



U.S. Department of Housing and Urban Development

Office of Policy Development and Research

Research and Evaluation, Demonstrations and Data Analysis and Utilization Program
(HUDRD)

FR-6200-N-29

Application Due Date: 05/24/2019

Research and Evaluation, Demonstrations and Data Analysis and Utilization Program
(HUDRD)

FR-6200-N-29

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U.S. Department of Housing and Urban Development

Program Office:	Office of Policy Development and Research
Funding Opportunity Title:	Research and Evaluation, Demonstrations and Data Analysis and Utilization Program (HUDRD)
Announcement Type:	Initial
Funding Opportunity Number:	FR-6200-N-29
Primary CFDA Number:	14.536
Due Date for Applications:	05/24/2019

Overview

Prospective applicants should carefully read all instructions in all sections to avoid sending an incomplete or ineligible application. HUD funding is highly competitive. Failure to respond accurately to any submission requirement could result in an incomplete or noncompetitive proposal.

HUD is prohibited from disclosing 1) information regarding any applicant's relative standing, 2) the amount of assistance requested by an applicant, and 3) any information contained in the application. Prior to the application deadline, HUD may not disclose the identity of any applicant or the number of applicants that have applied for assistance.

For Further Information Regarding this NOFA: Please direct questions regarding the specific program requirements of this Program Notice of Funding Availability (NOFA) to the office contact identified in Section VII.

OMB Approval Number(s): 2528-0299

Paperwork Reduction Act.

I. Funding Opportunity Description.

A. Program Description.

1. Purpose.

Summary

This NOFA announces the availability of up to \$4,708,000.

The following projects are eligible for award in the amounts listed:

- **Project 1: Cost-effectiveness Evaluation of HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) Resilience Investments** - HUD may award one or more cooperative agreements, with the total of all awards not to exceed \$950,000. The award floor is \$200,000.

- **Project 2: Qualitative Case Studies of Implementation of HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) Resilience Investments** - HUD may award one or more cooperative agreements, with the total of all awards not to exceed \$550,000. The award floor is \$200,000.

NOTE: HUD may not award the maximum for either Project 1 (\$950,000) or Project 2 (\$550,000). Under no circumstances will the total amount awarded for Projects 1 and 2 exceed \$1,200,000.

- **Project 3: Cooperative Research in Housing Technologies** - HUD may award three or more cooperative agreements, with a total of all awards not to exceed \$3,508,000 (comprised of up to \$1,208,000 in FY18 funds and up to \$2,300,000 in FY19 funds). The award ceiling for this project is \$400,000. The award floor is \$200,000.

NOTE: Applicants may apply for one, two, or all three projects under this announcement. Applicants applying for more than one project must submit a separate application for each project. Applicants may submit only one application per project. No person may be listed as a principal investigator on more than one application per project under this announcement.

Overview: Project 1 and Project 2

The Department of Housing and Urban Development Appropriations Act, 2018 (Public Law 115-141) provides funding for necessary expenses of programs of research and studies relating to housing and urban problems that will allow HUD to evaluate the efficacy of its resilience investments. We are soliciting proposals to conduct two distinct, but related, research studies: (1) a cost-effectiveness evaluation that investigates long- and short-term benefits and costs of expenditures designed to reduce human and property risks of flood hazards and increase resilience to floods, with explicit focus on impacts to vulnerable populations; and (2) an assessment of implementation of flood resilience strategies, with a goal of identifying those implementation practices that have the greatest chance of being successful and replicable across a range of communities, as well as important lessons learned from strategies that were not as effective.

Part of the deliverables for each of these studies will be guidance for communities carrying out flood resilience strategies. The cost effectiveness study will provide guidance on practical methods of evaluation that can be deployed by local communities and states with varying levels of capacity for assessing the benefits of resilience investments. The implementation guidance will include a review of common implementation challenges and solutions and will identify best practices for conceiving, planning, funding, and implementing flood resilience strategies, and especially for how to improve community participation and support of such strategies.

Projects 1 and 2 have interconnected research objectives but will have distinct scoring factors in this NOFA. The work of assessing the physical and social impacts of resilience projects is complex and necessitates a unique range of specialties. To fulfill the requirements of the research, applicants to either solicitation are encouraged to form teams or collaborations to satisfy the scoring criteria.

Background: Project 1 and Project 2

According to the National Oceanic and Atmospheric Administration (NOAA), the frequency of disaster events causing over \$1 billion in losses has been increasing. The six most expensive years of disaster losses have occurred since 2004, including the three most expensive disasters ever recorded in the United States: Hurricanes Katrina (\$165 billion), Harvey (\$128 billion), and Maria (\$92 billion).(1) The most expensive year of losses totaled a staggering \$317 billion in 2017. The rise in disaster related losses can be attributed to both the increasing intensity of storms and persistent, increasing residential and commercial development in areas prone to natural hazards, especially flooding.(2)(3)(4)(5)

In response to these events, Congress has made special appropriations of CDBG-DR funds to support communities and supplement the assistance available through other Federal disaster programs, e.g., FEMA Public and Individual Assistance and SBA Disaster Loans. Since 1992, this form of federal recovery funding has been used by Congress to provide flexible rebuilding funds in the aftermath of major disasters, and these grants have expanded dramatically over the past decade. Currently, HUD oversees over \$50 billion in active CDBG-DR grants throughout the country.

The primary function of CDBG-DR is to assist communities - and particularly low- and moderate-income households - in recovering from the qualifying disaster, and most appropriation laws permit the use of these funds for mitigation of future hazard risk only as part of the recovery process. Over time, the increasing desire to reduce the federal cost of natural disasters has translated into increased funding specifically for mitigation, within the CDBG-DR grant program, which HUD made possible through modifications to the standard CDBG-DR framework. In 2008, in response to Hurricanes Gustav and Ike and the Midwest floods, HUD established the Disaster Recovery Enhancement Fund (DREF) which allocated \$300 million to eligible CDBG-DR grantees for mitigation activities such as land-use planning, buyout programs, building retrofits, and training and enforcement of new building codes. In 2014, in response to Hurricane Sandy, HUD coordinated the Rebuild by Design (RBD) competition, an innovative and participatory approach to planning resilience strategies in the impacted areas. The selected projects included major infrastructure, property buyouts, and community planning and design efforts, and were subsequently funded through CDBG-DR funding in the amount of \$1 billion. In 2016, HUD announced winners of the National Disaster Resilience Competition (NDRC), which awarded 13 grantees throughout the country \$1 billion in CDBG-DR funds for a wide range of innovative resilience projects and programs, including one of the first federally funded community-wide resettlement efforts. Most recently, Congress appropriated no less than \$12 billion for mitigation activities (HUD eventually allocated nearly \$16 billion) in areas receiving CDBG-DR for disasters occurring in 2015 through 2017. More information about the CDBG-DR program can be found here: <https://www.hudexchange.info/programs/cdbg-dr/>.

The recent initiatives reflect Federal government's move beyond discrete mitigation projects to broad resilience efforts. Leaders in the field, including the Federal government, have increasingly moved beyond merely reducing damage losses caused by disasters and are focusing on improving the capacity of communities to recover following systemic shocks. Although these terms have not been defined within CDBG-DR program requirements, for the purposes of this NOFA, mitigation is defined as actions taken to reduce or eliminate the loss of life and property by lessening the impact of future disasters, while resilience is a quality of a place that indicates a capacity to prepare for anticipated hazards, adapt to changing conditions and recovery rapidly from disruptions without compromising long-term prospects for development.

Thus, mitigation is a type of activity that can increase a community's resilience.

The focus on reducing risk and improving resilience is borne out in various CDBG-DR mechanisms, yet there is little reliable, structured evidence to guide State's and local communities in developing resilience strategies and implementing such projects and programs using CDBG-DR funds. Furthermore, we have a unique role in serving the most vulnerable people and communities through these disaster recovery funds. Unless altered by a waiver and alternative requirement, regulations require at least 70 percent of funds to benefit low- or moderate-income households (sometimes a waiver reduces that figure to 50 to 70 percent), set standards for inviting community participation in the planning process, and include provisions to promote fair housing and equal opportunity. HUD, unlike other federal agencies that provide disaster response and recovery funding, operates under a mandate to understand not only how expenditures can reduce hazard risk and improve recovery outcomes, but also how expenditures affect low- and moderate-income and other vulnerable groups and in these communities.

Request for Proposals: Project 1 and Project 2

The increasing need to incorporate resilience into disaster recovery, especially for vulnerable communities, underscores the need for better information on how to effectively fund and implement it.

For both the cost-effectiveness evaluation and the assessment of implementation strategies, applicants are asked to develop proposals that describe innovative research approaches that will address the project objectives described in this NOFA. This approach should provide findings and informational resources that can be used to guide States and local communities using CDBG-DR and other public funds to incorporate the concepts of resilience into their disaster recovery plans.

In developing research proposals in response to this NOFA, there are several existing resources that we expect applicants to review:

- The Disaster Recovery Toolkits posted on the HUD Exchange website for current departmental guidance on implementation:
<https://www.hudexchange.info/programs/cdbg-dr/toolkits/> .
- Guidelines, regulations, selection process, requirements, and selected projects from HUD's prior CDBG-DR initiatives focused on resilience (RBD and NDRC), and any related literature or audits.

We expect successful proposals will incorporate one or more of the NDRC projects as part of the study sample, as these initiatives provided grantees with the most flexibility and opportunity to innovate. These projects also embody HUD's efforts to incorporate holistic community development approaches, emphasizing environmental, socioeconomic, social outcomes, as well as resilience performance.

Although Projects 1 and 2 cover overlapping topics, we are using distinct scoring criteria for each of the projects, with the expectation of funding at least one grant for each project. HUD encourages research organizations to submit applications for both projects.

Methodological Considerations: Project 1 and Project 2

Both Project 1 (cost-effectiveness analysis) and Project 2 (implementation study):

- The types of hazards and resilience strategies to be examined
- The time frame of grants from which researchers can sample resilience expenditures for analysis
- Requirements for data collection
- Special emphasis on vulnerable populations as part of the research design

i. Hazard Mitigation and Resilience Strategies

CDBG-DR funds a diverse range of hazard mitigation and resilience strategies as part of grantees' recovery processes. For this NOFA, we are specifically interested in investigating flood risk (both coastal and riverine) and strategies that are designed to mitigate flood risk and make communities more resilient to impacts caused by flooding, as described below.

Because disasters resulting from floods are the most common event for which Congress appropriates CDBG-DR funds and are the costliest of U.S. disasters, information about mitigating such risk offers the greatest potential for reducing losses and expense to the Federal government, state, and local communities. Furthermore, because the research will focus on a specific hazard type and mitigation strategy, we can more effectively focus on selecting the most capable researchers and specialists in this field of study. Since flood mitigation strategies are diverse, requiring highly specialized research skills across an array of disciplines, the scoring factors for both studies will consider specialization in flood mitigation strategies.

In applying for funding under either Project 1 or Project 2, you are limited to the following categories of mitigation/resilience strategies for the cost-effectiveness evaluation and implementation case studies. HUD will work with a successful grantee to finalize any proposed research design.

- Structural elevations
- Structural flood-proofing or retrofits
- Property buyouts, including community resettlement efforts
- Public flood management infrastructure, including green and grey infrastructure
- Land-use planning

ii. Scope of Research

The scope of proposals can include any allocations beginning with those for Hurricane Katrina in 2005, up through the allocations that included RBD and the NDRC grants. We are particularly interested in highlighting the innovative design and progress made by recent NDRC grants, to the extent feasible for the study. The sample of projects, programs, and grantees selected will depend on the following range of factors and will be finalized in consultation with the Department:

- The types of natural hazards and mitigation strategies that the study will focus on
- The methodological design of the study e.g., whether the research design will rely upon resilience strategies tested by actual disaster scenarios (loss avoidance) or modelled scenarios (probabilistic risk analysis)
- Geographic diversity, especially ensuring that the study sample includes resilience and mitigation strategies in both rural and urban contexts

- Level of municipal capacity to gather and share sophisticated project-level data
- Convenience of primary data collection (a critical component of the requested research)
- The extent to which findings are representative of CDBG-DR grants and mitigation strategies in general. For example, it is not expected that the results of either Project 1 or 2 are statistically representative of all similar CDBG-DR activities nationally

iii. Vulnerable Populations

Existing studies of the efficacy and implementation of mitigation and resilience efforts typically fail to distinguish between demographic groups, especially those that have a demonstrated disadvantage in the event of disasters, during recovery, or when neighborhoods undergo broad redevelopment efforts. A core component of HUD's mission is to promote equal opportunity of vulnerable populations, including low- and moderate-income households (LMI), the elderly and disabled, families with children, homeless populations, HUD-assisted households, and tribal communities. As such, questions about disparate benefits and impacts experienced by these groups should be central to any thorough evaluation of HUD's resilience expenditures. To better understand why some groups are more vulnerable to natural hazards, how resilience initiatives can improve outcomes, and how such initiatives are implemented effectively and with the support of communities that exhibit socioeconomic vulnerability, we request proposals that include analysis of these populations as part of the broader research design.

Topics of interest to be considered in the research design include and are not limited to:

- Impacts on neighborhood and housing market conditions, housing affordability and home values (This might include assessment of impacts of outmigration on communities, such as loss of revenue streams (business, utilities, local tax base))
- The likelihood of resilience investments in low-income areas
- Displacement or gentrification resulting from investment or underinvestment in resilience strategies
- Changes in hazard insurance premiums and the extent to which households at risk have flood insurance coverage
- Impacts on measures of economic activity, especially for small or minority-owned businesses
- Impacts on public health, including benefits of ecosystem-based mitigation strategies, and environmental justice

iv. Data Collection

Previous studies have relied on HUD administrative or Census data that limited the value of the findings. For projects conducted under this NOFA, we will require that research organizations(s) collect granular data on projects, activities, costs and timelines directly from study subjects, including onsite interviews, local data on project funding, location, and start and completion dates. We are seeking applicants with previous experience working with local communities to collect data on detailed capital investments, especially financial and project management information. Applications to this NOFA must address primary data collection within discussions of research design and sampling.

