Board of Commissioners of Cook County

118 North Clark Street
Chicago, IL

Legislation Details (With Text)

File #:	21-4087	**Version:**	1	**Name:**	Flood Plain Ordinance Amendment
Type:	Ordinance Amendment			**Status:**	Approved
File created:	7/6/2021			**In control:**	Board of Commissioners
On agenda:	7/29/2021			**Final action:**	7/29/2021
Title:	PROPOSED ORDINANCE AMENDMENT				

AMENDMENT TO THE FLOODPLAIN ORDINANCE

BE IT ORDAINED, by the Cook County Board of Commissioners, that Chapter 106 - Floodplains, Sections 106-2, 106-4, 106-5, 106-7, 106-8, and 106-9 are amended and Chapter 106-15 is enacted as follows:

Sec. 106-2. - Definitions

***

Accessory Structure means a non-habitable building, used only for parking of vehicles or storage, that is on the same parcel of property as the principal building and the use of which is incidental to the use of the principal building.

***

ASCE means the American Society of Civil Engineers

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Base flood means the flood having a one-percent probability of being equaled or exceeded in any given year. The base flood is also known as the 100-year frequency flood event. Application of the base flood elevation at any location is as defined in Section 106-5.

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Base Flood Elevation (BFE) means the height in relation to the North American Vertical Datum (NAVD) of 1988 (or other datum, where specified) of the crest of the Base Flood. Application of the base flood elevation at any location is as defined in Section 106-5.

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Breakawaywall A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

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Coastal High Hazard Area means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast, and any other area subject to high velocity wave action from storms or seismic sources. A coastal high hazard area is identified on a community's FIRM by the designation of zone VE. Cook County only has jurisdiction over the portions of the Cook County FIRM that are unincorporated as defined pursuant to 65 ILCS 5/7-4-4 and 55 ILCS 5/1-1004.

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Designated Floodway means the channel, including on-stream lakes, and that portion of the floodplain adjacent to a stream or watercourse as designated by IDNR/OWR, which is needed to store and convey the existing 100-year frequency flood discharge with no more than a 0.1 foot increase in stage due to the loss of flood conveyance or storage, and no more than a ten percent increase in velocities.

(1) The floodways are designated on the countywide Flood Insurance Rate Map for Cook County number 17031C, panels 15-93, 155-244, 253, 265, 285-404, 415, 416, 418, 419, 456-520, 581- 609, 616, 628 - 635, 637-655, 658, 661-701, 706, and 708-832, dated August 19, 2008; panels 611-614, 617-619, 636, 702-704, 707 dated November 1, 2019; and panels 94, 113, 251, 252, 254 - 260, 266-269, 406-409, 417, 436-440, 526 - 545, 656, 657, 659 dated September 10, 2021 15-609, 616, 628, 637-701, 706, and 708-832, dated August 19, 2008, panels 611-614, 617-619, 636, 702-704, 707 dated November 1, 2019 prepared by FEMA. With respect to panels 94, 113, 251, 252, 254 - 260, 266-269, 406-409, 417, 436-440, 526 - 545, 656, 657, 659 Cook County only has jurisdiction over the portions of these panels that are unincorporated as defined pursuant to 65 ILCS 5/7-4-4 and 55 ILCS 5/1-1004.

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Sec. 106-4.Duties of the enforcement officials

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The Department shall be responsible for the general administration and enforcement of this chapter, which shall include the following:

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(1) Determining the floodplain designation.

d. If the site is within a Coastal High Hazard Area, require that the minimum requirements of Section 106-9 be met.

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(7) Elevation and floodproofing certificates. Maintain permit files including:

a. An elevation certificate certifying the elevation of the lowest floor (including basement) of a residential or nonresidential building subject to Section 106-9; or an Elevation Certificate certifying the elevation of the lowest horizontal structural member of the Lowest Floor, where required by Section 106.9 and/or

b. The elevation to which a nonresidential building has been floodproofed, using a floodproofing certificate, for all buildings subject to the provisions of Section 106-9.

c. Certification of structural design and methods of construction for VE zone construction as required by Section 106.9.

d. Certification of breakaway wall design, when applicable, as provided in Section 106.9.

***

Sec. 106-5.Base flood elevation

***

This chapter's protection standard is based on the Flood Insurance Study for the County dated September 10, 2021.

(1) If a base flood elevation or 100-year frequency flood elevation is not available for a particular site, then the protection standard shall be according to the best existing data available in the Illinois State Water Survey's Floodplain Information Repository that has been approved by IDNR/OWR and FEMA.

