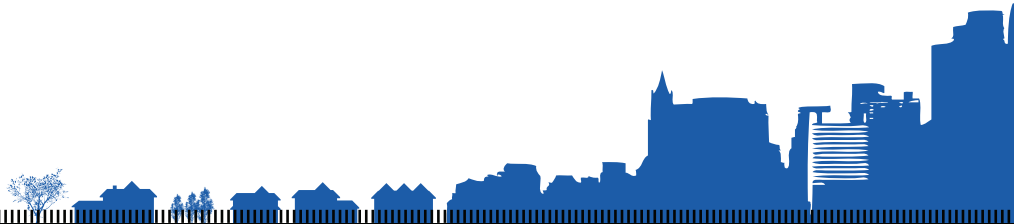


Evaluating Equity Efforts and Outcomes of CDBG- DR Funded Flood Resilience Efforts in Four Communities



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Prepared for:

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FOREWORD

The U.S. Congress appropriates Community Development Block Grant Disaster Recovery (CDBG-DR) grant funds that the U.S. Department of Housing and Urban Development (HUD) allocates to rebuild disaster-impacted areas and provide crucial funding toward long-term recovery, primarily for low-income residents. These flexible grants help cities, counties, Indian tribes, and states recover from presidentially declared disasters, especially in low-income areas, subject to the availability of supplemental appropriations. Because CDBG-DR assistance may fund a broad range of recovery activities, HUD can help communities and neighborhoods that otherwise might not recover due to limited resources.

Despite its critical role in disaster recovery, CDBG-DR is not statutorily authorized. Instead, Congress has periodically funded CDBG-DR grants through emergency appropriations acts, totaling nearly \$100 billion since 1992. Although CDBG-DR grants are largely subject to the statutes and regulations governing the CDBG program, each appropriation act that makes CDBG-DR funds available imposes disaster-specific requirements and includes broad waiver authorities that enable the Secretary to adjust requirements to local needs and to support a resilient, lasting, and inclusive recovery.

CDBG-DR appropriations in recent years have included a requirement that most CDBG-DR funds be used to benefit primarily low- and moderate-income (LMI) persons, defined as those earning less than 80 percent of area median income. Activities may also qualify for CDBG assistance if an activity will benefit all the residents of a primarily residential area in which more than one-half of the residents are LMI persons. In addition, HUD requires grantees to engage in a robust and inclusive community engagement process in developing the Action Plans that guide the use of CDBG-DR funds to ensure those funds meet the needs of communities hardest hit by a disaster and most vulnerable to future disaster risks.


This report presents Enterprise Community Partners and Amplify for Change's research findings that evaluate how CDBG-DR recipients incorporated equity into their disaster recovery and resiliency activities. The primary research question for this study is—*Did communities receiving CDBG-DR funding include and seek equitable outcomes for low-income households and other systemically marginalized populations through implementing post-disaster flood-resilience and mitigation strategies?* Combining quantitative analyses with stakeholder interviews and document reviews, the researchers considered the experiences of four jurisdictions that received CDBG-DR funds following flood-based disasters that occurred between 2010 and 2013: the states of New Jersey and Pennsylvania, Nashville-Davidson County in Tennessee, and the City of Chicago.

Two major factors limited the research that informed this report: (1) the length of time that elapsed between the analyzed disasters occurring and the data collected for this report, and (2) that the COVID-19 pandemic hit during the first year of the study, limiting site visits and in-person interviews.

Nonetheless, this report's findings reveal several challenges and opportunities grantees face in serving low-income and other systemically marginalized communities, including conducting communication and outreach, assisting populations such as seniors and renters with specific post-disaster needs, identifying effective recovery strategies, and overcoming administrative burdens. This report also identifies best practices and lessons learned from the four case studies, and it includes recommendations for policy and program changes based on these insights. One of the report's key findings is that local outreach and collaboration with community organizations are essential for determining unmet needs and increasing local "buy-in" for resilience activities. Partnering with local leaders was found to be an effective strategy for increased engagement.

One of the report's key recommendations is for Congress to permanently authorize the CDBG-DR program, which would streamline and speed up the process for accessing recovery funding. Permanent authorization would allow for many more communities that have navigated the complicated disaster recovery funding landscape to offer suggestions for improvement for future disaster survivors, which could be incorporated into a standard set of rules and procedures for all grantees. HUD already collected valuable feedback from community members on improving CDBG-DR funding through a pair of requests for information. President Biden has included permanent authorization of the CDBG-DR program among his legislative priorities in the fiscal year 2023 budget proposal.

This report contributes to a growing body of research demonstrating the value of using CDBG-DR for long-term disaster recovery and offering valuable insights into improving that process, including through permanent authorization. At time of publication, the study and report are already informing the development of HUD technical assistance resources for future CDBG-DR recipients, including the Citizen Participation and Equitable Engagement Toolkit at <https://www.hudexchange.info/programs/cdbg-dr/cpee-toolkit/introduction/> and the Economic Revitalization Guide for CDBG-DR Grantees at [Economic Revitalization Guide for CDBG-DR Grantees](https://www.hudexchange.info/programs/cdbg-dr/economic-revitalization-guide/) on hudexchange.info.

A handwritten signature in black ink, appearing to read 'Solomon J. Greene'. The signature is fluid and cursive, with a large initial 'S' and 'J'.

Solomon J. Greene
Principal Deputy Assistant Secretary for Policy Development and Research
U.S. Department of Housing and Urban Development

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EXECUTIVE SUMMARY

Study Objectives and Summary

Under a cooperative agreement with HUD, Enterprise Community Partners and its contractor, Amplify for Change, conducted a study of how recipients of Community Development Block Grant Disaster Recovery (CDBG-DR) funds sought and incorporated equity into their post-disaster recovery and resilience activities. CDBG-DR funding is one of the primary sources of funding to assist communities both with rebuilding following a natural disaster, as well as with mitigation efforts to reduce the risk of impacts from future disasters. Statutory requirements also mandate that most CDBG-DR funding be used to benefit primarily low- and moderate-income households (LMI), defined as those earning less than 80 percent of area median income. Thus, CDBG-DR funds are especially vital for meeting the needs of low-income households and other residents known to experience challenges in recovering from and accessing assistance following disasters, including seniors, renters, people with limited English proficiency (LEP), people with disabilities, residents of manufactured housing, and people experiencing homelessness. These challenges often stem from decades of systemic disinvestment and marginalization of such residents and their communities; thus, this report refers to them collectively as systemically marginalized residents.

The objective of the research described in the following was to understand both how former CDBG-DR grantees included and sought equity for low-income and other systemically marginalized residents throughout all stages of their disaster recovery process, as well as the observable outcomes of these efforts. In this report, equity is defined as ensuring low-income and systemically marginalized residents received support and assistance proportionate and appropriate to their particular needs following the disaster. The research team also sought to identify some of the common challenges that grantees faced in this work, as well as any best practices and lessons learned from their endeavors. From the findings of this research, this report further highlights a set of recommended policy and programmatic changes that, if implemented, could improve the capacity for future CDBG-DR grantees to advance equity in their post-disaster recovery and resilience efforts.

Research Questions and Methods

The study involved a rigorous multimethodology case study analysis of four former CDBG-DR grantees that used structural elevation or structural flood-proofing or retrofitting strategies to recover from flood-based disasters that occurred between 2010 and 2013. These grantees were—

- State of New Jersey, Superstorm Sandy (B-13-DS-34-0001).
- Nashville-Davidson County, TN, 2010 river flooding (B-10-MF-47-0002).
- City of Chicago, 2013 river flooding (B-13-MS-17-0001).
- Commonwealth of Pennsylvania, Hurricane Irene and Tropical Storm Lee (B-12-DT-42-0001).

The primary research question for this study was—

Did communities receiving CDBG-DR funding include and seek equitable outcomes for low-income households and other systemically marginalized populations through the implementation of post-disaster flood-resilience and mitigation strategies?

This question includes consideration of which strategies were chosen; whether equity was a factor in that choice; whether the process of implementing those strategies specifically addressed equity for residents with particular post-disaster needs and challenges; how officials that implemented these strategies engaged with these residents and their communities; what steps were taken to explicitly

incorporate their concerns into the implementation process; and what effect these steps had on producing equitable outcomes for all impacted residents.

Four other secondary research questions were also asked to address HUD's specific interests in CDBG-DR grantee processes and outcomes.

1. *What considerations and processes did communities use in selecting projects (for example, estimates of damage reduction, number of beneficiaries, spillover benefits, legal or time constraints, equity issues, public support, and participatory planning)?*
2. *Of those communities that have successfully implemented a controversial project that faced significant opposition from a stakeholder group, what public outreach, compromising, or negotiating strategies proved to be most effective in delivering the project? What was the impact of those compromises on the benefits of the project?*
3. *What guidance can facilitate grantee engagement with vulnerable communities when planning resilience investments, particularly those with low technology literacy, special needs households, households in rural areas, areas of minority concentration, and limited English proficient households?*
4. *Are there innovative or novel practices in implementation of resilience strategies that HUD should identify for scaling or additional evaluation?*

This study's hypothesis was that grantees of CDBG-DR funding used a variety of approaches to identify and address the needs of low-income and other systemically marginalized residents in implementing post-disaster flood-resilience and mitigation strategies, although these efforts were not always as successful as hoped at achieving equitable outcomes for such residents. Moreover, the challenges faced by grantees in their efforts were likely due to a combination of limited resources, funding regulations, and the magnitude and complexity of post-disaster needs among these residents.

To test this hypothesis, principals from Amplify interviewed 34 key stakeholders with knowledge of the CDBG-DR grant process from the four case study sites, including public officials involved in the administration and oversight of the grants and representatives of community organizations that were engaged in the allocation, distribution, and use of grant funds for flood recovery and mitigation activities. The interviewers used a snowball sampling strategy to identify these informants. Additional supplemental interviews were also conducted with administrators from four more recent CDBG-DR grantees, to provide context on changes to CDBG-DR funding since the 2010–13 disasters that were the focus of the case studies.

Enterprise and Amplify staff collected additional qualitative data through a review of documents related to the original disasters as well as the CDBG-DR grant application and administration, to supplement their understanding of each grantee and how they addressed the needs of systemically marginalized residents. These documents included original and amended action plans developed by each grantee, quarterly reports submitted to HUD, and media reports on the disaster and its aftermath. All qualitative data collected were then analyzed using an inductive coding scheme to identify key themes and findings. Enterprise staff also analyzed quantitative data to complement the qualitative research and provide another lens on the outcomes of each grantees' CDBG-DR allocations. These data were collected from public and administrative data sources such as the U.S. Census Bureau, the HUD disaster recovery grant report (DRGR) database, data tables and statistics submitted by grantees in their action plans and quarterly reports to HUD, and information reported in media and on grantee websites.

Overview of Findings and Implications

The research team heard numerous examples about how CDBG-DR grantees sought to include and achieve equitable outcomes for low-income and other systemically marginalized residents through their recovery and resilience efforts. These examples demonstrate both a wide range of particular challenges that grantees faced in serving these residents, as well as the methods grantees used to try to overcome them. They also identify best practices and common pitfalls that may help guide future CDBG-DR grantees in their post-disaster work.

The most salient findings from this research are summarized as follows within the context of five broad themes.

Local Outreach and Collaboration Efforts

- **Partnering with local leaders provided valuable insights and increased engagement.** Strong relationships with local leaders and volunteer organizations were vital to the success of their efforts to reach and serve low-income and other systemically marginalized residents.
- **Multiple outreach approaches were necessary to determine unmet needs.** Using field offices or drop-in centers, or both, were helpful in conducting outreach to low-income and other systemically marginalized residents.
- **Community engagement was crucial for getting buy-in for resilience activities.** Increased efforts at community engagement and local outreach paid off by improving both the grantees' ability to serve low-income and other systemically marginalized residents, as well as to get community buy-in for major CDBG-DR-funded projects.

Challenges Associated with Serving Low-Income and Systemically Marginalized Residents

- **The gap between availability of Federal Emergency Management Agency (FEMA) and CDBG-DR funding had greater impact on low-income households.** CDBG-DR funding generally reached residents long after immediate assistance provided by FEMA had already been exhausted, leaving a gap in support that was problematic for low-income households with access to few other recovery resources.
- **Low-income households struggled more with CDBG-DR requirements and restrictions.** Low-income households faced challenges accessing CDBG-DR funding, often due to a lack of information about funding restrictions and allowable expenses, which led to duplication of benefit violations.
- **Renters were more challenging to support with CDBG-DR funding due to lack of information on and attention to their specific needs.** Grantees lacked knowledge about where and how many renter households lived in their communities, which prevented or delayed grantees from developing programs to serve the needs of renter households rather than property owners.
- **Seniors required additional assistance accessing and using CDBG-DR funds.** Elderly residents were harder to serve, with concerns about different recovery strategies and a lack of facility with navigating application processes leading to low uptake among seniors.
- **Predatory developers and gentrification stymied recovery efforts for low-income residents.** Some residents faced a higher risk of being displaced from their homes during the flood

recovery process due to speculative and predatory developers, which further impeded efforts to help them equitably recover.