Researchers should discuss how they will incorporate a broad range of data sources, including

but not limited to:

- RBD and/or NDRC grant application materials
- Data on grant activities
- Performance metrics reported by grantees to HUD
- Public and proprietary data
- Scientific measures of natural hazard risk modeling based on ecosystem and climate conditions
- Data on the built environment
- Interviews with HUD staff
- Extensive site visits to selected grantees

2. Project Descriptions

a. Project 1: Cost-effectiveness Evaluation of HUD Resilience Investments through the CDBG-DR Program (HUD may award one or more cooperative agreements, with the total of all awards not to exceed \$950,000)

i. Research Objectives

The objective of this project is to better understand the long and short-term benefits, costs, and outcomes of HUD grantees' resilience investments through the CDBG-DR program, and to develop evaluation guidance for States and local communities. Specifically, researchers will investigate, describe, and summarize the benefits and costs associated with a selected sample of flood mitigation strategies (such as property elevation, flood proofing, buyouts, public flood management infrastructure, and land use planning) for various types of properties and in various flood risk scenarios (degrees of risk, exposure, over short-, medium-, and long-term). Researchers will use their findings to develop guidance for HUD grantees for evaluating the cost-effectiveness of resilience investments, which will facilitate better decision-making and help them demonstrate efficacy to the public.

We also expect the research to incorporate analyses that illustrate disparate impacts on vulnerable populations, including low- and moderate-income households (LMI), the elderly and disabled, families with children, homeless populations, HUD-assisted households, and tribal communities. Strong applications will combine a probabilistic risk analysis approach, a model which quantifies expected losses based on risk exposure over time and across an asset portfolio, with an analysis of socioeconomic outcomes that are aligned with HUD's core mission of promoting sustainable, inclusive communities and affordable housing opportunities to vulnerable groups. Such socioeconomic outcomes are critical to understanding the impacts of community investments, yet they are often ignored in cost-effectiveness studies related to hazard risk reduction and resilience because they are difficult to quantify in monetary values, and thus are not well understood.

We hope this research will help communities, States, and the Federal government design better mitigation strategies that benefit all members of a community. The aim is not merely to understand fiscal efficacy of investments, but also to investigate social outcomes and mechanisms for improving those outcomes. With this goal in mind, applicants should distinguish between a quantitative benefits-cost analysis, which attempts to monetize the benefits of a given expenditure and compare it to financial losses had the expenditure not been

made, and a cost-effectiveness analysis, which incorporate goals and outcomes that are not necessarily monetizable. HUD must consider both financial and social outcomes, and thus, is interested in researchers' proposals for addressing this distinction in the design.

We expect researchers to select a sample of CDBG-DR funded resilience projects to conduct analysis that illustrates cost-effectiveness of various types of strategies, however, as stated above the results need not be statistically representative at a national level. The awardee will select a sample of projects that will provide an informative picture of cost-effectiveness across various strategies that can be used to aid in future investigation and decision-making. The awardee is expected to produce a report that describes the methodology, data collection and analysis process, and results of a cost-effectiveness analysis, which may include quantitative analysis of benefits and costs to produce a benefit cost ratio. Documentation of the methodology and guidance on the process used should also be considered part of the deliverable to HUD. The details of how sampling occurs and how representative the findings are should be addressed in the proposal and will be finalized with HUD in the Data Collection and Analysis Plan.

Additionally, we request that researchers use existing literature and the results of the cost-effectiveness analysis to develop guidance for communities to help them assess the value of mitigation strategies and track performance outcomes for public communication. Currently HUD and its NDRC grantees are working to report on newly developed performance outcomes that effectively quantify how the funded resilience efforts are benefiting communities, but there is much to learn about how best to accomplish this. We have sought guidance from previously established models for tracking performance outcomes such as the National Institute of Standards and Technology's (NIST's) Community Resilience Toolkit (6) and the Rockefeller Foundation's City Resilience Framework (7), but none fulfill the needs of CDBG-DR grantees that need to easily track meaningful outputs and outcomes linked to specific projects, which are currently required to be reported on a quarterly basis. There are significant challenges to establishing and reporting performance measures that are both feasible for grantees to report regularly and can effectively communicate benefits of these investments over the long-term. In addition to producing a synthesis report of findings on cost-effectiveness of mitigation activities, research organizations will be tasked with creating guidance that provides practical methods of evaluation or performance tracking that can be deployed by CDBG-DR grantees.

ii. Research Questions

Applicants should propose research projects that attempt to address one or more of the following research questions. We expect the most competitive proposals will cover multiple research objectives.

- What is the financial return on investment of mitigation and resilience strategies funded by CDBG-DR?
- What is the return on investment of mitigation and resilience investments in terms of social and economic outcomes that are not directly quantifiable?
- What mitigation strategies have most cost-effectively increased protection/reduced losses, particularly for socially and economically vulnerable groups?
- What is the value to communities of incorporating hazard risk data into land-use planning?
- With regard to large scale buyout programs and restrictive land-use planning, what are

best practices for ameliorating the negative effects of outmigration while still achieving the positive benefits of hazard mitigation?

- What role does hazard risk planning play in the efficacy of mitigation and resilience strategies? Specifically, do communities that plan for disasters and hazard risk fare better in the event of a disaster than communities that do not?
- What methodologies can be replicated at the community level, across the country, and at HUD to streamline cost-effectiveness analysis, especially outcome measurement, analysis of alternative resilience strategies, and demonstration of efficacy?
- What practical methodological approaches are best suited for the Federal government, States, and communities to make decisions about appropriate mitigation strategies and to assess the true value of the resilience investments?
- Are there specific strategies to mitigate risk that outperform others, especially for low income populations at risk, that HUD should identify for scaling or additional evaluation? Are CDBG-DR funds more likely to serve low- and moderate-income populations than other programs, and if so, what are best practices for coordinating mitigation investments across funding sources such that investments are complementary and maximize benefit?

iii. Review of Methodological Frameworks

In developing methodologies, you might consider an array of established methods of evaluating the efficacy of hazard mitigation and resilience investments, including evaluations that have focused on actual hazard loss reduction, probabilistic or modeled risk reduction, and evaluations examining various types of funding streams and policies.

One common method uses actual disaster events to tabulate cost savings of mitigation expenditures that took place prior to the event. The Federal Emergency Management Agency (FEMA) conducts loss avoidance studies on discrete events which examine and tabulate losses avoided as a result of previous hazard mitigation projects.(8) FEMA's Hazard Mitigation Grant Program funds property buyout programs, flood control plans, and code enforcement, which aim to diminish the likelihood of future flood damage. The analyses demonstrate that the hazard mitigation funds were substantially less than the cost of recovery had these actions not been implemented.(9) While the incidence of an actual hazard scenario is a reliable test for the efficacy of a discrete mitigation activity, this method cannot be replicated for assessing the efficacy of a broad portfolio of grant funds where such a disaster has not occurred or where actuarial data is difficult or impossible to acquire. Since these analyses sample only activities tested by a natural hazard event where the benefit is easily quantified, results may be biased or not representative of the larger portfolio of activities.

Another method involves estimating probable monetized benefits relative to cost using established benefit-cost analysis (BCA) methods that incorporate discount rates and probabilistic models. Such BCA methods can accommodate spillover effects (externalized costs and benefits, such as construction of levees that cause downstream flooding). Many applications for federal grant programs are required to include a BCA that demonstrates a positive return on investment. This includes HUD's recent NDRC application requirements (10). The recently published Interim Reports of the Mitigation Saves study provides a model for conducting a BCA using a probabilistic risk analysis, or engineering approach. This analysis calculates efficacy of mitigation expenditures by determining a portfolio of assets, assessing exposure to

one or more probabilistic hazard scenarios over time, and tabulating potential damage losses and damage reduction.(11) This study used a rigorous sampling method to capture mitigation efforts for a range of hazard types and mitigation funding programs sponsored by different federal agencies. including HUD CDBG-DR grants. It incorporated 23 years of federal grant programs that fund mitigation activities, such as property acquisitions, structural retrofits and elevations, and found that mitigation funding can save the nation \$6 in future disaster costs for every \$1 spent on hazard mitigation.

These studies and others like them often fail to examine the non-quantifiable outcomes to vulnerable populations. While the Department is funding this research to better understand the more easily quantified dollar value of resilience and mitigation efforts, this NOFA is also meant to support research that examines how such activities funded by CDBG-DR prioritize vulnerable populations, what outcomes vulnerable populations experience, and what factors contribute to any disparities in short- and long-term outcomes from other communities. A growing field of research looks explicitly at demographics to assess social vulnerability of communities to disaster (for example, the Social Vulnerability Index (12) (13)), but rarely do resilience efficacy studies specifically isolate the interactions between social vulnerability and a given resilience or mitigation strategy. One recent study built on the vulnerability literature to develop a social vulnerability index tailored to flood recovery and used this to assess the social equity of how CDBG-DR mitigation funds were used in Cedar Rapids, Iowa (14). The findings demonstrate that the property acquisitions were cost-effective based on the avoidance of future flood losses, and also that CDBG-DR grant funds were prioritized for socially vulnerable neighborhoods.

iv. Eligible Activities

In support of the Project 1 objectives listed above, you are being asked to undertake a variety of research and evaluation activities, from articulating research questions to conducting the research itself and culminating in communicating research findings and producing informational guidance and resources that improve the practice of implementing resilience strategies. We consider the activities listed below to be essential in creating and completing the project in a manner that achieves its objectives. This list is not comprehensive.

a. Research design and work plan development. Developing a research design and a work plan that will effectively respond to the research goals identified in this NOFA. The development of these materials will be done in close consultation with the HUD Government Technical Representative (GTR), Government Technical Monitor (GTM), and/or other staff and experts as the HUD GTR directs. This activity should include:

- Identifying key research questions and explaining their significance;
- Conducting a literature review;
- Consulting with outside experts and stakeholders;
- Developing a research design, which should include research questions, hypotheses, data sources, data collection methods, data collection instruments, and analysis methods;
- Formulating a data collection plan, including sampling plans, surveys and pre-testing of survey instruments, detailed data system design and testing, and matching of administrative data across data sets held by different agencies, as applicable. This would also include a data security plan if warranted by the sensitivity of the data. The

researcher must plan for primary data collection on individual projects and programs directly from the implementing entity, or CDBG-DR grantee;

- Developing a work plan, which should include staffing assignments, task budgets, and a timeline of key activities;
- Completing OMB Paperwork Reduction Act, Privacy Impact Assessment, and System of Record Notification documentation, as applicable; and
- Obtaining Institutional Review Board approval as needed to ensure human subjects research protections in accordance with federal requirements (see <http://www.hhs.gov/ohrp/humansubjects/commonrule>)

b. Data Collection. This work will include data collection using qualitative and/or quantitative methods that may be in-person, by mail, by phone, or via the Internet if appropriate and may also use existing data (e.g., Census data) and administrative data as appropriate.

c. Data analysis. Merging, tabulating, analyzing, modeling, validating and presenting data from surveys and existing administrative data sources, including third-party sources to answer the research questions. Such analysis may include descriptive statistics, advanced statistical analysis, geospatial analysis, and data visualization business intelligence reporting and dashboard systems as appropriate to present the data.

d. Synthesize and communicate findings through briefings, presentations, written reports, and the production of informational guidance and resources. These are to be designed to effectively communicate findings to non-research audiences specializing in policy, budgeting, urban planning, community development, and other resilience practitioners at the State or local level.

e. Other Eligible Activities could include: Developing short papers or policy briefs on specific findings of the research that could guide resilience decision-makers at the State and local level.

v. Deliverables

At a minimum, HUD expects you to produce the following deliverables. The GTR and/or other HUD staff as assigned by the GTR will work closely with you to define these deliverables. We expect to have an opportunity to review and comment to ensure that they meet the project objectives.

a. Management and Work Plan: The Management and Work Plan will outline the overall strategy for completing the research within the budget and time frame allotted. It will describe activities to be undertaken, assign staff and level of effort, and provide a schedule of key tasks. A draft Management and Work Plan must be submitted with the application. After award, HUD will provide feedback to the awardee, and a final Management and Work Plan must be submitted to HUD within two weeks of the receipt of HUD comments.

b. Research Design: The Research Design will provide a detailed plan for technical aspects of the research, including research questions, hypotheses, data sources, data collection methods, data collection instruments, and analysis methods. The Research Design must demonstrate how the proposed methodology, including the data collection and analysis strategy, will address the research questions and hypotheses proposed. A draft Research Design must be submitted with the application. After award, we will provide feedback to you, with a final Research Design to be submitted to HUD within four weeks of the receipt of HUD comments.

c. Quality Control Plan (QCP): A draft QCP which addresses all potential points of a Quality

Control Lapse shall be delivered within two weeks after grant award and the final QCP shall be submitted for GTR approval within six weeks of grant award. Three copies of a comprehensive written QCP shall be submitted to the GTR and within five working days when changes are made thereafter. After acceptance of the QCP by the GTR, the awardee shall receive the GTR's acceptance in writing of any proposed change to its quality control system.

d. Quarterly Progress Reports: Quarterly Progress Reports will document activities completed in the most recent reporting period, planned activities for the upcoming reporting period, and budget expenditures by line item (including hours worked for specific staff). Progress reports must be submitted quarterly and should be aligned with the submission of draw down requests.

e. Retrospective Reports: The Retrospective Reports will document the complete findings from the evaluation; summarize the work conducted over the course of the project; and present the study objectives, data sources, analysis methods, and results. A series of Interim Retrospective Reports will be submitted over the course of the period of performance of this project and provide a summary of the project findings up to that point. The Interim Retrospective Reports should be considered an opportunity to evaluate the state of the project and for HUD to provide feedback on the study's approach and documentation. If applicable the Interim Retrospective Reports may be subject to sharing with divisions within HUD as well as CDBG-DR grantees. The exact deadline and content of the Interim Retrospective Reports will be decided between the GTR and the awardee. A Final Retrospective Report will serve as a stand-alone document that meets the overall objective of this project. The Final Retrospective Report should be edited and prepared for publication in accordance with HUD's Guidelines for Preparing a Report for Publication (<https://www.huduser.gov/portal/About/style-guide-for-reports.pdf>).

f. One to two-page plain language summary of findings appropriate for non-technical audience;

g. Policy Implications Briefing: Publishable brief and presentation targeted to State and local policymakers on how the findings of the study may impact disaster recovery and hazard risk reduction policies.

h. Guidance for Resilience Strategy Performance Evaluation: Guidance designed to help communities implementing resilience and mitigation strategies evaluate and communicate the efficacy of investments, and facilitate future decision-making. This guidance will help grantees establish meaningful resilience goals and objectives and performance metrics that can be used to monitor the success of a specific resilience project or system of projects in meeting their selected goals. Such metrics should also be feasible to collect and report regularly, and useful to grantees for reporting efficacy to the public, investors, and political leadership.

b. Project 2: Qualitative Case Studies of Implementation of CDBG-DR Resilience Investments (HUD may award one or more cooperative agreements, with the total of all awards not to exceed \$550,000).

i. Research Objectives

HUD is seeking proposals for a research study that employs qualitative methods to assess the implementation strategies of communities using CDBG-DR funds for resilience projects and programs. The objective of this study is to identify the most common challenges communities face in implementing resilience projects and to identify practices that result in successful implementation that incorporates local stakeholder feedback. We are especially interested in practices that can be replicated in other scenarios around the country. The selected research

organization(s) will develop in-depth qualitative (and potentially quantitative) case studies of a sample of CDBG-DR grantees that are implementing projects or programs designed to reduce risk of flood hazards to people or property and increase the community's resilience. In doing so, the researchers will investigate how grantees navigated project implementation, including prioritization of risk reduction and resilience, project selection, public engagement, planning, funding, and managing large scale resilience investments. Researchers will identify and document best practices, pitfalls, deployment strategies, and socio-political factors that hindered or contributed to the success of the project. For example, a qualitative assessment of the implementation of a buyout program in New York demonstrated some weaknesses of the program in offering a viable option to homeowners impacted by Hurricane Sandy.⁽¹⁵⁾ The findings offer insight into how policy and program design can improve the experience and ultimate outcomes of buyout programs, and demonstrate how knowledge of local conditions and preferences can inform program design.

