

CHAPTER 15.16: FLOOD DAMAGE PREVENTION

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§ 15.16.010 PURPOSE.

This chapter is enacted pursuant to the police powers granted to this city by ILCS Ch. 65, Act 5, §§ 1-2-1, 11-12-12, 11-30-2, 11-30-8, and 11-31-2. The purpose of this chapter is to maintain this city's eligibility in the National Flood Insurance Program; to minimize potential losses due to periodic flooding including loss of life, loss of property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare; and to preserve and enhance the quality of surface waters, conserve economic and natural values and provide for the wise utilization of water and related land resources. This chapter is adopted in order to accomplish the following specific purposes:

- (A) To meet the requirements of ILCS Ch. 615, Act 5, § 18(g) Rivers, Lakes and Streams Act;
- (B) To assure that new development does not increase the flood or drainage hazards to others, or create unstable conditions susceptible to erosion;
- (C) To protect new buildings and major improvements to buildings from flood damage;
- (D) To protect human life and health from the hazards of flooding;
- (E) To lessen the burden on the taxpayer for flood control projects, repairs to flood-damaged public facilities and utilities, and flood rescue and relief operations;
- (F) To make federally subsidized flood insurance available for property in the city by fulfilling the requirements of the National Flood Insurance Program;
- (G) To comply with the rules and regulations of the National Flood Insurance Program codified as 44 CFR 59-79, as amended;

(H) To protect, conserve, and promote the orderly development of land and water resources; and

(I) To preserve the natural characteristics and functions of watercourses and floodplains in order to moderate flood and stormwater impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits, and enhance community and economic development.

(Ord. 1798, passed 2-4-19)

§ 15.16.020 DEFINITIONS.

For the purposes of this chapter, the following definitions are adopted:

ACCESSORY STRUCTURE. A non-habitable structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure, and as defined by Section 2 of the City of Crest Hill Zoning Ordinance.

ACT. An act in relation to the regulation of the rivers, lakes, and streams of the State of Illinois, Ch. 615, Act 5, §§ 5 et seq.

APPLICANT. Any person, firm, corporation, or agency which submits an application.

APPROPRIATE USE. Only uses of the designated floodway that are permissible and will be considered for permit issuance. The only uses that will be allowed are as specified in § 15.16.702. In no case shall a use be considered an "appropriate use" unless permitted under the City of Crest Hill Zoning Ordinance for the Zoning District in which the property is located.

BASE FLOOD. The flood having a 1% chance 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 15.16.040 of this code.

BASE FLOOD ELEVATION (BFE). The elevation in relation to mean sea level of the crest of the base flood.

BASEMENT. That portion of the building having its floor partly or wholly subgrade (below ground level).

BUILDING. A walled and roofed structure, including gas or liquid storage tank, that is principally above ground, including manufactured homes, prefabricated buildings, and gas or liquid storage tanks. The term also includes recreational vehicles and travel trailers installed on a site for more than 180 days per year.

CHANNEL. Any river, stream, creek, brook, branch, natural or artificial depression, ponded area, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or man-made drainageway, which has a definite bed and banks or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.

CHANNEL MODIFICATION. Alteration of a channel by changing the physical dimensions or materials of its bed or banks. Channel modification includes damming, rip-rapping (or other armoring), widening, deepening, straightening, relocating, lining, and significant removal of native vegetation from the bottom or banks. Channel modification does not include the clearing of dead or dying vegetation, debris, or trash from the channel. Channelization is a severe form of channel modification involving a significant change in the channel cross-section and typically involving relocation of the existing channel (e.g. straightening).

COMPENSATORY STORAGE. An artificially excavated, hydraulically equivalent volume of storage within the floodplain used to balance the loss of natural flood storage capacity when artificial fill or structures are placed within the floodplain. The uncompensated loss of natural floodplain storage can increase off-site floodwater elevations and flows.

CONDITIONAL APPROVAL OF A DESIGNATED FLOODWAY MAP CHANGE. Preconstruction approval by IDNR/OWR and FEMA of a proposed change to the floodway map. This preconstruction approval, pursuant to this part, gives assurances to the property owner that once an appropriate use is constructed according to permitted plans, the floodway map can be changed, as previously agreed, upon review and acceptance of as-built plans.

CONDITIONAL LETTER OF MAP REVISION (CLOMR). A letter which indicates that FEMA will revise base flood elevations, flood insurance rate zones, flood boundaries or floodway as shown on an effective flood hazard boundary map or flood insurance rate map, once the as-built plans are submitted and approved.

CRITICAL FACILITY. Any facility which is critical to the health and welfare of the population and, if flooded, would create an added dimension to the disaster. Damage to these critical facilities can impact the delivery of vital services, can cause greater damage to other sectors of the community, or can put special populations at risk. Examples of critical facilities where flood protection should be required include: emergency services facilities (such as fire and police stations), schools, hospitals, retirement homes and senior care facilities, major roads and bridges, critical utility sites (telephone switching stations or electrical transformers), hazardous material storage facilities (chemicals, petrochemicals, hazardous or toxic substances), sewage treatment plants, water treatment plants, and pumping stations. Flood protection is recommended for all critical facilities.

DAM. All obstructions, wall embankments or barriers, together with their abutments and appurtenant works, if any, constructed for the purpose of storing or diverting water or creating a pool. Dams may also include weirs, restrictive culverts or impoundment structures. Underground water storage tanks are not included.

DELEGATED COMMUNITY. A community delegated by the state to have permitting authority in the floodway.

DESIGNATED FLOODWAY. The channel, including on-stream lakes, and that portion of the floodplain adjacent to a stream or watercourse, generally depicted on the FEMA FIRM map, 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 10% increase in velocities.

(1) The floodways are designated on the countywide flood insurance rate map of Will County prepared by FEMA and dated February 15, 2019. When two floodway maps exist for a waterway, the more restrictive floodway limit shall prevail.

(2) The floodways for those parts of unincorporated Will County that are within the extraterritorial jurisdiction of the city that may be annexed into the city are designated for Des Plaines River, Tributary A Des Plaines River, Rock Run North, St. Francis Academy Creek, St. Anne School Tributary, and Sunnyland Drain on the countywide Flood Insurance Rate Map prepared by FEMA and dated February 15, 2019.

(3) To locate the designated floodway boundary on any site, the designated floodway boundary should be scaled off the designated floodway map and located on a site plan, using reference marks common to both maps. Where interpretation is needed to determine the exact location of the designated floodway boundary, IDNR/OWR should be contacted for the interpretation.

DEVELOPMENT. Any man-made change to real estate, including:

- (1) Construction, reconstruction, repair, relocation or placement of a building or any addition to a building;
- (2) Substantial improvement of an existing building;
- (3) Installing a manufactured home on a site, preparing a site for a manufactured home, or installing a travel trailer or recreational vehicle on a site for more than 180 days in any calendar year. If a travel trailer or recreational vehicle is on site for more than 180 days in any calendar year, it must be fully licensed and ready for highway use; and must be in full compliance with the regulations established in Section 8 of the City of Crest Hill Zoning Ordinance;
- (4) Installing utilities, construction of roads, bridges, or similar projects;
- (5) Demolition of a structure, redevelopment of a site, clearing of land as an adjunct of construction;
- (6) Construction or erection of levees, walls, fences, dams, or culverts; channel modification;
- (7) Filling, dredging, grading, excavating, paving, drilling, mining or other non-agricultural alterations of the ground surface;
- (8) Storage of materials including the placement of gas and liquid storage tanks, and channel modifications or any other activity that might change the direction, height, or velocity of flood or surface waters;
- (9) Any other activity of man that might change the direction, height, or velocity of flood or surface water, including extensive vegetation removal;
- (10) Development does not include such activities as re-surfacing of pavement when there is no increase in elevation, or gardening, plowing, and similar agricultural practices that do not involve filling, grading, routine maintenance of buildings or construction of levees.

ELEVATION CERTIFICATES. A form published by FEMA that is used to certify the elevation to which a building has been elevated.

EROSION. The general process whereby soils are moved by flowing water or wave action.

EXEMPT ORGANIZATIONS. Organizations which are exempt from this chapter per Illinois Compiled Statutes (ILCS) including state, federal, or local units of government.

EXISTING MANUFACTURED HOME PARK OR SUBDIVISION. A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed or buildings to be constructed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the city initial floodplain management regulations.

EXPANSION TO AN EXISTING MANUFACTURED HOME PARK OR SUBDIVISION. The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

FEMA. Federal Emergency Management Agency and its regulations at 44 CFR 59-79, as amended.

FLOOD. A general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waves, or the unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD FREQUENCY. A period of years, based on a statistical analysis, during which a flood of a stated magnitude may be expected to be equaled or exceeded.

FLOOD FRINGE. That portion of the floodplain outside of the designated floodway.

FLOOD INSURANCE RATE MAPS (FIRM). A map prepared by FEMA that depicts the floodplain or Special Flood Hazard Area within a community. This map includes insurance rate zones and floodplains and may or may not depict floodways and show base flood elevation.

FLOOD INSURANCE STUDY. An examination, evaluation and determination of flood hazards and if appropriate, corresponding water surface elevations.

FLOODPLAIN OR SPECIAL FLOOD HAZARD AREA (SFHA). These two terms are synonymous. Means any land area susceptible to being inundated by water from any source. Floodplain also includes those areas of known flooding as identified by the community.

(1) The floodplains are those lands within the jurisdiction of the city that are subject to inundation by the base flood. The floodplains of the city are generally identified as such on panel number(s) 17197C0134G, 17197C0135G, 17197C0142G, 17197C0153G, 17197C0154G, 17197C0155G, 17197C0161G, and 17197C0162G of the countywide Flood Insurance Rate Map of Will County as prepared by the FEMA and dated February 15, 2019.

(2) The floodplains of those parts of unincorporated Will County that are within the extraterritorial jurisdiction of the city or that may be annexed into the city are generally identified as such on panel numbers(s) 17197C0134G, 17197C0135G, 17197C0142G, 17197C0153G, 17197C0154G, 17197C0155G, 17197C0161G, and 17197C0162G of the countywide Flood Insurance Rate Map prepared for Will County by the FEMA and dated February 15, 2019.