(2) When a party disagrees with the best available data, the party may finance the detailed engineering study needed to replace existing data with better data and submit it to IDNR/OWR and FEMA.

(3) The base flood or 100-year frequency flood elevation for the special flood hazard area (SFHA's) shall be as delineated on the 100-year flood profiles in the Countywide flood insurance study for the County prepared by FEMA, and dated November 1, 2019 September 10, 2021, and such amendments to such study and maps as may be prepared from time to time.

(4) The base flood or 100-year frequency flood elevation for each special flood hazard area (SFHA) delineated as an AH Zone or "AO Zone shall be that elevation (or depth) delineated on the Flood Insurance Rate Map (FIRM) of the County.

(5) The BFE for any zone VE floodplain, and for a zone AE floodplain in an area subject to flooding effects from Lake Michigan, shall be the highest elevation specified on the FIRM among all flood zones affecting the proposed development. Where development is proposed to encroach upon a riverine Zone AE which is subject to flooding effects from Lake Michigan, the requirements of Section 106-9 shall apply to the entire floodplain.

(65) The base flood or 100-year frequency flood elevation for each of the remaining special flood hazard areas (SFHAs) delineated as an A Zone on the Flood Insurance Rate Map (FIRM) of the County shall be according to the best existing data available from federal, state, or other sources. Should no other data exist, an engineering study must be financed by the applicant to determine

BFEs. in the Illinois State Water Survey Floodplain Information Repository.

a. When no base flood or 100-year flood frequency elevation BFE exists, the BFE for a riverine SFHA shall be determined from a backwater model, an accepted hydraulic model, based on current industry standards approved by the County Highway Department, such as HEC-II, WSP-2, or HEC-RAS.

b. The flood flows used in the hydraulic models shall be obtained from a hydraulic model, approved by the County Highway Department, such as HEC-I, or TR-20, or by techniques presented in various publications prepared by the United States Geological Survey for estimating peak flood discharges.

c. Along any watercourses draining more than one square mile, the above analyses shall be submitted to IDNR/OWR for approval. Once approved it must be submitted to the Illinois State Water Survey Floodplain Information Repository for filing.

d. For a nonriverine SFHA, the base flood elevation shall be the historic flood of record plus three feet, unless calculated by a detailed engineering study and approved by IDNR/OWR for drainage areas greater than one square mile.

de. For an unmapped extended SFHA (with a drainage area less than one square mile) which has been identified by the Department of Building and Zoning pursuant to Section 501.3, the base flood elevation shall be determined by the applicant utilizing a method as approved in Section 106-8, with concurrence of the County.

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Sec. 106-7.Occupation and use of designated floodways

***

(2) Preventing increased damages and a list of appropriate uses.

f. Permits for dams.

1. Any work involving the construction, modification or removal of a dam as defined in Section 106-2 per 17 Ill. Admin. Code Part 3702 (Rules for Construction of Dams) shall obtain an IDNR/OWR permit prior to the start of construction of a dam.

2. If the Department finds a dam that does not have an IDNR/OWR permit, the Department shall immediately notify the IDNR/OWR Schaumburg office.

3. If the Department finds a dam which is believed to be in unsafe condition, the Department shall immediately notify the owner of the dam, the IDNR/OWR Schaumburg office, and the Illinois Emergency Management Agency (IEMA).

***

Sec. 106-8.Occupation and use of special flood hazard areas (SFHA) where floodways are not identified

***

(1) Preventing increased damages.

3. Permits for dams.

(i) Any work involving the construction, modification or removal of a dam as defined in Section 106-2 per 17 Ill. Admin. Code Part 3702 (Rules for Construction of Dams) shall obtain an IDNR/OWR

permit prior to the start of construction of a dam.

(ii) If the Department finds a dam that does not have an IDNR/OWR permit, the Department shall immediately notify the IDNR/OWR Schaumburg office.

(iii) If the Department finds a dam which is believed to be in unsafe condition, the Department shall immediately notify the owner of the dam, the IDNR/OWR Schaumburg office, and the Illinois Emergency Management Agency (IEMA).

