

The Promise and Peril

of Data & Technology Use By Public
Housing Agencies

March 2023





The **Center for Democracy & Technology (CDT)** is a 28-year-old 501(c)3 nonpartisan nonprofit organization that fights to put democracy and human rights at the center of the digital revolution. It works to promote democratic values by shaping technology policy and architecture, with a focus on equity and justice. The organization is headquartered in Washington, D.C. and has a Europe Office in Brussels, Belgium.

As governments expand their use of technology and data, it is critical that they do so in ways that affirm individual privacy, respect civil rights, foster inclusive participatory systems, promote transparent and accountable oversight, and advance just social structures within the broader community. CDT's **Equity in Civic Technology Project** furthers these goals by providing balanced advocacy that promotes the responsible use of data and technology while protecting the privacy and civil rights of individuals. We engage with these issues from both technical and policy-minded perspectives, creating solutions-oriented policy resources and actionable technical guidance.

The Promise and Peril **of Data & Technology Use By** **Public Housing Agencies**

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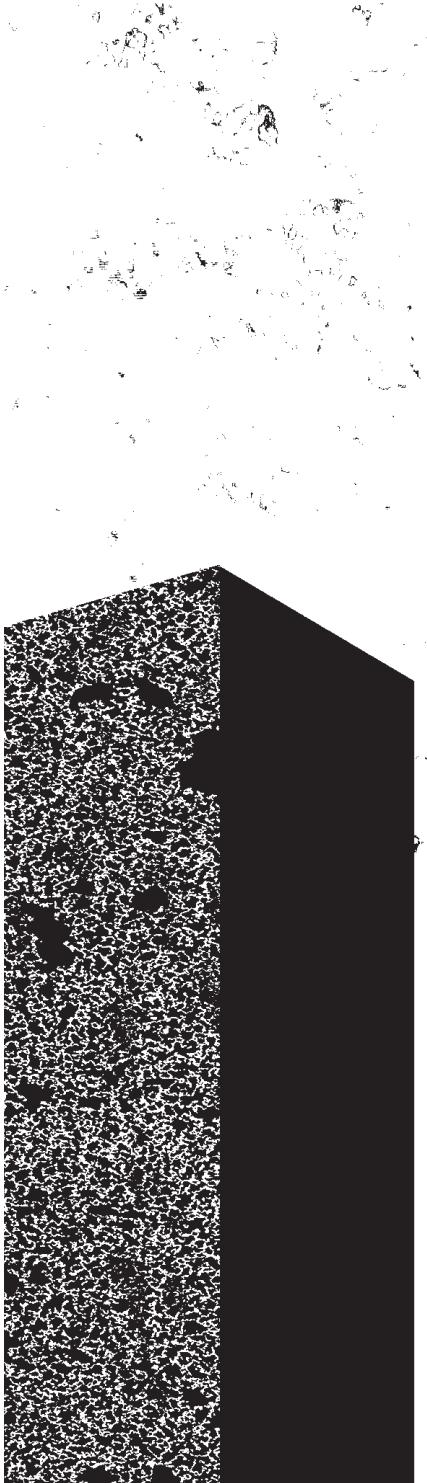
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Introduction