FLOODPROOFING. Any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents.

MANUFACTURED HOME. A structure, transportable in one or more sections, which is built on a permanent chassis and is designated for use with or without a permanent foundation when attached to the required utilities. The term **MANUFACTURED HOME** does not include a "recreational vehicle".

MANUFACTURED HOME PARK OR SUBDIVISION. A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

MITIGATION. Includes those measures necessary to minimize the negative effects which floodplain development activities might have on the public health, safety, and welfare. Examples of mitigation include compensatory storage, soil erosion and sedimentation control, and channel restoration.

NEW CONSTRUCTION. Structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

NEW MANUFACTURED HOME PARK OR SUBDIVISION. Manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) has been completed on or after the effective date of the city floodplain management regulations.

NAVD 88. National American Vertical Datum of 1988. NAVD 88 supersedes the National Geodetic Vertical Datum of 1929 (NGVD).

NATURAL. When used in reference to channels means those channels formed by the existing surface topography of the earth prior to changes made by man. A natural stream tends to follow a meandering path; its floodplain is not constrained by levees; the area near the bank has not been cleared, mowed, or cultivated; the stream flows over soil and geologic materials typical of the area with no substantial alteration of the course or cross-section of the stream caused by filling or excavating. A modified channel may regain some natural characteristics over time as the channel meanders and vegetation is re-established. Similarly, a modified channel may be restored to more natural conditions by man through regrading and revegetation.

ORDINARY HIGH WATER MARK (OHWM). The point on the bank or shore up to which the presence and action of surface water is so continuous so as to leave a distinctive mark such as by erosion, destruction, or prevention of terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristics.

PUBLIC FLOOD CONTROL PROJECT. A flood control project which will be operated and maintained by a public agency to reduce flood damages to existing buildings and structures, including a hydrologic and hydraulic study of the existing and proposed conditions of the watershed. Nothing in this definition shall preclude the design, engineering, construction, or financing, in whole or in part, of a flood control project by persons or parties who are not public agencies.

PUBLIC BODIES OF WATERS. All open public streams and lakes capable of being navigated by watercraft, in whole or in part, for commercial uses and purposes, and all lakes, rivers, and streams which in their natural condition were capable of being improved and made navigable, or that are connected with or discharge their waters into navigable lakes or rivers within, or upon the borders of the State of Illinois, together with all bayous, sloughs, backwaters, and submerged lands that are open to the main channel or body of water directly accessible thereto.

RECREATIONAL VEHICLE OR TRAVEL TRAILER. For the purpose of this chapter only shall mean a vehicle which is:

- (1) Built on a single chassis;
- (2) 400 square feet or less when measured at the largest horizontal projection;
- (3) Designed to be self-propelled or permanently towable by a light duty truck; and
- (4) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

REGIONAL PERMITS. Regional permits are offered for pre-approved projects which are considered minor projects that are permissible per IDNR/OWR Part 3708 rules for Northeastern Illinois regulatory floodways. A complete listing of the terms and conditions for specific project types can be obtained from the IDNR/OWR website.

REGISTERED LAND SURVEYOR. A land surveyor registered in the State of Illinois, under the Illinois Land Surveyors Act. (225 ILCS 330/1, et seq.)

REGISTERED OR LICENSED PROFESSIONAL ENGINEER (P.E.). An engineer registered in the State of Illinois, under the Illinois Professional Engineering Practice Act. (ILCS Ch. 225, Act 325, §§ 1 et seq.).

REPAIR, REMODELING, OR MAINTENANCE. Development activities which do not result in any increases in the outside dimensions of a building or any changes to the dimensions of a structure.

REPETITIVE LOSS. Flood-related damages sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25% of the market value of the structure before the damage occurred.

RETENTION/DETENTION FACILITY. A retention facility stores stormwater runoff without a gravity release. A detention facility provides for storage of stormwater runoff and controlled release of this runoff during and after a flood or storm.

RIVERINE FLOODPLAIN. Any floodplain or SFHA subject to flooding from a river, creek, intermittent stream, ditch, on-stream lake system, or any other identified channel. This term does not include areas subject to flooding from lakes, ponding areas, areas of sheet flow, or other areas not subject to overbank flooding.

RUNOFF. The water derived from melting snow or rain falling on the land surface, flowing over the surface of the ground, or collected in channels or conduits.

SEDIMENTATION. The processes that deposit soils, debris, and other materials either on other ground surfaces or in bodies of water or watercourses.

SPECIAL FLOOD HAZARD AREA (SFHA). See **FLOODPLAIN**.

START OF CONSTRUCTION. Includes substantial improvement and means the date the building permit was issued. This, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement or other improvement, was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns or any work beyond the stage of excavation, or placement of a manufactured home on a foundation. For a substantial improvement, actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building whether or not that alteration affects the external dimensions of the building.

STATEWIDE PERMITS. Statewide permits are offered for pre-approved projects that are considered minor projects which are permissible per the EDNR/OWR Part 3700 rules. A complete listing of the statewide permits and permit requirements can be obtained from the DONR/OWR website.

STRUCTURE. See **BUILDING**.

SUBSTANTIAL DAMAGE. Damage of any origin sustained by a structure whereby the cumulative percentage of damage during the life of the building equals or exceeds 50% of the market value of the structure before the damage occurred regardless of actual repair work performed. Volunteer labor and materials must be included in this determination. The term includes repetitive loss buildings. See **REPETITIVE LOSS**.

SUBSTANTIAL IMPROVEMENT. Any reconstruction, rehabilitation, addition, or improvement of a structure taking place during the life of the building in which the cumulative percentage of improvements equals or exceeds 50% of the market value of the structure before the improvement or repair is started, or increases the floor area by more than 20%.

(1) ***SUBSTANTIAL IMPROVEMENT*** is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the building. This term includes structures which have incurred repetitive loss or substantial damage, regardless of the actual work done.

(2) The term does not, however, include either:

(a) Any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions; or

(b) Any alteration of a "historic structure" listed on the National Register of Historic Places or the Illinois Register of Historic Places, provided that the alteration will not preclude the structure's continued designation as a historic structure.

TRANSACTION SECTION. Reaches of the stream or floodway where water flows from a narrow cross-section to a wide cross-section or vice versa.

VIOLATION. The failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance, is presumed to be in violation, until such time as that documentation is provided.

(Ord. 1798, passed 2-4-19)

§ 15.16.030 DUTIES OF THE CITY BUILDING INSPECTOR.

The City Building Inspector shall be responsible for the general administration and enforcement of this chapter which shall include the following:

(A) *Determining the floodplain designation.*

(1) Check all new development sites to determine whether they are in a floodplain using criteria listed in § 15.16.040.

(2) If they are in a floodplain, determine whether they are in a floodway, flood fringe or in a floodplain for which a detailed study has not been conducted and which drains more than one square mile.

(a) If the site is within a flood fringe, the City Building Inspector shall require that the minimum requirements of § 15.16.050 be met.

(b) If the site is within a floodway, the City Building Inspector shall require that the minimum requirements of § 15.16.060 be met.

(c) If the site is located within a floodplain for which no detailed study has been completed and approved, the City Building Inspector shall require that the minimum requirements of § 15.16.070 be met.

(B) *Professional engineer review.*

(1) If the development site is within a floodway or in a floodplain for which a detailed study has not been conducted and which drains more than one square mile, the permit shall be referred to a P.E. under the employ or contract of the city for review to ensure that the development meets §§ 15.16.060 or 15.16.070.

(2) In the case of an appropriate use, the P.E. shall state in writing that the development meets the requirements of § 15.16.060.

(C) *Dam safety requirements.* Dams are classified as to their size and their hazard/damage potential in the event of failure. Permits for dams may be required from IDNR/OWR. Contact IDNR/OWR to determine if a permit is required. If a permit is required, a permit application must be made to IDNR/OWR prior to the construction or major modification of jurisdictional dams.

(D) *Other permit requirements.* Ensure any and all required federal, state and local permits are received prior to the issuance of a floodplain development permit.

(E) *Plan review and permit issuance.*

(1) Ensure that all development activities within the floodplains of the jurisdiction of the city meet the requirements of this chapter.

(2) Issue a floodplain development permit in accordance with the provisions of this chapter and other regulations of this community when the development meets the conditions of this chapter.

(F) *Inspection review.*

(1) Inspect all development projects before, during, and after construction to assure proper elevation of the structure and to ensure compliance with the provisions of this chapter.

(2) Schedule on an annual basis an inspection of the floodplain and document the results of the inspection.

(G) *Substantial damage and substantial improvement determinations.* Establish, in coordination with the City Building Inspector, procedures for administering and documenting determinations, as outlined below, of substantial improvement and substantial damage made pursuant to § 15.16.080.

(1) Determine the market value or require the applicant to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the building or structure before the start of construction of the proposed work. In the case of repair, the market value of the building or structure shall be the market value before the damage occurred and before any repairs are made.

(2) Compare the cost to perform the improvement, the cost to repair a damaged building to its pre-damaged condition, or the combined costs of improvements and repairs, if applicable, to the market value of the building or structure.

(3) Determine and document whether the proposed work constitutes substantial improvement or substantial damage.

(4) Notify the applicant if it is determined that the work constitutes substantial improvement or repair of substantial damage and that compliance with the flood resistant construction requirements of the city and this chapter is required.

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

(1) An elevation certificate certifying the elevation of the lowest floor (including basement) of a residential or non-residential building subject to § 15.16.080 of this chapter; and/or

(2) The elevation to which a non-residential building has been floodproofed, using a Floodproofing Certificate, for all buildings subject to § 15.16.080 of this chapter.

(I) *Records for public inspection.* Maintain for public inspection and furnish upon request all permit records, including but not limited to base flood data, floodplain and designated floodway maps, copies of federal or state permit documents, variance documentation, soil compaction records, Conditional Letter of Map Revision, Letter of Map Revision, Letter of Map Amendment, "as-built" elevation, floodproofing certificates, and elevation certificates for all buildings constructed subject to this chapter.

