

IVORY INNOVATIONS

Equitable Affordable Housing in the Digital Age

8 ingredients for leveraging technology to enhance access



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Introduction

The current system for finding affordable housing in the U.S. is broken (and in many cases, doesn't exist). For families and individuals that can afford market rent, platforms like Zillow and Trulia facilitate the housing search process. However, subsidized "capital A affordable" units are typically not included on these sites, meaning low income renters are left to navigate multiple government and property-specific websites. These renters face complicated application processes, disparate and outdated information sources, and for many, race and socioeconomic-based discrimination. The stress is amplified by the increasingly limited supply of affordable rentals and competitive process to apply for and lease those that are available.

You cannot choose what you cannot find – at Exygy, Housing Navigator Massachusetts, and Ivory Innovations, we believe that **choice** and **access** are critical components of the broader, ongoing housing affordability conversation. The platforms we built – [Exygy's Bloom Housing](#) and [Housing Navigator MA](#) – help low-income renters find affordable, available, and accessible housing in the San Francisco Bay Area and Massachusetts, respectively.

We think these platforms should be replicated and built elsewhere – our hope is this guide gives you some inspiration, a few tools, and a bit of confidence to get started. While these platforms and services do different things, all leverage technology to improve housing access—more quickly, more conveniently, and with positive impacts for fair housing. They also align around eight common ingredients for success:

8 Common Ingredients for Success

1. [Focus on the user experience](#)
2. [Be data-obsessed](#)
3. [Catalysts and champions make things happen](#)
4. [Stakeholder engagement ensures widespread adoption](#)
5. [Make it a unified platform](#)
6. [Prioritize accessibility and racial equity](#)
7. [Balance renter and owner needs](#)
8. [Be realistic about the funding needed to build, maintain, and improve the platform](#)



Questions? Other parts of the process you'd like us to explore? Let us know [here](#).



#1: Focus on the user experience

If you're reading this report, we likely have the same overarching goal: to simplify the complex world of affordable housing, and provide renters with critical information to help them find housing. Affordable housing is a bog of financing acronyms and multi-level regulation. A renter does not need to know a property was financed using tax credits. **A renter does need clear answers to questions like: Are there units that fit my family? Does eligibility match my income including any minimum income requirements? If I have mobility needs, will they be addressed? If I'm interested, what do I do next—apply online, get a form, etc.?** Our tools achieve a high quality user experience by rigorously testing assumptions, wording, and wireframes with scores of renters. Each platform has also evolved over time based on user feedback.

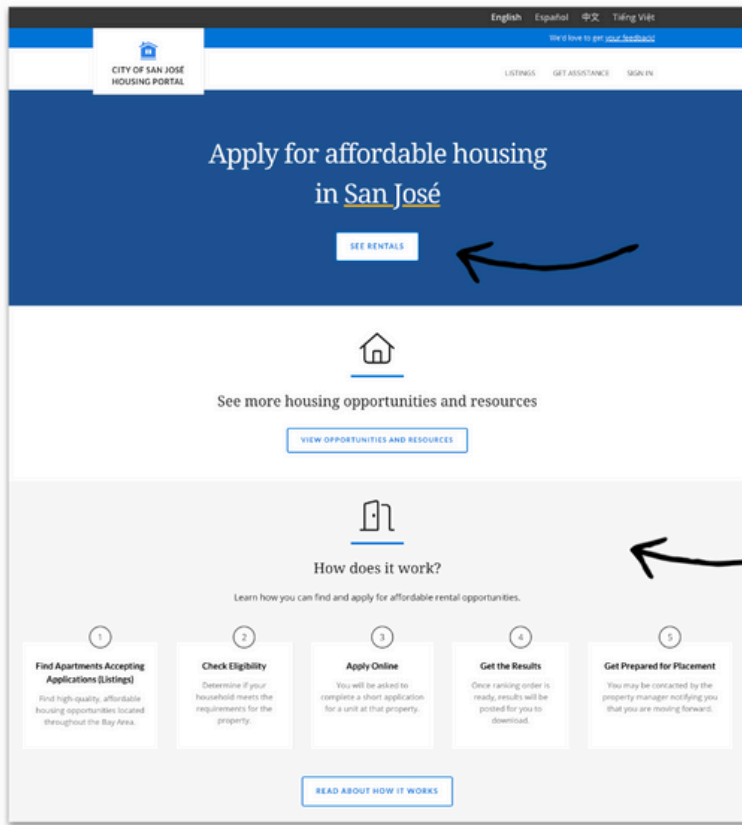
High on the priority list is ensuring every listing includes the most timely information, especially a "call to action". Whether it's contact information (property website, telephone number, or email address) or application information (download paper application or apply via digital application), renters should not encounter a dead end (stale contact information, broken application link) or closed doors (unexpectedly closed waitlist). Renters have told us time and time again that they do not want a list of affordable properties. Rather, they are searching for the details that matter for properties with open units and open waitlists.



