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Community Resilience Planning Guide for Buildings and Infrastructure Systems (NIST Special Publication 1190)

COMMENTS OF:
THE INTERNATIONAL CODE COUNCIL (ICC)
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On behalf of The International Code Council (ICC), The National Association of Home Builders (NAHB), The American Gas Association (AGA), The American Institute of Architects (AIA), and National Multi-Family Housing Council (NMHC), and Building Owners and Managers Association (BOMA)

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The International Code Council (ICC), on behalf of its membership, and on behalf of its strategic partners listed above who join in these comments, offers the following comments on the Draft for Public Comment, released April 27, 2015.

The International Code Council (ICC) is a membership association dedicated to building safety, fire prevention, and energy efficiency. The International Codes, or I-Codes, published by ICC, provide minimum safeguards for people at home, at school and in the workplace. Building codes benefit public safety and support the industry's need for one set of codes without regional limitations.

Fifty states and the District of Columbia have adopted the I-Codes at the state or jurisdictional level, typically the International Building Code for commercial and institutional buildings, the International Residential Code for one and two family dwellings, the International Fire Code, and the International Energy Conservation Code. Federal agencies including the Architect of the Capitol, General Services Administration, National Park Service, Department of State, U.S. Forest Service and the Veterans Administration also use the I-Codes for all the diverse facilities that they own or manage. The Department of Defense references the International Building

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Code for constructing military facilities, including those that house U.S. troops, domestically and abroad.

ICC was established in 1994 as a non-profit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes. The founders of the ICC are Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI). It is also the successor organization to the Council of American Building Officials.

ICC is the parent organization of ICC Evaluation Services and International Accreditation Service (IAS), two prominent market participants in the private conformity assessment system of the United States.

ICC's strategic partners, AGA, AIA, BOMA, NAHB, NMHC, who supported the creation of ICC and continue to support the adoption of current I-codes across the nation, have joined in these comments, as they are the primary stakeholders in the development and construction of residential, multi-family housing, and commercial buildings throughout the United States.

Background

NIST, after conducting a series of stakeholder and public workshops across the country on Disaster Resilience, has released a Draft for Public Comment of a Community Resilience Planning Guide for Buildings and Infrastructure Systems (CRPG), that offers an analysis of the issues involved in resilience planning, examples of typical community actions to evaluate and take action on a community basis, as well as detailed recommendations and a comprehensive appendix of standards and codes that can be use by state and local governments in improving resilience.

Comments

We believe that NIST, as the pre-eminent technology research and standards laboratory in the United States, has done an outstanding job in bringing together experts from a variety of disciplines, and organizing and staging workshops in all parts of the United States, to evaluate and develop both an understanding of, and potential guidance to address the issues surrounding community resilience in the United States. As NIST points out in the Executive Summary, disasters occur, on a regular basis, and affect communities large and small, in a variety of ways, across the United States. While different areas face different risks and challenges, there are always jurisdictions recovering from, and rebuilding after, disasters of many kinds and magnitudes.

The focus of the report is to assist communities to develop a plan to assess their current situation, evaluate the resilience of their buildings and infrastructure with reference to how the buildings and infrastructure support and enable social, business and community systems, and to

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create a plan to prioritize and implement mitigation actions that will reduce the impact of disasters, and improve the resilience of the community to such events. The goal of such a plan is to make sure that essential systems and buildings remain functional after an event, and reduce the time to recovery for other systems and the buildings that support those systems. While ICC and its partners appreciate the complexity and interdependencies identified by NIST in the Draft CRPG, we will limit our comments to issues that deal specifically with the resilience of buildings, and the policy issues that surround the decisions made to make buildings more resilient, as that is the focus of the model codes we publish, and is where our specific expertise and experience can provide the most value to the process of developing a final draft of the CRPG.

We note that the Draft Report suggests a hierarchy of "performance levels" to define the level of damage, or conversely, the level of usability of buildings following a disaster. These levels are not currently definitions recognized in the model codes, although the codes do recognize and require higher levels of structural and life safety protection for different types of buildings, primarily based on the number of people likely to be living or assembling in the building, as well as other factors such as the age and or mobility of the buildings users, and in some cases the use type of the building. ICC's code development process does not allow ICC staff to propose, support or oppose changes to the codes, but we welcome proposals to the codes from NIST, from our partners, or from the public that would incorporate suggested changes to the types of buildings recognized, and the level and type of structural and life safety protection that should be afforded to each type. Obviously, decisions regarding those levels of protection will be somewhat controversial, and should be resolved through an open, consensus process, such as the ICC Code Development Process, which allows all stakeholders a voice and a vote in the process of developing the new codes, which are developed and released on a three year development cycle.
The International Codes, are intended and, if adopted and complied with, are successful, at assuring a minimum level of safety for building users and occupants, against known and anticipated disaster events across all the various geographic and climactic regions of the United States. While there are different risks in different areas, the I-codes do take such differences into account, using a number of wind, seismic, and other risk maps to identify areas where higher levels of protection are required against the higher risks of specific disasters in those mapped areas.