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Sec. 106-9.Permitting requirements applicable to all floodplain areas

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In addition to the requirements found in Sections 106-6-106-8 for development in flood fringes, designated floodways, and special flood hazard areas (SFHAs) or floodplains where no floodways have been identified (Zones A, AO, AH, AE, A1-A30, A99, VO, V1-30, VE, V, M, E, D, or X), the following requirements shall be met

(1) Public health standards.

a. No developments in the special flood hazard area SFHA shall include locating or storing chemicals, explosives, buoyant materials, animal wastes, fertilizers, flammable liquids, pollutants, or other hazardous or toxic materials below the flood protection elevation (FPE) unless such materials are stored in a floodproofed and anchored storage tank and certified by a P.E. or floodproofed Building constructed according to the requirements of this chapter.

b. New and replacement water supply systems, wells, sanitary sewer lines and on-site waste disposal systems may be permitted providing all manholes or other above ground openings located below the FPE are watertight. New and replacement on-site sanitary sewer lines or waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

c. Public utilities and facilities such as sewer, gas and electric shall be located and constructed to minimize or eliminate flood damage.

d. All other activities, defined as development, such as pools, fences, filling, paving, etc., shall be designed so as not to alter flood flows or increase potential flood damages. Non-structural fill within a coastal high hazard area (zone V, V1-30, or VE) shall be permitted only if an engineering report demonstrates that the fill will not cause wave runup, ramping, or deflection of floodwaters that cause damage to buildings.

e. The use of fill for structural support of buildings within a coastal high hazard area (zone V, V1-30, or VE) [or within a Moderate Wave Action Area] is prohibited.

f. Man-made alterations of sand dunes within a coastal high hazard area (zone V, V1-30, or VE) are prohibited unless an engineering report documents that the alterations will not increase potential flood damage by reducing the wave and flow dissipation characteristics of the sand dunes.

g. Within a coastal high hazard area, bulkheads, seawalls, revetments, and other erosion control structures shall not be connected to the foundation or superstructure of a building, and shall be designed and constructed so as not to direct floodwaters or increase flood forces or erosion impacts on the foundation or superstructure of any building.

(2) Carrying capacity and notification.

a. For all projects involving channel modification, fill, or stream maintenance (including

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levees), the flood carrying capacity of the watercourse shall be maintained.

b. In addition, the County shall notify adjacent communities in writing 30 days prior to the issuance of a permit for the alteration or relocation of the watercourse.

(3) Protecting buildings.

a. All buildings located within a 100-year floodplain also known as a special flood hazard area (SFHA), and all buildings located outside the 100-year floodplain but within the 500-year floodplain, shall be protected from flood damage below the flood protection elevation. This building protection criteria applies to the following situations:

1. Construction or placement of a new building;

2. A structural alteration Substantial improvement made to an existing building; that either increases the first floor area by more than 20 percent or the building's market value by more than 50 percent. This alteration shall be figured cumulatively beginning with any alteration which has taken place subsequent to April 1, 1990; If substantially improved, both the existing building and any addition must meet the flood protection standards of this section.

3. Installing a manufactured home on a new site or a new manufactured home on an existing site. This building protection requirements does not apply to returning a mobile home to the same site it lawfully occupied before it was removed to avoid flood damage; and

4. Installing a travel trailer on a site for more than 180 days.

5. A substantially damaged building under repair. Substantial damage shall be figured cumulatively subsequent to April 1, 1990. If substantially damaged, the entire building must meet the flood protection standards of this section

b. This building protection requirement may be met by one of the following methods:

1. A residential or nonresidential building, when allowed in zones A, AO, AH, and AE, may be constructed or substantially improved on permanent land fill in accordance with the following:

(i). The lowest floor (including basement) shall be at or above the flood protection elevation (FPE) as defined in Section 106-1.

(ii) Fill requirements.

A. The fill shall be placed in layers no greater than one foot deep before compaction and should extend at least ten feet beyond the foundation of the building before sloping below the flood protection elevation.

B. The top of the fill shall be above the flood protection elevation. However, the ten-foot minimum may be waived if an Illinois licensed structural engineer certifies an alternative method to protect the building from damages due to hydrostatic pressures.

C. The fill shall be protected against erosion and scour.

D. The fill shall not adversely affect the flow or surface drainage from or onto neighboring properties.

2. A residential or nonresidential building in zones A, AO, AH, and AE may be elevated in accordance with the following:

(i) The building or improvements shall be elevated on crawl space, stilts, piles, walls, or other foundation that is permanently open to floodwaters and not subject to damage by hydrostatic pressures of the base flood or 100-year frequency flood. The permanent openings shall be no more

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than one foot above existing grade, and consists of a minimum of two permanent openings on at least two walls, located below the BFE. The openings must have a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding below the base flood elevation. Refer to FEMA TB1, Openings in Foundation Walls and Walls of Enclosures, for additional guidance.

(ii) The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice and floating debris.

(iii) All areas below the flood protection elevation shall be constructed of materials resistant to flood damage.

