



THE WORLD POST COVID-19

THE OPPORTUNITY PROJECT

2021 PROBLEM STATEMENTS

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

Analyzing Housing and Migration Trends Post-COVID 19

THE CHALLENGE – During the pandemic, housing needs quickly changed, as some people moved far from employers or to non-urban locations, and some industries collapsed, grew, or shifted to remote operations. This challenge is to 1) use data to help stakeholders understand post-pandemic housing and migration trends, and/or 2) create tools that help to visualize and process this information for data driven predictions and recommendations. Resulting products could focus on interactive data analysis or visualizations, AI tools, interactive maps, predictive analytics tools, or others.

EXECUTIVE CHAMPION – Kurt G. Usowski, Ph.D., Deputy Assistant Secretary for Economic Affairs, U.S. Department of Housing and Urban Development

THE PROBLEM – The U.S. Department of Housing and Urban Development (HUD) has supported low-income housing for more than 50 years, using data about housing needs and demographics to inform affordable housing policies and programs. Over the past year, the COVID-19 pandemic's global shutdowns challenged many past assumptions about affordable housing needs. Office worker commutes and business travel fell suddenly and sharply, with [60 million fewer commuting miles](#) as 37.1% worked from home. This in turn cut the use of hotels, airlines, dining, entertainment, and more. For instance, [business travel spending fell 76%](#). Millions remain unemployed. Some social and economic patterns are likely to return after the pandemic, while others may continue in a changed form or be gone forever. The housing needs of both remote workers (e.g., office jobs) and on-site workers (e.g., restaurants, delivery, hospitality, etc.) are shifting. Affordability may change for some urban areas, as people relocate to desirable and newly achievable places including the less expensive exurbs of large cities, to lower-cost southern states, and to communities that facilitate non-work activities such as golfing, boating, hiking, art, music and live entertainment, etc.

THE OPPORTUNITY – Many stakeholders, including local Public Housing Authorities, city and regional planners, housing developers, schools, state and local governments, and many federal agencies need to understand the changes coming in the post-pandemic era. For example, these stakeholders are facing challenges including:

- Where might housing soon become affordable if remote workers create vacancies?
- What are the locations, industries, and characteristics of people who now require housing assistance?
- How might HUD deliver and optimize assistance as people can choose to reside in transitory, semi-permanent, or remote housing?
- What are potential strategies to support unemployed and retired people who cannot afford costly housing or relocation?

The changes resulting from the pandemic affect numerous government services, including schools, healthcare, emergency responders, energy and utilities, roads, railroads, airports, etc. Industries and organizations outside of housing that have already shifted to heavy or full remote work (e.g., technology, software) might adapt successful existing strategies and provide value from lessons learned.

VISION FOR SPRINT OUTCOMES – Deliver essential and timely information to stakeholders who support local affordable housing, by gathering and/or analyzing relevant data necessary to plan the post-pandemic changes, requirements, and priorities of housing assistance programs.

TARGET END USERS – Any stakeholder involved in affordable housing, to include HUD clients (in the general population), HUD landlords, real estate developers, banks and funding organizations, public housing analysts, local Public Housing Authorities (PHAs), non-government advocacy organizations, city and regional planners, tribal governments, etc.

RELATED DATA SETS

- [COVID-19 Data Hub](#), U.S. Census Bureau
- [COVID-19 Household Pulse Survey](#), U.S. Census Bureau
- [COVID-19 Small Business Pulse Survey](#), U.S. Census Bureau
- [American Housing Survey](#), U.S. Census Bureau and U.S. Department of Housing and Urban Development
- [Key Economic Indicators](#), U.S. Bureau of Labor Statistics

LEAD POINTS OF CONTACT

- Greg Castello, Director, Office of Innovation, Department of Housing & Urban Development
- John Leggitt, Innovation Facilitator, Office of Innovation, Department of Housing & Urban Development

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

Tackling the Climate Crisis through Climate-Smart Communities

THE CHALLENGE – This sprint challenges participants to create tools that enable local decision-making about climate resilience and federal capacity to support local-level priorities, to improve climate resilience planning in communities around the nation. This may include easy-to-use geospatial information tools to help local governments identify and integrate locally relevant federal data to tackle the impacts of climate change on their communities.

