

Resiliency Sub-workgroup Meeting Summary

March 16, 2022 9:00 a.m. – 10:48 a.m.

Virtual Meeting: <https://vadhcd.adobeconnect.com/va2021cdc/>

ATTENDEES:

VA Department of Housing and Community Development (DHCD) Staff:

Jeff Brown: *State Building Codes Director, State Building Codes Office (SBCO)*

Richard Potts: *Code Development and Technical Support Administrator, SBCO*

Florin Moldovan: *Code and Regulation Specialist, SBCO*

Paul Messplay: *Code and Regulation Specialist, SBCO*

Travis Luter: *Code and Regulation Specialist, SBCO*

Jeanette Campbell: *Administrative Assistant, Building and Fire Regulations (BFR)*

Sub Workgroup Members:

George Homewood: *City of Norfolk, Planning Director*

Joel Andre: *American Institute of Architects (AIA), Virginia*

John Harbin: *Hampton Roads Planning District Commission (HRPDC)*

Raka Goyal: *Virginia Department of General Services (DGS), Division of Engineering and Buildings (DEB)*

Angela Davis: *Virginia Division of Conservation and Recreation (DCR)*

Richard Gordon: *Virginia Building and Code Officials Association (VBCOA)*

Steve Shapiro: *Apartment and Office Building Association (AOBA); Virginia Apartment and Management Association (VAMA)*

Steve Sunderman: *Resilient Virginia*

Traci Munyan: *DHCD, Resiliency*

Andrew Grigsby: *Viridiant*

Interested Parties

Margaret Rockwell

Sub Workgroup Members not in attendance:

Charles Baker: *Federal Emergency Management Agency (FEMA) Region 3*

Kenneth Somerset: *Virginia Floodplain Management Association (VFMA)*

Debbie Messmer: *Virginia Department of Emergency Management (VDEM)*

Ellis McKinney: *Virginia Plumbing and Mechanical Inspectors Association (VPMIA)*

Casey Littlefield: *International Association of Electrical Inspectors (IAEI), Virginia*

Andrew Clark: *Home Builders Association of Virginia (HBAV)*

Welcome and Introductions

Paul Messplay: Welcomed participants to the second meeting of the Resiliency Sub-workgroup and invited Raka Goyal to introduce herself, since she was not at the prior meeting.

Discussion

cdpVA Neutral Impact Proposals – Steve Sunderman

Paul: Steve Sunderman prepared a neutral impact analysis report from the proposals with neutral Resiliency Impact Statements in cdpVA. The file shared is also located in the pod on the left in the Adobe Connect meeting and is available for download.

Steve Sunderman: {B102.3-21} Reason Statement: “This exemption is based on exempting play structures from the amusement device provisions associated to these structures and was developed prior to VCC section 424. The provisions of VCC chapter 4 regarding children’s play structures regulate the fuel loading limitations and fire protection requirements associated with having these structures inside of buildings. Fire protection provisions related to installation of play structures in buildings should remain applicable.” He agrees with the Resiliency Impact Statement that the proposal will neither increase nor decrease resiliency. Other group participants agree.

Steve Sund: {B110.9-21} Reason Statement: “There is no provision in section 110 addressing proactive cancellation or discontinuance of building projects and permits by the permit holder or the owner. Abandonment of work and revocation provisions are provided, but neither of those code provisions address a simple request to cancel a permit.” This is a documentation clarification or administrative issue. He agrees that the proposal will neither increase nor decrease resiliency. Other group participants agree.

Steve Sund: {B310.6-21} This proposal has a lengthy Reason Statement, but it says that the scope of the VRC is not provided in VCC Section 310, where it belongs. It’s another formatting or administrative change, which he agrees has no impact on resiliency. Other group participants agree.

Steve Sund: {B706.1-21} This proposal aims to clarify the intent of the applicable code sections. It’s another formatting or administrative change, which he agrees has no impact on resiliency. Other group participants agree.

Steve Sund: {B1006.3.4-21} Reason Statement: Experience in Seattle and New York City has shown that this kind of development with a limited floorplan can be allowed safely, as well as in other countries. This allows more compact missing middle residential development that was historically common in Virginia but has not been permitted for many years. Reviewers note that there is still a need for reliable aerial access, sprinklers, and alarms. It’s another clarification issue with no impact on resiliency.

George Homewood: How broad is “resilience”? The ability to have missing metal, and therefore more affordable housing does contribute to economic resilience, although not necessarily physical resilience. He agrees with Steve that it doesn’t increase physical resilience, but it could increase economic resilience.