Types of Recovery and Resilience Activities

- ***Elevations were costly and unworkable for some households.*** Elevating homes was a challenge as the costs to do so often exceeded the homes' market value, whereas structural limitations on some properties made elevations physically difficult or increased expenses, or both, especially for seniors and low-income residents.
- ***Time delays in funding availability limited effectiveness of housing rehabilitation and flood-proofing strategies.*** Residents' needs for assistance changed between when grantees requested CDBG-DR funds and when those funds were made available, which reduced uptake and usefulness of these funds to serve low-income and systemically marginal residents.
- ***Infrastructure projects can also help build community resilience.*** Using CDBG-DR funds for infrastructure repair and resilience projects was often more cost effective and preferred by public officials versus individual housing-related programs.

Administrative and Funding Concerns

- ***Grantees combined CDBG-DR funding with other public funding to achieve equitable outcomes.*** Relative to CDBG-DR funding alone, funding from federal, state, and local sources often offered more flexibility in uses and requirements to access, which allowed grantees to reach more residents.
- ***A variety of data sources were needed to fully understand community needs.*** Multiple data sources were necessary to gauge the post-disaster needs of low-income and systemically marginalized residents, although collecting these data often slowed recovery efforts.
- ***Interviewees expressed confusion in navigating the roles and requirements of different agencies.*** Inconsistencies and lack of clarity around differences between various recovery resources and agencies added to timing delays and challenges for grantees to serve low-income and other systemically marginalized residents.

Number and Type of Households Served by CDBG-DR Funding

- ***Housing-related activities assisted fewer low-income households than originally projected.*** Grantees report to HUD their projections of how many LMI households (statutorily defined) they expect to serve, yet due to many of the challenges and limitations described previously, CDBG-DR-funded activities served only about 35 percent of the projected number of LMI households.
- ***Grantees reported few renters served by structural repair and resilience activities.*** Only two of the four case study grantees reported serving renter households through rehabilitation and reconstruction activities, despite high estimates of unmet renter needs in all jurisdictions.
- ***Number of Black, Latino, and Indigenous and Native American households, Asian American and Pacific Islander households, and other households of color served varied by location and activity type.*** The share of households of color served was often lower than their share of the total population in the most-impacted areas, especially with respect to activities that focused on rehabilitation and affordability.

In addition, this study suggests a set of policy and implementation changes that the federal government should consider to further support equitable recovery and resilience outcomes. These include—

- Permanent authorization of CDBG-DR funding by Congress, which will streamline and speed up the process for accessing recovery funding.
- Better information sharing and alignment of processes by HUD and other federal disaster response agencies.
- Better resources for state, county, and municipal officials to understand and communicate to residents about the regulations, covered expenses, and timelines for various recovery resources.
- More guidance to grantees about what out-of-pocket costs paid by residents can be reimbursed, the procedures required to do so, and how to document damage and repair expenses.
- More resources for grantees to partner with local leaders, use innovative communication methods, bridge funding gaps between recovery resources, and protect residents from predatory developers.
- Greater use of qualitative evaluations and other alternative metrics to assess CDBG-DR grantee performance and compliance.

Best practices and lessons learned from the research, meanwhile, are included throughout the report and will also be featured in a separate toolkit that Enterprise and Amplify are developing to guide future CDBG-DR grantees in their efforts to advance equity through post-disaster recovery and resilience activities.

I. INTRODUCTION

Community Development Block Grant Disaster Recovery (CDBG-DR) funding is one of the federal government’s primary tools for financing recovery and resilience efforts following natural and climate-based disasters. It is an especially vital resource for low-income households that often lack the means and resources necessary to effectively rebuild and prepare for future events. By statute, most CDBG-DR funds must be used to benefit low- and moderate-income (LMI) households¹—defined as those with incomes less than 80 percent of area median income—with grantees provided with considerable leeway to determine how best to serve these residents.

Despite this requirement, many low-income households—along with other groups of residents, such as renters, seniors, people with disabilities, people with limited English proficiency (LEP), residents of manufactured housing, and people experiencing homelessness—still face challenges accessing and receiving sufficient assistance to meet their particular post-disaster needs. These challenges can include everything from lacking financial resources to bridge the gaps in timing and amounts of funding available, difficulty accessing and navigating application processes, and proving eligibility for assistance. Such residents also often live in communities that are particularly vulnerable to experiencing impacts from climate change and natural disasters; for example, low-income neighborhoods often lack adequate flood mitigation systems, putting their homes at high risk of flood damage. As many of these challenges stem from decades of systemic disinvestment and marginalization, this report refers to these residents collectively as systemically marginalized residents.

Given the particular needs of low-income and systemically marginalized residents following natural disasters, many CDBG-DR grantees emphasize incorporating equity in the use and allocation of their recovery and resilience funding. This study defines equity as ensuring that such residents receive support and assistance proportionate and appropriate to their particular needs following the disaster. Incorporating equity can mean grantees either used equitable practices in engaging with residents around their needs and determining how to spend CDBG-DR funds, or sought equitable outcomes that do not exacerbate existing disparities for low-income and systemically marginalized residents, or both. CDBG-DR grantees that do not incorporate equity in their post-disaster recovery and resilience work therefore risk exacerbating existing disparities in housing and related conditions among low-income and systemically marginalized residents. Despite the importance of equity in this work, little is known about *how* prior grantees have sought equitable processes and outcomes for residents, and the results of their efforts.

Enterprise Community Partners (Enterprise) and its subcontractor Amplify for Change (Amplify) conducted this study to fill the gap in knowledge of CDBG-DR uses and outcomes. The objective was to learn about the processes used by grantees to include and consider these residents in different aspects of their post-disaster plans, including (but not limited to) the selection of recovery and resilience strategies to fund; outreach to and engagement with residents; implementation of specific activities targeted at low-income and other at-risk communities; and whether such activities were completed as intended. It also included a limited review of observable results from these efforts to determine if equitable outcomes were achieved. The goal of the study was to identify both the successes and challenges experienced by grantees so that they may inform future policy and implementation changes

¹ This report uses the term LMI when referring only to such households as defined by statute; otherwise, the phrase “low income” is used as a more general description of households that lack sufficient financial resources to recover from a disaster without public assistance.

in pursuit of more equitable post-disaster outcomes for low-income and other systemically marginalized residents.

Context for this Study

The need for this research comes as the frequency and severity of flood-related natural disasters have increased in recent years (Reidmiller et al., 2018). Flood-based disasters in the United States are estimated to be among the costliest, both in terms of loss of life and of damage to existing property and infrastructure. Repeat and chronic flooding are also becoming more common in several parts of the United States (Frank, 2020), raising the need and urgency for more flood-resilience measures to protect these communities.

Considerable public investment has already been made to help state and local jurisdictions both recover from floods and mitigate against their potential future impacts. CDBG-DR funding has been vital to these efforts, allocating almost \$100 billion since its inception in 1993 to state, county, and municipal governments for recovery and resilience activities following a wide range of disasters (HUD, 2022). Unlike more immediate disaster-recovery resources from the Federal Emergency Management Agency (FEMA) and the Small Business Administration (SBA), CDBG-DR funding is specifically intended to address longer-term unmet needs in impacted communities, including activities to lessen the threat to residents and communities from repeat and future floods (Emrich et al., 2020).

The process for granting and allocating CDBG-DR funds to communities in need begins immediately after a disaster strikes when a Governor requests and the President makes a major disaster declaration, thus establishing eligibility for federal assistance. Congress may then approve an appropriation of CDBG-DR funds—either as stand-alone legislation or as a supplemental bill²—covering multiple disasters to a set of recently impacted jurisdictions. Each appropriation comes with unique criteria and requirements, which makes it challenging for potential grantees to anticipate their eligibility and prepare for funding, including letting impacted community members know what to expect (Congressional Research Service, 2020). Once a specific allocation’s rules are announced and published in the Federal Register, potential grantees typically have 90 days to develop action plans detailing expected unmet needs and strategies to address them, which must be made available for public comment prior to submission to HUD. Only after submission and approval of these plans and certification that the grantees meet statutory capacity requirements will HUD begin disbursing funds to confirmed grantees.

With all these steps, the timing of receipt of CDBG-DR funds can take many months; indeed, a recent study found the average duration between a disaster and the first allocation of funds exceeded 18 months for disasters occurring between 2003 and 2013 (Martín et al., 2019). A survey of CDBG-DR grantees found that nearly 40 percent felt the most significant delays occurred between the disaster and Congressional appropriation, when the rules for each allocation are developed (Winkler, Minott, and Barry, 2022). That same survey also found that 80 percent of grantees felt the lack of permanent authorization for the resource contributes to this delay.

Nonetheless, CDBG-DR funds represent a crucial bridge between exhaustion of immediate post-disaster relief resources and long-term resilience planning. CDBG-DR funding is particularly important to supporting recovery and resilience efforts following flood-based disasters, the damages from which are less likely to be covered by insurance than other disasters like fires and earthquakes (Strochak, Zhu, and

² Congress has also approved CDBG-DR funds allocated through a competitive process, such as the National Disaster Resilience Competition or Rebuild by Design grants, to support longer-range resilience planning and disaster preparedness work.

Goodman, 2018).³ Flood-based disasters also tend to impact a wider area than events like tornados and acts of terrorism, so the scale of damage and recovery needs are greater, requiring longer time and greater costs to recover. Finally, flood-based disasters are expected to become more prevalent and severe due to climate change, likely requiring even greater public investments in recovery and resilience in the future. For these reasons, most CDBG-DR grants to date have been allocated to jurisdictions with unmet flood-related needs.

CDBG-DR funding is also especially critical to serving the needs of lower income and other systemically marginalized residents, such as seniors, persons with disabilities, homeless individuals, and those with LEP. Substantial prior research has shown such residents are not only more likely to live in flood-prone areas (Lee and Van Zandt, 2019; Rufat et al., 2015; Tate et al., 2021) and suffer greater relative damage to their homes and properties from flood-based disasters (Tate et al., 2021; Wilson, Tate, and Emrich, 2021), but are also less likely to have insurance and access to sufficient personal and private resources with which to recover quickly and completely after a flood (Drakes et al., 2021; Emrich et al., 2020). Thus, these residents are more likely to still have unmet needs when allocations of CDBG-DR funds come available. As such, Congress requires in each CDBG-DR appropriation that at least one-half of the funds be allocated to projects and communities in which LMI households constitute most of the beneficiaries.

Beyond this funding requirement, however, CDBG-DR grantees are given considerable leeway in determining which projects and programs to fund to meet the housing, infrastructure, and economic-development needs of disaster-impacted communities. The process for making such determinations is often a complex and iterative one, in which grantees must decide how to balance multiple and often-competing priorities using incomplete information.

Despite such emphasis on equity in CDBG-DR funding and uses, little is known about both how CDBG-DR grantees have sought to advance equity through their recovery and resilience activities, and how successful these efforts have been at achieving equitable outcomes. Recent studies on this topic have generally focused only on the distributions of dollars allocated by federal resources (for example, Emrich et al., 2020; Wilson, Tate, and Emrich, 2021) or types of activities conducted (Elliott, Brown, and Loughran, 2020), rather than considering a wider range of potential ways to assess equity. Research on the process of developing disaster recovery and resilience plans, meanwhile, is often limited in its scope or timing of observations (Rufat et al., 2015) or has focused only on a narrow set of decision-making tools, such as cost-benefit analyses (Junod et al., 2021).

The following research attempts to fill some of this gap in the literature on post-disaster recovery and resilience, with specific focus on the use of CDBG-DR grants in the wake of flood-based disasters. It examines the full process of allocating and using federal disaster assistance, including both in planning and outcomes, conducted by multiple CDBG-DR grantees following different types of flood-related disasters. This analysis thus offers a wider set of both contextual and observed factors in assessing how equity was considered in these efforts and their outcomes. Its findings also provide important insights to guide future grantees seeking to incorporate equity into their post-disaster planning. The lessons learned in the research process, meanwhile, provide considerations and options for future studies into recovery and resilience strategies.

³ The lack of insurance comes as private insurers have largely stopped offering flood insurance policies, due to the high frequency of claims and the corresponding high cost of the policies. The number of properties covered under the National Flood Insurance Program (NFIP), meanwhile, has declined in the past decade due to concerns over costs and underestimations of risk.

A brief note on terminology: Unless otherwise explicitly defined, this report uses conventional definitions for all words and phrases, such as low income, resilience, and community. The author assumes the same applies to all informants interviewed for the study, including with respect to terms that are explicitly defined in this report, such as equity and systemically marginalized, as the public officials and community representatives interviewed did not provide their understanding of these terms.

Organization of this Report

The report details the process and findings of the study into CDBG-DR grantees' efforts to include and seek equitable outcomes for low-income and other systemically marginalized residents following flood-based disasters. It begins with a review of how the four case study sites were selected, including the criteria used to ensure diversity across grantee and resident characteristics. Following that is a discussion of the multi-methodological data collection and analysis processes. Section four details the findings of the research, summarized into five broad themes: local outreach and collaboration efforts, challenges associated with serving low-income and other systemically marginalized residents, types of recovery and resilience activities conducted, administrative and funding concerns raised, and the number and types of households served through CDBG-DR-funded activities. The findings are highlighted with representative quotes from grantees and community representatives interviewed for this study. Sections 5 and 6 discuss the policy and research implications of the findings, followed by some concluding thoughts on next steps for this research.