User testing the Housing Navigator MA platform.

Bloom Housing

Bloom Housing takes an "applicant-first" approach to developing affordable housing portals - meaning the applicant experience is considered during development of Bloom Housing and tested with potential applicants. Our design team interviews applicants to listen and empathize with how they use the portal and we ideate with stakeholders - property managers, developers and jurisdictions - to prototype, test and release new features that work for those working on every step of the lease-up process. This results in an equitable applicant experience, whether or not the applicant speaks English or has accessibility needs. For applicants, the experience is consistent - from listings to applications - and is a stark contrast to the traditional affordable housing application experience. With information that varied wildly between developers and property managers and entirely different applications for every property - including photocopied paper applications that needed to be submitted in person on weekdays during business hours only.



Simple and Action Oriented

Clarity about the affordable housing process in plain language

The first page that resident applicants see when they go to San Jose’s affordable housing portal.

Housing Navigator MA

Housing Navigator MA’s earliest research (2018) found that searching for affordable housing was an almost unfathomable waste of effort and an emotional drain. From the outset, user input guided design choices and priorities. If you look at our site today and wonder how we made key decisions – everything from the terminology like “rent-based-on-income” or the organization of the landing page – the answer almost always is we relied on user input from interviews, surveys and product testing. This has continued as we innovated ways to address user pain points. For example, renters told us they wanted us to spotlight more actionable waitlists. We spent six months pilot testing tools and processes with both renters and owners, and then launched our short waitlist feature.



#2: Be data-obsessed

We cannot say it enough: a positive user experience is as much *or more* about high quality listings—which means sound, consistent data collection and maintenance—than it is about software. **The information displayed is not only timely, reliable, and accurate, it is consistent from property to property.** When, as is often the case, owners display the same information in their own, unique ways, renters struggle as they are expected to learn a new way of understanding already complicated information each time they visit one developer's website or another property manager's tenant selection criteria.

Hold yourself to high standards...would you recommend your site to a family member or friend searching for affordable housing? There are many ways of keeping data as good as possible, and we use them all in varying measure. A few examples:

Bloom Housing

Bloom Housing is typically launched with property listings-only, using existing digital and paper applications that property managers have in place. This centralized system creates more consistency across property listings as applicants will have the same experience from property to property - regardless of developer or property manager. This initial launch includes only property listings that are accepting applications for vacant units or open waitlists - including initial lease-up or reopenings. For jurisdictions that have a robust universal list of their subsidized housing units, getting properties onto the portal is quickly accomplished through a simple spreadsheet transfer to the portal - which creates a draft listing page for each property. Each property is then assigned to the property manager that maintains waitlists and accepts applications. Property managers are given access to Bloom Housing's Partners Portal, which allows them to edit their draft listings and ultimately manage digital applications (and manually enter in paper applications). Later phases of Bloom Housing roll-out include the launch of a universal digital housing application, which creates more consistency for the applicant, who applies using the same online or paper application across all properties on the portal.