EXECUTIVE CHAMPION – Tony LaVoi, Chief Data Officer, NOAA

THE PROBLEM – Climate change-driven extreme events and changed patterns of temperature and precipitation are causing cascading problems in our nation’s communities. As the associated frequency, severity, and costs increase, so, too, does the risk facing Americans, especially those most vulnerable to climate impacts, such as poor, rural and minority populations. Some of the greatest climate-related hazards include extreme heat, drought, wildfires, severe storms and very heavy precipitation, sea level rise and stronger storm surges, and poor air quality. Unfortunately, the pace and scale of climate-related impacts are generally outpacing our nation’s response. For example, both the average annual number and combined cost damages of [billion-dollar disasters \(BDDs\)](#) in the United States have quadrupled since 1980. Over the last four decades, our nation has gone from an average of 2.9 BDDs costing \$18 billion per year in the 1980s, to 12.3 BDDs costing \$82.5 billion per year in the 2010s.

Resilience to these growing threats must be built locally. But to guide and inform their long-term planning and make climate science-informed decisions, local decision makers need data from all levels of government at their fingertips. They need to be able to customize geospatial information in locally tailored maps, visuals, and text to communicate about and address local climate-related risks and opportunities.

THE OPPORTUNITY – Though some larger cities and well-resourced locations have access to GIS tools that help to integrate and visualize this data, many smaller governments lack the expertise and resources to produce their own locally synthesized geospatial data assets –especially those that are disproportionately impacted by climate change and that may lack the resources to develop their climate resilience plans independently. Furthermore, federal agencies’ datasets can be hard to find and use, in part because they are widely scattered across agencies. Solutions to this challenge have been called for in recent policy such as the [Executive Order on Tackling the Climate Crisis at Home and Abroad](#).

To address this challenge, local governments need tools that help them to easily locate and synthesize high quality data from all levels of government, and use that data to map, visualize, and communicate about their climate-related risks and opportunities. Such tools would also improve the nation’s collective ability to share information about the outcomes and lessons learned from actions taken to build climate resilience, and to produce quantitative estimates of the costs and benefits of taking action.

VISION FOR SPRINT OUTCOMES – Municipal, county, and tribal governments will be able to quickly and easily find and integrate federal agencies’ scientific and socioeconomic data, and pair it with their own local data. Communities of all types will be empowered to understand their vulnerabilities and accelerate their pace of climate resilience planning. The availability of the resulting tools will also reduce each community’s planning costs.

TARGET END USERS – The two primary target audiences are: (1) *municipal, county, tribal, and state decision makers* who are responsible for planning and action to protect people, property, resources, services, and infrastructure from climate-driven extremes, **especially in underserved communities**; and (2) *climate adaptation/resilience professionals* who provide local decision makers with expert guidance and translation services to help guide and inform development of their local [climate](#) resilience plans.

RELATED DATA SETS

- [Global Historical Climatology Network Data](#), National Oceanic and Atmospheric Administration (NOAA)
- [Sea Level Trends](#) and [Patterns & Projections](#), National Oceanic and Atmospheric Administration (NOAA)
- [Drought.gov Data & Maps](#)
- [Climate Model Intercomparison Projections](#), University of Melbourne
- [River and Stream Flow Data](#), U.S. Geological Survey (USGS)
- [Sea Level Rise Inundation Maps](#), National Oceanic and Atmospheric Administration (NOAA)
- [Risk Maps](#) and [Floodplains](#), Federal Emergency Management Agency (FEMA)
- [National Risk Index](#), Federal Emergency Management Agency (FEMA)
- [Census Tract Maps](#), U.S. Census Bureau
- [Social Vulnerability Index](#), Centers for Disease Control and Prevention (CDC)
- [Community Resilience Estimates](#), U.S. Census Bureau
- [Climate Data on Extremes](#), Climdex

LEAD POINTS OF CONTACT

- David Herring, Communication Division Chief, NOAA Climate Program Office
- Kim Valentine, Acting NOAA Geospatial Information Officer

CONSUMER FINANCIAL PROTECTION BUREAU (CFPB)

Preventing Crisis for Low-Income Renters & Small Landlords

THE CHALLENGE – Develop innovative digital tools to prevent financial hardship and housing insecurity by raising awareness of housing assistance resources and connecting at-risk households with housing assistance.