Specific Comments
Volume 1, Chapter 2. Form a Collaborative Planning Team.
This section describes the creation of a planning team, and suggest a number of key stakeholders who should be included. While it mentions building owners and operators, no mention is made of builders, developers and the contractors who work in the construction industry. Given the importance of achieving a balance between new regulations and requirements to achieve resilience and the cost of those requirements, to gain broad community

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support it is critical to involve those who best understand the first cost of the changes under consideration.
Volume 1, Chapter 2, Planning Team, description of various suggested groups. “Building Department” is identified, along with a list of roles that a building department will likely play. The first role listed is “identifies appropriate codes and standards for adoption.” While it is possible that the building department may have some input, or even influence upon the state building code, generally local building officials mainly enforce compliance with these statewide codes. We believe the description of “Building Department” should list all the roles except the first, and then end with the following sentence: “Where a statewide building code is not mandated, the building department can identify appropriate codes to adopt or update at the local level.” In this same section, under Business and Service Professionals, we believe the “Residential Building Industry” should be listed as a distinct category, because of the key role the professionals in that industry would play in implementing any forward looking changes in development, siting and construction practices or regulations.

Volume 1, Chapter 5. Plan Development
Sec. 5.2.Identify Solutions to Address Gaps. We agree that there are existing “administrative activities (that can be taken) with low implementation costs, that will yield significant long term benefit.”
We agree specifically with the following statement in that section:
“When a hazard event occurs, buildings and infrastructure systems provide protection to the occupants from serious injury or death. This goal can be achieved by adopting and enforcing current building codes and regulations for new construction and, where warranted, retrofitting existing buildings.”
We believe that adopting and enforcing current building codes should be an action taken by ALL jurisdictions, to bring new buildings up to a minimum level of safety and recognize current technology as well as lessons learned from recent disaster events.
Many jurisdictions do not regularly update their codes, and many amend the model codes to remove requirements which address disaster risks which are known to exist for those jurisdictions. At the same time, some jurisdictions have adopted requirements tailored to their circumstances to increase resilience that go beyond the requirements in the national model codes published by ICC.

The ability to make changes to the model codes at the state and local level is key to the success of our building code system in the United States. This flexibility recognizes the right of every jurisdiction to weigh the risks, costs and benefits of code requirements, as they affect local government as well as the citizens and business communities within those jurisdictions.
NIST can assist by encouraging jurisdictions to accurately assess risk, and take into account the high cost of a disaster to a community, versus the relatively lower cost of building new buildings to survive expected risks, even when that adds to the cost of new construction.

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Section 5.2.2. Construction Solutions.
We strongly agree with the first recommendation for new construction: “1. Adopt and enforce the latest national model building codes, standards, and regulations for the built environment, and add regulations as needed to support community resilience goals.”
We note that the adoption of the latest I-Codes will also incorporate by reference the latest related standards, as the I-codes are reviewed and coordinated at each publication cycle, with the current versions of the reference standards that are incorporated in the various codes, including standards from such key developers as AISC, ASTM, AGA, NFPA, and many other sophisticated standards developers.
This section also recognizes that the I-codes are minimum standards, which are specifically designed to provide protection tailored to each area of the country, through regional tables and climate zones that reflect the weather, wind, geographic and seismic risk differences that exist across the United States. Sec. 5.2.2. is correct in stating that the current model codes should be adopted, with additional regulations added to the minimum codes.

Section 7, Future Directions
ICC, and its partner organizations have more combined experience in dealing with the thousands of state and local jurisdictions and governmental entities charged with keeping people safe in the buildings they live and work in, than any other singular organization involved.
A concise guide or executive summary would be useful to local building departments.
NIST should also consider that the time commitment of non-profits, local governments and standards developers to participate in the Standards Panel to deep dive into ultimate best resilience practices will be difficult with current resources, given practical day-to-day challenges faced by most local governments and non -profits.

The “Future Directions” for the NIST CRPG should encompass 3 or 4 implementable action items, designed to allow jurisdictions around the country to quickly take advantage of the report, and begin to prepare and take action, in advance of the next natural or man-made disaster. Among these action items, are: 1) an executive summary document, briefly bulleting the key findings of the CRSPG; 2) a “steps to take now” action list, for jurisdictions to quickly assess where they stand vis-à-vis other local jurisdictions on a simplified readiness scale; 3) a best practices list, to assist jurisdictions to take immediate action on the steps that will make the biggest difference if implemented immediately, including overcoming common obstacles faced, and challenges in taking necessary steps to change current policies and practices.