A. The lowest floor (including basement) and all electrical, heating, ventilating, plumbing, and air conditioning equipment and utility meters shall be located at or above the flood protection elevation.

B. Water and sewer pipes, electrical and telephone lines, submersible pumps, and other waterproofed service facilities may be located below the flood protection elevation.

(iv) The areas below the flood protection elevation may only be used for the parking of vehicles, building access or storage in an area other than a basement.

(v) Manufactured homes and travel trailers to be installed on a site for more than 180 days, in zones A, AO, AH, and AE, shall be elevated to or above the flood protection elevation using a support and anchoring system, designed by a P.E. pursuant to 77 Ill. Adm. Code § 870.110 and shall be anchored to resist flotation, collapse, or lateral movement by being tied down in accordance with the Rules and Regulations for the Illinois Mobile Home Tie-Down Act issued pursuant to 77 Ill. Admin. Code Part 870. In addition, all manufactured homes shall meet the following elevation requirements:

A. In the case of manufactured homes placed or substantially improved outside of a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or in an existing manufacture home park or subdivision on which a manufactured home has incurred substantial damage from a flood, the top of the lowest floor shall be elevated to or above the flood protection elevation.

B. In the case of manufactured homes placed or substantially improved in an existing manufactured home park or subdivision, the manufactured home shall be elevated so that either the top of the lowest floor is above the base flood elevation or the chassis is at least 36 inches in height above grade and supported by reinforced piers or other foundations of equivalent strength, whichever is less.

(vi) Recreational vehicles or travel trailers shall be required to meet the elevation and anchoring requirements of Subsection (3)b.2.v of this section above unless:

A. They are on site for fewer than 180 consecutive days; and

B. They are fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utility and service devices, and has no permanently attached additions.

c. Only a nonresidential building in zones A, AO, AH, and AE, may be structurally dry floodproofed (in lieu of elevation) provided that:

1. A licensed Illinois professional engineer shall certify that the building has been structurally dry floodproofed below the flood protection elevation, certifying that the design and methods of construction are in accordance with accepted standards of practice for meeting the requirements of ASCE 24-14, and the structure and attendant utility facilities are watertight and capable of resisting the effects of the base flood or 100-year frequency flood.

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2. The building design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and impacts from debris or ice.

3. Floodproofing measures shall be operable without human intervention and without an outside source of electricity (levees, berms, floodwalls and similar works are not considered floodproofing for the purpose of this Subsection (3)c.3).

d. In zones A, AO, AH, and AE, detached accessory structures Tool sheds and detached garages on an existing single-family platted lot may be constructed with the lowest floor below the flood protection elevation in accordance with the following:

1. The building must be non-habitable, must not include areas intended or used for cooking, and must not include bathrooms, toilet rooms, or shower rooms. The building is not used for human habitation.

2. All areas below the base flood or 100-year frequency flood elevation shall be constructed with waterproof material. Structures located in a designated floodway shall be constructed and placed on a building site so as not to block the flow of floodwaters and shall also meet the Appropriate Use criteria of Section 106-7. In addition, all other requirements of Sections 106-6-106-8 must be met.

3. The structure shall be anchored to prevent flotation.

4. Service facilities such as electrical and heating equipment shall be elevated or flood proofed to the flood protection elevation.

5. The building shall be valued at less than $7,500.00 and be less than 500 square feet in floor size.

6. The building shall be used only for the storage of vehicles or tools and may not contain other rooms, workshops, greenhouses or similar uses. The building shall meet the permanent opening criteria of Subsection (3)2.i of this section.

e. Existing buildings located within a designated floodway shall also meet the more restrictive appropriate use standards included in Section 106-7. Nonconforming structures located in a designated floodway may remain in use and may only be enlarged, replaced or structurally altered in accordance with Section 106-7(2). A nonconforming structure damaged by flood, fire, wind or other natural or manmade disaster may be restored unless the damage equals or exceeds 50 percent of its market value before it was damaged.

f. In a Coastal high hazard area (zone VE), the building protection requirements of this Section must be met according to the following criteria:

1. All New Construction and Substantial Improvements shall be elevated on pilings or columns so that the bottom of the lowest horizontal structural member of the Lowest Floor (excluding the pilings or columns) is elevated to or above the FPE, and the pile or column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.

(i) Water loading values used shall be those associated with the Base Flood.

(ii) Wind loading values shall be those defined according to American Society of Civil Engineers 7-16 Minimum design loads and associated criteria for buildings and other structures, or other equivalent standard.

2. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of Section 106-9 (3)f.1.

