

**VILLAGE OF DOWNERS GROVE**  
**Report for the Village Council Meeting**

<b>SUBJECT:</b>	<b>SUBMITTED BY:</b>
Adoption of 2015 ICC Building and Fire Codes	Stan Popovich, AICP Director of Community Development

**SYNOPSIS**

Ordinances have been prepared adopting the International Code Council's (ICC) 2015 series of building and fire codes.

**STRATEGIC PLAN ALIGNMENT**

The goals for 2015-2017 include *Exceptional Municipal Services* and *Steward of Financial, Environmental and Neighborhood Sustainability*.

**FISCAL IMPACT**

N/A

**UPDATE & RECOMMENDATION**

This item was discussed at the June 13, 2017 Village Council meeting. At the meeting, Commissioner Waldack inquired about building code triggers for additional work. A staff report will be provided on Tuesday.

This item is scheduled for continued discussion at the June 20, 2017 Village Council meeting.

**BACKGROUND**

The Village's current building codes were adopted in October 2009. The building codes which were adopted at that time were the 2006 edition of the International Code Council (ICC) codes. Staff is proposing that the Village update to the 2015 edition of the ICC's building and fire codes. The specific codes targeted for adoption are:

- *2015 International Residential Code (IRC)* – governs construction of one- and two-family residential buildings and townhomes
- *2015 International Building Code (IBC)* – governs construction of all other use types
- *2015 International Property Maintenance Code (IPMC)* – governs maintenance of all existing buildings and properties
- *2015 International Fire Code (IFC)* – governs construction and maintenance of life safety systems in commercial and multi-family buildings

- *2015 International Fuel Gas Code (IFGC)* - governs installation of fuel-gas piping systems and fuel gas appliances
- *2015 International Mechanical Code (IMC)* - governs mechanical systems utilized to provide control of environmental conditions and related processes within buildings
- *2015 International Swimming Pool and Spa Code (ISPSC)* - governs aquatic recreation facilities, pools and spas

Staff has undertaken an extensive review process to examine the 2015 codes and determine differences between the current 2006 codes and local amendments with the proposed 2015 codes. In exploring the code changes, staff emphasized the following key concepts and strategies:

- Align with Long Range Plan goals
- Create clear and user friendly code requirements
- Reduce the number of local code amendments (42% reduction in the IRC and 55% reduction in IBC)
- Maintain consistency with existing ordinance provisions
- Maintain and provide code provisions that address local construction practices
- Align Village regulations with comparable communities

The principal change between the 2006 and 2015 IRC is the requirement to install fire sprinklers in newly constructed single family house. Some neighboring communities in the immediate area have removed this requirement from their building codes. A list of communities and fire districts in Illinois requiring sprinklers is attached.

Below is a brief summary of the major changes included in the 2015 model codes that are proposed for adoption.

#### 2015 International Residential Code:

- All new one- and two-family dwellings and townhomes are required to have fire sprinklers. This does not affect existing one- and two-family dwellings undergoing renovations or additions.
- All exposed engineered wood floor framing needs to be covered with gypsum board unless sprinklers are provided. This would require a layer of drywall on the ceiling of an unfinished basement.
- When finishing an existing basement an emergency escape window is only required if there is a sleeping room.
- Smoke alarms for remodeling and additions are now allowed to be wirelessly interconnected.
- Smoke alarms required throughout existing dwelling unit as part of a remodeling project are allowed to be battery operated rather than hard-wired for power.

#### 2015 International Building Code:

- Cross-Laminated Timber (CLT) is now permitted within exterior walls required to be of noncombustible construction, much in the same manner as fire-retardant-treated wood is allowed. The CLT must be covered on the exterior side with approved materials. CLT is regulated as Type IV construction, historically reserved for heavy timber.
- Excavation near foundations of adjacent structures now have basic requirements for providing protection to the adjacent structure.
- Certain Institutional occupancies have added sub-classifications to differentiate between the needs of individuals capable of self-preservation and those incapable, especially in situations such as assisted living facilities.

- Relaxed requirements for: Areas of Refuge in stairwells, number of allowable basement stories in podium style buildings, and dead end corridor length. However, developers would still be required to comply with the Illinois Accessibility Code.

#### 2015 International Property Maintenance Code (IPMC)

- No major changes

#### 2015 International Fire Code:

- Remove the restrictive amendments imposing limitations on waste oil and fresh oil storage.
- Require fire sprinklers in all new commercial buildings of all uses. This does not affect the triggers for the installation of fire sprinklers in existing commercial buildings.
- Require periodic evaluation of the fire sprinkler system in warehouse buildings to ensure it is adequately designed for any changes to what is being stored and the manner in which it is stored.
- Limit the use of NFPA 13R fire sprinkler systems (systems designed for residential buildings four stories and below that offer less protection than that provided for commercial structures) to buildings of Types I or II construction. This improves the quality of protection in residential buildings constructed of wood.
- Clarify an existing amendment which requires smoke detectors in residential buildings to be part of the building's fire alarm system.

#### 2015 International Fuel Gas Code (IFGC)

- No major changes

#### 2015 International Mechanical Code (IMC)

- No major changes

#### 2015 International Swimming Pool and Spa Code (ISPSC)

- This is a new separate code book. In the 2006 family of ICC codes, swimming pools and spas were included in the IRC code as an appendix. The 2015 family of ICC codes creates a separate code book for swimming pools and spas.
- No major changes to the technical aspects of the code.

For the first time the National Multi-family Housing Council (NMHC), National Apartment Association, Building Owners and Managers Association, and the National Association of Home Builders are encouraging state and local jurisdictions to consider adopting the 2015 ICC Codes. The NMHC has stated that, "Many of the changes benefit apartment and commercial construction and taken as a whole these positive changes more than offset the changes that might increase construction costs."

On May 24, 2017, staff held an informational meeting regarding the proposed adoption of the 2015 ICC family of codes. Staff invited architects, builders and contractors to attend the meeting which highlighted some of the key technical changes from the existing codes to the 2015 codes. Fourteen individuals attended and participated in the discussion.

