



Department Source: Community Development - BSD

To: City Council

From: City Manager & Staff

Council Meeting Date: August 19, 2019

Re: Adoption of the 2018 International code Council Family of Codes

Executive Summary

The Building Construction Codes Commission (BCCC) has completed its review of the 2018 International Code Council (ICC) Family of Codes and the 2017 National Electric Code for adoption by the City. Once again in this code cycle the majority of code changes consist of clarification and reformatting. However, there are also a few major code changes including, storm shelter requirements for additions to educational facilities, the new Appendix Q of the International Residential Code (IRC) recognizing "Tiny Houses", and a new retroactive requirement in the International Fire Code (IFC) 1103.5.1 that would require an automatic sprinkler system to be installed in an existing A-2 occupancy (restaurants, bars, nightclubs, etc.) where alcoholic beverages are consumed and there is an occupant load of 300 or more in the fire area.

Also worthy of noting in this summary is that the BCCC, after the previous code cycle, added a member experienced in energy conservation who chaired the sub-committee charged with the International Energy Conservation Code (IECC) review; a liaison from the Environment and Energy Commission (EEC) participated in this review; and both Commissions have agreed the 2018 IECC should be adopted as written, without amendment, including the solar ready provisions in appendices RA and CA. This recommendation is very well-suited to the recently adopted Climate Action and Adaptation Plan.

Discussion

The BCCC is authorized by Chapter 6 of the City Code to "review the Building and other codes periodically for updating and recommending changes." After obtaining authorization to review the 2018 codes from the City Council in August 2018, the BCCC and its committees met frequently from October 2018 to July 2019 evaluating the new codes and recommending the addition or deletion of amendments. BCCC members, representatives of the Building and Site Development Division of the Community Development Department, the Fire Department, the Inspections Division of Boone County Resource Management, and a liaison from the Environment and Energy Commission attended the meetings. Below is a list of selected major code changes and proposed amendments.

Significant Code Changes

- 1. Storm Shelters.** Storm Shelter scoping requirements which were added to the 2015 Codes have been further modified in the 2018 Codes. The 2018 International Existing Building Code (IEBC), Section 1106, requires: "Where an addition is added to an existing Group E occupancy (Schools) located in an area where the shelter design wind speed for tornados is 250 mph in accordance with figure 304.2.1 of ICC 500



(Columbia, MO meets this criteria) and the occupant load in the addition is 50 or more, the addition shall have a storm shelter constructed in accordance with ICC 500.”

The required occupant capacity of the storm shelter shall include all buildings on the site. This, in a nutshell, means an addition of 1,000 square feet could trigger the requirement for a storm shelter large enough to house all the occupants of the existing school.

Because the code was silent on this in the 2015 code cycle Department policy has been to require a storm shelter if an addition adds 25% of existing floor area. This 25% trigger is based upon the ratio of the occupant density of a classroom (20 square feet per person) vs. the occupant density of a community tornado shelter (5 square foot per person). If an addition increases the area of the school by 25% then using this formula there is enough square footage in the addition to accommodate the entire school population.

Under the 2018 provisions the trigger is a much smaller addition. Although there is an exception that states, “Where the addition is not of sufficient size to accommodate the required occupant capacity of the storm shelter for all the buildings on-site the storm shelter shall at a minimum accommodate the required capacity for the addition.” This exception could be problematic as it will provide shelter for some, but not all occupants on-site.

No amendment is proposed by the BCCC for this code change.

- 2. IRC Appendix Q “Tiny Houses”.** Along with the growth in popularity and new innovations in design the International Residential Code (IRC) now recognizes “Tiny Houses” which are defined as a dwelling that is 400 square feet or less in floor area, excluding lofts. Many code concessions related to ceiling height, room area, lofts, loft access, and egress roof access meeting emergency escape and rescue opening standards are given to make tiny houses a viable option. All other code requirements must still be met.

Adoption of Appendix Q along with the removal of floor area requirements in the Unified Development Code opens the door for the use of Tiny Homes in our community and removes another barrier to affordable housing.

The BCCC recommends adoption of Appendix Q.