We request more than a qualitative summary of implementation practices, and request that proposals describe methods to evaluate and identify those implementation practices that enabled success which could be replicated in other communities. How can this work allow other communities to understand their own strengths and limitations in implementing various types of mitigation strategies? As one final product, the selected research organization(s) will develop implementation guides that provide practical guidance, best practices, and recommendations for changes to current practices that could improve the efficacy of and community support for investments in resilience. These should be broadly applicable to assist decision-makers in implementing similar resilience projects and programs.

ii. Research Questions

Applicants should propose research projects that attempt to address one or more of the following research questions. We expect the most competitive proposals will cover multiple research objectives.

- What challenges have grantees experienced in developing plans for implementing mitigation strategies? What methods have been successful at overcoming these challenges?
- What guidance and data can best be used to facilitate community decisions about what level and type of flood mitigation investment to pursue?
To what extent should socioeconomic costs and benefits of resilience strategies play a role in decision-making?
- What considerations and processes did communities use in selecting projects (e.g. estimates of damage reduction, number of beneficiaries, spillover benefits, legal or time constraints, equity issues, public support, and participatory planning)?
- How have jurisdictions dealt with positive and negative political ramifications that result from chosen resilience strategies, such as neighborhood abandonment, major infrastructure development, gentrification, preservation/destruction of community cultural continuity, and conflict resulting from prioritization of resilience over more immediate recovery or other public and social needs?
- What financing mechanisms were successfully deployed to complete the project and cover long-term maintenance and operations, including leveraging with non-governmental, private sector sources?

- 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?
- Are HUD-funded expenditures different from other sources of funding with respect to how implementation happens and does this improve on or detract from the benefits achieved, especially among vulnerable populations?
- How should State and local agencies staff their resilience programs and select subcontractors? Are there key disciplines, levels of specialty, skillsets that are essential when conceiving, selecting, planning, funding, and implementing resilience projects and programs?
- What guidance do grantees need to prepare for compliance with federal requirements, including environmental reviews, civil rights and fair housing requirements, procurement rules that are specific to resilience investments, and requirements that funds must be tied to recovery from the declared disaster for which funds were allocated? This requirement, in particular, can create challenges for grantees attempting to use typical CDBG-DR funds to prepare for future hazard risks.
- 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? Particular emphasis should be placed on guidance to ensure adequate community outreach such as model Memorandums of Agreement with nonprofits for outreach and counseling.
- What sociopolitical considerations must a community address in deciding what level and type of flood mitigation investment to pursue?
- Are there effective funding mechanisms for leveraging public dollars with private funds to achieve resilience outcomes?
- Are there examples of communities effectively using public-private partnerships to initiate and sustain resilience plans?
- What relationships with public and private partners are necessary to make resilience efforts successful? What are the best ways for creating those relationships (e.g., formal agreements)?
- Are there innovative or novel practices in implementation of resilience strategies that HUD should identify for scaling or additional evaluation?

iii. Eligible Activities

In support of the Project 2 objectives listed above, you may be asked to undertake a variety of research and analysis activities, from articulating research questions to conducting the research itself and culminating in communicating research findings and producing informational tools and resources that improve practice and policies. We consider the activities listed below to be essential in creating and completing the project in a manner that achieves its objectives, however this list is not intended to be comprehensive.

a. Research design and work plan development. Developing a research design and work plan that will effectively respond to the research goals identified in this NOFA. The development of these materials will be done in close consultation with the HUD Government Technical

Representative (GTR), Government Technical Monitor (GTM), and/or other staff and experts as the HUD GTR directs. This activity includes:

- Honing research questions and explaining their significance
- Conducting a literature review
- Consulting outside experts and stakeholders
- Developing a research design, which should include research questions, hypotheses, data sources, data collection methods, data collection instruments, and analysis methods
- Formulating a data collection plan, including sampling plans, surveys and pre-testing of survey instruments and interview guides, detailed data system design and testing, and matching of administrative data across datasets held by different agencies, as applicable. The researcher must plan for primary data collection on individual projects and programs directly from the implementing entity, or CDBG-DR grantee
- Developing a work plan, which should include staffing assignments, task budgets, and a timeline of key activities
- Completing OMB Paperwork Reduction Act, Privacy Impact Assessment, and System of Record Notification documentation, as applicable
- Obtaining Institutional Review Board approval as needed to ensure human subjects research protections in accordance with federal requirements (see <http://www.hhs.gov/ohrp/humansubjects/commonrule>)

b. Data Collection. This work will include data collection using qualitative and/or quantitative methods that may be in-person, by mail, by phone, or via the Internet if appropriate and may also use existing data (e.g., Census data) and administrative data as appropriate. The researcher must plan for onsite visits designed to procure primary data collection on individual projects and programs directly from implementing entity, or CDBG-DR grantee.

c. Data analysis. Merging, tabulating, analyzing, modeling, validating and presenting data from surveys and existing administrative data sources, including third-party sources, to answer the research questions. Such analysis may include qualitative data analysis and synthesis, descriptive statistics, data visualization business intelligence reporting and dashboard systems as appropriate to present the data.

d. Communication. Synthesize and communicate findings through briefings, presentations, written reports, and the production of informational tools and resources. These are to be designed to effectively communicate findings to non-research or academic audiences specializing in policy, budgeting, urban planning, community development, and other resilience practitioners at the Federal, State, or local level.

e. Other Eligible Activities could include: Developing short papers or policy briefs on specific findings of the research that could guide resilience decision-makers at the State and local level.

iv. Deliverables

At a minimum, we expect the award recipient to produce the following deliverables. The GTR and/or other HUD staff as assigned by the GTR will work closely with the awardee on defining these deliverables. HUD expects to have an opportunity to review and comment to ensure that they meet the project objectives.

a. Management and Work Plan: The Management and Work Plan will outline the overall

strategy for completing the research within the budget and timeframe allotted. It will describe activities to be undertaken, assign staff and level of effort, and provide a schedule of key tasks. A draft Management and Work Plan must be submitted with the application. After award, HUD will provide feedback to the awardee, and a final Management and Work Plan must be submitted to HUD within two weeks of the receipt of HUD comments.

b. Research Design: The Research Design will provide a detailed plan for technical aspects of the research, including research questions, hypotheses, data sources, data collection methods, data collection instruments, and analysis methods. The Research Design must demonstrate how the proposed methodology, including the data collection and analysis strategy, will address the research questions and hypotheses proposed. A draft Research Design must be submitted with the application. After award, HUD will provide feedback to you, and a final Research Design must be submitted to HUD within four weeks of the receipt of HUD comments.

c. Quality Control Plan: A draft QCP which addresses all potential points of a Quality Control Lapse (see definition below) shall be delivered within two weeks after grant award and the final QCP shall be submitted for GTR approval within six weeks of grant award. Three copies of a comprehensive written QCP shall be submitted to the GTR and within five working days when changes are made thereafter. After acceptance of the QCP by the GTR, the Grantee shall receive the GTR's acceptance in writing of any proposed change to its quality control system.

d. Quarterly Progress Reports: Quarterly Progress Reports will document activities completed in the most recent reporting period, planned activities for the upcoming reporting period, and budget expenditures by line item (including hours worked for specific staff). Progress reports must be submitted quarterly and should be aligned with the submission of drawdown requests.

e. Retrospective Reports: The Retrospective Reports will document the complete findings from the study and will summarize the work conducted over the course of the project, present the study objectives, data sources, analysis methods, and results. A series of Interim Retrospective Reports will be submitted over the course of the period of performance of this project and provide a summary of the project findings up to that point. The Interim Retrospective Reports should be considered an opportunity to evaluate the state of the project and for HUD to provide feedback on the study's approach and documentation. If applicable the Interim Retrospective Reports may be subject to sharing with divisions within HUD as well as CDBG-DR grantees. The exact deadline and content of the Interim Retrospective Reports will be decided between the GTR and the awardee. A Final Retrospective Report will serve as a stand-alone document that meets the overall objective of this project. The Final Retrospective Report should be edited and prepared for publication in accordance with HUD's Guidelines for Preparing a Report for Publication (<https://www.huduser.gov/portal/About/style-guide-for-reports.pdf>).

f. One to two-page plain language summary of findings appropriate for non-technical audience;

g. Policy Implications Briefing: Publishable brief and presentation targeted to State and local policymakers on how the findings of the study may impact disaster recovery and hazard risk reduction policies regarding implementation.

h. Best Practices Guidance for Resilience Strategy Implementation: Guidance designed to help communities implementing resilience and mitigation strategies select, design, plan, fund, and execute resilience strategies that are informed and supported by the broader community. This guidance will describe best practices that can be deployed to overcome common challenges

associated with implementing resilience projects that are effective and developed with stakeholder feedback.

Project 3: Cooperative Research in Housing Technologies (HUD may award three or more cooperative agreements, with the total of all awards not to exceed \$3,508,000 - comprised of up to \$1,208,000 in FY18 funds and up to \$2,300,000 in FY19 funds).

The U.S. Department of Housing and Urban Development (HUD) is interested in receiving applications for co-operative agreements for pre-competitive research in homebuilding innovations. Under this announcement, pre-competitive research is research that is sufficiently in the early stages such that competitors are working together collaboratively. Applications should not include trade secrets or other confidential information. However, the applicant should fully describe the technology in sufficient detail so that HUD can make a determination on the strength of the application.

We are looking to develop knowledge that provides the homebuilding industry with new, innovative construction products or practices that lead to more affordable, energy efficient, resilient (that is, durable, disaster resistant, adaptable for future requirements, and maintainable), and healthier housing. HUD is also interested in research or methods on how to eliminate barriers to the acceptance of these new and emerging technologies by the building industry, State and local governments, and consumers.

The grants awarded under this announcement will require an applicant match. Applicants that offer additional sources of non-Federal funding will be more favorably considered. Funding under this announcement is intended to result in homebuilding products, processes, or informative documents that increase the rate of innovation, the diffusion and adoption of innovation, and the appropriate use of innovation to improve first-cost and life-cycle housing affordability; consumer awareness and stakeholder engagement; and energy efficiency, resiliency, and health performance.

We are particularly interested in cooperative agreements where the results would be widely available for application in the industry, as opposed to being deployed in a proprietary manner. In that regard, HUD has had significant success in the past working with trade or industry associations to generate advances that are broadly available.

HUD has funded similar cooperative agreements most recently in conjunction with the Partnership for Advancing Technology in Housing (PATH) program (<https://www.govinfo.gov/content/pkg/FR-2005-05-23/pdf/E5-2564.pdf>). Several of these agreements are listed below to illustrate of the type of innovative efforts HUD seeks to fund with this announcement. A common in the first three examples below are regulatory barriers, mostly related to building code restrictions, that prevented wide adoption of the innovation:

Insulating Concrete Forms (ICFs). This PATH-sponsored program developed a prescriptive method which established performance standards for ICFs and shared technical information about the technology. Program reports can be found on the HUDuser website <https://www.huduser.gov/portal/publications/destech/icf.html> and https://www.huduser.gov/portal/publications/destech/icf_2ed.html

Steel Framing. The effort sought to accelerate the adoption of steel framing as an alternative to wood in the residential-housing market. Similar to ICFs, HUD worked cooperatively with industry to first produce the Prescriptive Method for Residential Cold-Formed Steel

Framing <https://www.huduser.gov/portal/publications/destech/pm2.html>; later a Design for a Steel Framed Manufactured Home <https://www.huduser.gov/portal/publications/destech/sfmh.html>

Structural Insulated Panels (SIPs). HUD partnered with industry members to develop performance standards for SIPs and disseminate technical information about the technology, offering specific guidelines to facilitate the use of SIPs in wall systems for the construction of one- and two-family dwellings <https://www.sips.org/downloads/19prescriptive-method-for-sip-wall-systems.pdf>.

Lean Manufacturing Methods for Manufactured Housing. HUD assisted an industry alliance in showing how to reduce waste in labor hours and materials in factory-built housing (<https://www.huduser.gov/portal/publications/destech/pilotstudy.html> and <https://www.huduser.gov/portal/publications/manufhsg/leanprod.html>).

Eligible Activities

In support of the objectives listed in the section above, applicants are being asked to undertake a variety of research and evaluation activities, from articulating research questions and establishing appropriate, rigorous research methods and designs to implement the research and analysis, communicating research findings, and producing informational tools and resources that improve practice and policy.

Deliverables

At a minimum, we expect the award recipient to produce the following deliverables. The GTR and/or other HUD staff as assigned by the GTR will work closely with the awardee on defining these deliverables. HUD expects to have an opportunity to review and comment to ensure that they meet the project objectives. The deliverables should not include trade secrets or other confidential information as part of the reporting requirements. However, testing data and other results are expected to be reported to help evaluate the effectiveness of any proprietary technologies.