II. SELECTION OF CASE STUDY SITES

This research used case studies of prior CDBG-DR grantees to examine how equity for low-income and other systemically marginalized residents was considered in their post-flood recovery and resilience work. The research team, in consultation with HUD, established a set of criteria for identifying potential grantees for inclusion in the study, including—

- **Types of Flood-Based Disasters.** The distribution of grantees should reflect different types of flood-based disasters (for example, major coastal events, river flooding, heavy rainfall) to ensure that study findings have relevance to a range of different disaster experiences.
- **Use of Structural Elevation or Structural Flood Proofing Strategies.** Grantees should have incorporated structural elevation or structural flood proofing strategies in their post-disaster resilience and mitigation work, either alone or in combination with other flood resilience and mitigation strategies, to ensure the study findings are applicable to specific types of resilience activities.
- **Geography.** Grantees should reflect geographic diversity, including by region of the country as well as rural and urban locations, to ensure that study findings are not specific to a certain type of community or location.
- **Resident Composition.** Grantees' service areas should include a range of different community and population profiles, such as by race and ethnicity, socioeconomic status, poverty rates and age, to ensure applicability of findings to other grantees.
- **Housing Stock.** Grantees' service areas should also include a range of different housing tenure and stock types, including a mix of owners and renters and of single-family, multifamily, and manufactured homes, to ensure that study findings are not relevant to only one type of household or structure.
- **Timing of Grant Award.** Grantees must have been awarded grants between 2005 and 2013. Moreover, the preference was to select more recent grant recipients, as they were more likely to have relevant staff and institutional memory necessary for effective data collection.

In addition to these selection criteria, the research team also ensured that at least one grantee participated in the National Disaster Recovery Competition (NDRC) or Rebuild by Design (RBD) program, as requested by HUD.

The research team examined each CDBG-DR grant made within the specified time frame to determine which prior grantees met the eligibility criteria. This process involved confirming what type of disaster(s) each grant covered, reviewing initial and amended action plans by prior grantees to determine what flood resilience strategies were used, reviewing recent quarterly grant reports submitted by prior grantees to confirm intended strategies were followed, researching community and resident characteristics with publicly available Census Bureau data, and reviewing any relevant media reports, public documents, or other resources to complete the consideration of all potential case study sites.

Once candidate case study sites were identified, Amplify contacted assigned HUD grant managers and field staff familiar with each candidate site to confirm that site's eligibility and gain a better understanding of the specifics of each grant and the process followed in securing and allocating CDBG-DR funding. These conversations with HUD grant managers provided a helpful overview to CDBG-DR funding and insights about the design and deployment of action plans. This preliminary information also helped inform the development of data protocols and materials to be used during the data collection stage of the research process. Finally, these conversations facilitated identification of key stakeholders (for example, local officials, staff from grantees and organizations supporting recovery, organizations representing the perspectives of affected low-income and other systemically marginalized residents) to contact for interviews.

Based on these efforts, the research team selected the final four CDBG-DR grantees for the case study.

State of New Jersey, Superstorm Sandy (B-13-DS-34-0001). When Superstorm Sandy made landfall near Atlantic City, New Jersey, in October 2012, the storm surge inundated and severely affected regions from Cape May to Raritan Bay, including barrier islands and many areas along the Hudson River. The state suffered 35 fatalities and an estimated \$29 billion in damages to personal properties, businesses, and transportation and utilities infrastructure. The storm depleted both owner-occupied and rental housing stock, with more than 259,000 New Jersey residents, including 150,000 homeowners and 109,000 renters, registering for financial assistance from FEMA's Individual Assistance Program to obtain help with their housing and other needs.

The New Jersey Department of Community Affairs (DCA) was responsible for administering the CDBG-DR funds received by the state for post-Sandy recovery and resilience activities. After the initial CDBG-DR action plan was approved in April 2013, however, local advocates filed a fair housing complaint with HUD, arguing that the plan would disproportionately advantage higher-income homeowners and that the state was not meeting its requirements with respect to federal LEP regulations meant to ensure that non-English speakers would have an equal opportunity to benefit from the recovery programs. A resulting voluntary compliance agreement (VCA) made between the state, the advocates, and HUD sought to redress these problems by mandating that the state dedicate additional funding and resources to assist low-income renter households, make recovery-related information available in additional languages, and provide resources specifically for manufactured housing.

Nashville-Davidson County, TN, 2010 River Flooding (B-10-MF-47-0002). On May 1–2, 2010, more than 17 inches of rain fell in middle Tennessee, the greatest amount in more than 140 years of recorded history. The Cumberland River crested in Nashville at 51.86 feet, 12 feet above flood stage. Eleven people died as a result of the flood. Damage in the Nashville region was widespread, with more than 9,000 properties in 36 of Davidson County's 49 ZIP Codes reporting major or severe damage, most of

which were socioeconomically and racially marginalized communities. More than 3,000 business and 8 major cultural and entertainment venues were also impacted.

A month following the flood, the Nashville-Davidson County Metropolitan government (aka Metro Nashville) jump started their recovery by reprogramming \$5 million in annual CDBG funds and HOME Investment Partnership funds toward housing activities. The Metropolitan Development and Housing Agency (MDHA), a public housing authority independent of Metro Nashville that administered the CDBG and HOME funds, also oversaw the jurisdiction's CDBG-DR allocations. MDHA initially prioritized housing recovery with its CDBG-DR funding, although subsequent demand for these funds came in well below expectations, in part due to the initial CDBG and HOME fund reprogramming as well as substantial charitable donations to support early recovery efforts. In response, MDHA requested and received a waiver to reduce the share of CDBG-DR funding required to benefit LMI households, raised the maximum income for eligibility for CDBG-DR funds to 120 percent of area median income, and reallocated more than \$5 million in housing funds toward infrastructure projects.

City of Chicago, 2013 River Flooding (B-13-MS-17-0001). In April 2013, a massive storm swept through the City of Chicago and its surrounding suburbs, producing the equivalent of 2 months of rain in just 2 days. Many neighborhoods experienced flooded basements, cars under water, sinkholes in streets, and power outages. Flooding also significantly impacted infrastructure, including the city's stormwater conveyance and deep tunnel flood control systems, resulting in wastewater being released into streets and Lake Michigan. City officials determined the flood had an overwhelming impact on community areas with high unemployment rates and large populations of low- to moderate-income persons and seniors. Most individuals living in these communities were Black, although Hispanic residents made up a sizeable portion of the impacted population as well.

Chicago's Office of Management and Budget administered the city's CDBG-DR grant, which initially allocated most funding to infrastructure projects, as community partners and prior disaster relief funding were already addressing housing needs. After conducting a needs assessment, Chicago requested additional housing funds to help those with unmet needs; however, as the numbers of those who requested assistance dwindled, Chicago reallocated funds to infrastructure projects in the neighborhoods that were hardest hit, to improve their resilience against future flooding.

Commonwealth of Pennsylvania, Hurricane Irene and Tropical Storm Lee (B-12-DT-42-0001). In 2011, Pennsylvania was impacted by three natural disasters: a riverine flooding event in April, Hurricane Irene in August, and Tropical Storm Lee in September. These events brought record rain fall, high winds, downed trees, and flash flooding, which resulted in 18 fatalities and caused considerable damage to homes, businesses, and infrastructure across much of eastern and central parts of the commonwealth. Hurricane Irene and Tropical Storm Lee especially impacted rural communities in the northeast, with Bradford, Columbia, Dauphin, Luzerne, and Wyoming counties sustaining the worst effects. As a result of these three federally declared disasters, 9,059 homes suffered major to severe damage.

The CDBG-DR grant was administered by the Pennsylvania Department of Community and Economic Development (DCED). Municipalities, consortia, or nonprofit organizations in 26 affected counties were eligible as subgrantees for funding intended for housing activities, although HUD required that 80 percent of the CDBG-DR funds be used in the five counties most affected by Hurricane Irene and Tropical Storm Lee. DCED initially proposed to apply all its CDBG-DR allocation to housing and infrastructure activities, although HUD, concerned that economic needs had been missed, required the DCED to dedicate funds to economic recovery programs. When demand for economic recovery funds did not materialize, DCED reallocated that money to the housing and infrastructure projects to which it had been originally designated.

The four grantees thus fit the selection criteria, reflecting a range of different grantee and disaster types, including by region, urban or rural locations, nature of flooding event (tropical storm versus rainfall), scale of the disaster, and characteristics of the impacted population. All four also meet the conditions for timing of their grant and use of elevations or structural rehabilitation strategies, or both, for flood mitigation. Each grantee also employed other strategies (for example, buyouts), and although these strategies are not a focus of this study, they are referenced in the following findings when relevant to the grantees' incorporation of equity in their recovery and resilience efforts. Exhibit 1 summarizes some characteristics of these grantees as applicable to the selection criteria.

Exhibit 1. Summary of Case Study Site Criteria and Characteristics

Grantee	New Jersey	Nashville	Chicago	Pennsylvania	
Major Disaster and Year	Superstorm Sandy, 2012	River flooding, 2010	River flooding, 2013	Hurricane Irene and Tropical Storm Lee, 2011	
Type of Grantee	State	Municipal/ county	Municipal	State	
Grantee Region and Urban/Rural Status	Northeast, mix of urban and rural	Southeast urban	Midwest urban	Northeast rural	
Amount of CDBG-DR Grant	\$4.17B, including \$380M for Rebuild by Design	\$33.1M	\$63M	\$27.1M	
% Spent as of 4/1/22	85.3	96.8	92.2	61.6	
Total Housing Damages (FEMA Estimate, \$M)	964.4	110.0	37.4	190.9	
Study Area	9 counties	Davidson County	City of Chicago	26 counties*	5 counties
Housing Units with Major/Severe Damage (FEMA Estimate)	56,077	More than 9,000	2,900	9,059	4,468
Population in Impacted Area, 2010	5,248,469	626,681	2,695,598	7,657,949	747,211
% Non-Hispanic White	55	57	32	73	83
% Non-Hispanic Black	14	27	32	14	8
% Hispanic	20	10	29	8	6
% Seniors	14	10	10	14	16
% Poverty	11	20	23	13	15
% Rural Population	2	3	0	15	26
% Rural Land Area	46	42	0	82	92
Housing in Impacted Area, 2010	1,933,936	259,499	1,045,560	2,947,973	305,404
% Renters	39	44	55	31	32
% 1-4 Unit Structures	77	70	60	85	85
% 5+ Unit Structures	22	29	39	12	10

% Manufactured Homes	1	1	0	3	5
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B = billion. CDBG-DR = Community Development Block Grant - Disaster Recovery. FEMA = Federal Emergency Management Agency. M = million.

* Although damage from storms was observed in 26 Pennsylvania counties, their CDBG-DR grant specifies five counties (Bradford, Columbia, Dauphin, Luzerne, and Wyoming) that were substantially impacted and required to receive at least 80 percent of CDBG-DR funding. This research focuses on the five counties but may include some data from the larger set of counties.

III. RESEARCH METHODS

This research project employed a mixed-methods approach that combined qualitative (interviews and document reviews) and quantitative data collection and analysis, which allowed for a deeper understanding of both the context and nuances of each site, as well as cross-site comparisons through common data collection and analysis methods. Principals from Amplify for Change conducted all interviews and transcript analyses, whereas quantitative data collection and analysis were done by staff from Enterprise; both organizations contributed to document reviews.

Interviews and Transcript Analysis

Researchers conducted interviews with two types of informants from each site—public officials and staff at government organizations involved in CDBG-DR grant administration and nongovernmental representatives and leaders from the local community that were involved in recovery efforts among low-income and other systemically marginalized residents. These two groups were chosen to provide perspectives from both sides of the CDBG-DR process, that is, those making decisions on grant fund uses and those directly impacted by those decisions. These different perspectives helped to verify and triangulate the information collected, as well as identify areas of disconnect between grant officials and flood-impacted communities. To preserve confidentiality and protect informants, this report does not identify the specific individuals or organizations interviewed.

Researchers cast a wide net to identify key informants, using purposeful sampling methods rather than representative methods to ensure data were collected from those most directly engaged with the CDBG-DR grant administration. The purposeful sampling involved identifying informants through media mentions, official positions within relevant agencies and organizations, or other known connections to grant administration and community engagement. Researchers also used snowball sampling, whereby informants are asked to recommend other potential interview subjects from among the informants' networks or colleagues.

The interviews were guided by separate interview protocols for public officials and community representatives (see appendixes A and B). These protocols were submitted to and approved by a third-party institutional review board (IRB) prior to the start of data collection. All interviews were recorded with the informants' permission and transcribed by the interviewers. Although researchers identified more than 100 potential informants, they were only able to interview 34 individuals, as many public officials and community representatives had moved on from their roles during the grant process and were either unavailable or unable to speak with researchers. Exhibit 2 summarizes the number and type of informants interviewed for each case study site.

Exhibit 2. Number of Interviews per Site and Informant Type

Site	New Jersey	Nashville	Chicago	Pennsylvania
Public officials	4	6	4	9
Community representatives	5	1	2	3
Total	9	7	6	12

Amplify reviewed interview transcripts using a preliminary coding scheme based on the research questions. Additional codes and subcategories were added as common themes emerged and unique elements tied to a site’s recovery and resiliency strategies became apparent. Amplify then analyzed findings in the broader framing of the site’s action plan and subsequent amendments to develop the meta narrative for the site. Following this step, Amplify developed summary reports detailing major findings from each of the case study sites, as well as a cross-site summary that identified themes heard from multiple grantees. The cross-site summary also included analyses of supplemental interviews conducted with officials from four more recent CDBG-DR grantees (Louisiana, Florida, South Carolina, and New Orleans), which served to validate the findings and provide updated context regarding changes to the rules and administration of CDBG-DR funds in the time since the four case study disasters occurred.