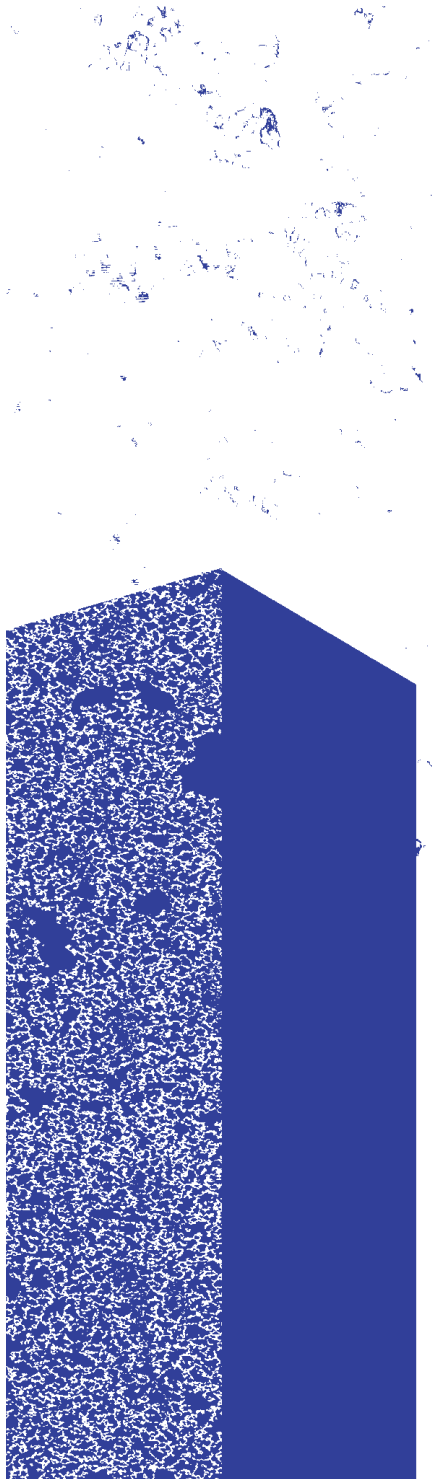


Like many sectors, public housing agencies are turning to data and technology in order to work more quickly and effectively. For example, to support regulatory enforcement, they are using data analytics to identify housing with a higher risk of property violations. To provide benefits, they use web portals and digital applications to streamline the process of finding and applying for opportunities.

However, these uses of data and technology also present risks. One potential risk is that data-driven techniques introduce unintended bias. Another risk is that the provision of technology services by third parties could result in the misuse of data and a loss of trust in public housing agencies.

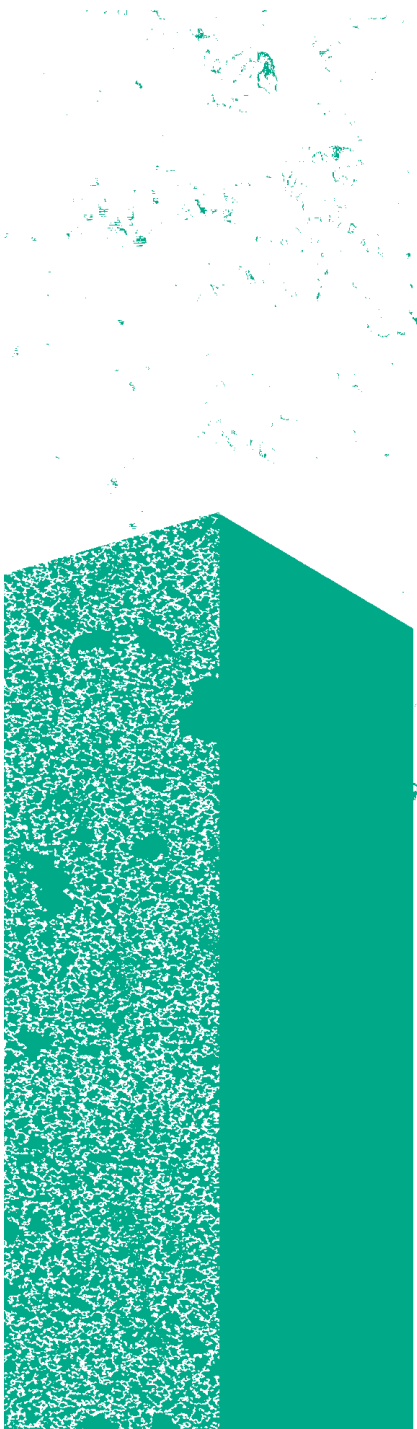
This brief outlines ways in which technology can assist in the work of public housing agencies, as well as the attendant risks. The brief will recommend several steps that public housing agencies can take to mitigate these risks, including community engagement, privacy practices, and vetting of third-party services.