1. The Management and Work Plan will outline the overall strategy for completing the research within the budget and timeframe allotted. It will describe activities to be undertaken, assign staff, and provide a schedule of key tasks. A draft Management and Work Plan must be submitted with the application. After award, HUD will provide comments to the awardee and a final Management and Work Plan must be submitted to HUD within two weeks of the receipt of HUD comments. A revised final budget may also be required with the final Management and Work Plan.
2. Research Design: The Research Design will provide a detailed plan for technical aspects of the research, including research questions, hypotheses, data sources, data collection methods, data collection instruments, and analysis methods. The Research Design must demonstrate how the proposed methodology, including the data collection and analysis strategy, will address the research questions and hypotheses proposed. A draft Research Design must be submitted with the application. After award, we will provide feedback to you, with a final Research Design to be must be submitted to HUD within four weeks of the receipt of HUD comments.
3. Quality Control Plan (QCP): A draft QCP which addresses all potential points of a Quality Control Lapse shall be delivered within two weeks after grant award and the

final QCP shall be submitted for GTR approval within six weeks of grant award. Three copies of a comprehensive written QCP shall be submitted to the GTR and within five working days when changes are made thereafter. After acceptance of the QCP by the GTR, the awardee shall receive the GTR's acceptance in writing of any proposed change to its quality control system.

4. Quarterly Progress Reports: Quarterly Progress Reports will document activities completed in the most recent reporting period, planned activities for the upcoming reporting period, and budget expenditures by line item (including hours worked for specific staff). Progress reports must be submitted quarterly and should be aligned with the submission of draw down requests.
5. Final report - Applicants will also be required to submit a final report which summarizes the entire work, achievements, and findings conducted under award. This report will address the specific outcomes described in the applicant's proposal, the cooperative agreement award, achievement of project goals and metrics, and the management plan. The report format and style requirements are provided at <https://www.huduser.gov/portal/About/style-guide-for-reports.pdf>

2. Changes from Previous NOFA.

Three new projects are included for award:

- Project 1: Cost-effective Evaluation of HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) Resilience Investments (HUD may award one or more cooperative agreements, with the total of all awards not to exceed \$950,000). The award floor is \$200,000.
- Project 2: Qualitative Case Studies of Implementation of HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) Resilience Investments (HUD may award one or more cooperative agreements, with the total of all awards not to exceed \$550,000). The award floor is \$200,000.

NOTE: HUD may not award the maximum for either Project 1 (\$950,000) or Project 2 (\$550,000). Under no circumstances will the total amount awarded for Projects 1 and 2 exceed \$1,200,000.

- Project 3: Cooperative Research in Housing Technologies - HUD may award three or more cooperative agreements, with a total of all awards not to exceed \$3,508,000 (comprised of up to \$1,208,000 in FY18 funds and up to \$2,300,000 in FY19 funds). The award ceiling for this project is \$400,000. The award floor is \$200,000

3. Definitions.

a. Standard Definitions

Affirmatively Furthering Fair Housing (AFFH) Regulations. Statutory obligation to affirmatively further the purposes and policies of the Fair Housing Act and guidance promulgated thereunder.

Assurances. By submitting your application, you provide assurances that, if selected to receive an award, you will comply with U.S. statutory and public policy requirements, including, but not limited to civil rights requirements.

Authorized Organization Representative (AOR) is the person authorized to submit applications on behalf of the organization via Grants.gov. The AOR is authorized by the E-Biz point of contact in the System for Award Management. The AOR is listed in item 21 on the SF-424.

Award, as used in this NOFA means a federal grant OR cooperative agreement as specified in Section II.E (Type of Funding Instrument).

Catalog of Federal Domestic Assistance (CFDA) is a directory of the various Federal listings, projects, services and activities offering financial and non-financial assistance and benefits to the American public. CFDA Number is the unique number assigned to each program, project, service or activity listed in the Catalog of Federal Domestic Assistance (CFDA).

Consolidated Plan is a document developed by states and local jurisdictions. This plan is completed by engaging in a participatory process to assess their affordable housing and community development needs and market conditions, and to make data-driven, place-based investment decisions with funding from formula grant programs. (See 24 CFR part 91 for more information about the Consolidated Plan and related Annual Action Plan).

Contract means a legal instrument by which a non-Federal entity purchases property or services needed to carry out the project or program under a Federal award. The term as used in this NOFA does not include a legal instrument, even if the non-Federal entity considers it a contract, when the substance of the transaction meets the definition of a Federal award or subaward (See 2 CFR 200.22.)

Contractor means an entity receiving a contract.

Deficiency is information missing or omitted within a submitted application. Deficiencies typically involve missing documents, information on a form, or some other type of unsatisfied information requirement (e.g., an unsigned form, unchecked box.). Depending on specific criteria, deficiencies may be either curable or non-curable.

- Curable Deficiency – Applicants may correct a curable deficiency with timely action.

To be curable the deficiency must:

- Not be a threshold requirement, except for documentation of applicant eligibility;
 - not influence how an applicant is ranked or scored versus other applicants; and
 - be remedied within the time frame specified in the notice of deficiency.
- Non-Curable Deficiency – An applicant cannot correct a non-curable deficiency after the

submission deadline.

Non-curable deficiencies are deficiencies that, if corrected, would change an applicant's score or rank versus other applicants. Non-curable deficiencies may result in an application being marked ineligible, or otherwise adversely affect an application's score and final determination.

DUNS Number is the nine-digit identification number assigned to a business or organization by Dun & Bradstreet and provides a means of identifying business entities on a location-specific basis. Requests for a DUNS number can be made by visiting the Online DUNS Request Portal.

Eligibility requirements are mandatory requirements for an application to be eligible for funding.

Federal Awardee Performance and Integrity Information System (FAPIIS) is a database that has been established to track contractor misconduct and performance.

Grants.gov is the website serving as the Federal government's central portal for searching and applying for federal financial assistance throughout the Federal government. Registration in Grants.gov is required for submission of applications to prospective agencies.

Historically Black Colleges and Universities (HBCUs). -The Higher Education Act of 1965 defines historically Black colleges and universities (HBCUs) as "any historically Black college or university that was established prior to 1964, whose principal mission was, and is, the education of Black Americans, and that is accredited by a nationally recognized accrediting agency or association determined by the Secretary to be a reliable authority as to the quality of training offered or is, according to such an agency or association, making reasonable progress toward accreditation..."

Institution of Higher Education (IHE), has the meaning given at 20 U.S.C. 1001.

Non-Federal Entity means a state, local government, Indian tribe, institution of higher education (IHE), or non-profit organization carrying out a Federal award as a recipient or sub recipient.

Nongovernmental organizations include Non-Federal entities and for-profit entities for the purpose of calculating indirect cost proposals accompanying applications submitted under this NOFA.

Personally identifiable information (PII) means information that can be used to distinguish or trace an individual's identity, either alone or when combined with other personal or identifying information that is linked or linkable to a specific individual. The definition of PII is not anchored to any single category of information or technology. Rather, it requires a case-by-case assessment of the specific risk that an individual can be identified. For more detail, refer to 2 CFR 200.79.

Point of Contact (POC) is the person who may be contacted with questions about the application submitted by the AOR. The point of contact is listed in item 8F on the SF-424.

Opportunity Zone according to the IRS, is an “economically-distressed community where new investments, under certain conditions, may be eligible for preferential tax treatment.” Opportunity Zones are further defined in 26 U.S.C. 1400Z.

Promotores/Promotoras are Spanish-speaking Community Health Workers who work in their communities to reduce barriers to health services and make health care systems more responsive.

Recipient means a non-Federal entity receiving an award directly from HUD to carry out an activity under a HUD program.

Section 3 Business Concern means a business concern: (1) 51 percent or more owned by Section 3 residents; (2) of which at least 30 percent of permanent, full-time employees are currently Section 3 residents, or were Section 3 residents within three years of the date of first employment with the business concern; or (3) provides evidence of a commitment to subcontract over 25 percent of the dollar award of all subcontracts to be awarded to business concerns meeting the qualifications in this definition.

Section 3 Residents means: 1) Public housing residents; or 2) Low and very-low income persons, as defined in 24 CFR 135.5, who live in the metropolitan area or non-metropolitan county where Section 3 covered assistance is expended.

Standard Form 424 (SF-424) means the government-wide forms required to apply for Application for Federal Assistance Programs, required by discretionary Federal grants and other forms of financial assistance programs. Applicants for this Federal assistance program must submit all required forms in the SF-424 Family of forms, including SF-424B. For an application under this notice to be complete, the applicant must sign and submit all required forms in the SF-424 Family.

Subaward means an award provided by a pass-through entity to a subrecipient for the subrecipient to carry out part of a Federal award received by the recipient. It does not include payments to a contractor or payments to an individual beneficiary of a Federal program. A subaward may be provided through any form of legal agreement, including an agreement that the pass-through entity considers a contract. The legal agreement must contain the subrecipient’s assurance of compliance with program requirements, including but not limited to nondiscrimination and equal opportunity requirements.

Subrecipient means a non-Federal entity receiving a subaward from a pass-through entity to carry out part of a HUD program; but does not include an individual beneficiary of such program. A subrecipient may also receive other Federal awards directly from a Federal awarding agency (including HUD).

System for Award Management (SAM), is an official website of the U.S. government. SAM

is a U.S. Government system that consolidated the capabilities of Central Contractor Registry (CCR), Excluded Parties List System (EPLS) and the Online Representations and Certifications Application (ORCA). Registration with [Sam.gov](https://sam.gov) is required for submission of applications via Grants.gov. You can access the website at [Sam.gov](https://sam.gov). There is no cost to use SAM.

Threshold Requirement – Threshold requirements are a type of eligibility requirement. Threshold requirements must be met for an application to be reviewed; are not curable, except for documentation of applicant eligibility and are listed in Section *III.D Threshold Eligibility Requirements*. Similarly, there are eligibility requirements under Section III.E, *Statutory and Regulatory Requirements Affecting Eligibility*.

4. Program Definitions.

Mitigation: An action taken to reduce the hazard risk to life and property, which includes existing structures and future construction, in the pre- and post-disaster environments..

Resilience: Disaster resilience is the ability of individuals, communities, organizations and states to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from hazards, shocks or stresses without compromising long-term prospects for development.

Homebuilding: the design and construction of housing. In this Notice, we are primarily interested in homebuilding of single-family attached or detached homes and multifamily homes with three stories or less in the structure (homes of this type generally use similar design approaches, products, and trades).

Innovation: We define "innovation" as the introduction of something new that results in an improvement of function or performance. For the purposes of this announcement, homebuilding innovations can include a new method of construction, materials, techniques, processes or products, development of a product etc., that greatly improves the function of homes. Innovation and technology are used interchangeably in this NOFA.

Pre-competitive Research: Pre-competitive research is research that is sufficiently in the early stages such that competitors are working collaboratively. Research that is jointly conducted by competitors for the purpose of developing new innovations for commercial use.

Prescriptive Method: In the context of building codes, prescriptive methods are design approaches where the performance is implicit in the method of construction. For example, joist sizes selected from tables allows the designer (or builder) to avoid the need to actually calculate the stresses or deflections as part of the design. This differs from the performance method where the design is contingent on determining the actual loads and sizing the components to the design stresses. While the prescriptive method may lead to some over sizing of the materials, the simplicity and speed often offset those costs.

Technology is defined as an application of scientific knowledge for practical purposes. Innovation and technology for the homebuilding industry are used interchangeably in this NOFA.

5. Web Resources.

- [Affirmatively Furthering Fair Housing Regulations](#)
- [Code of Conduct list](#)
- [Do Not Pay](#)
- [Dun & Bradstreet](#)
- [Equal Participation of Faith-Based Organizations](#)
- [Federal Awardee Performance and Integrity Information System](#)
- [FFATA Subaward Reporting System](#)
- [Grants.gov](#)
- [Healthy Homes Strategic Plan](#)
- [Healthy Housing Reference Manual](#)
- [HUD Funding Opportunities](#)
- [HUD's Strategic Plan](#)
- [HUD Grants](#)
- [Limited English Proficiency](#)
- [NOFA webcasts](#)
- [Opportunity Zone](#)
- [Procurement of recovered materials](#)
- [Section 3 Business Registry](#)
- [State Point of Contact List](#)
- [System for Award Management \(SAM\)](#)
- [Uniform Relocation Act – Real Property Acquisition and Relocation Requirements](#)
- [USA Spending](#)

[Community Development Block Grant Disaster Recovery Program](#)

B. Authority.

This program is authorized by Sections 501 and 502 of the Housing and Urban Development Act of 1970 (12 U.S.C. §1701z-1 and 2) and funding is provided by the Department of Housing and Urban Development Appropriations Act, 2018 (Public Law 115-141, approved March 23, 2018).

II. Award Information.

A. Available Funds.

Funding of up to **\$4,708,000** is available through this NOFA.

Additional funds may become available for award under this NOFA, because of HUD's efforts to recapture unused funds, use carryover funds, or because of the availability of additional appropriated funds. Use of these funds is subject to statutory constraints. All awards are subject to the applicable funding restrictions contained in this NOFA.

B. Number of Awards.

HUD expects to make approximately 8 awards from the funds available under this NOFA.

C. Minimum/Maximum Award Information.

Please note the three project (1-3) distinctions with award funding:

This NOFA announces the availability of up to \$4,708,000.

The following projects are eligible for award in the amounts listed:

- **Project 1: Cost-effectiveness Evaluation of HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) Resilience Investments** - HUD may award one or more cooperative agreements, with the total of all awards not to exceed \$950,000. The award floor is \$200,000.
- **Project 2: Qualitative Case Studies of Implementation of HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) Resilience Investments** - HUD may award one or more cooperative agreements, with the total of all awards not to exceed \$550,000. The award floor is \$200,000.

NOTE: HUD may not award the maximum for either Project 1 (\$950,000) or Project 2 (\$550,000). Under no circumstances will the total amount awarded for Projects 1 and 2 exceed \$1,200,000.

- **Project 3: Cooperative Research in Housing Technologies** - HUD may award three or more cooperative agreements, with a total of all awards not to exceed \$3,508,000 (comprised of up to \$1,208,000 in FY18 funds and up to \$2,300,000 in FY19 funds). The award ceiling for this project is \$400,000. The award floor is \$200,000.

NOTE: Applicants may apply for one, two, or all three projects under this announcement. Applicants applying for more than one project must submit a separate application for each project. Applicants may submit only one application per project. No person may be listed as a principal investigator on more than one application per project under this announcement.

Estimated Total Funding:	\$4,708,000
Minimum Award Amount:	\$200,000 Per Project Period
Maximum Award Amount:	\$950,000 Per Project Period

D. Period of Performance.

Estimated Project Start Date:	08/05/2019
Estimated Project End Date:	08/04/2022
Length of Project Periods:	24-month project period with two 12-month budget periods 36-month project period with three 12-

Length of Project Periods Explanation of Other:

month budget periods

PLEASE NOTE: The specific Project Period for each Project below:

Project 1: Cost-effectiveness Evaluation of HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) Resilience Investments - 36-month project period with three 12-month budget periods.

