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July 21, 2021

Federal Emergency Management Agency  
Regulatory Affairs Division, Office of the Chief Council  
500 C Street, SW  
Washington, DC 20472

*Via regulations.gov*

**Re: Comments of the International Code Council on FEMA’s Request for Information on FEMA Programs, Regulations, and Policies (Docket number FEMA-2021-0011)**

The International Code Council (ICC) is a nonprofit organization, with more than 64,000 members, that is dedicated to helping communities and the building industry provide safe, resilient, and sustainable construction through the development and use of model codes (I-Codes) and standards used in design, construction, and compliance processes. Most U.S. states and communities, federal agencies, and many global markets choose the I-Codes to set the standards for regulating construction, building safety, and major renovations, plumbing and sanitation, fire prevention, and energy conservation in the built environment. The Code Council appreciates the opportunity to submit the following comments on the Federal Emergency Management Agency’s (FEMA) Request for Information (RFI) on FEMA Programs, Regulations, and Policies (“FEMA’s RFI”) in the above captioned matter.

**I. Underserved Communities Face Disproportionate Hazard Risk**

Underserved communities, including, low- and moderate-income (LMI) families, are hardest hit by disasters because they are more likely to live in homes built in hazard-prone areas or homes with lower quality construction.<sup>1</sup> Consequently, they are at greater risk of damage to or destruction of their homes and are more likely to be made homeless by a disaster.<sup>2</sup> To illustrate, a post-Hurricane Harvey analysis found that in Houston, low- and moderate-income families were more likely to live in homes built in flood-prone areas or areas not protected from flood risk and, consequently, suffered more damage than residents in higher-income neighborhoods.<sup>3</sup>

Low- to moderate-income families also have the most at stake when it comes to protecting their property from natural and manmade hazards, like fire risks. Recent Bankrate studies have reported that less than 4 in 10 of those surveyed could cover an unanticipated \$1,000 expense with savings.<sup>4</sup> That’s about one-third of the average FEMA-verified (not actual) losses post-Hurricane Harvey for LMI renters and one-seventh to one-ninth of the FEMA-verified losses for LMI owners.<sup>5</sup> Following Hurricanes Harvey, Irma and Maria, serious delinquency rates on home mortgages tripled in Houston and Cape Coral,

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<sup>1</sup> SAMHSA, *Greater Impact: How Disasters Affect People of Low Socioeconomic Status*, Disaster Technical Assistance Center Supplemental Research Bulletin (July 2017).

<sup>2</sup> *Id.*

<sup>3</sup> Dickerson, M., *Post-Harvey, Houston needs safe, affordable housing [Opinion]*, Houston Chronicle (Aug. 22, 2018).

<sup>4</sup> Bankrate Financial Security Index Survey (Jan. 2021).

<sup>5</sup> Rosales, C., *To achieve an equitable recovery, we propose a fairer way to determine needs of Hurricane Harvey survivors*, Texas Housers (Feb. 21, 2018).

Florida, and quadrupled in San Juan, Puerto Rico. Serious delinquency rates increased more than 50 percent in Santa Rosa and Chico, California after the Tubbs Fire and Camp Fire.<sup>6</sup>

The consequences of disasters and risks to life safety for people on the poverty line demonstrate why disaster resilience must be a focal point of the Agency's programs.

## II. Modern Building Codes Promote Resilience

Modern model codes are among the most effective and systemic measures to reduce the risk to buildings and their occupants from natural and manmade hazards. In its 2020 report, *Building Codes Save: A Nationwide Study of Loss Prevention*, FEMA analyzed flood, hurricane, and earthquake risk, and found that adopting up-to-date building codes could avoid more than \$600 billion in losses by 2060.<sup>7</sup> A 2019 FEMA-funded study by the congressionally-established National Institute of Building Sciences (NIBS) found that up-to-date model building codes save \$11 for every \$1 invested through earthquake, flood, and wind mitigation benefits, with wildfire mitigation benefits as high as \$8 to \$1.<sup>8</sup> These benefits represent avoided casualties, property damage, business interruptions, first responder expenses, and insurance costs, and are enjoyed by all building stakeholders – from developers, titleholders, and lenders, to tenants and communities.