## **ATTACHMENTS**

Ordinances

Communities and Jurisdictions requiring sprinklers

Sprinkler background information

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## ORDINANCE NO. \_\_\_\_\_

**AN ORDINANCE ADOPTING THE 2015 INTERNATIONAL FIRE CODE  
AND AMENDMENTS THERETO**

BE IT ORDAINED by the Village Council of the Village of Downers Grove in DuPage County, Illinois, as follows: (Additions are indicated by shading/underline; deletions by ~~strikeout~~):

**Section 1. That Section 17.43. is hereby amended to read as follows:**

**17.43. 2015 ICC International Fire Code - Adoption.**

The International Code Council International Fire Code, as promulgated by the International Code Council ("ICC"), being particularly the ~~2006~~2015 edition thereof, is hereby adopted for the purpose of establishing rules and regulations governing conditions hazardous to life and property from fire or explosion. The same is adopted in its entirety, save and except such portions as are hereinafter deleted, modified or amended, and is, together with such amendments, incorporated as fully as if set out at length herein. Said Code, as modified and amended, may be referred to for all purposes as the "Downers Grove Fire Prevention Code" or the "Fire Prevention Code". One copy of said Code, including such amendments to it as shall hereinafter be enacted, shall be filed in the office of the Village Clerk, and additional copies shall be made available by the bureau of fire prevention. (Ord. No. 2857, § 8; Ord. No. 3185, § 2.)

**Section 2. That Section 17.45. is hereby amended to read as follows:**

**17.45. International Fire Code - Amendments.**

The deletions from and modifications and amendments to the Fire Prevention Code are as follows:

**Section 103.2** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**103.2. Appointment.** The ~~Fire e~~Code~~e~~Official shall be appointed by the chief appointing authority of the Village.

**Section 108.1** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**108.1 Appeal procedures.** Any person aggrieved by any decision or interpretation of the fire official made under the provisions of this Code may take an appeal to the Building Board of Appeals in accordance with the procedures prescribed in Chapter 7, Article IX of the Downers Grove Municipal Code.

**Section 108.3** is deleted in its entirety.

**Section ~~109.3~~109.4** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**~~109.3~~109.4 Violation penalties.** Any person, firm or corporation violating any of the provisions of the code or failing to comply with any order issued pursuant to any section thereof shall be guilty of a petty offense, and upon conviction thereof shall be punished as provided in Section 1-15 of the Downers Grove Municipal Code. Each day that a violation continues, after a service of notice as provided for in this Code, shall be deemed a separate offense.

**Section 111.4** is amended by adding the following fine amounts:

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"not less than seventy-five dollars (\$75.00) or more than seven hundred fifty dollars (\$750.00)"

**Section 202.** is amended by adding the following definitions:

**FIREWORKS.** The term "fireworks" shall have the same meaning as that term is defined and used in the Illinois Fireworks Regulation Act (425 ILCS § 30/2).

**HIGH RISE BUILDING.** A building with a floor used for human occupancy that is located more than fifty-five (55) feet above the lowest level of fire department vehicle access.

**Section 307.1** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**307.1 General.** Open burning shall be allowed only as permitted in Section 13-35 of the Downers Grove Municipal Code.

**Section 307.2 through 307.4.2** ~~307.5~~ are deleted in their entirety.

**Section 310.1** is deleted in its entirety.

**Section 310.6** is deleted in its entirety.

**Section 401.2** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**401.2 Approval Review.** Where required by the Fire Code Official, fire safety plans, emergency procedures and employee training programs shall be ~~approved.~~ reviewed by the Fire Code Official.

**Section 404.2** is amended by deleting the phrase "An approved" and by substituting in lieu thereof the following:

\_\_\_\_\_ "A"

**Section 405.2** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

**405.2 Frequency.** Required emergency evacuation drills shall be held at the intervals specified in Table 405.2, or as otherwise directed by the Fire Code Official. Participation in required emergency evacuation drills shall be mandatory by occupants listed in Table 405.2.

**Section 408.11.1.1** is amended by adding the phrase "If required" at the beginning of the beginning of the first sentence.

**Section 503** is amended by adding the following:

**503.1.4 Fire lanes on private property used by the public.**

a. For private property used by the public such as schools, hospitals, churches, shopping centers, apartment complexes, office complexes, theaters, bowling alleys and similar facilities, fire lanes shall be established and designated in the locations deemed necessary by the fire code official. The owner or occupant of the property shall execute an agreement with the Village allowing the Village to enforce the fire lane restrictions by issuing parking tickets for vehicles illegally parked in fire lanes designated under this section. The Village Manager is authorized on behalf of the Village Council to execute agreements with property owners, lessees or managers for the enforcement of fire lane restrictions on private property. Such agreement shall be signed prior to issuance of any applicable building permits for the property.

b. Fire lanes may be established and designated on property as aforesaid where the parking of motor vehicles or other obstructions may interfere with the ingress and egress of Fire Department vehicles

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for the protection of persons and property.

**Section 503.3** is amended by adding the following to the end of the paragraph:

— Fire lanes designated pursuant to this section shall be posted by the owner of the property with signs reading substantially as follows: "No Parking Fire Lane."

**Section 505.1** is amended by adding the following at the end of the paragraph:

Address numbers shall also be provided on the exterior of all marked emergency exits and rear doors.

**Section 506.1.2** is amended by deleting the Exception.

**Section 506.1.2(5)** is amended by adding the following at the end of the paragraph:

Two (2) sets of each type of key shall be provided for each elevator.

**Section 506.1.2(6)** is amended by deleting the same in its entirety and by substituting in lieu thereof the following:

At least one (1) key box shall be provided for every two (2) elevators installed. Elevator key boxes shall be located within three (3) feet of an elevator or as approved by the Fire Code Official. Elevator key boxes shall be within sight of the doors of any elevator.

**Section 510.4.2.3** is amended by adding the following at the end of the paragraph:

In the event that standby power is supplied by a generator, a UPS shall be installed with a minimum of one (1) hour of full standby power.

**Section 510** is amended by adding the following section:

**510.4.2.6 Kill Switch.** A properly labeled and protected switch shall be provided in the Fire Command Center that will disable all primary and backup power to the Emergency Responder Radio Coverage System once activated.

**Section 510.5.3** is amended as follows:

Substitute 95 percent for 90 percent.

**Section 510.5.3(4)** is amended as follows:

Substitute 95 percent for 90 percent.

**Section 607.3** is amended by adding the following at the end of the paragraph:

- (a) At least one key box shall be provided for every two (2) elevators installed.
- (b) At least two (2) keys for firefighter emergency operation shall be provided for each elevator.
- (c) Elevator key boxes shall be located within three (3) feet of an elevator or as approved by the fire code official. An elevator key box shall be within sight of the doors of any elevator.
- (d) The fire department shall be provided with two (2) keys to open the elevator key boxes for every elevator key box installed.

**Section 607.7** is amended by adding the following at the end of the paragraph:

Elevator keys shall be provided in accordance with 2015 IFC 506.1.2 (amended).

**Section 607.8** is amended by deleting the same in its entirety.

**Section 609.2** is amended by deleting the Exception.

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**Section 901.1** is amended by adding the following sentence:

"All fire protection systems shall comply with the requirements of this Code and the Village Alarm Code in Chapter 17, Article VI of the Downers Grove Municipal Code."