Background



[Funded and overseen nationally](#) by the Department of Housing and Urban Development (HUD), public housing agencies have [a variety of responsibilities](#) with the overarching goal of [ensuring access to safe and affordable housing](#). Public housing agencies are responsible for a large variety of regulations, including [anti-discrimination](#) (on the basis of race, disability status, and, in many localities, income), [landlord harassment](#), and [building code violations](#). Public housing agencies also provide benefits to those who are experiencing housing instability, such as providing [temporary housing](#) or [financial assistance](#).

How Data and Technology Can Help Public Housing Work



Public housing agencies can use data and technology to support regulatory efforts or to help provide benefits.

Regulate Housing

Public housing agencies can use data and technology to improve the accuracy and efficiency of their regulatory enforcement activities and make the best use of limited enforcement resources. For example, public housing agencies can use data science to [identify areas where landlords are violating housing regulations](#) and focus resources on those areas. To do this, public housing agencies collect information regarding previous violations of regulations and where they occurred. They then combine that historical data with current information about the property, such as location, property type, owners, and rental price. Using data science, public housing agencies could feasibly predict which areas are more likely to be in violation of housing regulations to help target their efforts appropriately.

The data gathered by public housing agencies also can help community housing partners. Public housing agencies are already responsible for [creating data to further fair housing](#), such as data that summarizes demographics (e.g., race/ethnicity, country of origin, or limited English proficiency), economics (e.g., proximity to public transit, jobs, or level of poverty), and existing public housing locations. Public housing agencies can modernize how they aggregate and communicate this data so that other organizations can [effectively leverage this data to protect communities](#). For instance, community partners can use this data to weigh in on development plans and to advocate for victims of housing discrimination.

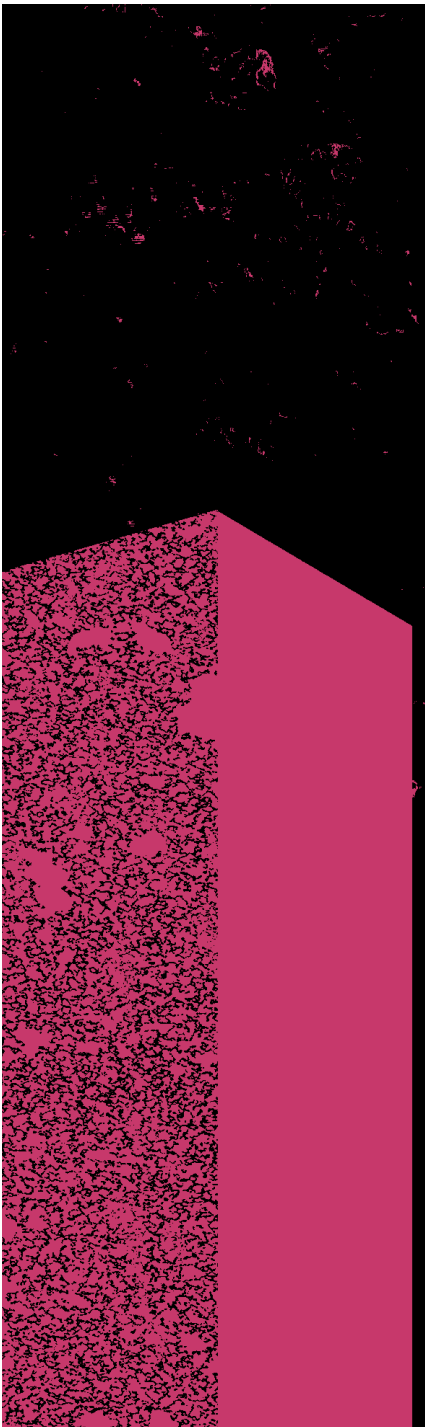
Provide Housing and Other Benefits

Public housing agencies also use technology to support benefits delivery in a variety of ways. First, technology can help streamline the application process. One simple innovation that could increase agency effectiveness is to supplement pen-and-paper record-keeping with digitized applications, as Denver, CO, did [for their severe weather shelter program](#). Processing applications in this way could be faster for public housing agencies.