Housing Navigator MA

An early feasibility study for **Housing Navigator MA's** search product was subtitled "the data has to be really good." That became our product watchword. Really good data has two prongs: 1) collecting the initial dataset and 2) maintaining high quality. Each of these was more involved and required more staffing than anticipated at the outset—but ultimately doable. Housing Navigator MA provides information on the complete inventory of affordable housing in our state. If it's permanent rental housing with any kind of income-restriction, the goal is to make it visible. To make it happen, we rely on a mix of data collection, bulk importing, and owners maintaining their own listings. We partner with our state housing funding agencies who require that properties they fund list on our search tool. Our data maintenance routines include a yearly listing review with the 80+ owners who work with us regularly and (modeled on HousingLink's time-tested approach), annual check-ins with the 10 municipalities which foster 95% of the inclusionary units in our state, and cross-checking against other public inventories. While we always explore automation of these tasks where



#3: Catalysts and champions make things happen

Most agree there is a problem around housing access, however, it takes a catalyst and numerous champions to actually tackle the issue, develop a solution and drive implementation. In many cases, **examples of champions are individuals working at a city or county, a foundation interested in funding the effort, innovation teams that see the access to housing as a digital divide issue, or a handful of passionate people interested in solving a problem.** In other cases, the catalysts are plaintiffs in a lawsuit (Los Angeles and Minneapolis). HousingLink was created out of a lawsuit -- Hollman v. Cisneros - in Minneapolis around concentration of race and poverty in the city. Plaintiffs and defendants were part of creating the platform.

Housing Navigator MA

For **Housing Navigator MA**, in April 2018, three passionate people—all of whom were long-time, respected, and connected participants in our state’s affordable housing ecosystem—sent invitations to a brainstorming session around housing access. A dozen people were expected and, to the delight of the organizers, over thirty people showed up. The next year, over 120 organizations were engaged in the conversation. One of the three original convenors continued project managing the effort—at times as 20/hr a week commitment— and eventually became Housing Navigator MA’s founder.

Bloom Housing

Since the time the San Francisco portal was developed, the **Bloom Housing** portal has since expanded throughout the 9-County Bay Area and beyond. Throughout each step of expansion there have been champions along the way who have seen the full vision for developing an affordable housing portal that not only works for their own community, but is an open source portal that allows new features developed on one portal to be implemented seamlessly on existing portals. Champions for Bloom Housing have included the County of San Mateo SMC Labs - which saw the importance of connecting digital technology with affordable housing needs, Silicon Valley Community Foundation - which provided a grant to the City of San Jose to first pilot their housing portal, and Google.org - which helped lead the way for housing portals in San Francisco and Detroit.



#4: Stakeholder engagement ensures widespread adoption

Broad participation—early and often—is the sturdy thread that binds all our efforts. The initial stage of each tool involved a **steering committee with sector and cross-sector engagement: property owners - both large and small, market rate and nonprofit owners; property managers and compliance teams; community-based organizations; affordable housing advocates; housing counselors; housing authority representatives, housing funders (both transactional and philanthropic) and public sector staff**. Not only is this important for creating the momentum to move adoption forward, each group ensures the ultimate product meets needs across the lease-up process, aligns with government processes, and ensures there are only positive, intended consequences when it comes to fair housing.

After the initial phase, intentional, frequent engagement keeps relationships strong and feedback fresh. In later phases, outreach morphs into ongoing participation in user testing, information sessions and feedback opportunities for social service providers, and typical marketing efforts.

Housing Navigator MA

Housing Navigator MA's first phase was a Steering Committee from interested constituencies—local and state government, housing advocates, housing owners, human service providers, philanthropy—and keeping everyone around the table to set the vision and work out the details. Participation/engagement opened up further through convening working groups and holding a forum “The Future of Housing Search” attended by 200+ and highlighting the model set by our colleagues at HousingLink. The Steering Committee focused on critical foundational decisions:

- Where would be the organizational home for the effort long-term?
- What would be the vision for a search tool both short and long-term?
- Where would initial funding and revenue come from?

A critical moment was aligning everyone and setting expectations with a common, layperson-friendly product description. This brief document used five user personas and described what the search tool would do (vs solving how it would be done.) The document prioritized functionality, created a way to estimate costs, and was flexible enough to leave room for change based on user testing. It sparked the road map for the next 1.5 years.

Bloom Housing

Throughout each local implementation of **Bloom Housing**, Exygy has brought the same level of stakeholder engagement, iterative research and development, 1-1 user studies, and facilitated local steering committees to ensure the complicated mix of stakeholders involved with each region is brought along from inception to launch. The start of each implementation of Bloom Housing begins with interviews with property managers,



developers and jurisdiction staff followed by workshops focused on listings and applications, as well as development of a steering committee to provide guidance throughout development of the portal.