**Section 901.4** is amended by adding the following at the conclusion thereof:

1. New fire detection and alarm systems shall be installed by a licensed State of Illinois Fire Alarm Contractor. The system shall meet the requirements of NFPA 72, Downers Grove Fire Prevention Code and the Village Alarm Code in Chapter 17, Article VI of the Downers Grove Municipal Code.

2. Repairs, alterations, and replacements to existing fire alarm systems shall be done by a State of Illinois licensed Fire Alarm Contractor in accordance with NFPA 72, Downers Grove Fire Prevention Code and the Village Alarm Code in Chapter 17, Article VI of the Downers Grove Municipal Code.

**Section 901.4.1** is amended by adding the following language at the end of this section the first sentence:

"and shall continue to be periodically tested pursuant to Chapter 17, Article VI of the Downers Grove Municipal Code. Before any re-occupancy, a test of the system shall be witnessed by the code official."

**Section 901.6.1** is amended by adding the following at the end of the paragraph:

— "Automatic sprinkler systems shall be inspected annually in accordance with NFPA 25."

**Table 901.6.1** is amended by adding the following after "Water-based fire protection systems"

— "/ Automated sprinkler systems"

**Section 901** is amended by adding the following section:

**901.6.3 Engineering Study.** Upon change of occupancy or no later than every five (5) years, the fire sprinkler system in a Use Group S Occupancy (excluding parking structures) shall undergo an engineering study to verify the adequacy of the system. All associated records shall be submitted to the Fire Code Official for record keeping.

**Section 901.9** is amended by adding the following to the end of the paragraph:

Termination of monitoring service shall be in accordance with the Downers Grove Fire Alarm Code.

**Section 901** is amended by adding the following section:

**901.10901.11 Resetting fire alarm systems.** Upon activation of a fire alarm system, the system shall not be reset (restored to a secured or clear condition) by any person until Fire Department personnel are on the scene and direct the system to be reset.

**Section 901** is amended by adding the following section:

**901.11901.12 Silencing fire alarm systems.** Upon activation of a fire alarm system, the system shall not be silenced (alarm devices shut off) by any person until Fire Department personnel are on the scene and direct the system to be silenced.

**Section 902.1** is amended by adding the following definition:

**SIGNIFICANT REMODELING.** In areas with a total square footage of greater than one thousand five hundred (1,500) square feet, when the square footage of the remodeling or reconstruction exceeds thirty-five percent (35%) of the total building occupancy, tenant or suite space. Reconstruction or remodeling square footage shall be cumulative overall construction projects and shall be determined by the Code Official.

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**Section 903.1** is amended by adding the following language at the conclusion thereof of the sentence:

**903.1** Chapter 9 of the 2006~~2015~~ International Building Code shall not take precedence over any fire protection or life safety system requirements of this ordinance. Any existing building or structure which exceeds the maximum area or height limits of the Downers Grove Building Code, Section 903 and Table 903, shall be equipped with an electrically supervised automatic fire suppression ~~sprinkler system and fire protective signaling system~~ throughout the building in accordance with the provisions of Chapter 17, Article VI of the Downers Grove Municipal Code ~~this Code~~ and the Building Code if:

(a) The building or structure undergoes any significant remodeling, addition of usable floor space, or change of actual use which increases the hazard level in the building in any manner in accordance with the NFPA Life Safety Code and the International Fire Code. ~~Any existing building or structure not exceeding the maximum area limits of Section 903 that undergoes an addition of usable floor space, the addition area shall be added to the existing building area so as to determine the maximum area limits for the installation of a complete sprinkler system in the existing building or structure and the addition thereof; or~~

(b) The building or structure undergoes a change to a more restrictive use.

~~Each fire protective signaling system shall be equipped with audio/visual fire alarm warning devices located so as to be seen, and heard effectively above all other sounds, by all occupants in every occupiable space within the building. The sound level of alarm devices shall be at least 15 dBA above the ambient sound level or 5 dBA above the maximum sound level having a duration of at least sixty seconds, whichever is greater, such levels to be measured five feet above the floor level in the occupiable area.~~

**Section 903.2** is amended by deleting the same in its entirety and substituting in lieu thereof the following: **903.2 Where required.** Approved automatic sprinkler systems shall be installed in all new buildings and structures.

**Section 903.3** is amended by adding the following at the end of the paragraph:

**Flexible Sprinkler Heads.** Flexible sprinkler heads shall have limited use as approved by the Fire Code Official and are not for general coverage. In all cases flexible sprinkler heads shall be installed in accordance with the product listing.

**Section 903.3.1.2** is amended by adding the following at the end of the sentence:

If such buildings are constructed of Type I or Type II construction only.

**Section 903.3.5** is amended by adding the following to the end of the paragraph:

Water supply tests shall be conducted within one year of fire sprinkler plan submittal and shall be witnessed and documented by the Public Works Department or other Water Jurisdiction. The test shall be conducted in close proximity to the job site, at an approved location. Fire sprinkler design shall have a safety factor of ten (10) psi or ten percent (10%) of system demand, whichever is greater.

**Section 903.3** is amended by adding the following section:

**903.3.6.1 High rise structure connections.** High rise structures shall carry a five inch stortz to two –2 1/2 inch siamese adapters as part of the high rise equipment box required under Section 911.1 of the International Building Code.

**Exception:** A fire department connection having the standard internal threaded swivel fittings of 2 1/2 inches NST may be substituted for the five inch stortz connection with the approval of the authority having jurisdiction where system pressures may exceed hose test pressure or water supply could require an extensive hose lay to the structure.

**Section 903.3.7** is amended by adding the following language at the conclusion thereof:

The fire department connections shall be five inch stortz type connectors compatible with the hose couplings currently used by the local fire department and connected to the riser by means of a five inch or

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larger piping system.

**Section 903.4** is amended by deleting Exceptions 2-5.

**Section 903.4.3** is amended by deleting the same in its entirety and substituting in lieu thereof the following: **Floor control valves.** Approved floor control valves, containing supervised indicating control valves and monitored waterflow switches, shall be installed at the point of connection to the riser on each floor in all multi-story buildings.

**Section 903** is amended by adding the following section:

**903.4.4 Waterflow switches.** Single story multi-tenant buildings, such as strip centers and office/warehouse occupancies, shall have a monitored waterflow switch and supervised indicating control valve installed for each tenant space, as deemed necessary by the Fire Code Official.