Public housing agencies can also [make it easier for recipients](#) of one kind of benefit to receive housing benefits. Conversely, sharing data with other community partners can also help improve and streamline access to assistance outside of housing. For example, [education partners may need to customize programs](#) to fit the needs of students experiencing housing instability.

Using data analytics, public housing agencies can also identify areas of need and provide targeted assistance to those areas. Agencies can [combine existing data with new surveys](#) to figure out which individuals and communities might be struggling with housing instability. When combined with human-in-the-loop transparency and privacy requirements, algorithmic predictions can also help predict which individuals are likely to experience housing instability. This information can be used to [proactively connect individuals](#) with financial relief, [supportive housing](#), or other benefit programs.

How Lack of Privacy and Irresponsible Data and Tech Use Can Undermine Public Housing Work



As described previously, new applications of data analysis and technology can assist public agencies in achieving their goals of preventing discriminatory housing practices and expanding access to benefits. However, these benefits can only be achieved if public agencies also address potential risks that new uses of data and technology bring.

Biased Decision-making

Though data science can help public housing agencies surface likely cases of housing violations, it could also amplify historical biases in the data. The record of reported violations does not accurately reflect where violations are actually occurring due to things like the failure to conduct inspections or other enforcement activities in particular neighborhoods. In such cases, data science techniques could point public housing agencies away from areas of high need.

Using data to target or streamline access to benefits could also be susceptible to the same bias issues. The worst case scenario is that public housing agencies use algorithms to prioritize some potential benefits recipients at the expense of others who might also have been similarly in need. The negative consequences can be mitigated if data-driven processes are used only to promote available opportunities without precluding access. Thus, as public housing agencies prioritize their benefits work, they must take care to ensure an open application process for everybody and to preserve equity in their outreach work.

Privacy Violations and Lack of Trust

As public housing agencies share data with third parties such as community organizations, they must take care to protect individual privacy. Broadly, there are two kinds of data produced by public housing agencies: data about individuals and data about neighborhoods. Third-party access to information about applicants for housing benefits carries significant risks. Data about individuals cannot be anonymized since providing benefits requires knowledge of an individual's identity. If third parties do not adequately protect applicant information or, worse, themselves misuse applicant information, there could be dire consequences. Applicants for housing benefits can easily be targeted by [predatory practices](#). Moreover, hacked data about individuals can be used for [identity theft](#).

Though neighborhood-level housing data might seem safe from a privacy perspective, the reality is more complex. [Re-identifying individuals](#) from aggregate data is [frequently possible](#), especially because housing data contains location information that is [particularly susceptible to re-identification techniques](#). Re-identified data then poses a high risk of misuse, either by partner organizations or hackers who forcibly obtain such data.