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3. All New Construction and Substantial Improvements shall have the space below the Lowest Floor either free of obstruction or constructed with non-supporting Breakaway Walls, open wood lattice-work, or insect screening intended to collapse without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.

(i) For the purpose of Section 106-9 (3), a Breakaway Wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot.

(ii) Use of Breakaway Walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or where so required by local or state codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet all of the following conditions:

A. Breakaway Wall collapse shall result from a water load less than that which would occur during the base flood; and

B. The elevated portion of the Building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Water loading values shall be those associated with the base flood. Wind loading values shall be those defined according to American Society of Civil Engineers 7-16 Minimum design loads and associated criteria for buildings and other structures, or equivalent standard.

C. All space enclosed by Breakaway Walls, open wood lattice-work, or insect screening below the lowest floor shall be used solely for parking of vehicles, building access, or storage.

4. Placement or Substantial Improvement of Manufactured Homes must comply with Section 106.9.

5. Recreational Vehicles, including park models, must either be on site for fewer than 180 consecutive days; or be fully licensed and ready for highway use; or comply with Section 106.9.

***

Sec. 106-15. Other Laws

The provisions of this chapter shall not be deemed to nullify any provisions of local, State or federal law. With respect to Coastal High Hazard Areas, Cook County only has jurisdiction over the portions of the Cook County FIRM that are unincorporated as defined pursuant to 65 ILCS 5/7-4-4 and 55 ILCS 5/1-1004.

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Effective date: This ordinance shall be in effect immediately upon adoption.

Sponsors: PETER N. SILVESTRI

Indexes:

Code sections:

Attachments:

Date	Ver.	Action By	Action	Result
7/29/2021	1	Board of Commissioners	suspend the rules	Pass
7/29/2021	1	Board of Commissioners	approve	Pass

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(7) *Elevation and floodproofing certificates.* Maintain permit files including:

a. An elevation certificate certifying the elevation of the lowest floor (including basement) of a residential or nonresidential building subject to Section 106-9; or an Elevation Certificate certifying the elevation of the

lowest horizontal structural member of the **Lowest Floor,** where required by Section 106.9 and/or

b. The elevation to which a nonresidential building has been floodproofed, using a floodproofing certificate, for all buildings subject to the provisions of Section 106-9.

c. Certification of structural design and methods of construction for VE zone construction as required by Section 106.9.

d. Certification of breakaway wall design, when applicable, as provided in Section 106.9.

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Sec. 106-5.Base flood elevation

***

This chapter's protection standard is based on the Flood Insurance Study for the County dated September 10, 2021.

(1) If a base flood elevation or 100-year frequency flood elevation is not available for a particular site, then the protection standard shall be according to the best existing data available in the Illinois State Water Survey's Floodplain Information Repository that has been approved by IDNR/OWR and FEMA.

(2) When a party disagrees with the best available data, the party may finance the detailed engineering study needed to replace existing data with better data and submit it to IDNR/OWR and FEMA.

(3) The base flood or 100-year frequency flood elevation for the special flood hazard area (SFHA's) shall be as delineated on the 100-year flood profiles in the Countywide flood insurance study for the County prepared by FEMA, and dated ~~November 1, 2019~~ September 10, 2021, and such amendments to such study and maps as may be prepared from time to time.

(4) The base flood or 100-year frequency flood elevation for each special flood hazard area (SFHA) delineated as an AH Zone or "AO Zone shall be that elevation (or depth) delineated on the Flood Insurance Rate Map (FIRM) of the County.

(5) The BFE for any zone VE floodplain, and for a zone AE floodplain in an area subject to flooding effects from Lake Michigan, shall be the highest elevation specified on the FIRM among all flood zones affecting the proposed development. Where development is proposed to encroach upon a riverine Zone AE which is subject to flooding effects from Lake Michigan, the requirements of Section 106-9 shall apply to the entire floodplain.

(6~~5~~) The base flood or 100-year frequency flood elevation for each of the remaining special flood hazard areas (SFHAs) delineated as an A Zone on the Flood Insurance Rate Map (FIRM) of the County shall be according to the best existing data available from federal, state, or other sources. Should no other data exist, an engineering study must be financed by the applicant to determine BFEs. ~~in the Illinois State Water Survey Floodplain Information Repository.~~

a. When no ~~base flood or 100-year flood frequency elevation~~ BFE exists, the BFE for a riverine SFHA shall be determined from ~~a backwater model,~~ an accepted hydraulic model, based on current industry standards approved by the County Highway Department, such as HEC-II, WSP-2, or HEC-RAS.

b. The flood flows used in the hydraulic models shall be obtained from a hydraulic model, approved by the County Highway Department, such as HEC-I, or TR-20, or by techniques presented in various publications prepared by the United States Geological Survey for estimating peak flood discharges.