EXECUTIVE CHAMPION – Dave Uejio, Acting Director, CFPB

THE PROBLEM – Housing insecurity, or access to affordable housing for lower income households, is not a new challenge facing our country, but it has been exacerbated by the COVID-19 pandemic. In 2020, those who fell behind at least three months on their mortgage **increased 250 percent to over 2 million households**. Collectively, these households are estimated to **owe almost \$90 billion in deferred principal, interest, taxes and insurance payments**. Similarly, **over 8 million rental households are behind in their rent**. Now, as the economy recovers from the impacts of the pandemic, eviction moratoriums established to help vulnerable renters will sunset. As these protections end, many households that faced housing insecurity prior to and during the pandemic will have increased challenges resuming rent or being able to cover back payments, potentially leading to households being displaced and/or individuals becoming homeless.

Displaced households will be impacted by other factors straining the supply of affordable housing, placing displaced households at even higher risk for homelessness or unstable housing. One of these factors is the strain of the pandemic on small landlords. Small landlords – defined as those with 10 or fewer units – account for nearly half of all rental units and represent an important source of affordable housing in many areas. Yet many are not prepared to weather significant financial hardships such as missed tenant rent payments, and therefore may instead decide to sell off their rental properties or find other tenants. These landlords may feel further discouraged to continue renting or retaining tenants in need of assistance because, in many instances, landlords and tenants must coordinate to capitalize on rental assistance programs. As time passes, landlords may face the tough decision to evict renters in order to retain their properties if assistance is not swiftly provided, despite being otherwise willing to help their tenants. The importance of identifying these renters and landlords and connecting them with aid will only grow as we face the long term economic impacts of the pandemic.

THE OPPORTUNITY – Federal, state, and local governments, nonprofits, and consumer advocates have developed programs to help both housing insecure families, and small landlords, but people are not always aware of these resources. Such programs include: emergency rental assistance, access to free legal aid when consumer protections are violated, access to housing counselors, and educational materials about available resources. Households in need of these resources may not have accessed them in large numbers for reasons such as:

- Belief that the programs are too difficult or inconvenient to access or navigate,
- Actual accessibility/user experience challenges for those who do try,
- Administration of programs at the local level by organizations under-resourced to distribute funding efficiently or adequately raise awareness,

- Local variation in program rules and user experience making it very hard for federal agencies like CFPB to provide consistent help from a central source and for tenants to learn from each other across jurisdictional,
- Limited English proficiency or inability to access information in a desired language,
- Lack of broadband and lack of mobile-first resources.

Digital tools are needed to help increase utilization of these critical relief opportunities. Federal agencies can do some marketing, but renters and landlords often rely on trusted advisors to help them navigate the resources, engagement processes, or systems required to access assistance. Additionally, nonprofits seeking to provide vital support may struggle with identifying those at-risk or navigating numerous, continually evolving support programs.

VISION FOR SPRINT OUTCOMES – Digital tools use open data to identify the most vulnerable renters; identify affordable housing landlords who are considering or in need of selling rental units; increase awareness of the resources and programs for these communities; and/or help connect these renters and landlords to aid programs.

TARGET END USERS

- **Primary audience:** small landlords, at-risk renters, and nonprofits or legal organizations serving vulnerable renters and/or those at risk for homelessness
- **Secondary audiences or stakeholders:** trade associations or other entities seeking to help small landlords retain their properties, financial services providers, and state, local, and tribal governments.