Paul: This proposal appears to reduce stairways from 2 to 1. Would that make the building less safe or resilient?

Steve Sund: There could be an argument one way or another about the resiliency issues, but he still doesn’t see a strong case to increase or decrease resiliency.

Paul: The group agrees. No impact on resiliency.

Steve Sund: {B1020.2.1-21} Reason Statement: “The VCC has historically eliminated the requirement for hoistway opening protection in 3006. As long as that section is eliminated in the 2021 VCC, the reference to 3006 from 1020 is invalid.” It’s another documentation clarification issue with no impact on resiliency. Other group participants agree.

Steve Sund: {EB102.2.2-21} Reason Statement: “VEBC section 302.3 has this requirement that replacement smoke alarms must meet UL 217 and requires 10 year sealed batteries for battery only replacements. If the R-5 exception is taken to use the VRC instead of the VEBC this requirement to have current technology replacement smoke alarms is lost. This code change brings application of the VRC to R-5 consistent with use of the VEBC for

R-5.” He agrees that the code change has no impact on resiliency.

Andrew Grigsby: Improved smoke alarms theoretically reduce damage to buildings which overall would increase resiliency.

Steve Sund: The issue is that this is a documentation or code clarification; it isn’t a new code requirement. It brings consistency between statements in the codes.

Paul: As discussed in a previous meeting, correlation between codes can have a positive impact on resiliency, (i.e. proposal FP1201.3-21).

Steve Shapiro: Agrees with Paul. If this change was not made, there would be an issue. The change ensures that R-5 isn’t left out. Therefore, correlation between codes in this case increases resiliency.

Andrew: Agrees that this supports increased resiliency.

Steve: After hearing the discussion, he could say that it does increase resiliency.

Paul: Held a vote. This will increase resiliency due to coordination in codes. All thumbs up.

Steve: {EB603.6-21} Reason Statement: “Any occupant load change that increases the number of required plumbing fixtures is a change of occupancy by definition and section 710.1 is applicable. This provision is not consistent with the exception to 710.1 creating a confusing conflict.” It’s a documentation clarification issue, and he agrees that there is no impact on resiliency.

George: If the occupancy is increased, plumbing fixtures should be increased.

Steve Sund: The cost impact statement says that there’s no impact. The section is already overridden by section 710.1, so this is essentially an editorial change. Even if the plumbing fixture requirement is changed, is that resiliency? He thinks it’s still only editorial, with no impact to resiliency.

Richard Gordon: It’s clear in section 710 that plumbing needs to be upgraded to match the occupancy. This is just a statement of clarification.

George: What’s the exception to 710.1 that is referenced?

Richard: The exception says that in other than group R or I occupancies or childcare facilities classified as group E, where the occupant load is increased by 20% or less in the area where the change of occupancy occurs, additional plumbing fixtures required based on the increased occupant load in quantity specified in the IPC are not required. The exception is already in 710.1, which matches this.

Steve: Increase in plumbing fixtures seems to be more of a convenience issue than a resiliency issue.

Raka: Section 710 only comes into the picture when there’s a change in occupancy. Section 603 doesn’t say that. Does this change anything? It seems very specific only when there’s a change of occupancy.

Paul: It’s a good question. He asked the group if they could provide an answer.

Florin: When there’s an increase in plumbing fixture requirements, it’s already determined that there’s a change in occupancy by definition in chapter 2 of the VEBC.

Raka: Thank you.

Paul: Called for a vote on no impact. The group voted thumbs up: no impact on resiliency.

Andrew: The group just decided that improving consistency, even at the editorial level did benefit resiliency because it would improve compliance. For this proposal, it doesn’t seem to be the case. How is that principle going to be defined, or is it subjective? He’s inclined to lean towards possible economic resiliency due to coordinating with other codes.

Paul: There is a precedent where coordination between codes has a positive impact on resiliency. This may not be coordination with code, but how about clarity? Does clarity in the code increase resiliency?

Steve Shap: This is different, it eliminates a conflict, and has no impact on resiliency.

Steve Sun: If there’s a code requirement, aren’t we obligated to comply with the most restrictive aspect of the code? By coordinating them, it removes any doubt, but it still wouldn’t impact resiliency. It’s just clarification.

Richard: If the code provisions’ subject matter directly affects resiliency, then coordination between codes affects resiliency. If the subject matter of the change doesn’t affect resiliency, then neither would coordination of codes.

Steve Sun: Agrees. He still sees no impact on resiliency in this proposal.