Document Review

In addition to conducting interviews, Amplify and Enterprise staff reviewed relevant documents for background information about case study sites, the scope and nature of damage to residential structures, initial and amended allocations of CDBG-DR funds to specific activities, and the current status of those activities. Some reviews were conducted in advance of site selection, to provide researchers with key facts about each grantee and confirm their eligibility for inclusion in the study. Others were done simultaneously or after the interviews, to supplement and verify data collected from informants. Such documents included grantee action plans and amendments, quarterly reports to HUD on progress, and media reports and news articles during and after the disaster. Summaries of these documents were developed by Enterprise staff to provide context for interviews and were revisited by Amplify periodically to inform further lines of inquiry. Details from these documents are also reflected in the following findings.

Quantitative Data Collection and Analysis

To supplement the qualitative data collection and analysis, Enterprise also collected quantitative data on grantees and the communities they serve, such as the scope of the disaster and damage estimates, sociodemographic data (for example, age, race, ethnicity, income) of communities and residents impacted by the flood event, and allocations of CDBG-DR funding to specific housing-related activities. These data were collected primarily from public or administrative data sources such as the Census Bureau, the HUD disaster recovery grant report (DRGR) database, data tables and statistics submitted by grantees in their action plans and quarterly reports to HUD, and information reported in media and on grantee websites.

Analyses conducted on these quantitative data included summary and descriptive statistics about grantees and the communities they served through post-flood recovery and resilience activities. These analyses provided both background information prior to qualitative data collection (for example, exhibit 1) and ongoing context during the interview and document review processes. What conclusions could be drawn from these analyses are reflected in the following findings.

IV. RESEARCH FINDINGS

Through the data collection and analysis steps described previously, the research team uncovered several findings relevant to the primary and secondary research questions. Exhibit 3 summarizes these findings, as well as their applicability to each of the case study sites (noted by an X in the corresponding column) and relevant research questions (listed in the last column, with P for the primary question and S1–S4 denoting the secondary questions). For simplicity, these findings are grouped into the following broad themes: local outreach and collaboration efforts, challenges associated with serving low-income and other systemically marginalized residents, types of recovery and resilience activities conducted, administrative and funding concerns raised, and number and types of households served through CDBG-DR-funded activities.

Exhibit 3. Summary of Key Findings by Grantee and Relevance to Research Questions

Theme	Finding	Chi	NJ	PA	TN	RQs
Local outreach/ collaboration	Partnering with local leaders provided valuable insights and increased engagement with low-income and other residents	X	X	X	X	S3
	Multiple outreach approaches were necessary to determine unmet needs	X	X	X	X	P
	Community engagement was crucial for getting buy-in for resilience activities	X	X	X	X	S2
Serving low-income and systemically marginalized residents	Time gap between availability of FEMA and CDBG-DR funding had greater impact on low-income households	X	X	X		P
	Low-income households often struggled with CDBG-DR requirements and restrictions		X	X	X	S3
	Renters were more challenging to support with CDBG-DR funding due to lack of information on and attention to their specific needs	X	X	X	X	S1
	Seniors required additional assistance accessing and using CDBG-DR funds		X	X	X	S3
	Predatory developers and gentrification stymied recovery efforts for low-income and other residents				X	S3
Types of recovery/ resilience activities	Elevations were costly and unworkable for some households		X	X	X	S1
	Time delays in funding availability limited effectiveness of housing rehabilitation and flood-proofing strategies	X	X	X	X	P, S4
	Infrastructure projects can also help build community resilience	X		X	X	P, S4
Administrative/ funding concerns	Grantees combined CDBG-DR funding with other public funding to achieve equitable outcomes		X	X	X	P
	A variety of data sources were needed to fully understand community needs	X	X	X	X	S1
	Grantees expressed confusion in navigating the roles and requirements of different agencies	X	X	X	X	S4
Number/type of households served by CDBG-DR funding	Housing-related activities assisted fewer low-income households than originally projected	X	X	X	X	P
	Grantees reported few renters served by structural repair/resilience activities	X	X	X	X	S3
	Number of Black, Latino, and Indigenous and Native American households, Asian American and Pacific Islander households, and other households of color served varied by location and activity type	X	X	X	X	P

CDBG-DR = Community Development Block Grant Disaster Recovery. Chi = Chicago. FEMA = Federal Emergency Management Agency. P = primary question. RQ = research question. S = secondary question. TN = Nashville/Davidson County. Note: An X in a cell denotes the findings' applicability to a case study site.

Local Outreach and Collaboration Efforts

The first step in many disaster recovery efforts is to conduct community outreach, both to better assess local needs as well as to open channels of communication with impacted residents.⁴ With respect to low-income and other systemically marginalized residents with particular post-disaster challenges, collaboration and engagement is especially helpful for identifying their needs and advancing equitable post-disaster recovery and resilience outcomes. Grantees identified many ways to accomplish this step, including partnering with trusted leaders before and early in the recovery process, developing effective communication and outreach strategies, and meeting residents where they are.

Partnering with Local Leaders Provided Valuable Insights and Increased Engagement with Low-Income and Other Residents

All grantees reported that having strong relationships with local leaders and volunteer organizations were vital to the success of their efforts to reach and serve low-income and other systemically marginalized residents. Whether organized regionally (like Pennsylvania's Long Term Recovery Committee) or developed by the communities (as in the volunteer-led Hands-On Nashville coalition), these partnerships not only brought trust and credibility to CDBG-DR funded activities, but also helped facilitate development of those activities to best target identified community needs.

Part of our work is understanding what the institutions are in the community that can disseminate information and inspire. What is the cultural fabric? Who are the people to go to? What are the businesses, cultural and faith institutions, hair salons, and barbershops that people trust? (Community representative, New Jersey)

Community participation is important in all phases of the post-disaster recovery process. In Pennsylvania, for example, DCED used input from municipal and county officials to inform the development of their initial action plans, which helped DCED identify housing and infrastructure as priorities for their CDBG-DR funding allocations. Nashville similarly benefited from early engagement with local organizations, including two with which it had developed memorandums of understanding (MOUs) even before the flood occurred. These MOUs made clear what support local groups would provide in the immediate wake of the flood. Nashville also used a trusted city partner, The Housing Fund, to spearhead its community outreach and engagement efforts. This increased responsiveness, especially among low-income households and communities of color, which were familiar with the Fund and its work in support of affordable housing development.

One of the things that I think is important when you're dealing with disasters, whether it be flooding or the coronavirus, is where are you getting your information and are there local trusted partners that you can go to for the information? So, is the person who is disseminating the information somebody I trust and believe, and are they directing me in the right way? (Public official, Pennsylvania)

⁴ HUD recently released a Citizen Participation & Equitable Engagement Toolkit for CDBG-DR grantees that includes some of the best practices identified in this research for reaching and collaborating with LMI and other systemically marginalized residents. The toolkit can be found here: <https://www.hudexchange.info/programs/cdbg-dr/cpee-toolkit/introduction/>.

Officials in Chicago noted the value in working with local leaders to communicate about sensitive topics; for instance, residents who experienced sewage coming into their basements were embarrassed to talk about it until trusted local leaders explained this occurrence was common. Once the stigma was removed, officials were better able to assess the scale of sewage flood problems and eventually target their recovery efforts at improving wastewater and drainage systems serving predominantly low-income communities.

Multiple Outreach Approaches Were Necessary to Determine Unmet Needs

In addition to collaborations with local leaders and officials, grantees found that a range of other approaches were also helpful in conducting outreach to low-income and other systemically marginalized residents. For example, as part of their VCA, New Jersey was required to conduct more outreach to residents that were not targeted in their original action plan, including those with LEP. These efforts featured everything from translating key documents and applications into languages commonly spoken in each of the most impacted counties, to advertising in non-English speaking media newspapers and radio stations, to staffing field offices with bilingual staff members. Officials later reported that these actions significantly improved uptake from low-income and other residents.

Subsequent to the Voluntary Compliance Agreement, we engaged in significant outreach and spent a considerable sum of money for outreach to low-income households. Latino Action Network and NAACP [National Association for the Advancement of Colored People] gave us strategies and we used them to engage with social media, news, radio. We left no stone unturned. (Public official, New Jersey)

All four grantees also reported success with using field offices or drop-in centers, or both, to access residents where they were. Siting these offices and centers near manufactured housing communities, at houses of worship, and in existing community facilities not only provided residents with a one-stop shop to address their recovery and resilience needs, but also enabled local officials to better understand the challenges those residents were facing and help them complete applications for assistance. Technology also played an important role in facilitating outreach—for example, along with the required in-person public meetings, Chicago also held virtual meetings with call-in capabilities for residents with mobility or childcare limitations. Nashville, meanwhile, implemented a text-based alert system to warn residents about future disasters and help them access supportive services.

More recent grantees confirmed that flexible and innovative outreach strategies remain essential to realizing effective and equitable allocations of CDBG-DR funding. Officials in Louisiana, for example, used surveys to better understand the range of unmet needs in their communities following the initial phase of the disaster recovery process. To ensure this survey was accessible to all community members, a telephone-based version was provided through call centers through which senior residents and those with LEP and low technological literacy could work with a representative to provide information and be connected to supportive services. Florida likewise used a range of digital tools, including advertisements on multiple social media platforms, to inform community members of various resources, as well as Apple and Android apps to collect data and allow for residents to apply for assistance from their phones.

The survey was useful in helping us see who was responding and then allowing us to create strategies to go look for the people who weren't responding; that's when we would contact the legislator for that area and say, "Hey, people in your district aren't responding. Can you help us?" That really helped. (Public official, Louisiana)

Community Engagement Was Crucial for Getting Buy-In for Resilience Activities

Across the board, grantees reported that their increased efforts at community engagement and local outreach paid off by improving both their ability to serve low-income and other systemically marginalized residents, as well as to get community buy-in for major CDBG-DR-funded projects. Pennsylvania officials were able to overcome initial opposition to the development of the flood wall in Bloomsburg through frequent community meetings to explain the options available to address flooding, the costs of each option, and the funding the community had access to at the time the decision was made to move ahead with the flood wall. Officials also explained why this option was not the best to use for communities that were not initially slated to be covered by the flood wall, and their commitment to pursuing alternative solutions for those areas, including using remaining funding for two studies to identify effective strategies for addressing flooding there. In addition, the town moved forward with other stormwater and sanitary upgrades that have benefited all the neighborhoods because of the system's interconnectedness. Combined, these efforts helped to foster better dialog with residents and support for the project.

Residents wanted to know why we are building the wall the way we are. We held community outreach meetings.... We had a very good engineer on our project who was able to explain the science behind why what someone was advocating for wasn't possible. Town Councilors were able to respond to political types of questions. We had a team approach. We tried to do our homework ahead of time to have answers ready. (Public official, Pennsylvania)

In New Jersey, both public officials and community leaders noted how much the VCA improved both outreach and community responsiveness to the state's recovery and resilience efforts. In particular, the hands-on involvement of top officials from the Department of Community Affairs in the post-VCA community engagement process indicated the department's commitment to supporting those communities, although delays and dissatisfaction remained a concern among residents. Chicago similarly sought support from residents through an extensive multi-step effort of engagement throughout the development of several green infrastructure projects, which included holding listening and educational sessions to hear and respond to community concerns, as well as regular follow-up opportunities to ensure progress and compliance with previous commitments.

Challenges Associated with Serving Low-Income and Systemically Marginalized Residents

An important component of advancing equity through disaster recovery and resilience strategies involves addressing the specific needs of low-income and other residents at greater risk for inequitable outcomes. All four case study grantees, as well as those from more recent disasters, reported both successes and challenges in their efforts to identify, reach, serve, and monitor outcomes among these residents.

Time Gap Between Availability of FEMA and CDBG-DR Funding Had Greater Impact on Low-Income Households

As noted previously, it can often take 2 years or more post-disaster for CDBG-DR funding to reach impacted communities. Multiple grantees noted that by that time, any immediate assistance provided by FEMA has already been exhausted, leaving a gap in support that can be especially problematic for low-income households that often had few resources to conduct their own repair and recovery work (including post-disaster Small Business Administration [SBA] loans for homeowners). Officials in New Jersey noted that costs for households were often higher during this interval, including for those paying both mortgage payments on their damaged home as well as rent on temporary lodgings. A report by local advocates suggested that many low-income households without the means to weather this gap continued to struggle 2 years following the disaster (Fair Share Housing Center, Latino Action Network,

and NAACP New Jersey State Conference, 2015). Another study that tracked the experiences of those most affected by Sandy in New Jersey found that 12 percent of residents reported being permanently displaced 2 years after the storm (Murray and Tracey, 2014).

When you talk about equity, if your assistance can be timed so that there is not a dip or gap, then there's a better likelihood that people are going to be able to rebuild and stay in their communities. But if there's any time when they have no assistance, because they don't have deep pockets, this creates a lot of problems. (Public official, New Jersey)

Some grantees developed programs specifically to address this funding gap. For example, in Pennsylvania officials conducted environmental reviews in advance and established a system to transfer funds and quickly process home buyouts once funding was officially available. Metro Nashville was also able to reprogram its recently received \$5 million annual CDBG and HOME allocations toward housing recovery efforts. Considerable philanthropic assistance, including more than \$15 million raised by The Community Foundation of Middle Tennessee, was also provided to help as many as 12,000 households with repair work in advance of CDBG-DR allocations, thereby reducing the amount of government funds needed for housing recovery.