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c. Along any watercourses draining more than one square mile, the above analyses shall be submitted to IDNR/OWR for approval. Once approved it must be submitted to the Illinois State Water Survey Floodplain Information Repository for filing.

~~d. For a nonriverine SFHA, the base flood elevation shall be the historic flood of record plus three feet, unless calculated by a detailed engineering study and approved by IDNR/OWR for drainage areas greater than one square mile.~~

d~~e~~. For an unmapped extended SFHA (with a drainage area less than one square mile) which has been identified by the Department of Building and Zoning pursuant to Section 501.3, the base flood elevation shall be determined by the applicant utilizing a method as approved in Section 106-8, with concurrence of the County.

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Sec. 106-7.Occupation and use of designated floodways

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(2) *Preventing increased damages and a list of appropriate uses*.

f. Permits for dams.

1. Any work involving the construction, modification or removal of a dam as defined in Section 106-2 per 17 Ill. Admin. Code Part 3702 (Rules for Construction of Dams) shall obtain an IDNR/OWR permit prior to the start of construction of a dam.

2. If the Department finds a dam that does not have an IDNR/OWR permit, the Department shall immediately notify the IDNR/OWR ~~Schaumburg office~~.

3. If the Department finds a dam which is believed to be in unsafe condition, the Department shall immediately notify the owner of the dam, the IDNR/OWR ~~Schaumburg office~~, and the Illinois Emergency Management Agency (IEMA).

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Sec. 106-8.Occupation and use of special flood hazard areas (SFHA) where floodways are not identified

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(1) *Preventing increased damages.*

3. Permits for dams.

(i) Any work involving the construction, modification or removal of a dam as defined in Section 106-2 per 17 Ill. Admin. Code Part 3702 (Rules for Construction of Dams) shall obtain an IDNR/OWR permit prior to the start of construction of a dam.

(ii) If the Department finds a dam that does not have an IDNR/OWR permit, the Department shall immediately notify the IDNR/OWR ~~Schaumburg office~~.

(iii) If the Department finds a dam which is believed to be in unsafe condition, the Department shall immediately notify the owner of the dam, the IDNR/OWR ~~Schaumburg office~~, and the Illinois Emergency Management Agency (IEMA).

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Sec. 106-9.Permitting requirements applicable to all floodplain areas

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In addition to the requirements found in Sections 106-6-106-8 for development in flood fringes, designated floodways, and special flood hazard areas (SFHAs) or floodplains where no floodways have been identified (Zones A, AO, AH, AE, A1-A30, A99, VO, V1-30, VE, V, M, E, D, or X), the following requirements shall be met

(1) *Public health standards.*

a. No developments in the ~~special flood hazard area~~ SFHA shall include locating or storing chemicals, explosives, buoyant materials, animal wastes, fertilizers, flammable liquids, pollutants, or other hazardous or toxic materials below the flood protection elevation (FPE) unless such materials are stored in a floodproofed and anchored storage tank and certified by a **P.E.** or floodproofed **Building** constructed according to the requirements of this chapter.

b. New and replacement water supply systems, wells, sanitary sewer lines and on-site waste disposal systems may be permitted providing all manholes or other above ground openings located below the FPE are watertight. New and replacement on-site sanitary sewer lines or waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

c. Public utilities and facilities such as sewer, gas and electric shall be located and constructed to minimize or eliminate flood damage.

d. All other activities, defined as development, such as pools, fences, filling, paving, etc., shall be designed so as not to alter flood flows or increase potential flood damages. Non-structural fill within a coastal high hazard area (zone V, V1-30, or VE) shall be permitted only if an engineering report demonstrates that the fill will not cause wave runup, ramping, or deflection of floodwaters that cause damage to buildings.

e. The use of fill for structural support of buildings within a coastal high hazard area (zone V, V1-30, or VE) [or within a Moderate Wave Action Area] is prohibited.

f. Man-made alterations of sand dunes within a coastal high hazard area (zone V, V1-30, or VE) are prohibited unless an engineering report documents that the alterations will not increase potential flood damage by reducing the wave and flow dissipation characteristics of the sand dunes.

g. Within a coastal high hazard area, bulkheads, seawalls, revetments, and other erosion control structures shall not be connected to the foundation or superstructure of a building, and shall be designed and constructed so as not to direct floodwaters or increase flood forces or erosion impacts on the foundation or superstructure of any building.