(J) *State permits.* Ensure that construction authorization has been granted by IDNR/OWR, for all development projects subject to §§ 15.16.060 and 15.16.070 of this chapter, unless enforcement responsibility has been delegated to the City. However, the following review approvals are not delegated to the City and shall require review or permits from IDNR/OWR:

- (1) Organizations which are exempt from this Chapter, as per the Illinois Compiled Statutes;
- (2) IDNR/OWR projects, dams and all other state, federal or local unit of government projects, including projects of the city, except for those projects meeting the requirements of § 15.16.15.16.060(C);
- (3) An engineer's determination that an existing bridge or culvert crossing is not a source of flood damage and the analysis indicating the proposed flood profile, per § 15.16.060(C);
- (4) An engineer's analysis of the flood profile due to § 15.16.060(C);
- (5) Alternative transition sections and hydraulically equivalent compensatory storage as indicated in § 15.16.060(C);
- (6) Permit issuance of structures within, under, or over publicly navigable rivers, lakes and streams;
- (7) Any changes in the mapped floodway or published flood profiles.

(K) *Cooperation with other agencies.*

- (1) Cooperate with state and federal floodplain management agencies to improve base flood or 100-year frequency flood and floodway data and to improve the administration of this chapter;
- (2) Submit data to IDNR/OWR and FEMA for proposed revisions of a regulatory map within six months whenever a modification of the floodplain may change the base flood elevation or result in a change to the floodplain map;
- (3) Submit reports as required for the National Flood Insurance Program; and
- (4) Notify FEMA of any proposed amendments to this chapter.

(L) *Promulgate regulations.* Promulgate rules and regulations as necessary to administer and enforce the provisions of this chapter, subject however to the review and approval of IDNR/OWR and FEMA for any chapter changes.

(M) *Variances.* If a variance is to be granted, the City Building Inspector shall review the requirements of § 15.16.100 to make sure they are met. In addition, the City Building Inspector shall complete all notifications requirements.

(N) *Enforcement.* In order to assure that property owners obtain permits as required in the chapter, the City Building Inspector may take any and all actions as outlined in § 15.16.120.
(Ord. 1798, passed 2-4-19)

§ 15.16.040 BASE FLOOD ELEVATION.

(A) This chapter's protection standard is based on the Flood Insurance Study for Will County.

(1) If a base flood elevation is not available for a particular site, then the protection standard shall be according to the best existing data available from federal, state or other sources.

(2) When a party disagrees with the best available data, they shall submit a detailed engineering study needed to replace existing data with better data and submit it to IDNR/OWR and FEMA for review and consideration prior to any development of the site.

(B) The base flood elevation for the floodplains of Des Plaines River, Tributary A Des Plaines River, Rock Run North, St. Francis Academy Creek, St. Anne School Tributary, Sunnyland Drain, Mink Creek Tributary, Railroad Creek, Des Plaines River Tributary B, and Des Plaines River Tributary C shall be as delineated on the 100-year flood profiles in the Flood Insurance Study of Will County prepared by FEMA dated February 15, 2019 and such amendments to such study and maps as may be prepared from time to time.

(C) The base flood elevation for the floodplains of those parts of Will County that are within the extraterritorial jurisdiction of the city or that may be annexed into the city shall be as delineated on the 100-year flood profiles in the Flood Insurance Study of Will County prepared by FEMA and dated February 15, 2019, and such amendments or revisions to such study and maps as may be prepared from time to time.

(D) The base flood or 100-year frequency flood elevation for each floodplain delineated as an "AH Zone" or "AO Zone" shall be that elevation (or depth) delineated on the countywide Flood Insurance Rate Map of Will County.

(E) The base flood or 100-year frequency flood elevation for each of the remaining floodplains delineated as an "A Zone" on the countywide Flood Insurance Rate Map of Will 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 base flood elevations.

(1) When no base flood or 100-year frequency flood elevation exists, the base flood or 100-year frequency flood elevation for a riverine floodplain shall be determined from a backwater model, such as HEC-II, HEC-RAS, or a dynamic model such as HIP.

(2) The flood flows used in the hydraulic models shall be obtained from a hydrologic model, such as HEC-HMS, HEC-1, TR-20, or HIP, or by techniques presented in various publications prepared by the United States Geological Survey for estimating peak flood discharges.

(Ord. 1798, passed 2-4-19)

§ 15.16.050 OCCUPATION AND USE OF FLOOD FRINGE AREAS.

Development in and/or filling of the flood fringe will be permitted if protection is provided against the base flood or 100-year frequency flood by proper elevation, and compensatory storage, and other applicable provisions of this chapter. No use will be permitted which adversely affects the capacity of drainage facilities or systems. Developments located within the flood fringe shall meet the requirements of this section, along with the requirements of § 15.16.080.

(A) *Development permit.*

(1) No person, firm, corporation, or governmental body not exempted by law shall commence any development in the floodplain without first obtaining a development permit from the City Building Inspector.

(2) Application for a development permit shall be made on a form provided by the City Building Inspector.

(a) The application shall be accompanied by drawings of the site, drawn to scale, showing property line dimensions and legal description for the property and sealed by a licensed engineer, architect or land surveyor; existing grade elevations, using the NAVD of 1988, and all changes in grade resulting from excavation or filling; the location and dimensions of all buildings and additions to buildings.

(b) For all proposed buildings, the elevation of the lowest floor (including basement) and lowest adjacent grade shall be shown on the submitted plans and the development will be subject to the requirements of § 15.16.080 of this chapter.

(3) Upon receipt of a development permit application, the City Building Inspector shall compare the elevation of the site to the base flood or 100-year frequency flood elevation.

(a) Any development located on land that can be shown to be higher than the base flood elevation of the current Flood Insurance Rate Map and which has not been filled after the date of the site's first Flood Insurance Rate Map without a permit, as required by this chapter, is not in the floodplain and, therefore, not subject to the requirements of this chapter. Conversely, any development located on land shown to be below the base flood elevation and hydraulically connected, but not shown on the current Flood Insurance Rate Map, is subject to the provisions of this chapter.

(b) The City Building Inspector shall maintain documentation of the existing ground elevation at the development site and certification that this ground elevation existed prior to the date of the site's first Flood Insurance Rate Map identification.

(4) The City Building Inspector shall be responsible for obtaining from the applicant copies of all other federal, state, and local permits, approvals or waivers that may be required for this type of activity. The City Building Inspector shall not issue a permit unless all other federal, state, and local permits have been obtained.

(5) A development permit or approval shall become invalid unless the start of construction for work authorized by such permit, is commenced within 180 days after its issuance, or if the work authorized is suspended or abandoned for a period of 180 days after the work commences. Extensions for periods of not more than 180 days each shall be requested in writing and justifiable cause shall be demonstrated.

(B) *Preventing increased damages.*

(1) No development in the flood fringe shall create a threat to public health and safety.

(2) If fill is being used to elevate the site above the base flood or 100-year frequency flood elevation, the applicant shall submit sufficient data and obtain a letter of map revision (LOMR) from FEMA for the purpose of removing the site from the floodplain.

(3) *Compensatory storage.*

(a) Whenever any portion of a floodplain is authorized for use, the volume of space which will be occupied by the authorized fill or structure below the base flood or 100-year frequency flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood or 100-year frequency flood elevation.

(b) The excavation volume shall be at least equal to 1.5 times the volume of storage lost due to the fill or structure.

(c) In the case of streams and watercourses, such excavation shall be made opposite or adjacent to the areas so filled or occupied.

(d) All floodplain storage lost below the existing ten-year flood elevation shall be replaced below the proposed ten-year flood elevation. All floodplain storage lost above the existing 10-year flood elevation shall be replaced above the proposed ten-year flood elevation.

(e) All such excavations shall be constructed to drain freely and openly to the watercourse.

(C) *Construction of a building under a LOMR based on fill.* A person who has obtained a Letter of Map Revision Based on Fill that removes a site in the floodplain due to the use of fill to elevate the site above the BFE, may apply for a permit from the city to construct the lowest floor of a building below the BFE in the floodplain. The City Building Inspector shall not issue such a permit unless the applicant has complied with all the criteria set forth in the following subsection and maintain the documentation verifying such compliance.

(1) Compensatory storage shall be provided per subsection (B) of this section.

(2) The elevation of the lowest opening in the basement wall (i.e., window wells, access ways) shall be at or above the Flood Protection Elevation (FPE).

(3) The lowest adjacent grade to the foundation shall be at or above the FPE, for a minimum distance of ten feet beyond the outside face of the structure. However, if site conditions are such that this requirement cannot be met, the City Building Inspector may waive the ten foot minimum setback if an Illinois Licensed P.E. certifies that an alternative method to protect the building from damage due to hydrostatic pressures has been met. The certifications shall be in the form of a detailed soil and structural design analysis, which shall be submitted to the City Building Inspector for review. The City Building Inspector may require such additional documentation as necessary to prove that the proposed shorter setback distance will keep the structure reasonably safe. In no case shall the setback distance be less than four feet.

(4) The grade around the perimeter of the structure, measured at a distance of 20 feet from the structure, shall be above the BFE. However, if site conditions are such that this requirement cannot be obtained, the City Building Inspector may waive the 20 foot minimum setback distance if an Illinois Licensed P.E. certifies that an alternative method to protect the building from damages due to hydrostatic pressures have been met. A detailed soils analysis and structural design proving that a shorter setback distance will keep the structure reasonably safe from flooding, shall be submitted to the city for review. In no case shall the setback distance be less than four feet.

(5) The ground around the building shall be compacted fill that meets all requirements of this subsection and is at least five feet thick under the basement floor slab. Nothing in this subsection shall be interpreted to require the removal or replacement of fill that was placed as part of a LOMR-F, if such fill consists of material, including soils of similar classification and degree permeability, such as those classified as CH, CL, SC, or ML according to ASTM standard D-2487, Classification of Soils for Engineering Purposes.

(6) The fill material must be homogeneous and isotropic; that is, the soil must be all of one material, and the engineering priorities must be in the same direction.

(7) All fill material and compaction shall be designed, certified, and inspected by an Illinois Licensed P.E., as warranted by the site conditions.

(8) The basement floor shall be at an elevation that is no more than five below the BFE.