RELATED DATA SETS

- [Broadband Access](#), Federal Communications Commission (FCC)
- [Housing Assistance Resources](#), Department of Housing and Urban Development (HUD)
- [Consumer Complaint Data](#), Consumer Finance Protection Bureau
- [List of Municipal, State, and Federal Rental and Mortgage Assistance Programs](#), National Low Income Housing Coalition
- [Low Income Home Energy Assistance Program](#), Department of Health & Human Services
- [COVID-19 Resources for Lenders, Services, Landlords, and Others in the Housing Industry](#), Federal Housing Finance Agency
- [Interpretive Services](#), Federal Housing Finance Agency
- Nonprofit and academic datasets ([Urban Institute Rental Survey Data](#), Princeton [Eviction Lab Data](#), etc.)
- Pending availability, industry data to help identify landlords most likely to default on mortgages post-forbearance, and consumer use of things like eviction exceptions, renegotiated rental agreements or mortgage terms, etc during the pandemic.

LEAD POINT OF CONTACT

- Nathaniel Weber, Tech Sprint Program Manager, Office of Innovation, CFPB

Analyzing Equity in Federal COVID-19 Spending

THE CHALLENGE – Develop innovative tools that combine datasets to help inform community leaders on equitable distribution of federal funding. Teams are encouraged to analyze how federal COVID-19 spending has been shared with communities most vulnerable to impacts of the pandemic.

EXECUTIVE CHAMPION – Justin Marsico, Chief Data Officer, Bureau of the Fiscal Service, US Treasury Department

THE PROBLEM – Over the course of the COVID-19 pandemic, the federal government has [made \\$4.5 trillion available](#) for relief efforts. How has this money been spent? A greater understanding of how government spending reaches different communities is a step forward for data transparency and a call-to-action to improve equity. Access to federal financial data alongside demographic data can help community leaders make higher impact funding decisions. In line with the [recent Executive Order](#) on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, this problem statement seeks to put equity at the center of the government spending agenda.

THE OPPORTUNITY – The correlation between federal spending data and demographic data is critical to understanding how federal funds are distributed to various communities and demographic groups, but this correlation has not been fully explored or made accessible to community level stakeholders. This creates blind spots for government leaders as they make decisions on funding allocation and addressing inequities in their communities. With an overwhelming amount of federal data collected, there are many ways that digital tools could combine data sets to help paint a picture of equity in federal spending, especially in response to the COVID-19 pandemic. To help address this need, digital products could:

- Combine federal financial data and demographic data to enable government leaders' decision-making on the equitable allocation of federal funds
- Create models around the flow of federal funding to different geographic regions
- Identify and visualize overlapping COVID spending across programs and agencies
- Help local communities learn about federal funding available to help with COVID relief

Note on equity: A [recent Executive Order](#) defines “equity” as the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. We seek to work with tech teams to better refine how to define and construct measures of equity using data.

VISION FOR SPRINT OUTCOMES – By bringing together Census, Treasury, and other open data sources, digital tools help stakeholders better understand whether the federal government is equitably distributing federal funds during the COVID-19 pandemic.

TARGET END USERS – Local officials/decision makers; policy and advocacy organizations; research communities; data journalists.

RELATED DATA SETS

- [American Community Survey](#), U.S. Census Bureau
- [USA Spending.gov](#)
- [COVID-19 Small Business Pulse Survey](#), U.S. Census Bureau
- [COVID-19 Household Pulse Survey](#), U.S. Census Bureau
- [TIGER Shapefiles](#), U.S. Census Bureau
- [COVID-19 Data Hub - Data Equity](#), U.S. Census Bureau
- [Consolidated Federal Funds Reports](#), U.S. Census Bureau
- [Girl Scouts State of Girls](#)
- [Fiscal Data](#), U.S. Department of Treasury
- [CDFI Fund Data](#), U.S. Department of Treasury
- [SNAP Utilization + Expenditures](#), U.S. Department of Agriculture
- [Unemployment data](#), U.S. Bureau of Labor Statistics
- Education Data ([Public School Spending Per Pupil](#), U.S. Census Bureau, [Annual Survey of School System Finances Tables](#), U.S. Census Bureau)
- Health Care Data ([Medical Expenditure Panel Survey](#), Agency for Healthcare Research & Quality; [Medicaid Enrollment Data](#), Medicaid.gov)
- State/Local Economic Data
 - (e.g., on considerations like state or local climate incentives, regulations, etc)
 - [Proposed & Enacted State Budget Links](#), National Association of State Budget Officers
 - [The Stockton Economic Empowerment Demonstration](#), Universal Basic Income Project
- [USPS ZIP Code Crosswalk Files](#), U.S. Department of Housing and Urban Development