**Section 903** is amended by adding the following section:

~~**903.7 Primary System Flow Switches.** Where all components of a sprinkler system are individually controlled and send independent zoned alarms, any main flow switches, pump running and other associated primary water flow indicators shall be connected to a supervisory zone. The primary flow indicator will be tied to the external (24 VDC) device which will be non-silenceable as required by NFPA 72 for indication of water flow.~~

~~**Exception:** All devices will be connected in accordance with the requirements as indicated, modification and application of this Code section is subject to the authority having jurisdiction.~~

**Section 903** is amended by adding the following section:

~~**903.8903.7 Dry sprinkler system.** All dry pipe systems shall have a dryer on the air compressor to minimize moisture within the system piping.~~

**Section 905.3.1** is amended by adding the following after the word "buildings":

~~"three or more stories in height" deleting the paragraph in its entirety and substituting in lieu thereof the following:~~

~~Class III standpipe systems shall be installed throughout buildings where any one of the following apply:~~

- ~~1. The building is three (3) stories or more in height, measured from the lowest level of fire department vehicle access.~~
- ~~2. Where the floor level of the highest story is located more than thirty (30) feet above the lowest level of fire department vehicle access.~~
- ~~3. Where the floor level of the lowest story is located more than thirty (30) feet below the highest level of fire department vehicle access.~~

**Section 905.1.1** is further amended by deleting "30 feet" and replacing it with the following:

~~"twenty two (22) feet"~~

**Section 906.1(1)** is amended by deleting the first sentence and replacing it with the following:

~~In all buildings of Use Groups A, B, E, F, H, I-, M, R-1, R-2, R-3 if containing a child care facility, R-4, S and U."~~

**Section 906.1(1)** is amended by deleting the Exception.

~~**Section 906.1(2)** is amended by adding the following to the end of Section 906.1(2):~~

~~an extinguisher of a type appropriate to the hazard present (Class K) shall be installed. Wet chemical extinguishers are acceptable and desirable where a fryer application is present.~~

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**Section 907** is amended by adding the following:

**~~907.1.3~~907.1.4 Power source.** The power source for smoke detectors shall be an AC primary source with a battery backup power source. Exception: Smoke detectors powered by DC power from a fire alarm control panel and such panel being (primary) powered by AC power are acceptable if the system is connected to the Village's fire alarm receiving equipment in accordance with the provisions of Chapter 17, Article VI, of the Downers Grove Municipal Code.

**~~907.1.4~~907.1.5 Fire protective signaling system.** The following shall be equipped with an electrically supervised fire protective signaling system connected to the Village's fire alarm receiving equipment in accordance with the provisions of Chapter 17, Article VI of the Downers Grove Municipal Code:

(a) All buildings or structures equipped with a fire suppression system, fire sprinkler system or fire detection system except one- and two- family dwellings;

(b) Any other building required by any code or ordinance to be equipped with a fire alarm, fire detection or fire suppression system.

Each fire protective signaling system shall be equipped with audio/visual fire alarm warning devices located so as to be seen, and heard effectively above all other sounds, by all occupants in every occupiable space within the building. The sound level of alarm devices shall be at least 15 dBA above the ambient sound level or 5 dBA above the maximum sound level having a duration of at least sixty seconds, whichever is greater, such levels to be measured five feet above the floor level in the occupiable area.

**Section 907.2** is amended by adding the following at the end of the paragraph:

**907.2 General Requirements for Manual and Automatic Fire Detection Systems in the Village.**

In all new buildings, additions, and buildings constructed under the ~~2006~~2015 International Building & Fire Codes, except in one- and two-family dwellings, a complete manual and automatic fire alarm detection system, connected to the Village's fire alarm board, shall be installed throughout the building in accordance with NFPA 72.

Exception: Fully sprinkled buildings. Fully sprinkled buildings shall have limited detection; the following locations shall have detection installed in all cases:

(a) corridors

(b) storage rooms seventy-five (75) square feet or more

(c) copy rooms

(d) top of stairways

(e) boiler rooms

(f) electrical rooms

(g) open office areas nine hundred (900) square feet or more

(h) elevator lobbies

(i) all mechanical rooms

(j) above all fire alarm control units

(k) under raised flooring

(l) all other open areas and locations deemed necessary by the Fire Code Official

(m) server/IT rooms seventy-five (75) square feet or more

**Section 907** is amended by deleting the following sections in their entirety:

**Sections 907.2.1, 907.2.1.1, 907.2.2, 907.2.3, 907.2.4, 907.2.5, 907.2.6, 907.2.6.1, 907.2.6.2, 907.2.6.3, 907.2.6.3.3, 907.2.7, 907.2.7.1, 907.2.8, 907.2.8.1, 907.2.8.2, 907.2.8.3, 907.2.9, 907.2.10, 907.2.11, 907.2.10.1, 907.2.10.1.1, 907.2.10.1.2, and 907.2.10.1.3** are deleted in their entirety.

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~~Section 907.2.12.~~ is amended by deleting the amending height of "75 feet" and substituting in lieu thereof: "55 feet"

~~Section 907.2.16 and Section 907.2.17~~ are deleted in their entirety.

~~Section 907.2.19~~ is amended by adding the words; "and automatic fire detection system" after the words "manual fire alarm system".

~~Section 907.3.~~ is hereby amended by adding the following at the conclusion thereof:

~~— A Manual Fire Alarm and Automatic Fire Detection System in accordance with Section 907.3.1 through 907.3.9 and 907.1.5.1 shall be required in existing buildings in all other Use Groups as listed in Chapter 3 of the International Building Code ("IBC") except One and Two Family Residential Dwellings if:~~

- ~~1. The building, occupancy, tenant or suite undergoes a change in use to a more restrictive use; or~~
  - ~~2. The building, occupancy, tenant or suite undergoes the addition of usable floor space, or change in use which increases the hazard level in the area in any manner as established by at least one requirement in the NFPA Life Safety Code, the International Fire Code or the International Building Code; or~~
  - ~~3. The building, occupancy, tenant or suite undergoes any significant remodeling (as defined in Section 902.1)~~
  - ~~4. The building or structure contains a residential use and any other use in addition to residential.~~
- ~~Exception: Fully sprinkled buildings as per Section 907.2, above.~~

~~When identifying the need for the installation of a Manual Fire Alarm and Automatic Fire Detection System, a specific written finding shall be made by the Village based upon the above-stated requirements.~~

~~Section 907.3.1~~ is amended by adding at the end of the paragraph the following: "except as amended."

~~Section 907.3.1.1~~ is amended by deleting the exceptions.

~~Section 907.3.1.2~~ is amended by deleting the exception.

~~Section 907.3.1.7~~ is amended by deleting the same in its entirety.

~~Section 907.3.1.8~~ is amended by deleting exception number 1.

Section 907 shall be amended by adding the following section:

Section 907.5.2.4 Outside alerting devices. Outside alerting devices shall be provided of a type and in a location approved by the Fire Code Official for both general fire alarm activation and fire sprinkler water flow.