(9) There shall be a granular drainage layer beneath the floor slab, and minimum of one quarter horsepower sump pump with a backup power supply shall be provided to remove seepage flow. The pump shall be rated at four times the estimated seepage rate and shall discharge above the BFE and away from the building in order to prevent flooding of the basement or uplift of the floor under the effect of the seepage pressure.

(10) The drainage system shall be equipped with a positive means of preventing backflow.

(11) All foundation elements shall be designed to withstand hydrostatic pressure in accordance with accepted engineering practices.

(12) If the applicant is unable to meet all of the requirements set forth in the preceding paragraphs of this subsection, the City Building Inspector may allow the construction of a basement below the BFE only if the applicant demonstrates that the proposed fill and structure meet the guidelines and requirements set forth in FEMA Technical Bulletin 10-01 and are reasonably safe from flooding. In order to demonstrate that the proposed structure is reasonably safe from flooding, the applicant shall submit a detailed engineering analysis of the proposed fill and foundation wall. The engineered basement study shall be completed in accordance with the latest edition of FEMA Technical Bulletin 10-01, with the analysis of the fill being prepared by an Illinois Licensed P.E.

(13) In order to provide the required compensatory storage on site, in no case shall the depth of excavation in the front and side yards of the lot exceed 18 inches, as measured from the previously existing natural grade. The rear yard shall be permitted to have a greater depth of excavation, if necessary. All such excavation shall be constructed to drain freely and openly to the watercourse or storm sewer system. The use of mechanical means to drain the compensatory storage area will not be permitted. (Ord. 1798, passed 2-4-19)

§ 15.16.060 OCCUPATION AND USE OF DESIGNATED FLOODWAYS.

(A) This section applies to proposed development, redevelopment, site modification or building modification within a designated floodway. The designated floodway for Des Plaines River, Tributary A Des Plaines River, Rock Run North, St. Francis Academy Creek, St. Anne School Tributary, and Sunnyland Drain shall be as delineated on the countywide Flood Insurance Rate Map of Will County and referenced in § 15.16.020. Only those uses and structures will be permitted which meet the criteria in this section. All floodway modifications shall be the minimum necessary to accomplish the purpose of the project. The development shall also meet the requirements of § 15.16.080.

(B) *Development permit.*

(1) No person, firm, corporation, or governmental body, not exempted by state law, shall commence any development in a floodway without first obtaining a development permit from IDNR/OWR.

(2) In a delegated community, an application for a development permit shall be made on a form provided by the City Building Inspector. The application shall include the following information:

(a) Name and address of applicant.

(b) Site location (including legal description) of the property, drawn to scale, on the designated floodway map, indicating whether it is proposed to be in an incorporated or unincorporated area.

(c) Name of stream or body of water affected.

(d) Description of proposed activity.

(e) Statement of purpose of proposed activity.

(f) Anticipated dates of initiation and completion of activity.

- (g) Name and mailing address of the owner of the subject property, if different from the applicant.
- (h) Signature of the applicant or the applicant's agent.
- (i) If the applicant is a corporation, the president or other authorized officer shall sign the application form.
- (j) If the applicant is a partnership, each partner shall sign the application form.
- (k) If the applicant is a land trust, the trust officer shall sign the name of the trustee by him (her) as trust officer. A disclosure affidavit shall be filed with the application, identifying each beneficiary of the trust by name and address and defining the respective interests therein.
- (l) Plans of the proposed activity shall be provided, which include, as a minimum:
 - 1. A vicinity map showing the site of the activity, name of the waterway, boundary lines, names of roads in the vicinity of the site, graphic or numerical scale, and north arrow;
 - 2. A plan view of the project and engineering study reach showing existing and proposed conditions including principal dimensions of the structure or work, elevations, using the NAVD of 1988, adjacent property lines and ownership, drainage and flood control easements, location of any channels and any existing or future access roads, distance between proposed activity and navigation channel (when the proposed construction is near a commercially navigable body of water), designated floodway limit, floodplain limit, specifications and dimensions of any proposed channel modifications, location and orientation of cross-sections, north arrow, and a graphic or numerical scale;
 - 3. Cross-section views of the project and engineering study reach showing existing and proposed conditions including principal dimensions of the work as shown in plan view, existing and proposed elevations, normal water elevation, ten-year frequency flood elevation, 100-year frequency flood elevation, and graphic or numerical scales (horizontal and vertical);
 - 4. A soil erosion and sediment control plan for disturbed areas. This plan shall include a description of the sequence of grading activities and the temporary sediment and erosion control measures to be implemented to mitigate their effects. This plan shall also include a description of final stabilization and revegetation measures, and the identification of a responsible party to ensure post-construction maintenance.
 - 5. A copy of the designated floodway map, marked to reflect any proposed change in the designated floodway location.
- (m) Any and all other federal, state, and local permits or approval letters that may be required for this type of development.
- (n) Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the permit criteria of § 15.16.060.
- (o) If the designated floodway delineation, base flood or 100-year frequency flood elevation will change due to the proposed project, the application will not be considered complete until IDNR/OWR has indicated conditional approval of the designated floodway map change. No structures may be built until a Letter of Map Revision has been approved by FEMA.

(p) The application for a structure shall be accompanied by drawings of the site, drawn to scale showing property line dimensions and existing ground elevations and all changes in grade resulting from any proposed excavation or filling, and floodplain and floodway limits; sealed by a licensed P.E., licensed architect or licensed land surveyor; the location and dimensions of all buildings and additions to buildings; and the elevation of the lowest floor (including basement) of all proposed buildings subject to the requirements of § 15.16.080 of this chapter.

(q) If the proposed project involves a channel modification, the applicant shall submit the following information:

1. A discussion of the purpose of and need for the proposed work;
2. A discussion of the feasibility of using alternative locations or methods (see § 15.16.060) to accomplish the purpose of the proposed work;
3. An analysis of the extent and permanence of the impacts each feasible alternative identified in this section would have on the physical and biological conditions of the body of water affected; and
4. An analysis of the impacts of the proposed project, considering cumulative effects on the physical and biological conditions of the body of water affected.

(3) The City Building Inspector shall be responsible for obtaining from the applicant copies of all other federal, state, and local permits and approvals that may be required for this type of activity.

(a) The City Building Inspector shall not issue the development permit unless all required federal and state permits have been obtained.

(b) A Licensed P.E., under the employ or contract of the city shall review and approve applications reviewed under this section.

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

(1) The only development in a floodway which will be allowed are appropriate uses, which will not cause a rise in the base flood elevation, and which will not create a damaging or potentially damaging increase in flood heights or velocity or be a threat to public health and safety and welfare or impair the natural hydrologic and hydraulic functions of the floodway or channel, or permanently impair existing water quality or aquatic habitat. Construction impacts shall be minimized by appropriate mitigation methods as called for in this chapter. Only those appropriate uses listed in 17 Ill. Adm. Code Part 3708 will be allowed. The approved appropriate uses are as follows:

(a) Flood control structures, dikes, dams and other public works or private improvements relating to the control of drainage, flooding, erosion, or water quality or habitat for fish and wildlife.

(b) Structures or facilities relating to the use of, or requiring access to, the water or shoreline, such as pumping and treatment facilities, and facilities and improvements related to recreational boating, commercial shipping and other functionally water dependent uses;

(c) Storm and sanitary sewer relief outfalls;

(d) Underground and overhead utilities;

(e) Recreational facilities such as playing fields and trail systems, including any related fencing (at least 50% open when viewed from any one direction) built parallel to the direction of flood flows, and including open air pavilions and toilet facilities (four stall maximum) that will not block flood flows nor reduce floodway storage.

(f) Detached garages, storage sheds, or other non-habitable accessory structures that will not block flood flows nor reduce floodway storage;

(g) Bridges, culverts, roadways, sidewalks, railways, runways, and taxiways and any modification thereto;

(h) Parking lots built at or below existing grade where either:

1. The depth of flooding at the 100-year frequency flood event will not exceed 1.0 foot; or

2. The applicant of a short-term recreational use facility parking lot formally agrees to restrict access during overbank flooding events and accepts liability for all damage caused by vehicular access during all overbank flooding events.

(i) Designated floodway regrading, without fill, to create a positive non-erosive slope toward a watercourse.

(j) Floodproofing activities to protect previously existing lawful structures including the construction of water tight window wells, elevating structures, or construction of floodwalls around residential, commercial or industrial principal structures where the outside toe of the floodwall shall be no more than ten feet away from the exterior wall of the existing structure, and, which are not considered substantial improvements to the structure.

(k) The replacement, reconstruction, or repair of a damaged building, provided that the outside dimensions are not increased, and if the building was damaged to 50% or more of the market value before the damage occurred, the building will be protected from flooding to the flood protection elevation.

(l) Modifications to an existing building that would not increase the enclosed floor area of the building below the 100-year frequency flood elevation, and which will not block flood flows including but not limited to, fireplaces, bay windows, decks, patios, and second story additions. If the building is improved to 50% or more of the market value before the modification occurred (i.e., a substantial improvement), the building will be protected from flooding to the flood protection elevation.

(2) Appropriate uses do not include the construction or placement of any new structures, fill, building additions, buildings on stilts, excavation or channel modifications done to accommodate otherwise non-appropriate uses in the floodway, fencing (including landscaping or planting designed to act as a fence), and storage of materials except as specifically defined above as an appropriate use.

(3) Within the designated floodway, the construction of an appropriate use, will be considered permissible provided that the proposed project meets the following engineering and mitigation criteria and is so stated in writing with supporting plans, calculations and data by a licensed P.E. and provided that any structure meets the protection requirements of § 15.16.090 of this chapter:

(a) *Preservation of flood conveyance, so as not to increase flood stages upstream.* For appropriate uses other than bridge or culvert crossings, on-stream structures or dams, all effective designated floodway conveyance lost due to the project will be replaced for all flood events up to and including the 100-year frequency flood. In calculating effective designated floodway conveyance, the following factors shall be taken into consideration:

1. Designated floodway conveyance, "K" = $(1.486/n)(AR^{2/3})$ where "n" is Manning's roughness factor, "A" is the effective flow area of the cross-section, and "R" is the ratio of the area to the wetted perimeter. (See Ven Te Chow, Open Channel Hydraulics, (McGraw-Hill, New York 1959)).