Modern codes require smoke alarms and fire sprinklers, which can reduce insurance premiums.<sup>9</sup> Smoke detectors reduce fatalities by 54 percent.<sup>10</sup> And both smoke alarms and fire sprinklers help protect occupants who, in the event of a fire, now have, on average, three minutes to escape, from 17 minutes, due to shifts towards open layouts and newer materials that cause fires to burn hotter and faster.<sup>11</sup>

Strong code enforcement—which includes adequate staffing, certification that demonstrates an understanding of the codes being enforced, and continuing education on code updates, improvements in building science, and best practices—ensures codes' theoretical public safety and resilience benefits are carried through in the field. These benefits have been quantified in several instances. For example, strong code enforcement can help to reduce losses from catastrophic weather by 15 to 25 percent.<sup>12</sup>

Importantly, codes provide these benefits without appreciable implications for housing affordability—in fact, no peer-reviewed research has found otherwise. For example:

- After Moore, Oklahoma experienced its third violent tornado in 14 years, the city significantly strengthened its building codes. The Moore Association of Home Builders estimated a \$1-\$2/sqft resulting increase in the cost of construction. Yet, researchers found that the change to a stronger building code had no effect on the price per square foot or home sales.<sup>13</sup>

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<sup>6</sup> Betten, D., et. al., *2019 Natural Hazard Report*, CoreLogic (Jan. 2020).

<sup>7</sup> FEMA, *Protecting Communities and Saving Money: The Case for Adopting Building Codes* (Nov. 2020).

<sup>8</sup> NIBS, *Natural Hazard Mitigation Saves: 2019 Report* (Dec. 2019).

<sup>9</sup> See, e.g. <https://www.nationwide.com/property-insurance-rates.jsp>.

<sup>10</sup> Ahrens, M., *Smoke Alarms in U.S. Home Fires*, NFPA Research (Jan. 2019).

<sup>11</sup> Leamy, E., *House fires burn much faster than they used to. Here's how to survive*, Washington Post (Nov. 2017).

<sup>12</sup> Czajkowski, J. et. al., *Demonstrating the Intensive Benefit to the Local Implementation of a Statewide Building Code*, Risk Management and Insurance Review (2017).

<sup>13</sup> Simmons, K. & Kovacs, P., *Real Estate Market Response to Enhanced Building Codes in Moore, OK*, Investigative Journal of Risk Reduction (Mar. 2018).

- The most detailed benefit-cost analysis of seismic code adoption to date modeled six buildings in Memphis, Tennessee and compared the costs of adhering to the seismic provisions of the 2012 edition of model building codes as opposed to late 1990s-era codes. The study found that adopting the 2012 codes, for the apartment building studied, would add less than 1 percent to the construction cost (and less to the purchase price, since construction cost typically amounts to between 1/3rd and 2/3rds of purchase price), reducing annualized loss—in terms of repair cost, collapse probability, and fatalities—by approximately 50 percent.<sup>14</sup>
- According to the Association of State Floodplain Managers, the insurance savings from meeting current codes’ flood mitigation requirements can reduce homeowners’ net monthly mortgage and flood insurance costs by at least 5 percent.<sup>15</sup>
- The principal investigator for the NIBS report found that improvements to model building codes’ resilience over the nearly 30-year period studied only increased a home’s purchase price by around a half a percentage point in earthquake country or in an area affected by riverine flood.<sup>16</sup>

In recognition of their contributions to community resilience, FEMA has called adopting current building codes “the single most effective thing we can do.”<sup>17</sup> As FEMA recognized in its current Strategic Plan, “[d]isaster resilience starts with building codes, because they enhance public safety and property protection.”<sup>18</sup> In the Plan’s very first objective, FEMA highlighted the importance of the Agency’s “advocate[ing] for the adoption and enforcement of modern building and property codes.”

### **III. Responses to FEMA’s RFI**

As stated above, underserved communities, as defined in Executive Order 13985, are more likely to be hardest hit by disasters because they are more likely to live in homes built in hazard-prone areas or homes with lower quality construction, and lack the resources necessary for recovery, including relocation and repair. FEMA, backed by extensive research, views the adoption and effective implementation of modern codes as the most effective community mitigation measure. The below responses to FEMA’s RFI identify ways the Agency could improve its efforts to more effectively encourage the adoption and effective implementation of modern building codes and, therein, extend the benefits they provide to underserved communities that face disproportionate hazard risk.