~~Section 907.6~~ is amended by deleting the words "ICC Electrical Code" and substituting in lieu thereof the following:

~~—"National Electrical Code as adopted and amended by the Village"~~

Section 907.6.6 is amended by adding the following section:

907.6.6.3 Connection to Village. All fire alarm systems shall be supervised by connection to the Village fire alarm receiving panel in the manner specified by the Municipal Code and shall transmit alarm, trouble, and supervisory signals. In lieu of connecting to the Village's alarm receiving panels as set forth above, any property within the municipal limits of Downers Grove which is under the jurisdiction of a fire protection

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district organized pursuant to State law shall instead connect to the alarm receiving panels of the fire protection district. Such alternative connection shall be according to the fire protection district's rules and regulations for connection. The Fire Code Official is authorized to require the installation of wireless fire alarm monitoring if the existing installation is causing nuisance alarms or monitoring outages.

Section 907.6.6 is amended by deleting Exception #1 and Exception #2

Section 907.8 is amended by adding the following to the end of the first paragraph: Records of inspection, testing, and maintenance shall be submitted to the Fire Prevention Bureau in an approved manner. Annual testing of fire alarm systems shall include 100% of all devices.

Section 907.8 is amended by adding immediately at the conclusion thereof the following: "and as specified in the Alarm Code in Chapter 17, Article VI of the Downers Grove Municipal Code".

Section 907.8.2 is amended by deleting the same in its entirety and substituting in lieu thereof the following: 907.8.2 Testing. Complete and satisfactory tests shall be performed on all devices in accordance with Chapter 17, Article VI of the Downers Grove Municipal Code.

Section 907.8.5 is amended by adding immediately at the conclusion thereof the following: "as specified in the Alarm Code in Chapter 17, Article VI of the Downers Grove Municipal Code."

Section 907.9.2 is amended by deleting the number "75 feet (22 860 mm)" and inserting in lieu thereof: "55 feet".

Section 907.15 is amended by adding the following section:

907.15.1 Connection to Village. All fire alarm systems shall be supervised by connection to the Village fire alarm receiving panel in the manner specified by the Municipal Code and shall transmit alarm, trouble, and supervisory signals.

In lieu of connecting to the Village's alarm receiving panels as set forth above, any property within the municipal limits of Downers Grove which is under the jurisdiction of a fire protection district organized pursuant to state law shall instead connect to the alarm receiving panels of the fire protection district. Such alternative connection shall be according to the fire protection district's rules and regulations for connection.

Section 907.15 is further amended by deleting Exception #1 and Exception #2

Section 907.20 is amended by adding immediately at the conclusion thereof the following: "and as specified in the Alarm Code in Chapter 17, Article VI of the Downers Grove Municipal Code.

Section 907.20.2 is amended by deleting the same in its entirety and substituting in lieu thereof the following:

907.20.2 Testing. Complete and satisfactory tests shall be performed on all devices in accordance with Chapter 17, Article VI of the Downers Grove Municipal Code.

Section 907.20.5 is amended by adding immediately at the conclusion thereof the following: "as specified in the Alarm Code in Chapter 17, Article VI of the Downers Grove Municipal Code."

Section 909.3 is amended by adding the following language at the conclusion thereof:

"or as specified in the Village Alarm Code in Section 17, Article VI, of the Downers Grove Municipal Code, whichever is more often."

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**Section 909.11** is amended by deleting the words "ICC Electrical Code" and substituting in lieu thereof the following:

———"National Electrical Code as adopted and amended by the Village"

**Section 909.12** is amended by deleting the words "ICC Electrical Code" and substituting in lieu thereof the following:

"NFPA 70, the National Electrical Code as adopted and amended by the Village"

**Section 912** is amended by adding the following:

**912.1 Installation.** A 5" STORTZ connection shall be required and shall comply with 912.2 through 912.6, unless otherwise determined by the Fire Code Official.

**Section 912.2** is amended by adding the following to the end of the first paragraph:

Fire hydrants shall be located such that the distance from a fire hydrant to a fire department connection does not exceed one hundred (100) feet, or as approved by the Fire Code Official.

**Section 912.5** is amended by deleting the words "International Plumbing Code" and substituting in lieu thereof the following:

"State of Illinois Plumbing Code as adopted and amended by the Village"

**Section 912.6** is amended by adding the following sections:

**912.6.1 Backflow prevention.** Whenever a backflow prevention device is required to be installed on an existing hydraulically calculated sprinkler system, the system shall be recalculated to assure that the design density of the sprinkler system is satisfied. Should the design density be inadequate, the automatic sprinkler system shall be redesigned for compliance with the required design density. Whenever a backflow prevention device is required to be installed on an existing pipe scheduled sprinkler system, the system shall be verified/calculated to assure that the design density of the system is satisfied.

**912.6.2 Backflow prevention - antifreeze systems.** Wherever an existing antifreeze sprinkler system is not protected by a reduced pressure backflow prevention device, the system shall be altered to incorporate a reduced pressure backflow prevention device at the point of connection to that section of the system containing such additives.

**Section 913.1** is amended by adding the following at the end of the paragraph:

"and the IBC Section 913.1".

**Section 913.2** is amended by adding the following section:

**913.2.3 Fire pump emergency power.** Any fire pump installed to meet the hydraulic design needs of an automatic fire sprinkler system shall be connected to an automatically switched emergency power generator to assure operation at all times. The emergency power generator, all switching equipment, and the connection to the fire pump shall meet all requirements of the National Electrical Code (NFPA 70) as adopted by the Village.

**Section 1001.1** is amended by adding the following at the end of the second sentence:

———"and IBC Sections 1003.5, 1007.1, 1007.2, 1007.2.1 and 1088.1.1"

**Section 1001.2** is deleted in its entirety and by substituting in lieu thereof the following is amended by adding the following section:

**1001.3 Maintenance.** Means of egress shall be maintained in accordance with the International Fire Code and the International Property Maintenance Code as adopted and amended by the

## Fire Prev 2015

Village.

**Section 1006.3** ~~1008.3~~ is amended by adding the following at the end of the section ~~paragraph~~:

~~1006.3~~ **Emergency Lighting.** Where emergency lighting is powered by a generator, a minimum of twenty percent (20%) of the emergency light fixtures shall be provided with battery back-up. For multi-story buildings, battery powered units shall be provided in enclosed stairways for proper illumination of each story.

**Section 1009.3** is amended by deleting Exceptions #4, #5, #6 and #8.

**Section 1013.2** is amended by adding the following to the end of the paragraph:

Floor-level exit signs shall also be required in Group R-2 occupancies.