2. The same Manning's "n" value shall be used for both existing and proposed conditions unless a recorded maintenance agreement with a federal, state, or local unit of government can assure the proposed conditions will be maintained or the land cover is changing from a vegetative to a non-vegetative land cover.

3. Transition sections shall be provided and used in calculations of effective designated floodway conveyance. The following expansion and contraction ratios shall be used unless an applicant's engineer can prove to IDNR/OWR through engineering calculations or model tests that more abrupt transitions may be used with the same efficiency:

a. When water is flowing from a narrow section to a wider section, the water should be assumed to expand no faster than at a rate of one foot horizontal for every four feet of the flooded stream's length.

b. When water is flowing from a wide section to a narrow section, the water should be assumed to contract no faster than at a rate of one foot horizontal for every one foot of the flooded stream's length.

c. When expanding or contracting flows in a vertical direction, a minimum of one-foot vertical transition for every ten feet of stream length shall be used.

d. Transition sections shall be provided between cross-sections with rapid expansions and contractions and when meeting the designated flood way delineation on adjacent properties.

e. All cross-sections used in the calculations shall be located perpendicular to flood flows.

(b) *Preservation of floodway storage so as not to increase downstream flooding.*

1. Compensatory storage shall be provided for any designated floodway storage lost due to the proposed work from the volume of fill or structures placed and the impact of any related flood control projects.

2. Compensatory storage for fill or structures shall be equal to at least 1.5 times the volume of floodplain storage lost.

3. Artificially created storage lost due to a reduction in head loss behind a bridge shall not be required to be replaced.

4. The compensatory designated floodway storage shall be placed between the proposed normal water elevation and the proposed 100-year flood elevation. All designated floodway storage lost below the existing ten-year flood elevation shall be replaced below the proposed ten-year flood elevation. All designated floodway storage lost above the existing 10-year flood elevation shall be replaced above the proposed ten-year flood elevation. All such excavations shall be constructed to drain freely and openly to the watercourse.

5. If the compensatory storage will not be placed at the location of the proposed construction, the applicant's engineer shall demonstrate through a determination of flood discharges and water surface elevations that the compensatory storage is hydraulically equivalent.

6. There shall be no reduction in floodway surface area, as a result of a floodway modification, unless such modification is necessary to reduce flooding at existing structure.

(c) *Preservation of floodway velocities so as not to increase stream erosion or flood heights.*

1. For all appropriate uses, except bridges or culverts or on-stream structures, the proposed work will not result in an increase in the average channel or designated floodway velocities or stage for all flood events up to and including the 100-year frequency event.

2. In the case of bridges or culverts or on-stream structures built for the purpose of backing up water in the stream during normal or flood flows, velocities may be increased at the structure site if scour, erosion and sedimentation will be avoided by the use of riprap or other design measures.

(d) *Construction of new bridges or culvert crossings and roadway approaches.*

1. The proposed structure shall not result in an increase of upstream flood stages greater than 0.1 foot when compared to the existing conditions for all flood events up to and including the 100-year frequency event; or the upstream flood stage increases will be contained within the channel banks (or within existing vertical extensions of the channel banks) such as within the design protection grade of existing levees or flood walls or within recorded flood easements.

2. If the proposed construction will increase upstream flood stages greater than 0.1 feet, the developer must contact IDNR/OWR to obtain a permit for a dam or waiver.

a. The engineering analysis of upstream flood stages must be calculated using the flood study flows, and corresponding flood elevations for tailwater conditions for the flood study specified in § 15.16.040 of this chapter. Bridges and culverts must be analyzed using any commonly accepted FEMA approved hydraulic models.

b. Lost floodway storage must be compensated for per § 15.16.070(B).

c. Velocity increases must be mitigated per § 15.16.070(B).

d. If the crossing is proposed over a public water that is used for recreational or commercial navigation, an IDNR/OWR permit must be received.

e. The hydraulic analysis for the backwater caused by the bridge showing the existing condition and proposed regulatory profile must be submitted to IDNR/OWR for concurrence that a CLOMR is not required by § 15.16.060(C).

f. All excavations for the construction of the crossing shall be designed per § 15.16.060(C).

(e) *Reconstruction or modification of existing bridges, culverts, and approach roads.*

1. The bridge or culvert and roadway approach reconstruction or modification shall be constructed with no more than 0.1-foot increase in backwater over the existing flood profile for all flood frequencies up to and including the 100-year event, if the existing structure is not a source of flood damage.

2. If the existing bridge or culvert and roadway approach is a source of flood damage to buildings or structures in the upstream floodplain, the applicant's engineer shall evaluate the feasibility of redesigning the structure to reduce the existing backwater, taking into consideration the effects on flood stages on upstream and downstream properties.

3. The determination as to whether or not the existing crossing is a source of flood damage and should be redesigned must be prepared in accordance with 17 Ill. Adm. Code Part 3708 (Floodway Construction in Northeastern Illinois) and submitted to IDNR/OWR for review and concurrence before a permit is issued.

(f) *On-stream structures built for the purpose of backing up water.*

1. Any increase in upstream flood stages greater than 0.0 foot when compared to the existing conditions, for all flood events up to and including the 100-year frequency event shall be contained within the channel banks (or within existing vertical extensions of the channel banks) such as within the design protection grade of existing levees or flood walls or within recorded flood easements.

2. A permit or letter indicating a permit is not required must be obtained from IDNR/OWR for any structure built for the purpose of backing up water in the stream during normal or flood flow.

3. All dams and impoundment structures as defined in § 15.16.020 shall meet the permitting requirements of 17 Ill. Adm. Code Part 3702 (Construction and Maintenance of Dams). If the proposed activity involves a modification of the channel or floodway to accommodate an impoundment, it shall be demonstrated that:

a. The impoundment is determined to be in the public interest by providing flood control, public recreation, or regional stormwater detention;

b. The impoundment will not prevent the migration of indigenous fish species, which require access to upstream areas as part of their life cycle, such as for spawning;

c. The impoundment will not cause or contribute to degraded water quality or habitat conditions. Impoundment design should include gradual bank slopes, appropriate bank stabilization measures and a pre-sedimentation basin.

d. A non-point source control plan has been implemented in the upstream watershed to control the effects of sediment runoff as well as minimize the input of nutrients, oil and grease, metals, and other pollutants. If there is more than one municipality in the upstream watershed, the municipality in which the impoundment is constructed should coordinate with upstream municipalities to ensure comprehensive watershed control;

e. The project otherwise complies with the requirements of § 15.16.060.

(g) *Flood proofing of existing habitable, residential and commercial structures.*

1. If construction is required beyond the outside dimensions of the existing building, the outside perimeter of the floodproofing construction shall be placed no further than ten feet from the outside of the building.

2. Compensation of lost storage and conveyance will not be required for floodproofing activities.

(h) *Excavation in the floodway.*

1. When excavation is proposed in the design of bridges and culvert openings, including the modifications to and replacement of existing bridge and culvert structures, or to compensate for lost conveyance or other appropriate uses, transition sections shall be provided for the excavation.

2. The following expansion and contraction ratios shall be used unless an applicant's engineer can prove to IDNR/OWR through engineering calculations or model tests that more abrupt transitions may be used with the same efficiency:

a. When water is flowing from a narrow section to a wider section, the water should be assumed to expand no faster than at a rate of one foot horizontal for every four feet of the flooded stream's length; and

b. When water is flowing from a wide section to a narrow section, the water should be assumed to contract no faster than at a rate of one foot horizontal for every one foot of the flooded stream's length; and

c. When expanding or contracting flows in a vertical direction, a minimum of one-foot vertical transition for every ten feet of stream length shall be used; and

d. Erosion/scour protection shall be provided inland upstream and downstream of the transition sections.

(i) If the proposed activity involves a channel modification, it shall be demonstrated that:

1. There are no practicable alternatives to the activity which would accomplish its purpose with less impact to the natural conditions of the body of water affected. Possible alternatives include levees, bank stabilization, flood proofing of existing structures, removal of structures from the floodplain, clearing the channel, high flow channel, or the establishment of a stream side buffer strip or green belt. Channel modification is acceptable if the purpose is to restore natural conditions and improve water quality and fish and wildlife habitat;

2. Water quality, habitat, and other natural functions would be significantly improved by the modification and no significant habitat area may be destroyed, or the impacts are offset by the replacement of an equivalent degree of natural resource values;

3. The activity has been planned and designed and will be constructed in a way which will minimize its adverse impacts on the natural conditions of the body of water affected, consistent with the following criteria:

a. The physical characteristics of the modified channel shall match as closely as possible those of the existing channel in length, cross-section, slope and sinuosity. If the existing channel has been previously modified, restoration of more natural physical conditions should be incorporated into channel modification design, where practical.

b. Hydraulically effective transitions shall be provided at both the upstream and downstream ends of the project, designed such that they will prevent erosion.

c. One-sided construction of a channel shall be used when feasible. Removal of streamside (riparian) vegetation should be limited to one side of the channel, where possible, to preserve the shading and stabilization effects of the vegetation.

d. Clearing of stabilizing vegetation shall be limited to that which is essential for construction of the channel.

e. Channel banks shall be constructed with a side slope no steeper than 3:1 horizontal to vertical, wherever practicable. Native vegetation and gradual side slopes are the preferred methods for bank stabilization. Where high velocities or sharp bends necessitate the use of alternative stabilization measures, soil bioengineering techniques, natural rock, or rip-rap are preferred approaches. Artificial materials such as concrete, gabions, or construction rubble should be avoided unless there are no practicable alternatives.

f. All disturbed areas associated with the modification shall be seeded or otherwise stabilized as soon as possible upon completion of construction. Erosion blanket or an equivalent material shall be required to stabilize disturbed channel banks prior to establishment of the vegetative cover.

g. If the existing channel contains considerable bottom diversity such as deep pools, riffles, and other similar features, such features shall be provided in the new channel. Spawning and nesting areas and flow characteristics compatible with fish habitat shall also be established, where appropriate.

h. A sediment basin shall be installed at the downstream end of the modification to reduce sedimentation and degradation of downstream water quality.

i. New or relocated channels should be built in the dry season and all items of construction, including vegetation, should be completed prior to diversion of water into the new channel.

j. There shall be no increases in stage or velocity as the channel enters or leaves the project site for any frequency flood unless necessitated by a public flood control project or unless such an increase is justified as part of a habitat improvement or erosion control project.

k. Unless the modification is for a public flood control project, there shall be no reduction in the volume of floodwater storage outside the floodway as a result of the modification; and the project otherwise complies with the requirements of this section.