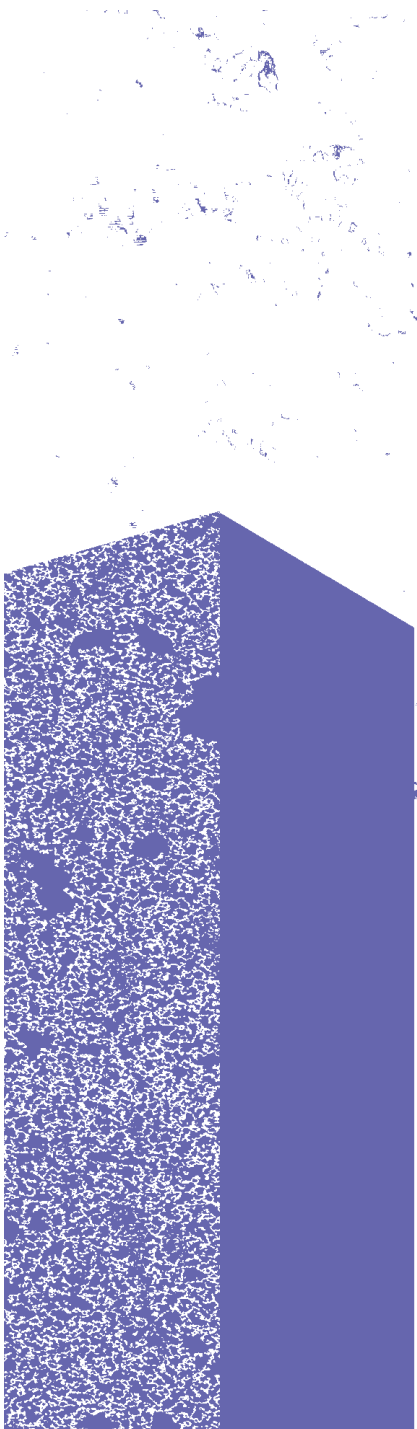
Recommendations for the Responsible Use of Technology

To mitigate the privacy and ethical risks associated with the use of data and technology, public housing agencies should take the following steps.

Establish Goals Through Community Engagement

Before utilizing technology and data, public housing agencies should first determine the goals for the proposed technology and [engage the community on risks and alternatives](#), including:

- **Articulate a clear objective and determine what role data and technology should play, if any.** Though technology is often viewed as a panacea, public housing agencies should resist the myth that technology will inevitably solve a large number of issues. Instead, public housing agencies should create measurable goals for the technology they intend to use.
- **Engage external communities through surveys, meetings, or focus groups.** As public agencies consider the best way to use data and technology, they should work with benefits recipients and housing organizations to identify the most valuable paths forward. Engagement goes beyond simply notifying affected parties. Instead, proper engagement requires investing significant time and money to involve others in the public housing agencies' decision-making process. Interested readers can find further guidance in previous work about [engaging communities in the education sector](#).



Protect Privacy

Public housing agencies should take proactive steps to protect the privacy of any individuals whose data might be collected or shared as part of the process of prioritizing and expanding benefits access. To do so, they should:

- **Adopt a data minimization approach.** Public housing agencies should take care to only collect the data that they need. Public housing agencies should also take similar precautions when sharing information with third parties and share only the minimum amount of information required. They should also make sure that third parties have appropriate policies and procedures in place to protect the data.
- **Only use data in the context for which it was originally collected.** As part of their privacy obligations, public housing agencies should specify the limited purposes for which data is collected and respect those limits in future work. If necessary, public housing agencies should obtain affirmative consent before using previously collected data for additional purposes.
- **Protect sensitive data about individuals through [data retention and deletion practices](#).** Public housing agencies should have policies and practices in place to ensure they retain the data only as long as it is needed for the purpose for which it was collected. When deleting data, public housing agencies should take care to thoroughly delete copies of data in an irreversible manner. Public housing agencies should also not sell access to data about individuals to third parties.
- **Use [robust access management practices](#).** When public housing agencies need to share data with others, they should do so with access management software that enables secure user authentication, role-based controls, and time-based expiration of access.

Mitigate Bias

As public housing agencies use data to support their work, they should be cognizant that data-based practices are not foolproof. Data may contain biases, and data-driven processes may also introduce biases. Accordingly, public housing agencies should:

- **Perform a risk assessment for potential biases introduced by data-driven processes.** This includes both risks from data bias and algorithmic bias. First, public housing agencies should interrogate which individuals or housing units might be left out or misrepresented in datasets. For example, existing data might reflect reports of violations but not violations themselves or historical biases in what areas were the subject of inspections or other enforcement activities. Also, many individuals in need of benefits might be [under-represented](#)

[in existing government data](#). Second, public housing agencies should also assess methodological or process-based risks from data analysis as well. For example, if public housing agencies prioritize reducing the number of housing violations, that might also mean ignoring cases of more severe but less frequent violations. In particular, severity might not be captured in existing data. Finally, agencies need to take steps to mitigate the uncovered biases, such as by limiting how much of their work relies on existing data or finding ways to expand available data, e.g., by inspecting for violations in places without a previous record.

