Agenda Item No: 16

City Council
Agenda Supplement

Meeting Date: April 17, 2018

Item: Adoption of 2018 International Building Codes

Staff Recommendation: Motion to adopt ordinances incorporating the following codes as amended by the City into the City Code:

- 2018 International Building Code
- 2018 International Existing Building Code
- 2018 International Fire Code
- 2018 International Fuel Gas Code
- 2018 International Mechanical Code
- 2018 International Property Maintenance Code
- 2018 International Residential Code
- 2017 National Electrical Code

Staff Contact: Michelle Rentzsch, Director of Community Development
Michael Magnussen, Building Commissioner

Background:

The City last had a significant update in its building codes in 2008, when the 2006 International Code Council (ICC) codes were adopted. The City has been reviewing various updates that have been published by the ICC and other agencies, and is suggesting that the City Council adopt the 2018 building codes.

The updated codes represent the most current advances in life safety building codes and add clarity to the City's existing codes. Any permit application that was submitted to the City prior to the date of adopting the new codes would be reviewed and granted a permit under the previous version of the code. The new codes would go into effect on November 1, 2018.

Benefits of Adopting the 2018 Codes

- **The 2018 Codes would represent an update to our existing codes by incorporating life safety provisions that have been added since the adoption of the 2006 ICC code series; specifically, language has been added to compensate for single family homes constructed without sprinklers in the form of fire rated assemblies, regulations for**

operable window opening limitations to protect children from accidental falls and revisions to the Means of Egress section.

- **Many of the discrepancies in the older codes have been corrected in the new proposed codes. The new 2018 Residential Code has a section that specifically addresses deck construction. This will provide the contractors, plan reviewers and inspectors with specific guidelines for deck construction.**
- **The new codes will also incorporate braced wall construction techniques that are currently not enforced. This provision provides for a structure that is constructed to withstand higher wind speeds, which would be a benefit for owners and occupants of structures.**

Public Outreach and Feedback

After the initial informational presentation to the City Council on February 20, 2018, the City provided outreach opportunities to the development community for the proposed 2018 Building Codes Update. The attached letter and postcard were emailed and sent out, respectively, to almost 300 architects, builders, contractors, developers and other types of construction professionals. Also, information about the proposed Codes and the public Open Houses is located on the City's website.

The first Open House was held on February 28th and three people attended. The second Open House was held on March 13th and twelve people attended, predominantly development professionals such as architects and builders. Also, the City provided a presentation to the Chamber of Commerce on the morning of March 13th to anyone in their membership that was interested. Three people attended the Chamber event.

Romex - Based on the feedback at the initial City Council meeting and consistent with our current Code, non-metallic cable (Romex) has been deleted and will not be allowed within Crystal Lake.

One resident provided feedback (email enclosed) that the City should regulate asbestos and lead removal and require porta potties for all construction sites. These regulations are already found in EPA and OSHA standards and the City does its best to educate these provisions with each permit.

Out of all the public outreach efforts, there were two areas that solicited feedback: window safety restrictors and whole house arc fault breakers.

CITY COUNCIL DECISION POINTS:

Window Safety Restrictors - This is a requirement introduced in the 2009 edition of the codes and the provision that elicited the most comments. People shared stories of younger siblings that had fallen out of windows, but others felt this was an onerous requirement. Attached in the packets are illustrations of these window safety restrictors. This restrictor requirement would come in play in only certain situations, such as windows that have a height above the floor of 24 inches and an exterior fall of 72 inches. If those conditions are met, the operable window must meet provisions to restrict the opening to a maximum of 4 inches.

Here are some examples of the restriction devices.









There is a provision in the code which allows for the windows to have a manual override of the restrictors that would allow for full opening of windows. The requirement has been included in the code for safety. For every 4,000 window incidents (where children fall from the window), 12 children ages 10 years old and younger die each year. There are a few options available for the City's Council's consideration and direction:

A) Make no changes to the proposed code and keep the window safety restriction in place.
B) Delete this provision as a local amendment to the City's adopted code.
C) Alter the requirement to lower the window height to 20 inches from top of finished floor to the window sill to lessen the number of times this requirement would be necessary and provide protection for very low window situations.