Paul: Voting again has all thumbs up for no impact.

Steve: {EB707.2-21} Reason Statement: “The exception is never applicable because the listed occupancies are

never required to have a rating greater than 2 hours. This error is even noted in the ICC commentary for this section (1011.6.1 in the IEBC).” This is a code revision to remove an exception. It’s only an administrative correction or clarification, with no impact on resiliency. Other group members agree that there’s no impact.

Steve: {P1003.3.2-21} Reason Statement: “The use of food waste grinders also become a dumping sink for all food wastes and the grinders break up the food into small particles that heavily contribute to Fats, Oils and Grease production. Grease interceptors are not designed to handle solids loading so a solids interceptor is needed before a grease interceptor. If food waste grinder drains are allowed to bypass a grease interceptor, then the grease is passed through to the sewer collection system.” The Resiliency Impact Statement says “This proposal will not have an impact on the resiliency of the system in regards natural disasters, sea level rise and other climate concerns.” Steve disagrees, he thinks it does impact resiliency. Without such a provision, sewer collection systems could backup and cause damage to finishes and structures. Resilience is not just limited to climate considerations. He thinks that they only considered climate impacts, and not hazards in general.

Paul: Steve thinks proposal will impact resiliency. Vote shows everyone agrees that it will.

Steve: {RB324-21} This proposal has a very long Reason Statement. There’s a proposed reduction in pathway requirements on roofs for fire-fighting purposes, in order to maximize usability areas for solar panels. This one is difficult to evaluate because solar PVs are resiliency measures. This proposal reduces a means of access, but it’s not clear if it will hinder fire-fighting capability. If it increases PV effectiveness, it increases resiliency, but if it restricts fire fighter access, it decreases resiliency.

Paul: In the past, where portions of a proposal could increase resilience, while others could decrease resilience, it was left as a neutral impact proposal.

Steve Shap: This was discussed at the SFPC group. Fire services have concerns about reducing pathways. He agrees with the second part of Steve’s analysis, that reduction in access decreases resiliency.

Andrew: The change is from 3 feet or wider clearance, and the advocate says 1.5 feet is sufficient. He has been on many roofs and 3 feet is pretty wide, while 18 inches isn’t very wide. Is 2 feet a good compromise? He wants maximum PV coverage on roofs, because he sees it as very impactful on resiliency. This was discussed at the national level. Overall, he thinks 18 inches could be sufficient, and would support this as an increase on resiliency.

Paul: As groups have done in the past with competing opinions, it has been left as neutral. Should this one be left as neutral or something else?

Andrew: If members think there would be 25% negative impact and a 75% positive impact, should it remain neutral, or would it only be neutral for a 50/50 split?

Paul: There’s no time on these meetings to get into details. Given the time limitations, it would stay neutral if there are competing opinions. A thumbs up and down vote was mixed. The impact will remain neutral.

Paul: Thanked Steve Sunderman for preparing this analysis.

Proposed Amendments to the VCC, VEBC – Charles Baker, John Harbin, George Homewood

Paul: Asked George where they are with these proposals.

George: Tied these to the 2015 code. He wants some time to review the 2018 code to ensure that these are up to date, and return to the discussion next month.

Paul: This agenda item will be tabled until the next meeting.

2024 Model Code Provisions to Consider – Ellis McKinney

Paul: Ellis is not on the meeting today. This will be postponed until the next meeting.

Proposals for Consideration

Paul: These proposals were obtained from cdpVA, and have positive Resiliency Impact Statements. The group will discuss and vote on the resiliency impact from each item, as was just done with the neutral impact items.

B432-21

Paul: This proposal provides a correlation to the IFC for installation of plant processing or extraction facilities. The Resiliency Impact Statement says: "This proposal will increase resiliency by shoring up life safety and fire protection requirements between the Virginia Construction Code and the International Fire Code." He asked the group to comment or vote.

George: Is concerned about the earlier precedent where coordinating codes creates resilience on face value. He doesn't think this one increases or decreases resilience, and doesn't think that it should be a hard rule that coordinating codes automatically creates increased resilience.

Paul: Appreciates the comment. Angela Davis typed in the chat box that she agrees with George. He asked if there is any other discussion about his proposal in particular as it relates to resilience.

Andrew: He wonders about increasing coordination with code provisions that decrease resiliency. It could be getting convoluted.

Steve Shap: Agrees with Andrew Milliken's assessment (the proponent). Looking at the Reason Statement, the proposal does close the gap between codes, since construction requirements were added to the IFC but not the IBC. In this case, it would be a life safety issue due to the subject matter (extraction facilities).