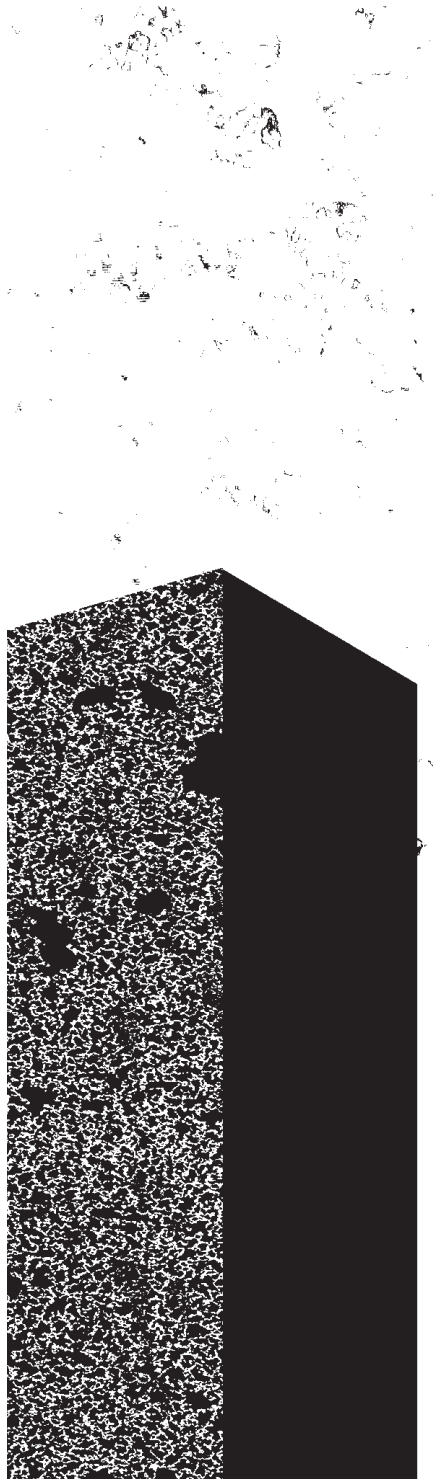
- **Focus on use cases that expand benefits access or increase awareness about opportunities instead of on use cases for determining eligibility or preclude access.** Data-driven processes can help public housing agencies be more effective in communicating available opportunities to those who might be eligible for them. The use of data analysis for outreach poses fewer risks. This is only true if benefits applications remain open to all though (see the next recommendation). In contrast, using algorithms for benefits eligibility determination carries significant risks – previous CDT work covers the topic in more detail.
- **Preserve the ability for any individual to apply for benefits.** Even if public housing agencies use data to reach out to individuals in need, they should never close applications for others who might have been missed by data-driven practices.

Vet Vendors

When public housing agencies procure services from vendors, they should take care that vendors satisfactorily address the previous issues by taking the following actions:

- **Develop and apply clear standards, requirements, and processes for procuring and auditing third-party technology systems.** Agencies should ensure that the efficacy, bias, privacy, and security requirements for third-party systems are met by establishing a clear and stringent procurement process. Vendors should be held to the same standards and use the same practices as government agencies, e.g., data minimization practices.
- **Regularly assess vendors against these standards.** Even after a contract finds a winning bid, public housing agencies must continually impact the vendor's work along the same standards.

Conclusion





If used properly, data and technology can be helpful tools for public housing agencies and their work ensuring that everyone has access to safe and affordable housing.

The recommendations in this guidance can help public housing agencies make the most of technology while avoiding potential risks to bias, privacy, and security.

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