, it would not cause disruption to any city services.

Using volunteers also is attractive if collaboratives have broader project goals beyond the tool's creation. Housing Insights' multisector approach created a space for affordable housing organizations and policymakers to partner with the tech community. For the DHCD, the Civic Tech and Data Collaborative was the first time the department engaged with Code for DC. The largely volunteer-built and open-source tool illustrated a viable alternative to issuing high-dollar requests for proposals for technology. This model allowed for a more iterative and collaborative design process than the detailed predetermined specifications in a formal procurement process.

Incorporating volunteers can also facilitate positive interactions with government and increase resident awareness on a policy issue. Partnering with Code for DC created a channel to inform citizen technologists about the complexity of the affordable housing crisis.



Volunteers with no subject-matter expertise now better understand the need for affordable housing and programs.

Housing Insights provides government officials and advocates better information for their housing decisions, potentially leading to the preservation of affordable housing in the District. The project also strengthened cross-sector relationships among those committed to increasing affordable housing in the city. Looking forward, it created a blueprint for how technologists, advocates, and city officials can weave data and technology into policy solutions, which can be applied to other challenges low-income residents face.

**“The tool is useful, but more critically, the CTDC project helped demonstrate the value of cross-sector civic tech partnerships. The added value is the ecosystem of people who are now familiar with that data, know how to use the tool, and feel motivated to get it to government.”**

**– Danilo Pelletiere,  
Senior Policy Adviser**

DC Department of Housing and  
Community Development

## **NOTES**

1. See HPSF (2016). See also past work from the Urban Institute and Urban-Greater DC (formerly NeighborhoodInfo DC) that details the increase in housing costs and its disproportionate impact on low-income residents: “Our Changing City: Housing,” Urban Institute, accessed March 1, 2018, <http://apps.urban.org/features/OurChangingCity/housing/>.
2. Mary Hui, “DC Establishes \$10 Million Fund to Preserve Disappearing Affordable Housing,” Washington Post, November 26, 2017, [https://www.washingtonpost.com/local/dc-establishes-10-million-fund-to-preserve-disappearing-affordable-housing/2017/11/26/242893ea-cbb7-11e7-aa96-54417592cf72\\_story.html?utm\\_term=.cd4bc885f880](https://www.washingtonpost.com/local/dc-establishes-10-million-fund-to-preserve-disappearing-affordable-housing/2017/11/26/242893ea-cbb7-11e7-aa96-54417592cf72_story.html?utm_term=.cd4bc885f880).
3. See the Housing Insights website at <http://housinginsights.org/>.
4. “DC Preservation Catalog Online,” Urban-Greater DC (formerly NeighborhoodInfo DC), accessed March 2, 2018, <https://www.neighborhoodinfodc.org/dcpreservationcatalog/>.
5. “DC Housing Preservation Strike Force,” DC Department of Housing and Community Development, accessed March 1, 2018, <https://dhcd.dc.gov/service/dc-housing-preservation-strike-force>.
6. Read the project manager’s blog posts on tools and strategies for managing projects with civic tech volunteers: “User Input in Civic Tech,” Code for America (blog), Medium, January 11, 2018, <https://medium.com/code-for-america/user-input-in-civic-tech-c167f0e765ec>.
7. “Affordable Housing,” DC.gov, November 20, 2017, <http://opendata.dc.gov/datasets/affordable-housing>.

## REFERENCES

HPSF (District of Columbia Housing Preservation Strike Force). 2016. [District of Columbia Housing Preservation Strike Force Final Report: Six Recommendations for Addressing Affordable Housing Preservation](#). 2016. Washington, DC: HPSF.

PSWG (DC Preservation Network, Preservation Strategy Working Group). 2014. [“Maintaining Economic Diversity and Affordability: A Strategy for Preserving Affordable Rental Housing in the District of Columbia.”](#) Washington, DC: PSWG.

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## ABOUT THE NATIONAL PARTNERS



Living Cities harnesses the collective power of 18 of the world's largest foundations and financial institutions to develop and scale new approaches for creating opportunities for low-income people, particularly people of color, and improving the cities where they live. Its investments, applied research, networks, and convenings catalyze fresh thinking and combine support for innovative, local approaches with real-time sharing of learning to accelerate adoption in more places. Additional information can be found at [www.livingcities.org](http://www.livingcities.org).



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Coordinated by the Urban Institute, the National Neighborhood Indicators Partnership (NNIP) consists of independent organizations in 32 cities that share mission to help community stakeholders use neighborhood data for better decisionmaking, with a focus on assisting organizations and residents in low-income communities.



Code for America is a national nonprofit that believes government can work for the people, by the people, in the 21st century. We organize a network of people who build technology to further local governments' priorities of creating healthy, prosperous, and safe communities. Our goal: government services that are simple, effective, and easy to use, for everyone.

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