Additionally, we test functionality with potential applicants, with a special focus on local priority communities (ie. Spanish speaking residents) as well as those with accessibility needs. In many cases, we partner with local community-based organizations with a strong membership base to provide us with applicants for user testing. We in turn, provide support to their staff to ensure they are well versed in the application process, using the training the trainers model, to help with outreach and engagement on the portal's functionality.



An example of how Bloom Housing conducts co-creation sessions with diverse stakeholders of the affordable housing ecosystem, photo of our team facilitating a workshop in Alameda County.



#5: Make it a unified platform

Prior to our launches, renters spent hours physically going place-to-place, taking time off from work, waiting for the bus, and then hearing that a building had a closed waitlist. One case manager in rural Massachusetts reported spending 30% of her time googling to identify affordable housing options in vain. Affordable housing owners often do not list on the typical aggregator sites, both for reasons of habit and the inability of these sites to convey information uniquely needed for affordable housing. You cannot choose what you cannot find.

Although the affordable housing ecosystem spans multiple government agencies and geographies, **we can only address renter needs and further fair housing goals by creating one centralized comprehensive listing service and/or application portal.** This also affords the opportunity to link centrally to other housing entities and resources - such as Housing Authorities, housing counselors, and housing-related services.

Similarly, while housing opportunities and resources might span multiple local agencies (city, state, federal) or even various departments of one jurisdiction (housing, health and human services, homelessness), residents should not be forced to understand how housing programs and policies are administered in order to seek help. No one should reach a dead-end in their search because they do not know the difference between a project-based voucher, tenant-based voucher, or low-income housing tax credit. Or the difference between a housing department at a city or county versus a housing authority.

Whether non-profit, open source platform, or in-house government, our efforts show that you can get to the same “one-stop-shop” using different organizational homes as the route. There is no single “right” home organizationally.

HousingLink & Housing Navigator MA

Both **HousingLink** and **Housing Navigator MA** are structured as nonprofits. The advantages of a nonprofit “home” include:

- 1) ability to combine multiple funding streams from philanthropy, public sector, fee-for-service and contracting;
- 2) intentional governance drawing on the range of housing interests;
- 3) independence from ebbs and flows of public sector support; and
- 4) mission-priority around serving low and moderate income renters which builds trust.

Had there been an existing statewide nonprofit that was excited about leveraging technology for housing access, Housing Navigator MA could have been a program within a larger organization. An interesting, common challenge for nonprofit-based technology efforts is that nonprofit support is often geographically-focused while technology makes spanning geographies possible and more highly effective.



Bloom Housing

Bloom Housing, as an open source product developed by Exygy, is a portal that is integrated into a city, county, or other government agency's own website. The look and feel of the portal matches that of the local jurisdiction, but its structure is similar across all Bloom Housing portals. By embedding into a local city or county website, potential applicants are assured they are using a trusted source for information and housing applications. In many cities, the affordable housing application process occurs mainly outside of the local government's purview, which has led to various inequitable outcomes including application fees levied on applicants for properties without any foreseeable openings, high credit check fees required early on in the process even when it's unclear if an applicant is eligible, and overall confusion due to disparate application processes that are not centralized or coordinated. Whether marketing is directed towards local community organizations, social media or ethnic newspapers, having links directed towards a government website in a city or county's housing department page provides legitimacy and accountability.



#6: Prioritize accessibility and racial equity

Our portals focus on accessibility, fair housing and racial equity, due to the extensive and diverse populations our portals serve.

HousingLink

As noted, **HousingLink** was created directly as a result of a lawsuit around the concentration of poverty and racial exclusion. At the systemic level, we focus on opening up opportunities and breaking down barriers - especially those that reinforce patterns of racial segregation or thwart housing seekers. Everything should theoretically be easier to find and apply to. We make a particular effort to ensure visual accessibility and make sure accessible units are highlighted on our site. Finally, a digital tool eases the ability to present things in multiple languages.