Project 2: Qualitative Case Studies of Implementation of HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) Resilience Investments - 36-month project period with three 12-month budget periods.

Project 3: Cooperative Research in Housing Technologies - 24-month project period with two 12-month budget periods.

E. Type of Funding Instrument.

Funding Instrument Type:

Cooperative Agreement

F. Supplementation.

III. Eligibility.

A. Eligible Applicants.

State governments

County governments

City or township governments

Special district governments

Public and State controlled institutions of higher education

Native American tribal governments (Federally recognized)

Native American tribal organizations (other than Federally recognized tribal governments)

Nonprofits having a 501(c)(3) status with the IRS, other than institutions of higher education

Nonprofits without 501(c)(3) status with the IRS, other than institutions of higher education

Private institutions of higher education

For profit organizations other than small businesses

Small businesses

Others (see text field entitled "Additional Information on Eligibility" for clarification)

Additional Information on Eligibility:

Tribal Designated Housing Entities as defined by Section 4(22) of NAHASDA and Tribes as defined by Section 4(13) of NAHASDA are eligible to compete for, or receive, awards made under this announcement.

B. Ineligible Applicants.

Individuals, foreign entities, and sole proprietorship organizations are not eligible to compete for, or receive, awards made under this announcement. HUD will not evaluate applications from ineligible applicants.

C. Cost Sharing or Matching.

This Program requires cost sharing, matching or leveraging as described below.

Only project 3. Cooperative Research in Housing Technology requires a 25% Match which may be in the form of cash or in-kind contributions. No indirect funds can be used for match. Federal sources are not allowed to be used as a cost share or match unless otherwise permitted by the program's authorizing statute.

D. Threshold Eligibility Requirements.

Applicants who fail to meet any of the following threshold eligibility requirements will be deemed ineligible. Applications from ineligible applicants will not be evaluated.

Outstanding civil rights matters must be resolved to HUD's satisfaction prior to grant award, provided that all applicable legal processes have been satisfied.

1. Timely Submission of Applications. – Applications submitted after the deadline stated within this NOFA that do not meet the requirements of the grace period policy will be marked late. Late applications are ineligible and will not be considered for funding. See also Section IV Application and Submission Information, part D. Application Submission Dates and Times.

2. Resolution of Civil Rights Matters. Outstanding civil rights matters must be resolved before the application deadline. Applicants who after review are confirmed to have civil rights matters unresolved at the application deadline will be deemed ineligible; the application will receive no further review, will not be rated and ranked, and will not receive funding.

a. Applicants having any of the charges, cause determinations, lawsuits, or letters of findings referenced in subparagraphs that have not been resolved to HUD's satisfaction before or on the application deadline date are ineligible for funding. Such matters include:

(1) Charges from HUD concerning a systemic violation of the Fair Housing Act or receipt of a cause determination from a substantially equivalent state or local fair housing agency

concerning a systemic violation of a substantially equivalent state or local fair housing law proscribing discrimination because of race, color, religion, sex, national origin, disability or familial status;

(2) Status as a defendant in a Fair Housing Act lawsuit filed by the Department of Justice alleging a pattern or practice of discrimination or denial of rights to a group of persons raising an issue of general public importance under 42 U.S.C. 3614(a);

(3) Status as a defendant in any other lawsuit filed or joined by the Department of Justice, or in which the Department of Justice has intervened, or filed an amicus brief or statement of interest, alleging a pattern or practice or systemic violation of Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Section 109 of the Housing and Community Development Act of 1974, the Americans with Disabilities Act or a claim under the False Claims Act related to fair housing, non-discrimination, or civil rights generally including an alleged failure to affirmatively further fair housing;

(4) Receipt of a letter of findings identifying systemic non-compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Section 109 of the Housing and Community Development Act of 1974; or the Americans with Disabilities Act; or

(5) Receipt of a cause determination from a substantially equivalent state or local fair housing agency concerning a systemic violation of provisions of a state or local law prohibiting discrimination in housing based on sexual orientation, gender identity, or lawful source of income.

b. HUD will determine if actions to resolve the charge, cause determination, lawsuit, or letter of findings taken before the application deadline date will resolve the matter. Examples of actions that may be sufficient to resolve the matter include, but are not limited to:

1. Current compliance with a voluntary compliance agreement signed by all the parties;
2. Current compliance with a HUD-approved conciliation agreement signed by all the parties;
3. Current compliance with a conciliation agreement signed by all the parties and approved by the state governmental or local administrative agency with jurisdiction over the matter;
4. Current compliance with a consent order or consent decree;
5. Current compliance with a final judicial ruling or administrative ruling or decision; or
6. Dismissal of charges.

3. Proposals must be responsive to one of the Projects described within this Announcement. - Applications that do not clearly respond to the research objectives of one of the three Projects described in this announcement will be ineligible and will not be considered for funding.

4. The title of the Project to which you are applying must be clearly identified within the Title field of Box 13 Competition of the Application for Federal Assistance SF-424 submitted as part of your application.

5. No person may be listed as a principal investigator on more than one application per Project.

E. Statutory and Regulatory Requirements Affecting Eligibility.

Eligibility Requirements for Applicants of HUD's Grants Programs.

The following requirements affect applicant eligibility. Detailed information on each requirement is posted on HUD's Funding Opportunities Page ([click here](#)).

[Outstanding Delinquent Federal Debts](#)

[Debarments and/or Suspensions](#)

[Pre-selection Review of Performance](#)

[Sufficiency of Financial Management System](#)

[False Statements](#)

[Mandatory Disclosure Requirement](#)

[Prohibition Against Lobbying Activities](#)

[Equal Participation of Faith-Based Organizations in HUD Programs and Activities](#)

F. Program-Specific Requirements Affecting Eligibility.

This program requires a certification of Consistency with the Consolidated Plan under 24 CFR 91.2. This certification means the proposed activities in the application are consistent with the jurisdiction's strategic plan, and the location of the proposed activities is consistent with the geographic areas specified in the Consolidated Plan. The Consolidated Plan also includes the jurisdiction's certification to affirmatively further fair housing, as specified under applicable regulations and guidance. For competitive programs, a certification of consistency of the application with the approved Consolidated Plan for the jurisdiction may be required, whether the applicant is the jurisdiction or another applicant.

G. Criteria for Beneficiaries.

There are no specific criteria for beneficiaries for this announcement.

IV. Application and Submission Information.

A. Obtaining an Application Package.

Instructions for Applicants.

You must download both the Application Instruction and the Application Package from Grants.gov. You must verify that the CFDA Number and CFDA Description on the first page of the Application Package, and the Funding Opportunity Title and the Funding Opportunity Number match the Program and NOFA to which you are applying.

The Application Package contains the portable document forms (PDFs) available on

Grants.gov, such as the SF-424 Family. The Instruction Download contains official copies of the NOFA and forms necessary for a complete application. The Instruction Download may include Microsoft Word, Microsoft Excel and additional documents.

An applicant demonstrating good cause may request a waiver from the requirement for electronic submission. For example, a lack of available Internet access in the geographic area in which your business offices are located. Lack of SAM registration or valid DUNS is not deemed good cause. If you cannot submit your application electronically, you must ask in writing for a waiver of the electronic grant submission requirements. HUD will not grant a waiver if HUD does not receive your written request at least 15 days before the application deadline and if you do not demonstrate good cause. An email request for a waiver sent 15 days before the application is due will also be considered. If HUD waives the requirement, HUD must receive your paper application before the deadline of this NOFA. To request a waiver you must contact:

Madlyn Wohlman Rodriguez

Email: madlyn.wohlmanrodriguez@hud.gov

Office of Policy Development and Research

451 Seventh Street SW Room 8226

DC 20410

Madlyn Wohlman Rodriguez

Phone: (202) 402-5939

Email: Madlyn.WohlmanRodriguez@hud.gov

U.S. Department of Housing and Urban Development

Office of Policy Development and Research

Office of University Partnerships

451 7th Street S.W. Room 8226

Washington, DC 20410

B. Content and Form of Application Submission.

You must verify that boxes 11, 12, and 13 on the SF424 match the NOFA for which you are applying. If they do not match, you have downloaded the wrong Application Instruction and Application Package.

Submission of an application that is otherwise sufficient, under the wrong CFDA and Funding Opportunity Number is not a curable deficiency and will result in your application being declared ineligible for funding.

1. Content.

Forms for your package include the forms outlined below:

Forms / Assurances / Certifications	Submission Requirement	Notes / Description
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Disclosure of Lobbying Activities - SF LLL		
Disclosure of Lobbying Activities - SF LLLa		
Grant Application Detailed Budget Worksheet - SF424 CBW		
Application for Federal Assistance - SF424		
HUD Applicant Recipient Disclosure Report (HUD) 2880 Applicant/Recipient Disclosure/Update Report	HUD will provide instructions to grantees on how the form is to be submitted.	HUD instructions to grantees are provided by webcast, To view the webcast, click here .
Acknowledgment of Application Receipt (HUD2993), if applicable	This form is applicable only to applications submitted on paper, following receipt of a waiver of electronic submission.	This form is not required but is available for applicants who want confirmation that their hard-copy application was received by HUD. The form must be submitted with the application, in accordance with the application submission instructions included in the waiver of electronic submission.

Additionally, your complete application must include the following narratives and non-form attachments.

- Abstract - One-page application summary as described in Section IV.B.2.b below.
- Narrative statement addressing ratings factors.
- Appendix containing up to 5 resumes of key personnel.
- Appendix that lists the names of the firms for all of the subcontractors and consultants with whom the applicant has entered into an agreement to participate in an award under this NOFA and a brief statement of each firm's qualifications.
- Appendix containing a list of references outlining the applicant's performance of recent

- (within five years) and relevant social science research or program evaluations.
- Budget submission (display of all anticipated costs during the performance period, including an indirect cost rate).
- Code of Conduct. Applicants selected for funding will be required to provide HUD with their written Code of Conduct if they have not previously done so and it is not recorded on the HUD website at:
<http://www.hud.gov/offices/adm/grants/codeofconduct/cconduct.cfm>
- Central Contractor Registration Requirement.

2. Format and Form.

Narratives and other attachments to your application must follow the following format guidelines.

a. Narrative addressing rating factors should not exceed 25 pages. The narrative page limits do not include required forms, assurances and certifications, the appendix of participating firms and contractors, the appendix of resumes, the appendix of reference letters, the budget narrative, and the one-page abstract. The narrative must be formatted to fit an 8 1/2 by 11-inch page, double-spaced (information requirements), with one-inch margins, using standard Times New Roman 12-point font. Resumes are subject to a separate 20-page limit as follows:

- i. the application shall include resumes for no more than 5 key personnel; and
- ii. no individual resume shall exceed 4 pages. Submitting pages in excess of page limits will not disqualify an applicant; however, HUD will not consider the information on any excess pages. This exclusion may result in a lower score.

b. Abstract - One-page application summary needs to include:

- i. A brief description of the proposed research and/or evaluation project; and
- ii. Provide funding request in whole dollar amount. The amount requested should be based on the scope of the project, personnel costs, other direct costs, as well as administrative costs, etc.

C. System for Award Management (SAM) and Dun and Bradstreet Universal Numbering System (DUNS) Number.

1. SAM Registration Requirement.

Applicants must be registered with SAM before submitting their application. In addition, applicants must maintain an active SAM registration with current information while they have an active Federal award or an application or plan under consideration by HUD.

2. DUNS Number Requirement.

Applicants must provide a valid DUNS number, registered and active at SAM, in the application. DUNS numbers may be obtained for free from [Dun & Bradstreet](#).

3. Requirement to Register with Grants.gov.

Anyone planning to submit applications on behalf of an organization must register at Grants.gov and be approved by the EBiz Point of Contact in SAM to submit applications for the organization.

Registration for SAM and Grants.gov is a multi-step process and can take four (4) weeks or longer to complete if data issues arise. Applicants without a valid registration cannot submit an application through Grants.gov. Complete registration instructions and guidance are provided at Grants.gov. See also Section IV.B for necessary form and content information.

D. Application Submission Dates and Times.

The application deadline is 11:59:59 p.m. Eastern time on **05/24/2019**. Applications must be received no later than the deadline.

Submit your application to Grants.gov unless a waiver has been issued allowing you to submit your application in paper form. Instructions for submitting your paper application will be contained in the waiver of electronic submission.

"Received by Grants.gov" means the applicant received a confirmation of receipt and an application tracking number from Grants.gov. Grants.gov then assigns an application tracking number and date-and time-stamps each application upon successful receipt by the Grants.gov system. A submission attempt not resulting in confirmation of receipt and an application tracking number is not considered received by Grants.gov.

Applications received by Grants.gov must be validated by Grants.gov to be received by HUD.

"Validated by Grants.gov" means the application has been accepted and was not rejected with errors. You can track the status of your application by logging into Grants.gov, selecting "Applicants" from the top navigation, and selecting "Track my application" from the dropdown list. If the application status is "rejected with errors," you must correct the error(s) and resubmit the application before the 24-hour grace period ends. Applications in "rejected with errors" status after the 24-hour grace period expires will not be received by HUD. Visit Grants.gov for a complete description of processing steps after submitting an application.

HUD strongly recommends applications be submitted at least **48 hours before the deadline** and during regular business hours to allow enough time to correct errors or overcome other problems.

You can verify the contents of your submitted application to confirm Grants.gov received everything you intended to submit. To verify the contents of your submitted application:

- Log in to Grants.gov.
- Click the Check Application Status link, which appears under the Grant Applications heading in the Applicant Center page. This will take you to the Check Application Status page.
- Enter search criteria and a date range to narrow your search results.

- Click the Search button. To review your search results in Microsoft Excel, click the Export Data button.
- Review the Status column.
- To view more detailed submission information, click the Details link in the Actions column.
- To download the submitted application, click the Download link in the Actions column.

Please make note of the Grants.gov tracking number as it will be needed by the Grants.gov Help Desk if you seek their assistance.

HUD may extend the application deadline for any program if Grants.gov is offline or not available to applicants for at least 24 hours immediately prior to the deadline date, or the system is down for 24 hours or longer and impacts the ability of applicants to cure a submission deficiency within the grace period.

HUD may also extend the application deadline upon request if there is a presidentially-declared disaster in the applicant's area.

If these events occur, HUD will post a notice on its website establishing the new, extended deadline for the affected applicants. HUD will also include the fact of the extension in the program's Notice of Funding Awards required to be published in the Federal Register.