- 3. IFC 1103.5.1 Group A-2.** This new code requires, “Where alcoholic beverages are consumed in a Group A-2 Occupancy (Nightclubs, restaurants, etc.) having an occupant load of 300 or more, the fire area containing the Group A-2 occupancy shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1.”



This is a retroactive requirement for existing bars and restaurants that serve alcohol and have an occupant load over 300. This change is a response to the Station Nightclub Fire of 2003 in West Warwick, Rhode Island that killed 100 people and injured 230. The Fire Marshal reported this amendment would affect businesses such as:

- Flat Branch Brewery**-115 S Fifth St. (324)
- Olive Garden**-1300 I-70 Dr. SW (330)
- Yin Yang Night Club**-128 E Nifong Blvd (428)
- Campus Bar and Grill**-304 S Ninth St. (410)
- Gran Cru**-2600 S Providence Rd. (331)
- Tropical Liqueurs**-3805 S. Providence Rd. (324)

After lengthy discussion the BCCC and the Fire Marshall agreed that maintaining the sprinkler standards for new construction as written in our code today is sufficient. Accordingly, the BCCC recommends IFC Section 1103.5.1 be deleted.

- 4. 2019 BCCC and EEC Cooperation.** During the review of the 2018 IECC the assigned BCCC sub-committee members and the liaison from the ECC, after much open discussion, came to a consensus for recommendation to adopt the code as written including Appendix RA-Solar Ready Zone Residential and Appendix CA-Solar Ready Zone Commercial. The EEC approved this recommendation at their meeting on July 23, 2019. The full BCCC also approved this consensus recommendation. It is initially estimated this will improve energy efficiency 2-5% over the 2015 IECC.

The BCCC/EEC recommends approval as written including Appendices CA and RA.

- 5. 2018 International Swimming Pool and Spa Code (ISPSC)—Barrier Requirements**

The design and construction of pools must comply with the City of Columbia 2015 “Swimming Pool Ordinance and Guide for Swimming Pool Design and Operation” This ordinance does not speak to barrier requirements. The BCCC proposes to adopt the barrier requirements of the 2018 ISPSC and incorporating them into IRC 326.2 and International Building Code (IBC) 3109.1. There will be two major differences from previous barrier requirements in our ordinances.

 - a. Where spas or hot tubs are equipped with a lockable safety cover complying with American society for Testing and Materials (ASTM) F1346 and swimming pools are equipped with powered safety cover that complies with ASTM F1346, the areas where those spas, hot tubs or pools are located shall not be required to comply with sections 305.2 through 305.7. (Barrier Requirements).
 - b. In ISPSC section 305.2.1 barrier height is required to be not less than 48 inches. The City of Columbia has had an amendment requiring barriers to be 72 inches for many code cycles. The BCCC proposes to accept the barrier height prescribed in the International Code.



City of Columbia

701 East Broadway, Columbia, Missouri 65201

The BCCC recommends adopting and incorporating the amended barrier requirements into IRC 326.2 and IBC 3109.1 as depicted in the proposed ordinances.

Assuming adoption by Council City staff will host training for the design and construction communities in September 2019.

Fiscal Impact

Short-Term Impact: NA

Long-Term Impact: NA

Strategic & Comprehensive Plan Impact

[Strategic Plan Impacts:](#)

Primary Impact: Public Safety, Secondary Impact: Economy, Tertiary Impact: Infrastructure

[Comprehensive Plan Impacts:](#)

Primary Impact: Livable & Sustainable Communities, Secondary Impact: Environmental Management, Tertiary Impact: Infrastructure

Legislative History

Date	Action
08/20/2018	REP76-18 Council authorized the Building Construction Codes Commission to review the 2018 International Codes.
11/19/2018	R176-18 Council directed the City Clerk to place on file for a period of 90 days the 2018 International Code Council Family of Codes and the 2017 National electric Code.

Suggested Council Action

Adopt the 2018 International Code Council Family of Codes (International Residential Code, International Building Code, International Energy Conservation Code, International Existing Buildings Code, International Plumbing, Mechanical, and Fuel Gas Codes, International Fire Code) and the 2017 National Electric Code to be in full force and effect on October 1, 2019.