(j) *Seeding and stabilization plan.* For all activities located in a floodway, a seeding and stabilization plan shall be submitted by the applicant.

(k) *Soil erosion and sedimentation measures.* For all activities in the floodway, including grading, filling, and excavation, in which there is potential for erosion of exposed soil, soil erosion and sedimentation control measures shall be employed consistent with the following criteria:

1. The construction area shall be minimized to preserve the maximum vegetation possible. Construction shall be scheduled to minimize the time soil is exposed and unprotected. In no case shall the existing natural vegetation be destroyed, removed, or disturbed more than 15 days prior to the initiation of improvements.

2. Temporary and/or permanent soil stabilization shall be applied to denuded areas as soon as possible. As a minimum, soil stabilization shall be provided within 15 days after final grade is reached on any portion of the site, and within 15 days to denuded areas which may not be at final grade but will remain undisturbed for longer than 60 days.

3. Sedimentation control measures shall be installed before any significant grading or filling is initiated on the site to prevent the movement of eroded sediments off site or into the channel. Potential sediment control devices include filter fences, straw bale fences, check dams, diversion ditches, and sediment traps and basins.

4. A vegetated buffer strip of at least 25 feet in width shall be preserved and/or re-established, where possible, along existing channels (See § 15.16.060(C)). Construction vehicle use of channels shall be minimized. Temporary stream crossings shall be constructed, where necessary, to minimize erosion. Necessary construction in or along channels shall be restabilized immediately.

5. Soil erosion and sedimentation control measures shall be designed and implemented consistent with "Procedures and Standards for Urban Soil Erosion and Sedimentation Control in Illinois" (1988) also known as the "Green Book" and "The Illinois Urban Manual" (NRCS, 1995).

(l) *Public flood control projects.* For public flood control projects, the permitting requirements of this section will be considered met if the applicant can demonstrate to IDNR/OWR through hydraulic and hydrologic calculations that the proposed project will not singularly or cumulatively result in increased flood heights outside the project right-of-way or easements for all flood events up to and including the 100-year frequency event.

(m) *General criteria for analysis of flood elevations.*

1. The flood profiles, flows and floodway data in the designated floodway study, must be used for analysis of the base conditions. If the study data appears to be in error or conditions have changed, IDNR/OWR shall be contacted for approval and concurrence on the appropriate base conditions data to use.

2. If the 100-year designated floodway elevation at the site of the proposed construction is affected by backwater from a downstream receiving stream with a larger drainage area, the proposed construction shall be shown to meet:

a. The requirements of this section for the 100-year frequency flood elevations of the designated floodway conditions; and

b. Conditions with the receiving stream at normal water elevations.

3. If the applicant learns from IDNR/OWR, local governments, or a private owner that a downstream restrictive bridge or culvert is scheduled to be removed, reconstructed, modified, or a regional flood control project is scheduled to be built, removed, constructed or modified within the next five years, the proposed construction shall be analyzed and shown to meet the requirements of this section for both the existing conditions and the expected flood profile conditions when the bridge, culvert or flood control project is built.

(n) *Conditional letter of map revision.*

1. If the appropriate use would result in a change in the designated floodway location or the 100-year frequency flood elevation, the applicant shall submit to IDNR/OWR and FEMA all information, calculations and documents necessary to be issued a conditional designated floodway map revision and receive from IDNR/OWR a conditional concurrence of the designated floodway change before a permit is issued.

2. The final designated floodway map will not be changed by FEMA until as-built plans or record drawings of initial filling, grading, dredging, or excavating activities are submitted and accepted by FEMA and IDNR/OWR.

3. In the case of non-government projects, the municipality in incorporated areas and the county in unincorporated areas shall concur with the proposed conditional designated floodway map revision before IDNR/OWR approval can be given.

4. No filling, grading, dredging, or excavating shall take place until a conditional approval is issued.

5. After initial filling, grading, dredging or excavating, no activities shall take place until a final Letter of Map Revision (LOMR) is issued by FEMA with concurrence from IDNR/OWR.

(o) *Professional engineer's supervision.* All engineering analyses shall be performed by or under the supervision of a licensed P.E.

(p) For all activities in the floodway involving construction within 25 feet of the channel, the following criteria shall be met:

1. A natural vegetation buffer strip shall be preserved within at least 25 feet of the ordinary high water mark of the channel.

2. Where it is impossible to protect this buffer strip during the construction of an appropriate use, a vegetated buffer strip shall be established upon completion of construction.

3. The use of native riparian vegetation is preferred in the buffer strip. Access through this buffer strip shall be provided, when necessary, for stream maintenance purposes.

(q) After receipt of conditional approval of the designated floodway change and issuance of a permit and a Conditional Letter of Map Revision, construction as necessary to change the floodway designation may proceed but no buildings or structures or other construction that is not an appropriate use may be placed in that area until the designated floodway map is changed and a final Letter of Map Revision is received. The designated floodway map will be revised upon acceptance and concurrence by IDNR/OWR and FEMA of the "as-built" plans.

(4) *Development activities in delegated communities requiring state review.* For those projects listed below located in a designated floodway, the following criteria shall be submitted to IDNR/OWR for their review and concurrence prior to the issuance of a permit by a community or county delegated state permitting authority in the floodway.

(a) An engineer's analysis of the flood profile due to a proposed bridge pursuant to § 15.16.060(C).

(b) An engineer's determination that an existing bridge or culvert crossing is not a source of flood damage and the analysis indicating the proposed flood profile, pursuant to § 15.16.060(C).

(c) Alternative transition sections and hydraulically equivalent storage pursuant to § 15.16.060(C).

(d) The construction of any IDNR/OWR projects, dams (as defined in § 15.16.020) and all other federal, state, or local units of government projects, including projects of the municipality or county.

(e) An engineer's determination that a proposed bridge affected by backwater from a downstream receiving stream may be built with a smaller opening.

1. Projects which revise or establish the floodway and/or flood profiles.

2. Projects in public bodies of water.

(5) *Other permits.*

(a) In addition to the other requirements of this chapter, a development permit for a site located in a floodway shall not be issued unless the applicant first obtains a permit or written documentation that a permit is not required from IDNR/OWR, issued pursuant to 615 ILCS 5/5 et seq.

(b) No correspondence from IDNR/OWR shall be required if the project meets the requirements of Regional Permit 3.

(c) No permit from IDNR/OWR shall be required if IDNR/OWR has delegated this responsibility to the city.

(6) *Permits for dams.*

(a) Any work involving the construction, modification, or removal of a dam as defined in Section 300.16 per 17 Ill. Adm. Code Part 3702 (Rules for Construction of Dams) shall obtain an IDNR/OWR permit prior to the start of construction of a dam.

(b) If the City Building Inspector finds a dam that does not have an IDNR/OWR permit, the City Building Inspector shall immediately notify the IDNR/OWR Bartlett office.

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

(7) *Activities that do not require a licensed professional engineer's review.* The following activities may be permitted without a licensed P.E.'s review. Such activities shall still meet the other requirements of this chapter, including the mitigation requirements.

(a) Regional Permit 3 which authorizes, for example, underground and overhead utilities, storm and sanitary sewer outfalls, sidewalks, patios, athletic fields, playground equipment, and streambank protection activities.
(Ord. 1798, passed 2-4-19)

§ 15.16.070 OCCUPATION AND USE OF FLOODPLAIN AREAS WHERE FLOODWAYS ARE NOT IDENTIFIED.

(A) In floodplains, (including AE, AH, AO, and Unnumbered A Zones) where no floodways have been identified and no base flood or 100-year frequency flood elevations have been established by FEMA, and draining more than a square mile, no development shall be permitted unless the cumulative effect of the proposals, when combined with all other existing and anticipated uses and structures, shall not significantly impede or increase the flow and passage of the floodwaters nor significantly increase the base flood or 100-year frequency flood elevation.

(B) *Development permit.*

(1) No person, firm, corporation, or governmental body, not exempted by state law, shall commence any development in a floodplain without first obtaining a development permit from the City Building Inspector.

(2) Application for a development permit shall be made on a form provided by the City Building Inspector.

(a) The application shall be accompanied by drawings of the site, drawn to scale showing property line dimensions; and existing grade elevations and all changes in grade resulting from excavation or filling, sealed by a licensed engineer, architect or surveyor; the location and dimensions of all buildings and additions to buildings; and the elevations of the lowest floor (including basement) of all proposed buildings subject to the requirements of § 15.16.080 of this chapter.

(b) The application for a development permit shall also include the following information:

1. A detailed description of the proposed activity, its purpose, and intended use;
2. Site location (including legal description) of the property, drawn to scale, on the designated floodway maps, indicating whether it is proposed to be in an incorporated or unincorporated area;
3. Anticipated dates of initiation and completion of activity;
4. Plans of the proposed activity shall be provided which include as a minimum:
 - a. A vicinity map showing the site of the activity, name of the waterway, boundary lines, names of roads in the vicinity of the site, graphic or numerical scale, and north arrow;

b. A plan view of the project and engineering study reach showing existing and proposed conditions including principal dimensions of the structure or work, elevations, using the NAVD 1988, adjacent property lines and ownership, drainage and flood control easements, distance between proposed activity and navigation channel (when the proposed construction is in or near a commercially navigable body of water), floodplain limit, location and orientation of cross-sections, north arrow, and a graphical or numerical scale;

c. Cross-section views of the project perpendicular to the flow of floodwater and engineering study reach showing existing and proposed conditions including principal dimensions of the work as shown in plan view, existing and proposed elevations, normal water elevation, ten-year frequency flood elevation, 100-year frequency flood elevation, and graphical or numerical scales (horizontal and vertical); and

d. A soil erosion and sedimentation control plan for disturbed areas. This plan shall include a description of the sequence of grading activities and the temporary sediment and erosion control measures to be implemented to mitigate their effects. This plan shall also include a description of final stabilization and revegetation measures, and the identification of a responsible party to ensure post-construction maintenance.