In determining whether to grant a request for an extension based on a presidentially-declared disaster, HUD will consider the totality of the circumstances including the date of an applicant's extension request (how closely it followed the basis for the extension), whether other applicants in the geographic area are similarly affected by the disaster, and how quickly power or services are restored to enable the applicant to submit its application.

PLEASE NOTE: Busy servers, slow processing, large file sizes, improper registration or password issues are not valid circumstances to extend the deadline dates or the grace period.

1. Amending or Resubmitting an Application.

Before the submission deadline, you may amend a validated application through Grants.gov by resubmitting a revised application containing the new or changed material. The resubmitted application must be received and validated by Grants.gov by the applicable deadline.

If HUD receives an original and a revised application for a single proposal, HUD will evaluate only the last submission received by Grants.gov before the deadline.

2. Grace Period for Grants.gov Submissions.

If your application is received by Grants.gov before the deadline, but is rejected with errors, you have a grace period of 24 hours after the application deadline to submit a corrected, received, and validated application through Grants.gov. The date and time stamp on the

Grants.gov system determines the application receipt time. Any application submitted during the grace period not received and validated by Grants.gov will not be considered for funding.

There is no grace period for paper applications.

3. Late Applications.

An application received after the NOFA deadline date that does not meet the Grace Period requirements will be marked late and will not be received by HUD for funding consideration. Improper or expired registration and password issues are not causes that allow HUD to accept applications after the deadline.

4. Corrections to Deficient Applications.

HUD will not consider information from applicants after the application deadline. HUD may contact the applicant to clarify information submitted prior to the deadline. HUD will uniformly notify applicants of each curable deficiency. A curable deficiency is an error or oversight that, if corrected, it would not alter, in a positive or negative fashion, the review and rating of the application. See curable deficiency in the definitions section (Section I.A.3.). Examples of curable (correctable) deficiencies include inconsistencies in the funding request and failure to submit required certifications. These examples are non-exhaustive.

When HUD identifies a curable deficiency, HUD will notify the authorized representative by email. This email is the official notification of a curable deficiency. Each applicant must provide accurate email addresses for receipt of these notifications and must monitor their email accounts to determine whether a deficiency notification has been received. The applicant must carefully review the request to cure a deficiency and must provide the response in accordance with the instructions contained in the deficiency notification.

Applicants must email corrections of curable deficiencies to applicationsupport@hud.gov within the time limits specified in the notification. The time allowed to correct deficiencies will be no less than 48 hours and no more than 14 calendar days from the date of the email notification. The start of the cure period will be the date stamp on the email sent from HUD. If the deficiency cure deadline date falls on a Saturday, Sunday, Federal holiday, or on a day when HUD's Headquarters are closed, then the applicant's correction must be received on the next business day HUD Headquarters offices in Washington, DC are open.

The subject line of the email sent to applicationsupport@hud.gov must state: Technical Cure and include the Grants.gov application tracking number or the GrantSolutions application number (e.g., Subject: Technical Cure - GRANT123456 or Technical Cure - XXXXXXXXXXXX). If this information is not included, HUD cannot match the response with the application under review and the application may be rejected due to the deficiency.

Corrections to a paper application must be sent in accordance with and to the address indicated in the notification of deficiency. HUD will treat a paper application submitted in accordance with a waiver of electronic application containing the wrong DUNS number as having a curable deficiency. Failure to correct the deficiency and meet the requirement to have a DUNS number and active registration in SAM will render the application ineligible for funding.

5. Authoritative Versions of HUD NOFAs. The version of these NOFAs as posted on Grants.gov are the official documents HUD uses to solicit applications.

6. Exemptions. Parties that believe the requirements of the NOFA would impose a substantial burden on the exercise of their religion should seek an exemption under the Religious Freedom Restoration Act (RFRA).

E. Intergovernmental Review.

This program is not subject to Executive Order 12372, Intergovernmental Review of Federal Programs.

F. Funding Restrictions.

An organization may not conduct research or an evaluation of itself.

HUD will determine whether the salary rates are reasonable, customary for the skill set provided and the tasks to be conducted, and in accordance with federal legal requirements.

Indirect Cost Rate.

Normal indirect cost rules apply. If you intend to charge indirect costs to your award, your application must clearly state the rate and distribution base you intend to use. If you have a Federally negotiated indirect cost rate, your application must also include a letter or other documentation from the cognizant agency showing the approved rate. Successful applicants whose rate changes after the application deadline must submit new rate and documentation.

Nongovernmental organizations and Indian tribal governments. If you have a Federally negotiated indirect cost rate, your application must clearly state the approved rate and distribution base and must include a letter or other documentation from the cognizant agency showing the approved rate. If you have never received a Federally negotiated indirect cost rate and elect to use the de minimis rate, your application must clearly state you intend to use the de minimis rate of 10% of Modified Total Direct Costs (MTDC). As described in 2 CFR 200.403, costs must be consistently charged as either indirect or direct costs but may not be double charged or inconsistently charged as both. Once elected, the de minimis rate must be applied consistently for all Federal awards until you choose to negotiate for a rate, which you may apply to do at any time. Documentation of the decision to use the de minimis rate must be retained on file for audit.

State and local governments. If your department or agency unit has a Federally negotiated indirect cost rate, your application must include that rate, the applicable distribution base, and a letter or other documentation from the cognizant agency showing the negotiated rate. If your department or agency unit receives more than \$35 million in direct federal funding per year, you may not claim indirect costs until you receive a negotiated rate from your cognizant agency for indirect costs as provided in Appendix VII to 2 CFR part 200.

If your department or agency unit receives no more than \$35 million in direct federal funding per year and your department or agency unit has developed and maintains an indirect cost rate

proposal and supporting documentation for audit in accordance with 2 CFR part 200, Appendix VII, you may use the rate and distribution base specified in that indirect cost rate proposal. Alternatively, if your department or agency unit receives no more than \$35 million in direct federal funding per year and has never received a Federally negotiated indirect cost rate, you may elect to use the de minimis rate of 10% of MTDC. As described in 2 CFR 200.403, costs must be consistently charged as either indirect or direct costs but may not be double charged or inconsistently charged as both. Once elected, the de minimis rate must be applied consistently for all Federal awards until you choose to negotiate for a rate, which you may apply to do at any time. Documentation of the decision to use the de minimis rate must be retained on file for audit.

G. Other Submission Requirements.

1. Application Certifications and Assurances.

By signing the forms in the SF-424 either through electronic submission or in paper copy submission (for those granted a waiver), the applicant and the signing authorized representative affirm that they have reviewed the certifications and assurances associated with the application for federal assistance and (1) are aware the submission of the SF424 is an assertion that the relevant certifications and assurances are established and (2) acknowledge that the truthfulness of the certifications and assurances are material representations upon which HUD will rely when making an award to the applicant. If it is later determined the signing authorized representative to the application made a false certification or assurance, caused the submission of a false certification or assurance, or did not have the authority to make a legally binding commitment for the applicant, the applicant and the individual who signed the application may be subject to administrative, civil, or criminal action. Additionally, HUD may terminate the award to the applicant organization or pursue other available remedies. Each applicant is responsible for including the correct certifications and assurances with its application submission, including those applicable to all applicants, those applicable only to federally-recognized Indian tribes, and those applicable to applicants other than federally-recognized Indian tribes. All program-specific certifications and assurances are included in the program Instructions Download on Grants.gov.

2. Lead Based Paint Requirements.

When providing housing assistance funding for purchase, lease, support services operation, or work that may disturb painted surfaces, of pre-1978 housing, you must comply with the lead-based paint evaluation and hazard reduction requirements of HUD's lead-based paint rules (Lead Disclosure; and Lead Safe Housing (24 CFR part 35)), and EPA's lead-based paint rules (e.g., Repair, Renovation and Painting; Pre-Renovation Education; and Lead Training and Certification (40 CFR part 745)).

V. Application Review Information.

A. Review Criteria.

1. Rating Factors.

A. Project 1: Cost-effectiveness Evaluation of HUD CDBG-DR Resilience Investments

The maximum number of points from the rating factors that can be awarded to any application is 100. The minimum score for an application to be considered for funding is 75 with individual minimum scores of 30 points for Factor 2 and 30 points for Factor 3.

Rating Factor 1: Need for the Research (Maximum Points: 15)

You must discuss how the proposed research will contribute to understanding the effectiveness of CDBG-DR funds targeted at mitigating hazard risk and increasing community resilience to the shocks of natural hazards. The project narrative should discuss previous efforts to conduct such evaluations of resilience and/or mitigation expenditures and its challenges, while also addressing the need to assess disparate impacts on various subpopulations, how pre-existing disparities contribute to disaster impact, and how public investment can ameliorate those impacts. You must explain how the proposed research would address the objectives described in this NOFA, and you will be assessed based on the extent to which the project would generate new evidence about the effectiveness of HUD's resilience expenditures and provide information and guidance that would be helpful to entities that are intent on reducing hazard risk in communities.

Rating Factor 2: Organizational Capacity and Experience and Key Personnel (Maximum Points: 40)

Minimum points needed for funding consideration is 30 of 40 possible maximum points for this rating factor.

a. Recent Experience and Performance (Maximum 20 points)

We will evaluate the organization's past performance based on research projects completed within the past five years. These projects should have reached completion and must demonstrate the organization's ability to conduct the required research. Ideally, some of these projects should be comparable in size, scope and complexity to the project at hand and have employed similar research methods. Specifically, we will place high value on experience that demonstrates your successful completion of multidisciplinary, project- or program-level cost-effectiveness studies using probabilistic natural hazard risk analyses to assess risk reduction measures across a portfolio of assets. We will place high value on experience that demonstrates your ability to translate research findings into policy at local, state, and federal levels.

For each recent engagement, you should provide:

1. A statement of the objective of the project.
2. A description of the research/evaluation or other tasks included in the engagement that would be relevant for this engagement, especially collection of data or modeling of local-level data that is critical to understanding risk exposure and risk reduction.
3. A synopsis of how you conducted and managed the work, including the number of hours involved, data collected, methods of collection, response rate, and the total cost of the engagement.
4. A description of the final product or products of the research, the primary audience of

the research, and how it was used by the primary solicitor, especially whether and how the information generated by the research affected policy, program, budgeting, or planning decisions.

5. Key personnel who worked on the project that will be working on the proposed project.

Note: Past performance may be verified with third-party references.

b. Key Personnel (Maximum 20 points)

For the purposes of responding to this sub-factor, "key personnel" is defined as your in-house staff, subcontractors and/or consultants who will perform an essential management or technical function on the proposed project, and who could not be easily replaced by other staff with comparable expertise.

You must identify the key personnel for the proposed project; explain their role in the project; and demonstrate that they have the education, skills, and experience required to successfully complete the project.

You should include in your proposed research and development team people with expertise in applied research, project management, data management, software development, statistics, and writing and editing, as well as past experience in one or more topical disciplines addressed by this NOFA, including but not limited to disaster recovery, disaster risk reduction, adaptation to anticipated future risks, hazard mitigation, resilience, flood risk management, civil engineering, and environmental science.

You will be assessed based on the extent to which your proposed key personnel have the demonstrated education, skills, and experience required to complete the proposed research.

1. Provide a list of up to five key team members and their roles in the management and/or implementation of this project.
2. Demonstrate experience of each team member to carry out their identified roles in this project.

Resumes for key personnel should be included as an appendix to the narrative.

Rating Factor 3: Soundness of Approach (Maximum Points: 40)

Minimum points needed for consideration is 30 of 40 possible maximum points for this rating factor.

a. Research and Design (Maximum 30 points)

You must provide a draft research design that lays out the conceptual approach for the entire project. The draft research design must include specific research questions and hypotheses that will be investigated by the proposed research, a data collection and analysis plan that discusses data needs, methods of collection, and analyses that respond to research objectives, and a plan for development of products that synthesize and disseminate findings to a broad audience including policy makers and practitioners.

The proposed research design will be rated on technical quality, clarity, creativity, thoroughness, specificity, and feasibility, specifically the extent to which it provides a

methodologically sound and realistic approach for the proposed research, including:

1. The extent to which the proposal demonstrates extensive knowledge of this field of practice and research literature, addresses key research questions and identifying research products that successfully communicate findings and practices geared towards policymakers and practitioners

2. The extent to which the proposal describes an adequate, comprehensive, and feasible plan to undertake a multidisciplinary analysis of cost-effectiveness of resilience strategies, including descriptions of the:

- Scope of the sample of projects to be evaluated
- Scope of hazard mitigation strategies to be evaluated
- Method of assessing cost and benefits
- Method for identifying vulnerable subpopulations, and a method for assessing disparate impacts on such populations

3. The extent to which the proposal describes an adequate, appropriate, and sound approach to data collection and analysis, including:

- The availability and reliability of data sources
- Strategies for obtaining data, especially data collected directly from HUD CDBG-DR grantees that have implemented or are currently implementing resilience strategies
- Methods for analyzing the data to address the research questions

In your proposal for the collection of original data from HUD CDBG-DR grantees, the draft research design must discuss sampling strategy and the extent to which findings will be generalizable.

4. The extent to which the proposal describes an adequate and feasible plan for developing guidance for policymakers and practitioners on evaluating resilience strategies.

b. Management and Work Plan (Maximum 10 points)

You must provide a draft Management and Work Plan for the project that presents a clear, practical, and forward-looking plan to complete the proposed research. The draft Management and Work Plan must include:

1. A narrative discussion of how you will manage the overall project, including a discussion of how to assign appropriately skilled staff and how to manage communication with HUD and other stakeholders (such as CDBG-DR recipients), major project milestones, interdependencies among tasks, and quality control procedures.

2. A schedule of tasks (including start dates and completion dates) and deliverables.

3. Allocation of resources, including staffing and labor hours, by task.

You will be assessed based on the extent to which your draft Management and Work Plan provides a thorough and realistic approach for managing the overall project.

c. Budget

Your budget proposal should thoroughly estimate all applicable direct and indirect costs. HUD

is not required to approve or fund all proposed activities and reserves the right to negotiate or redistribute funds as appropriate. You must thoroughly document and justify all budget categories and costs (Form HUD424CBW) and all major tasks, for yourself, sub-recipients, major subcontractors, joint venture participants, or others contributing resources to the project.

A separate budget must be provided for partners who are proposed to receive more than 10 percent of the federal budget request. Your application will be evaluated on the extent to which your resources are appropriate for the scope of your proposed study.

Your narrative justification associated with these budgeted costs should be submitted as part of the Total Budget (Federal Share and Leveraging) but is not included in the 25-page limit for this submission. The narrative should provide an explanation of the basis for the major budget items. Separate narrative justifications should be submitted for partners that are submitting separate budgets.