Bloom Housing & Housing Navigator MA

Our tools are a vital part of the fair marketing ecosystem - many of HUD's recommendations from their [recent marketing guidelines](#) can be implemented using our portals' digital tools. For example, HUD marketing guidelines encourage increased application submission hours, multiple submission methods, and marketing efforts beyond word-of-mouth or for-rent signage. For portals like **Bloom Housing** and **Housing Navigator MA**, a centralized affordable housing portal can help property managers take steps toward meeting HUD's marketing guidelines, but more importantly, reach the most applicants - especially the hardest to reach populations.



#7: Balance renter and owner needs

For every effort, there is a much needed human element to encourage adoption, instill empathy into the frustrations of housing search, and spread the word about our tools. Software augments. It does not replace. This is why balancing user needs is critical. **While it's true we operate with a renter user-focused mindset and prioritize their needs, we also know making things easier for owners—with things like input tools that are easy for them or bulk uploads of information—ultimately also make data better and things easier for renters.**

We also partner with human service providers. From property managers updating listing information and receiving applications to housing coordinators focused on managing the portals to jurisdictions reviewing marketing plans, the technology does not replace the many important stakeholders but rather updates the infrastructure they rely on.

The screenshot shows the 'Partners Portal' interface. At the top, there's a navigation bar with 'LISTINGS', 'USERS', 'SETTINGS', and 'SIGN OUT'. Below that, the page title is 'New Listing' with tabs for 'LISTING' and 'APPLICATIONS'. A 'CLOSED' button is visible. On the left, there's a summary of applications: 'All Applications: 1,235', 'Pending Review: 20', and 'Resolved: 2'. A 'Filter by Name' input field is present. The main table lists applications with columns for 'APPLICATION SUBMISSION DATE', 'FIRST NAME', 'LAST NAME', 'APPLICATION NUMBER', 'HOUSEHOLD SIZE', 'DECLARED ANNUAL INCOME', and 'SUBSIDY OR VOUCHER'. The table contains 10 rows of data. At the bottom, there are 'PREVIOUS' and 'NEXT' buttons, along with pagination information: '1,235 Applications', 'Show 10', and 'Jump to page 10'.

| APPLICATION SUBMISSION DATE | FIRST NAME | LAST NAME | APPLICATION NUMBER | HOUSEHOLD SIZE | DECLARED ANNUAL INCOME | SUBSIDY OR VOUCHER |
|-----------------------------|------------|-----------|--------------------|----------------|------------------------|--------------------|
| 07/01/2020 at 8:47:12PM | Lisa | Simpson | APP-00133030 | 3 | \$92,000 | No |
| 07/01/2020 at 8:48:30PM | Bart | Simpson | APP-00133031 | 1 | \$73,000 | No |
| 07/01/2020 at 8:49:40PM | Marge | Simpson | APP-00133033 | 2 | \$85,000 | No |
| 07/01/2020 at 8:50:40PM | Homer | Simpson | APP-00133034 | 2 | \$42,000 | No |
| 07/01/2020 at 9:02:18PM | Ned | Flanders | APP-00133035 | 3 | \$102,000 | No |
| 07/01/2020 at 9:12:11PM | Nelson | Muntz | APP-00133036 | 3 | \$85,000 | No |
| 07/01/2020 at 9:17:01PM | Edna | Krabappel | APP-00133037 | 2 | \$55,000 | No |
| 07/01/2020 at 9:22:44PM | Selma | Bouvier | APP-00133038 | 4 | \$89,000 | No |
| 07/01/2020 at 9:34:55PM | Carl | Carlson | APP-00133039 | 3 | \$73,000 | No |
| 07/01/2020 at 9:43:50PM | Waylon | Smithers | APP-00133040 | 5 | \$98,000 | No |

The Partners Portal streamlines the process for receiving and processing applications.

Bloom Housing

For **Bloom Housing**, this has meant bringing developers and property managers along throughout the development of local Bloom Housing Implementations. It has also resulted in the development of a robust back-end system with a very friendly User Interface called the "Partners Portal". The portal serves as the



internal system that jurisdictions and property managers use to add/update listings, create housing preferences, review applications digitally submitted, and add paper application information. For developers/property managers who currently do not have a digital application system, it is a useful resource for receiving digital applications - downloaded as CSV files which can then be uploaded into their own internal property management systems.