Paul: Asked if the group members who didn't indicate thumbs up were abstaining.

Joel Andre: He is abstaining from a vote because it is not clear. He can see both sides of the argument.

Paul: George asked in the chat box: "Does life safety equal resilience?" It is an issue to consider and to Steve's point, safety to the structure is also something to consider. Having a link to technical provisions for construction of these facilities would increase resilience to the structure.

Paul: The vote on this item shows agreement that resiliency would be increased. Joel Andre abstained.

EB502.1.1-21 Note: Tabled from previous meeting

Paul: This was carried over from the previous meeting, to allow members to look through ACI 562. He asked for discussion.

Raka: Looked at ACI 562, which isn't a stand-alone code. It specifies minimum requirements. Commentary suggests that the building code may be used if it has better standards. She thinks that the VEBC does have better standards. She thinks that referencing it (ACI 562), might cause a conflict in compliance, and she doesn't agree with that. If it is referenced, she thinks it should be made clear that the VEBC would override minimum standards proposed by ACI 562.

Steve Shap: Likes the ACI 562 as a reference for structural concrete repair. He agrees with the proponents' Reason Statement, that it would increase resilience.

Paul: Chapter 1 in the VCC has an order of precedence, and any conflict would be addressed if there was one.

George: Typed in the chat box: "Are there any standards for structural concrete repair in VUSBC?"

Paul: Not that he knows of. He asked DHCD staff to look it up. Steve Shapiro typed in the chat box: "I don't think there are."

George: If this is adopted, would it become the standard for concrete repair?

Paul: It does say that assessment, design, and repairs to structural concrete shall be in accordance with ACI 562. Assessment and design of repairs of seismic force-resisting concrete elements that result in changes of strength, stiffness, or ductility from pre-damage conditions shall be in accordance with Section 305.

George: Given the Florida condo collapse due to failure to repair structural concrete, perhaps this would be a smart thing to do.

Paul: Vote from the group resulted in thumbs up except for a dissenting vote from Raka.

[Break 9:59-10:04]

EC404.2-21

Paul: This was renamed in cdpVA as "REC404.2", but the text is the same. This provides provisions for when one and two family dwellings and townhouses are required to be solar ready. The proponent states in the Resiliency Impact Statement that it will increase resiliency by cutting greenhouse gas emissions and providing residential

customers with the ability to generate solar energy. He asked the group to vote on resiliency impact. The group agreed that yes, it would increase resiliency.

EC1301.1.1.1-21

Paul: This proposal eliminates the Virginia amendments to the IECC, and fully adopts the language of the 2021 IECC. The Resiliency Impact Statement says that it will increase resiliency by reducing health impacts from air pollution, temperature impacts from power outages, cost-driven reductions of heating and cooling and evictions.

George: Do the Virginia amendments have an impact of reducing the energy code requirements? Otherwise, it seems pointless.

Paul: The intent of the proposal is to reduce the weakening Virginia amendments and therefore increase the energy code requirements in Virginia by adopting the 2021 IECC.

Steve Shap: He personally doesn't agree with the code change. However, since the charge is not to weigh in on the code, just the resiliency impact, he does agree that it would increase resiliency.

Paul: Yes, as a reminder, the group votes on just the resiliency impacts and not the technical provisions of the proposals. The group did all vote with thumbs up that this proposal would increase resiliency.

FP103.1-21

Paul: This proposal came from the SFPC Sub-workgroup. It provides correlation between the applicable building code and references to the IFC for specific SFPC provisions that were either modified or removed in the base document. It's a large proposal which covers multiple code sections. The Resiliency Impact Statement says: "The proposal will increase the resiliency by ensuring that the buildings will be maintained in accordance with the applicable codes and standards." The group vote is to decide if correlation between the codes and providing appropriate references to how buildings will be maintained increases resiliency. Without further discussion, the group voted thumbs up, except for Raka Goyal, who abstained.

M410.2-21

Paul: The Reason Statement says, in part: "This proposal expands the list of acceptable pressure test ports beyond a simple tee fitting by recognizing that regulator, appliance gas control, and pre-fabricated manifold manufacturers provide integral test ports in their devices that meet the intent of the code." The Resiliency Impact Statement says: "This proposal would increase resiliency by eliminating unnecessary fittings, joints and potential leak paths in the gas piping system." Traditionally, downstream of a regulator would be a test port. There would also be a union in the piping between the regulator and the test port. This proposal would eliminate the extra piping, union and test port, and provide for testing directly at the regulator.