More emphasis on action and implementation would be far more beneficial, and more welcome by local jurisdictions, than an effort to generate more codes, standards and recommendations, at a time when most jurisdictions are having difficulty keeping up with the recommendations and codes currently available to them.

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Chapter 11. Buildings

ICC and its partners support, and agree with much of the discussion in Chapter 11. However, we do think that there is a need to clarify the term “minimum” which is used throughout this section, in some cases with an apparently negative connotation. While it is certainly true that the ICC model building, residential and fire codes do establish “minimum” requirements across a great number of building elements, the requirements taken together provide for buildings with a high degree of safety for occupants and building users. The fact is that in many places both inside the United States and in many nations, buildings and homes are constructed without meeting the “minimums” required in the codes. So when the discussion talks about meeting code minimums, it should be made clear that these code minimums represent a strong consensus of experts that the minimum requirements of the codes provide for a reasonable level of safety, energy efficiency, and other societal benefits reflected in the code requirements.

While some of the distinctions and “performance categories” differ from existing code definitions and use categories, we believe that examination of these issues is helpful, and may lead to proposed changes to the codes that will better reflect community priorities and needs.

Site selection and land-use / zoning is critical to the success of building design and construction. The best building code with the best architect/engineer team and the best contractor cannot make for a resilient building if poor land use regulations and development standards still exist.

Sec. 11.3 Performance Goals.
Definitions for Category B and C are consistent with other commonly used protocols authored by the Applied Technology Council and FEMA. Significant detail and impacts need to be further described.
Under Category designations, we suggest subtitles for paragraphs that refer to typical hazard types: seismic, flood and wind.
In a deeper dive, there could be more discussion on the general condition of the existing building stock and the expected performance of typical buildings

Sec. 11.4. Regulatory Environment. ICC believes that this section is important, as it points out the fact that although ICC develops and publishes a new set of I-codes every three years, reflecting new knowledge, technology and lessons learned from disaster events, the adoption and enforcement of codes is at the state and local level. There is wide diversity in the schedules and regularity of state and local adoptions, and many jurisdictions have fallen significantly behind the current model codes, many as a result of the prolonged housing recession that negatively impacted local tax revenues, and the ability of jurisdictions to support the adoption and training of local officials and contractors on the new codes. Likewise, as this section also points out, adoption without consistent enforcement can significantly affect resilience. Many jurisdictions affected by budget problems over the past 5-6 years have significantly reduced the

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capacity of their building code compliance activities, and these capabilities need to be rebuilt, at the same time that more up-to-date codes are adopted.

Typical duties of the authority having jurisdiction should be included: the duty is to assure the initial construction provides a reasonable degree of safety to building users and occupants. After a certificate of occupancy is issued, there are typically no inspections or maintenance requirements for residential properties, and typically only annual fire safety inspections for commercial buildings.

Sec. 11.5. Standards and Codes.
We believe this section is accurate and important, and provides a very accurate overview of how building codes affect new and existing buildings, and why continual updating of locally adopted codes is important in achieving resilient communities. A chart of milestones in code development would be very useful.
Local building departments often revisit their land use, zoning and building codes after a disaster and while ultimately providing greater protection to the community upon adoption, these changes can cause confusion to building owners and create delays for reconstruction and repairs.

Sec. 11.6. New Construction.
This section contains a discussion of the building codes, and how the codes address various risk events, including the concept of “design load periods” These issues go to the heart of the public policy and cost issues that are a part of the ongoing code development process. ICC encourages communities, stakeholders and the public to evaluate these issues and considerations, and to participate in the code process, to assure that a proper balance between known and projected risks, and the costs of various mitigation approaches, is achieved in the codes. While there will likely never be complete agreement on what level of protection should be mandated by the building codes, it is possible, and desirable, to achieve consensus on the best, most cost-effective measures that should be incorporated both in the minimum code requirements, as well as into optional, higher performance recommendations.

Conclusion
ICC and our partners greatly appreciate the opportunity provided by NIST to comment on the Draft CRPG, and the obvious research, attention to detail and commitment to an open and transparent process that the NIST Draft for Public Comment demonstrates. We look forward to continuing to serve the numerous state and local government jurisdictions that rely on the International model codes and standards, to assure safe and resilient buildings that Americans can live, work and learn in every day. We also welcome proposals to change, improve and update the codes to better reflect the changing nature of our understanding of resilience, and how strong and safe buildings are an important part of achieving resilient communities.