LEAD POINT OF CONTACTS

- Steve Keller, Senior Data Scientist
- Grace Lim, Data Lab Product Owner
- Eileen Carey, Communications and Stakeholder Specialist
- Ben Turse, Data Scientist

MINORITY BUSINESS DEVELOPMENT AGENCY (MBDA)

Improving Minority Businesses' Access to Capital

THE CHALLENGE – Develop digital products to help improve minority businesses' access to capital

EXECUTIVE CHAMPION – Edith Mccloud, Acting National Director, MBDA

THE PROBLEM – Minority owned businesses are critical to the national and local economies. They are a critical part of job creation and preservation with more than [2.2 million jobs](#) held by persons who find themselves either directly or indirectly employed by NMSDC-certified MBEs.

Yet these businesses face obstacles to surviving and thriving, particularly because of difficulty accessing capital. Minority businesses often face obstacles in securing business loans from their local financial institutions. A [study by Bates & Robb \(2016\)](#) found that higher rates of rejection and lower loan amounts typified lending to black and Hispanic-owned Minority Business Enterprises (MBE). The [2021 Small Business Credit Survey](#) found that Black-owned firms that applied for traditional forms of financing were least likely to receive all of the financing they sought -- 40% of white-owned firms received all of the financing they sought, compared to 31% of asian-owned firms, 20% of Hispanic-owned, and only 13% of black-owned firms. This trend persists even among firms with good credit scores.

One key reason for the lack of bank financing for MBEs is [lower credit, lower net worth, and lack of assets](#). Without the ability to access needed capital, minority businesses often find themselves struggling to grow and gain any traction in their selected industry. Even having to seek bank loans, compared to other business financing options, has disadvantages. Without alternative capital options, businesses either reduce operational capacity or go out of business. Both options can stunt job creation, slow down local economies, and further increase the earnings gap in the United States. This has been exacerbated with the inequities of the COVID-19 economy. African Americans [experienced the largest losses as a result of the COVID-19 pandemic](#), eliminating 41 percent of business owners. Similarly, the number of Latinx business owners declined by 32% between February and April 2020, while immigrant business owners suffered a drop of 36 percent.

THE OPPORTUNITY – With the increasing growth in fintech and awareness of the need to support minority businesses, there is an opportunity to create digital tools that help minority businesses access the capital that can help their businesses survive, thrive, and contribute to economic growth and their local communities. This sprint challenges teams to create user-friendly digital tools that help Minority Business Enterprises and Minority Entrepreneurs:

- Gain understanding of, and access to, alternative business capital options
- Gain access to business loans by helping MBEs and MEs meet underwriter requirements to secure loans and understand the loan application process
- Additionally, tools could also help investors and sources of capital find opportunities to finance MBEs and MEs

VISION FOR SPRINT OUTCOMES – With user-friendly digital tools, MBEs and MEs are better able to access capital to grow their enterprises, and financial institutions and investors are better connected to MBEs and MEs.