Rating Factor 4: Performance Evaluation (Maximum Points: 5)

You must describe the general methods and measures you will use to regularly monitor the effectiveness of your work. We have identified the broad control measures that constitute high-quality research.

You must present a clear plan for regularly monitoring the effectiveness of your work on the following measures:

1. Quality of data collection
2. Quality of data analysis
3. Quality of written products
4. Quality of performance monitoring guidance tool
5. Timeliness of performance and effectiveness of cost control measures

B. Project 2: Qualitative Case Studies of Implementation of HUD CDBG-DR Resilience Investments

The maximum number of points from the rating factors that can be awarded to any application is 100. The minimum score for an application to be considered for funding is 75, with individual minimum scores of 30 points for Factor 2 and 30 points for Factor 3.

Rating Factor 1: Need for the Research (Maximum Points: 15)

You must discuss how the proposed research will contribute to understanding how CDBG-DR grantees implement resilience strategies and how the research will identify best practices for overcoming common challenges implementing these complex projects, especially how to improve community participation and support of such strategies. The project narrative should also address the need to understand disparate impacts on various subpopulations, how pre-existing disparities contribute to disaster impact, and how public investment and participatory planning can ameliorate adverse impacts. The project narrative should also discuss previous efforts to conduct such case studies of resilience and/or mitigation project implementation and explain how the proposed research would address the objectives described in this NOFA in a creative way. You will be assessed based on the extent to which the research would generate useful information about implementation practices that could inform policy and provide guidance to entities that are devising ways to reduce hazard risk and increase resilience in

communities.

Rating Factor 2: Organizational Capacity and Experience and Key Personnel (Maximum Points: 40)

Minimum Points needed for funding consideration is 30 of 40 possible maximum points for this Rating Factor.

1. Recent Experience and Performance (Maximum 20 points)

HUD will evaluate your organization's past performance based on your descriptions of other recent (within the past 5 years) research projects as applicable that were fully completed and demonstrate your organization's ability to conduct the applicable functions. Ideally, some of these projects should be comparable in size, scope and complexity to the project at hand and employed similar research methods. Specifically, HUD will place high value on experience that demonstrates the applicant's successful completion of implementation studies, that investigate decisions and practices of public entities implementing a complex project with public funds, using methodologies that can be scaled for the purposes of this study. HUD will place high value on experience that demonstrates the applicant's ability to translate research findings into policy at local, state, and federal levels.

For each recent engagement, applicants should provide:

1. A statement of the objective of the project;
2. A description of the research/evaluation or other tasks included in the engagement that would be relevant for this engagement, especially working closely with public entities that plan and implement major community infrastructure and have collected project and local environmental data critical to understanding risk exposure and risk reduction.
3. A synopsis of how the work was conducted and managed by the applicant, including the number of hours involved, data collected, methods of collection, and response rate, and the total cost of the engagement.
4. A description of the final product or products of the research, the primary audience of the research, and how it was used by the primary solicitor, especially whether and how the information generated by the research affected policy, program, budgeting, or planning decisions.
5. Key personnel who worked on the project that will be working on the proposed project.

Note: Past performance may be verified with third-party references.

2. Key Personnel (Maximum 20 points)

For the purposes of responding to this sub-factor, 'key personnel' is defined as the applicant's in-house staff, subcontractors and/or consultants who will perform an essential management or technical function on the proposed project, and who could not be easily replaced by other staff with comparable expertise.

The applicant must identify the key personnel for the proposed project; explain their role in the project; and demonstrate that they have the education, skills, and experience required to successfully complete the project.

Applicants must include in their proposed research and development team people with expertise in applied research, project management, data management, software development, statistics,

and writing and editing, as well as past experience in one or more topical disciplines addressed by this NOFA, including but not limited to disaster recovery, disaster risk reduction, adaptation to anticipated future risks, hazard mitigation, resilience, flood risk management, civil engineering, environmental science, public project management and implementation.

Applicants will be assessed based on the extent to which the proposed key personnel have demonstrated education, skills, and experience required to complete the proposed research.

1. Provide a list of no more than 5 key team members (up to 5) and their role in the management and/or implementation of this project; and
2. Demonstrated experience of each team member to carry out their identified role in this project.

Resumes for key personnel should be included as an appendix to the narrative.

Rating Factor 3: Soundness of Approach Maximum Points: 40

Minimum points needed for consideration is 30 of 40 possible points for this Rating Factor.

a. Research and Design (Maximum 30 points)

Applicants must provide a draft research design that lays out the conceptual approach for the entire project. The draft research design must include specific research questions and hypotheses that will be investigated by the proposed research, a data collection and analysis plan that discusses data needs, methods of collection, and analyses that respond to research objectives, and a plan for development of products that synthesize and disseminate findings to a broad audience including policy makers and practitioners.

The proposed research design will be rated on technical quality, clarity, creativity, thoroughness, specificity, and feasibility, specifically the extent to which it provides a methodologically sound and realistic approach for the proposed research, including:

- The extent to which the proposal demonstrates knowledge of this field of practice and research literature, addresses key research questions and identifies research products that successfully communicate findings and practices geared towards policymakers and practitioners;
- The extent to which the proposal describes an adequate, comprehensive, and feasible plan to undertake an implementation study that identifies common challenges and best practices of conceiving, planning, funding, and managing resilience strategies, including description of
 - Scope of the sample of projects to be evaluated
 - Scope of hazard mitigation strategies to be evaluated
 - Method of assessing cost and benefits
 - Method for identifying vulnerable subpopulations and a method for assessing disparate impacts on such populations
- The extent to which the proposal describes an adequate, appropriate, and sound approach to data collection and analysis, including:
 - The availability and reliability of data sources
 - Strategies for obtaining data, especially data collected directly from HUD

CDBG-DR grantees that have implemented or are currently implementing resilience strategies

- Methods for analyzing the data to address the research questions
- The extent to which the proposal describes an adequate and feasible plan for developing guidance for policymakers and practitioners on implementing resilience strategies.

In your proposal for the collection of original data from HUD CDBG-DR grantees, the draft research design must discuss sampling strategy and the extent to which findings will be generalizable.

b. Management and Work Plan (Maximum 10 points)

Applicants must provide a draft Management and Work Plan for the project that presents a clear, practical plan to complete the proposed research. The draft Management and Work Plan must include:

1. A narrative discussion of how the applicant will manage the overall project, including discussion of how to assign appropriately skilled staff, managing communication with HUD and other stakeholders (such as CDBG-DR recipients), major project milestones, interdependencies among tasks, and quality control procedures.
2. A schedule of tasks (including start dates and completion dates) and deliverables.
3. Allocation of resources, including staffing and labor hours, by task.

Applicants will be assessed based on the extent to which the draft management and work plan provides a thorough and realistic approach for managing the overall project.

c. Budget

Your budget proposal should thoroughly estimate all applicable direct and indirect costs. HUD is not required to approve or fund all proposed activities and reserves the right to negotiate or redistribute funds as appropriate. You must thoroughly document and justify all budget categories and costs (Form HUD424CBW) and all major tasks, for yourself, sub-recipients, major subcontractors, joint venture participants, or others contributing resources to the project.

A separate budget must be provided for partners who are proposed to receive more than 10 percent of the federal budget request. Your application will be evaluated on the extent to which your resources are appropriate for the scope of your proposed study.

Your narrative justification associated with these budgeted costs should be submitted as part of the Total Budget (Federal Share and Leveraging) but is not included in the 25-page limit for this submission. The narrative should provide an explanation of the basis for the major budget items. Separate narrative justifications should be submitted for partners that are submitting separate budgets.

Rating Factor 4: Performance Evaluation Maximum Points: 5

The applicant must describe the general methods and measures it will use to regularly monitor the effectiveness of its work. HUD has identified the broad control measures of what constitutes high quality research. The applicant must present a clear plan for regularly monitoring the effectiveness of its work on the following measures:

1. Quality of the data collection;
2. Quality of its data analysis
3. Quality of its written products;
4. Quality of performance monitoring guidance tool;
5. Timeliness of performance and effectiveness of cost control measures.

C. Project 3. Cooperative Research in Housing Technology

The maximum number of points from the rating factors that can be awarded to any application is 100. The minimum score for an application to be considered for funding is 75 with individual minimum scores of 10 points for Factor 1, 10 points for Factor 2, and 20 points for Factor 3.

Rating Factor 1: Need for the Effort (Maximum 20 Points).

Minimum points needed for funding consideration is 10 of 20 possible maximum points for this rating factor.

This factor addresses the extent to which there is a need for the proposed effort to make homebuilding more affordable and higher performing. Describe why HUD funding is required, and how it will help the Department and industry improve the quality and performance of housing. In reviewing this factor, HUD will determine the extent to which the applicant's proposal clearly addresses the following:

- a. The scope of the proposed project. (5 points)
- b. Describe the significance of the work, including its relationship to past effort and proposed use in the future. Describe how the work builds on existing knowledge and how it will foster innovation in homebuilding in the future. Reviewers will consider the extent to which the proposal makes a clear and compelling a case for the project. (5 points)
- c. Discuss how this effort will change the homebuilding process, including the broader impact expected, practical implications, and explain why the information will be accepted by relevant stakeholders. (10 points)

Rating Factor 2: Organizational Capacity and Experience of Key Personnel (Maximum 20 Points).

Minimum points needed for funding consideration is 10 of 20 possible maximum points for this rating factor.

In reviewing this factor, HUD will determine the extent to which the applicant demonstrates adequate qualifications of the key personnel conducting the work. The applicant must clearly address the following:

- a. Qualifications of Staff (10 points). All applicants shall provide a narrative detailing the background, skills and expertise of KEY staff involved in carrying out the proposed research. Applicants shall demonstrate that they either have sufficient personnel or the ability to procure qualified experts or professionals with the requisite knowledge, skills, and abilities in preparing and delivering the products that the proposed research is expected to produce. The narrative shall provide names, titles, and explain the responsibilities of the Principal Investigator(s),

Primary Researcher(s), or the Research Team. It shall also, and detail the procedures for allocating resources, setting goals, and determining progress towards implementation of proposed research project. You must submit in the appendix an organizational chart that shows the key players in the project, their reporting relationships, and their responsibilities.

b. Past Performance (10 points). Applicants shall discuss past activities undertaken by the key personnel within the last five (5) years. All activities must be relevant to the subject area or research category chosen for this proposal, including, but not limited to: publications; authored or co-authored books; peer-reviewed journal articles, chapters, or books; unpublished articles issued during meetings or conference proceeding; and any other articles, text and poster presentations made during the last five (5) years. If applicable, the applicant should highlight research projects that were successfully managed during the last 5 years, describing deliverables and project outcomes. Applicants should describe any challenges they faced in executing past research projects and how they implemented strategies to overcome them.

Rating Factor 3: Soundness of Approach (Maximum 35 Points).

Minimum points needed for funding consideration is 20 of 35 possible maximum points for this rating factor.

This factor will be evaluated based on the extent to which the proposed effort demonstrates the following:

a. Quality of Effort. (20 Points) Describe how the project proposes to accomplish the work.

(1) Clearly state the objectives and strategies of the proposed effort and how it relates to the statement of need described in Factor 2;

(2) Describe in detail the proposed project as it relates to stated objectives described above;

(3) Describe and explain the methodology which will be used to complete the proposed effort including how you will collect, manage, and analyze the information and data. If appropriate, describe the plan for testing and data analysis, specifically relating those actions to the existing codes, standards, and protocols.;

(4) Explain why the proposed methodology is the most effective and appropriate;

(5) Describe the quality assurance mechanisms that will be integrated into the proposed effort to ensure the validity and quality of the results. Detail strategies that you will undertake to address any potential challenges or obstacles that may arise; and,

(6) Describe follow-on efforts anticipated to fully deploy the result of this effort in the open market for residential construction. Specifically:

(i) Describe how the manufacturers will be made aware of this innovation with the intent of being integrated into their product offerings. This could be illustrated with letters of commitment from relevant trade associations.

(ii) Describe anticipated changes to building codes, design processes, or construction that are expected to be necessary to support widespread use of the result of this effort.

(iii) Describe how the anticipated changes will inform HUD policy. Describe how those activities will be supported or funded, particularly if they are critical to the ultimate success of

the effort being proposed.

b. Work Plan. (15 Points) The proposal must include a schedule of deliverables that describes specific tasks and activities involved in the proposed project. The schedule must identify all the major tasks involved in completing the proposed effort. The tasks must be presented in a logical sequence of steps and phases.

Note: The sequence and duration of this effort should be presented in quarterly (3 month) intervals for the entire life of the grant (use of a Gant chart to present this information is preferred).

(1) Indicate the sequence in which these tasks will be performed, and benchmarks achieved;

(2) Identify the key individuals responsible for carrying out each of the specific tasks or activities outlined in the schedule; and,

(3) Identify all deliverables.

Rating Factor 4: Leveraging Resources and Budget (Minimum of 5 Points to a Maximum of 15 Points).

a. Leveraging Resources (10 points) Applications require a minimum match of 25 percent of the Federal share. Applicants must score 5 points in this factor to be considered for funding.

Applications that can demonstrate a higher level of match can receive up to a maximum of 10 points.

Leverage	Points
Less than 25%	Does not meet threshold
25% and greater but less than 35%	5
35% and greater but less than 50%	7
50% and greater	10

b. Budget (5 Points) Your budget proposal should thoroughly estimate all applicable direct and indirect costs. HUD is not required to approve or fund all proposed activities and reserves the right to negotiate or redistribute funds as appropriate. You must thoroughly document and justify all budget categories and costs (Form HUD424CBW) and all major tasks, for yourself, sub-recipients, major subcontractors, joint venture participants, or others contributing resources to the project.

A separate budget must be provided for partners who are proposed to receive more than 10 percent of the federal budget request. Your application will be evaluated on the extent to which your resources are appropriate for the scope of your proposed study.

Your narrative justification associated with these budgeted costs should be submitted as part of the Total Budget (Federal Share and Leveraging) but is not included in the 25-page limit for this submission. The narrative should provide an explanation of the basis for the major budget items. Separate narrative justifications should be submitted for partners that are submitting separate budgets.

Rating Factor 5: Program Management (Maximum 10 Points). This factor emphasizes HUD’s commitment to ensuring that applicants keep promises made in their applications. The performance of successful applicants will be assessed quarterly to ensure that performance goals are met.

