

**Resiliency Sub-Workgroup  
December 10, 2019**

**Attendees:**

|                            |                    |
|----------------------------|--------------------|
| Kenney Payne               | AIA                |
| Steve Shapiro              | City of Hampton    |
| Kristin Owen               | DCR                |
| Charles Baker              | FEMA               |
| George Homewood            | City of Norfolk    |
| Garrett Dyer               | VDFP/SFMO          |
| Stacey Smith               | Viridiant          |
| Carol Considine            | ODU                |
| Craig Toalson              | HBA Virginia       |
| Andrew Clark               | HBA Virginia       |
| John Ainslie               | Ainslie Group      |
| Steve Sunderman            | Resilient VA       |
| Abigail Johnson (remote)   | BHCD Member        |
| Whitney Katchmark (remote) | HRPDC              |
| Annette Osso (remote)      | Resilient Virginia |
| Richard Potts              | DHCD               |
| Thomas King                | DHCD               |
| Jeff Brown                 | DHCD               |
| Traci Munyan               | DHCD               |
| Lee Hutchinson             | DHCD               |

---

**Welcome/Introductions**

**Discussion of Executive Order 24 and 45**

Mr. Brown summarized the intent of Executive Order 24 and the past work of this Subworkgroup. Mr. Brown explained that, during a previous meeting, there was an agreement to first focus on flooding and high wind events before working on some of the other identified shocks/stresses. At the previous meeting, this group agreed to draft a proposal to require all new dwelling units to be provided with a portable generator hookup. Mr. Brown summarized the current status of the code change process and indicated that any proposals from the group would need to be finalized and submitted by April or May to be considered at a regular workgroup meeting prior to conclusion of the final regulations phase. He also encouraged participants to work together, between meetings, to come up with potential code changes to submit to the group for consideration.

Mrs. Owen summarized the work that has been done so far related to Executive Order 24. She also summarized the report submitted by DCR at the direction of EO 24 that included several recommendations. Mrs. Owen summarized the actions taken under Executive Order 45, which included rescinding a previous Executive Memorandum 2-97 which created the Flood Plain Management program, updating flood prevention provisions for building construction for state owned buildings and updating Virginia's Flood Map to NOAA 2100.

### **Discussion of draft "Generator Connection" proposal**

Mr. Brown opened the discussion on the draft code change proposal, developed as a result of the previous meeting, to require a generator connection for individual dwelling units. He went over the individual items in the proposal, explained how it would work for new construction of dwelling units and when it would apply to existing buildings.

Mr. Payne suggested having the term "optional standby power system" refer back to NFPA 70. Mr. Brown suggested having it read "...an optional standby power system in accordance with NFPA 70".

Questions were raised regarding natural gas power and applicability for multi-unit apartments/condos and if this proposal unintentionally creates an unsafe situation by having multiple individual portable generator connections for each unit in a multi-family building.

Mr. Payne asked what items would be covered by this emergency power supply – the heater, the lighting, the oven, the refrigerator, etc. Mrs. Owen asked if the emergency standby power in the NFPA is already limited to just lighting and elevators and would already prohibit the powering of refrigerators and heating/cooling.

Mr. Ainslie questioned if the proposal conflicts, by increasing the cost of a home, with other guidance from the Governor to promote affordable housing. There was some discussion on what this type of connection would include (transfer switch, wiring, generator receptacle, etc.) and what it would cost. Mr. Brown stated he had installed one in his own home for about \$150 in materials, but that the price to a homeowner including installation would likely be higher. Mr. Brown asked the HBAV representatives if they would help determine estimated costs to provide one of these connections for a new home.

Based on several concerns that were raised by various members regarding application of the requirements to multi-family buildings, the group agreed to first focus on finding a solution for one and two-family dwellings.

Mr. Ainslie suggested that the language in the draft proposal should strike the word "optional" and state that it's mandatory, if it's agreed that it should be mandatory. Mr. Ainslie spoke to the unintended consequences of making this type of hookup available to homeowners who may not be informed on safe operation.

Mr. Dyer spoke to the importance of and complications in educating the public and ensuring life safety in an emergency.

There was some discussion that many homeowners purchase portable generators leading up to or after severe weather events and try to find a way to connect it to their home. There was general agreement that having a code compliant connection already installed on a home would be much safer than a homeowner attempting to install one on their own in the aftermath of an event.

Mrs. Osso said item 5 on the proposal would seem to be the best way to get to the issue that we're facing.

Mr. Brown asked for input or ideas on how the proposal might be amended to alleviate the concerns raised related to the cost of the proposed change and possibly reach consensus on the proposal. Mr. Shapiro added that any resiliency improvements that we identify are going to come with some additional cost and if there is going to be opposition to any cost increase, regardless of the benefits, we should just go home now. It was mentioned that the proposed generator connections might be funded through existing or new grants to offset the initial cost. Mr. Toalson and Mr. Ainslie offered to research funding options, total cost increase to the home and possible cost offsets from things like homeowners insurance.

Mr. Shapiro offered to find out if there are any approved changes coming in the 2021 edition of the model codes related to generators that might be beneficial to the discussions.

Mr. Brown tabled the discussion on this proposal until the next meeting to allow time for additional research on costs and submission of any suggested amendments to help reach consensus.

### **Discussion of draft "Flood Hazard Area Construction" proposal**

Mr. Brown opened the discussion with a summary of George Homewood's proposal and the discussion from last meeting.