(2) *Carrying capacity and notification.*

a. For all projects involving channel modification, fill, or stream maintenance (including levees), the flood carrying capacity of the watercourse shall be maintained.

b. In addition, the County shall notify adjacent communities in writing 30 days prior to the issuance of a permit for the alteration or relocation of the watercourse.

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(3) *Protecting buildings.*

a. All buildings located within a 100-year floodplain also known as a special flood hazard area (SFHA), and all buildings located outside the 100-year floodplain but within the 500-year floodplain, shall be protected from flood damage below the flood protection elevation. This building protection criteria applies to the following situations:

1. Construction or placement of a new building;

2. ~~A structural alteration~~ Substantial improvement made to an existing building; ~~that either increases the first floor area by more than 20 percent or the building's market value by more than 50 percent. This alteration shall be figured cumulatively beginning with any alteration which has taken place subsequent to April 1, 1990;~~ If substantially improved, both the existing building and any addition must meet the flood protection standards of this section.

3. Installing a manufactured home on a new site or a new manufactured home on an existing site. This building protection requirements does not apply to returning a mobile home to the same site it lawfully occupied before it was removed to avoid flood damage; and

4. Installing a travel trailer on a site for more than 180 days.

5. A substantially damaged building under repair. Substantial damage shall be figured cumulatively subsequent to April 1, 1990. If substantially damaged, the entire building must meet the flood protection standards of this section

b. This building protection requirement may be met by one of the following methods:

1. A residential or nonresidential building, when allowed in zones A, AO, AH, and AE, may be constructed or substantially improved on permanent land fill in accordance with the following:

(i). The lowest floor (including basement) shall be at or above the flood protection elevation (FPE) as defined in Section 106-1.

(ii) Fill requirements.

A. The fill shall be placed in layers no greater than one foot deep before compaction and should extend at least ten feet beyond the foundation of the building before sloping below the flood protection elevation.

B. The top of the fill shall be above the flood protection elevation. However, the ten-foot minimum may be waived if an Illinois licensed structural engineer certifies an alternative method to protect the building from damages due to hydrostatic pressures.

C. The fill shall be protected against erosion and scour.

D. The fill shall not adversely affect the flow or surface drainage from or onto neighboring properties.

2. A residential or nonresidential building in zones A, AO, AH, and AE may be elevated in accordance with the following:

(i) The building or improvements shall be elevated on crawl space, stilts, piles, walls, or other foundation that is permanently open to floodwaters and not subject to damage by hydrostatic pressures of the base flood or 100-year frequency flood. The permanent openings shall be no more than one foot above existing

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grade, and consists of a minimum of two permanent openings on at least two walls, located below the BFE . The openings must have a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding below the base flood elevation. Refer to FEMA TB1, Openings in Foundation Walls and Walls of Enclosures, for additional guidance.

(ii) The foundation and supporting members shall be anchored and aligned in relation to flood flows and adjoining structures so as to minimize exposure to known hydrodynamic forces such as current, waves, ice and floating debris.

(iii) All areas below the flood protection elevation shall be constructed of materials resistant to flood damage.

A. The lowest floor (including basement) and all electrical, heating, ventilating, plumbing, and air conditioning equipment and utility meters shall be located at or above the flood protection elevation.

B. Water and sewer pipes, electrical and telephone lines, submersible pumps, and other waterproofed service facilities may be located below the flood protection elevation.

(iv) The areas below the flood protection elevation may only be used for the parking of vehicles, building access or storage in an area other than a basement.

(v) Manufactured homes and travel trailers to be installed on a site for more than 180 days, in zones A, AO, AH, and AE, shall be elevated to or above the flood protection elevation using a support and anchoring system, designed by a **P.E.** pursuant to 77 Ill. Adm. Code § 870.110 and shall be anchored to resist flotation, collapse, or lateral movement by being tied down in accordance with the Rules and Regulations for the Illinois Mobile Home Tie-Down Act issued pursuant to 77 Ill. Admin. Code Part 870. ~~In addition, all manufactured homes shall meet the following elevation requirements:~~

~~A. In the case of manufactured homes placed or substantially improved outside of a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or in an existing manufacture home park or subdivision on which a manufactured home has incurred substantial damage from a flood, the top of the lowest floor shall be elevated to or above the flood protection elevation.~~

~~B. In the case of manufactured homes placed or substantially improved in an existing manufactured home park or subdivision, the manufactured home shall be elevated so that either the top of the lowest floor is above the base flood elevation or the chassis is at least 36 inches in height above grade and supported by reinforced piers or other foundations of equivalent strength, whichever is less.~~