#### **A. FEMA’s Programs Should Better Support Code Adoption and Implementation (Responsive to FEMA RFI Questions 1-3)**

Despite the Agency’s efforts to prioritize them, to date, very few grants have supported code activities across the Building Resilient Infrastructure and Communities (BRIC) program and Hazard Mitigation Grant Program (HMGP). To illustrate:

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<sup>14</sup> NEHRP Consultants Joint Venture, *Cost Analyses and Benefit Studies for Earthquake-Resistant Construction in Memphis, Tennessee*, NIST GCR 14-917-26 (2013).

<sup>15</sup> ASFPM’s Comments in Response to FR-6187-N-01, White House Council on Eliminating Barriers to Affordable Housing Request for Information (Docket HUD-2019-0092).

<sup>16</sup> Porter, K., *Resilience-related building-code changes don’t affect affordability*, SPA Risk LLC Working Paper Series 2019-01 (2019).

<sup>17</sup> FEMA, *Protecting Communities and Saving Money: The Case for Adopting Building Codes* (Nov. 2020).

<sup>18</sup> FEMA’s 2018-2022 Strategic Plan (2018).

- For FY2020, BRIC is expected to award \$1.4 million for state/territorial code projects, and \$850,000 for tribal code projects, which in total constitutes 0.5% of the total FY20 BRIC allocation. According to FEMA's posted data, at least \$1.5 million in code projects was not accepted, in almost all instances because of insufficient funding.<sup>19</sup>
- Of the more than 30,000 grants in FEMA's Hazard Mitigation Assistance database, as of July 2021, only 80 have been used for code adoption and enforcement activities (0.3% of the total awards).<sup>20</sup>

The programs' structure is the primary challenge in each instance. First, the offices most in tune with local code needs and the benefits codes provide, building and fire prevention offices, are not the primary applicants in these programs. That role is filled by state emergency managers (and, frequently, local emergency managers for sub-applicants). Second, programs like BRIC and HMGP cap grant amounts, which forces communities and states to prioritize among eligible projects. Building and fire prevention officials have long reported that it is nearly impossible for code activities to compete for grants with other eligible activities, particularly infrastructure and redevelopment efforts, which are tangible and have greater visibility.

This challenge is particularly evident with BRIC given state, local, and territorial governments can only fund code projects out of the \$600,000 state/territory allocation. State/territorial governments were oversubscribed for that small sum, which is not adjusted by population, by as much as 30 times or more in some instances. Code projects were crowded out as a consequence. In BRIC, we believe this impediment could be alleviated in part by the Agency agreeing that code capability and capacity building efforts not count against state/territory set-aside caps.

We also encourage the Agency to ensure it has visibility into state project prioritization. The \$1.5 million cited above is the total amount of code projects BRIC did not fund in FY20 as reported by FEMA. Most states did not report, and FEMA did not publish, complete applicant lists for state, tribal, territorial set-aside funding, which in some cases exceeded a given recipients' allocation by 30 times. We suspect that significantly more code projects were submitted to states but not to FEMA. Greater visibility into that prioritization could inform future education efforts on codes as well as future BRIC programmatic considerations to prioritize code activities.

For both HMGP and BRIC we would also encourage FEMA to develop forms to guide applicants, through which blanket approvals could be provided for certain common code projects, including, for example:

- New applications to train code officials or help code officials receive certification on the codes they enforce (funding could be provided automatically per capita based on the extent of training, certifications, and staff trained/certified);
- Code department modernization, including funding to enable electronic permitting and plan review and remote virtual inspection;
- The adoption of hazard resistant codes in jurisdictions without hazard resistant codes; and
- Building department accreditation.

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<sup>19</sup> <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities/fy2020-subapplication-status>.

<sup>20</sup> <https://www.fema.gov/openfema-data-page/hazard-mitigation-assistance-projects-v2>.

These forms would reduce the administrative burden applicants face, reducing a barrier to code activity applications.