New Jersey took a different approach and implemented a Homeowner Resettlement Program, initially funded with CDBG-DR but later extended with state-provided resources. The program offered \$10,000 grants to more than 18,000 homeowners for non-construction storm-related expenses. This effort was so successful that after the initial funding of \$200 million was exhausted, the state refunded and expanded the program using funds from other non-HUD sources. This second round provided funds to both homeowners and renters for rental assistance for up to 9 months and to replace storm-damaged appliances. Interviewees said these resources made a difference for tens of thousands of families.

Low-Income Households Often Struggled with CDBG-DR Requirements and Restrictions

Multiple grantees perceived and observed additional challenges for low-income households once CDBG-DR funding was made available, especially around accessing that funding and complying with funding restrictions. The time and effort required to apply for funding was often noted as a significant barrier, especially among households that sought reimbursements for prior work but did not have the proper documentation or approvals to qualify. Pennsylvania officials described the process as “overwhelming,” and the Nashville grantee reported confusion about whether or which expenses could be repaid.

Compounding the difficulties with using CDBG-DR funds were concerns about unintentional duplication of benefit (DOB) violations among low-income households. Seasoned disaster recovery specialists who worked on New Jersey's response explained that many low-income households in New Jersey, as in other grantee sites with which they were familiar, used FEMA assistance intended for home repair instead to cover immediate needs like food, childcare, transportation, or to rent elsewhere. Those households then later found themselves without sufficient resources to complete recovery work on their homes. Households also ran into problems accounting for other funding sources, such as insurance proceeds or charitable donations, when applying for and estimating needs for home repair.

Let's say I received money for home repair, and my house is in complete disarray. The money that I'm spending on home repairs may just be throwing money out the window. Let's say I take that money and I try to stabilize my family. I use that money to help us survive. Then when long term recovery dollars kick in, I just created a duplication of benefit for myself. I didn't use that money for home repair. I have to come up with as much money as I received from FEMA for home repairs that I didn't necessarily use for home repairs, but I used to survive. It could be as

little as five hundred dollars to as much as \$14K–\$15K. If I'm on a fixed income, I don't have those resources. (Public official, New Jersey)

Grantees reported that early and frequent efforts to explain duplication of benefits helped mitigate complications for low-income residents, including clear communication on what constitutes a duplication, guidance on accounting systems to keep housing recovery funds separate, and connecting low-income applicants to other funds, such as philanthropic donations, for emergency living expenses.

Renters Were More Challenging to Support with CDBG-DR Funding due to Lack of Information on and Attention to Their Specific Needs

A recurring theme among all four grantees was about the challenges of identifying and serving renter households in their communities. Several described a lack of knowledge about how many and where renter households lived in their communities as a critical stumbling block to standing up effective recovery and resilience programs to specifically address their needs. Others remarked that targeting programs to serve owners of rental properties rather than renter households led to the former receiving more attention and better outcomes relative to the latter. Nashville officials also reported a lack of interest in receiving assistance among rental property owners who did not want to comply with associated regulations on keeping rental housing affordable to low-income residents, especially as the housing market heated up.

I can't even say what happened with renters. You could find the homeowners because they were still tied to their places. With renters you couldn't find them anymore and it was hard to figure out how to organize with them. I recommend setting up a renters database where you are better able to track them and communicate to them. (Community representative, New Jersey)

In Pennsylvania, DCED initially addressed damages and potential unmet needs for rental housing using funds from non-CDBG-DR federal resources, including the Emergency Solutions Grant (ESG) Program, U.S. Department of Agriculture (USDA) Rural Housing, HUD Project Based Vouchers, and Low-Income Housing Tax Credits (LIHTC). In 2015, however, DCED worked with the Pennsylvania Housing Finance Agency (PHFA) to administer a survey of rental properties funded through that found considerable unmet need for affordable rental housing remained 4 years after the flood. DCED subsequently announced a plan to support PHFA's development of additional affordable units by providing gap financing from CDBG-DR funds for LIHTC projects, with priority given to areas that experienced the greatest loss of affordable rental units due to the storm events.

New Jersey likewise did not initially intend to support rental housing repair with its CDBG-DR allocation, although following the VCA the state allocated additional funding and resources specifically to assist low-income renter households, including \$240 million to build replacement housing for rental units destroyed by Sandy. The state also stepped up the ways it educated the public about the issue of fair housing rights and responsibilities, including providing information about housing discrimination laws and where to find assistance on housing issues; distributing bilingual fair housing information around the state; sponsoring educational workshops on fair housing laws; and distributing fair housing information to developers and owners of multifamily rental properties, including information on providing assistance to LEP individuals. Based on input from interviewees, the state's enhanced housing strategies as required by the VCA boosted flood recovery outcomes for renters and other systemically marginalized residents.

Seniors Required Additional Assistance Accessing and Using CDBG-DR Funds

Another group of residents with disproportionate vulnerabilities to disasters is senior citizens, who may experience mobility-related challenges associated with post-flood recovery and resilience strategies. For example, some interviewees reported that seniors were reluctant to elevate their properties, out of concern that such mitigation activity would necessitate expensive additional work to make their elevated homes accessible. Community representatives further explained that many seniors found the housing assistance application process intimidating, and that fear of being relocated kept many from seeking federal assistance. Many seniors are also on fixed or low incomes, or both, further compounding the complexity of serving their needs.

We knew that the majority of our clients are vulnerable and most likely seniors. We would make home visits. It's part of our business operations to help them, take them paperwork, and so on (Public official, Nashville)

Grantees noted that resources specific to seniors were rare. To identify and serve seniors, grantees relied on data and community organizations to better pinpoint their locations and needs. In Nashville, a network of social service providers was deployed to work with local neighborhood leaders to offer personalized, one-on-one assistance to senior residents. In Pennsylvania, county governments used every available database list to contact seniors and let them know of available funding and services. Multiple grantees also reported working with civic organizations and clergy leadership to conduct outreach to seniors.

Predatory Developers and Gentrification Stymied Recovery Efforts for Low-Income and Other Residents

Several grantees reported instances of developers taking advantage of low-income and other residents during the flood recovery process, including through predatory and shady tactics intended to pressure residents to leave and sell their properties for below-market value. Perhaps the most blatant case of this occurrence was in Nashville, where community representatives reported multiple cases of developers preying on low-income residents, scaring them with threatening scam letters and offering low-ball offers for their homes. When a homeowner didn't respond to an eager developer's written offer, the developer would call the building department to complain about the house's deterioration, essentially to scare the homeowner into selling. This tactic led some residents to leave their communities and sped up gentrification of formerly affordable neighborhoods.

Predatory developers would come to someone's house and put a letter on their door with a seal that almost looks like the Metro government seal. The letter would say "You've got until December 31st to accept this offer." And to the homeowner, it's a high offer but in truth it's not a realistic amount to stay in Davidson County, much less their existing community. Then at the very bottom of the letter in small print that you could barely read without a magnifying glass it would say this is just an offer from such and such developer. But, you know, these would scare people. (Public official, Nashville)

Nashville officials interviewed for this study said in the aftermath of the flood they didn't realize the extent to which predatory offers were occurring in low-income flood-affected neighborhoods because they were busy managing the details of the CDBG-DR grant, and that it took a few years after the flood to see the effects of all these opportunity-seeking home purchases. Since then, however, the Metro government has developed systems to limit further predatory behaviors, such as automatic reporting to MDHA by the Metro building department when a code violation complaint is made so MDHA can

contact the homeowner about home repair opportunities. In recent years, Metro government officials have also made very intentional efforts in neighborhoods where they know such schemes are happening to get volunteer groups out to educate neighbors on how to recognize a predatory developer and their rights under fair housing law.

Types of Recovery and Resilience Activities

The selection of specific strategies employed by CDBG-DR grantees in their post-flood recovery and resilience efforts played a significant role in their ability to serve impacted households and communities effectively and equitably. In particular, some strategies developed by grantee organizations presented particular challenges for low-income and other systemically marginalized residents, which limited their use and uptake of programs and funding. Some grantees reported success with using infrastructure projects to address communitywide concerns among such residents.

Elevations Were Costly and Unworkable for Some Households

Other than New Jersey, which elevated more than 6,300 homes, grantees in this study reported challenges with using elevations as a means of reducing risks from future flood-based disasters, especially for homes occupied by low-income and other systemically marginalized residents. County administrators of housing programs in Pennsylvania, for example, found that the costs associated with elevating homes often exceeded their market value and the grantee's funding cap of \$160,000 per household. These costs, although partially subsidized by CDBG-DR grant funds, made undertaking an elevation unattractive to many low-income owners.

Some structural aspects of elevations also raised concerns for residents and administrators. Officials in New Jersey, for example, noted that elevations may be structurally difficult or impossible to complete in urban and high-density communities with larger numbers of multifamily or attached dwellings (for example, rowhouses), unless all adjoining residents agree to participate in elevating their structures. Such neighborhoods have also historically been home to low-income and systemically marginalized residents, although in areas that have recently gentrified not all neighbors may qualify for low-cost loans or grant funding to elevate their building. Older homes and homes with basements also presented particular challenges for elevations.

Finally, administrators in Nashville and Pennsylvania expressed concerns that elevations intended to increase a building's chances of surviving the worst give some residents a false sense of personal security from future storms. Their lack of understanding may put both them and first responders at risk if they fail to evacuate when ordered.

We don't pursue elevations. It may remove risk of water getting into your house, but it's not safe to homeowners. Even if they are in these elevated homes, they still need to get out. And it puts our first respondents at risk. (Public official, Nashville)

One interviewee expressed a more positive perspective on elevations as compared with other post-flood resilience strategies, namely buyouts and demolition of properties in flood plains. Although buyouts are attractive to many residents seeking to avoid chronic and repeat flooding, municipal governments may be less eager to offer this option due to concerns of erosion of their tax base and a lack of alternative affordable housing options for low-income residents in tight markets. Elevated properties, in contrast, provide households with a way of staying in their communities, which sustains community ties and property tax revenues in the area.

Time Delays in Funding Availability Limited Effectiveness of Housing Rehabilitation and Flood-Proofing Strategies

Along with elevations, grantees also developed programs to assist residents with other rehabilitation and structural repair activities. In the immediate wake of a disaster, demand for such programs was high among residents in impacted communities, and grantees initially allocated a substantial portion of their housing funding toward these efforts. However, by the time CDBG-DR funds were available to support rehabilitation and flood-proofing efforts, most grantees found fewer interested and eligible households than they had anticipated.

Some of the drop off in demand reported by grantees was attributed to the long delay in applying for, receiving, and allocating CDBG-DR funds, which could take years following the disaster to reach impacted communities. As noted previously, grantees used various approaches to bridge some of this delay, including offering grants and repurposing other federal funding. Some households also used other resources—such as insurance proceeds, SBA loans, philanthropic organizations, or out-of-pocket spending (for example, savings or retirement accounts, credit cards)—to make repairs more quickly. By the time CDBG-DR funding was made available to these residents, therefore, their need for it was much reduced.

Households that had not already repaired their flood-damaged homes by the time funding became available—who were more likely to be low-income or have other challenges to making such repairs on their own—still found barriers to accessing CDBG-DR funding for this work. Officials in Nashville, for example, reported a substantial number of applications for assistance requested but not completed; follow-up efforts revealed a number of households that felt the application process was too much trouble for the amount of assistance available, especially for homes that had deteriorated further due to the lack of repair in the time since the flood. Interviewees from Pennsylvania, meanwhile, explained that some applicants struggled to prove that damage to their homes was the result of the flood for which the disaster recovery funds were awarded or lacked necessary paperwork to complete their applications after so much time had passed.

The CDBG-DR money came in with stringent guidelines and a tight timeframe. By 2016 we no longer had as many homeowners and tenants interested in housing recovery. Feedback from the needs assessment was that most people moved on or they didn't have records that the damage was due to that flood. (Public official, Chicago)

Finally, some interviewees speculated that households unable to afford their own repairs may have given up and left the community rather than wait for assistance. This experience was especially acute among low-income households in Nashville, some of whom were either encouraged or pressured to sell or move out of their homes due to high demand and rapid turnover of properties in hot markets.

Infrastructure Projects Can Also Help Build Community Resilience

CDBG-DR funds initially earmarked to housing repair programs but unused due to lower-than-expected demand were often reallocated to other programs, including infrastructure repair and resilience work. Indeed, several officials reported preference for using CDBG-DR funds for flood mitigation strategies that address the needs of whole communities rather than individual households.

There are some big differences in opinion about whether you should put that much money into one home. Local communities say, "I'm going to get \$500K for five units?!" Instead, they want to use that money for infrastructure. (Public official, Pennsylvania)

In Chicago, where the flood caused extensive sewage and wastewater damage, CDBG-DR funds were used to expand sewage storage and diversion tunnels specifically in lower income neighborhoods. This work not only improved community resilience to future floods, but also alleviated the need for buyouts and relocations of residents in previously flood-prone properties. Nashville similarly directed some of its reallocated housing funds to repair and improve water pumps in two low-income neighborhoods.