Housing Navigator MA

Similarly, **Housing Navigator MA** has two team members supporting owners day-to-day. Our software has an owner input tool and owner dashboard designed to be as simple as the complexities of affordable housing allow. Over time, we have reshaped the tool based on owner feedback. We also strive to find places where the pain points of renters and owners overlap. The short waitlist feature we launched in 2023 was a result of both renters expressing an interest and owners telling us some of their properties had short waiting periods they would be pleased to be able to feature.



#8: Be realistic about the funding needed to build, maintain, and improve the platform

From the outset, we were aware that our efforts would soon flounder if we didn't have **financial support to both create and keep our platforms in top shape.**

If you are used to the price tag for building housing, the cost of standing up a service like ours may strike you as relatively affordable. The initial seven-year investment in HousingLink was \$5M which translates to \$9.7M in current dollars, or about ~\$1.4M / year. Housing Navigator MA got to launch, building software and creating $\frac{2}{3}$ of its current listings with \$1 million. Its current budget for the search tool including adding features and maintaining data is around \$1.4 million/year.

HousingLink & Housing Navigator MA

HousingLink and **Housing Navigator MA** draw on a mix of earned revenue, philanthropy and public sector support. For Housing Navigator, the first funders to step forward-- two local foundations, the state's Housing Finance Agency, and an individual major donor who was a housing developer--illustrated the cross-sector



support that has continued. HousingLink's funding is split between government, philanthropy, and contracts for services, with the MN Housing Finance Agency as their largest contributor.

Bloom Housing

Bloom Housing was initially started with the development of the City and County of San Francisco's Portal, and expanded with local implementations in neighboring counties such as Alameda and San Mateo, as well as the City of San Jose. Together, these investments have funded the build out of the system. Due to the open source nature of our platform, each Portal benefited from the investments of the other jurisdictions and contributed to build new functionality that was made available to all Bloom implementers. Continued implementation in other jurisdictions are now led by Exygy through a Software as a Service (SaaS) model, which brings the cost down considerably - as long as local implementation does not require significant customization for local needs. Over the 10 year lifetime of the Bloom project, the average yearly investment has been similar to Housing Navigator -- \$1.5-2M/yr. Today, we're able to serve small and medium size jurisdictions on the order of \$100k/yr, while we are also able to accommodate the needs of large jurisdictions that may have more custom needs and require higher dedicated services and associated costs.

Conclusion

It takes many skilled, passionate, and persistent people to ease the affordable housing crisis. While this report has just scratched the surface of all that goes into implementing a new system for finding and applying for affordable housing, our main goal is to share how it has been done before so you don't feel alone in the problems you're working to solve.



Did you find this resource helpful, or have questions? Other parts of the process you'd like us to explore? Let us know [here!](#)

More Information

About this Effort -

We've been getting a lot of questions: How did you build this? How can I replicate this platform in my city, county, or state? In response, we came together in partnership – Exygy, Housing Navigator MA, and Ivory Innovations – to create this guide and answer those questions. The Bloom Housing (built by Exygy) and Housing Navigator MA teams shared their experiences, challenges, and learnings from the process, and Ivory Innovations helped consolidate and refine each platforms' insights into this guide.



About the Authors -

Bloom Housing

[Bloom Housing](#) - a product of [Exygy](#) - is a centralized affordable housing portal that simplifies the process of finding and applying for home seekers, housing staff and property managers. Exygy partners with government teams to design and build technology that improves lives. Since 2015, Exygy has focused on affordable housing innovation, including Bloom Housing and the [Housing Readiness Report](#).



[Housing Navigator Massachusetts](#) is a 501c3 creating technology and collecting data that bring ease and equity to housing search.



IVORYINNOVATIONS

[Ivory Innovations](#) is a nonprofit with the mission of catalyzing innovation in housing affordability. Every year, the [Ivory Prize](#) recognizes the most creative, scalable, and impactful innovations addressing housing affordability. Housing Navigator Massachusetts was a Top 10 Finalist for the Ivory Prize in 2023.

Special Thank You -



[HousingLink](#), founded in 1995, helps connect renters to affordable units in Minneapolis, St. Paul, Twin Cities suburbs, and throughout all of Minnesota. We are grateful to HousingLink's President, Sue Speakman-Gomez, for sharing the HousingLink story with us - many HousingLink examples can be found in this guide.