

Memorandum

City of Lawrence

Planning & Development Services

TO: Building Code Board of Appeals (BCBA)

FROM: Kurt Schroeder, Assistant Director of Planning & Development Services
Barry Walthall, Building Code Official

CC: Janet Smalter and Lee Queen, Staff to BCBA; Scott McCullough, Director of Planning & Development Services

DATE: December 6, 2016

RE: December 15, 2016 BCBA Agenda Item - Adoption of 2015 IBC Storm Shelter Requirements for K-12 Educational and Critical Emergency Operations Facilities

Background: On February 23, 2016, the City Commission approved first reading of multiple ordinances adopting the 2015 editions of the International Code Council (ICC) model construction codes and the 2014 edition of the National Electrical Code, which became effective July 1, 2016. Based on public comment and discussion during the February 23, 2016 meeting in regard to new 2015 IBC storm shelter requirements for K-12 educational facilities, the Commission directed Staff to amend (for second reading) City Code Section 5-206 by deleting the new 2015 International Building Code (IBC) requirement *mandating* storm shelters for new or expanded K-12 educational facilities and critical emergency operations facilities (to be designed and constructed to the *ICC 500 - ICC/NSSA Standard for the Design and Construction of Storm Shelters*). Although the previous two editions of the IBC (2009, 2012) required that *voluntarily* constructed storm shelters meet *ICC 500* standards, they did not *mandate* storm shelters for any use or occupancy type. On March 1, 2016, an amended 2015 IBC adopting ordinance, removing the storm shelter requirement mandate for schools and critical emergency operations facilities, was approved by the Commission on second reading.

During their February 23 and March 1, 2016 meetings, the City Commission directed Building Safety Division (BSD) staff to further review the new 2015 IBC storm shelter requirements (and/or potential modified, alternative requirements) with/among USD 497 representatives, private school representatives, project designers, emergency operations facility operators and the Building Code Board of Appeals. Recommendations for storm shelter requirement code amendments were tentatively scheduled to be reconsidered by the City Commission by the end of 2016.

K-12 Educational Facilities

Staff review with K-12 school stakeholders/designers: In late April 2016, BSD staff scheduled an initial meeting with USD 497 representatives. Follow-up discussions with USD 497 were conducted in mid-May, early June and early July. During June, BSD staff contacted the Director of Real Estate & Construction for the Archdiocese of Kansas in Kansas City (there are two Catholic schools in Lawrence) and the Headmaster of Bishop Seabury Academy (for which a FEMA-approved storm shelter was constructed 5-6 years ago) in regard to the 2015 IBC storm shelter requirements; both referred staff to the local architectural firm that had designed, or was working on design, for

construction projects for their schools. From late April into August, BSD and USD 497 staff also contacted other Kansas school districts in which FEMA and/or *ICC 500* shelters had been constructed, and conducted additional research with ICC and FEMA.

On August 26, 2016, USD 497 Facilities Staff, the Superintendent of USD 497, representatives from Sabatini Architects and Gould-Evans (firms involved in design and construction of recent USD 497 construction projects; Sabatini Architects designed the FEMA-approved storm shelter in Bishop Seabury Academy) and BSD staff met to review the new IBC storm shelter requirements for schools, discuss several key *ICC 500* design criteria and cost-drivers and share design/research information. Subsequent meetings with the above-identified designers and stakeholders, and the Director of Real Estate & Construction for the Archdiocese of Kansas in Kansas City, Mr. Leon Roberts, were conducted on September 21 and October 28, 2016. Information from the August 26 and September 21, 2016 meetings was forwarded to the Director of Veritas Christian School in mid-October, 2016, who was also invited to the scheduled October 28, 2016 meeting. Key 2015 IBC and *ICC-500* (2014) design criteria discussion items identified for and during stakeholder meetings are outlined in the attached *Summary of 2015 IBC Storm Shelter Requirements & Reviews*.

Recommended Storm Shelter Requirements for K-12 Educational Facilities: After the October 28, 2016 meeting with stakeholders/designers, BSD staff drafted the attached proposed code language to adopt amended 2015 IBC Sections 423.1.1 and 4.23.4, and to add several new sections to the 2015 IEBC in regard to Group E educational occupancy additions. The stakeholders and designers identified above have indicated general concurrence with the proposed code language.

In brief, for new K-12 educational facilities, the proposed 2015 IBC code amendments require that a storm shelter designed to ICC 500 standards and capable of housing the entire occupant load of the new school building be provided. The IBC amendments further require that ICC 500 storm shelter protection be provided for the occupant load of both the new school building and existing school buildings on a school campus when the new school building exceeds 25% of the floor area of the existing school buildings. For additions to schools, the proposed 2015 IEBC code amendments require an ICC 500 storm shelter if the proposed school building addition exceeds 25% of the floor area of the existing school building; when a storm shelter is required, storm shelter protection is required for the entire occupant load of the addition and the existing school building.

Critical Emergency Operations Facilities

Review with critical emergency operation facilities stakeholders: In early February 2016, BSD staff forwarded an email to various critical emergency operation facility stakeholders outlining the new 2015 IBC storm shelter requirements for such new facilities, and providing information regarding the pending 2015 IBC adoption. No feedback was received prior to or during the 2015 IBC City Commission adoption hearings on February 23 and March 1, 2016. In early November 2016, City staff followed up with these stakeholders to arrange a November 18, 2016 meeting to review and discuss the 2015 IBC storm shelter requirements for critical emergency operations facilities. There was general consensus that the 2015 IBC storm shelter requirements for new critical emergency operations facilities should be adopted as written.

Recommended Storm Shelter Requirements for Critical Emergency Operations Facilities: The proposed 2015 IBC code amendments would adopt the 2015 IBC storm shelter requirements for new emergency operations facilities as written in the 2015 IBC, with no local amendments.

Attachments: (1) Proposed 2015 IBC & 2015 IEBC Storm Shelter Requirement Amendments, 12-5-16; (2) Summary of 2015 IBC Storm Shelter Requirements & Reviews.