In other instances, reallocation of funds supported infrastructure projects that impacted the broader community. As mentioned previously, the city of Bloomsburg, Pennsylvania, allocated funds to support the extension of the floodwall around a neighborhood with hundreds of residential and municipal structures, as well as for design and planning for subsequent sections of the wall that would protect other neighborhoods, including areas with many low-income residents. Nashville's reallocation of housing repair funds to infrastructure projects adjacent to areas with many low-income residents also came only after substantial CDBG-DR funds had been previously committed to repairing and flood-proofing several commercial and recreational sites. Local officials in these two study sites conducted substantial community outreach in an effort to build understanding of their decision-making regarding the sequencing of these projects.

Administrative and Funding Concerns

Grantees sought ways to advance equity in the administration of federal disaster recovery and resilience funds. These options included combining CDBG-DR funds with other resources to maximize options for targeting and serving low-income and other systemically marginalized residents, developing innovative data collection methods to better identify communities in need, and understanding and communicating to residents about various funding options and their requirements.

Grantees Combined CDBG-DR Funding with Other Public Funding to Achieve Equitable Outcomes

As noted previously, several grantees struggled to serve low-income and other systemically marginalized residents due to the timing, restrictions on, and limited amount of CDBG-DR funding provided, at least relative to the scale of the challenges these communities faced. When possible, each sought additional funding from federal, state, and local sources to supplement CDBG-DR funds. Several of these sources also offered more flexibility in uses and requirements to access, which was crucial to addressing the specific needs of these residents. For example, officials in Pennsylvania used funding from the ESG Program, USDA Rural Housing, HUD Project Based Rental Assistance, and LIHTC to increase affordable housing options for low-income renters in the wake of the flood. As mentioned previously, Nashville likewise redirected some of its annual CDBG and HOME funding allocations toward critical housing-related disaster recovery and resilience efforts.

Following the VCA, New Jersey also tapped additional sources to increase its capacity to assist low-income and other systemically marginalized residents. Specifically, the state combined CDBG-DR with tax credit funds for its Restoration of Multifamily Housing (MFH) program, which was run by the state's Housing and Mortgage Finance Agency (HMFA), which had experience developing multifamily projects throughout the state. By 2017, this program had allocated funds for 76 multifamily projects with nearly 6,000 affordable rental units.

I loved our multifamily housing program. We were able to increase rental stock, not just replace what was damaged by Sandy. And we broadened affordability.... The program as conceptualized was extremely effective. We had a risk ranking checklist and would put our money where the most could be done the quickest. We built MFH across the nine most impacted counties. (Public official, New Jersey)

A Variety of Data Sources Were Needed to Fully Understand Community Needs

At the time of the flood, all grantees reported having insufficient information about residents of impacted communities, especially low-income and other systemically marginalized residents, which prompted them to look at a range of different data sources and collection methods to better understand the recovery and resilience needs of these communities. As noted previously, working with local officials and leaders was a big part of this process, as with Pennsylvania's reliance on county and municipal input in the development of their action plan, and use of field offices to better understand on-the-ground conditions. The smaller geographic areas of Chicago and Nashville permitted these grantees to collect even more precise and locally specific data, using information from calls received at city helplines, walking tours of select neighborhoods, and detailed mapping to identify individual properties in need of assistance.

We based our process on needs; it was a top-down initiative because our executive offices, top level managers, and directors were meeting daily at the Joint Field Office to look at the HUD driven data; but we were also paying attention to the local data to determine how best to use these funds. (Public official, Pennsylvania)

New Jersey, meanwhile, offers a cautionary tale regarding reliance on limited data. In their initial action plan, the state based their estimates of unmet needs almost solely on FEMA applications for Individual Assistance, which excluded many impacted low-income and other systemically marginalized residents. One official who was involved in developing the action plan recalled feeling a sense of urgency to complete the action plan and start distributing funds, despite knowing the data being used was flawed and incomplete. The subsequent legal challenge and VCA eventually corrected this mistake, but at the expense of time and effort that could have been better spent serving residents in need.

Other grantees similarly noted experiencing tension between wanting to get money out fast with the need to collect data and engage the community on their needs. Officials describing the early stages of formulating their action plans emphasized the overwhelming challenge of managing a new grant and budget of this magnitude. For most, it was their first time involved in such a grant, and they were "drinking from a firehose" while also trying to coordinate with other state agencies. Given these challenges, processes that allow for continuous input from the community helped grantees stay informed about on-the-ground needs.

Grantees Expressed Confusion in Navigating the Roles and Requirements of Different Agencies

Grantees expressed a need to understand the relationships and distinctions between the various disaster recovery funding sources early in the post-flood planning process, such as from FEMA, SBA, HUD, and National Flood Insurance Program (NFIP) proceeds for policyholders. In addition to the funding gap issues noted previously, differences in program applications, requirements, allowable funding uses, and reporting needs added considerable complexity to officials' efforts to develop recovery and resilience programs. When grantees were able to collaborate more closely with various federal agencies, they reported better outcomes in terms of activity timing, efficacy, and equity.

So many people in the disaster space say, "I'm a FEMA person" or "I'm a HUD person." That approach is the kiss of death in my mind. If you cannot understand FEMA and you cannot understand HUD and you cannot understand how the two interrelate, your programs are doomed to fail. (Public official, New Jersey)

In addition to navigating the complexities around different recovery resources, grantees commented on the need for communicating with and informing the public about the options and policies that applied to

different agencies. For example, grantees observed a lack of knowledge among residents about the requirements involved in applying for and using funds from various sources, such as the need to use flood-resilient materials in repairs for which residents may seek reimbursement from CDBG-DR funds. Providing clarity to residents on different resources can also help reduce duplication of benefit issues later. This clarity is particularly important to households on fixed incomes that are less able to repay a duplication of benefits.

Number and Type of Households Served by CDBG-DR Funding

In addition to the findings derived from interviews and document reviews, the research team analyzed quantitative data from HUD’s DRGR database, which includes grantee-provided detail on the number and type of recovery and resilience activities conducted, how much was spent on each activity, the number and characteristics of households directly assisted through these activities, and how these counts differ from initial projections. These analyses find that, relative to their initial estimates of unmet needs, grantees directly assisted only a small number of households through their CDBG-DR-funded housing programs, which corroborates the observations of officials and community leaders as noted previously. Moreover, although most of the households served by these activities were low income, very few were renters.

Housing-Related Activities Assisted Fewer Low-Income Households Than Originally Projected

All four grantees reported directly assisting households through housing-related activities, although each served fewer LMI households (statutorily defined) than originally projected. Exhibit 4 summarizes by type all reported activities through which grantees had originally projected to serve LMI households, along with the actual number of LMI households assisted, both as a share of projected and of total households served.

Exhibit 4. Projected Versus Actual LMI Households Assisted by Activity Type

Grantee	Activity Type	LMI Households Served			Total Households Served	LMI as % of Total
		Projected	Actual	Actual as % of Projected		
Chicago	Rehabilitation/reconstruction of residential structures	317	56	18	56	100
Nashville	Construction of new replacement housing	26	0	0	0	N/A
	Rehabilitation/reconstruction of residential structures	686	188	27	364	52
New Jersey	Affordable rental housing	8,177	6,461	79	6,544	99
	Construction of new housing	3	1	33	1	100
	Rehabilitation/reconstruction of residential structures	8,021	3,739	47	7,683	49
	Rental assistance waivers	2,259	2,260	100	2,675	84
	Residential location incentive grants	7,758	7,758	100	18,248	43
Pennsylvania	Construction of new housing	40	0	0	40	0
	Construction of new replacement housing	5	0	0	0	N/A
	Homeownership assistance to low- and moderate-income	9	0	0	0	N/A
	Rehabilitation/reconstruction of residential structures	34	4	12	5	80

LMI = low- and moderate-income. N/A = not applicable.

New Jersey had the most success with serving LMI households on par with initial projections, in large part through targeted rental and affordable housing programs developed as part of their VCA. Their new construction and rehabilitation efforts, however, were much less effective at assisting LMI households, as noted by several informants interviewed for this research. Other grantees were similarly challenged to serve more than a handful of the expected number of LMI households with unmet needs through rehabilitation and reconstruction activities (which included elevations). These findings do not mean, however, that grantees favored non-LMI households in their housing efforts, as the LMI share of all households served by the activities listed in exhibit 4 were one-half or more for all except New Jersey’s rehabilitation and reconstruction activities and residential location incentive grants.

Grantees Reported Few Renters Served by Structural Repair and Resilience Activities

Within the reported counts of actual LMI and total households served by CDBG-DR-funded housing activities, grantees include breakdowns by specific demographic and housing characteristics of these households, such as the number of owner and renter households, as shown in exhibit 5.

Exhibit 5. Renter Households Served by Housing Activities

Grantee	Activity Type	Total Households Served	Total Renters Served	Renters as % of Total
Chicago	Rehabilitation/reconstruction of residential structures	56	4	7
Nashville	Rehabilitation/reconstruction of residential structures	364	0	0
New Jersey	Affordable rental housing	6,544	6,544	100
	Construction of new housing	1	0	0
	Rehabilitation/reconstruction of residential structures	7,683	557	7
	Rental assistance waivers	2,675	2,675	100
Pennsylvania	Construction of new housing	40	40	100

Only Chicago and New Jersey report serving renter households through rehabilitation and reconstruction activities, accounting for 7 percent of all households that received CDBG-DR funds for such work. New Jersey and Pennsylvania also served renters through targeted construction and assistance programs, although Nashville reported assisting only owners. New Jersey’s rental assistance program was by far the largest of any program serving renters.

The low numbers of renter households served comes despite high estimates of unmet renter needs in some jurisdictions. For example, Chicago calculated total unmet needs for renters at \$2.5 million, by subtracting the amount of FEMA assistance granted to renters from the estimated verified loss amounts on rental properties. A follow-up assessment 4 years after the flood, however, found that several expected beneficiaries had declined to participate, either because they were no longer living in their units or did not meet funding source requirements.

Number of Black and Latino Households, Indigenous and Native American Households, Asian American and Pacific Islander Households, and Other Households of Color Served Varied by Location and Activity Type

The other characteristic of assisted households noted in the DRGR reports submitted by grantees is their race and ethnicity. Although race is not an explicit consideration for this study, many low-income and other systemically marginalized residents often identify as persons of color, owing to decades of housing discrimination and segregation that gave rise to higher rates of disinvestment and exposure to climate hazards.

The share of Black and Latino residents, Indigenous and Native American residents, Asian American and Pacific Islander residents, and other residents of color served by the grantees through CDBG-DR-funded housing activities varies, from nearly 100 percent in Chicago—where the affected population was overwhelmingly Black and Hispanic—to only 3 percent in the one new construction project developed in rural Pennsylvania. Perhaps the most instructive aspect of these data is from the various activities conducted in New Jersey, where the population was racially and ethnically diverse; whereas Black and Latino residents, Indigenous and Native American residents, Asian American and Pacific Islander residents, and other residents of color were most of the residents assisted through affordable rental housing activities—which mostly consisted of landlord incentives and short-term rent vouchers—they were less likely to be served by structural rehab, rental assistance waivers, and location incentive grants, as exhibit 6 shows.

Exhibit 6. Households Served by Race and Ethnicity

Grantee	Activity Type	Total Households Served	Percent Households of Color (%)	Percent Households of Color in Impacted Area (%)
Chicago	Rehabilitation/reconstruction of residential structures	56	98	68
Nashville	Rehabilitation/reconstruction of residential structures	364	48	43
New Jersey	Affordable rental housing	6,544	68	45
	Construction of new housing	1	100	
	Rehabilitation/reconstruction of residential structures	7,683	22	
	Rental assistance waivers	2,675	41	
	Residential location incentive grants	18,248	21	
Pennsylvania	Construction of new housing	40	3	27

Households of color: Black and Latino Households, Indigenous and Native American Households, Asian American and Pacific Islander Households, and Other Households of Color.

Some caution should be used in interpreting these data, as reporting requirements can vary from grant to grant, and the information collected by HUD may not present a complete picture of all recovery and resilience activities conducted by grantees. Grantee-reported data may also be prone to errors, particularly if the officials in charge of reporting are different from those who oversee the activities (including subgrantees). Finally, grantees may use slightly different definitions and metrics for some of their reporting (for example, households versus housing units), which can make cross-grantee comparisons inaccurate.

V. POLICY IMPLICATIONS

The findings of this study offer many suggestions for policy and implementation interventions to better support equity in the process and outcomes of CDBG-DR grantees’ post-disaster recovery and resilience efforts. For one, HUD and other federal disaster recovery agencies (FEMA, NFIP, and SBA) can and should do more to educate state, county, and municipal officials on how their various resources relate and differ in the provision of funding and assistance for recovery efforts. More clarity and easier-to-access information on each agency, what it does or does not provide, and the administrative requirements associated with their funding, would enable grantees to quickly develop recovery and resilience programs in compliance with these regulations. Grantees will also be able to pass that information on to residents earlier in the recovery process, thereby reducing confusion and the risk of DOB violations. The agencies should also work to better align their application, regulation, and funding

processes to make implementation of their resources more seamless and less labor-intensive for both grantees and impacted residents.