5. Engineering calculations and supporting data shall be submitted showing that the proposed work will meet the criteria of § 15.16.070.

6. Any and all other federal, state, and local permits or approvals that may be required for this type of development.

(3) Based on the best available existing data according to federal, state or other sources, the City Building Inspector shall compare the elevation of the site to the base flood or 100-year frequency flood elevation.

(a) Should no elevation information exist for the site, the developer's engineer shall calculate the elevation according to § 15.16.040(E).

(b) Any development located on land that can be shown to have been higher than the base flood elevation of the current Flood Insurance Rate Map Identification is not in the floodplain and, therefore, not subject to the requirements of this chapter.

(c) The City Building Inspector shall maintain documentation of the existing ground elevation at the development site and certification that this ground elevation existed prior to the date of the site's first Flood Insurance Rate Map identification.

(d) The City Building Inspector shall be responsible for obtaining from the applicant copies of all other federal, state, and local permits, approvals or waivers that may be required for this type of activity. The City Building Inspector shall not issue the development permit unless all required federal, state, and local permits have been obtained.

(C) Preventing increased damages.

(1) No development in the floodplain, where a floodway has not been determined, shall create a damaging or potentially damaging increase in flood heights or velocity or threat to public health, safety, and welfare or impair the natural hydrologic and hydraulic functions of the floodway or channel or impair existing water quality or aquatic habitat. Construction impacts shall be minimized by appropriate mitigation methods as called for in this chapter.

(2) Within all riverine floodplains where the floodway has not been determined, the following standards shall apply:

(a) The developer shall have a Licensed P.E. state in writing and show through supporting plans, calculations, and data that the project meets the engineering requirements of § 15.16.060(C) for the entire floodplain as calculated under the provisions of § 15.16.040(E) of this chapter.

(b) As an alternative, the developer should have an engineering study performed to determine a floodway and submit that engineering study to IDNR/OWR and FEMA for acceptance as a designated floodway.

(c) Upon acceptance of the floodway by IDNR/OWR and FEMA, the developer shall then demonstrate that the project meets the requirements of § 15.16.060 for the designated floodway. The floodway shall be defined according to the definition in § 15.16.020 of this chapter.

(d) A development permit shall not be issued unless the applicant first obtains a IDNR/OWR permit or a determination has been made that an IDNR/OWR permit is not required.

(e) *Permits for dams.*

1. Any work involving the construction, modification or removal of a dam as defined in § 15.16.020 per 17 Ill. Adm. 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 City Building Inspector finds a dam that does not have an IDNR/OWR permit, the City Building Inspector shall immediately notify the IDNR/OWR Bartlett office.

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

(3) The following activities may be permitted without a Licensed P.E.'s review or calculation of base flood elevation and designated floodway. Such activities shall still meet the other requirements of this chapter.

(a) Bridge and culvert crossings of streams in rural areas meeting conditions of IDNR/OWR Statewide Permit number 2;

(b) Barge fleeting facilities meeting conditions of IDNR/OWR Statewide Permit No. 3;

(c) Aerial utility crossings meeting conditions of IDNR/OWR Statewide Permit No. 4;

(d) Minor boat docks meeting conditions of IDNR/OWR Statewide Permit No. 5;

(e) Minor, non-obstructive activities meeting conditions of IDNR/OWR Statewide Permit No. 6;

(f) Outfall structures and drainage ditch outlets meeting conditions of IDNR/OWR Statewide Permit No. 7;

(g) Underground pipeline and utility crossings meeting the conditions of IDNR/OWR Statewide Permit No. 8;

(h) Bank stabilization projects meeting the conditions of IDNR/OWR Statewide Permit No. 9;

(i) Accessory structures and additions to existing residential buildings meeting the conditions of IDNR/OWR Statewide Permit No. 10;

(j) Minor maintenance dredging activities meeting conditions of DNR/OWR Statewide Permit No. 11;

(k) Bridge and culvert replacement structures and bridge widenings meeting conditions of IDNR/OWR Statewide Permit No. 12;

(l) Temporary construction activities meeting conditions of IDNR/OWR Statewide Permit No. 13;

(m) Special uses of public waters meeting conditions of IDNR/OWR Statewide Permit No. 14; and

(n) Any development determined by IDNR/OWR to be located entirely within a flood fringe area shall be exempt from state floodway permit requirements.

(4) The flood carrying capacity of any altered or relocated watercourse shall be maintained.

(5) *Compensatory storage.*

(a) Whenever any portion of a floodplain is authorized for use, the volume of space which will be occupied by the authorized fill or structure below the base flood or 100-year frequency flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood or 100-year frequency flood elevation.

(b) The excavation volume shall be at least equal to 1.5 times the volume of storage lost due to the fill or structure.

(c) In the case of streams and watercourses, such excavation shall be made opposite or adjacent to the areas so filled or occupied.

(d) All floodplain storage lost below the existing 10-year flood elevation shall be replaced below the proposed ten-year flood elevation. All floodplain storage lost above the existing ten-year flood elevation shall be replaced above the proposed ten-year flood elevation. All such excavations shall be constructed to drain freely and openly to the watercourse.

(Ord. 1798, passed 2-4-19)

§ 15.16.080 PERMITTING REQUIREMENTS APPLICABLE TO ALL FLOODPLAIN AREAS.

(A) (1) In addition to the requirements found in §§ 15.16.050, 15.16.060 and 15.16.070 for development in flood fringes, designated floodways, and floodplains where no floodways have been identified, the following requirements shall be met.

(2) In addition to the requirements found in this chapter, all properties shall comply with the Will County Stormwater Management Ordinance (latest version).

(B) *Public health and other standards.*

(1) No developments in the floodplain 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 § 15.16.080 of this chapter.

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

(3) Public sanitary sewer systems and water supply systems shall be located and constructed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

(4) 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.

(5) 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.

(C) *Carrying capacity and notification.*

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

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

(D) *Protecting buildings.*

(1) In addition to the damage prevention requirements in §§ 15.16.050(B) and 15.16.060(C) of this chapter, all buildings located within a floodplain, shall be protected from flood damage below the flood protection elevation. This building protection criteria applies to the following situations:

(a) Construction or placement of a new building or alteration or addition to an existing building valued at more than \$1,000 or 70 square feet.

(b) Substantial improvements or structural alterations made to an existing building that increase the floor area by more than 20% or equal or exceed the market value by 50%. Alteration shall be figured cumulatively during the life of the building. If substantially improved, the existing structure and the addition must meet the flood protection standards of this section.

(c) *Repairs made to a substantially damaged building.* These repairs shall be figured cumulatively during the life of the building. If substantially damaged the entire structure must meet the flood protection standards of this section.

(d) Installing a manufactured home on a new site or a new manufactured home on an existing site (the building protection requirements do not apply to returning a manufactured home to the same site it lawfully occupied before it was removed to avoid flood damage).

(e) Installing a travel trailer or recreational vehicle on a site for more than 180 days per year; and

(f) Repetitive loss to an existing building as defined in § 15.16.020.

(2) Residential or non-residential buildings can meet the building protection requirements by one of the following methods:

(a) The building may be constructed on permanent land fill in accordance with the following:

1. The lowest floor (including basement) shall be at or above the flood protection elevation.

2. The fill shall be placed in layers no greater than six inches before compaction and should extend at least ten feet beyond the foundation before sloping below the flood protection elevation.

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

4. The fill shall be protected against erosion and scour during flooding by vegetative cover, riprap, or other structural measure.

5. The fill shall be composed of rock or soil and not include debris or refuse material.

6. The fill shall not adversely affect the flow of surface drainage from or onto neighboring properties and, when necessary, include stormwater management techniques such as swales or basins.

(b) The building may be elevated in accordance with the following:

1. The building or improvements shall be elevated on stilts, piles, walls, crawlspace, or other foundation that is permanently open to flood waters.

2. If walls are used, all enclosed areas below the flood protection elevation shall address hydrostatic pressures by allowing the automatic entry and exit of flood waters. Designs must either be certified by a licensed professional engineer or by having a minimum of one permanent opening on each wall no more than one foot above grade with a minimum of two openings. The openings shall provide 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; and

3. 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.

4. The foundation and supporting members shall be anchored, aligned, designed, and certified so as to minimize exposure to hydrodynamic forces such as current, waves, ice, and floating debris.

5. All structural components below the flood protection elevation shall be constructed of materials resistant to flood damage.

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

7. The area below the flood protection elevation shall be used solely for parking or building access and not later modified or occupied as habitable space.

8. In lieu of the above criteria, the design methods to comply with these requirements may be certified by a licensed professional engineer or architect.

(c) The building may be constructed with a crawlspace located below the flood protection elevation provided that the following conditions are met;

1. The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

2. Any enclosed area below the flood protection elevation shall have openings that equalize hydrostatic pressures by allowing for the automatic entry and exit of floodwaters. A minimum of one opening on each wall having a total net area of not less than one square inch per one square foot of enclosed area. The openings shall be no more than one foot above grade.

3. The interior grade of the crawlspace below the flood protection elevation must not be more than two feet below the lowest adjacent exterior grade.

4. The interior height of the crawlspace measured from the interior grade of the crawl to the top of the foundations wall must not exceed four feet at any point.

5. An adequate drainage system must be installed to remove floodwaters from the interior area of the crawlspace within a reasonable period of time after a flood event.

6. Portions of the building below the flood protection elevation must be constructed with materials resistant to flood damage.

7. Utility systems within the crawlspace must be elevated above the flood protection elevation.

(3) Non-residential buildings may be structurally dry floodproofed (in lieu of elevation) provided a licensed professional engineer or architect submits a FEMA Floodproofing Certificate, documenting that:

(a) Below the flood protection elevation, the structure and attendant utility facilities are watertight and capable of resisting the effects of the base flood, including sewer back flow.

(b) The building design accounts for flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effects of buoyancy, and the impact from debris and ice.

(c) Floodproofing measures will be incorporated into the building design and operable without human intervention and without an outside source of electricity.

(d) Levees, berms, floodwalls and similar works are not considered floodproofing for the purpose of this subsection.