The application should include a discussion of the following;

- (a) Identify the organizations/person that will have primary responsibility for completion of each of the major study tasks and indicate plans for ensuring effective communication among members of the study team as well as the community, if applicable, about goals, methods, progress, and timeliness (4 points).
- (b) Identify potential obstacles, or delays in maintaining the proposed schedule and achieving the study objectives (e.g. recruitment and/or retention), and discuss steps adjustments that will be taken to respond to these potential obstacles and delays to ensure timely completion of the study. (4 points).
- (c) Include plans and schedules for preparation and submission of a final report. (2 points). The PD&R publication, “Guidelines on Preparing a Report for Publication (available at https://www.huduser.gov/portal/About/GTR_Guide1.pdf)” provides specific information and requirements regarding the format of written materials intended for publication.

Maximum Points: 0

2. Other Factors.

Preference Points.

HUD encourages activities in Opportunity Zones (OZ) and activities in collaboration with HBCUs. HUD may award two (2) points for qualified activities supporting either or both initiative(s). In no case will HUD award more than two preference points for these activities.

Opportunity Zones.

This program does not offer Opportunity Zone preference points.

HBCU.

Applicants designated by the U.S. Department of Education as Historically Black College or University will receive two (2) HBCU preference points when their application includes documentation of their status as an HBCU. [Click here](#) for more information about HBCUs,

Partnership Plans, and HBCU authorizing officials.

Applicants partnering with a Historically Black College or University will receive two (2) HBCU Preference Points when their application includes a Letter of Commitment certifying that an HBCU Partnership is in place and signed by an authorizing official of the HBCU and documentation of the college or university's status as an HBCU. [Click here](#) for more information about HBCUs, Partnership Plans, and HBCU authorizing officials.

B. Review and Selection Process.

1. Past Performance

In evaluating applications for funding, HUD will consider an applicant's past performance in managing funds. Items HUD may consider include, but are not limited to:

The ability to account for funds appropriately;

Timely use of funds received from HUD;

Timely submission and quality of reports submitted to HUD;

Meeting program requirements;

Meeting performance targets as established in the grant agreement;

The applicant's organizational capacity, including staffing structures and capabilities;

Time-lines for completion of activities and receipt of promised matching or leveraged funds; and

Other

HUD will evaluate your organization's past performance based on research projects completed within the past 5 years. These projects should have reached completion and should demonstrate your organization's ability to conduct the required research. These projects should be comparable in size, scope and complexity to the project at hand and should have required the use of similar research methods. Specifically, HUD will place high value on experience that demonstrates the applicant's successful completion of multidisciplinary, project-or program-level benefit-cost studies using probabilistic natural hazard risk analyses to assess risk reduction measures across a portfolio of assets. HUD will place high value on past experience that demonstrates the applicant's ability to translate research findings into policy implications at local, state, and federal.

HUD may reduce scores as specified under V. A. Review Criteria. Whenever possible, HUD will obtain past performance information. If this review results in an adverse finding related to integrity or performance, HUD reserves the right to take any of the remedies provided in Section III.D 1. Pre-selection Review of Performance, above.

2. Assessing Applicant Risk.

In evaluating risks posed by applicants, the Federal awarding agency may use a risk-based approach and may consider any items such as the following:

- Financial stability;
- Quality of management systems and ability to meet the management standards

prescribed in this part;

- History of performance. The applicant's record in managing Federal awards, if it is a prior recipient of Federal awards, including timeliness of compliance with applicable reporting requirements, conformance to the terms and conditions of previous Federal awards, and if applicable, the extent to which any previously awarded amounts will be expended prior to future awards;
- Reports and findings from audits performed under Subpart F—Audit Requirements of this part or the reports and findings of any other available audits; and
- The applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities.

Two types of reviews will be conducted:

1. A threshold review to determine an applicant's basic eligibility; and
2. A technical review for all applications that pass the threshold review, to rate and rank the application based on the "Rating Factors" listed in Section V.A.

Only those applications that pass the threshold review will receive a technical review and be rated and ranked.

VI. Award Administration Information.

A. Award Notices.

Following the evaluation process, HUD will notify successful applicants of their selection for funding. HUD will also notify other applicants, whose applications were received by the deadline, but have not been chosen for award. Notifications will be sent by email to the person listed as the AOR in item 21 of the SF424.

Negotiation. After HUD has made selections, some HUD programs may negotiate specific terms of the funding agreement and budget with selected applicants. If HUD and a selected applicant do not successfully conclude negotiations in a timely manner, or a selected applicant fails to provide requested information, an award will not be made to that applicant. In this case, HUD may select another eligible applicant. Consult the program NOFA for specific details.

HUD may impose special conditions on an award as provided under 2 CFR 200.207:

- Based on HUD's review of the applicant's risk under 2 CFR 200.205;
- When the applicant or recipient has a history of failure to comply with the general or specific terms and conditions of a Federal award;
- When the applicant or recipient fails to meet expected performance goals; or
- When the applicant or recipient is not otherwise responsible.

Adjustments to Funding. To ensure the fair distribution of funds and enable the purposes or requirements of a specific program to be met, HUD reserves the right to fund less than the amount requested in an application.

- a. HUD will fund no portion of an application that:

- (1) Is not eligible for funding under applicable statutory or regulatory requirements;
- (2) Does not meet the requirements of this notice; or
- (3) Duplicates other funded programs or activities from prior year awards or other selected applicants.

b. If funds are available after funding the highest-ranking application, HUD may fund all or part of another eligible fundable application. If an applicant turns down an award offer, or if HUD and an applicant do not successfully complete grant negotiations, HUD may make an offer of funding to another eligible application.

c. If funds remain after all selections have been made, remaining funds may be made available within the current FY for other competitions within the program area, or be held for future competitions, or be used as otherwise provided by authorizing statute or appropriation.

d. If, after announcement of awards made under the current NOFA, additional funds become available either through the current appropriations, a supplemental appropriation, other appropriations or recapture of funds, HUD may use the additional funds to provide additional funding to an applicant awarded less than the requested amount of funds to make the full award, and/or to fund additional applicants that were eligible to receive an award but for which there were no funds available.

Funding Errors. If HUD commits an error that when corrected would cause selection of an applicant during the funding round of a Program NOFA, HUD may select that applicant for funding, subject to the availability of funds.

B. Administrative, National and Department Policy Requirements for HUD recipients.

For this NOFA, the following Administrative, National and Department Policy Requirements and Terms for HUD Financial Assistance Awards apply. Please [Click here](#) to read the detailed description of each applicable requirement.

1. Compliance with Non-discrimination and Other Requirements

Unless otherwise specified, these non-discrimination and equal opportunity authorities and other requirements apply to all NOFAs. Please read the following requirements carefully as the requirements are different among HUD's programs.

- Compliance with Fair Housing and Civil Rights Laws, Which Encompass the Fair Housing Act and Related Authorities (cf. 24 CFR 5.105(a)).
 - Affirmatively Furthering Fair Housing.
 - Economic Opportunities for Low-and Very Low-income Persons (Section 3).
 - Improving Access to Services for Persons with Limited English Proficiency (LEP).
 - Accessible Technology.

2. Equal Access Requirements.

3. Ensuring the Participation of Small Disadvantaged Business, and Women-Owned Businesses.

4. Equal Participation of Faith-Based Organizations in HUD Programs and Activities.

5. Real Property Acquisition and Relocation.
6. Participation in HUD-Sponsored Program Evaluation.
7. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.
8. Drug-Free Workplace.
9. Safeguarding Resident/Client Files.
10. Compliance with the Federal Funding Accountability and Transparency Act of 2006 (Pub. L. 109-282) (Transparency Act), as amended.
11. Eminent Domain.
12. Accessibility for Persons with Disabilities.
13. Violence Against Women Act.
14. Conducting Business in Accordance with Ethical Standards/Code of Conduct.
15. Environmental Requirements.

In accordance with 24 CFR **50.19(b)(1)**, activities funded under this NOFA are categorically excluded from environmental review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321) and not subject to environmental review under related laws and authorities.

C. Reporting.

HUD requires recipients to submit performance and financial reports under OMB guidance and program instructions.

1. Reporting Requirements and Frequency of Reporting. Applicants should be aware that if the total Federal share of your Federal award includes more than \$ 500,000 over the period of performance, you may be subject to post award reporting requirements reflected in Appendix XII to Part 200-Award Term and Condition for Recipient Integrity and Performance Matters.

2. Performance Reporting. All HUD-funded programs, including this program, require recipients to submit, not less than annually, a report documenting achievement of outcomes under the purpose of the program and the work plan in the award agreement.

Quarterly Progress Reports: Quarterly Progress Reports will document activities completed in the most recent reporting period, planned activities for the upcoming reporting period, and budget expenditures by line item (including hours worked for specific staff). Progress reports must be submitted quarterly and should be aligned with the submission of drawdown requests.

Interim Report: The Interim Report will be released near the midpoint of this project and provide a summary of the project up to that point. The Interim Report should be considered an opportunity to evaluate the state of the project. The exact deadline and content of the Interim Report will be decided between the GTR and the awardee.

Final Report: The Final Report must summarize the work conducted over the course of the project, present the study objectives, data sources, analysis methods, and results. The Final Report is the key deliverable of the study, and must serve as a standalone document that meets the overall objective of this project. The Final Report should be edited and prepared for

publication in accordance with HUD's Guidelines for Preparing a Report for Publication https://www.huduser.gov/portal/About/GTR_Guide1.pdf

3. Race, Ethnicity and Other Data Reporting. HUD requires recipients that provide HUD-funded program benefits to individuals or families to report data on the race, color, religion, sex, national origin, age, disability, and family characteristics of persons and households who are applicants for, participants in, or beneficiaries or potential beneficiaries of HUD programs in order to carry out the Department's responsibilities under the Fair Housing Act, Executive Order 11063, Title VI of the Civil Rights Act of 1964, and Section 562 of the Housing and Community Development Act of 1987. NOFAs may specify the data collection and reporting requirements. Many programs use the Race and Ethnic Data Reporting Form HUD-27061, U.S. Department of Housing OMB Approval No. 2535-0113.

D. Debriefing.

For a period of at least 120 days, beginning 30 days after the public announcement of awards under this NOFA, HUD will provide a debriefing related to their application to requesting applicants. A request for debriefing must be made in writing or by email by the authorized official whose signature appears on the SF424 or by his or her successor in office and be submitted to the point of contact in Section VII Agency Contact(s), below. Information provided during a debriefing may include the final score the applicant received for each rating factor, final evaluator comments for each rating factor, and the final assessment indicating the basis upon which funding was approved or denied.

VII. Agency Contacts.

HUD staff will be available to provide clarification on the content of this NOFA.

Questions regarding specific program requirements for this NOFA should be directed to the point of contact listed below.

Madlyn Wohlman Rodriguez

(202) 402-5939

madlyn.wohlmanrodriguez@hud.gov

Persons with hearing or speech impairments may access this number via TTY by calling the toll-free Federal Relay Service at 800-877-8339. Please note that HUD staff cannot assist applicants in preparing their applications.

VIII. Other Information.

1. National Environmental Policy Act.

This NOFA awards funds for research activities that are categorically excluded and not subject to NEPA and other environmental laws under 24 CFR 50.19(b)(1). Accordingly, under 24 CFR 50.19(c)(1), this NOFA is categorically excluded from environmental review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321).

Appendix.

References

- (1) National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI). U.S. Billion-Dollar Weather and Climate Disasters (2018). <https://www.ncdc.noaa.gov/billions/> (Accessed September 6, 2018).
- (2) National Academies of Sciences, Engineering, and Medicine (NASEM). Attribution of Extreme Weather Events in the Context of Climate Change (2016). Washington, DC: The National Academies Press. <https://doi.org/10.17226/21852>.
- (3) “Risky Waters” <http://www.governing.com/topics/transportation-infrastructure/gov-flood-zone-floodplain-development-homes-zoning.html> (Accessed September 6, 2018).
- (4) “Boomtown, Flood Town” <https://projects.propublica.org/houston-cypress/> (Accessed September 6, 2018).
- (5) “Estimates of present and future flood risk in the conterminous United States.” Oliver E J Wing et al 2018 Environ. Res. Lett. 13 034023. <https://doi.org/10.1088/1748-9326/aaac65>.
- (6) [Community Resilience Planning Guide](#): NIST (2016) Community Resilience Planning Guide for Buildings and Infrastructure Systems, NIST SP 1190, National Institute of Standards and Technology, Gaithersburg, MD. <http://dx.doi.org/10.6028/NIST.SP.1190v1>, <http://dx.doi.org/10.6028/NIST.SP.1190v2>
- (7) Arup (2014) City Resilience Framework, The Rockefeller Foundation and Ove Arup & Partners International Limited, April, <https://www.arup.com/perspectives/publications/research/section/city-resilience-index>.
- (8) Federal Emergency Management Agency (FEMA) Loss Avoidance Studies. <https://www.fema.gov/hmgrp-loss-avoidance-studies>. (Accessed September 6, 2018)
- (9) See for example “Loss Avoidance Study: Higher Regulatory Standards, 2013 Colorado Flood.” Accessed 9/11/18 (https://www.fema.gov/media-library-data/1492193978501-8b228ed3251229b6a86dac730e56e925/FEMA_Factsheet_Colorado_LAS_508.pdf) or “Losses Avoided from Hurricane Harvey in Texas.” Accessed 9/11/18 (https://www.fema.gov/media-library-data/1526910367587-f8c8bf46c8cb0309a8289bcc88b77d3b/FEMA_Factsheet_HARVEY_LAS_Final_9.21.17_508.pdf)
- (10) National Disaster Resilience Competition <https://www.hudexchange.info/programs/cdbg-dr/resilient-recovery/> (Accessed September 6, 2018).
- (11) Engineering approach to Benefit Cost Analysis (BCA) – A method for calculating BCR of hazard mitigation activities which employs the following steps: developing exposure data, conducting analysis of asset portfolios, modeling hazard risk and impact, assessing potential loss

scenarios, and decision-making based on alternative scenarios (typically, action investment versus no action investment). See Mitigation Saves 2.0
<https://www.nibs.org/page/mitigationsaves>

(12) Cutter SL, Boruff BJ, Shirley WL (2003) Social vulnerability to environmental hazards. *Soc Sci Q* 84(1):242–261

(13) Phillips B, Thomas D, Fothergill A, Blinn-Pike L (2010) *Social vulnerability to disasters*. CRC Press, Boca Raton

(14) Tate, E., Strong, A., Kraus, T. et al. *Nat Hazards* (2016) 80: 2055.
<https://doi.org/10.1007/s11069-015-2060-8>

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