Beyond coordinating with other disaster recovery agencies, HUD can also make changes to its administration and oversight of CDBG-DR grants. This oversight can include providing more guidance to grantees about what out-of-pocket costs paid by residents can be reimbursed, the procedures required to do so, and how to document damage and repair expenses, so this information can be shared early with residents. HUD could also do more to partner with various federal, state, and local governments to facilitate grantees' access to and use of the best available data on residents and their likely needs and risks, including down to the block level. Grantees can then use that data to customize recovery and resilience projects to meet those particular needs.

HUD should also consider adjustments to what it asks of CDBG-DR grantees, in accordance with some of the findings shared previously, and make available more resources to support such efforts to incorporate equity into the resilience and recovery process. These include—

- Identifying and partnering with local leaders and community partners early in the recovery process, including before a disaster strikes. This identification can help grantees better understand the needs of impacted communities, especially as those needs change and may suggest changes in activities or repurposing of funds.
- Seeking continuous data and input from the community as recovery progresses, in order to determine whether and when it would be appropriate to reallocate funds or seek additional funding to supplement programs. Grantees can also be encouraged to use different communication methods, including mobile and social media platforms, to reach low-income and systemically marginalized residents and facilitate ongoing two-way communications throughout the recovery process.
- Taking steps to help residents prepare for funding availability, including communicating on expected timeframes for receipt of funds, queuing up applications, and conducting environmental reviews and other regulatory steps in advance. Grantees can also provide resources for residents to bridge the gaps between availability of different funding types.
- Protecting residents from predatory developers, such as those used in Nashville to alert residents when code enforcement complaints are filed against them as a pressure tactic.

In promoting these best practices, HUD may also want to consider using alternative metrics to evaluate CDBG-DR grantee performance and compliance beyond spending and counts of households served. They could include qualitative assessments of how and how effectively grantees conducted outreach to low-income and systemically marginalized residents, how and how effectively grantees incorporated data and input collected from these residents, surveys of resident satisfaction during and after CDBG-DR allocations were made, and testimonies from community leaders with their impressions of how grantees engaged and responded to needs of low-income and systemically marginalized residents.

Finally, challenges related to delays in availability of CDBG-DR funds would be reduced if Congress passes legislation to permanently authorize the resource and adopt a standard set of rules and procedures for all grantees. CDBG-DR funding is vital to community recovery, and with almost \$100 billion of taxpayer dollars invested in CDBG-DR, it should be treated like any other federally funded resource, subject to the same public inspection. By requiring notice-and-comment rulemaking, permanent authorization would allow for many more communities that have navigated the complicated disaster recovery funding landscape to offer their suggestions for improving it for future disaster

survivors. Indeed, a recent survey found that more than 80 percent of CDBG-DR grantees feel this one change would result in “more timely, predictable, equitable, or efficient CDBG-DR assistance” (Winkler, Minott, and Barry, 2022).

The *Reforming Disaster Recovery Act* (H.R. 4707/S. 2471) currently being debated includes permanent authorization, along with other key enhancements, such as a reserve fund to bridge the gap between a disaster and availability of CDBG-DR funds, set asides for capacity building and technical assistance for grantees, and requirements for data collection and sharing to facilitate coordination among grantees and other agencies. President Biden has also included permanent authorization of CDBG-DR funding among his legislative priorities in his fiscal year 2023 budget proposal.

VI. RESEARCH CHALLENGES AND IMPLICATIONS

Although the findings of this research suggest important policy considerations, the process of studying CDBG-DR grantees also revealed some implications for further research into post-disaster recovery and resilience activities. Specifically, the research team encountered some challenges in the collection and analysis of data on grantees and their outcomes, of which both HUD and other researchers should be aware and take steps to address in future research on this topic.

Among the chief research findings was the difficulty of identifying and collecting data from knowledgeable informants due to the elapsed time since the floods occurred (8–11 years prior to the interviews). Many of the officials and community representatives who were instrumental in the early phases of grantees’ CDBG-DR work had since moved on to other roles and could not be located, and newer staff involved in grant administration lacked knowledge about the development of grantee action plans and selection of specific recovery and resilience strategies. Even those informants who were involved from the beginning of the CDBG-DR grant sometimes struggled to remember key details and recall names of other potential interviewees for the snowball sampling process. The long duration of post-disaster recovery and resilience work, however, requires approaching grantees several years after a disaster to effectively assess outcomes, which studies with more recent grantees would not provide. CDBG-DR grantees and their community partners should therefore be encouraged to better document and preserve knowledge from the early grant phases for use in future research, including through reflection memos, surveys, interviews, archived data, and video accounts.

The process of identifying and collecting data from informants was further complicated by the onset of the COVID-19 pandemic during the first year of the study. The original project workplan included site visits and in-person interviews with all case study grantees but was modified to conducting interviews by video calls for the safety of both interviewers and informants. Although this approach was still an effective means for collecting data from informants, it limited the research team’s ability to directly see the impact of recovery and resilience activities in flood-damaged communities. Likewise, snowball sampling might have been more productive for generating referrals if interviews had taken place in person and on site where key staff were working together. To adjust for these obstacles, Amplify cast a wider net to identify potential interviewees, including by examining media accounts of the flood, documents of recovery-related meeting minutes forwarded by interviewees, and CDBG-DR site-specific documentation available online. Despite these efforts, the research team was unable to meet their original target of 25 interviews per site and thus drew their findings from a smaller set of 7–14 interviews that may not have captured the full range of experiences with each grantees’ post-disaster recovery and resilience activities.

Additional challenges were experienced in the collection and analysis of quantitative data regarding equitable outcomes from CDBG-DR recovery and resilience work. Questions about the quality of DRGR

data collected by HUD from grantees, as noted previously, made cross-site comparisons of the number and characteristics of households served by grant-funded activities less reliable. Grantee-reported data on the location of certain CDBG-DR activities, meanwhile, were found to be inconsistent with the publicly available DRGR data, and thus not effective for analyzing the conditions of neighborhoods that received such funds, to assess whether they differed from those of impacted neighborhoods without grant-funded recovery and resilience activities, as well as to see how conditions in such places may have changed overtime. Such observations are important to assessing the equitability of outcomes due to CDBG-DR grants, and HUD should work to improve the accuracy of such data from grantees going forward.

VII. CONCLUSION

The findings summarized previously detail several ways that prior CDBG-DR grantees sought to include and seek equitable outcomes for low-income and other systemically marginalized residents in their post-flood recovery and resilience efforts. In their choice of housing-related strategies, collaborations with local organizations, and procedures developed to overcome programmatic barriers, the four grantees included in this case study were innovative in how they addressed the specific needs of impacted residents and communities. Although in-depth and causal evaluations of the results of these efforts were limited by data availability, this analysis nonetheless suggests some successes by the grantees in addressing the range of needs among impacted residents. Their experiences also reveal how robust policy and implementation changes could further enhance the flexibility and resources needed to achieve more equitable outcomes for low-income and other systemically marginalized residents, along with data collection and reporting changes to improve assessments of future disaster recovery and resilience efforts.

The results of this research will also be used to inform materials designed to guide other CDBG-DR grantees as they seek to advance equitable outcomes. Specifically, the findings of the research will be adapted into a resource for communities to reference in the immediate wake of a disaster, to alert and inform them on important elements of post-disaster resilience strategies that this research has shown are often overlooked or less understood at the beginning of this process. It will be comprised of a series of short briefs on specific topics relevant to identifying, communicating, collaborating on, and streamlining effective housing and community strategies and programs to serve low-income and other systemically marginalized residents. The goal of this resource is to bring awareness to these topics early in the post-disaster recovery process, so funding and communication plans can incorporate them from the beginning, leading to better and more equitable resilience outcomes.

Achieving equitable post-disaster recovery and resilience processes and outcomes is vital to ensuring that low-income and other systemically marginalized residents are not disproportionately harmed as a result of natural and climate-based disasters and have the same opportunities to recover better and more prepared for future disasters as all other impacted residents. It is also an important element of redressing past discrimination and isolation of low-income and other systemically marginalized residents that put them at greater risks of negative impacts from natural disasters in the first place. Ensuring these past inequities are not exacerbated by the increasing frequency and severity of natural disasters, therefore, should be central to all efforts to advance both climate resilience and racial and social equity for all Americans.

APPENDIX A. PUBLIC OFFICIAL OR ADMINISTRATOR INTERVIEW PROTOCOL

Audience for this protocol

This interview protocol is for Community Development Block Grant Disaster Recovery (CDBG-DR) management officials. For example, individuals interviewed using this protocol might include staff in the City of Chicago's Office of Budget and Management, the City of Nashville's Metropolitan Development and Housing Agency, New Jersey's Department of Community Affairs, and Pennsylvania's Department of Community and Economic Development, among others.

In advance of each interview, the interviewers will familiarize themselves with the following.

- Details about this flood disaster, including the number of counties and communities that were affected and determined to be Most Impacted and Distressed (MID) per HUD; the amount of CDBG-DR funds provided; and whether the grantee managed construction for the single-family housing repair and rehabilitation program or if awards were provided to the homeowner and the homeowner performed or managed the work.
- Details about the site, interviewee's role, and the level of involvement in managing and disbursing CDBG-DR funding.
 - Based on interviewee's role, some interview questions and probes may not be relevant and therefore won't be asked.
- The geographic region the organization serves, the main populations served by the organization, and the overall programs and services the organization provides.
- Any tracking on how the program got deployed, results of investment and community response by scanning media coverage or websites, or both, related to recovery.
- Any available information regarding connection with the Federal Emergency Management Agency (FEMA) or other agency efforts to support recovery and any potential intersection.

Introduction

To begin the interview, the interview team members will—

- *Introduce themselves and describe the purpose of the interview and project goals.*
- *Hello, my name is _____, and I am with Amplify for Change. The purpose of this interview is to gather input on HUD's Community Development Block Grants for Disaster Recovery (CDBG-DR) Program in [site name, in year]. We are interviewing you as part of a national research project on CDBG-DR housing recovery programs. The goal of our research is to understand how grantees included and sought equitable flood resiliency and mitigation outcomes for low- and moderate-income and vulnerable households and communities, particularly those with limited English proficiency, with special needs, with low technology literacy, in rural areas, and in areas of minority concentration. We are interviewing grantees as well as community leaders. The goal of this project is to develop an implementation guide that will improve community resiliency.*
- *Thank the interview respondent for her or his time.*
- *Remind the interview respondent that the interview will last approximately 75 minutes.*
- *Let the interview respondent know that they will be recorded, and a member of the interview team will be taking notes to capture her or his responses.*
- *Refer to the informed consent document they received by email and explain to the interview respondent that any responses she or he provides will remain confidential and private to the extent permissible by law and assuring that names will not be listed in any published reports and information will be combined with information provided by others. That is, no names will be directly tied to interview responses, and we will only report findings from the interviews in*

aggregate or group form. Only members of the project team will have access to the notes that are being taken. The project team will keep notes private, only anonymized data will be provided to HUD, and that anonymized data will be archived and securely stored for a period of at least 3 years after culmination of the study.

- *Ask the interview respondent if she or he has any questions before the interview begins.*

Interview Questions

1. To begin, describe your role in the action plan's development and implementation, including the amendments.
2. About how many months after the flood did the housing recovery programs begin accepting applications?

The following questions are about the decision-making process that went into the housing recovery program's design.

3. Describe the process used to design the housing recovery program.
 - a. In what way were community groups and residents involved?
 - b. What other departments, agencies, or public entities were involved in the housing recovery design?
4. Describe how strategies to reduce risk of future flooding in homes were chosen and incorporated into the housing recovery program.
 - a. What other departments, agencies, organizations, or stakeholders helped determine those strategies?
 - b. How did you consider the needs of low- and moderate-income and vulnerable populations versus the needs of the general population?

The next few questions are about community outreach for the development and implementation of the action plan.

5. Other than the citizen participation meetings, what other ways did you reach out to low- and moderate-income and vulnerable communities? For example, did you partner with nonprofits, churches, or neighborhood groups?
 - a. How did you decide when you had done enough public outreach?

The next series of questions are about the application, selection eligibility, and award process.

6. What resources and supports were provided to help low- to moderate-income and vulnerable populations know about the available funding and the application process?
 - a. How did people with disabilities and limited English proficiency learn about the funding and application process? Were additional supports provided to support these applicants?
 - b. What other steps could have been taken to improve outreach to low- and moderate-income and vulnerable populations?
7. What might be reasons that people started but did not finish an application?
 - a. Did your jurisdiction follow up with applicants who submitted incomplete applications, or did you determine them ineligible?
 - b. Did you extend housing program deadlines to allow for additional applicants?

The next few questions are about equitable outcomes and flood resilience. The questions focus on differences that may occur post-recovery for higher-income households and neighborhoods compared with low- and moderate-income households and neighborhoods.

8. Were there neighborhoods that received funding first? If so, why?

9. Describe processes that might have been in place to monitor the equitable distribution of funds to low- and moderate-income households.
 - a. Were adjustments made to rebalance the distribution?
10. Did housing type (for example, single-family homes, apartment complexes, duplexes, designated affordable housing, public housing, manufactured housing) determine whether recovery was slow or quick?
 - a. What type of housing stock was the most difficult to assist?
 - b. What type of housing type (single-family homes, apartment complexes, duplexes, designated affordable housing, public housing, manufactured housing) was the hardest to help?
11. Did neighborhoods with high numbers of racial and ethnic minorities recover at a different pace than other neighborhoods?
 - a. What could the program have done differently to change this pace?
12. In the neighborhoods that were prone to flooding before this disaster, who lived in those neighborhoods before the flood and how did that change as a result of the flood?