Arc Fault – Our current codes require electrical arc fault protection in bedrooms only. The adoption of the 2017 National Electrical Code would require arc fault protection for the whole house. Two electricians, present at the Chamber event, stated that the whole house arc fault

requirement would add ~$1,500 to the construction costs. (Letter from on electrical company enclosed in packet.) An option would be to maintain our current requirement of bedrooms only.

A) Make no changes to the proposed code and keep the whole house arc fault requirement in place.
B) Keep our current code requirement of bedrooms only.

Summary of Changes from Existing Codes to the Proposed Codes

INTERNATIONAL BUILDING CODE

1. Provisions specific to the construction of public parking garages added to code.
2. Provisions for storm shelter construction included in the code.

   Provisions apply to new construction of educational use group buildings.
3. Requirements specific to ambulatory care facilities added to code.
4. Means of egress chapter expanded and clarified providing more detail.
5. Load calculation for business use group altered to allow for a larger space to be used.

   Change will benefit property owners as existing buildings may have additional opportunities for reuse.
6. Requirements for window fall protection.

   Change provides for an enhanced safety feature for residents.
7. Requirements for carbon monoxide detectors.

   Change provides for an enhanced safety feature for residents.
8. Chapter addressing existing building repairs and remodel removed from code and new Existing Building Code created by ICC.

   Change was initiated in 2015 code series. New code provides property owners with clarification and may provide for some code provision relief on remodeling of existing buildings.
9. Provisions for braced wall panels created.

   Requirement expected to add minimal cost to overall construction cost.

INTERNATIONAL RESIDENTIAL CODE

1. Fire sprinkler requirement added for all new single family, duplex and townhome construction.

   Sprinkler requirement added to code in 2012. The 2018 code has provisions to add safety features such as drywall or limited area sprinkler for the floor joists of

basements. The removal of the sprinkler requirement for single family and duplex construction matches our existing codes and will not add cost to construction.

2. Requirements for floor protections in buildings not equipped with an automatic fire sprinkler system.

   The addition of the floor protection for sprinkled buildings allows for the removal of the requirement in single family and duplex construction and provides an enhanced level of protection.

3. Fire resistant construction section expanded for fire separation requirements for added protection when sprinklers are not installed.

   The addition of the floor protection for sprinkled buildings allows for the removal of the requirement in single family and duplex construction and provides an enhanced level of protection.

4. Door into house from garage required to be self-closing.

   Requirement provides additional life safety protection for residents.

5. Requirements for window fall protection.

   Change provides for an enhanced safety feature for residents.

6. Requirements for carbon monoxide detectors.

   Change provides for an enhanced safety feature for residents.

7. Section 507 Decks created.

   Change provides contractors, property owners and plan reviewers with a set of standards specific to deck construction.

8. Additional requirements for deck attachments to resist lateral loads added.

   Change provides for an increased level of safety for decks. Requirement for additional connections adds minimal costs.

9. Provisions for braced wall panels created.

   Requirement expected to add minimal cost to overall construction cost.

10. Provisions created for basement remodel of existing homes that may not require an emergency egress window.

    Change provides for an enhanced ability to remodel an existing basement without additional costs.

INTERNATIONAL PROPERTY MAINTENANCE CODE

1. Minimum area requirements for overcrowding provided.

Change will provide clear area requirements for occupancy.

2. Requirements for grease trap maintenance.

   Change will allow for the ability to ensure compliance. This ability will provide Public Works the ability to ensure responsible use of municipal sewer services.

3. Language added for repairs to electrical systems due to water damage.

   Change will provide the ability to ensure electrical systems are fully operational after subject to a flooding event. This will provide an enhanced level of safety for residents.

4. Language added for repairs to electrical systems due to fire damage.

   Change will provide the ability to ensure electrical systems are fully operational after subject to a flooding event. This will provide an enhanced level of safety for residents.

5. Chapter 7 Fire Safety Requirements expanded.

   This will provide an enhanced level of safety for residents.

INTERNATIONAL EXISTING BUILDING CODE

1. Provisions of new code are intended to replace Chapter 34 of the current IBC and provide designers with an alternate path for compliance.

2. Section 305.8.10 similar to the IAC. Compliance is only required when the work includes the bathroom during a change of occupancy.

   This provision will allow property owners to reuse existing structures for new tenants without requirement for the creation of compliant bathrooms in some instances.