(vi) Recreational vehicles or travel trailers shall be required to meet the elevation and anchoring requirements of Subsection (3)b.2.v of this section above unless:

A. They are on site for fewer than 180 consecutive days; and

B. They are fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utility and service devices, and has no permanently attached additions.

c. Only a nonresidential building in zones A, AO, AH, and AE, may be structurally dry floodproofed (in lieu of elevation) provided that:

1. A licensed Illinois professional engineer shall certify that the building has been structurally dry floodproofed below the flood protection elevation, certifying that the design and methods of construction are

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in accordance with accepted standards of practice for meeting the requirements of ASCE 24-14, and the structure and attendant utility facilities are watertight and capable of resisting the effects of the base flood or 100-year frequency flood.

2. The building design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and impacts from debris or ice.

3. Floodproofing measures shall be operable without human intervention and without an outside source of electricity (levees, berms, floodwalls and similar works are not considered floodproofing for the purpose of this Subsection (3)c.3).

d. In zones A, AO, AH, and AE, detached accessory structures ~~Tool sheds and detached garages on an existing single-family platted lot~~ may be constructed with the lowest floor below the flood protection elevation in accordance with the following:

1. The building must be non-habitable, must not include areas intended or used for cooking, and must not include bathrooms, toilet rooms, or shower rooms. ~~The building is not used for human habitation.~~

2. All areas below the base flood or 100-year frequency flood elevation shall be constructed with waterproof material. Structures located in a designated floodway shall be constructed and placed on a building site so as not to block the flow of floodwaters and shall also meet the Appropriate Use criteria of Section 106-7. In addition, all other requirements of Sections 106-6-106-8 must be met.

3. The structure shall be anchored to prevent flotation.

4. Service facilities such as electrical and heating equipment shall be elevated or flood proofed to the flood protection elevation.

5. The building shall be valued at less than $7,500.00 and be less than 500 square feet in floor size.

6. The building shall be used only for the storage of vehicles or tools and may not contain other rooms, workshops, greenhouses or similar uses. The building shall meet the permanent opening criteria of Subsection (3)2.i of this section.

e. Existing buildings located within a designated floodway shall also meet the more restrictive appropriate use standards included in Section 106-7. Nonconforming structures located in a designated floodway may remain in use and may only be enlarged, replaced or structurally altered in accordance with Section 106-7(2). A nonconforming structure damaged by flood, fire, wind or other natural or manmade disaster may be restored unless the damage equals or exceeds 50 percent of its market value before it was damaged.

f. In a Coastal high hazard area (zone VE), the building protection requirements of this Section must be met according to the following criteria:

1. All New Construction and Substantial Improvements shall be elevated on pilings or columns so that the bottom of the lowest horizontal structural member of the Lowest Floor (excluding the pilings or columns) is elevated to or above the FPE, and the pile or column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.

(i) Water loading values used shall be those associated with the Base Flood.

(ii) Wind loading values shall be those defined according to American Society of Civil Engineers 7-16 Minimum design loads and associated criteria for buildings and other structures, or other equivalent

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standard.

2. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of Section 106-9 (3)f.1.

3. All New Construction and Substantial Improvements shall have the space below the Lowest Floor either free of obstruction or constructed with non-supporting Breakaway Walls, open wood lattice-work, or insect screening intended to collapse without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.

(i) For the purpose of Section 106-9 (3), a Breakaway Wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot.

(ii) Use of Breakaway Walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or where so required by local or state codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet all of the following conditions:

A. Breakaway Wall collapse shall result from a water load less than that which would occur during the base flood; and

B. The elevated portion of the Building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Water loading values shall be those associated with the base flood. Wind loading values shall be those defined according to American Society of Civil Engineers 7-16 Minimum design loads and associated criteria for buildings and other structures, or equivalent standard.

C. All space enclosed by Breakaway Walls, open wood lattice-work, or insect screening below the lowest floor shall be used solely for parking of vehicles, building access, or storage.

4. Placement or Substantial Improvement of Manufactured Homes must comply with Section 106.9.

5. Recreational Vehicles, including park models, must either be on site for fewer than 180 consecutive days; or be fully licensed and ready for highway use; or comply with Section 106.9.

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Sec. 106-15. Other Laws

The provisions of this chapter shall not be deemed to nullify any provisions of local, State or federal law. With respect to Coastal High Hazard Areas, Cook County only has jurisdiction over the portions of the Cook County FIRM that are unincorporated as defined pursuant to 65 ILCS 5/7-4-4 and 55 ILCS 5/1-1004.

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Effective date: This ordinance shall be in effect immediately upon adoption.