The following question is for grantees that reallocated funds from housing to other uses or into housing from other categories.

13. Why were funds reallocated? How did you determine how to use the reallocation?
 - a. Was there public controversy or opposition to moving housing funds to a project? How was this opposition addressed in the community?

We have only a couple more questions before we close.

14. Can you think of any aspects of the grant implementation that were both creative and turned out to be highly effective?
 - a. For example, were atypical groups or individuals consulted in decision-making and planning, was financing structured with private funding, were existing community goals integrated into the communication and participation process?
15. Anything else you would like to share?
16. Can you suggest two to three other people knowledgeable in this program that we can contact?

OPTIONAL IF TIME PERMITS

1. Was the CDBG-DR grant combined with other funds or used to leverage or attract other funding sources? If so, did this combined funding help low- and moderate-income and vulnerable populations?
2. Did your community face a fair housing or civil rights lawsuit or administrative complaint? If so, what was the complaint? How was it resolved?
3. Do you think neighborhoods with low- and moderate-income and vulnerable populations changed for the better as a result of CDBG-DR funding?
 - a. Did rebuilding or identifying a new project, create new challenges or equity for low- and moderate-income and vulnerable populations?

Thank you!

APPENDIX B. COMMUNITY REPRESENTATIVES INTERVIEW PROTOCOL

Audience for this protocol

This interview protocol is for non-Community Development Block Grant Disaster Recovery (CDBG-DR) management officials and community-based organization leaders and staff. For example, individuals interviewed using this protocol could include representatives of the long-term recovery group, local fair housing organizations, local council on aging, local disability rights center, local nonprofit chapters of Catholic Charities, Habitat for Humanity, Rebuilding Together, and so on

In advance of each interview, the interviewer will familiarize themselves with the following.

- Details about the site, interviewee's role, and the level of involvement in CDBG-DR funding.
- The geographic region the organization serves, the main populations served by the organization, and the overall programs and services the organization provides.

Introduction

To begin the interview, the interview team members will—

- *Introduce themselves (that is, briefly explain the purpose of the interview and the project goals).*
- *Hello, my name is _____, and I am with Amplify for Change. The purpose of this interview is to talk about HUD's Community Development Block Grant for Disaster Recovery (CDBG-DR) to [name of grantee] for the [year] flood. We are interviewing you as part of a national research project. The goal of our research project is to understand how the CDBG-DR grant funding can help make households and communities more resilient to the impacts of flooding. In particular, the goal is to learn how the design and carrying out of flood recovery plans serves the needs of low- and moderate-income and vulnerable households and communities. In this interview, when we use the word "vulnerable" we mean households with low technology skills, disabilities, limited English proficiency, or persons living in rural areas or in areas of minority concentration. In addition to interviewing leaders of community organizations like you, we are interviewing local government officials. We will use information from this research to write tips and guidance that helps communities prepare for and carry out flood disaster recovery that better serves low- and moderate-income and vulnerable households and communities.*
- *Thank the interview respondent for her or his time.*
- *Remind the interview respondent that the interview will last approximately 75 minutes.*
- *Let the interview respondent know that a member of the interview team will be taking notes to capture her or his responses.*
- *Refer to the informed consent document they received by email and explain to the interview respondent that any responses she or he provides will remain confidential and private to the extent permissible by law and assuring that names will not be listed in any published reports and information will be combined with information provided by others. That is, no names will be directly tied to interview responses, and we will only report findings from the interviews in aggregate or group form. Only members of the project team will have access to the notes that are being taken. The notes will be kept private by the project team, only anonymized data will be provided to HUD, and that anonymized data will be archived and securely stored for a period of at least 3 years after culmination of the study.*
- *Ask the interview respondent if she or he has any questions before the interview begins.*

Interview Questions

1. Describe your role in the community at the time of the flood and in the years soon after it.
2. After the flood, what services did the organization for which you worked provide to affected residents? For example, was it direct assistance such as food and housing or indirect assistance such as organizing residents and representing their interests to officials allocating funds?
3. Although the flood damaged thousands of homes, describe the damage to houses in low- and moderate-income and vulnerable neighborhoods.
 - a. In the years that have passed since [year of this flood], have the original residents in those flooded neighborhoods experienced less flood-related damage as an outcome of this funding?

CDBG-DR funding is meant to close the gap between the cost to rebuild a safer community and the federal funding provided immediately after the flood by the Federal Emergency Management Agency (FEMA) and other agencies. CDBG-DR funds pay for things like home elevation, rehabilitation, and flood-proofing as well as housing buyouts and other activities. Often it takes 1 to 2 years after a disaster until CDBG-DR funds are available to a community.

4. Tell us what you recall about the 2 years after the flood. How did flood-affected households make their homes livable again?
 - a. When doing these repairs, were homeowners also flood-proofing or elevating to protect against future floods?
5. CDBG-DR grantees are required to develop an action plan that must be approved by HUD. It describes how the funds will be used and the criteria for awarding funding for housing recovery and infrastructure projects. Tell us what you recall about public meetings or other public engagement efforts hosted by [grantee] that presented the action plan.
 - a. Did [grantee] consult with community stakeholders and advocates in developing the plan?
 - b. To ensure the needs of low- and moderate-income and vulnerable homeowners and renters are addressed in an action plan, what additional community outreach do you recommend take place?
6. Once the CDBG-DR funds were available, the grantee announced the application process and eligibility criteria for housing recovery funds. How did people in low- and moderate-income and vulnerable communities learn about this process? What was their general response?
 - a. Did the grantee establish formal partnerships with nonprofits to assist with outreach and application counseling?
 - b. Were there certain populations that required more assistance with the application? If so, was it provided?
 - c. Were there any particularly effective ways that the funding availability was communicated to low and moderate income and vulnerable communities?
7. “CDBG-DR grantees often make difficult judgments about who to fund and how much funding to provide. If award amounts are capped too low, then the housing units are often not fully rehabbed and blighting effects remains in a community. If there are no caps on awards, grantees will not be able to assist all eligible beneficiaries. The grantee must weigh the rebuilding needs against the resources available and plan their housing rehab program accordingly,” (HUD, 2013). Describe your understanding of criteria that [grantee] used to decide on the eligibility criteria and funding amounts for rehabbing, elevating, and floodproofing damaged properties.
 - a. Was the housing recovery funding distributed in a fair way so that low- and moderate-income and vulnerable households got what they needed to reduce the risk of similar flooding happening to their homes in the future?
 - b. Were more affluent neighborhoods more likely to access program benefits?

- c. What could [grantee] have done to better facilitate equitable flood recovery outcomes?
- 8. In considering how the needs of some people were addressed compared with others, were any of the following groups' needs not well addressed because of an unfair or inequitable process? What could have been done to correct this?
 - a. Owners.
 - b. Renters.
 - c. Landlords of affordable rental housing.
 - d. Mobility-impaired residents.
 - e. Racial and ethnic minorities.
 - f. Lower income neighborhoods.
 - g. Limited English proficiency households.
 - h. Single-family, duplex, and multifamily households.
- 9. Comparing neighborhoods with high numbers of racial and ethnic minorities to those with low numbers, did the pace of recovery vary significantly?

Question 10 is ONLY for grantees that reallocated funds from housing to infrastructure.

- 10. By the time CBDG-DR funds became available, fewer people applied for the housing recovery funds than had been originally anticipated. As a result, [grantee] amended the action plan and reallocated funds from residential projects to other uses, such as infrastructure projects. For instance, in some communities, sewer pipes were widened to reduce the chance of overflow into homes. Tell us what you remember about housing funds being redirected to infrastructure projects.
 - a. Do you remember if stakeholders were consulted or if a public process existed to discuss the reallocation?
 - b. What infrastructure projects from that period stand out as especially successful for reducing the risk of future flood damage for low- and moderate-income and vulnerable populations?
 - c. Describe any controversial projects that were successfully implemented. Who was the opposition and what was the outcome?
- 11. Is there anything we haven't covered today relevant to this topic that you would like to share?
- 12. Can you recommend one to two other people you suggest we speak with who could help inform this project?

Thank you!

REFERENCES

- Congressional Research Service. 2020. *The Community Development Block Grant's Disaster Recovery (CDBG-DR) Component: Background and Issues. Report R46475.*
- Drakes, Oronde, Eric Tate, Jayton Rainey, and Samuel Brody. 2021. "Social Vulnerability and Short-Term Disaster Assistance in the United States," *International Journal of Disaster Risk Reduction* 53. <https://doi.org/10.1016/j.ijdrr.2020.102010>.
- Elliott, James R., Phylcia Lee Brown, and Kevin Loughran. 2020. "Racial Inequities in the Federal Buyout of Flood-Prone Homes: A Nationwide Assessment of Environmental Adaptation," *Socius* 6. doi:10.1177/2378023120905439.
- Emrich, Christopher T., Eric Tate, Sarah E. Larson, and Yao Zhou. 2020. "Measuring Social Equity in Flood Recovery Funding," *Environmental Hazards* 19 (3): 228–250. <https://doi.org/10.1080/17477891.2019.1675578>.
- Fair Share Housing Center, Latino Action Network, and NAACP New Jersey State Conference. 2015. *The State of Sandy Recovery (Second Annual Report)*. http://fairsharehousing.org/images/uploads/State_of_Sandy_English_2015.pdf.
- Frank, Thomas. 2020. "More U.S. Homes Are at Risk of Repeat Flooding," *Scientific American*. <https://www.scientificamerican.com/article/more-u-s-homes-are-at-risk-of-repeat-flooding/>.
- Junod, Anne N., Carlos Martín, Rebecca Marx, and Amy Rogin. 2021. *Equitable Investments in Resilience: A Review of Benefit-Cost Analysis in Federal Flood Mitigation Infrastructure*. Washington, DC: Urban Institute. <https://www.urban.org/research/publication/equitable-investments-resilience>.
- Lee, Jee Young, and Shannon Van Zandt. 2019. "Housing Tenure and Social Vulnerability to Disasters: A Review of the Evidence," *Journal of Planning Literature* 34 (2): 156–170. <https://doi.org/10.1177/0885412218812080>.
- Martín, Carlos, Brandi Gilbert, Dan Teles, and Brett Theodos. 2019. *Housing Recovery and CDBG-DR: A Review of the Timing and Factors Associated with Housing Activities in HUD's Community Development Block Grant for Disaster Recovery Program*. Washington, DC: U.S. Department of Housing and Urban Development, Office of Policy Development and Research. https://www.huduser.gov/portal/sites/default/files/pdf/HousingRecovery_CDBG-DR.pdf.
- Murray, Patrick, and Tim Tracey. 2014. *NJ Sandy Panel: Recovery Stuck in the Sand*. Monmouth University Poll. https://www.monmouth.edu/polling-institute/documents/monmouthpoll_njsandy_102814.pdf/.
- Reidmiller, D. R., C. W. Avery, D. R. Easterling, K. E. Kunkel, K. L. M. Lewis, T. K. Maycock, and B. C. Stewart, eds. 2018. *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II*. Washington, DC: U.S. Global Change Research Program. doi: 10.7930/NCA4.2018.
- Rufat, Samuel, Eric Tate, Christopher G. Burton, and Abu Sayeed Maroof. 2015. "Social Vulnerability to Floods: Review of Case Studies and Implications for Measurement," *International Journal of Disaster Risk Reduction* 14 (4): 470–486. <https://doi.org/10.1016/j.ijdrr.2015.09.013>.
- Strochak, Sarah, Jun Zhu, and Laurie Goodman. 2018. "Too Many Homeowners Lack Flood Insurance, but Many Buy It Voluntarily." Urban Wire blog, Urban Institute. <https://www.urban.org/urban-wire/too-many-homeowners-lack-flood-insurance-many-buy-it-voluntarily>.

Tate, Eric, Md Asif Rahman, Christopher T. Emrich, and Christopher C. Sampson. 2021. "Flood Exposure and Social Vulnerability in the United States," *Natural Hazards* 106: 435–457. <https://doi.org/10.1007/s11069-020-04470-2>.

U.S. Department of Housing and Urban Development (HUD). 2013. *Disaster Recovery Homeowner Rehabilitation Program Design and Implementation Toolkit*. HUD Exchange. <https://www.hudexchange.info/resource/2855/disaster-recovery-homeowner-rehabilitation-program-toolkit/>.

———. 2022. *CDBG Disaster Recovery Grant History*. HUD Office of Community Planning and Development. <https://www.hud.gov/sites/dfiles/CPD/documents/CDBG-DR-Grant-History-2022-4.pdf>.

Wilson, Bradley, Eric Tate, and Christopher T. Emrich. 2021. "Flood Recovery Outcomes and Disaster Assistance Barriers for Vulnerable Populations," *Frontiers in Water* 3. <https://www.frontiersin.org/article/10.3389/frwa.2021.752307>.

Winkler, Andy, Owen Minott, and Erin Barry. 2022. "Findings from BPC's Survey of HUD CDBG-DR Grantees." Bipartisan Policy Center. <https://bipartisanpolicy.org/blog/bpcs-survey-findings-of-hud-cdbg-dr/>.

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