**Section 1028.3** ~~1031~~ is amended by adding the following section:

~~1028.3~~ ~~1031.3.2~~ **Check out lanes.** At no time shall check-out lanes be blocked by stored carts, displays, chains or other fixed obstructions to free access.

**Section 1103.7** is amended by deleting the same in its entirety and in lieu thereof substituting the following:

A Manual Fire Alarm and Automatic Fire Detection System in accordance with 907.2 shall be required in existing buildings in all other Use Groups as listed in Chapter 3 of the International Building Code ("IBC") except One and Two Family Residential Dwellings if:

1. The building, occupancy, tenant or suite undergoes a change in use to a more restrictive use; or
2. The building, occupancy, tenant or suite undergoes the addition of usable floor space, or change in use which increases the hazard level in the area in any manner as established by at least one requirement in the NFPA Life Safety Code, the International Fire Code or the International Building Code; or
3. The building, occupancy, tenant or suite undergoes any significant remodeling (as defined in Section 902.1); or
4. The building or structure contains a residential use and any other use in addition to residential.

Exception: Fully sprinkled buildings as per Section 907.2, above.

When identifying the need for the installation of a Manual Fire Alarm and Automatic Fire Detection System, a specific written finding shall be made by the Village based upon the above-stated requirements.

**Section 1103.8** is deleted in its entirety.

**Section 1404** is amended by adding the following section:

~~1404.8~~ **Restriction of combustible materials.** Where required by the code official, no combustible construction materials or packaging shall be stored inside the building or structure until the sprinkler system is activated. Where deemed necessary by the code official, the activated sprinkler system shall be supervised by a temporary connection to the Village's fire alarm receiving equipment.

**Section 2108.2** is amended by deleting Exceptions #1 and #2.

**Section 2211** is amended by adding the following sections:

~~2211.2.2.1~~ **Storage of waste oils.** Waste oils shall be stored in a listed double wall tank located outside the building with a minimum 2" diameter steel vent pipe extending at least 18" above the roof line. The tank shall be installed on a concrete pad with drainage and shall be protected from vehicular traffic damage in an approved manner and shall be blocked from view by an approved fence a minimum of six feet high. The tank and all associated piping shall be air pressure tested in the manner prescribed by the manufacturer and such test shall be witnessed by the code official.

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~~2211.2.2.2 Maximum waste oil storage above ground.~~ The maximum amount of waste oil stored outside above ground without additional protection shall be 660 gallons. Where the amount stored outside above ground exceeds 660 gallons, the installation shall comply with NFPA 31 listed in the ICC Fire Prevention Code.

~~2211.2.2.3 Storage of motor oils in above ground tanks.~~ New motor oils shall be stored in a listed single wall tank if stored inside, or a listed double wall tank if stored outside. When stored outside, the tank shall be installed on a concrete pad with drainage, shall be protected from vehicular traffic damage in an approved manner, and shall be blocked from view by an approved fence a minimum of six feet high. The tank and all associated piping shall be air pressure tested in the manner prescribed by the manufacturer and such test shall be witnessed by the code official.

~~2211.2.2.4 Maximum motor oil storage above ground:~~ The maximum amount of new motor oil stored in above ground tanks inside a building shall not exceed 1,320 gallons. If stored outside, the maximum amount of new motor oil shall not exceed 1,320 gallons without additional protection pursuant to NFPA 31 listed in the ICC Fire Prevention Code.

**Section 3302.1** is amended by deleting the definition of "fireworks" in its entirety and substituting in lieu thereof the following:

~~**FIREWORKS.**~~ The term "fireworks" shall have the same meaning as that term is defined and used in the Illinois Fireworks Regulation Act\*

**Section 3313.1** is amended by adding the following to the end of the paragraph:

In occupancies of Type III Construction or other construction types featuring wood construction, standpipes shall be installed prior to construction exceeding thirty (30) feet in height above the lowest level of fire department vehicle access.

**Section 3401.1** is amended by adding the words: "or waste oils" after the words "combustible liquids" wherever they appear therein.

**Section 3401.4** is amended by adding the following:

~~**3401.4.1 Annual License Required.**~~ An annual permit is required for underground storage of flammable/combustible liquids. A bond is required for any installation or removal of any underground storage tanks. Fees and bonds are as noted in Section 17-47 of the Downers Grove Municipal Code.

**Section 3404.1** is amended by deleting the same in its entirety and substituting in lieu thereof the following:

~~**3404.1 General.**~~ Combustible liquid storage tanks of any capacity installed above ground shall comply with this chapter. Flammable liquids shall not be stored above ground.

**Section 3404.2** is amended by adding the following:

~~**3404.2.9.5.1.7 Fuel dispensing systems.**~~ Above ground tanks shall be permitted for the storage of combustible motor fuels on premises to which the public does not have access when installed in a special enclosure constructed in accordance with NFPA 30A listed in the ICC Fire Prevention Code.

**Section 3404.2.9** is amended by adding the following section:

~~**3404.2.9.6.11 Tank Capacity/Installation.**~~ Tanks containing motor fuels shall not exceed 1,000 gallon individual fuel capacity or 1,500 gallons in aggregate capacity. Installations with the maximum allowable aggregate capacity shall be separated from other such installations by no less than 100 feet.

**Section 3404.2.13.1.4(3)** is amended by deleting the exception.

**Section 3801.2** is amended by deleting the same in its entirety and substituting in lieu thereof the following:

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~~3801.2 Permits required.~~

- ~~(a) A permit shall be obtained from the code official for each of the following:~~
- ~~(1) installation of liquefied petroleum gas tanks regardless of the capacity;~~
  - ~~(2) sales or exchanges of filled tanks and the filling of tanks of any size for sale or use on site;~~
  - ~~(3) for the storage of containers used in commercial, maintenance, construction, stock management or vehicles, and~~
  - ~~(4) any other use where tanks are used and stored on a regular basis.~~
- ~~(b) Prior to installation, use or storage of liquefied or petroleum gas, the applicant for a permit shall submit plans to the code official detailing such installation, use or storage. If compliance with the requirements of this Code is shown by such plans, a permit shall be issued. The code official shall inspect the site upon completion of the installation to determine compliance with the plans and the ordinances of the Village.~~
- ~~(c) Permit fees shall be in accordance with Section 17.47 of the Downers Grove Municipal Code.~~

~~Section 3809 is amended by adding the following section:~~

~~**3809.15 Storage of containers.** Containers stored inside or outside a building shall be secured inside a shelf or rack system of non-combustible construction or shall be chained to a non-combustible wall. Either method of storage shall prevent the tank from "rocketing" if exposed to fire. If stored outside, tanks shall be protected from tampering.~~

Section 5307.5 is amended by adding the following to the end of the paragraph:

In all cases an emergency alarm system shall be installed.