(4) Manufactured homes or travel trailers to be permanently installed on site for more than 180 days in any year shall be:

(a) Elevated to or above the flood protection elevation.

(b) 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. Adm. Code § 870.

(5) Travel trailers and recreational vehicles on site for more than 180 days per year shall meet the elevation requirement and anchoring requirements of § 15.16.080(D) unless the following conditions are met:

(a) The vehicle must be either self-propelled or towable by a light duty truck.

(b) The hitch must remain on the vehicle at all times.

(c) The vehicle must not be attached to external structures such as decks and porches.

(d) The vehicle must be designed solely for recreation, camping, travel, or seasonal use rather than as a permanent dwelling.

- (e) The vehicles largest horizontal projections must be no larger than 400 square feet.
- (f) The vehicle's wheels must remain on axles and inflated.
- (g) Air conditioning units must be attached to the frame so as to be safe for movement out of the floodplain.
- (h) Propane tanks and electrical and sewage connections must be quick-disconnect and be above the base flood elevation.
- (i) The vehicle must be licensed and titled as a recreational vehicle or park model, and must either be entirely be supported by jacks, or have a hitch jack permanently mounted, have the tires touching the ground and supported by block in a manner that will allow the block to be easily removed by use of the hitch jack.

(6) Garages, sheds or other minor accessory structures constructed ancillary to an existing residential use may be constructed with the lowest floor below the flood protection elevation provided the following conditions are met:

- (a) The structure must be non-habitable.
- (b) All areas below the base flood or 100-year frequency flood elevation shall be constructed with waterproof material.
- (c) The structure must be used only for the storage of vehicles and tools and cannot be modified later into another use.
- (d) The structure must be located outside of the floodway or have the appropriate state and/or federal permits.
- (e) Below the base flood elevation, the structure must be built of materials not susceptible to flood damage.
- (f) All utilities, plumbing, heating, air conditioning and electrical must be elevated above the flood protection elevation.
- (g) The structure must have at least one permanent opening on each wall not more than one foot above grade with one square inch of opening for every one square foot of floor area.
- (h) The structure must be less than \$15,000 in market value or replacement cost whichever is greater or less than 576 square feet (24' x 24').
- (i) The structure shall be anchored to resist floatation and overturning.
- (j) All flammable or toxic materials (gasoline, paint, insecticides, fertilizers, etc.) shall be stored above the flood protection elevation.
- (k) The lowest floor elevation should be documented and the owner advised of the flood insurance implications.
- (l) If located in a designated floodway, the structure shall be constructed and placed on a building site so as not to block flood flows nor reduce floodway storage (§ 15.16.070(C)) and shall also meet the appropriate use criteria of § 15.16.070 and all other applicable requirements of §§ 15.16.060, 15.16.070 and 15.16.080.

(7) Existing buildings located within a designated floodway shall also meet the more restrictive Appropriate Use standards included in Section 15.16.800. Nonconforming structures located in a designated floodway may remain in use and may only be enlarged, replaced or structurally altered in accordance with § 15.16.070(C). A non-conforming structure damaged by flood, fire, wind or other natural or man-made disaster may be restored unless the damage exceeds 50% of its market value before it was damaged, in which case it shall conform to this chapter.

(8) Construction of new or substantially improved critical facilities shall be located outside the limits of the floodplain. Construction of new critical facilities shall be permissible within the floodplain if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor (including basement) elevated or structurally dry floodproofed to the 500-year flood frequency elevation or three feet above the level of the 100-year flood frequency elevation whichever is greater. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities.
(Ord. 1798, passed 2-4-19)

§ 15.16.090 SUBDIVISION REQUIREMENTS.

The City Council shall take into account flood hazards, to the extent that they are known in all official actions related to land management, use and development.

(A) New subdivisions, manufactured home parks, annexation agreements, and Planned Unit Developments (PUDs) within the floodplain shall be reviewed to assure that the proposed developments are consistent with §§ 15.16.050, 15.16.060, 15.16.070, and 15.16.080 of this chapter and the need to minimize flood damage. Plats or plans for new subdivisions, mobile home parks and Planned Unit Developments (PUDs) shall include a signed statement by a Licensed P.E. that the plat or plans account for changes in the drainage of surface waters in accordance with the Plat Act (ILCS Ch. 765, Act 205, § 2).

(B) Proposals for new subdivisions, manufactured home parks, travel trailer parks, planned unit developments (PUDs) and additions to manufactured home parks and additions to subdivisions shall include base flood elevation data and floodway delineations. Where this information is not available from an existing adopted study, the applicant's engineer shall be responsible for calculating the base flood elevation per § 15.16.040(E) and the floodway delineation per the definition in § 15.16.020.

(C) Streets, blocks, lots, parks and other public grounds shall be located and laid out in such a manner as to preserve and utilize natural streams and channels. Wherever possible, the floodplains shall be included within parks or other public grounds.

(D) The City Council shall not approve any Planned Unit Development (PUD) or plat of subdivision located outside the corporate limits unless such agreement or plat is in accordance with the provisions of this chapter.
(Ord. 1798, passed 2-4-19)

§ 15.16.100 VARIANCES.

(A) No variances shall be granted to any development located in a designated floodway as defined in § 15.16.020.

(B) Whenever the standards of this chapter place undue hardship on a specific development proposal, the applicant may apply to the City Building Inspector for a variance. The City Building Inspector shall review the applicant's request for a variance and shall submit its recommendation to the City Council. The City Building Inspector may attach such conditions to granting of a variance as it deems necessary to further the flood protection intent of this chapter.

(C) No variance shall be granted unless the applicant demonstrates that all of the following conditions are met:

- (1) The development activity cannot be located outside the floodplain.
- (2) An exceptional hardship would result if the variance were not granted.
- (3) The relief requested is the minimum necessary.
- (4) There will be no additional threat to public health, safety, beneficial stream uses and functions, especially aquatic habitat, or creation of a nuisance; and
- (5) There will be no additional public expense for flood protection, lost environmental stream uses and functions, rescue or relief operations, policing, or repairs to streambeds and banks, roads, utilities, or other public facilities; and
- (6) The provisions of § 15.16.050(B) and § 15.16.070(B) of this chapter shall still be met; and
- (7) The activity is not in a designated floodway; and
- (8) The applicant's circumstances are unique, do not represent a general problem, and do not establish a pattern inconsistent with the intent of the NFIP; and
- (9) The granting of the variance will not alter the essential character of the area.
- (10) All other required state and federal permits or waivers have been obtained.

(D) The City Building Inspector shall notify an applicant in writing that a variance from the requirements of § 15.16.080 that would lessen the degree of protection to a building will:

- (1) Result in increased premium rates for flood insurance up to amounts as high as \$25 per \$100 of insurance coverage; and
 - (2) Increase the risks to life and property; and
 - (3) Require that the applicant proceed with knowledge of these risks and that the applicant will acknowledge in writing the assumption of the risk and liability.
 - (4) Variances requested in connection with restoration of a historic site or historic structure as defined in § 15.16.020 "Historic Structures", may be granted using criteria more permissive than the requirements of § 15.16.100, subject to the conditions that:
 - (a) The repair or rehabilitation is the minimum necessary to preserve the historic character and design of the structure; and
 - (b) The repair or rehabilitation will not result in the structure being removed as a certified historic structure.
- (Ord. 1798, passed 2-4-19)

§ 15.16.110 DISCLAIMER OF LIABILITY.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on available information derived from engineering and scientific methods of study. Larger floods may occur, or flood heights may be increased by man-made or natural causes. This chapter does not imply that development, either inside or outside of the floodplain, will be free from flooding or damage. This chapter does not create liability on the part of the city or any officer or employee thereof for any flood damage that results from reliance on this chapter or any administrative decision made lawfully thereunder.

(Ord. 1798, passed 2-4-19)

§15.16.120 PENALTY.

(A) Failure to obtain a permit for development in the floodplain or failure to comply with the conditions of a permit or a variance shall be deemed to be a violation of this chapter. Upon due investigation, the city may determine that a violation of the minimum standards of this chapter exists. The City Building Inspector shall notify the owner in writing of such violation.

(B) If such owner fails after ten days notice to correct the violation:

(1) The City Building Inspector may make application to the Circuit Court for an injunction requiring conformance with this chapter or make such other order as the Court deems necessary to secure compliance with the chapter.

(2) Any person who violates this chapter shall, upon conviction thereof, be fined not less than \$300 or more than \$750 for each offense.

(3) A separate offense shall be deemed committed upon each day during or on which a violation occurs or continues.

(4) The City Building Inspector may record a notice of violation on the title to the property.

(C) The City Building Inspector may inform the owner that any such violation is considered a willful act to increase flood damages and, therefore may cause coverage by a Standard Flood Insurance Policy to be suspended.

(1) The City Building Inspector is authorized to issue an order requiring the suspension of the subject development. The stop-work order shall be in writing, shall indicate the reason for the issuance, and shall order the action, if necessary, to resolve the circumstances requiring the stop-work order. The stop-work order constitutes a suspension of the permit.

(2) No site development permit shall be permanently suspended or revoked until a hearing is held by the City Council. Written notice of such hearing shall be served on the permittee and shall state: (1) the grounds for complaint or reasons for suspension or revocation; and (2) the time and place of the hearing. At such hearing, the permittee shall be given an opportunity to present evidence on his/her behalf. At the conclusion of the hearing, the City Council shall determine whether the permit shall be suspended or revoked.

(3) Nothing herein shall prevent the City Building Inspector from taking such other lawful action to prevent or remedy any violations. All costs connected therewith shall accrue to the person or persons responsible.

(Ord. 1798, passed 2-4-19)

§ 15.16.130 ABROGATION AND GREATER RESTRICTIONS.

(A) This chapter repeals and replaces other ordinances and codes adopted by the City of Crest Hill to fulfill the requirements of the National Flood Insurance Program including: Ordinance No. 480.

(B) However, this chapter does not repeal the original resolution or ordinance adopted to achieve eligibility in the program. Nor does this chapter repeal, abrogate, or impair any existing annexation agreements, easements, covenants, or deed restrictions. Where this chapter and other chapters, easements, covenants, or deed restrictions conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(Ord. 1798, passed 2-4-19)