TARGET END USERS – Engaged Minority Business Owners and Minority Entrepreneurs seeking access to capital; advocacy organizations supporting these individuals; lending, financing and investment institutions

RELATED DATA SETS

- [Payroll Protection Program Data](#), Small Business Administration
- [Third Party Lending Data](#), Small Business Administration
- [Small Business Investment Company \(SBIC\) Program Financing to Businesses By State FY 2013 through FY 2018](#), Small Business Administration
- [Small Business Credit Survey](#), Federal Reserve
- [COVID-19 Small Business Pulse Survey](#), U.S. Census Bureau
- [National Survey Access to Capital Among Minority Business Enterprises](#), National Minority Supplier Development Council

LEAD POINT OF CONTACTS

- Trevon Pitt, Program Analyst, MBDA
- Carmen West, Business Development Specialist, MBDA
- JR Baguidy, Senior Business Development Specialist, MBDA
- Bridget Gonzales, Chief of Office of Policy and Development, MBDA
- Efrain Gonzalez, Associate Director, Office of Policy and Development, MBDA

NEW YORK CITY MAYOR'S OFFICE OF THE CHIEF TECHNOLOGY OFFICER

Increasing Content Accessibility for Multilingual Communities

THE CHALLENGE – Develop (ideally open source) tools to help serve the increasingly multilingual community in NYC and in cities nationwide, enabling them to access government resources for an equitable recovery to the impacts of COVID-19.

EXECUTIVE CHAMPION – John Paul Farmer, Chief Technology Officer, New York City Mayor's Office

THE PROBLEM – With more than 3 million foreign-born residents from more than 200 different countries, New York City is home to one of the most diverse populations in the world. New Yorkers come from every corner of the globe and speak over 200 different languages. Nearly one-half of all New Yorkers speak a language other than English at home, and almost 25% -- or 1.8 million people -- are not English Proficient. In crisis response and recovery, critical public health and operational information must be delivered in multiple languages. Facts emerge on a rolling basis, and information changes quickly, but new information is currently shared first and primarily in English -- making it difficult to ensure that the millions of non-English Proficient residents are able to receive critical information in a timely manner. In an emergency situation, and during an economic recovery from crises such as COVID-19, if people lack equal access to usable information, how can we ensure an equitable recovery?

THE OPPORTUNITY – Managing rapidly changing content, and subsequent translations, is extremely difficult. For example, one public-facing service **updated COVID-19 public health content 114 times in eight weeks**. This doesn't include translation, which typically is very time intensive and is thus often done later, so as not to delay the release of critical government information. Beyond crisis response, the issue of language access touches every aspect of public-facing services, such as issues related to immigrant affairs and civic participation, which are particularly critical and relevant for non-English speaking residents. To address this need, this sprint challenges teams to create technical resources that help local governments to keep content constantly in sync across multiple languages (including translating government-speak into "plain language English"), and potentially other tools that help provide the most timely and accurate information to residents in their own languages.

VISION FOR SPRINT OUTCOMES

- Teams in this sprint explore the creation of an open source data pipeline that moves digital content to one or more translation tools, and back into content management systems, for the benefit of any public-facing agency delivering digital content in multiple languages.
- Residents of New York City can access all resources equitably; all content is available to all major language groups without significant intervention from content creators.

TARGET END USERS – Local governments and NGOs who need to communicate with diverse language speakers in the United States. The majority of target users will be people who manage digital and print content within public-facing institutions. The ultimate beneficiaries of this initiative are non-English Proficient people, who will benefit by having continuously translated content available to them in the language of their choosing.

RELATED DATA SETS

- Code base: [Project ELSA](#), a tested proof of concept built by the NYC CTO team, usable as a starting point or reference
- All written content on NYC government websites. Examples to be provided in the sprint include data sources and workflows in Wordpress, Google Docs, Microsoft Word, and code living in GitHub.
- [Language Spoken at Home, English Proficiency, & World Region of Birth](#), American Community Survey, Census Bureau
- Data on touchpoints with government (e.g., [SNAP](#) data, [Medicaid enrollment data](#))

LEAD POINTS OF CONTACT

- Katherine Benjamin, Deputy CTO for Digital Services
- Justin Isaf Man, Associate CTO for Digital Services
- Rapi Castillo, Assistant Director of Engineers and Lead Web Developer