Section 5307.5.2(3) is amended by deleting the same in its entirety and in lieu of substituting the following:

Notification of a leak shall be provided in a manner and of a type approved by the Fire Code Official.

Section 5701.4.1 is amended by adding the following:

**5701.4.1 Annual License Required.** An annual permit is required for underground storage of flammable/combustible liquids. A bond is required for any installation or removal of any underground storage tanks. Fees and bonds shall be as set forth in Administrative Regulation entitled "User-Fee, License and Fine Schedule".

Section 5704.1 is amended by deleting the same in its entirety and substituting in lieu thereof the following:

**5704.1 General.** Combustible liquid storage tanks of any capacity installed above ground shall comply with this chapter. Flammable liquids shall not be stored above ground.

Section 5704.2 is amended by adding the following:

**5704.2.9.7.10 Fuel dispensing systems.** Above ground tanks shall be permitted for the storage of combustible motor fuels on premises to which the public does not have access when installed in a special enclosure constructed in accordance with NFPA 30A listed in the ICC Fire Prevention Code.

Section 6101.2 is amended by deleting the same in its entirety and substituting in lieu thereof the following:

**6101.2 Permits required.**

- (a) A permit shall be obtained from the Fire Code Official for each of the following:
- (1) installation of liquefied petroleum gas tanks regardless of the capacity;
  - (2) sales or exchanges of filled tanks and the filling of tanks of any size for sale or use on site;
  - (3) for the storage of containers used in commercial, maintenance, construction, stock management or vehicles: and

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- (4) any other use where tanks are used and stored on a regular basis.
- (b) Prior to installation, use or storage of liquefied or petroleum gas, the applicant for a permit shall submit plans to the Fire Code Official detailing such installation, use or storage. If compliance with the requirements of this Code is shown by such plans, a permit shall be issued. The Fire Code Official shall inspect the site upon completion of the installation to determine compliance with the plans and the ordinances of the Village.
- (c) Permit fees shall be as set forth in Administrative Regulation entitled "User-Fee, License and Fine Schedule".

**Section 6109** is amended by adding the following section:

**6109.16 Storage of containers.** Containers stored inside or outside a building shall be secured inside a shelf or rack system of non-combustible construction or shall be chained to a non-combustible wall. Either method of storage shall prevent the tank from "rocketing" if exposed to fire. If stored outside, tanks shall be protected from tampering.

**Chapter 80** is amended by adding the following referenced standards:

1. NFPA 3 - Recommended Practice for Commissioning of Fire Protection and Life Safety Systems, 2015 Edition.
2. NFPA 4 - Standard for Integrated Fire Protection and Life Safety System Testing, 2015 Edition.

**Appendix B, Fire-flow Requirements for Buildings**, is hereby adopted in its entirety.

**Appendix C, Fire Hydrant Locations and Distribution**, is hereby adopted in its entirety.

**Appendix D, Fire Apparatus Access Roads**, is adopted in its entirety.

**Appendix J, Building Information Sign**, is hereby adopted as follows:

Delete J101.1.1 through J101.7 and replace with the following: The building information sign shall be of a type and in a location as approved by the Fire Code Official.

(Ord. No. 2857, § 8; Ord. No. 3118, § 20; Ord. No. 3185, § 3.)

**Section 3.** That all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

**Section 4.** That this ordinance shall be in full force and effect from and after its passage and publication in the manner provided by law.

---

Mayor

Passed:

Published:

Attest: \_\_\_\_\_

Fire Prev 2015

Village Clerk

## Communities and Fire Districts Requiring Sprinklers

No.	CITY	DATE	COMMERCIAL/RESIDENTIAL SQUARE FEET
1	Long Grove (Municipality)	April, 1988	0/13D
2	Barrington Fire Protection District	September, 1997	0/13D
3	Lake Barrington	December, 1997	0/13D
4	Wheeling	July, 2000	0/13D plus manufactured homes
5	Clarendon Hills	August, 2000	2000/13D
6	Village of Barrington	December, 2000	0/13D
7	Park Ridge	March, 2001	0/13D
8	West Dundee	August, 2001	4,000/13D - all 1-2 family new con.
9	Glenside	2001	13D/3,000 square feet
10	Hoffman Estates	January, 2002	1,000 for all use groups & 13D
11	Glen Ellyn	March, 2002	0/13D
12	Round Lake Beach	March, 2002	0/13D
13	Streamwood	June, 2002	1,000 Commercial/13D
14	LaGrange Park	Aug-03	0/A, E, H, I R1, R2; 2,000/13D
15	Mount Prospect	June, 2003	0/13D + condo conversions & mfg. homes
16	Berkeley	November, 2003	A,E,H,P,R,S - 0/13D / M,B,I - 3000
17	Rolling Meadows	2003	4,000 square feet
18	Matteson Fire Department	January, 2004	0/13D
19	Countryside Fire Protection District	March, 2004	0/13D
20	Huntley Fire Protection District	July, 2004	0/13D
21	North Maine Fire Protection District	July, 2004	0/13D
22	Indian Creek (Countryside FPD)	Feb-00	0/13D
23	Skokie	October, 2004	5,000/13D
24	Long Grove Fire Protection District	November, 2004	13D
25	Hickory Hills	January, 2005	0/13D/multi-family retrofit
26	Justice	February, 2005	0/13D
27	Des Plaines	March, 2005	0/13D
28	Libertyville (Municipality)	March, 2005	1,000/13D
29	Sunnycrest FPD (Flossmoor)	January, 2005	13D
30	Bedford Park Fire Department	July, 2005	0/13D
31	Roselle	Dec-08	13D
32	St. Charles/Countryside FPD	August, 2005	On Hold
33	Oak Forest	August, 2005	0/13D/ +50% Commercial
34	Lincolnwood	October, 2005	5,000/13D
35	Libertyville Fire Protection District	November, 2005	0/13D
36	Bridgeview	November, 2005	0/13D, mfg homes,
37	River Forest	March, 2006	5000/13D + 50 % single-family
38	Glenwood	June, 2006	0/13D + 50% assessed valuation retrofit/ownership changes
39	Palos Hills	August, 2006	0/13D/ Apartment to Condo
40	Villa Park	August/October, 2006	(Hold) 1,500/13D/End 2013
41	Prospect Heights	December, 2006	0/13D
42	Northbrook	February, 2007	5,000/13D plus Townhomes
43	Bellwood	January, 2007	0/13D + 50% Retrofit Apartment to Condo
44	Lake Bluff	March, 2007	0/13D, 75% Additions
45	Lake Zurich Rural Fire Protection District	April, 2007	13D
46	Lincolnshire/Riverwoods Fire Protection District	May, 2007	13D
47	Orland FPD	2007	Unincorporated No Water Supply, 5,000
48	Highwood	August, 2007	0/13D
49	Lisle-Woodridge FPD	October, 2007	5,000 sq. ft.
50	Alsip	October, 2007	0/13D
51	Palatine Rural FPD	November, 2007	0/13D
52	Chicago Ridge	December, 2007	0/13D