Steve Shap: Eliminating places where leaks could occur is certainly an increase in resiliency.

George: Disagrees with the Resiliency Impact Statement. He doesn't see it as increasing resilience, even though it is a good thing to do. He's getting uncomfortable with the way resiliency is being handled in the group.

Steve Sund: Thinks that the proposals need to be left alone and the resiliency needs to be voted on by itself. Anything that would reduce gas leakage and combustion would be a resiliency issue because it would protect the structure and continue to serve the needs of the people.

George: Safety and resiliency aren't the same thing. It may increase safety, but is that really by definition an increase in resiliency? He sees them as two different things.

Steve Sund: Safety is relative to occupants. If the building catches fire because of a gas leak, it speaks to destruction and resiliency of the structure. Resiliency has to do with the ability of the structure to continue to serve its function. If the building catches fire, it's both a personal safety and structural issue.

Paul: There's a distinction between safety of the building and safety of the occupants. There can be more discussion about if increases in the safety of a building also increases resiliency. As Paul counted the votes, George voted thumbs down, in disagreement that resiliency is increased, Raka and Angela abstained and other group members voted thumbs up, indicating their agreement that resiliency is increased.

REC402.1.2-21

Paul: This proposal changes the Virginia amendments to the wood frame wall insulation R value and U factor

requirements. The Resiliency Impact Statement says: “This proposal will increase resiliency in Virginia’s residential buildings. The International Code Council published a white paper titled The Important Role of Energy Codes in Achieving Resilience regarding the role of energy efficiency in resiliency.” (This document is located in the file pod in the meeting space.) “Specifically, the ICC found that increased insulation requirements support passive survivability and reduce energy burdens on low-income families, grid impacts by reducing energy demand, ice-dams, and condensation, limiting mold and mildew.”

Paul: With no further discussion, members all voted thumbs up that it does increase resiliency.

REC402.4.1.2-21

Paul: The Reason Statement says, in part: “The purpose of this code change proposal is to improve efficiency and maintain compliance flexibility for code users by modifying the air leakage testing requirements to be consistent with the 2021 IECC. Specifically, the proposal improves the baseline envelope tightness requirement from 5.0 ACH50 to 3.0 ACH50, but adds a performance path trade-off option for air tightness up to 5.0 ACH50, as long as the efficiency losses are accounted for.” The Resiliency Impact Statement says: “This proposal will increase the resiliency of homes. A properly sealed home will help maintain better indoor air quality and improve the long-term durability of the home. It will also reduce the volatility of indoor temperature swings and maintain more livable conditions during power outages due to natural emergencies.”

Steve Sund: The air infiltration issue is important for comfort, but the question is about fresh air. Tightening up a building envelope is ok, provided that there’s enough fresh air and ventilation. There is a potential to cause mold problems and limit ventilation. On the surface it seems to increase resiliency.

Andrew: Fresh air requirements is already addressed elsewhere in the code. Mechanical ventilation systems are required and should be commissioned and programmed to install per ASHRAE the right amount of fresh air in the building.

Steve: How about residential? Commercial is ok. Typically mechanical systems don’t provide fresh air in residences, they rely on air leak for make-up air. If it’s tightened up, there may be a potential problem.

Andrew: He thinks the residential code also requires fresh air. There is a problem with the selection of methods to provide fresh air. The minimum standard is least preferred, but is very low cost.

Paul: Raka and Richard abstained, and all other group members voted thumbs up for a positive impact on resiliency.

Assignments and Next Steps

Paul:

1. Review new batch of Neutral Impact Proposals in cdpVA
Steve Sunderman will do this. He’ll ask for help if there are too many for him to handle.
2. 2024 Model Code Provisions to Consider
Ellis does have a report. Paul will ask if he will continue to review and bring to the next meeting.
3. Updated proposed amendments to the VCC and VEBC based on 2018 language.
George & John & Charlie will work on this together.

Next Meeting

Paul: The meetings are on a tighter schedule this cycle than they were in the past cycles. We will meet again in about a month in April. He will send Doodle poll within a week to select the best date.

Introduction: Andrew Grigsby (new group member) works for Viridiant, focusing on high-performance construction. He has a long history in construction.

Raka: Asked if the high flood area proposals that were tabled to tie into 2018 language were also going to be coordinated with the EO45 directive (not in the VCC) and also the state resiliency action plan.

Paul: Encouraged Raka to work with George on that for the next meeting. He thanked everyone for participating.