## **B. FEMA Should Align its Programs to Promote Strong Codes (Responsive to Question 5)**

The availability of funding for code activities through set-aside allocations notwithstanding, FEMA has done an admirable job in structuring the BRIC program to support the adoption and effective implementation of strong building codes. This includes the Agency's ensuring that applicant adoption of and effective implementation of current codes are heavily weighted aspects of the BRIC program's technical criteria for mitigation project evaluation and the Agency's limiting BRIC funding for code adoptions to those that update communities to hazard resistant codes. The Bipartisan Budget Act of 2018 permitted FEMA to increase the federal share of post-disaster public assistance based on similar code adoption and implementation considerations.<sup>21</sup>

FEMA should consider whether the National Flood Insurance Program's (NFIP) building standards should be updated to more closely align with these standards. According to the Agency, less than half of communities facing flood risk have adopted flood resistant codes.<sup>22</sup> NFIP's minimum building standards haven't been substantively updated since the 1970s and now, per FEMA, lag significantly behind the life safety and mitigation benefits contained in base building codes.<sup>23</sup> According to the National Institute of Building Sciences (NIBS), as compared to NFIP minimums, current codes provide at least \$6 in flood mitigation savings for every \$1 invested.<sup>24</sup> FEMA's Hurricane Harvey after action report found that modern code requirements have reduced average claim payments by 90%.<sup>25</sup>

We also encourage FEMA to align its hazard mitigation planning requirements with its emphasis on the adoption and effective implementation of hazard resistant codes. Mitigation plans are required for applicants to receive mitigation funding (including through BRIC and HMGP). Yet mitigation plans are not required to consider code adoption or implementation. To align its mitigation plan requirements with its prioritization of building code activities, FEMA should update its state and local mitigation plan guidance to require that plans consider (1) whether adopted codes, as adapted and implemented, adequately address natural hazards; (2) whether updated or new codes should be adopted to address hazard risk, particularly in areas that, per FEMA, have not adopted hazard resistant codes, and (3) whether code implementation and enforcement should be enhanced to better address hazard risk (e.g. considering staffing based on permitting demand, providing for training and certification of code officials).

Lastly, FEMA should apply minimum construction standards consistently across its programs. Both BRIC and the Agency's post disaster public assistance program establish minimum construction standards to

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<sup>21</sup> The Bipartisan Budget Act (sec. 20606) required FEMA to issue guidance implementing this section by February 2019. To our knowledge that guidance is still forthcoming. We strongly encourage the Agency to issue it in short order.

<sup>22</sup> <https://www.fema.gov/emergency-managers/risk-management/building-science/bcat>.

<sup>23</sup> E.g., *Building Code Requirements That Exceed or Are More Specific Than the National Flood Insurance Program*, FEMA Fact Sheet (May 2021).

<sup>24</sup> NIBS, *Natural Hazard Mitigation Saves: 2019 Report* (Dec. 2019).

<sup>25</sup> FEMA P-2022, *Mitigation Assessment Team Report: Hurricane Harvey in Texas, Building Performance Observations, Recommendations, and Technical Guidance* (Feb. 2019).

ensure that mitigation and post-disaster reconstruction efforts adhere to current codes.<sup>26</sup> FEMA has declined to apply similar requirements to the post-disaster assistance it makes available through its individual assistance (IA) program. We believe the Agency should reconsider. According to FEMA, two-thirds of communities facing hazard risk have not adopted hazard resistant codes.<sup>27</sup> That means that, absent minimum construction standards, IA-funded reconstruction in two-thirds of communities would not adhere to hazard resistant codes, risking the perpetuation of an unending cycle of damage and repair if those older codes are never updated.

#### **IV. Conclusion**

Underserved communities are more likely to be the hardest hit by disasters because they are more likely to live in homes built in hazard-prone areas or homes with lower quality construction, and lack the resources necessary for recovery. FEMA, backed by extensive research, views the adoption and effective implementation of modern codes the most effective community mitigation measure. By adjusting BRIC to allow more funding for code adoption and implementation activities, better visibility into state prioritization, and a streamlined process for approvals, FEMA can ensure that more underserved communities can benefit from the mitigation benefits strong codes provide. The Agency's better aligning its BRIC, mitigation planning, public assistance, and individual assistance programs would provide greater incentives for hazard resistant code adoption and stronger post disaster reconstruction, benefiting underserved communities that face disproportionate hazard risk.

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Thank you for the opportunity to provide comments. If you have any questions concerning the Code Council's recommendations, please do not hesitate to me.

Sincerely,

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<sup>26</sup> See *Notice of Funding Opportunity (NOFO) FY 2020 Building Resilient Infrastructure and Communities*, Dept. of Homeland Security (Aug. 4, 2020); *Consensus-Based Codes, Specifications and Standards for Public Assistance*, FEMA Recovery Interim Policy FP-104-009-11 Version 2 (Dec. 20, 2019).

<sup>27</sup> <https://www.fema.gov/emergency-managers/risk-management/building-science/bcat>.