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53	Pleasantview FPD	January, 2008	Single exit subdivision
54	Country Club Hills	January, 2008	0/13D
55	Park Forest	September, 2008	0-13D
56	Newport Township FPD (Wadsworth)	January, 2009	0/13D
57	Green Oaks	February, 2009	13D
58	Riverside	March, 2009	13D
59	Palos Heights FPD	June, 2009	13D
60	Lake Zurich	September, 2009	13D
61	Palos Fire Protection District	October, 2009	13D/5,000†
62	Crest Hill	December, 2009	0 sqft commercial/ all 13D
63	Normal	January, 2010	13D
64	Burlington Fire Protection District	April, 2010	13D
65	Riverwoods	April, 2010	13D
66	Wilmette	May, 2010	13D/Lightweight Construction
67	Aurora	May, 2010	13D/5,000†
68	Forest Park	May, 2010	0 Sq Ft / 13D
69	St Charles	July, 2010	13D effective 2012
70	Oak Brook	January, 2011	13D
71	Palos Park	March, 2011	NFPA 13D, 5,000†
72	Schaumburg	May, 2011	13D, 1,000 Sq Ft, High Rise Retrofit, Apartment to Condo
73	Central Stickney FPD	June, 2011	0/13D, 2009 IFC with Amendments
74	Glencoe	Jan., 2012	0 sq. ft./13D
75	Flossmoor	March, 2012	13D
76	Norwood Park FPD	April, 2012	2009 IRC/ICC /13D/ 1000 Sq.Ft.
77	Harwood Heights	April, 2012	2009 ICC/IRC/13D/1000 Sq.Ft.
78	Norridge	April, 2012	2009 ICC/IRC/13D/1000 Sq.Ft.
79	South Holland	April, 2012	2009 IRC/13D
80	Manhattan FPD	April, 2012	13D
81	Wood Dale	May, 2012	13D
82	Gurnee	June, 2012	0/13D, 2012 IRC
83	Blue Island	July, 2012	13D
84	Milan	August, 2012	13D, 2012 IRC
85	Vernon Hills	October, 2012	1,000 square feet/13D Lightweight Construction/ 2012 IRC All 13D
86	Elgin	October, 2012	2012 IRC/Future Plats
87	Homewood	October, 2012	5,000 sq. ft.
88	Warren Waukegan FPD	November, 2012	0/13D 2012 IRC
89	Niles	January, 2013	13D
90	Hazelcrest	February, 2013	13D
91	Roselle Fire District	March, 2013	13D
92	Westchester	November, 2013	13D
93	Addison	December, 2013	2012 IRC/13D
94	Riverdale	January, 2014	13D
95	Evanston	February, 2014	2012 IRC/13D LSC 101 2012
96	Elmwood Park	September, 2014	2012 IRC/NFPA 13D
97	Westmont	October, 2014	2012 IRC/NFPA 13D/2016
98	Western Springs	October, 2014	2012 IRC/13D
99	Barrington Countryside FPD	October, 2014	0/13D 2012 IBC
100	Brookfield	January, 2015	2015 IRC/13D
101	Oak Park	January, 2015	2009 IRC/13D

## Sprinkler Background Information

### General Information

- Residential fire sprinklers are designed for life safety, not property protection
- New homes are typically not safer than older homes because new homes tend to be constructed with lightweight materials, have open floor plans so smoke spreads more rapidly and new furnishings are typically synthetic materials
- Since 2009, model building codes have required fire sprinklers in one and two family dwellings
- Some insurance companies offer discounts for fire sprinklers

### Sprinkler system costs

Reported costs of residential fire sprinklers in new single family home construction vary depending on the source and region of the country:

- In 2013, the Northern Illinois Fire Sprinkler Advisory Board (NIFSAB) reported that costs averaged \$2.38 per square foot.
- In 2015, the Village of Westmont collected quotes from qualified sprinkler contractors as part of their 1-year grace period procedures. During that year, 14 applicants opted out of installing residential sprinkler systems and submitted quotes. Their data for these homes which ranged in size from 2,841 sq.ft to 5,866 sq.ft is as follows:
  - Cost range (per sq. ft.): \$1.69 - \$3.68
  - Cost range (per system): \$7,400 - \$13,170
- In 2016, the National Association of Homebuilders (NAHB) reported that the average cost per system nationwide was about \$6,000.

### What is a complete residential sprinkler system?

Complete systems typically include sprinkler coverage in all habitable rooms, including but not limited to kitchens, family rooms, basements, and bedrooms. Sprinkler protection is not required in small bathrooms, closets, garages, porches, unused attics and crawl spaces and concealed spaces.

Sprinkler system elements are:

- Sprinkler heads
- Supply lines
- Shut-off valves
- Back-flow devices (to protect domestic water)
- Pressure gauge
- Water flow switch and local alarm bell (optional)
- Outside Horn and Strobe (optional)

### What happens if there is a fire and the house is equipped with sprinklers?

Sprinklers only respond to heat, not smoke. Unlike in movies, sprinklers do not all activate together; only the sprinkler closest to the fire will activate. In approximately 90% of home fires, the fire is controlled by a single sprinkler head, flowing at 13 gallons per minute.

The intent of a single family sprinkler system is to control the fire, allowing occupants time to escape; complete extinguishment is not the intended purpose of a home sprinkler system. When functioning properly, a home sprinkler system will keep the fire under control and prevent it from spreading. After firefighters arrive, they will perform clean up operations and turn off the water supply to the sprinkler system, to prevent any additional water damage.

### Fire and Sprinkler Statistics

Data compiled by the National Fire Incident Reporting System within FEMA identify the following statistics on fires and sprinklers.

- 83% of fire deaths occur in one and two family dwellings
- The risk of dying in a home fire decreases by about 80% when fire sprinklers are present
- The risk of dying in a home fire decreases by about 50% with smoke alarms alone
- In communities which require fire sprinklers (some for at least 15 years) they have documented: 80% fewer civilian deaths, 70% less property damage, and 65% fewer firefighter injuries
- 90% of the time fires are contained by the operation of a single fire sprinkler

### History of fires in single family home

In the past five years (July 2012 through July 2017) the Village of Downers Grove has experienced 38 fires in single family homes.

- 17 resulted in damages of \$100,000 or more
- 13 resulted in damages of \$10,000 to \$99,999
- 8 resulted in damages under \$10,000
- 1 fire resulted in a fatality