3. Section 405.2.1 allows for the repair of an existing element that does not meet current code requirements

   Provision can be used in the case of an older house with porch that has low guardrail. This would be a cost saving for homeowners allowing the reuse of an existing guardrail.

4. Section 503.1 allows for the alteration of a building that doesn't meet code requirements as long as the structure is not less complaint when complete.

   Current practice now specifically covered under code as allowable. This would be a cost saving for homeowners.

5. Section 505.3 allows for a non-compliant egress window to be installed as a replacement in an existing opening.

   Current practice now covered under code as allowable. This would be a cost saving for homeowners.

NATIONAL ELECTRIC CODE

1. Prohibit the use of non-metallic cable- Romex.

   Consistent with current amendment.

2. Requirement for all ceiling boxes to have 3-wire installation.

   Minimal cost at time of installation which would provide a cost savings for future ceiling fan installation.

3. Requirement to provide 20 amp dedicated circuit to garage.

   Will provide additional power for potential heavy load uses

4. Requirement to provide 20 amp dedicated circuit to outside electrical outlet.

   Will provide additional power for potential heavy load uses.

5. Requirement for GFCI protection of dishwasher power supply.

   Requirement expected to add minimal cost to overall construction cost.

6. AFCI protection expanded to include entire house.

   Change was initiated in 2014 NEC.

7. Requirement for GFCI protection of all outlets in laundry room.

   Exception created for outlets serving unit. Requirement expected to add minimal cost to overall construction cost.

INTERNATIONAL MECHANICAL CODE

1. Locking access port caps required to prevent unauthorized access to potentially dangerous chemicals if inhaled.

   Change is a life safety issue and should not have a significant impact on cost.

2. Where exhaust duct equivalent length exceeds 35 feet the equivalent length shall be identified on a permanent label or tag. Label or tag shall be mounted within 6 feet of the exhaust duct connection.

   Change is for future information and should not have a significant impact on cost.

3. Section 805.7 added providing specific clearance requirements for factory built chimneys which pass through insulated assemblies.

   Change is a life safety issue and should not have a significant impact on cost.

4. Section 14 Solar Thermal Systems multiple changes to provide more details on installation and safety measures.

   Change is a life safety issue and should not have a significant impact on cost

INTERNATIONALAL FIRE CODE

Fire code officials, building officials, contractors, and others involved in the field of fire safety recognize the need for a modern, up-to-date fire code. The International Fire Code (IFC), 2018 Edition, is intended to meet these needs through model code regulations that safeguard the public health and safety.

Adoption of the 2018 IFC will allow the Fire Rescue Department to keep current with changes in the building industry such as: mobile food preparation vehicle requirements, Lockdown plans for schools, carbon monoxide detection requirements, solar photovoltaic power system requirements, outdoor assembly event requirements, and on-demand mobile fueling operations.

Many of the revisions to the City's Fire Code and amendments are minor revisions to section numbers or titles to remain consistent with the 2018 IFC or language changes to clarify code requirements. In the 2018 IFC, Chapter 31 has been expanded greatly over the years and now includes the language from Section 2405, Public Events, rendering this section unneeded.

No changes are being proposed to the other building codes utilized by the City, including:

- 2014 Illinois Plumbing Code
    - The City adopted and updated the 2014 Illinois State Plumbing Code on May 17, 2016
- 2015 International Energy Conservation Code
    - Adoption of the most current Energy Conservation Code is automatic by State mandate. The State typically notifies municipalities of enforcement start date between March and June of year created. That notification of enforcement of 2018 IECC will begin soon. A review of the code does not indicate major revisions or additional costs associated with update.
- 1997 Illinois Accessibility Code
    - This is a State code and this the most current version of this code
- 2000 National Fire Protection Association Life Safety Code
    - This is this the most current version of this code adopted by the State of Illinois

The City is adopting the new International Existing Building Code. This new code from ICC addresses the alteration, remodeling, and maintenance of existing buildings. Previously, these requirements were in the International Building Code. The City is also inserting the separate swimming pool section of the City Code into the Residential Code Chapter. Additionally, the Property Maintenance Code chapter is being renamed from the old Housing Code title to reflect the codes therein more accurately.

The attached ordinances have been reviewed by special counsel and are in an acceptable format for adoption.

Votes Required to Pass:

Simple majority of City Council present.