Mr. Homewood summarized his proposal, explaining that it allows localities to consider adoption of specific above-code requirements in coastal areas designated as "high risk" related to wind and flooding. The proposal included a requirement to design to elevations based on 50-year sea level rise projections with an additional of 3 feet of freeboard, and a continuous load path (from the roof to foundation) designed to handle all expected environmental loads expected for 50 years. The proposal includes options for local enforcement of recognized above-code construction standards and prohibitions or restrictions on basement construction. The proposal also included several pages of minor technical and clarification changes throughout the existing flood provisions of the code.

Mr. Sunderman suggested expanding the proposal so that all localities within high wind zones and coastal areas can optionally adopt their own resiliency related ordinances.

Mr. Shapiro indicated that item 2 under scoping requires compliance with technical bulletins that contain non-regulatory language (not mandatory). Mr. Baker said this is correct, FEMA Technical Bulletins are not written as mandates.

Mrs. Owen said item 1 could be correlated with similar provisions in EO 45.

Mrs. Osso asked whether the General Assembly would have to enact legislation to permit localities to adopt these changes. The group agreed that it would not require GA action.

Mr. Payne asked for clarification on item 1 and how it would be determined what 50 year projection means. Mrs. Owen and Mr. Homewood said that part of the EO 45 work will include identifying specific sea level rise projections and sea level rise inundation areas. They indicated an interactive map for sea level rise projections already exists on NOAA's website.

Mrs. Considine stated that the solution would be to just incorporate the map the Governor's Office has published online and to go to the 50 year curve and stack the freeboard requirement around that. The ASCE also has incorporated this 50 year curve recommendation into their resilient design standard.

Mr. Brown suggested pulling out the requirement to design to projected sea level rise and making it a proposal on its own.

Mrs. Owen said the definition for "base flood" is not the same as "base flood elevation" for computing flood rates and the two definitions need to be matched throughout for clarity and in the USBC as well.

Mr. Brown suggested pulling out items that everyone agrees with as separate proposals, and grouping similar changes into separate proposals, like all definition definitions and all items related to elevation certificate, etc.

Mrs. Owen asked throughout the definitions that we do not use "100-year floodplain" and instead use a 1% chance or greater of flooding in a given year for consistency with FEMA regulations.

Under minimum inspections 113.3 there was a requirement added to require certifying the elevation of the lowest floor before proceeding with construction.

Mrs. Owen said we need to go back and make sure that the elevation of the lowest floor is being certified before the building is finished and the problem is still fixable, but that this doesn't need to be in 113.3. Also there are places in the code where it directs you to use the elevation certificate and in other places it just says use whatever the surveyor uses. We should go through the code and remove the words elevation certificate and just let the builder choose

whether they use the surveyor info or the elevation certificate form or RDP certification of the elevation.

Mrs. Owen asked that FEMA Technical Bulletins be included or referenced in some capacity even if they aren't referenced as standards that must be complied with.

### **Discussion of draft "Resiliency References"**

Mr. Payne's discussed his draft proposal that brought forward many IBC changes recommended to increase flood resistance in Chapter 5 of FEMA's "Reducing Flood Losses Through the International Codes". He explained that most of the changes were to the IBC Appendix G "Flood-Resistant Construction".

Mrs. Owen indicated that some states utilize Appendix G, but Appendix G does not fit with Virginia, so DCR utilizes a draft local floodplain ordinance that localities adopt to incorporate the NFIP requirements that are not within the scope of the USBC and are addressed in the Appendix and suggested that adoption of the Appendix is not desirable in Virginia.

Mr. Baker added that adoption of Appendix G will help with BCEGS ratings and will help with insurance rates. Additional discussions focused on the benefits of utilizing either Appendix G or a local floodplain ordinance.

Mr. Payne suggested that one way to add additional strength/resiliency for structures in certain high risk areas, without making significant changes to the IBC, would be requiring all buildings in specific/identified high risk areas to be designed/built as Risk Category IV, in accordance with the IBC. This would make the requirements clear, versus utilizing terms like "stronger", as the specific requirements are already laid out in the IBC. Additional discussion included adding a new Risk Category and requiring compliance with all requirements of Risk Category IV, with exceptions for any that were identified as non-applicable.

Mr. Payne asked what could be pulled over from his proposal to the technical proposals already put forth. Several people agreed that the elevation requirements could be brought over, in addition to the records retention items.

Mrs. Owen stated that she has been working to identify any areas where there are items that could be clarified in the USBC to ensure that there are no conflicts with the model floodplain ordinance language, and will meet with Mr. Brown prior to the next meeting to finalize a list of specific changes that she would like to recommend.

For example, flood hazard records, to comply with FEMA have to be kept in perpetuity. The current USBC ties records retention to the Library of Virginia, which is not up to date with FEMA's requirement. USBC Section 105.4 specifies records retention requirements, Mr. Brown suggested we could propose an amendment to this section to make it clear that NFIP compliance records must be kept in perpetuity and can be stored digitally.

## Adjournment

### Next Steps:

- The Generator Connection proposal will be limited to one and two-family dwellings for the time being and will be added to the next meeting agenda for further discussion.
- Mr. Ainslie and Mr. Toalson will research cost, grants and other offsets for mandatory residential generator connections.
- Identify changes that have been approved for the 2021 I-Codes, that increase resiliency
- Identify specific provisions in the Florida building codes that have been amended to increase resiliency and bring back to group for consideration.
- Mr. Shapiro offered to work on obtaining copies of the Florida codes.
- Mrs. Owen will work with Mr. Brown to develop a list of suggested amendments to the USBC to better coordinate with the floodplain ordinances and NFIP requirements.
- Prior to the next meeting, DHCD staff will work with Mr. Homewood, Mr. Payne and Mrs. Owen to compile and categorize the various individual changes submitted/discussed into multiple proposals for consideration at the next meeting: administrative requirements, elevation certificates, definitions, specific technical requirements, stand-alone items, etc.